

**EESTI MAJANDUSPOLIITILISED
VÄITLUSED**

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**ESTNISCHE GESPRÄCHE ÜBER
WIRTSCHAFTSPOLITIK**

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ECONOMIC POLICY**

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XVII

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**DISCUSSIONS ON ESTONIAN ECONOMIC POLICY
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EESSÕNA: PAKKUMISELE ORIENTEERITUD MAJANDUSPOLIITIKA RENESSANS ÜLEMAAILMSE MAJANDUSKRIISI KAUDU

Käesolev publikatsioon „Eesti majanduspoliitilised väitlused“ ilmub nüüd juba seitsmeteistkümnendat korda (selle nimega küll alles kolmandat aastat). Artiklid asuvad CD-ROM-il ja nende teisekeelsed kokkuvõtted on esitatud kogumiku paberkanjal.¹ Kõiki artikleid on anonüümselt retsenseeritud peamiselt teiste riikide majandusteadlaste poolt. „Eesti majanduspoliitilised väitlused“ on iseseisvad teaduslike artiklite kogumikud ja ilmuvad 2001. aastast alates Berliini kirjastuse Berliner Wissenschafts-Verlag (endine Berlin-Verlag Arno Spitz) ning Eesti kirjastus- ja konsultatsioonifirma Mattimar vahelises koostöös.

Publikatsioonide eesmärgiks on analüüsida ja võimalust mööda hinnata majandusarenguid nii Eesti Vabariigis kui ka terves Euroopa Liidus. Käesoleval aastal on see maailmamajandust tabanud kriiside taustal omandanud erilise aktuaalsuse.

Eesti on² alates 28. juunist 2004 ühinenud II vahetuskursimehhanismiga (ERM II) ja on seega vastavalt EÜ-lepingule võtnud endale kohustuse pärast konvergenstkriteeriumite täitmist eurole üle minna. ERM II-ga liitumisel lubati Eestil jääda senikehtinud valuutakomitee raamistiku juurde. Eesti kroon on vahetatav Euroopa Keskpanga poolt fikseeritud nn keskkursi alusel.

Eesti ei ole viimastel aastatel inflatsioonikriteeriumi³ kahjuks täitnud. Kui 2003. aastani võis täheldada liikumist suurema hinnataseme stabiilsuse suunas, siis eelkõige kolme viimase aasta jooksul on inflatsioon tunduvalt kasvanud, nimelt 4,4%-lt (2006) 6,6%-ni (2007) ja edasi 10,4%-ni (2008), ja on seega taas kaugenenud Euroopa Majandus- ja Valuutaliidu võrdlusväärtusest (2008. aastal oli see 3,2 %).⁴ See dünaamika saab veelgi selgemaks kui võrrelda kahe järjestikuse aasta kasvumäärasid: 2007. aasta alguses (ca + 5%) ning 2008. aasta märtsis (+ 11,2%). Selline inflatsioonisurve on põhjustatud esmajoones toiduainete ja energia kallinemisest ning samuti administreeritud hindade hüppelisest tõusust. Peaaegu ühe protsendipunkti võrra andis hinnatõusule oma panuse ka aktsiiside harmoniseerimine. Inflatsiooni arengut tuleb vaadelda reaalse SKP väga võimsa kasvu taustal, mis aastatel 2000-2007 moodustas keskmiselt 9%. Tööturul valitsenud järjest enam pingestunud olukorra tõttu kasvasid töõjõu erikulud järsult: 8,1% 2006. aastal ja 18,9% 2007. aastal, mis andis inflatsioonile lisaimpulse tänu nii tõusvale nõudlusele, aga eriti suurenenud kulutustele.

¹ Kokkuvõtte on vastavalt autori valikule kas eesti, saksa või inglise keeles. Sellisel kujul (CD-ROM ja paberkanjal) ilmub publikatsioon alates 2007. aastast.

² Leedu kõrval.

³ Inflatsioonimäär – vastavalt harmoniseeritud tarbijahinna indeksile (HICP) ei tohi see ületada kolme kõige stabiilsemate hindadega riigi keskmist inflatsiooni mitte rohkem kui 1,5 %.

⁴ Antud ja järgnevate statistiliste andmete kohta vaata: Europäische Zentralbank, Konvergenzbericht [Euroopa Keskpanga konvergenziraport] mai 2008, lk. 31 jj.; Konvergenziraporti statistilise materjali laekumise lõpptähtaeg oli 18. aprill 2008.

Vastandina sellele on avaliku sektori finantsid siiani rõõmustavat pilti pakkunud. Riigieelarve saldo on varasematel aastatel olnud positiivne, aga 2007. aastast näitab vähenemise tendentsi ja nimelt SKP suhtes: 3,4%-lt 2006. aastal 2,8%-ni 2007. aastal. 2008. aastaks ennustas Euroopa Komisjon edasist ülejäägi vähenemist kuni 0,4%-ni SKP-st. Vastavalt sellele vähenes võlatase 4,2%-lt 2006. aastal kuni 3,4%-ni 2007. aastal ja jäi seega ikkagi tunduvalt allapoole 60%-list referentsväärtust.⁵

Turuintress⁶ on inflatsioonimäära kõrval teine tähtis rahapoliitiline liitumiskriteerium. Kuna riigi võlatase on madal, siis ei eksisteeri Eestis kroonipõhisel riigivõlal funktsioneerivat arenenud turgu. Järelikult puuduvad ka harmoniseeritud pikaajalised intressimäärad, nii et turuintresside kriteeriumit arvestades võis väita: „üldkokkuvõttes pole praegu piisavalt selgeid pidepunkte negatiivse hinnangu andmiseks.“⁷

Seoses ülemaailmse finantskriisi ja sellest välja kasvanud majanduskriisi puhkemisega on ka Eesti majanduse olukord omandanud dramaatilisi jooni. Lisaks sellele, et järjest süveneb juba 2008. aasta algul alanud SKP kasvu selge aeglustumistendents, tulevad nüüd päevavalgele ka rahandussektori patud. Pangad näevad vaeva kahjude piiramisega ja tegelevad juba mõnda aega laenuandmise tingimuste erakordse karmistamisega. Eriti Rootsi pangad, nagu Balti turgu valitsevad SEB ja Swedbank, kes lubasid möödunud buumiperioodil liiga kergekäeliselt laenu. Eriti problemaatiliseks on muutunud SEB olukord, kes on kolmes Balti riigis kokku sõlminud laenutehinguid ümberarvestatuna 18,1 miljardi euro eest. Vahepeal on Stockholmi keskpang laenuandmist tugevasti piiranud. Peale selle on moodustatud erikomisjon, mille ülesandeks on Balti riikide ettevõtteid ähvardava maksejõuetuse eest õigeaegselt kaitsta.

Eredaks näiteks selle kohta, kui kergekäeliselt eelnevatel aastatel laenu võimaldati, on SMS-laenude ohvrid. Hulk eestimaalasi on end ülimalt kahtlastest ja rahandusvälistest ettevõtjatest peibutada lasknud ja võtnud mobiili abil minutite jooksul saabuvat laenu. Seejuures on laenuvõtjad leppinud liigkasuvõtjalike intressidega, et ainult kuidagi saaks ära maksta traditsiooniliste pankade tavalisest hüpoteegilaenudest tulenevaid maksekohustusi. Kui siis võlgnikud on omakorda SMS-laenu tagasimaksetega hilinened, ilmuvad välja inkassofirmad, kes tihti on SMS-laenuandjate tüdrettevõtted ja nõuavad võlad halastamatult sisse.

Paljud ehitusfirmad on pidanud juba alustatud ehitused pooleli jätma, kuna võimalikel ostjatel kadus edasise finantseerimise võimalus (seda aga üldiselt pangalaenude tagasimaksmise jõuetuse tõttu). Kinnisvarahinnad on juba

⁵ Ka need arvud on antud suhtes SKP-sse.

⁶ Turuintressiks loetakse avaliku, st vastava valitsuse poolt emiteeritud riigivõla kasumimäära kestvusega 10 aastat (vajadusel järelejäänud kestvusaega). Sellist nn turuintressi peetakse stabiilsuse ja seega liitumiskriteeriumiks, mille järgi turud hindavad liitumiskandidaatide stabiilsuse hoidmise tahet.

⁷ Europäische Zentralbank, Konvergenzbericht Mai 2008, lk. 37

dramaatiliselt langenud. Laenuandjad pangad peavad oma bilanssides tegema mahakirjutusi ja näitama kahjumit.

Nii nagu teised Ida-Euroopa maad on ka Eesti täbaras olukorras, kuna ekspordi-impordi bilansi defitsiit oli kõrge (11,2% SKP-st), valuutareservid kasinad (brutoreservide suhe lühiajaliste välislaenudega kõigest 0,2%), välismaised laenud suured (netopositsioon välismaiste pankade suhtes 78,7% SKP-st) ja majanduskasv on olnud suures osas finantseeritud laenude abil (krediidid erasektorisse +21,5%).⁸

Ka Eesti peab üha suurema Euroopa Liiduga lõimumise raames ja enne valuutaliiduga ühinemist oma finantssektorit põhjalikult reformima. Eeltoodut silmas pidades tuleb ellu viia järgmised nõuded või neid vähemalt igakülgselt kaaluda:

– Erinevate riikide rahvamajanduste finantseerimistegevus on liitunud globaalseks ühenduseks ja nii tuleb riikidel oma finantsturgude reguleerimist ja nende üle järevalve teostamist harmoniseerida. See toimuks tihedas koostöös Rahvusvahelise Valuutafondiga (IWF) ja finantsstabiilsuse foorumiga (FSF), loomaks ülemaailmset eelhoiatussüsteemi, mis koosneks eri riikide järevalveorganisatsioonidest, kelle ülesandeks on järjekindlalt valvata oma piirkonna tähtsamate pankade tegevust ja regulaarselt koostada riskianalüüse. See kehtib esmajärjekorras sihtotstarbeliste äriühingute kohta, mida mõni aeg tagasi mitmel pool loodi, et väljaspool reeglitekohast bilanssi sooritada riskantseid investeerimistehinguid.

– Finantsturgudele tuleb tuua rohkem läbipaistvust. Laenude väärtpaperistamisel peab valitsema selgus selle suhtes, millised täpselt on riskistruktuurid. Sellele lisaks peaks krediteerivatelt pankadelt nõudma, et nad ka ise võtaksid osaliselt enda kanda kaotusrisi, mis oleks võrreldav kindlustuse omavastutusega.

– Reitinguagentuurid tuleb allutada rangematele hindamisjuhiste ja registreerumiskohustusele. Järjekindlamalt tuleb tulevikus ka nn Hedge-fonde⁹ kontrollida.

– Basel II pankade omakapitalile esitatavaid nõudeid puudutavad valemitepõhised reeglid tuleb kujundada paindlikumaks, ennetamaks protsüklilist käitumist laenude andmisel, mis võib kujuneda – nagu praegune olukord näitab – eriti probleemiliseks konjunktuuri langusfaasis.

– Sellega seoses tuleb kriitiliselt läbi vaadata finantsinvesteeringute *fair value* hindamisreeglid (niivõrd kui nad kasutamist leiavad). See vajadus kerkib esile just uusima finantskriisi taustal. Ja tulevikku silmas pidades võiks aru pidada ka selle üle, kas mitte vähemalt ajutiselt rakendada kursivõidust saadud dividendide väljamaksmise peatamist.

– Lõpuks tuleb muuta panga- ja teiste majandusjuhtide hüvitus- ja boonussüsteeme, nii et nende sissetulek ei sõltuks mitte lühiajalisest edukusest vaid püsivatest eesmärkidest.

⁸ IWF, Global Financial Stability Report, October 2008.

⁹ Riskifondid, kui erilised investeerimisfondid, mida iseloomustavad spekulatiivsed investeerimisstrateegiad. Riskifondid pakuvad suurt tuluvõimalust, kuid osakute ostmisega kaasneb ka suur risk. Riskifondide puhul on tavapärase investeeringute kasutamine tuletisväärtpaperitega kauplemiseks ja nn katteta müük.

Tänapäeval üldkehtivad makroökonomilised teooriad ja nendest lähtuvad majanduspoliitilised kontseptsioonid baseeruvad sageli reaalsusest kaugetil oletustel, et turud on püsivalt efektiivsed ja et inimesed juhivad alati ratsionaalsetest kaalutlustest. Mittemajanduslikke motiive ja irratsionaalseid käitumismalle ei arvestata tänapäeval käibelolevates mudelites ilmselt peaaegu üldse. See on viinud selleni, et korduvate kriiside kõige kaalukamad tekkepõhjused jäävad enamasti märkamata. Toetudes John Maynard Keynesile, kasutavad George Akerlof ja Robert Shiller mõistet „Animal Spirits“¹⁰, millel nende arvates on majandusarengutele suurem mõju kui ratsionaal-ökonomilistel teguritel. „Optimismi ja pessimismi lained tingivad suuri muutusi üldmajanduslikus nõudluses“. Kõigi majanduskriiside algtõukejõuks võib lugeda psühholoogilisi tegureid. Milliseid järeldusi saab sellest teha? Riigil tuleb majanduses aktiivset rolli etendada ja „animal spirits“i“ poolt põhjustatud turu tõblemiste vastu õigeaegselt võitlusse astuda. Et kapitalism jääks püsivalt stabiilseks, ei tohiks turgu põhimõtteliselt isenda hooleks jätta. *John Maynard Keynes on surnud; elagu John Maynard Keynes!*

Veebruar-märts 2009

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Tallinn/Pirita-Kose ja Pärnu, Eesti

¹⁰ Akerlof, G., Shiller, R. *Animal Spirits – How Human Psychological drives the Economy, and why it matters for Global Capitalism*, Princeton 2009.

VORWORT: DURCH WELTWEITE WIRTSCHAFTSKRISE RENAISSANCE DER ANGEBOTORIENTIERTEN WIRTSCHAFTSPOLITIK

Die vorliegende Dokumentation „Estnische Gespräche über Wirtschaftspolitik“ erscheint nunmehr in der 17. Ausgabe. Die einzelnen Beiträge werden auf CD-Rom und darüber hinaus als Zusammenfassung im vorliegenden Sammelband erfasst.¹ Die Artikel sind anonym rezensiert worden, vor allem von Wirtschaftswissenschaftlern aus dem Ausland. Die Beitragsbände als selbstständige Sammlungen wissenschaftlicher Artikel erscheinen seit 2001 im Berliner Wissenschafts-Verlag (früher Berlin-Verlag Arno Spitz) in Kooperation mit dem estnischen Verlag Mattimar OÜ.

Die Dokumentationen haben das Ziel, wirtschaftliche Entwicklungen sowohl in der Republik Estland als auch in der Europäischen Union zu analysieren und – soweit das möglich ist – zu bewerten. In diesem Jahr erlangt dieses Anliegen durch die Ereignisse der weltweiten Wirtschaftskrisen besondere Brisanz.

Estland ist² mit Wirkung vom 28. Juni 2004 dem Wechselkursmechanismus II (WKM II) beigetreten und hat damit gemäß EG-Vertrag die Verpflichtung übernommen, nach Erfüllung der Konvergenzkriterien den Euro einzuführen. Mit dem Beitritt ist Estland die Beibehaltung seiner bisherigen Currency-Board-Regelung zugestanden worden, wodurch die Eesti Pank – wenn notwendig – zu jederzeitigen Interventionen an den Devisenmärkten verpflichtet ist und andererseits die Europäische Zentralbank keinerlei Interventionsverpflichtungen hat. Die estnische Krone ist bisher durchgängig zu ihrem jeweiligen Leitkurs gehandelt worden.

Das Inflationskriterium³ hat Estland in den letzten Jahren zunehmend verletzt. Nach einem noch bis 2003 zu beobachtenden Trend zu mehr Preisniveaustabilität ist die Inflation vor allem in den letzten drei Jahren wieder deutlich angestiegen, und zwar von 4,4% (2006) über 6,6% (2007) auf 10,4% (2008); sie hat sich damit vom Referenzwert der Europäischen Wirtschafts- und Währungsunion (der 2008 bei 3,2% lag) erneut entfernt.⁴ Noch deutlicher wird diese Dynamik, wenn man im jeweiligen Vorjahresvergleich die Steigerungsraten von Anfang 2007 (rund + 5%) und März 2008 (+ 11,2%) gegenüberstellt. Dieser Inflationsdruck ist in erster Linie auf die Verteuerung von Nahrungsmitteln und Energie sowie sprunghafte Erhöhungen administrierter Preise zurückzuführen. Mit knapp einem Prozentpunkt hat auch die Harmonisierung der Verbrauchsteuern zu diesen Preissteigerungen

¹ je nach Wahl des Verfassers in deutscher, englischer oder estnischer Sprache.

² neben Litauen

³ Die Inflationsrate – gemessen am Harmonisierten Verbraucherpreisindex (HVPI) – darf jene der drei preisstabilsten Länder um nicht mehr als 1,5 Prozentpunkte übersteigen.

⁴ Zu diesen und den folgenden statistischen Angaben: Europäische Zentralbank, Konvergenzbericht Mai 2008, S. 31 ff.; Redaktionsschluss für die in dem Konvergenzbericht enthaltenen Statistiken war der 18. April 2008.

beigetragen. Diese Inflationsentwicklung muss vor dem Hintergrund eines sehr robusten Wachstums des realen Bruttoinlandprodukts (BIP) gesehen werden, das im Zeitraum von 2000 bis 2007 durchschnittlich bei 9% lag. Durch die zunehmend angespannte Lage auf den Arbeitsmärkten sind die Lohnstückkosten drastisch um 8,1% (2006) und 18,9% (2007) gestiegen und haben der Inflation von der Nachfrage- und vor allem von der Kostenseite zusätzliche Impulse verliehen.

Im Gegensatz dazu zeichnen die öffentlichen Finanzen bisher ein erfreuliches Bild: Der Staatshaushalt weist vorerst noch einen positiven Saldo aus, der allerdings seit 2007 rückläufig ist, und zwar – jeweils in Relation zum Bruttoinlandprodukt (BIP) – von 3,4% im Jahre 2006 auf 2,8% im Jahre 2007. Für 2008 wird von der Europäischen Kommission ein weiterer Rückgang des Überschusses auf 0,4% des BIP vorausgesagt. Entsprechend ist bisher der Verschuldungsbestand von 4,2% (2006) auf 3,4% im Jahr 2007 zurückgegangen und damit noch immer weit unterhalb des Referenzwertes von 60% geblieben.⁵

Der Marktzins⁶ ist neben der Inflationsrate das zweite geldpolitische Beitrittskriterium. Wegen des geringen öffentlichen Schuldenbestandes gibt es in Estland noch keinen entwickelten Markt für estnische Staatsanleihen. Folglich liegen keine aussagekräftigen harmonisierten langfristigen Zinssätze vor, so dass es im Hinblick auf das Marktzinskriterium „derzeit ... keine hinreichend eindeutigen Anhaltspunkte für eine insgesamt negative Beurteilung“⁷ gibt.

Mit dem Ausbruch der weltweiten Finanz- und der sich daraus entwickelnden Wirtschaftskrise hat auch in Estland die wirtschaftliche Lage dramatische Züge angenommen. Nicht nur dass sich die bereits Anfang 2008 abzeichnende deutliche Verlangsamung des Wachstums des Bruttoinlandprodukts nunmehr verschärft hat, auch Sünden des Finanzsektors treten jetzt zu Tage. Die Banken sind um Schadensbegrenzung bemüht, indem sie seit Monaten die Kriterien für ihre Kreditvergaben außerordentlich verschärfen. Vor allem schwedische Institute, wie die beiden baltischen Marktführer SEB und die Swedbank, haben während der vergangenen Boomphase allzu leichtfertig Kredite gewährt. Besonders problematisch ist die Situation für die SEB geworden. Sie hat in den drei baltischen Staaten für insgesamt – umgerechnet – 18,1 Mrd. Euro Aktivgeschäfte abgeschlossen. Inzwischen hat die Stockholmer Zentrale die Kreditvergabe drastisch eingeschränkt. Außerdem hat sie eine Sonderkommission gebildet, die baltische Unternehmungen rechtzeitig vor einer drohenden Insolvenz schützen soll.

⁵ auch diese Zahlen jeweils in Relation zum Bruttoinlandprodukt (BIP).

⁶ Als Marktzins gilt die Durchschnittsrendite öffentlicher, d. h. von der jeweiligen Zentralregierung emittierter Anleihen mit einer Laufzeit (gegebenenfalls Restlaufzeit) von 10 Jahren. Dieser so genannte Marktzins wird als Stabilitätskriterium und damit Beitrittskriterium dafür angesehen, wie die Märkte den Stabilitätswillen der einzelnen Beitrittskandidaten einschätzen.

⁷ Europäische Zentralbank, Konvergenzbericht Mai 2008, S. 37.

Wie leichtfertig Kredite in den vergangenen Jahren vergeben worden sind, zeigen die Opfer von so genannten SMS-Krediten. Eine hohe Zahl von Esten ist von dubiosen und zumeist branchenfremden Unternehmungen dazu verführt worden, per Handy in Minutenschnelle einen Kredit zu bekommen. Die Kreditnehmer haben dabei teilweise Wucher-Zinsen in Kauf genommen, nicht selten nur um ihren Zahlungsverpflichtungen aus normalen Hypothekenkrediten bei traditionellen Banken nachkommen zu können. Wenn dann ein Kreditnehmer säumig geworden ist, haben Inkassounternehmungen, die oftmals Töchter der SMS-Kredit-Firmen sind, die Schulden skrupellos eingetrieben.

Viele Bauunternehmungen mussten bereits begonnene Neubauten abbrechen, weil den potenziellen Käufern die Anschlussfinanzierung nicht mehr möglich war. Die Immobilienpreise sind bereits dramatisch gesunken. Die betroffenen Banken werden Wertberichtigungen in ihren Bilanzen vornehmen und Verluste ausweisen müssen.

Neben anderen osteuropäischen Ländern befindet sich Estland in einer prekären Situation auf Grund hoher Leistungsbilanzdefizite (11,2% des BIP), geringer Währungsreserven (Bruttoreserven im Verhältnis zu kurzfristiger Auslandsverschuldung nur 0,2%), hoher Auslandsverschuldung (Nettoposition gegenüber ausländischen Banken 78,7% des BIP) und stark kreditfinanzierten Wirtschaftswachstums (Kredite an den privaten Sektor + 21,5%).⁸

Auch Estland wird mit zunehmender Verflechtung im Rahmen der Europäischen Union und vor dem Beitritt zur Währungsunion seinen Finanzsektor grundlegend reformieren müssen. Dazu sind die nachfolgenden Forderungen umzusetzen oder zumindest zu prüfen:

- Volkswirtschaften im globalen Finanzierungsverbund müssen die Regulierung ihrer Finanzmärkte und die Aufsichtsregeln harmonisieren. Dazu ist in enger Kooperation mit dem internationalen Währungsfonds (IWF) und dem Financial Stability Forum (FSF) ein weltweites Frühwarnsystem zu errichten, das sich aus nationalen Aufsichtsgremien zusammensetzt, welche konsequent die in Ihrem Bereich relevanten Institute überwachen und ständig Risikoanalysen erstellen. Das gilt ganz besonders für Zweckgesellschaften, die in der Vergangenheit vielerorts gegründet worden sind, um außerhalb der regulären Bilanz riskante Anlagengeschäfte zu betreiben.

- An den Finanzmärkten muss mehr Transparenz hergestellt werden. Bei Verbriefungen von Darlehen muss klar sein, wie die Risikostrukturen beschaffen sind. Dazu sollte von den kreditierenden Banken verlangt werden, dass auch sie einen Teil des Ausfallrisikos tragen – ähnlich dem Selbstbehalt bei Versicherungen.

- Ratingagenturen müssen strengeren Bewertungsrichtlinien und einer Registrierungspflicht unterworfen werden. Auch Hedge-Fonds müssen zukünftig konsequent kontrolliert werden.

- Die formelgebundenen Regeln nach Basel II zur Eigenkapitalausstattung der Banken müssen flexibler gestaltet werden, damit es nicht zu prozyklischen

⁸ IWF, Global Financial Stability Report, Oktober 2008.

Bewegungen bei den Kreditgewährungen kommt, was – wie die gegenwärtige Situation zeigt – besonders problematisch in rezessiven Konjunkturphasen ist.

– In diesem Zusammenhang sind 'Fair-Value'-Bewertungsregeln für Finanzanlagen, soweit sie Anwendung finden, gerade im Hinblick auf die Erfahrungen in der jüngsten Finanzkrise kritisch zu überprüfen. Und mit Blick auf die Zukunft sollte darüber nachgedacht werden, ob nicht Ausschüttungssperren für Kursgewinne zumindest temporär verhängt werden sollten.

– Letztendlich müssen die Vergütungs- und Bonisysteme der Bankmanager wie auch der übrigen Wirtschaftsführer verändert werden, so dass sich deren Einkommen nicht an kurzfristigen Erfolgen, sondern an nachhaltigen Zielen ausrichten.

Die heute im Allgemeinen vertretenen makroökonomischen Theorien und darauf aufbauenden wirtschaftspolitischen Konzeptionen beruhen auf den im Grunde realitätsfremden Annahmen, dass die Märkte stets effizient seien und die Menschen sich immer von rationalen Überlegungen leiten ließen. Nicht-ökonomische Motive und irrationale Verhaltensweisen finden in den heute gängigen Modellen kaum Berücksichtigung. Das hat dazu geführt, dass die gravierendsten Ursachen für immer wieder auftretende Krisen meist übersehen werden. In Anlehnung an John Maynard Keynes sprechen George Akerlof und Robert Shiller von 'Animal Spirits'⁹, welche für die wirtschaftlichen Entwicklungen größere Bedeutung haben als rational-ökonomische Faktoren. „Die Wellen von Optimismus und Pessimismus verursachen große Veränderungen der gesamtwirtschaftlichen Nachfrage.“ Das irrationale Auf und Ab der Erwartungen verstärkte und verlängerte Rezessions- und Depressionsphasen im wirtschaftlichen Geschehensablauf. Alle Wirtschaftskrisen gingen letztendlich auf psychologische Faktoren zurück. Welche Schlussfolgerungen sind daraus zu ziehen? Der Staat muss eine aktive Rolle in der Wirtschaftspielen und die durch 'Animal Spirits' verursachten Marktverwerfungen rechtzeitig bekämpfen. Damit der Privatkapitalismus auf Dauer stabil bleibt, darf der Markt grundsätzlich nicht sich selbst überlassen werden: *John Maynard Keynes ist tot; es lebe John Maynard Keynes!*

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⁹ Akerlof, G., Shiller, R. *Animal Spirits – How Human Psychological drives the Economy, and why it matters for Global Capitalism*, Princeton 2009.

PREFACE: RENAISSANCE OF THE SUPPLY-ORIENTED ECONOMIC POLICY THROUGH THE GLOBAL ECONOMIC CRISIS

This is already the 17th publication “Disputes on Estonian Economic Policy” (although published only the third year under this name). The papers have been published on CD-ROM and their summaries in another language in the collection printed on paper media.¹ All papers have been anonymously peer-reviewed by economists from mostly other countries. “Disputes on Estonian Economic Policy” are independent collections of research papers which have been published since 2001 in cooperation by the Berliner Wissenschafts-Verlag publishing house (the former Berlin-Verlag Arno Spitz) in Berlin and the Estonian Mattimar publishing and consultation company.

The aim of the publications is to analyse and evaluate as much as possible the economic developments both in the Republic of Estonia and in the whole European Union. It has become particularly topical this year, considering the crises which have hit the global economy.

Estonia joined² the Exchange Rate Mechanism II (ERM II) on 28 June 2004 and has consequently taken the commitment according to the EC Treaty to adopt the euro after meeting the convergence criteria. When joining the ERM II, Estonia was allowed to retain the currency board framework it had followed until that time. The Estonian kroon is exchangeable on the basis of the so-called central exchange rate fixed by the European Central Bank.

Estonia has unfortunately not fulfilled the inflation criterion³ in the recent years. While movement towards a greater stability of the price level could be observed until 2003, the inflation has considerably increased above all in the course of the last three years, namely from 4.4% (2006) to 6.6% (2007) and further to 10.4% (2008), and has therefore moved farther away again from the reference value of the European economic and monetary union (which was 3.2% in 2008).⁴ This dynamics becomes even more evident if we compare the growth rates in two consecutive years: at the beginning of 2007 (ca +5%) and in March 2008 (+11.2%). Such a pressure on inflation is caused above all by the increase in the prices of food products and energy and also from the dramatic increase in regulated prices. Also harmonisation of excise taxes made a contribution to the price increase by almost one percentage point. Development of inflation should be viewed in the context of the very powerful growth of the real GDP, which was 9% on an average in 2000-

¹ The summary is either in Estonian, German or English according to the choice of the author. The collection has been published in this form (on CD-ROM and on paper) since 2007.

² Together with Lithuania.

³ The inflation rate – according to the harmonised index of consumer prices (HICP) it must not exceed by more than 1.5% the average inflation of three countries with the most stable prices.

⁴ Concerning these statistics and those provided below, see: Europäische Zentralbank, Konvergenzbericht [*Covergence Report of the European Central Bank*], May 2008, pp. 31 ff.; The due date for the submission of statistical materials for the Convergence Report was 18 April 2008.

2007. The increasingly strained situation in the labour market has considerably increased unit labour costs: by 8.1% in 2006 and by 18.9% in 2007, which gave additional impulses to the inflation due to increased demand but particularly due to increased costs.

On the other hand, the financial situation of the public sector has been good. The balance of the state budget has been positive in the previous years but has shown a decreasing trend since 2007, namely with respect to GDP: from 3.4% in 2006 to 2.8% in 2007. For 2008 the European Commission forecast a further decrease in the surplus, to 0.4% of the GDP. The debt level decreased respectively from 4.2% in 2006 to 3.4% in 2007 and therefore remained still considerably below the 60% reference value.⁵

Market interest rate⁶ is another important monetary policy criterion next to the inflation rate for joining the euro area. As the government debt level of the country is low, no market based on government debt in kroons has developed in Estonia. Therefore there are also no long-term harmonised interest rates and it was possible to state, considering the market interest rate criterion: „there are at present no indications which are sufficiently strong to warrant a negative assessment overall.“⁷

The situation of the Estonian economy has also acquired dramatic features in connection with the global financial crisis and the economic crisis which has developed as a result. In addition to the deepening slowdown of the GDP growth which became evident already at the beginning of 2008, now also the sins of the financial sector are coming to light. Banks make efforts to limit their losses and have offered extremely tough borrowing conditions for some time already. Particularly Swedish banks, such as SEB and Swedbank, which are dominating the market and issued loans too easily during the boom period which has ended by now. The situation of SEB, which has signed loan transactions in the three Baltic countries in total for the value of 18.1 billion euros, has become particularly problematic. Meanwhile, their central office in Stockholm has considerably limited its lending activities. Besides, a special committee has been set up for the timely protection of companies from insolvency in the Baltic states.

Victims of SMS loans are a vivid example of too easy availability of loans in the earlier years. A large number of Estonians have been snared by extremely suspicious entrepreneurs who have no experience in finances and have acquired through mobile phones loans which arrive in just a few minutes. Such borrowers have agreed to usurious interest rates to be able to meet in some way their payment obligations arising from ordinary mortgage loans from traditional banks. When the debtors then

⁵ Also these figures have been provided with respect to GDP.

⁶ Market interest rate is defined as the 10-year yield rate of the respective government bonds issued (time remaining to maturity, if appropriate). Such market interest rate is considered to be a criterion on price stability and consequently a criterion for joining the euro, indicating how markets evaluate the will of the candidate countries to maintain their stability.

⁷ Europäische Zentralbank, Konvergenzbericht Mai 2008, pp. 37.

delay with the repayments of their SMS loan, debt collection companies, which are often subsidiaries of SMS loan providers, appear and collect the debts without any mercy.

Many construction companies have had to stop their uncompleted construction projects as the possible buyers had no opportunity for further financing (usually due to the inability to repay bank loans). Real estate prices have already dramatically decreased. Lending banks have to write off loans in their balance sheets and show losses.

Similar to other East European countries, Estonia is in a plight as it had a high export-import balance deficit (11.2% of GDP), low foreign currency reserves (ratio of gross reserves to short-term foreign loans only 0.2%), high foreign loans (net position with foreign banks 78.7% GDP) and its economic growth had largely been financed with loans (credits to the private sector +21.5%).⁸

Estonia also has to thoroughly reform its financial sector for its integration with the EU and before joining the currency union. Considering the above-mentioned circumstances, the following requirements should be met or at least thoroughly considered:

- Financing activities of the national economies of different countries have merged into a global structure, therefore countries have to harmonise the regulation of their financial markets and performance of supervision over these markets. It should be done in close cooperation with the International Monetary Fund (IMF) and the Financial Stability Forum (FSF) to create a global advance warning system which would consist of supervisory organisations of different countries, whose duty is to ensure continuous monitoring the activities of the most important banks in their area and to prepare regular risk analyses. This applies first and foremost to single-purpose companies which were established at many places some time ago to perform risky investment transactions off balance sheet.

- More transparency should be brought to financial markets. In the securitisation of loans, the exact risk structures should be clearly identified. Besides, crediting banks should be required to partly assume the risk of losses, comparable to risk for own account in insurance.

- Rating agencies should be subjected to more strict assessment guidelines and the registration obligation. Also hedge funds should be inspected more regularly in the future.

- The Basel II regulations based on formulas for establishing requirements to the equity of banks should be made more flexible to prevent procyclic behaviour in issuing loans, which may become particularly problematic in the decline phase of the economic cycle as demonstrated by the current situation.

- In that respect the *fair value* assessment rules of financial investments should be critically reviewed (if these are applicable). This need emerges particularly in the context of the most recent financial crisis. And bearing in mind the future, we could

⁸ IMF, Global Financial Stability Report, October 2008.

also discuss the possibility for suspending even temporarily the disbursements of dividends earned from gains from exchange rates.

– And last but not least – the compensation and bonus systems of bank managers and other heads of companies should be modified to make their income dependent on meeting long-term objectives rather than on short-term success.

The current generally recognised macroeconomic theories and the resulting conceptions of economic policy are often based on assumptions which are far from reality – that markets are permanently efficient and that individuals always proceed from rational considerations. Non-economic motives and irrational behavioural patterns are probably not taken into consideration at all in the currently recognised models. This has led to the situation where the most valid reasons for recurrent crises are mostly ignored. George Akerlof and Robert Shiller rely on John Maynard Keynes in using the concept of „animal spirits“⁹, which in their opinion has more effect on economic developments than rational economic factors. „Waves of optimism and pessimism cause considerable changes in general economic demand“. All economic crises are originally driven by psychological factors. What conclusion can be drawn from it? The state has to assume a proactive role in economy and take timely measures against convulsions of the market caused by „animal spirits“. In order to maintain the stability of capitalism, the market should not in principle be left to its own devices. *John Maynard Keynes is dead; long live John Maynard Keynes!*

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PLACE MARKETING IMPLEMENTATION IN DIFFERENT ADMINISTRATIVE SUBDIVISIONS: ESTONIAN CASE STUDY

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Abstract

The principal scope of this paper is to construct the chain-of-marketing that regards the implementation of a place marketing strategy, in particular regional tourism and development policy. For a few decades place marketing has been mostly a marketing viewpoint for urban areas in the context of tourism in cities or metropol. Smaller rural areas and country-sides have not got so much attention and place marketing is not much used as a strategic tool to improve development in such areas. Place marketing is usually seen as a tourism improvement for tourists, but actually the target audience is much wider. The starting point of the paper was the assumption that the quality of place marketing in these rural areas is not good and strategically elaborated. By comparing three different case studies, Tartu Rural Development Association (Example 1), 4P area in Central-Estonia (Example 2) and Attractions in Municipality of Konguta (Example 3), worst and best practices have been identified, and an answer to the question whether there exists such a thing as ideally sized and structured geographical area that deals with place marketing on the regional level has been sought.

Keywords: place marketing, regional development, tourism, life quality, region marketing, city marketing, geographical area promotion

1. Introduction

Before place marketing, place selling was a dominant form of promoting locations. As the name indicates, place selling is a more operational approach to promotion, which is strongly based on various forms of advertising. Recently, place marketing has become a prominent feature of the economic development strategy, place development.

The main drive to place marketing comes from globalization which brings along extra efforts in marketing not only for enterprises but countries as well. National economic policies across the world are converging. In practice, if undertaken effectively, place marketing can contribute greatly to the economy in terms of attracting tourism, students of tertiary education, economic immigration, and foreign direct investments (FDI). The growth of world and regional trade arrangements, shared currencies, and external disciplines agreed with multinational investors, fuels the convergence of economic policies across the world leaving little to choose in pure policy terms between different countries as sites for investment (van den Berg and Braun 1999). In addition, place marketing can also enhance the attractiveness of the place's exports. The basic idea is that every place should ask itself why anyone wants to live, relocate, visit, invest, or start or expand a business there. Kotler *et al.*

(1993) brings out two main questions: what does this place have that people need or should want, and from a global perspective what competitive advantages does this place offer that others do not?

In Estonia the first contributions to place marketing were done through the country promotion program Brand Estonia held by Enterprise Estonia (EAS) in 2001. The main outcome was the dissatisfaction of Estonians who saw the 13 million EEKs spent to work out a plain mark “Welcome to Estonia” rather than the contribution to promote Estonia as a whole. (Kullasepp 2007) The concept was rather unclear not only for residents but entrepreneurs as well.

In 2007 the state with the help of European Union donated 65 million EEKs to reform the concept of Brand Estonia and also to renew the mark “Welcome to Estonia”. Still the concept targets mainly tourists but not investors and residents which are also important target groups in place marketing. This is one important reason why wider and more thorough observation into place marketing in Estonia needs to be done. Another reason comes from the fact that also the foreign experts’ estimations show that Estonia is not able to introduce itself to the world with a unitary message. The most important inducement is probably the fact that also in theoretical framework the main focus is on urban areas and it appears also in Estonia where place marketing concerns mainly Tallinn as the most developed area in Estonia (for instance, “Tallinn – the Next European Capital of Culture” or “Tallinn, the Party City” – an advertisement in MTV). Rural areas have not got enough attention although there are plenty of opportunities of place marketing for them too. It is important to distinguish between different administrative divisions that could help target different regions in Estonia and determine the need for place marketing not only for Estonia as a whole but also for these divisions. In this paper we consider village, municipality, county, region and country as the administrative divisions.

An important factor that also shows the importance of place marketing is the enhanced need for effective regional and local development programs in Estonia. The divergence in regional development is exacerbating tensions and impeding the development of free market-driven competition in the whole world, unions of countries as well as within the countries. Regional divergence has become an important impeding factor in Estonian development. So place marketing could be one source to decrease that divergence and develop regions on equal grounds.

Consequently the aim of this paper is to identify the main principles for place marketing of different administration divisions. The paper consists of three different parts. First, the theoretical framework of place marketing has to be clarified. In part 2, we bring out main definitions concerning place marketing. Secondly, it is also important to explain the sources for place marketing strategic decisions and this is done in part 3. The empirical part 4 consists of 3 case studies based on three different regional levels of Estonia. Last, the results and implications are brought out.

2. Theoretical framework of place marketing

In the present paper the definition of place marketing is proceeds from Kotler's *et al.* (2002) approach. Place marketing means designing a place to satisfy the need of its target markets. It succeeds when citizens and businesses are pleased with their community, and the expectations of visitors and investors are met. The "produced good or service" known in traditional marketing concept, means the "place's image" in place marketing concept (Metaxas 2002). The image derives from the local distinctive characteristics that are the multiple combinations of products and services the place constitutes.

Understanding the concept of place marketing also needs the clarification of the word "place". That is a nation-state, a geopolitical physical space; a region or state; a cultural, historical or ethic bounded location; a central city and its surrounding populations; a market with various definable attributes; an industry's home base and a clustering of like-industries and their supplier; a psychological attribute of relations between people (Kotler *et al.* 2002). As mentioned in the introduction, in present paper the term "place" is determined by administrative divisions: village, municipality, county, region and country.

Place marketing comprehends various elements that need to be considered when planning the ways of place marketing. Figure 1 summarizes these elements in a framework called *Levels of Place Marketing*. There are three main factors playing an essential role in place marketing process: target markets, marketing factors and planning group. Target markets mean the selected segments and customers to which a place chooses to send marketing messages. Marketing factors are the attractions and infrastructure of the place, its people and image and quality of life. The planning group is responsible for the planning and control process of place marketing. (Rainisto 2003)

The place's "customers" are its investors, tourists, manufacturers, exporters, new residents and corporate headquarters. Also traders, market intermediaries, NGOs, and office-holders in other countries and in multilateral institutions could be added as target markets. Understanding their psychology and demographics is crucial. Their interactions with one another take place in a complex environment, affected by governments, social forces, cultural factors, and markets. The country must clearly identify its clients: who are they, what motivates them, what do they do and buy (and how, where and when), what are their decision-making processes and priorities, who influences these and how. It is important to remember that people and institutions buy goods and services to satisfy needs. So the places must find ways to differentiate and position themselves for their target markets (Krantz and Schätzl 1997).

Figure 1 gives a good overview of the elements influencing place marketing, but another important issue to analyze is the place marketing process itself that includes analyzing the influencing elements as well. The process of place marketing starts with the strategic analysis of the place, together with the work of the vision and mission statements. This is mainly the issue of planning groups.

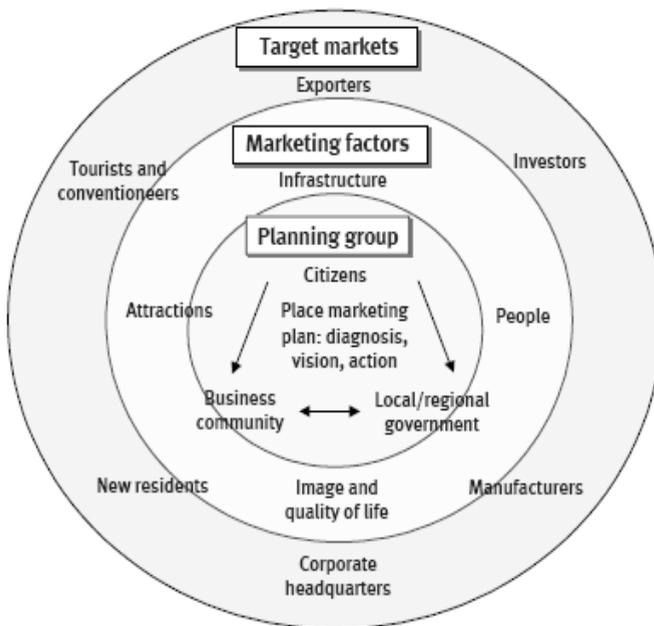


Figure 1. Levels of place marketing. (Kotler *et al.* 2002: 46)

The major actors in the place marketing process consist of local, regional, national and international players (Kotler *et al.* 1999).

- **Local actors** can be divided into two sub-categories: public sector actors and private sector actors. Public sector actors are: mayor or city manager, business development department in the community, urban planning department of the community (transport, education, sanitation etc.), tourist bureau, conventions bureau, public information bureau etc. Private sector actors can be seen as individual citizens, leading enterprises, real estate developers and agents, financial institutions (banks and insurance companies), electricity and gas utilities, telecommunications companies, chamber of commerce and other local business organizations, hospitality and retail industries (hotels, restaurants, departments stores, other retailers, exhibition and conventions centers), travel agencies, labor market organizations, architects, transport companies (taxi, railway, airline) and media (newspaper, radio, TV).
- **Regional actors** are regional economic development agencies, local and state government and regional tourist boards.
- **National actors** are mostly political heads of government, inward investment agencies and national tourist boards.
- **International actors** are embassies and consulates, inward investment agencies, economic development agencies with a specific link to a region or a city and international enterprises with a place-bound link.

Ritchie and Ritchie (2002) suggest the need for a move from promotion-oriented place marketing to a more holistic, strategic approach in order to attain sustainable competitive advantage. For that the elaborated place marketing process is essential and therefore larger emphasis on strategic decision making has to be put in order to effectively manage place marketing.

3. Place marketing strategic decisions in administrative divisions

Estonia is a small country. Its area (45 227 km²) is similar to that of The Netherlands yet the population is ten times smaller (1 340 341 people as of January 2008, Statistics Estonia). Estonia's land border is 645 km long, with half of it running along rivers and lakes. Estonia's mainland neighbors are Russia and Latvia. The sea border has been established in agreement with Latvia, Finland, Russia and Sweden. (Portal of the Republic Estonia)

A Municipality is the smallest administrative subdivision of Estonia. Each municipality is a unit of self-government with its representative and executive bodies. The municipalities in Estonia cover the entire territory of the country. Municipalities in Estonia are of two types: urban municipalities or towns, and rural municipalities or parishes. There is no other status distinction between them. Municipality may contain one or several populated places. Some urban municipalities are divided into districts with limited self-government. Municipalities are ranging in size from Tallinn with 400 000 inhabitants to Ruhnu with as few as 60 inhabitants. The population in over two-third of the municipalities is under 3 000 inhabitants and many of them have found it advantageous to co-operate in providing services and carrying out administrative functions. Since October 2005 there is total of 227 municipalities in Estonia, 34 of them are urban and 193 are rural. Figure 2 illustrates the Estonian administrative subdivisions and county borders: (Ministry of Internal Affairs)

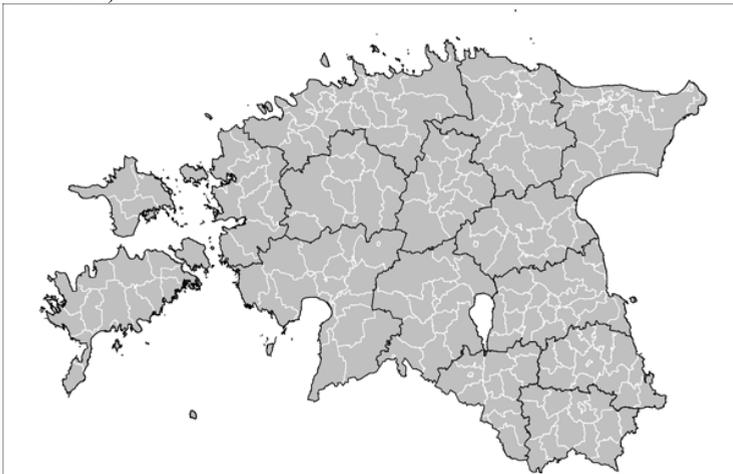


Figure 2. Estonian administrative subdivisions and counties.

Basing on the theoretical framework it is necessary to evaluate different planning groups of these areas. Rainisto (2003) says that four types of actor groups can be defined. International actors are the strategic ones and local actors are directly involved in precise area of administrative subdivisions. In the table below it is pointed out how different organizations and planning groups are involved in Estonian context:

Table 1. Different actor groups in Estonian context (all names pointed out are examples and the list of names is not conclusive)

International actors	Welcome to Estonia brand-identity Estonian Ministry of Foreign Affairs
National actors	EAS (Enterprise Estonia) Ministry of Economic Affairs and Communications Estonian Ministry of the Interior
Regional actors	Union of 4P Tartumaa Turism SA Lõuna-Eesti Turism SA Emajõe Jõeriik SA
Local actors	Municipality of Konguta SA Sõrvemaa Värav The Alam-Pedja Nature Reserve

It is quite a theoretical viewpoint to have the planning groups in four actor groups. Actor groups must be divided based on administrative subdivisions to have a better overview of planning groups in place marketing (Rainisto 2003). In this paper we are using administrative subdivisions as planning groups which are pointed out as: village, municipalities, union of municipalities, county, region and country. Such partition enables to implement place marketing on different levels and point out how to do it in precise regional areas.

Place marketing implementation should be organized on the same way as strategies in common firm policy. If planning group is formed, place environment can be successfully analyzed by SWOT matrix and strategies can be extracted by TOWS techniques. After collecting and analyzing soft and hard data concerning the current place profile and marketing situation the SWOT analysis follows. It is regarded as the fundamental essential tool of situation analysis intended for designing the strategy and development programs. It may also be regarded as a basis implying answers to the questions: what the position of the place is and where it is heading for in future (Matlovičova). Along with the increasing heterogeneity of place as a marketing product, there is a need for partial SWOT analyses (for each geographical area), which is in the summary of the analytical section synthesized in the form of complex SWOT analysis (region or country level).

After SWOT analysis strategy should be implemented and taken into consideration. Model of strategy as guided evolution has five main elements (see Figure 3). There are two units of selection in the model: strategic initiatives and human and social capital (Lovas, Ghoshal: 2000). This is basically an area which can be considered as

place with its' strategic initiatives (from SWOT-TOWS analyses) and human capital as planning groups. The strategic intent defines the objective function in the model. In place marketing context it can be seen as a goal for place marketing which basically shows us the chosen target markets. As such it reflects self-government preferences of the future direction of the area. Administrative systems which include formal structures and organizational routines serve to facilitate the replication of a natural selection environment. The sources of variation in the strategic processes in principle include everyone who may have relevant knowledge of the issues. These can be different planning groups in same area or on other place marketing levels. The agents of selection and retention are multiple, and effectively include everyone who works on a strategic initiative. These can be extra marketing forces, advertising companies etc.

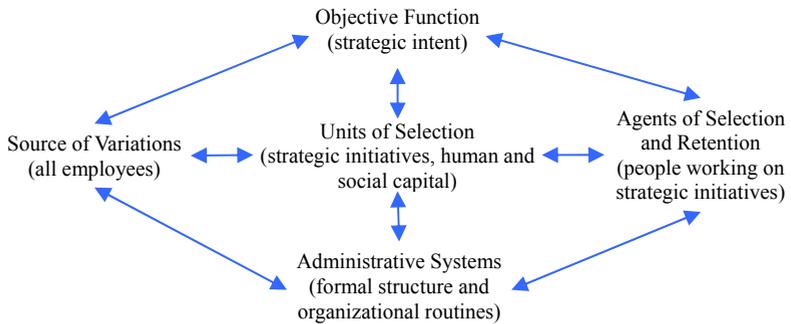


Figure 3. The five elements of guided strategy evolution. (Lovas, Ghoshal 2000)

In this model of strategy as guided evolution, it is precisely interventions that define the role of self-government in shaping the strategy and performance of areas (from village to country) (*Ibid.*). It should be understood that place marketing is a complicated system which really needs strategic viewpoint to understand different elements and factors. At first planning group idea should be debated and committed and strategic environment should be analyzed. All networking partners as sources of variations and administrative systems should be understood.

4. Estonian Case Studies: place marketing in different regional areas

Methodology and sample. Estonian case studies are established in different regional areas in Estonia. For this paper three different regional levels are analyzed to show more precisely how place marketing is acting and is established. The authors of this paper are involved in consulting the rural areas in strategic development and due to this reason good contacts with leaders of municipalities have been arranged.

Municipality is the smallest administrative subdivision of Estonia. Each municipality is a unit of self-government with its representative and executive bodies. The municipalities in Estonia cover the entire territory of the country.

Municipalities in Estonia are of two types: urban municipalities or towns, and rural municipalities or parishes. There is no other status distinction between them. In this paper mostly rural areas were involved. Municipality may contain one or several populated places. Some urban municipalities are divided into districts with limited self-government (districts and villages). Municipalities are ranging in size from Tallinn with 400 000 inhabitants to Ruhnu with as few as 60 inhabitants. Over two-third of the municipalities have a population of under 3 000 inhabitants.

All information published in this paper is gathered through open interviews and seminars in different municipalities. Interviewing leaders of municipalities was most reasonable method for the empirical study. The authors have been the key persons in working out strategic documents for mentioned areas and that has guaranteed a good overview of the situation in different municipalities. The interviews were done with Agu Kasetalu, Kristiina Liimand, Toivo Tõnson, Maimu Kelder, Reet Alev and Rauno Kuus. Indirectly over 50 persons were involved in the strategic development and all ideas were implicitly admitted. The interviews with the leaders of municipalities were conducted during the period from November 2006 – January 2009.

There are three examples included to show the real situation of Estonian place marketing: **Tartu Rural Development Association** as a place marketing implementer in Tartumaa (**16 municipalities included**), **4P** (parish Puurmani, parish Põltsamaa, town Pajusi) **area in Central-Estonia** as a place marketing planner in Central-Estonia (**4 municipalities included**) and **attractions in municipality of Konguta** (**1 municipality involved**). Figure 4 gives an overview of their positions on Estonia's map.

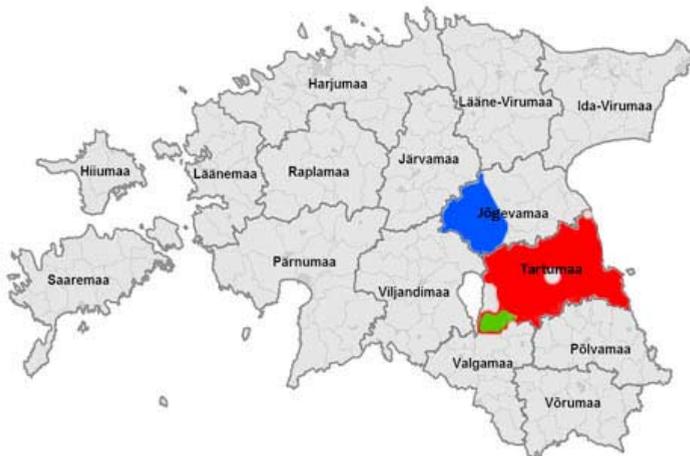


Figure 4. Location of TRDA (red), 4P area (blue) and the municipality of Konguta (green).

By comparing three different examples worst and best practices have been identified, and an answer to the question whether there exists an ideally sized and structured geographical area that deals with place marketing at the regional level has been sought. In this paper 20 different municipalities were analyzed. Municipality of Konguta is part of Tartu Rural Development Association and that is why total number of municipalities is 20 not 21. Since October 2005 there is a total of 227 municipalities in Estonia. The authors have analyzed 19 rural municipalities of total 193 and 1 urban municipality of total 34 which covers 2.94% of urban areas and 9.84% of rural areas. One aspect of the purpose of present paper is to analyze place marketing in rural areas mostly and the percentage of 9.84% gives quite an objective sample.

Consequently from the aim of this paper three aspects will be analyzed: place marketing objects, targets of place marketing and strategic level of decisions. According to the answers which were given by the interviewees, the main objects, targets and strategic development during the observed period will be identified, and the influencing factors of place marketing of each regional level will be analyzed. Also notice, that in the tables with each case study there are two factors: rate of mass policy and rate of distinctness policy. The discussion of these factors is taken together at figure 5 (see pages 13-15).

Example 1: Tartu Rural Development Association (*Tartumaa Arendusselts*) Tartu Rural Development Association is a local action group (LAG) in South Estonia. The main purpose of the association is to develop the rural living environment through the partnership of three sectors. One important task of the LAG is implementing the EU LEADER program in the region of Tartu. The association is one of the biggest LAGs in Estonia. TRDA (Tartu Rural Development Association) consists of 16 Tartumaa municipalities. Due to the legislation of the LEADER program, bigger urban municipalities cannot be included to this area. Three rural municipalities from Tartumaa are not included because of lack of interest. In Tartu County lives the total of 147 000 persons, and approximately 24% of them lives in Tartu Rural Development Association area, numberly 35 422 inhabitants. TRDA total land area forms 87% of the total Tartu County area. These figures show colorfully that most of the TRDA area is rural. The city of Tartu is an attractive center of Tartu County and approximately 68% of Tartu County population lives there.

Table 2. Figures of Tartu Rural Development Association

Factor of place marketing	Figure
Geographical area	area 2,612 km ² , surrounds the city of Tartu which is the second largest city in Estonia
Infrastructure	Infrastructure in the area of Tartu Rural Development Association is quite average, mostly bandaged with Tartu. Tartu is connected to seven main roads (directions to Tallinn, Jõgeva, Kallaste, Räpina, Luhamaa, Valga and Viljandi). Totally it is 1254 km of national roads of which 12% are main roads, 14% secondary roads and 74% other roads. The conditions of larger roads are good, smaller roads are frequently broken.
Human resources	Population is 35 422 inhabitants (the city of Tartu is not part of TRDA), density of population is 13.6 inhabitants per km ²
Economy	Mostly quite developed economy, some of the Estonia's most fertile lands and successful farmers are located in the region of Tartu, which provides around 10 % of the whole Estonian agricultural production. The main branches of industry are wood and furniture, glass, food and beverages, clothes. The timber industry is the most evenly developed. About one-third of Estonian print production comes from Tartu County. The universities and research institutions located in the city of Tartu offer good opportunities to develop knowledge intensive production.
Culture and Nature	The region has diverse nature, rich historical and cultural traditions. Tartu County is situated between two big lakes – Lake Peipus and Lake Võrtsjärv. Peipus is a border lake between Estonia and Russia, and Europe's fifth largest lake. Peipus and Võrtsjärv are connected by River Emajõgi which has a high value for tourists. The villages of the Russian Old Believers on the shore of Lake Peipus are very unique and lend a special cultural value to the area. Alongside farming, fishery is an important activity in the regions near Lake Peipus and Lake Võrtsjärv.
Planning group	Development association
Target markets	Residents, tourists, companies, investors etc
Competition	Competition mainly on region level, between counties. One competitive advantage is definitely geographical position of Tartu, all aspects of place marketing are fulfilled.
Rate of mass policy	3: Region
Rate of distinctness policy	2+ : Complemented to Special

Example 2: 4P area in Central-Estonia

4P area in Central – Estonia is established basing on four municipalities: town Põltsamaa which is also the center of the 4P area, Parish of Põltsamaa, Parish of Pajusi and Parish of Puurmani. The name “4P area” comes from the first letters of these four areas. All four municipalities are neighbours and connected on everyday bases. They have established different projects together: waste organizing systems are developed together, energy projects are headed in cooperation etc. Different

strategic projects are mostly held through co-operation to maximize the influence on target markets. Center of Jõgevamaa is town Jõgeva, which is not classically combined with 4P area. Jõgeva is situated in the middle of Jõgevamaa, the Piibe road goes across the town. 4P area is situated in Tallinn – Tartu – Valga road, which practically gives the area an infrastructural advantage.

Table 3. Figures of 4P area

Factor of place marketing	Figure
Geographical area	Total area 947,9 km ²
Infrastructure	Main roads are Tallinn – Tartu – Valga road and Võhma – Põltsamaa – Jõgevaa road. Both roads are main roads and carry a lot of transport via area. The center of the area is the town Põltsamaa. Tallinn is 120 km to north, Tartu is 60 km to south, Jõgeva is 25km to East.
Human resources	Total population 12 347 inhabitants
Economy	As common to rural areas, main economic fields are agriculture and forestry; there are also some stone mining companies in the area. In the town Põltsamaa most services are provided and basically standard life-quality is provided.
Culture and Nature	The most important issue in tourism field is culture and nature attractions. It is told that the 4P area was once a residence for a king and the remaining of the castle increases different historical stories. Nature is quite diversified and mostly the area is monotonous and suitable for agriculture, some areas are wetland or preserves.
Planning Group	Union of municipalities
Target markets	Tourism, Residents, Companies
Competition	4P area is mostly accessible via Tallinn – Tartu – Valga road, which basically makes the competition situation with other areas in this route quite intense. 4P area is competitive in economic as well as in cultural and natural aspect. The cultural background is quite good; the castle and churches are main attractions in the area. The nature is mostly presented via wet-areas and game preserves.
Rate of mass policy	2+ : Union of Municipalities
Rate of distinctness policy	2 : Complemented

Example 3: Attractions in Municipality of Konguta

The municipality of Konguta is situated in western-area of Tartu County. The neighbours are the municipalities of Rannu, Rõngu and the town Elva. Municipality of Konguta is one of the smallest municipalities in Tartu County. Municipality of Konguta is quite abandoned rural area, which is situated next to the town Elva. In the municipality there are no main services provided, but actually really specific cultural and natural reserves are found. Due to that, in this municipality the main task is to upgrade on special attraction to improve tourism and local life-quality. Co-operation with the neighbourhood is yet not achieved due to the lack of co-operative interest to develop different projects together. That is why the improvement of

tourism attractions is held individually without any partnership with other municipalities.

Tabel 4. Figures of Municipality of Konguta

Factor of place marketing	Figure
Geographical area	Total area: 107,6 km ²
Infrastructure	The center of the municipality (Annikoru) is located 30 km from Tartu and 210 km from Tallinn. There are two main roads across the municipality, Tartu – Viljandi – Pärnu road and Tallinn – Tartu – Valga road.
Human resources	Total 1419 inhabitants
Economy	Micro-firms are common in the area; in 2008 88 companies were registered in the economy registry. Main fields are agriculture and fabrication of agricultural crop. Forestry and wood processing are common as well.
Culture and Nature	Historical findings have been found on a narrow area in the Old Valley of Kavilda; excavations are held every summertime. Supposedly the oldest historical findings in Estonia are found in Konguta. The nature of Konguta provides classical sights of landscapes; the Old Valley of Kavilda is definitely a noteworthy attraction.
Planning Group	Board of Municipality
Target markets	Tourists, residents
Competition	Municipality of Konguta competes mostly on attraction level with other areas. Konguta does not have any system of figures and for this reason one attraction gets all attention.
Rate of mass policy	1 : Municipality
Rate of distinctness policy	2+ : Complemented to Special

The analysis of previous examples revealed that two paradigms are important while implementing place marketing. Firstly, it is necessary that the area comprises the services and figures that are required in this area. A village center with one shop cannot be a system of services. Big towns and urban areas on the contrary have multiple centers with independent complex service systems. In figure 5 this criteria is presented as “mass policy”. Basically, if the range of an area is big enough and the area contains some complex service systems it could be reasonable to implement place marketing. Another axis shows the rate of singularity, presented as “distinctness policy” on figure 5. In some cases the area is too small to implement place marketing, but at the same time the attractions of this area are special enough to assure the success of place marketing.

The previous empirical examples are set on figure 5 according to the estimation based on the analysis done with each case (see tables 2, 3, 4). The diagonal stripe on figure 5 shows the critical line of place marketing. All positions below this critical line should be pointed out as unsuitable areas for place marketing. All positions above it have figures and attractions required to implement place marketing. The

figure 5 illustrates the rationality of place marketing in each case previously analyzed.

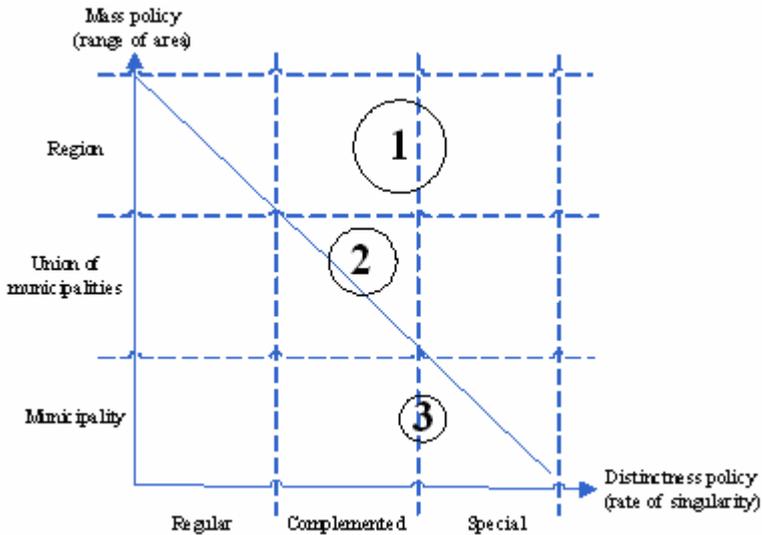


Figure 5. Critical level of place marketing. (Composed by authors)

Tartu Rural Development Association area is positioned on the figure as number one (1). The size of this geographical area and population is big enough to provide required services and figures. The area has different economic fields; for example tourism is executed in the area, hospitals etc are in this area. Tartu County possesses different historical and natural attractions, which are important for some target markets, but are not defined as special in Estonia as a whole. Still, the area is large enough for place marketing and different strategies can be held in Tartu Rural Development Association area.

4P area is positioned as number two (2). The area is not as large as TRDA's, consisting of 4 different municipalities. One of these municipalities is a town that acts as a local centre. Many services are provided in region, but some services and products can be purchased from another center nearby. The rate of singularity is not so high as well. At the same time the 4P area has deep cultural and natural paradigms, but something special cannot be pointed out. The town Põltsamaa has attractions as a castle, churches etc. Although an extant castle is not a very common attraction in Estonia, still a lot of churches can be seen in the area. On figure 5 the 4P area stands quite close to the critical line of place marketing.

Number three (3) points out the situation in Municipality of Konguta. The area consists of only one municipality area; the center of the municipality is Annikoru. Agricultural activities are held mostly; also some forestry work is done. No services

are provided in the area; for example, no accommodation or catering service is held out. All services are accessible in nearby town, Elva or center of Tartu County, the City of Tartu. On the other hand, the rate of singularity is quite high because of the unique Old Valley of Kavilda which brings together several cultural and natural aspects in one phenomenon. The size of the municipality is not large enough to form one functional district for place marketing. On figure 5 it can be seen that the municipality of Konguta stands under the critical line because both criterias are too low to deal with place marketing individually.

If the area is not suitable for place marketing (positions under the critical line shown on figure 5), some strategies must be engaged to improve the possibility to plan place development and marketing of the area. There are two radical options to improve the area's possibilities: one strategy is merging and affiliation, second strategy is improving unique advantages to increase competitiveness. Both strategies are explained as follows:

- ✓ **Strategy 1 (S 1):** Unions and mergers – Optimal areas are regions with similar features, which enable to achieve the balance between advantages and disadvantages. Classical area for place marketing is achieved if all main services are provided and the area can act like individual district. In Estonian context the union of municipalities can usually provide an area large enough to implement place marketing.
- ✓ **Strategy 2 (S 2):** Unique advantages – Competitive advantages can be achieved by improving unique attractions. Unique attractions should be improved to products and region-based brands which make it possible to compete with larger areas that possess all services. In Estonian context a unique advantage is usually associated with culture or nature, in some places also economic environment can be considered as a unique advantage.

Consequently from previous, not all areas are able to implement place marketing because of lack of figures. Still all places and areas are parts of others and that is why all districts are involved in the place marketing system. It is important to understand the roles regions hold in place marketing. Regions above the critical line of place marketing (see figure 5) can implement place marketing for the region by themselves, but smaller areas have to co-operate with others to fulfill the required criterias of mass policy and distinctiveness policy. It is important to understand the commitment of place marketing targets.

It was said in the theoretical framework, that usually the targets of place marketing are tourists, residents, manufactures, investors, corporate headquarters etc. All places should figure out which target groups have commitment in which specific area. To be more accurate, figure 6 illustrates the commitment issue of each place.

Target Group	Village	Municipality	Union	County	Region	Country
Tourists and conventioners			x	x	x	x
Residents	x	x	x			
Manufacturers		x	x	x		
Investors				x	x	x
Exporters					x	x
Corporate Headquarters						x

Figure 6. Commitment of target groups in place marketing. (Composed by authors)

Tourists and conventioners usually do not know any regional districts and self-government areas. It is more likely that they understand the places like union or county. Basically tourists see more often union, county, region and country image. Residents see mostly their life-space and their commitment is stated in village, municipality or union areas. Manufacturers are committed to municipality, union and county areas, because of the figures important in business (infrastructure, human capital, resources etc). Investors see areas more strategically and usually county, region or country level is considered as possible place and environment to invest. Exporters are mostly interested in the specifications of economic environment; region and country are classified as commitment areas. Corporate headquarters are usually trying to find possibilities to manage international transfers and schemes and that is why mostly country level is understood as the area for commitment.

To sum up these remarks, it is possible to draw out three different levels for place marketing. **Village and municipality level** is too small and less-effective to impact larger target groups and that is why mostly residents (permanent and new residents) should be affected as well as manufacturers. Village and municipality can provide different projects and figures for economic development as well as residential programs. Implementers of place marketing on this level are usually local actors, but all activities on this level should be considered as not complex place marketing but as partial development for some larger area (part of some large region's place marketing system).

Union and county levels are usually involved in tourism, residents, manufacturers and investors. There is no point to shape residents on a big scale, because usually area-wide decisions are not implemented to all villages and residents. On union and country level tourism and investor relationship are included to a usual resident. Union and country level can develop networking solutions for firms and tourism. Different co-operation projects can be held which increase route-based solutions and attraction-based tourism routes.

Region and country level are usually more complex and cross-border between regions and countries. Place marketing on region level should deal mostly with tourism, investors and exporters, country level should add corporate headquarters to this list. Region and country level should deal with international tourism and international economy. Country level is most powerful tool for place marketing because it can control inflow of tourism as well as FDI structure. On this level strategic decisions should be made and definitely all place marketing issues of smaller regions should be taken into consideration.

5. Implications and results

Place marketing is a needful theory and tool for systematic regional planning and development. Place marketing is usually established only on one level, but systematic place marketing in different regional levels is not organized. In this paper it was pointed out, how it is possible to implement place marketing as a tool for all levels in administration division and how different planning groups should act.

All implications and results are quite subjective because planning groups are not always covering the same geographical area as regional district in self-government sense. Due to this fact, it is always necessary to make a mind-map with all different planning groups and their interests included. Sometimes a place can be seen totally different from residents' and manufacturers' point of view and that is why it is hard for them to co-operate in place marketing implementation. Below some results are pointed out how place marketing should be considered and implemented in geographical areas, especially in rural areas in Estonia:

- ✓ Firstly, **place marketing should be considered as a networking tool in complex environment**. It means that different levels of place marketing are implemented by different planning groups and all decisions which are made are structured as part of a complex system. In Estonia large branding campaign „Welcome to Estonia“ was established, but it was done only in country and region level, not in first level of place marketing – village and municipality. That was the reason why results of this program were not so good. In future all campaigns should be implemented from–village-to-county methodology, which means that all small unique attractions and regional unions should be handled as substrates for the next level of place marketing;
- ✓ Secondly, all **planning groups should understand their role** and the need for liability in place marketing system. It is not realistic if small village starts to provide tourism services to Italians while country is not interested in Italians. There is no point to manage village-based products for country, because country's role is different. Therefore the small areas without the needed capacity for place marketing should concentrate on unique attractions and unions with other areas, while region and country based organizations should concentrate more on international level and gross-border ideas;
- ✓ Thirdly, **planning group is not always covering the same area as physical area in self-government sense**. Sometimes a planning group is covering only some places of county or region and in this case the decisions made are not area-based. If a planning group is not area-based (in classical geographical

way), it should definitely have a common source which connects one planning group's interests to another planning group's interests. Sometimes geographical objects as lakes, rivers and preserves can be understood as common sources. Because of that a planning group should be conceived to improve some special advantage of a place marketing factor;

- ✓ Fourthly, place marketing should **not be seen only as a functional tool for tourism improvement**. Additionally, place marketing defines tourists, residents, manufacturers, investors, exporters and corporate headquarters as the target groups. Place marketing should cover all these target groups in different implementation levels and that is the reason why place marketing should be taken comprehensively on all levels. Improvements for other target groups are necessary to maximize the satisfaction of different interests.
- ✓ Fifthly, this empirical study showed **that a minimal area for implementing place marketing should usually be a union of municipalities**. Union of municipalities is large enough to have different unique attractions and also the capacity of a union is big enough to provide all necessary services and life-quality. Many of them have found it advantageous to co-operate in providing services and carrying out administrative functions. Smaller areas than a union of municipalities are usually not able to implement place marketing (complex place marketing theory) correctly.
- ✓ Sixthly, **the best practices in place marketing have not yet appeared** but the work of planning groups in networks should guarantee the best solutions for a whole region or country.

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THE POSSIBILITIES FOR APPRAISING TEACHERS' PERFORMANCE IN THE PERSPECTIVE OF EDUCATIONAL POLICY AND ORGANISATIONAL CULTURE

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Abstract

With the view to raising the effectiveness of Estonian educational system, new course concerning schools' and pupils' individual development must be taken. It can be achieved through performance management, which also generates the need to appraise schools' and teachers' performance.

The purpose of this article is to bring out the opportunities for appraising schools' and teachers' performance in Estonian general education schools in a perspective of organizational culture and educational policy. On the assumption of teachers' main activities the authors grouped evaluation criteria into activities connected to school management and activities connected to educational process. Teachers' appraisal criteria a brought out in three main themes: teachers' personal characteristics, learning process and learning environment and school management and development. The authors also debate over the Estonian educational policy.

Keywords: performance, performance management, appraisal, evaluation, organisational culture, effectiveness, education, educational policy.

Introduction

Organizations', its employees' performance and activities is recommended to evaluate (measure) to diagnose organization's shape and to change and direct it if needed. The need to appraise educational institutions' and teachers' performance has also a political perspective – to raise the effectiveness of state's educational system, the quality of education, the scholarliness of its citizens and to supply educational system with qualified and motivated teachers.

Therefore, the purpose of this article is to bring out the opportunities for appraising schools' and teachers' performance in Estonian general education schools in a perspective of organizational culture and educational policy. The authors point out the important evaluation criteria to improve the effectiveness of Estonian general education schools and the performance of the teachers working in these educational institutions. The authors also debate over the Estonian educational policy.

The article consists of four important parts: 1) the experience in appraising teachers' performance and implementing pay-for-performance in world's educational systems; 2) the role of appraisal in school management; 3) the appraisal policy in Estonian schools, and; 4) the ways and opportunities for improving teachers' appraisal and developing organisational culture by bringing out the appraisal criteria for evaluating teachers' performance.

Kaplan and Norton (2003: 21) argue, if you can't measure it, you can't manage it. A lot depends on how the measurement is done, what measurement techniques and - processes are used – employees' reaction and behaviour depends on that. Management theorists and practitioners emphasise the significance of appraisal methods and process in management. But it is also important to remember that evaluation does not substitute management and it is impossible to measure all important activities and results in organization. The same is with political decisions – there is no unique model that educational policy makers can base on to make their political decisions and investments.

Schools' main objective is believed to be to shape individuals who are active, capable of developing and to create the fundamentals for their successful subsistence in society. In the literature of educational policy that is often called an educational process or educational production model. In that model political decisions are made based on the inputs and outcomes of different schools. But it is essential to notify that it is very difficult to measure schools' main objective reliably, therefore the key question is to develop appraisal system and finding information sources that accord to the schools' goals the most and which are associated with teaching and learning. There are also difficulties with defining the input and outcome of educational process which guarantee the effectiveness of school or educational system generally. That complicates the decision process of educational policy makers, who often have to make their decisions based on insight or on the impact of the decision to their political career.

The educational policy makers share the opinion that there is a need in Estonian general education system to analyze and evaluate what is done and to move further from there. It is also essential to improve the quality of learning process which is achieved by motivating teachers and improving their and schools' performance. To that end, schools have recently started to analyze and evaluate its activities more systematically. That manifests in creating systems for appraising teaching and teachers' performance. Teachers' appraisal should be based on the appraisal of their work performance. That enables to direct teachers to achieve their goals better and also gives an opportunity for motivating them in a perspective of school's better performance. These systems are still in its initial stage in a lot of schools and therefore the decisions about schools' activities, teachers' competence and efficiency are often made using casual and trivial indicators and methods.

The term "evaluation" has broadened substantially during years. Earlier, evaluation had rather elementary and raw control function, during what employees' performances were given quantitative estimations by its superiors (Pratt 1991). Nowadays it also concludes a lot of activities by what organization tries to appraise its employees, trains, develops and promotes them and tries to improve organizations' efficiency, also rewards are given for efficient work (Mani 2002: 141-142). Both quantitative and qualitative appraisal criteria and methods are important. Personnel appraisal has become a part of strategic human resource management, which tries to avoid appraiser's subjectivity and to balance estimation's qualitative and quantitative aspects (Fletcher 2001: 473-474).

Educational process differentiates significantly from the production process of private sector organizations and therefore creating a reliable appraisal system in schools is very challenging. Characteristics of the educational process that complicate the appraisal are the following (Engert 1996: 250; Mancebon, Bandres 1999: 133-134):

1. Multiple objectives and outcomes of educational organisations.
2. Many educational organisations' outcomes cannot be unambiguously measured or quantified.
3. The subject of exchange in the education is rather an outcome made up of elements having a diverse nature (knowledge, attitudes, rules of behaviour, values) which are produced in a joint form and are difficult to measure and aggregate.
4. Many of the components (attitudes towards life, position on the economic scale etc) in the production of education only reveal themselves later, once the education years have finished and even throughout the length of an individual's life cycle.
5. The educational production process is cumulative over time and depends on the context.
6. An indeterminate part of education received by an individual is not the consequence of his passage through the education system, but rather that of his personal experiences, of the communication media or of the relationships that he has had (family, social, friendships).
7. The production process is carried out by the customer itself (the pupil), who represents a fundamental input and whose involvement is an authentic determinant of the products obtained (the time dedicated to learning, his interests, his innate capacities).
8. Limited knowledge of the true correspondence relating inputs to outputs in the educational production process is a major problem (Hanushek 1986: 1154).

All these characteristics mentioned above, need to be taken into consideration while analysing the evaluation results of educational institutions', teachers' and pupils' performance. These characteristics should also be taken into consideration while making political decisions.

Experience in appraising teachers' performance and implementing pay-for-performance in world's educational systems

Many teachers are not satisfied with their wage and working conditions, which leads to the problem that teacher's profession is becoming unfavourable, some teachers are dissatisfied and some of them are leaving the schools. Despite of that, schools have to raise its performance to guarantee the supply of high-quality education. The effectiveness of educational system is a high political priority in many countries, but still some educational systems are more effective than others.

From the analysis taken by McKinsey & Company (Barber; Mourshed 2007: 56) in 25 best educational systems showed that their success is based on the skills to create the system that more efficiently fulfils the following three objectives:

- to find more talented people into the organization;
- to raise the quality of learning;
- to achieve continuous usage of exemplary teaching methods.

These are the key dimensions that constitute success for the organisations concerned. These key dimensions can be achieved by the usage of performance management.

Many democratic countries have taken performance management into use with the intention to modernize teachers' profession and to turn it more attractive, to raise the schools' performance orientation and to tie teachers' activity and results directly to schools' goals (Storey 2000: 509-510; Tomlinson 2000: 281-282). That creates the need to appraise schools' and teachers' performance which has also created many debates among pedagogues, theorists and politicians.

In England, schools have taken performance management into use since the year 2000. Durango Foundation for Educational Excellence report that schools that are successful in launching performance management have achieved the following (Performance management in ... 2000):

- a commitment to the attainment and welfare of pupils at their school;
- an appreciation of the crucial role that teachers play;
- an atmosphere of trust between teacher and team leader, which allows them to appraise strengths and identify areas for development;
- encouragement to share good practice; and
- the integration of performance management with the overall approach to managing the school.

Thus there are two major benefits that may be pointed out from the practice in England and why this practice is pointed out as effective management technique for schools: first, pupils will benefit because their teachers will have a more sharply focused picture of what, with encouragement, support and high expectations, their pupils can achieve; second, teachers will benefit. Teachers have the right to expect that their performance will be regularly appraised and that they will have a proper opportunity for professional discussion with their team leader about their work and their professional development. (*Ibid.*)

Despite of great expectations to performance management, new approach has involved a lot of resistance and critical opinions, especially among teachers. Teachers are very critical about performance management because they say that in schools, the nature of the task is much more diffuse to appraise teachers' work objectively and the allocation of responsibility for outcomes far less certain (Storey 2000: 519; Storey 2002: 321-322; Bartlett 2000: 35). Teachers are collegially responsible and pupils' educational process takes years and is affected by many teachers' contribution (Storey 2000: 519). There are also doubts whether pay-for-performance which is often implemented with performance management is the right incentive for teachers (Storey 2000: 516; Tomlinson 2000: 292). Therefore most of

the criticism concerns the appraisal of teachers' work performance and using the right appraisal criteria.

As has been frequently pointed out, choice of measures is crucial for a pay-for-performance scheme. The most obvious reason for this is that the performance measures are supposed to capture the key dimensions of what constitutes success or failure for the organisations concerned. A central feature of the argument for pay-for-performance is thus that adjusting pay in the light of such performance measures provides an incentive for employees to promote the success of the organisation. Naturally, therefore, inappropriate measures will run the risk of promoting and, in the context of pay-for-performance, rewarding activity which may be either irrelevant to organisational success or even counterproductive. (Cutler, Waine 1999: 59-60) In a perspective of educational policy it is also important that the actions constituting success to state's citizens' scholarliness should be awarded and extra monetary incentives should be directed in that purpose. So far, difficulties with setting measurable objectives and problems with reliable appraisal are the reasons why pay-for-performance and performance management are not combined enough in schools.

Therefore only the things that are reliably measurable and important to all parties should be measured. Appraisal should not generate fear and resistance, but it should motivate teachers to improve the quality of their work and to develop themselves. But appraisal may cause reverse tendencies. For example there are a lot of cases where appraisal has caused the burn-out of employees, especially when employee is not capable of achieving the objects set by its managers (Brown, Benson 2003: 67-68). Different appraisal criteria should be weighted and made comparable to each-other so that a numerical overall estimation may be given.

The research into teacher effectiveness by Hay McBer (McBer 2000: 6-9) brought out a model of teacher effectiveness, which underlies England's educational compensation policy. They found that there are three main factors within teachers' control that significantly influence pupil progress: teaching skills, professional characteristics and classroom climate. Teaching skills are those "micro-behaviours" that the effective teacher constantly exhibits when teaching a class: high expectations for the pupils, good planning skills, employment of a variety of teaching strategies and techniques, clear strategy for pupil management, wise time and resource management, employment of a range of assessment methods and techniques and giving homework that are integrated with class work. The skills of creating natural lesson flow combined with a well-considered time management and the skills of having most of the pupils on task through the lesson, are also seen as an important part of teaching skills (see figure 1).

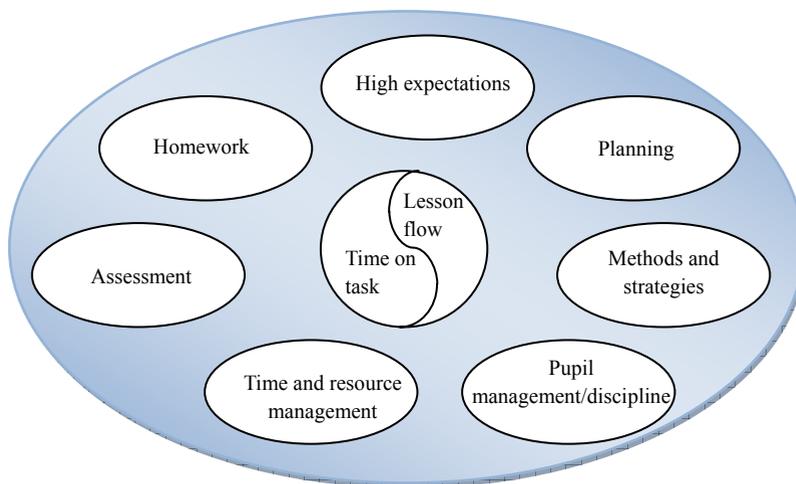


Figure 1. The model of teaching skills. (McBer 2000: 10)

Professional characteristics are deep-seated patterns of behaviour which outstanding teachers display more often, in more circumstances and to a greater degree of intensity than effective colleagues (see figure 2). Five clusters can be brought out: professionalism (respect for others, the provision of challenge and support, expressing confidence and optimism about abilities and making an active contribution in meetings, creating trust with pupils), thinking (the ability of analytical thinking, conceptual thinking), planning and setting expectations (drive for improvement – not only a need to do a good job but also a need to set and measure achievement against an internal standard of excellence, seeking information, initiative to seize immediate opportunities and sort out problems before they escalate), leading (skills of managing teachers, passion for learning, high degree of flexibility to changing circumstances, commitment to holding people accountable – both pupils and others) and relating to others (understanding others, ability to impact and influence pupils to perform, good team working skills).



Figure 2. The model of professional characteristics. (McBer 2000: 19)

Classroom climate is defined as the collective perceptions by pupils of what it feels like to be a pupil in any particular teacher's classroom, where those perceptions influence every student's motivation to learn and perform to the best of his or her ability. Based on these three attributes it is possible to distinguish effective teachers from less effective ones. (McBer 2000: 6-9) Therefore it is recommended to use the model of teacher effectiveness while appraising teachers' performance. This approach is approved by the educational policy makers in England and also mainly done in English educational institutions. The authors of this article believe that the model of teacher effectiveness can also be implemented in Estonia, of course with some adaptations. This approach is developed further by the authors in the final part of this article (see figure 4).

Appraisal systems should be developed involving both organisation's management and other regular staff. If it is not done this way, appraisal systems won't work even when they are suitable and reflecting exactly the organisation's objectives, strategy and other important processes. Appraisal systems that are created only by higher levels of management or policy makers are not accepted as much as these created by all employees. Non-trusting or even withdrawn attitude is taken to that kind of approach. This manifests in organisational culture. Corresponding attitudes are common in European countries and they slow down the changes put into practice also for example in English schools (Jackson 1988: 15). It is pointed out that teachers who were involved into the development of appraisal systems were much

more aware of and accepted more the expectations set on their performance, understood the appraisal process better and were much more committed to it (Kelly *et. al.* 2008: 44). The research of Williams and Levy showed that the understanding of used appraisal systems was positively correlated with work satisfaction, organisational commitment and perception of justice (Williams, Levy 1992: 841). Thus performance management and appraisal system works best when it is an integral part of a school's culture; it is seen to be fair and open; understood by everyone and based on shared commitment to supporting continuous improvement and recognising success.

A lot of resistance concerning the usage of new management techniques in schools comes from the resistance to change. For example, Marsden and French (1998: 121) claim in their research that teachers' resistance to new performance management system and to appraisal result from the resistance to changes. Further, the research in question addressed teachers to answer negatively to research questions. For example if asked from employee whether he or she started to work harder after the implementation of pay-for-performance, a lot of them would answer that they did their work well already before launching the new system. This critical view is also pointed out by Richardson (1999: 19). While teachers get used to performance management system during its implementation period and develop much more reliable appraisal criteria and -methods based on their experience, teachers' performance management is continually complicated and problematic.

The role of appraisal in school management

During appraisal it is important to concentrate on objectives, process and people and to achieve balance between them. The criteria of teachers' appraisal should reflect teachers' actions starting from extracurricular activities, embracing the activities of the entire school up to specific aspects of learning process. An overview of the relations between criteria of teachers' performance appraisal, appraisal process and pay-for-performance is given on figure 3. The figure 3 is also often called as educational production model or educational process. That approach is the most popular concept in literature and in practice while discussing political decisions (Hanushek 1986).

Thus like in all processes, the educational process consists of inputs that are transformed to outcome/results through the processes that are being managed. Outcomes are the main objectives that every school tries to achieve. Implementing motivational system, including compensation in schools should guarantee higher quality of teaching for pupils, should change teachers' profession more attractive and should motivate teachers to develop and upgrade themselves (Performance-Pay for Teachers 2007: 12; Pay-for-Performance ... 2001; Türk 2008: 48-53). Performance appraisal should measure the performance and features that capture the key dimensions of what constitutes success or failure for the schools. These actions that constitute success for the school should also be valued through the motivational system, included compensation. Therefore teachers are better directed towards achieving school's overall objectives. Hence motivational system works as an input,

which guarantees better outcome. Therefore, pay and appraisal should be adjusted in the light of such performance measures provides an incentive for employees to promote the success of the organisation and achieving its goals.

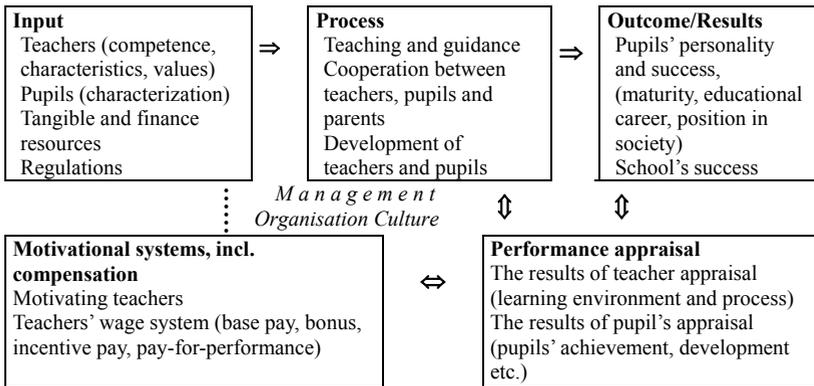


Figure 3. The relations between teachers' performance appraisal criteria, appraisal process and pay-for-performance.

However, a disturbing pattern in the multitude of studies of this type is that no strong empirical evidence exists to support the contention that traditional educational inputs have the expected positive influence on educational outcomes (Worthington 2001: 245). Many previous economic studies have concluded that school inputs do not matter because school output is often uncorrelated with input variations (Brown, Saks 1975: 571). That brings problems to educational policy makers who have made their decisions based on this input-outcome model. The politicians prefer to subsidize input and there is a belief that investing more money to input increases the final value of outcome. But as already said there is no actual proof to confirm that bigger investment into the input guarantees the increase in outcome. Because of the vagueness in determining certain model of educational process, including input and outcome, clear policy prescriptions are difficult to develop.

Likewise, educational process is appraised externally by state (accrediting) and internally (self-evaluation) by school itself. Concerning the states' policy it is essential to bring out that external appraisal concentrates mostly on inputs and self-evaluation on outcomes. Because schools' main objective is to offer society a good outcome, the role of governmental appraisal should be decreased and instead appraisal based on schools' performance should be valued more highly.

The subject of teachers' work satisfaction and motivation has become topical lately. Further, non-pecuniary (intrinsic) rewards like pride, need for achievement, belonging to a team, are emphasised in addition to pecuniary while motivating teachers. Some authors argue that public servants, including teachers are mainly motivated by intrinsic motivational factors (Wright 2007: 60; DeCenzo, Robbins

2005: 274-275; Jobome 2006: 333), which should be taken into account while creating compensation systems (Tomlinson 2000: 286-287). Brown (2005: 477) has brought out that if teachers were asked whether pay-for-performance was a good practice for teachers' profession, most of the answers were negative. However the research showed that most of the respondents believed that better teachers should be rewarded higher compared to the ones with lower performance.

Arguments concerning whether pecuniary rewards are suitable motivators for teachers draw back to the understanding that low wage is demotivational for everyone (Bender 2004: 526). It is also demotivational if high wage level is achieved quickly and easily. (Cutler, Waine 1999: 67). Therefore to improve the educational production process the reliable performance appraisal system should be linked with motivational system with a view to achieve schools main objectives better.

The appraisal policy in Estonian Schools

The development of general education system depends on competent management, appraisal and political decisions. In ten years time, the external appraisal system for Estonian schools is developed and implemented. It includes school's criterion-based internal appraisal; state operated supervisory, tests while graduating I and II school level, final exams for primary schools and for gymnasiums and international comparative studies. The goal for appraising academic performance so far has been the supporting of development of the national curriculum and teachers' training. Less attention is turned to supporting the development of educational institutions and pupils' individual development. (Üldharidussüsteemi arengukava aastateks ... 2008: 20-24) Therefore the new course in Estonian educational policy is schools' and pupils' individual development, which is achieved through performance management.

Schools have recently started to analyze and appraise its activities more systematically. That manifests in creating systems for appraising teaching. The appraisal systems for appraising teaching are still in initial stage in a lot of Estonian schools and therefore the decisions about schools' activities, teachers' competence and efficiency are often made using casual and trivial indicators and methods. For example giving appraisal to teachers' work only one classroom observation is used. In England, that kind of approach is also common (Performance Management in ... 2000). This appraisal is quite random, is not sufficient and reliable. Deformations in appraisal results are generated by appraisers' preferences about the teaching techniques and by their bias and value judgements. Further, teachers do not like if their faults are pointed out by outsiders whose only role is to do sample inspection and whose estimation is inaccurate and tendentious because they do sample inspections.

Teachers are really sensitive towards appraisal because they themselves use complicated and objective appraisal systems in their everyday work (Krull 2001: 579). They will not accept general and simple procedures which aim is just to examine one's pedagogical competence. Attitude towards appraisal can be improved

by increasing the reliability of appraisal objectives, methods and procedures and by giving feedback and explanations to appraisal methods and -results. Many proofs show that teachers support appraisal systems that improve the development of their competences and are afraid of negative feedback. That is why is essential to be discreet and confidential while giving negative feedback.

Teacher appraisal systems emanate from teaching models which are not simultaneously acceptable in all subjects and for different teachers. Therefore the restrictions conditioned from teachers' model-based appraisal should be overcome and the reliability of appraisal results that emanate from the final objective of teaching should be guaranteed. Model-free appraisal enables to give objective appraisals to different teaching techniques. If not, trial lessons are organised especially by experienced teachers. These trial lessons may not be anything like the lessons teachers conduct every day and therefore false appraisals are made. Model-free appraisal gives better presumptions for applying teachers' individual speciality which also enables to motivate teachers to be more creative and to be less worried about what the appraisers expect them to behave like in a classroom.

All that necessitates the development and implementation of fitting appraisal systems and on the other hand the development of appraisal culture in Estonian schools. It is essential to notify that teachers, local authorities, parents and board of trustees should be involved into the development of schools' teachers' appraisal system (Pay-for-Performance ... 2001). Only then it is possible to create a fitting appraisal system, which is accepted by all parties and which enables to manage quick changes in schools' and teachers' activities. The modernization of appraisal practise imply the improvement of theoretical and practical knowledge about performance appraisal techniques, including appraisal criteria, -methods and -process (Türk 2005; Byars 2008; Messmer 2008; Employee Selection ... 2009 etc.). Appraisal system also allows to determine the critical success factors and criteria to appraise one own performance.

Because of the fact that external appraisal (accrediting) concentrates mainly on input, internal evaluation is more valued. That is also a trend in educational politics – the role of outcome is increased and therefore during educational reform, headmaster's opportunities and rights should be broadened to manage schools and to motivate and reward teachers. New performance appraisal processes should be launched and implemented during this. First step in this direction is the development and implementation of self-evaluation systems in schools. (MacBeath 2008; Janssens, Amelvoort 2008; Blok, Slegers, Karsten 2008).

Self-evaluation is mainly oriented to school as a whole, not to individual performance. This generates less resistance in teachers and is more suitable because the creation process of appraisal system and guaranteeing its reliability takes more time. The idea of self-evaluation is not to evaluate individuals but processes and the results are used for unity and not to bring out the peculiarities of different individuals. Self-evaluation is one of the regulation-mechanisms of human activities, which is needed to perform changes in schools and to give evaluations to that action.

It is especially important in the circumstances of quick changes. Regular evaluation (on average once in a year) allows fixating organisation's shape, to bring out the dynamics of change, allows to see the development of its employees and to find out the efficiency of methods used during changes.

Self-evaluation enables to give estimation to organisations' activities and performance systematically and regularly and also completes the task of job analysis. During job analysis organisations' structure, work allocation and working order is examined and as a result its regulations (documentation) and structure is improved. One of the techniques in performance management is schools' internal benchmarking, which enables to be guided by exemplary experience through which schools' management can be improved.

Schools' self-evaluation should be democratic, reliable and based on clear procedure principles. Evaluation is given to the performance of teachers and to the management of school based on their development and progress. Self-evaluation implies the selection of appraisal objects and -subjects and the usage of fitting appraisal criteria and -methods. (Nikkanen, Lyytinen 2005) Teachers' competence, including its qualification and teachers motivation to apply it; plays an important role in teachers' performance. So it is not good enough to train and develop teachers, but also to establish conditions for applying them.

Self-evaluation raises the awareness and responsibility of teachers and increases the self-respect for its achievements, which also encourages teachers to develop themselves and to creatively apply their competence. With the help of self-evaluation, it is possible to recognise outstanding achievement and performance. School's shape and problems are being diagnosed during self-evaluation and also the needs for development and development strategies are being specified. In our researches it is emphasised that the most resultant is self-evaluation process itself rather than specific results. Teachers value teamwork, participative management and the creation of supportive environment by school management and educational officers highly.

Appraisal implies setting the main objectives and the selection of appraisal criteria and –methods based on these main objectives. Schools' main objective is to shape individuals who are active, capable of developing and to create the fundamentals for their successful subsistence in society. It is very difficult to measure it reliably, therefore the key question is to develop appraisal system and finding information sources that accord to the schools' goals the most and which are associated with teaching and learning. Appraisal results should help to diagnose organisations' shape and to find reserves and opportunities for improving activities done so far. Firstly one should answer question: what is done well and what should be done to improve it? As follows it should be concentrated on the question: what should be done to make the change happen? Often only the first question is asked and the work is continued as before. This discredits appraisal process and makes it greatly pointless.

Appraisal methods are self-analysis, report, inquiry, test, brainstorming, development and performance appraisal interview etc. Schools' self-evaluation is based on organisation's reports, conducted researches, the protocols of management and teachers' council meetings, study materials and so on. Development and performance appraisal interviews are held between school's headmaster and teachers and on the other hand between teacher and pupils. For getting additional information, inquiries, which need a very careful planning, are done with pupils, parents and alumna. It is essential to create impartial and neutral environment while conducting inquiries and to guarantee the confidentiality of gathered information. Equivalently important are the questions asked, appraisal criteria and the environment where the inquiry is held. For example the person who conducts the inquiry must not be personally interested in the results; therefore teachers should not conduct the inquiry which goal is to evaluate his or her performance. The appraisal process must be correctly restricted and the inquiry papers compiled so that they can be fulfilled with making just marks. It is not recommended to ask additional information about respondent and answering to open questions must be voluntary. For generating ideas brainstorming in working groups are effective.

The objects of appraisal may be schools' objectives, including academic performance, creation of innovative internal environment, the high-level arrangement of educational work and efficiency, creative learning process etc. Schools' internal environment may be divided to tangible and social. Organisational culture plays an important role in the creation and manifestation of social environment. It is not right to concentrate merely on efficiency indicators and if they are taken into account then they should not be the main indicators (Improving Student Learning ... 2008: 10). School has to deal with both talented and problematic children; therefore appraisal indicators are often process-centred rather than result-centred. Also school is often a local cultural centre completing regional and social oriented tasks.

To sum up, new ways for improving educational process like individual researches, essays, practice, group work and special courses should be taken into account while designing evaluation criteria (Entrepreneurship in higher ... 2008: 8-9). The evaluation of Estonian schools has concentrated too much on knowledge estimation (including the results of national exams); therefore the guidance and development of pupils and teaching them to learn should be considered more. The formation of learning habits and the creation of the needed readiness for life are much more important than specific knowledge in some subject. Teachers should turn more attention to pupils' intelligence, communication skills, emotional development and supporting individual peculiarity. The creation of intellectual and creative environment should be valued among pupils. The subject-to-object relationship should be substituted by teacher-to-pupil relationship (subject-to-subject relationship). The authors of this article have worked out the appraisal criteria that help to solve the aforementioned shortcomings and to achieve new courses in Estonian educational policy,

The new perspective in educational policy - the ways and opportunities for improving teachers' appraisal and developing organisational culture.

As mentioned above, new courses in educational policy must be taken to develop more effective educational system. One of the opportunities is to employ performance management into educational institutions which also creates the need to evaluate organisations' and teachers performance. But while doing so, organisational culture needs to be taken in account. According to the modern approach, the success of an organisation as a whole depends not on the performance of some remarkable individuals but on the collective contribution of all members (Jacobs 1981). For the success, many people have to support the well being of the organisation and the organisation should be aware of its members' wish to support their organisation and understanding of the essence of collective work. The concept of organisational culture could serve as the framework for the relevant analysis because researchers as well as practitioners use the term of organisational culture if they want to underline people may either support or obstruct organisational efforts to bring these people together in order to pursue certain goals.

Grives (2000) argues that organisational culture is relatively recent foci for managers in organisations. Yet, the cultural perspective has served the special attention in the organisational studies since eighties of the former century, when the beginning of decade presented notable publications of the field (i.e. Ouchi 1981; Peters & Waterman 1982; Deal & Kennedy 1982). One of the reasons for this derives from developments in wide context of society because the organisational culture concept enabled to open various actual problems of those days.

The definitions of organisational culture vary from a very short description given by Deal and Kennedy: "It's the way we do things around here" (1982: 13) to more sophisticated ones, for example, as proposed by Schein (1985: 9). Several taxonomies exist in order to capture the variation of mechanisms that form commonly shared but unique combinations of values and behaviour patterns in organisations. The complex nature of culture leads to multidimensional approaches (see for a review Detert 2000; van der Post *et al.* 1997; Lau & Ngo 1996).

Every organisation has its own special organisational culture created collectively by its members and organisational culture gives guidelines for organisational members how to behave and thus it is related to the performance on the organisational and individual level. This is a mutual relationship because the certain type of organisational culture puts impact on the individual's performance on the one hand, on the other, the way how organisational members actually perform influences organisational culture. It implies that performance appraisal is also related to the organisational culture. Studies have demonstrated the existing relationship between performance and organisational culture (see for example, Chan *et al.* 2004, Denison *et al.* 2003, Ogbonna & Harris 2000, Kotter & Heskett 1992), while there some studies about educational system (i.e. Griffith 2003) but this field is poorly investigated. In order to fill this gap we present the relationships between

organisational culture and school's performance in Estonia at first, and then discuss how to employ this knowledge for improvements in the performance appraisal.

When starting abovementioned analysis the organisational culture should be defined, however, Lim (1995: 20) expresses that "A major obstacle to investigations of the relationship between performance and culture appears to be related to the application of the term "organisational culture". Definitional problems, as well as difficulties in the measurement of organisational culture seem to have contributed to the inconclusiveness of the research". We refer on Schein's (1992) understanding that organisational culture is influenced by two major factors – task and relationship orientation. Harrison (1995) distinguishes between task and person oriented organisational cultures. Task culture emphasises the superiority of the goals of the organisation over the member's personal goals. Person oriented orientation like Schein's relationship orientation is based on warm and harmonious interpersonal relationships. These two orientations – task-orientation and relation-orientation – are the vital aspects of organisational culture that can influence employee attitudes. We have developed an instrument that would enable measuring the two aspects in a reliable way (Vadi *et al.* 2002).

In the following paragraphs study by Aidla and Vadi (2007) is referred because they have shown some specific relationships between organisational culture and school performance. In order to measure secondary school performance, the results of the national examinations of secondary schools within six years (2000-2005) were used. The results are presented on the homepage of the National Examinations and Qualification Centre. The exam results in mathematics, English, composition and history were considered as the basis of comparison. For measuring the size of the school, the number of its pupils was used. A large school has over 800 pupils and a small school less than 800 pupils. In the organisational culture study 558 individuals agreed to participate in the study and they filled Organisational Culture Questionnaire. Both school level and individual level organisational culture estimations were measured with this method. Results are presented in the table 1.

According to the results organisational culture and school academic performance are not interrelated in all the secondary schools because the significant correlations were found only in large schools or those located in city or county town, whereby if the school is small or located in the rural municipality or small town, this connection was not significant. It shows that there can be significant variation among the schools and some reasons for that can be attributed to the matter that schools' human and material resources may differ due to their size and location. The other side of the picture is that the performance appraisal would take into consideration the school's size and location and obviously some other factors too.

Table 1. Correlations between OC orientations and school performance in Estonia (with respect to the location and size of schools)

Performance with respect to the location and size of the school	OC orientations	
	OC1 ¹	OC2 ²
City or county town	0.78**	0.54*
Rural municipality or small town	0.13	0.27
Large school	0.84**	0.59*
Small school	0.05	0.09

** Correlation is significant at the 0.01 level, * correlation is significant at the 0.05 level
 OC1¹-task orientation, OC2²- relationship orientation, n = 60.

Source: Aidla & Vadi 2007.

Indeed, there are other issues too. For example, many successful pupils living in a small town try to go to study into a city of county town school because they think that there are more opportunities to get a proper education. Because in similar vein, the study shows school’s size and location play significant role when school administration’s attitudes impact on pupils’ national examination results was analyzed (Aidla, Vadi 2008). Large schools are more attractive employers for teachers etc. Here we focus on organisational culture aspect.

If we look the content of statement what formed the task orientation of organisational culture (for example, “*people are proud of their organisation*”, “*positive changes constantly take place*”, “*people are rewarded for their good work*”, and “*people’s well-being is important*”), then we can hypothesise that there is a need for the profound explanation how organisational culture and performance are interrelated in small and in the rural municipality or small town located schools. This initial step hopefully creates the favourable context for the implementation of performance appraisal methods.

Relationship orientation indicates belongingness and coherence (statements for example, “*people know one another*”, “*all important matters are discussed with each other*”, “*people help each other in job-related situations*” and “*in tough situations there is a strong feeling of togetherness*”). This aspect of organisational culture emphasizes the importance of interpersonal relations that may alleviate tensions, completing a certain task. Here the metaphor “social glue,” explicitly expresses the function of interpersonal relationships. This implies that performance is related to the interpersonal relationships and it gives possibility to evolve this to the performance appraisal too. Reasonable relationships generate mutual trust and support among organisational members. Again, in small and in the rural municipality or small town located schools the implementation of this idea must be well explained to the organisational members.

Irrespective to the multitude of the literature and articles written on the topic, the perpetual “reliable criterion problem” continues to receive considerable attention within the performance management literature (Fletcher 2001: 474). The indicators for performance measurement should be rational – they should assure sufficient and

complex information with optimal costs; they should be useful and reliable – they should reflect problematic fields, assure comparability and should be used easily. Accumulating facts does not guarantee that results and processes are measured and quantitative data does not ensure the right understanding of the situations. Likewise there is a hazard to overestimate one situation or fact when implications are made only based on that single event or fact. Therefore the purpose of this article is to bring out the opportunities for appraising teachers' action and performance and the criteria for comparing different schools in Estonian general education schools in a perspective of organisational culture and educational policy.

On the assumption of teachers' main activities, the evaluation criteria may be grouped into activities connected to school management and activities connected to educational process:

1. **School management**, including 1.1) participation in school management and development (teachers' council, board of trustees.), 1.2) participation in creating schools' working environment (tangible, social, cultural environment, employees satisfaction), 1.3) schools' development (development and implementation of schools' strategic development plan), 1.4) schools' public relations and communication with external environment, 1.5) instructing young teachers and guaranteeing the followers.
2. **Learning process**, including 2.1) activities concerning curriculum and programme of subjects, 2.2) teaching-methodical work (study materials, teaching techniques, homework), 2.3) educational environment (learning milieu, evaluation), 2.4) pupils' preparation for life (educational choices, career), 2.5) extra-curricular activities (events outside the lessons, extra-curricular activities, educational work), 2.6) the development of pupils personality (motivation for learning, skills of learning, social skills etc.), 2.7) considering and developing pupils' capabilities, 2.8) co-operation and getting along with pupils, colleagues and parents 2.9) pupils' academic performance (tests, national exams, olympiads), 2.10) the number of subjects and pupils 2.11) teachers' responsibility and conscientiousness (work discipline and documentation).

The reliable information about the quality of **learning process** may be gathered by inquiries. The peculiarity of pupils, including the age, should be taken into consideration in the compilation of inquiry. For example to the inquiry for the seniors of gymnasium, the following questions should be engaged (the criteria were developed based on the sources: Õppeasutuse sisehindamine 2008: 22-64; Guide for Education 2008: 23-25, McBer 2000: 6-29; Professional Standards for Teachers ... 2007: 1-31):

1. Teachers' values and attitudes (example, ethics, authority).
2. The level of preparation and content-richness of learning process.
3. The relevance of learning process and its relations to practice and other subjects.
4. Performing in front of the classroom, communicating (good contact, involving pupils and discussions).
5. Attitude towards pupils (impartiality and objectivity).
6. Understand-ability and the rate of exemplification of teaching.

7. Homework and their connection to lessons.
8. The rate of feedback and its constructiveness.
9. Skills to get pupils to work independently and with interest.
10. Skills of considering pupils' individual peculiarity.
11. The quality of study materials used.
12. Adhere to learning processes schedule and timetable.
13. Discipline in the classroom/motivational learning environment.

The authors of the article elaborated the model of teacher effectiveness used in England. The sub-criteria of the three main groups of teacher performance criteria were advanced (see figure 4). The main criteria for describing teachers' performance are personal characteristics, learning process and learning environment. The sub-criteria for evaluating them are brought out in the figure and also in the listing following the figure. These criteria and sub-criteria generate schools' and pupils' performance. The criteria pointed out in this article are based on several researches (case studies in several schools) and scientific sources, for example: McBer (2000: 6-29), Professional Standards for ... (2007: 1-31), Öppeasutuse sisehindamine (2008: 22-64), Guide for Education (2008: 23-25), Nikkanen, Lyytinen (2005: 219-223).

Teachers' personal characteristics

- 1.1) knowledge and skills in specialty
- 1.2) analytical and conceptual thinking
- 1.3) teacher's personality, authority and values (example, ethics)
- 1.4) drive for improvement and learning
- 1.5) unbiased and fair attitude towards pupils
- 1.6) getting along and co-operation with pupils
- 1.7) understanding and influencing pupils
- 1.8) co-operation with colleagues and parents
- 1.9) understand-ability of performing in front of the classroom, involving pupils
- 1.10) teachers' responsibility and conscientiousness

Learning process and learning environment

- 2.1) activities concerning programme of subjects
- 2.2) teaching-methodical work (study materials, teaching techniques)
- 2.3) creative, innovating and flexible learning environment
- 2.4) time management and motivative learning environment
- 2.5) supporting and involving pupils (giving examples, discussions)
- 2.6) considering and developing pupils' capabilities (educational career, supporting systems)
- 2.7) skills to get pupils to work independently and with interest (homework, research)
- 2.8) the relevance of learning process and its relations to practice and other subjects (including info technology)
- 2.9) evaluation and giving feedback (objectivity, constructiveness)
- 2.10) extra-curricular activities (events outside the lessons, educational work)
- 2.11) the development of pupils' personality (preparation for life, social skills)
- 2.12) the climate of learning process and discipline in the classroom

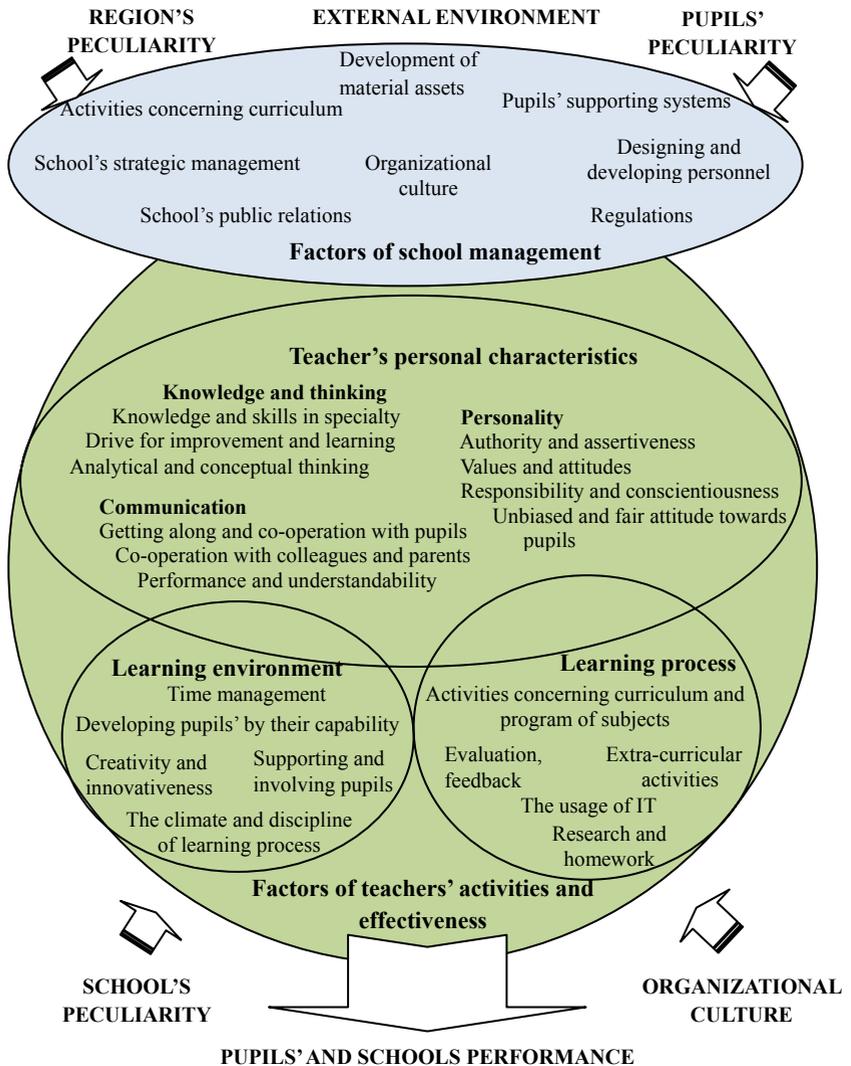


Figure 4. The key factors of teachers' and schools' performance. (Compiled by authors)

School management and development

- 3.1) participation in school management (teachers' council, board of trustees, parents)
- 3.2) participation in creating schools' tangible environment
- 3.3) participation in creating schools' social and cultural environment
- 3.4) designing personnel and instructing young teachers, to guarantee existence of the followers
- 3.5) activities concerning curriculum (the structure of subjects and extra-subjects)
- 3.6) development and implementation of schools' strategic development plan
- 3.7) school's development and innovation
- 3.8) schools' public relations and communication with interest groups
- 3.9) developing and following regulations (including timetables).

Specific evaluation criteria for comparing different schools can also be developed. For example comparing gymnasiums, the following criteria may be used (the criteria were developed based on the sources: Öppeasutuse sisehindamine 2008: 22-64; Guide for Education 2008: 23-25; McBer 2000: 6-29; Professional Standards for Teachers ... 2007: 1-31):

1. The state of material assets (library, gym, catering, extra-curricular activities).
2. The level of computerization and the usage of computers in teaching.
3. The usage of modern info technology in communicating with colleagues, pupils, parents and other interest groups.
4. The number of pupils.
5. The volume and structure of subjects.
6. The number of foreign languages and special subjects taught.
7. The number of extra-curricular activities (the number of activities, speciality and the rate of participation in them).
8. The opportunities for teachers' development (the number of schoolings and financing).
9. Schools image and security perceived by parents.
10. The existence of supporting systems for pupils (study support services).
11. The number of entree applications and the level of competition.
12. The number of drop-outs and the number of absentees without excuse.
13. The number of pupils who graduated with medal, the results of national exams.
14. The percentage of graduates who got into university (or vocational school) (public financed full-time students, studying on fee, the level on competition, success in next school).
15. The number of pupils who participated in national or international Olympiads, competitions and exhibitions and their results.

While developing and launching appraisal system, a lot of attention should be turned to the communication that relates to it (Brown, Benson 2003: 69-70; Chang, Hahn 2006: 409). Selecting suitable and reliable evaluation criteria and -techniques are great assumption to efficient appraisal process. Likewise all the questions arising from the usage of appraisal results, making conclusions and the mechanisms of giving feedback to teachers, should be carefully considered. The appraised

employees should be notified of that before the evaluation process itself. It should be thought through and decided prior what kind of information is confidential and what is available for everyone. For declaring general information, different information channels may be used, for example organisations' internal communication channel, homepage, printed matters, board for information etc. The lack of feedback or its incorrect presentation may generate resistance, the evaluation system may be perceived as unfair and employees may feel like their effort is not valued adequately.

Conclusion

There is a clear understanding that Estonian educational system needs to be developed. The new course is more pointed to schools' and pupils' individual success, which can be achieved through the implementation of performance management.

But performance management can not be implemented effectively if there is a lack in appraisal system. The appraisal system used in Estonian educational sector concentrates only on academic performance, which does not accord with the main goal of the education – to shape individuals who are active, capable of developing and to create the fundamentals for their successful subsistence in society. Of course academic performance is important, but pupils' general skills are often brought out as even more important skills that guarantee pupils' success in the future (in the next educational level or in labour market).

The view developed by the authors of this article allows evaluating teachers' and schools' performance much broadly. Involving these appraisal criteria pointed out by authors to teachers' appraisal system allows creating more effective educational system through effective learning process and effective teachers. Of course this approach needs further development in the future and it is important to involve all parts of the educational sector, including teachers, headmasters, educational policymakers, parent, pupils and local authorities to that development process.

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LEVEL OF LIVING AND WELL-BEING AS MEASURES OF WELFARE: EVIDENCE FROM EUROPEAN COUNTRIES

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Abstract

The aim of the present study is to elaborate generalized indicators describing objective and subjective aspects of welfare and analyze the relationships between them based on the sample of European countries. While applying the quality of life approach we differentiate economic, human capital, social capital and emotional aspects of welfare. With help of confirmatory factor analysis generalized objective level of living and subjective well-being indicators to measure all mentioned aspects will be composed. Our results show that in countries with objectively lower positions the subjective assessments on welfare tend to be higher. Although an ideal situation could be imagined where objective and subjective assessments were equal, there are deviations from the equilibrium to both directions.

Keywords: Welfare, Level of living, Well-being

Introduction

Many economies in Europe, and Estonia among them have developed relatively fast during the last decades until 2008. In objective terms the economic success during this period has been indisputable. At the same time, there are some reservations about whether these changes have promoted the overall gain in welfare and whether people are satisfied with their level of living and well-being. Subjectively perceived satisfaction with life depends on several factors which cannot only be expressed in disposable money. Although there are studies that indicate the positive relationship between economic development and happiness (see Inglehart *et al.* 2008), then those in line with the “Easterlin paradox” suggest that there is no link between the level of economic development of a society and the overall happiness of its members (see Easterlin 2001). For instance, according to the University of Michigan's World Values Survey 2008 (World Values ... 2008) Colombia ranked as the third country in the world according to perceived subjective well-being while its GDP per capita amounted only 9000 USD in 2008 (The World ... 2009). For comparison, Estonia ranked as the 84th in the same list (World Values ... 2008), while its GDP per capita was exceeding 21900 USD in 2008 (The World ...). Hence, welfare is also influenced by the environment, i.e. culture, values, norms and social behavior of other society members. Therefore, measurement of welfare presumes taking into consideration not only economic but also social aspects.

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The aim of the present study is to elaborate generalized indicators describing objective and subjective aspects of welfare and analyze the relationships between them based on the sample of European countries. As the sample consists of countries differing considerably in terms of their socio-economic development level, but belonging to the European cultural space, the results of the study could be applied to draw conclusions about the general tendencies in welfare formation by various aspects of it. The novelty of our study proceeds from the more composite approach in measuring welfare whereas selected initial indicators reflecting various aspects of welfare will be generalized as well as additional aspects of welfare compared to previous studies will be included into the analysis.

The article is organized as follows: Section 1 provides the theoretical framework for the analysis; Section 2 describes the data and methodology applied in the analysis; Sections 3-6 present the procedure of generalizing initial indicators of welfare measured both in objective and subjective terms and by various aspects of welfare. In addition, the relationships between objective and subjective indicators of welfare in observed countries by various aspects of it will be drawn; Section 7 provides the comparative analysis of the observed countries based on objective level of living and subjective well-being; Finally, discussion and conclusions of the results will be presented.

1. Theoretical framework

The main idea and final goal of a country's economic policy should be the maximum welfare of its residents. There is no common understanding about what welfare means or consists in (Bognar 2005) and the concept of welfare has changed in the course of time. Initially, only material wealth was considered when speaking about welfare, but at the end of the 1960s welfare became a multidimensional concept, taking account of immaterial aspects, like health or social relations as well (Berger-Schmitt and Noll 2000). Generally, it can be said that welfare refers to "how well a person's life goes for that particular person" (Bognar 2005). Whether a person's life is going well for that person depends on two broad aspects: first, the objective living conditions and second, the perception of these conditions and the subjective well-being of individuals. Both aspects are included into the quality of life approach, which is nowadays the most widely recognised and the most frequently used framework for analyzing welfare at the society level (Berger-Schmitt and Noll 2000). Quality of life has been often viewed as the main policy goal (Costanza *et al.* 2008; Shackman *et al.* 2005).

Although in the literature of previous decades the welfare theories often focused on either objective or subjective aspects and measures of quality of life, nowadays there is a common agreement that both objective and subjective features should be included when analyzing quality of life (Berger-Schmitt and Noll 2000). Thus, quality of life can be defined as "the extent to which objective human needs are fulfilled in relation to personal or group perceptions of subjective well-being" (Costanza *et al.* 2008).

The objective aspect of welfare encompasses the objectively valuable resources that are available for an individual and that enable to meet basic human needs (Bognar 2005; Costanza *et al.* 2008). These resources include income and assets, education and knowledge, objective health status, social networks and trust etc. The data about these elements of welfare can be obtained without directly surveying the individuals. It is important to stress here that only the capabilities can be measured objectively. Capabilities are, however, only the means to achieve the desired ends. It is often not possible to measure objectively the extent to which the capabilities are utilised by the individual, for example, the satisfaction gained from the particular level of income depends largely, on what is consumed for this income. The utilisation of capabilities can be assessed by the subjective aspect of welfare that deals with individual's subjective experience – whether the individual enjoys his life or not. The subjective aspect covers individual's self-reported levels of satisfaction, happiness, pleasure, fulfilment and other indicators of subjective well-being (Costanza *et al.* 2008). The data for subjective indicators of welfare can only be gathered by questioning individuals about their perception of their quality of life.

The extent to which the objectively measurable capabilities will be utilised by the individuals in order to gain satisfaction with their lives depends on many factors, for example cultural context, individual's education, temperament and mental capacity, but also the on available information, social norms and preferences (Costanza *et al.* 2008). Therefore, it is important to form a policy to create conditions that increase the likelihood that individuals effectively utilise all their capabilities. While the characteristics of individuals and also the cultural context are hard to change, the availability of information can be improved and the prevailing norms can also be directed to some extent.

In the following analysis we will rest on the quality of life approach and include both objective and subjective indicators of welfare. The framework of our analysis is presented in Table 1.

Table 1. Different aspects of a country's average welfare

	Economic aspect	Human capital aspect	Social capital aspect	Emotional aspect
Objective welfare	Economic wealth and income, economic inequality	State of health and education, access to health and education services	Institutional quality	Absence of social exclusion
Subjective welfare	Satisfaction with the individual wealth and income	Satisfaction with access to education and health services, assessment of individual health	General and institutional trust, perceived support	Satisfaction with life, happiness

First, probably the most self-evident aspect of welfare is the economic one. On the objective side it includes wealth and income as well as their distribution between individuals. On the subjective side the satisfaction with one's economic state should be taken into account, which at least in part depends on individual's relative position compared to others (Luttmer 2005). The next aspect of welfare that has also often been covered with welfare analysis is connected with human capital. Here, the objective welfare incorporates both health condition and education level, but also the access to education and health care services. At the same time the satisfaction with these services and individuals health status constitute the subjective view on human capital aspect. The third aspect in our analysis reflects the social conditions by which individuals are enclosed and influenced. The objective state of this social capital aspect can be characterised by institutional or governance quality, while the subjective evaluation of this aspect is expressed by the trust in people in general as well as in different institutions, which in turn is connected with the perceived social support. Finally the emotional aspect should also be taken into account. Here, at first the objective side can be somewhat difficult to imagine, but the subjective side undoubtedly comprises the satisfaction with life as a whole (as opposed to the satisfaction with some specific aspect of life) and happiness. In case of previous three welfare aspects, the subjective welfare is based on the judgment of the objective state of the particular aspect. Here, the happiness is at least partly influenced by the perceived social exclusion or its absence, hence, at the objective side we can evaluate the absence of social exclusion, in terms of, for example, poverty or unemployment. In the following analysis we assume that all these four aspects are important factors of welfare.

2. Data and methodology

Conducting the empirical part of the work implies the inclusion of both objective and subjective measures of welfare into the analysis. We exploit secondary data collected from Human Development Report 2007/2008 (Human ... 2007) and World Bank Aggregate and Individual Governance Survey 1996-2006 (Kaufmann 2007) for obtaining objective indicators and European Social Survey 2006 (European ... 2006) for finding subjective indicators. The list of countries included in the analysis rests on the availability of the subjective assessments, i.e. the countries included in the third round (2006) of the European Social Survey. Accordingly, the objective indicators for welfare were also collected for the same countries. Altogether, we rely on the data about 24 European countries².

Our data set includes numerous indicators explaining different aspects of welfare and thus the indicators are often strongly related to each other. Use of several individual indicators would make the analysis quite complicated and incomprehensive, whereby in the present study we first attempt to generalize the initial indicators to a decreased number of aggregated variables which will be applied in

² Sample included Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, the Netherlands, Latvia, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine and the United Kingdom.

further analysis. For the generalization procedure there are several methods available, but in our study factor analysis (method of principal components) has been chosen. This method suits very well for integrating correlating individual indicators as was the case here.

Factor analysis enables to capture initial indicators of subjective and objective welfare of various aspects into more generalized composite indicators solving also the problem of different scales pertaining to different initial indicators (see Appendix 1 for more detailed information about initial and generalized indicators used in this study).

The applied methodology of confirmatory factor analysis presumes the selection of appropriate initial indicators and the assessment about the generalized indicators of their ability to reflect the information in initial indicators. Confirmatory factor analysis can be used if the aggregated wholes describing different aspects of the analyzed phenomenon were identified. For instance, Whiteley (2000) in his paper has in a similar way generalized various aspects of social capital. In our study the appropriateness of initial indicators has been verified according to the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO), whereby only the indicators showing the common variance at least on mediocre level (value of MSA^3 at least 0.6) have been included to the analysis. While selecting the initial indicators we seek to achieve the highest possible intercorrelation between initial and generalized indicators (component loads above 0.7, but in most cases more than 0.9). Additionally, the description power of the generalized indicators was supposed to exceed 70% of the variation in initial indicators.

The component scores of these general indicators were used to compare the countries and to analyze the connections between the subjective and objective aspects of welfare. Component scores indicate the relative position of each country in the sample according to the described aspect; the average value of the component scores of one indicator is zero. Therefore, in the countries where the value of the component score is positive, the situation based on the aspect concerned is above average, and if the component score is negative, the situation is below average.

3. Economic aspect of welfare

In order to obtain the generalized objective indicator to assess the economic aspect of welfare, the general indicators of economic wealth and income distribution have been constructed with help of factor analysis. The indicator of economic wealth described 99.2% of the variation in GDP per capita and GNP per capita while the indicator of income distribution described 95.7% of the variation of Gini index and income ratio of the richest 10% and the poorest 10% of the population. Relationships between initial indicators and final indicator (component loads) were

³ MSA – Measure of Sampling Adequacy indicates the appropriateness of individual variables for generalization with help of factor analysis. If value of MSA is below 0.5 the use of factor analysis is not justified.

0.99 in case of economic wealth and between 0.96-0.99 in case of income distribution. The general indicator of income distribution has been constructed so that the more equal income distribution, the higher value of the indicator (component score). All generalized indicators of welfare for observed countries expressed by component scores are given in Appendix 2.

For constructing the generalized subjective indicator regarding the economic aspect of welfare, satisfaction with level of living and quality of life as well as feeling about household's income have been integrated. Generalized indicator described 93.5% of the variation of initial indicators, component loads were between 0.95 and 0.98.

Indicators of wealth and satisfaction with level of living were mutually strongly correlated (correlation coefficient 0.92⁴). On the following Figure 1 the placement of observed countries according to the objective and subjective indicators of economic welfare will be presented.

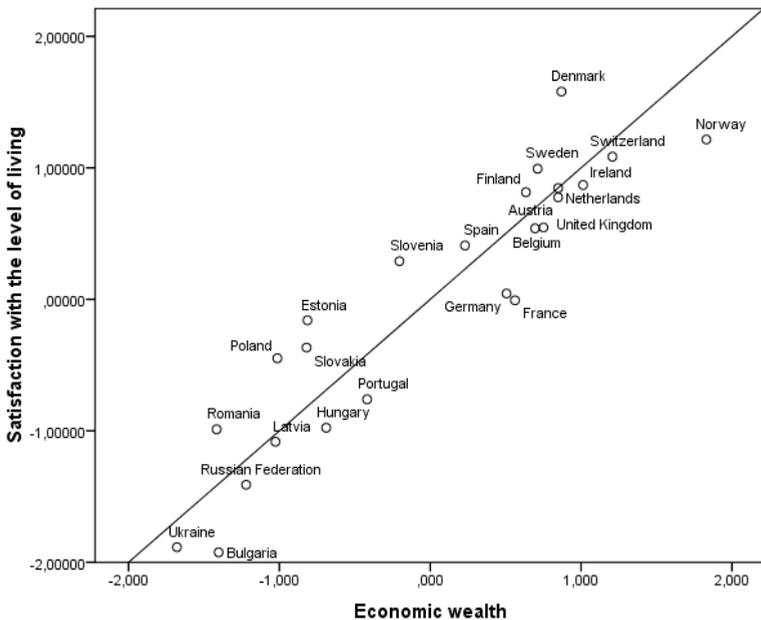


Figure 1. Relationship between economic wealth and satisfaction with level of living in observed countries.

The general tendency of a strong relationship between objective and subjective indicators of welfare is clearly seen from the Figure 1. Nevertheless, some relatively

⁴ All correlation coefficients presented in this paper are statistically significant at the 0.01 level.

interesting deviations can also be observed. For example, Estonians seem to be more satisfied with their level of living compared to Hungary or Slovakia which are more or less as wealthy. On the contrary, people in Germany and France are more or less as satisfied with their level of living as people in Estonia, even though the objectively measured wealth level in these countries is considerably better. Denmark contrasts from others by the considerably higher satisfaction level, at the same time being approximately as wealthy as the Netherlands and Austria. If we would attempt to find the reasons for such differences from the other objective indicator of wealth – income distribution (see Figure 2) – one could suppose that the unexpectedly high satisfaction with level of living in Denmark and Slovenia could have been resulting from the more equal income distribution in these countries. However, in case of Estonia this assumption does not hold as income distribution here is more unequal than in Germany, France, Hungary or Slovakia.

Figure 2 reflects that satisfaction with level of living is not related to income distribution.

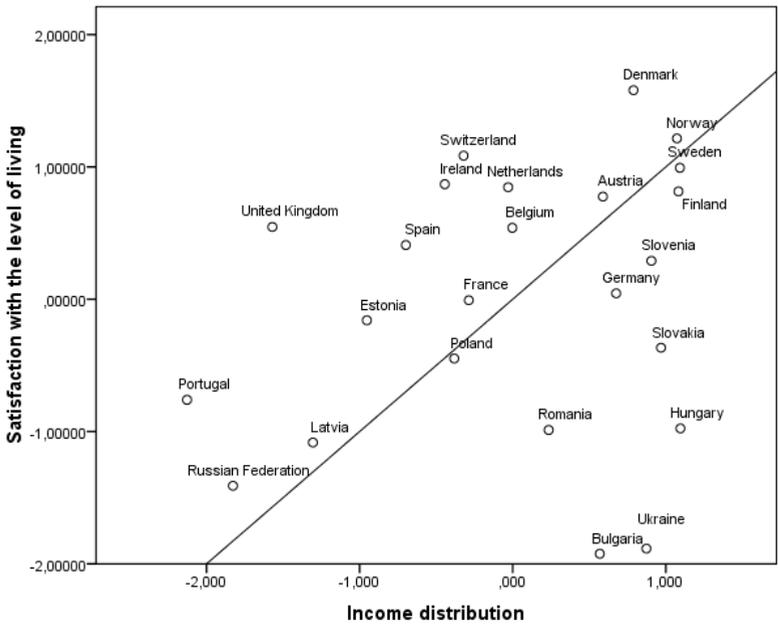


Figure 2. Relationship between income distribution and satisfaction with level of living in observed countries.

It is obvious from the Figure 2 that it was not possible to find statistically significant correlation between income distribution and wealth which was in fact an expected result. For example, Ireland and Switzerland that belong to the richest economies rank lower than average in the sample with regard to the equality of income

distribution. At the same time, Bulgaria and Romania which are among the poorest countries in the sample rank above average as far as the income equality is concerned. As a matter of fact, it is not possible to determine whether more equal income distribution is good or bad in and of itself. However, whether people perceive unequal income distribution to be a problem can be determined.

As a peculiarity of our analysis it turned out that the subjective assessment about income distribution - The survey question "Should government reduce differences in income levels?" - was not related with objective indicators. However, there appeared to exist a negative correlation with wealth: this question tended to be rather positively answered by representatives of poorer countries (correlation with wealth – 0.74).

Considerable concurrences and discrepancies can be seen when comparing countries according to the objective and subjective estimations on income distribution. Respondents who expected the biggest steps from government regarding equalizing income distribution lived in Bulgaria (the above mentioned survey question got 4.45 grades out of 5), the objective indicator of the country being above the average at the same time. In Ukraine also the problem has been perceived as essential, although in objective terms the income distribution was relatively equal there. At the same time, United Kingdom has traditionally been among the countries with the most unequal income distribution, but the respondents from United Kingdom did evaluate the need to equalize income distribution at one of the lowest levels (3.45 grades). Altogether it turned out from our analysis that the assessment about the need to equalize income distribution by government is reflected within the overall satisfaction with level of living, because the higher satisfaction level was related with lower needs regarding equalization of income distribution (correlation coefficient -0.82).

4. Human capital aspect of welfare

For objective assessment of the human capital aspect of welfare the generalized indicator has been created by integrating indicators of average life expectancy, public sector education and health care expenditures. The constructed indicator describes 73.3% of the variation of initial indicators. Relationships between initial indicators and final indicator (component loads) remained between 0.73 and 0.93. The generalized indicator is also quite closely related with the general research and development indicator (correlation coefficient 0.6), which we obtained as a result of generalizing the initial indicators describing patents, research and development costs and the number of scientific workers. Thereby, this indicator provides a summarized picture about the creation of human capital and its availability in a given country.

In order to obtain a subjective assessment of the human capital aspect of welfare, the satisfaction estimates about the availability of health care and education services as well as the satisfaction with one's health situation have been used. The initial indicators were strongly related with the obtained general indicator of satisfaction with education and health (all component loads 0.91). The generalized indicator described 82.6% of the variation of initial indicators. The obtained general indicator

was also related the respondents' level of formal education (years of school enrolment) (correlation coefficient 0.58).

The correlation between the generalized objective and subjective estimates of the human capital aspect of welfare was 0.76, thus the relationship is weaker than in case of different indicators explaining economic aspect of welfare. The distribution of observed countries according to objective and subjective estimates of the human capital aspect of welfare is presented in the following Figure 3.

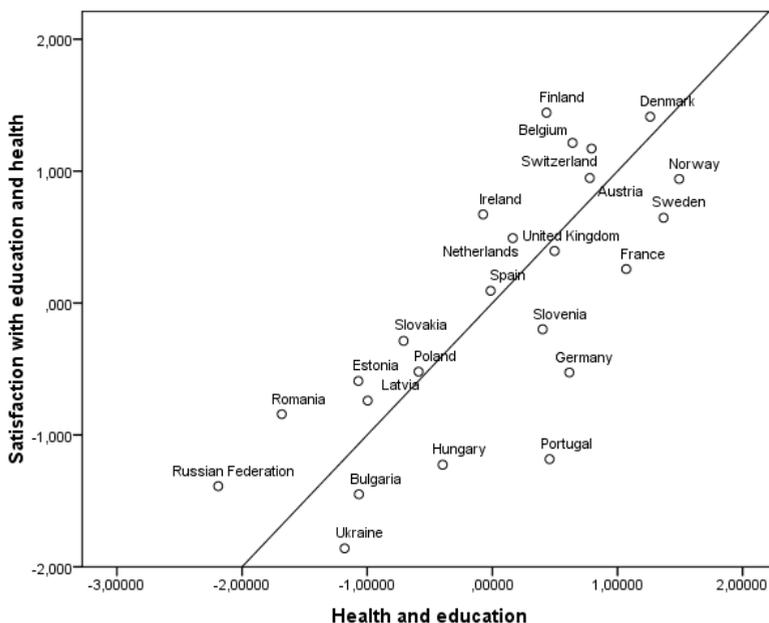


Figure 3. Relationship between indicators of education and health and satisfaction with education and health in observed countries.

We can see from the Figure that in some countries the difference between subjective and objective estimates in case of comparable objective situation is relatively big. For example in Estonia, there is much greater satisfaction with education and health than in Bulgaria or Ukraine, which are in more or less the same situation. Estonia's objective indicator has apparently been reduced by the relatively short average life expectancy, but people do not think about this when assessing the state of their own health. Particularly drastic is the difference in positions of Finland and Portugal, given that the estimates to the analogous objective situation differ by more than two and a half standard deviations from the subjective estimates in these countries. One possible cause could stem from the fact that based on the European Social Survey the length of formal education is only 7.4 years in Portugal, which is the minimal value for the indicator in the sample and lagging significantly below the average (12

years). Hence, the respondents of the survey have probably perceived problems with the availability of education.

5. Social capital aspect of welfare

Social capital indicators have not been used frequently in previous studies analyzing welfare. At the same time it has been recognized as an essential aspect for every human being affecting people's feelings and their assessment of their position in the society. As an objective measure of social capital, governance indicators have been used in this study. Governance indicators measure six dimensions of governance (Kaufmann *et al.* 2007): 1) Voice and Accountability (VA) measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; 2) Political Stability and Absence of Violence (PS) measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism; 3) Government Effectiveness (GoE) measures the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; 4) Regulatory Quality (RQ) measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; 5) Rule of law (RL) measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence; 6) Control of Corruption (CC) measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The above mentioned aggregate governance indicators are based on hundreds of specific and disaggregated initial variables measuring different dimensions of governance, taken from 33 data sources provided by 30 different organizations. (Kaufmann *et al.* 2007)

The governance indicators describe the efficiency of governing institutions and the opportunities for citizens to participate in the society through the social networks. Hence, these indicators can be interpreted as objective estimates for social capital at the society level. We used the component scores computed according to the World Bank methodology and found a generalized indicator for governance for each country in the sample. As all six dimensions of governance are strongly related it is quite logical that the generalized indicator describes 92.4% of the variation of initial indicators. Component loads remained between 0.89 and 0.98.

Generally acknowledged subjective indicators for social capital are the various estimates of trust. Therefore, in our study we created the generalized indicator of trust based on the trust evaluations towards other people, government, legal system, police, politicians and political parties. The generalized indicator of trust describes 92.1% of the variation of initial indicators, component loads remained between 0.93

and 0.98. The correlation coefficient between objective and subjective measure of social capital was 0.85. The positions of countries according to these two estimates are presented in Figure 4.

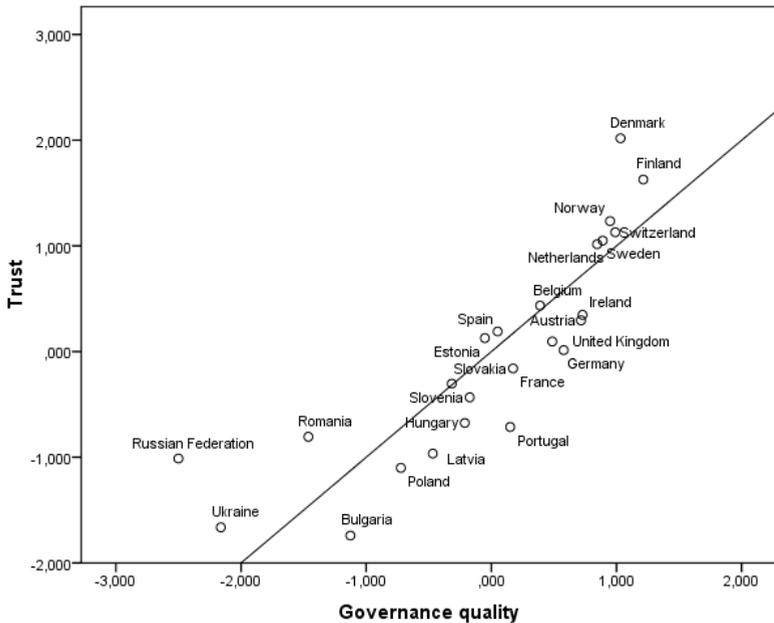


Figure 4. Relationship between indicators of governance quality and trust in observed countries.

The general picture is known from previous analysis: Denmark and Finland are positively emerging countries, and those lagging behind include Russia, Ukraine, Romania and Bulgaria. Besides that we can notice that in countries where both indicators are below the average, governance indicator varies more and in other countries indicator of trust is more diversified. Estonia is closer to the average than on previous figures and unlike in former cases, the indicator of trust is even slightly above the average here.

6. Emotional aspect of welfare

One of the factors enhancing the perception about welfare is the absence of social exclusion as expressed by Woolley (1998) or in other words social cohesion. Absence of social exclusion promotes the formation of social capital and enables to accumulate and use human capital. Objective measures for estimating the absence of social exclusion are rather complicated to discover. Commonly, poverty and long-term unemployment are considered to be indicators that at least indirectly express social exclusion. Regrettably, neither data about poverty nor long-term

unemployment indicators were available for all countries in our sample. Therefore we have chosen three proxy estimates for measuring the emotional aspect of welfare in objective terms. These indicators were ratio of unemployment in the labor force (an indirect measure for human capital use), the probability that a newborn's life expectancy remains below 60 years (an indirect measure for human capital creation) and judgment about the state's task to decrease income inequality (indirect measure for prevailing unfairness). Undoubtedly one could argue against the above mentioned choice of indicators, but the choice was made under the circumstances of limited data and the best of possible data set has been taken. The generalized indicator for estimating the emotional aspect of welfare objectively described merely 70% of the variation of initial indicators, whereas component loads remained between 0.76 and 0.88. Hereinafter we will use the component scores for social exclusion with the opposite sign as the social cohesion indicator.

In order to estimate the emotional aspect of welfare in subjective terms we integrated two indicators: individuals' satisfaction with life as a whole and their feeling of happiness. Insofar as the two indicators were strongly correlated with each other the generalized indicator described 98.8% of the variation of initial indicators and both component loads were 0.99. The following Figure 5 shows how the countries in our sample were distributed according to the subjective aspect of welfare.

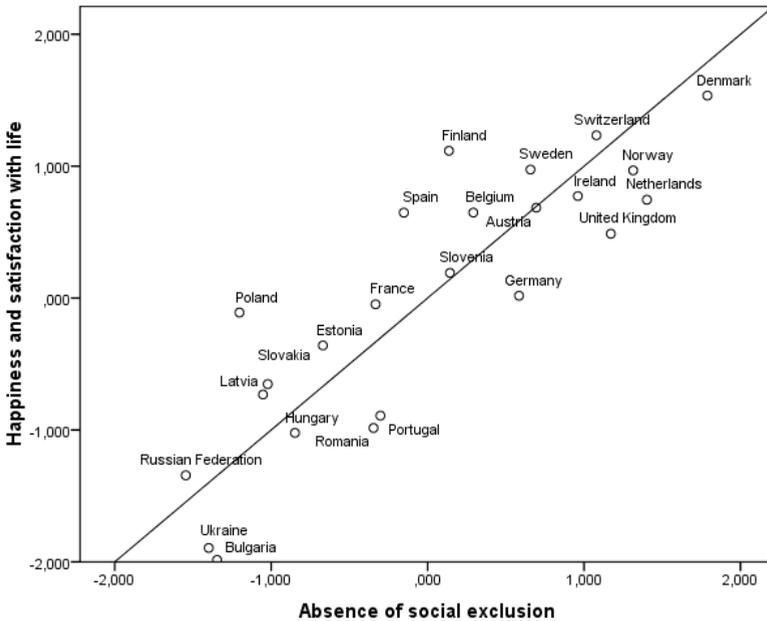


Figure 5. Relationship between absence of social exclusion and happiness and satisfaction with life.

The correlation coefficient between the objective and subjective measure of the emotional aspect of welfare was 0.86. Whereas the constructed generalized indicator for social cohesion was not perfect by its' content, the obtained result is relatively sound. Portugal that also in earlier figures emerged due to its' inferior positions, again shows the lower than average level in terms of both objective and subjective measures. One can notice relatively essential difference between objective and subjective measures, especially among the countries that lag behind. It would be intriguing to repeat the analysis based on the more relevant measures for social exclusion such as poverty and long-term unemployment rate.

7. Generalized objective and subjective welfare indicators

In the final stage of empirical analysis we will construct the generalized objective and subjective welfare indicators based on the estimates describing various aspects of welfare and created in previous sections of the paper. According to the theoretical framework the analysis was rest on, the first could be regarded as objective level of living and the second as the subjective well-being. By means of integrating all four objective measures of welfare (generalized indicators of wealth, human capital, governance and social cohesion) we obtained the final objective measure of welfare which described 89.1% of the variation of the mentioned generalized indicators. Component loads were between 0.93 (absence of social exclusion) and 0.97 (wealth). In order to obtain the generalized measure for estimating the subjective well-being, the indicators of different subjective aspects of welfare (satisfaction with level of living, satisfaction with education and health, trust and happiness and satisfaction with life) have been integrated into one final measure. The created indicator described 95.4% of the variation in these indicators. Component loads were in range of 0.96 (trust) and 0.99 (happiness and satisfaction with life). The correlation coefficient between the objective level of living and the subjective well-being estimates was 0.92. Figure 6 shows how the observed countries are positioned according to the generalized objective and subjective measures of welfare.

It appears from the Figure that the objective level of living is the highest in Norway and the lowest in Russia. While measured in subjective terms the situation is the best in Denmark and the worst in Ukraine. In countries that are located on the line or close to it, the objective and subjective estimates (almost) coincide. At the same time there are several countries where the measures of the objective level of living and the subjective well-being vary considerably. Countries which are located above the line of the Figure 6 show the higher subjective evaluation about the well-being than is reflected by the objective measures. In case of other countries the result is opposite, i.e. the subjective evaluation given by a country's residents is undervalued considering the objective situation in the given country. Based on these outcomes we have analyzed the differences between objective and subjective measures in observed countries.

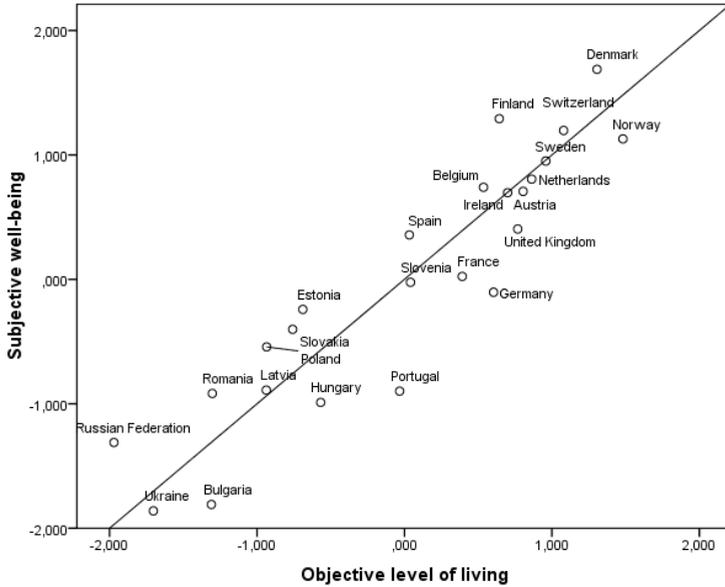


Figure 6. Objective level of living and subjective well-being in observed countries.

In the following Figure 7 countries have been ranked according to the difference between the subjective well-being compared to objective level of living.

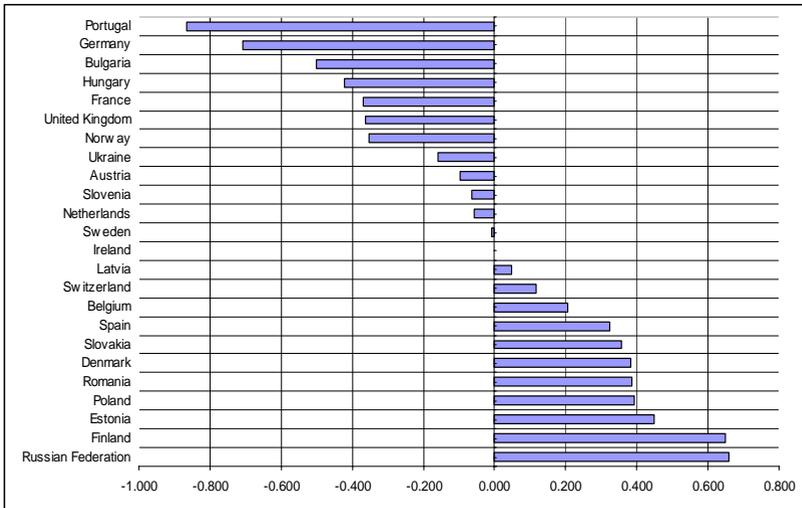


Figure 7. Differences in subjective and objective estimates of welfare in observed countries (measured in standard deviations).

In the light of Figure 7 it appears that results are rather intriguing, but sporadically quite difficult to interpret. It is not surprising to find Finland among the top of countries where subjective evaluations considerably exceed the objective ones as the objective level of life is relatively high and thus also the subjective attitude about the country and society should be positive. Estonia's high ranking is presumably influenced by the fast economic growth during the last couple of years and by the fact that the perceived well-being has considerably improved compared to the past. The European Social Survey has been conducted in 2006 when many people could have believed into the slogan "Let us bring Estonia amongst the five richest economies in Europe within five years". Subjective evaluations today would probably be much more reserved.

The greatest overvaluation of subjective well-being with respect to objective indicators exists in Russia. What could be the reason for that? Both propaganda and the custom to tolerate poor life conditions could be possible answers here. Nevertheless, the result is rather astonishing because in Ukraine, which has a similar historical and cultural background, the indicators are much closer to each other. Another interesting pair of countries is Bulgaria and Romania, where the situation is overvalued in Romania by a similar amount as it is undervalued in Bulgaria. The greatest dissatisfaction is expressed in Germany and Portugal. And why are people relatively satisfied with their life in Slovakia, but not so much in Slovenia, although Slovenia lies among the countries with the highest level of well-being? Apparently, we cannot answer these questions based only on the indicators included in the analysis, but more complicated cultural and social factors must be taken into consideration. The fact that satisfaction is always based on expectations must be taken into account. It can be said that in the highly developed countries with lower levels of satisfaction, such as Germany, France and England, expectations are greater for historical or cultural reasons.

Discussion and conclusions

In this paper we used the quality of life approach in order to evaluate the objective and subjective aspects of welfare. Theoretically, a person's quality of life is determined by two factors: objective level of living and subjective perception about well-being. Hypothetically, the objective and subjective assessments should be equal or if this is not the case, some policy measures could be applied to equalize them.

Based on the theoretical considerations we created a framework for analyzing objective and subjective determinants of welfare and their mutual relationships. According to the used framework we differentiated four aspects of welfare and found both objective and subjective indicators for measuring all these aspects. Economic aspect of welfare supposes the analysis of economic wealth, income distribution and inequality from the objective side and satisfaction with the individual wealth and income from the subjective side. Human capital aspect of welfare indicates the state of health and education and access to them from the objective point of view and satisfaction with the latter expressed as a subjective assessment. Social capital aspect of welfare indicates to the social conditions by

which individuals are enclosed and influenced. Thus, objectively we could investigate this by governance quality and subjectively by trust towards other people and institutions. Besides the mentioned aspects there is also the emotional aspect of welfare as happiness has been considered one of the essential reflections of welfare. It was a challenge for the authors to find indicators that would measure the emotional aspect of welfare in objective terms, but we have used some proxy variables to measure the absence of social exclusion. As measures for subjective perception of welfare, happiness and satisfaction with life assessments have been employed.

As far as the economic aspect of welfare is concerned, our results indicate that there is a strong relationship between economic wealth and satisfaction with level of living in observed European countries. Thus there is a relatively clear consistency in objective level of living and subjective perception about well-being. Nevertheless, some interesting deviations can be observed where countries which stay in the similar position in objective terms differ considerably regarding subjective assessments (for instance, Romania and Bulgaria, Estonia and Latvia, Denmark and Netherlands). Here the differences could probably be explained by culture, social norms, future expectations of the people etc. Regarding income distribution and satisfaction with level of living, the observed countries differ considerably in terms of the differences in objective and subjective assessments. These findings indicate a clear role for absolute income (wealth) and more limited role for income distribution in determining happiness. This is in line with the work of Stevenson and Wolfers (2008) who found in their comprehensive cross-country study that absolute levels of income were important in shaping happiness while there was a lesser role for relative income comparisons than was previously thought.

In case of the human capital aspect of welfare, the differences between objective and subjective estimates for the observed countries turned out to be relatively big. Although there were 14 countries out of 24 where the satisfaction with education and health and subjective health assessment have exceeded the objective level of education and health, on the average the subjective overvaluation in these countries was much lower than the subjective undervaluation in case of remaining ten countries.

Regarding the social capital aspect of welfare, our results show that generally the objective and subjective estimates are quite strongly correlated. The biggest deviation from the equilibrium point (where objective and subjective assessments are equal) implies for Russia where trust towards institutions and other people is considerably higher than the actually low governance quality would presume. Surprisingly, Ukraine and Romania are in the similar situation. At the other end of the line are Denmark and Finland whose overvalued assessments on trust can be better understood as in these countries also the governance quality is the highest in the sample.

Despite the use of indirect proxy variables to investigate the emotional aspect of welfare we obtained much better results than anticipated. There was a strong

relationship between objective and subjective indicators, although also some essential deviations from the equilibrium point could be seen. Nevertheless, there are slightly more countries overvaluing their happiness and satisfaction with life compared to the indicator reflecting the absence of social exclusion.

As an important result of our analysis it was possible to compose the generalized indicators of objective level of living and subjective well-being based on various aspects of welfare and the corresponding objective and subjective indicators reflecting them. The comparison of these final indicators brought us to the conclusion that as a general tendency, in countries with objectively lower positions the subjective assessments on welfare tend to be higher. Although an ideal situation could be imagined where objective and subjective assessments were equal, our results indicated deviations from the equilibrium to both directions. Approximately half of the countries showed overvaluation of subjective assessments and the other half reflected the opposite result. Subjective assessments were the most undervalued in case of Portugal and Germany, while the highest overvaluation existed in countries such as Russian Federation and Finland. At the same time, roughly in one third of the countries objective and subjective estimates on welfare varied only marginally.

An essential conclusion of the study affirms that the available resources and capabilities which reflect the objective side of welfare should be exploited by people in the best possible way in order to guarantee the high perception of subjective well-being. Employment of the available resources and capabilities in the society depends on several factors, but some of them such as individual characteristics or cultural background are quite complicated to change. However, while determining policy goals the better access to information and direction of social norms should be taken as an important task to facilitate better usage of resources and capabilities.

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Appendix 1. Indicators of welfare

Generalized indicator	Initial indicator	Source
Economic wealth	GDP per capita PPP US\$	HDR 2007/2008
	GNP per capita PPP current international \$	WDI
Income distribution	Gini index	HDR 2007/2008
	Share of income: richest 10% to poorest 10%	
	Share of income: richest 20% to poorest 20%	
Satisfaction with the level of living	How satisfied with present state of economy in country (average on scale 0-10)	ESS 3 2006
	Satisfied with standard of living (average on scale 0-10)	
	Feeling about household's income nowadays (average on scale 1-4)	
Health and education	Life expectancy at birth (years)	HDR 2007/2008
	Public expenditure on health (% of GDP)	
	Public expenditure on education (% of GDP)	
Satisfaction with education and health	State of education in country nowadays (average on scale 0-10)	ESS 3 2006
	State of health services in country nowadays (average on scale 0-10)	
	Subjective general health (average on scale 1-5)	
Governance quality	Voice and accountability (average 0)	Kaufmann <i>et al.</i> 2007
	Political stability and absence of violence (average 0)	
	Government effectiveness (average 0)	
	Regulatory quality (average 0)	
	Rule of law (average 0)	
Trust	Most people can be trusted or you can't be too careful (average on scale 0-10)	ESS 3 2006
	Trust in country's parliament (average on scale 0-10)	
	Trust in the legal system (average on scale 0-10)	
	Trust in the police (average on scale 0-10)	
	Trust in politicians (average on scale 0-10)	
	Trust in political parties (average on scale 0-10)	
State of social exclusion	Unemployment rate (% of labor force)	HDR 2007/2008
	Probability at birth of not surviving to age 60+ (% of cohort 2000-2005)	
	Government should reduce differences in income levels (average on scale 1-5)	ESS 3 2006
Happiness and satisfaction with life	How satisfied with life as a whole (average on scale 0-10)	ESS 3 2006
	How happy are you (average on scale 0-10)	

Appendix 2. Generalized indicators of welfare in observed countries

Country	Economic wealth	Income distribution	Satisfaction with level of living	Education and health	Satisfaction with education and health	Governance quality	Trust	Absence of social exclusion	Happiness, satisfaction with life	Objective level of living	Subjective well-being
Austria	0.848	0.589	0.775	0.778	0.948	0.716	0.295	0.694	0.685	0.805	0.707
Belgium	0.695	-0.003	0.539	0.641	1.214	0.389	0.435	0.292	0.648	0.536	0.740
Bulgaria	-1.403	0.569	-1.924	-1.066	-1.450	-1.126	-1.741	-1.346	-1.985	-1.309	-1.809
Denmark	0.870	0.789	1.580	1.261	1.412	1.032	2.018	1.788	1.535	1.306	1.688
Estonia	-0.814	-0.953	-0.159	-1.071	-0.591	-0.052	0.127	-0.669	-0.359	-0.689	-0.242
Finland	0.634	1.083	0.815	0.433	1.443	1.214	1.628	0.136	1.117	0.643	1.291
France	0.562	-0.287	-0.008	1.070	0.257	0.173	-0.160	-0.333	-0.047	0.392	0.024
Germany	0.505	0.676	0.044	0.615	-0.526	0.578	0.013	0.584	0.017	0.604	-0.104
Hungary	-0.690	1.095	-0.977	-0.397	-1.226	-0.212	-0.675	-0.848	-1.022	-0.569	-0.989
Ireland	1.013	-0.444	0.869	-0.074	0.672	0.729	0.347	0.960	0.773	0.699	0.697
Latvia	-1.026	-1.305	-1.083	-0.996	-0.740	-0.468	-0.966	-1.052	-0.732	-0.938	-0.890
Netherlands	0.848	-0.030	0.847	0.163	0.492	0.846	1.015	1.402	0.745	0.863	0.806
Norway	1.830	1.073	1.215	1.493	0.941	0.949	1.234	1.314	0.968	1.482	1.129
Poland	-1.014	-0.382	-0.448	-0.590	-0.520	-0.723	-1.101	-1.203	-0.110	-0.935	-0.543
Portugal	-0.419	-2.127	-0.760	0.457	-1.184	0.150	-0.714	-0.302	-0.892	-0.033	-0.898
Romania	-1.416	0.235	-0.989	-1.683	-0.842	-1.463	-0.807	-0.346	-0.985	-1.303	-0.917
Russian Federation	-1.221	-1.827	-1.410	-2.190	-1.389	-2.501	-1.012	-1.546	-1.344	-1.971	-1.311
Slovakia	-0.820	0.969	-0.367	-0.709	-0.287	-0.316	-0.304	-1.022	-0.652	-0.758	-0.402
Slovenia	-0.204	0.906	0.290	0.402	-0.199	-0.173	-0.434	0.143	0.191	0.041	-0.024
Spain	0.231	-0.698	0.409	-0.014	0.093	0.050	0.190	-0.152	0.648	0.033	0.357
Sweden	0.712	1.092	0.993	1.368	0.646	0.890	1.050	0.658	0.974	0.959	0.951
Switzerland	1.208	-0.321	1.085	0.792	1.171	0.991	1.129	1.079	1.234	1.079	1.196
Ukraine	-1.679	0.873	-1.885	-1.180	-1.860	-2.161	-1.663	-1.400	-1.895	-1.703	-1.861
United Kingdom	0.751	-1.570	0.546	0.497	0.395	0.487	0.095	1.171	0.488	0.768	0.404

SECTORAL STRUCTURE AND GDP: IS THERE A REMARKABLE RELATIONSHIP IN THE CASE OF THE ESTONIAN COUNTIES

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Abstract

The paper aims to offer some empirical insights into regional disparities in sectoral structure and GDP per capita in the case of the Estonian counties. In order to elaborate on the aggregated indicators of the Estonian counties' sectoral structure and to explore the relations between sectoral structure and GDP per capita as a proxy of economic wealth, the method of principal component in combination with regression analysis is applied. The results of empirical analysis confirm the validity of the hypothesis that regional disparities in GDP per capita are remarkably affected by the sectoral structure of the counties' economy. Additionally to sectoral structure, the location of a county, measured by the distance between the capital city and counties' centre, has a significant impact on GDP per capita. There is a core-periphery structure with high income levels in the capital region (Harjumaa) and low income levels in peripheral regions. The divergence in regional GDP levels may indicate the concentration of production inputs and development of sectoral structure in regions, where economies are functioning more efficiently.

Keywords: sectoral structure, economic wealth, regional disparities

1. Introduction

The issue of regional disparities and convergence has been the subject of a large body of empirical research since 1990s (e.g., Barro and Sala-i-Martin 1995; Armstrong 1995; Tondl 2001; Cuadrado Roura 2001; Baumont *et al.* 2003; Arbia and Piras 2005; Meliciani and Peracchi 2006; Anagnostou *et al.* 2008; Paas and Schlitte 2008). Despite the great interest in this matter, information on regional convergence in the enlarged EU is still relatively scarce and the role of sectoral structure in convergence processes has been largely ignored. However, considering the objective of enhancing economic and social cohesion, this constitutes a challenging task in the context of developing proper regional policy measures helping to alleviate poverty and to improve efficiency of an economy. Information on disparities and factors that may have impact on regional economic development is therefore of utmost importance for regional policy. Sectoral structure of an economy, which can be analysed on the basis of a wide range of indicators (employment, added value, GDP, etc.) and at different levels and structure of economic sectors, is playing a significant role in the economic performance and regional development of a country; its improvement is vital for enhancing both economic efficiency and wealth.

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The relationship between sectoral structure and economic development of a country has received considerable attention in recent decades (see Gemmill 1987). According to the three-sector hypothesis, which was first introduced by Fisher (1935) and Clark (1940), a gradual shift in employment and value added from the primary to the tertiary sector is inherent in the process of economic development. Hence, structural change could be characterized as a demand phenomenon: with increasing income levels, the demand for inferior goods will unavoidably decrease, while the demand for superior services will continue to grow (Breitenfellner & Hildebrandt 2006). Also regional aspects of structural change have gained remarkable attention in recent economic literature (e.g. Cunado, J., Sanches-Robles, B. 2000; Arcelus, F. J., Dovan, P. 2003; Marelli, E. 2004; Osterhaven, J., Broersma, C. 2007)

This paper aims to empirically investigate the relationship between sectoral structure and GDP per capita as a proxy of economic wealth in the Estonian counties focusing on the regional aspects and their peculiarities in the case of small economy with the post-socialist path-dependence. Estonia as the new member state belongs to the periphery of the EU having had one of the highest growth rates in the EU during the recent years till the year 2007. Examining GDP per capita in the counties of Estonia shows significant regional disparities (see also Lill and Paas 2008). Empirical analysis of our paper bases on the regional data of the Statistics Estonia which are examined using the combination of several statistical methods in order to elaborate on the aggregated indicators (latent variables) of the Estonian counties' sectoral structure and explore the relationship between the aggregated indicators of sectoral structure and GDP per capita. The data used for the analysis describe the sectoral structure of the 15 counties during the years 1996-2006. Three main economic sectors are taken into account for examining sectoral structure: primary, secondary and tertiary sectors.

The paper consists of five sections. In the next section, we introduce the framework for the analysis of sectoral structure including conceptualization and measurement of the observable phenomena and short data description. Section 3 introduces the procedure of finding aggregate indicators for analysis by means of the method of principal components, and presents the results of elaborating and analysing the aggregated indicators that describe sectoral structure of the Estonian counties. The results of examining the relationship between the aggregated indicators of sectoral structure and GDP per capita are presented in section 4. Section 5 concludes.

2. A framework for the analysis of sectoral structure: data and methodology

The general trends in sectoral evolution are summarized by the so-called "three-sector hypothesis" associated historically with Fisher (1935) and Clark (1940) works. "The three sector hypothesis" describes the long-run evolution of economies from agricultural to industrial and then to service-based economic structure defined as the process of tertiarization (see also Bachman and Burda 2008). These developments are associated with the changes in shares of sectors by creating value added as well as in movement of labour between sectors that induce new challenges

for development of human capital and educational system. Some of structural change has a short run nature reflecting temporary shifts of technological and innovative development, while others are more or less permanent having also different impact economic growth and GDP per capita across countries and their regions.

Nowadays the service sector is the most important sector in industrialized economies. According to the ILO data, the service sector's share of total employment in the European Union and other developed economies has grown from 66.1% in 1995 to 71.4% in 2005; the industry sector shrunk from 28.7% to 24.9% at the same time (ILO 2006). The sectoral shifts in employment and also in GVA structure describe the widening process of tertiarization of national as well as international economies and this tendency is also valid in the EU countries and their regions. The industrialized countries of the EU have already entered the stage of post-industrialised service economies which also generates certain effects of sectoral structure on the aggregated productivity of an economy. The new member states of the EU mainly passed the process of industrialisation and also entering into the post-industrialization stage. The economies with different sectoral structures have essentially different opportunities of growth.

The sectoral structure of an economy can be analysed on the basis of a wide range of indicators (employment, added value, GDP, etc.) and at different levels and structure of economic sectors. Table 1 presents the 3-level classification system of economic sectors which is used in the Eurostat database of sectoral data.

Table 1. Classification of the main economic sectors

Economic sectors	Classification code in the Eurostat database
Agriculture, hunting, forestry, fishing	A, B
Manufacturing, construction,	C, D, E, F
Wholesale and retail trade; repair of motor vehicles and household appliances, hotels and restaurants, transport, warehousing, communication, financial mediation, real estate, renting and business activities, public administration and civil defence; compulsory social insurance, education, health care and social welfare, etc.	G, H, I, J, K, L, M, N, O

Source: Eurostat.

The empirical analysis of a sectoral structure of the counties of Estonia bases on the different indicators focusing on the role of three main economic sectors in employment and in creating GDP and value added (table 2). The data for the analysis are derived from the regional data base of the Statistics Estonia of the years 1997-2006, the period that describes the post-socialist transition and EU assessment processes. As we see from the table 2, according to the different indicators describing sectoral structure there are significant regional disparities between the 15 counties.

Table 2. The variability of the share of the main economic sectors in the counties of Estonia, 1997-2006 average (%)

		Minimum	Maximum	Average
Primary sector	The share in GDP	0.7	23.0	10.0
	The share in employment	1.1	32.0	13.1
	The share in added value	0.8	25.0	11.3
Secondary sector	The share in GDP	14.4	45.3	27.1
	The share in employment	19.1	53.9	33.2
	The share in added value	16.2	51.5	30.5
Tertiary sector	The share in GDP	40.5	68.3	51.3
	The share in employment	41.3	70.8	53.4
	The share in added value	46.4	76.0	57.9

Source: Authors' calculations based on the data of Statistics Estonia.

Sectoral structure of an economy is a complicated phenomenon, the different sides of which could be characterized by a number of different indicators. Use of several individual indicators would make the analysis complicated and incomprehensive, whereby in the present study we first attempt to generalize the initial indicators to some aggregated variables which will be applied in further analysis. For the generalization procedure there are several methods available; in our study the method of principal components (confirmative factor analysis) has been chosen. This method suits well for integrating correlating individual indicators as that is case in our data. Thus, by using method of principal components the aggregated indicators characterising the economic structures of the Estonian counties are elaborated and presented in the next part of the paper. In order to examine the relationship between the aggregated indicators of sectoral structure and GDP per capita as a proxy of a county's wealth several regression models are estimated. Additionally to the aggregated indicators of a sectoral structure also the distance between the capital city and counties' centre a proxy of the county's location is used as an independent variable of the regression model.

3. Aggregated indicators of the Estonian counties' sectoral structure

We estimate a factor model based on the cross-section data of the separate years of the period under observation, two sub-periods (1996-2000 and 2001-2006) and on the pooled data of the whole period 1996-2006. The results are robust. Statistical criteria (KMO – Kaiser-Meyer-Olkin criteria; MSA – measure of sampling adequacy) confirm that the extraction results are statistically correct.

Table 3 presents the main results of implementation of the method of principal components (confirmative factor analysis) for elaborating the aggregated indicators of sectoral structure of the Estonian counties during the whole period under observation. The results of KMO test imply the technical appropriateness of the initial indicators for aggregation of by the method of principal component in the

cases of all three sectors (primary, secondary and tertiary). Due to the fact that there is a high correlation between all three initial indicators of sectoral structure (the shares in employment, added value and GDP), there is no sense to use them separately. Therefore, aggregated indicator will be applied in the further analysis.

Table 3. Extraction of the aggregated indicators of three economic sectors based on the data of the Estonian counties, 1997-2006

	Primary sector		Secondary sector		Tertiary sector	
	Loads ²	Extraction ³	Loads	Extraction	Loads	Extraction
KMO ⁴	0.7		0.7		0.7	
Share in GDP	0.981	0.963	0.980	0.960	0.975	0.951
Share in employment	0.916	0.839	0.905	0.818	0.870	0.756
Share in added value	0.983	0.965	0.981	0.962	0.974	0.949
% of Variance ⁵	92.2		91.3		88.6	

Source: Authors' calculations based on the data of Statistics Estonia.

Component scores⁶ and their changes during the period under observation have been brought out in table 5.

The share of primary sector has declined more rapidly in the counties with the comparatively low share of secondary sector. The beginning of the period under observation can be considered as the period of industrialisation: the share of primary sector declined and secondary sector increased. The increase of tertiary sector has mainly been instead of decline of both primary and secondary sector characterising the first steps of tertiarization.

² Correlation coefficient between initial and aggregate indicator

³ Information in the aggregate indicator reflected by the initial indicator

⁴ Kaiser-Meyer-Olkin Measure of Sampling Adequacy (>0,7 middling, >0,8 meritorius)

⁵ Total variance explained

⁶ Mean equals zero. Component scores show the difference from mean in positive or negative direction in standard deviation

Table 5. Aggregated indicators of the Estonian counties' sectoral structure (factor scores), 1997-2006

	Average factor scores			Changes in factor scores, 1997-2006		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Harjumaa	-1.692	-0.743	2.388	-0.129	-0.402	0.535
Hiiumaa	1.245	-1.117	-0.055	-1.355	1.314	-0.041
Ida-Virumaa	-1.480	2.661	-1.194	-0.434	-0.433	0.802
Jõgevamaa	1.786	-1.472	-0.238	-1.009	1.199	-0.088
Järvamaa	1.092	0.181	-1.220	-1.151	1.282	-0.142
Läänemaa	-0.355	-0.083	0.445	-0.806	0.928	-0.098
Lääne-Virumaa	0.766	0.830	-0.951	-0.640	0.567	0.101
Põlvamaa	0.707	-0.526	-0.151	-0.064	0.467	-0.274
Pärnumaa	-0.230	0.435	-0.205	-1.096	0.195	0.961
Raplamaa	0.374	0.089	-0.463	-0.855	0.908	-0.068
Saaremaa	-0.241	-0.184	0.441	-0.632	0.569	0.104
Tartumaa	-1.156	-0.580	1.710	-0.330	0.601	-0.227
Valgamaa	-0.136	0.104	0.046	-0.656	1.124	-0.373
Viljandimaa	0.505	0.086	-0.630	-0.405	1.242	-0.791
Võrumaa	-0.235	0.186	0.069	-0.165	0.442	-0.199

Source: Authors' calculations based on the data of Statistics Estonia.

Figures 1-3 give an overview of how the comparative position of the counties in the sectoral structure has been changed during the years 1997-2006.

Analysing the aggregated indicators of the primary sector it is possible to divide counties into three groups: 1) counties with the high share of this sector; this share remained comparatively high also at the end of the period under observation (Jõgevamaa, Põlvamaa, Hiiumaa, Viljandimaa and Järvamaa); 2) counties with the comparatively low share of the primary sector and/or this share did not changed remarkably (Harjumaa, Ida-Virumaa, Tartumaa, Läänemaa, Saaremaa and Võrumaa); 3) the counties which had a high share of primary sector; this share has significantly declined during the period under observation (Pärnumaa, Valgamaa, Lääne-Virumaa and Raplamaa) (see figure 1).

The changes in the secondary sector have been the most rapid and also heterogenous (see figure 2 and table 5). Again, we can distinguish between the three groups of counties: 1) counties where the share of the secondary sector has been above average over the whole period under observation (Ida-Virumaa, Lääne-Virumaa, Võrumaa and Pärnumaa); 2) counties where the share of the secondary sector has been below average over the whole period (Jõgevamaa, Hiiumaa, Tartumaa, Põlvamaa and Harjumaa); 3) the share of the secondary sector has increased significantly (Valgamaa, Saaremaa, Viljandimaa, Raplamaa, Läänemaa and Järvamaa).

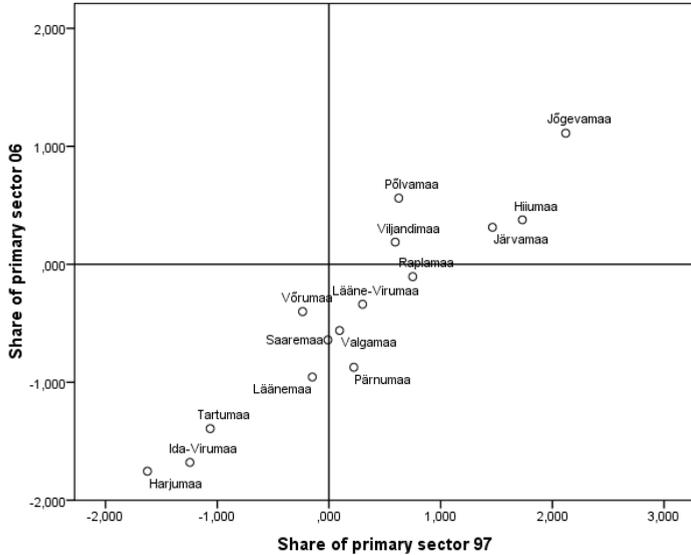


Figure 1. Aggregated indicators of primary sector. (Authors' calculations based on the data of Statistics Estonia)

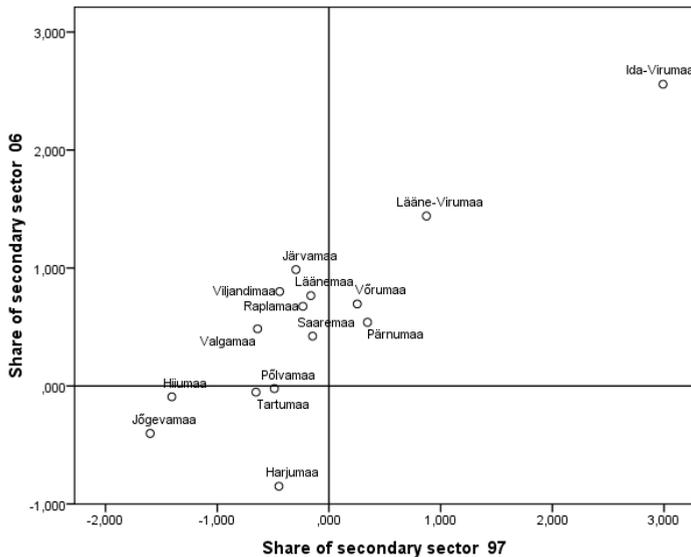


Figure 2. Aggregated indicators of secondary sector. (Authors' calculations based on the data of Statistics Estonia)

According to the aggregated indicators of the tertiary sector (see figure 3) it is possible to divide counties into two groups: the counties where the share of this sector is above (e.g. Harjumaa, Tartumaa, Pärnumaa) and below the average (e.g. Järvamaa, Lääne-Virumaa).

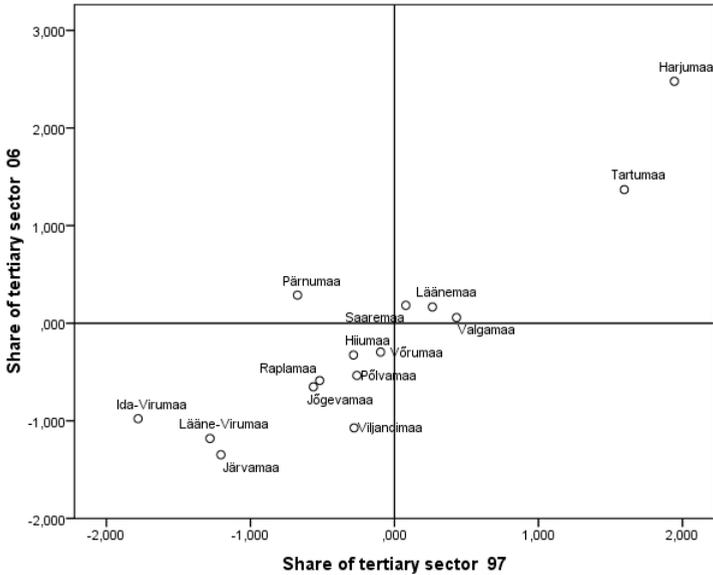


Figure 3. Aggregated indicators of tertiary sector. (Authors’ calculations based on the data of Statistics Estonia)

In table 6 we present correlation coefficients between the aggregated indicators of sectoral structure and GDP per capita as the proxy of regional economic wealth in the counties of Estonia during the different time periods. As expected, there is a negative correlation between GDP per capita and the aggregated indicators of primary sector and positive correlation between GDP per capita and the aggregated indicators of tertiary sector. The correlation between GDP per capita and the aggregated indicators of secondary sector is not statistically significant. The dynamics of this relationship seems to be more stable during the recent period, the years 2001-2006. Therefore in the next part of our paper we estimate the regression models based on the pooled data of this period.

Table 7 presents the main results of extraction procedure for getting aggregated indicators of sectoral structure of the Estonian counties based on the data of years 2001-2006. The results are similar with the those presented in the table 4 indicating their robustness.

Table 6. Correlation coefficients between the aggregated indicators of sectoral structure and GDP per capita in the counties of Estonia, 1997-2006

Period	Primary sector	Secondary sector	Tertiary sector
1996-2006	-0.445**	0.025	0.455**
1996-2000	-0.327**	-0.058	0.522**
2001-2006	-0.570**	0.102	0.588**
1996	-0.668*	0.133	0.502
1997	-0.484	0.007	0.505
1998	-0.264	0.076	0.585*
1999	-0.438	-0.132	0.590*
2000	-0.532*	0.081	0.620*
2001	-0.567*	-0.089	0.625*
2002	-0.534*	0.242	0.722**
2003	-0.579*	0.239	0.681**
2004	-0.587*	0.176	0.667**
2005	-0.635*	0.189	0.767**
2006	-0.617*	-0.430	0.824**

* significance level 0.05; ** significance level 0.01

Source: Authors' calculations based on the data of Statistics Estonia.

Table 7. Extraction of the aggregated indicators of three economic sectors based on the data of the Estonian counties, 2001-2006

	Primary sector		Secondary sector		Tertiary sector	
	Loads	Extraction	Loads	Extraction	Loads	Extraction
KMO	0.707		0.658		0.674	
Share in GDP	0.983	0.966	0.976	0.952	0.974	0.949
Share in employment	0.925	0.855	0.878	0.772	0.863	0.744
Share in value added	0.984	0.968	0.977	0.955	0.974	0.949
% of Variance	93.0		89.3		88.1	

Source: Authors' calculations based on the data of Statistics Estonia.

Taking into account that aggregated indicators of sectoral structure are robust and statistically correct we implement these indicators for testing the hypothesis that regional variability of economic wealth (GDP per capita) is explained by the sectoral structure of the Estonian counties' economies.

4. The relationship between sectoral structure and GDP per capita

In order to examine the relationship between the sectoral structure and GDP per capita of the Estonian counties we estimate regression models based on the Estonian Statistics regional GDP data and the aggregated indicators (factor scores) of factors

of sectoral structure. The basic regression equation for exploring the relationship between the indicators of GDP per capita and sectoral structure is as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4i} + \beta_5 D_{jit} + \dots + \beta_9 D_{5it} + u_{it} \quad (1),$$

Where

Y_{it} – GDP per capita in the county i at time t ;

X_{1it} – explanatory variable, aggregated indicator of primary sector of the county i at time t (factor scores);

X_{2it} – explanatory variable, aggregated indicator of secondary sector of the county i at time t (factor scores);

X_{3it} – explanatory variable, aggregated indicator of tertiary sector of the county i at time t (factor scores);

X_{4i} – explanatory variable, distance between capital city Tallinn and the counties centres (km; time invariant variable)

D_{jit} – dummy variables of years (reference year is 2006);

β_0 – intercept;

β_j – parameters of the explanatory variables;

$i = 1, 2, \dots, 15$; $t = 1, 2, \dots, 6$

Taking into account that aggregated indicators of the secondary sector do not have significant correlation with dependent variable GDP per capita and in order to avoid possible problems of multicollinearity explanatory variable X_{2it} is not included into final regression models (see also see table 8).

Table 8. Correlation coefficients between the aggregated indicators of sectoral structure and GDP per capita in the counties of Estonia, 2001-2006

	GDP per capita	Primary sector	Secondary sector	Tertiary sector
GDP per capita		-0.570**	-0.102	0.588**
Primary sector	-0.570**		-0.416**	-0.495**
Secondary sector	-0.102	-0.416**		-0.583**
Tertiary sector	0.588**	-0.495**	-0.583**	

** significance level 0.01

Source: Authors' calculations based on the data of Statistics Estonia.

The estimated regression models are presented in the tables 9 (model 1) and 10 (model 2). Table 10 presents estimators of the regression model that describe the relationship between GDP per capita and sectoral structure taking into account also the location of the counties (distance between the capital city and counties' centre). The estimated regression models describe approximately 64% (model 1) and 80% (model 2) of regional variability of GDP per capita.

The estimators show that the aggregated indicators both of primary and tertiary sectors are related to the GDP per capita as a proxy of economic wealth. The signs of the parameters are as expected: in the case of primary sector negative and tertiary sector positive. The estimation results also confirmed the validity of the hypothesis that location of the counties has a statistically significant impact on the regional variability of GDP per capita. The sign of the respective parameter is as expected negative indicating that there is a core-periphery structure with high income levels in the capital region, Harju county, and low income levels in peripheral regions. Divergence in regional GDP levels may indicate to the concentration of production inputs and development of sectoral structure in regions, where economies are functioning more efficiently.

Table 9. Empirical results: estimators of the model 1

Variables	Estimators		t	Significance
	Coefficients	Standard error		
Intercept	100825.861	5284.054	19.081	.000
Primary sector	-7866.794	2528.880	-3.111	.003
Tertiary sector	15892.736	2496.843	6.365	.000
2001	-42313.331	7542.407	-5.610	.000
2002	-36318.361	7478.053	-4.857	.000
2003	-31145.851	7425.534	-4.194	.000
2004	-24932.554	7403.919	-3.367	.001
2005	-14211.067	7376.164	-1.927	.057

$R^2=0.635$; $R^{2adj}=0.604$; $p=0.000$

Source: Authors' calculations based on the data of Statistics Estonia.

Table 10. Empirical results: estimators of the model 2

Variables	Estimators		t	Significance
	Coefficients	Standard error		
Intercept	128532.524	5266.042	24.408	.000
Primary sector	-7343.265	1901.680	-3.861	.000
Tertiary sector	13886.043	1893.123	7.335	.000
Distance	-189.021	23.594	-8.011	.000
2001	-42117.078	5668.479	-7.430	.000
2002	-36108.631	5620.123	-6.425	.000
2003	-30888.159	5580.684	-5.535	.000
2004	-24659.847	5564.451	-4.432	.000
2005	-13892.224	5543.630	-2.506	.014

$R^2=0.797$; $R^{2adj}=0.777$; $p=0.000$

Source: Authors' calculations based on the data of Statistics Estonia.

The predicted values of GDP per capita which are calculated on the basis of the regression models 1 and 2 could be considered as the so-called potential economic

wealth or “potential” – GDP per capita of a county. This is GDP per capita could have been in the given county if it had been influenced only by sectoral structure characterized by aggregated indicators of economic sectors (model 1)

or

by sectoral structure characterized by aggregated indicators of economic sectors and the distance between the counties’ centres and capital city (model 2).

In order to compare the so-called “potential” GDP per capita (or predicted GDP) with its real value the standardized residuals are calculated. Standardized residuals allow us to compare the differences in the actual and so-called potential economic wealth taking into account different size of the counties’ economies. Table 11 presents data of actual and estimated (potential) GDP per capita, the differences between them (residuals) as well as standardized residuals for the year 2006.

Table 11. Actual and predicted GDP per capita (potential GDP) in Estonian counties in 2006

County	GDP <i>per capita</i>	Estimated GDP <i>per capita</i> (potential)	Residuals	Standardised residuals
Harjumaa	239987	174919	65067	4.307
Hiiumaa	91533	90214	1318	0.087
Ida-Virumaa	86085	95310	-9225	-0.611
Jõgevamaa	66918	82281	-15363	-1.017
Järvamaa	94112	88220	5891	0.390
Läänemaa	92997	118135	-25138	-1.664
Lääne-Virumaa	98499	94770	3728	0.247
Põlvamaa	72284	71547	736	0.049
Pärnumaa	111515	113612	-2097	-0.139
Raplamaa	82229	109952	-27723	-1.835
Saaremaa	97469	93178	4290	0.284
Tartumaa	134745	121602	13142	0.870
Valgamaa	74511	88994	-14483	-0.959
Viljandimaa	83717	81859	1857	0.123
Võrumaa	76131	78131	-2000	-0.132

Source: Authors’ calculations based on the data of Statistics Estonia.

Figures 4 and 5 illustrate the differences between real and the so-called potential GDP per capita in the counties of Estonia. Figure 4 reflects the estimators in the case if only aggregated indicators of sectoral structure are taken into account (model 1). The estimators presented in the figure 5 take into account the role of location in forming counties’ regional wealth.

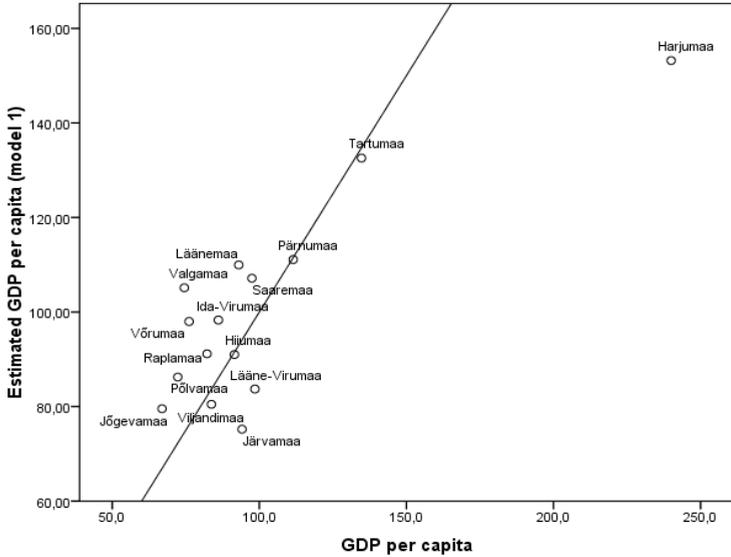


Figure 4. Real (horizontal axis) and estimated (vertical axis) GDP per capita (estimations base on model 1. 2006).

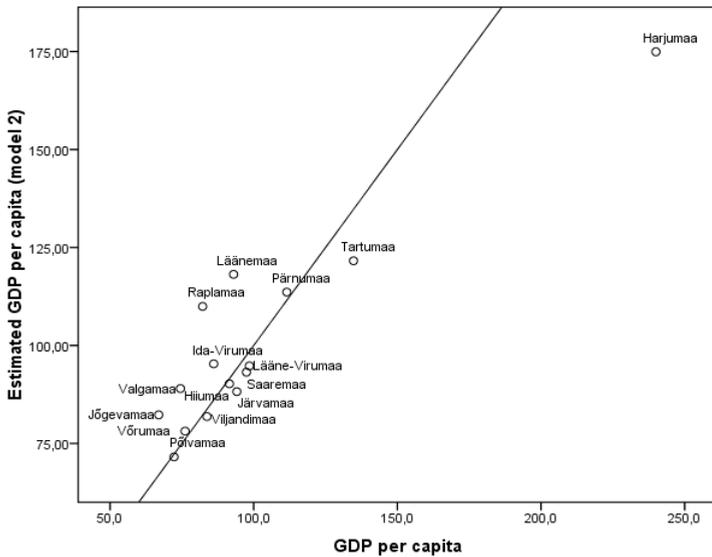


Figure 5. Real (horizontal axis) and estimated (vertical axis) GDP per capita (estimations base on model 2. 2006).

The counties which are below the line are performing better than their so-called potential is: the predicted GDP per capita is lower than actual. The counties which are above the line have higher potential GDP per capita than actual is; thus, the predicted GDP per capita is higher than actual. The position of the counties below or above the line is different depending on the estimated models or those the location of the counties is taken into account (model 2) or not (model 1).

Performance of the counties Harjumaa and Tartumaa is somewhat different from the other counties (model 2, Figure 5). Real GDP per capita of Harjumaa county is higher than potential indicating that there are some additional factors that support economic development of this county, which is located around the capital city. Economic wealth of county Tartumaa is approximately closed to its potential level (in the case of model 1) or remarkably better (model 2). Below potential are performing Läänemaa, Raplamaa and Jõgevamaa and above potential Järvamaa, Hiiumaa and Viljandimaa.

5. Conclusion

The most important common trend in recent economic development has been a shift of sectoral structure towards service activities, the process of tertiarization. Sectoral change is a natural process that occurs in all countries and is related to global and national business cycles. The EU enlargement and globalization processes posed new challenges for sectoral change, particularly for the EU new member states like Estonia. Our paper explores regional disparities in sectoral structure and GDP per capita in the case of the Estonian counties taking into account the small size of a country. In order to elaborate on the aggregated indicators of the Estonian counties' sectoral structure and to examine the relations between sectoral structure and GDP per capita as a proxy of economic wealth, the method of principal component in combination with regression analysis was applied.

The analysis of regional sectoral structure and elaboration of aggregated indicators of sectors allow us to divide counties according to their respective sectoral performance into three groups within each of the three sectors. Firstly, based on the aggregated indicators of primary sector, it is possible to divide counties into the following groups: 1) counties with a high share of primary sector where this share has remained comparatively high also at the end of the period under observation (Jõgevamaa, Põlvamaa, Hiiumaa, Viljandimaa and Järvamaa); 2) counties with a comparatively low share of the primary sector and/or where this share did not change remarkably (Harjumaa, Ida-Virumaa, Tartumaa, Läänemaa, Saaremaa and Võrumaa); 3) the counties which have a high share of primary sector, but where this share has significantly declined during the period under observation (Pärnumaa, Valgamaa, Lääne-Virumaa and Raplamaa). Secondly, the changes in the secondary sector have been most rapid and heterogeneous. Again, we can distinguish between three groups of counties: 1) counties where the share of secondary sector is above average in comparison with other counties and it increased during the period under observation; (Lääne-Virumaa, Võrumaa, Pärnumaa, Järvamaa) 2) counties where the share of secondary sector has been below average and it increased over the whole

period (Jõgevamaa, Hiiumaa, Tartumaa, Põlvamaa, Valgamaa); 3) counties where in comparison with other counties the share of the secondary sector decreased significantly (Ida-Virumaa, where the share is above average; Harjumaa, where the share is below average) Thirdly, according to the aggregated indicators of the tertiary sector, it is possible to divide counties into the following types 1) counties where the share of tertiary sector is above average and it increased (Harjumaa, Saaremaa) or decreased during the investigated period (Tartumaa, Valgamaa, Läänemaa, Võrumaa); 2) counties where the share of tertiary sector is below the average and has increased (Ida-Virumaa, Lääne-Virumaa, Pärnumaa) and 3) counties where the share of the sector was below the average and has declined (Jõgevamaa, Järvamaa, Põlvamaa, Viljandimaa). Thus, regional pattern of the Estonian counties sectoral structure is heterogeneous and dynamic indicating that these small economies are able to adjust with the challenges posed by the rapidly changing socio-economic environment.

The results of empirical analysis that base on regression models confirm the validity of the hypothesis that regional disparities in GDP per capita are remarkably affected by the sectoral structure of the counties' economy. Additionally to sectoral structure, the location of a county has a significant impact on regional disparities in economic wealth measured by the GDP per capita. There is a core-periphery structure with high income levels in the capital region (Harjumaa) and low income levels in peripheral regions. Divergence in regional GDP levels may indicate the concentration of production inputs and development of sectoral structure in regions, where economies are functioning more efficiently.

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RURAL ENTREPRENEURSHIP POLICY IN ESTONIA

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Abstract

This article seeks to provide an overview of the entrepreneurship policies targeted at rural areas and family undertakings. Agricultural undertakings, especially cattle breeders, have been almost ignored in the development of Estonia's entrepreneurship policies. Various action plans have been devised for the development of rural living environments. Unfortunately none of them supports cattle breeding. The author obtained the data used in this research from the databases of Estonian Animal Recording Centre, Estonian Agricultural Register and from questionnaires. The author conducted interviews with beef cattle breeders doing performance testing and with parish authorities. Family enterprises are extremely vulnerable; their reserves for surviving critical periods are small or nearly nonexistent. They often depend only on one area of activity. In the current economic situation owners of family enterprises need to pay particular attention to strategic management, so as to survive in difficult situations. They must take right decisions and start looking for challenges.

Keywords: Entrepreneurship policy, agricultural entrepreneurship, rural entrepreneurship, agricultural undertaking, family undertaking, family enterprise, family entrepreneur, family business, sole proprietor.

Introduction

This article seeks to provide an overview of the entrepreneurship policies targeted at rural areas and family undertakings.

The specific character of family businesses in Estonia, and the need to increase awareness of their specific problems is growing. Little attention has been focused on the role of rural undertakings in entrepreneurship policies. Until now, management and business research has been conducted primarily in Tallinn, and with the focus on larger and growing businesses. A large portion of enterprises (although not as attractive) have been excluded until recently. Estonia must be viewed more comprehensively and blanks must be filled.

Agricultural undertakings, especially cattle breeders, have been almost ignored in the development of Estonia's entrepreneurship policies. Various action plans have been devised for the development of rural living environments. Unfortunately none of them supports cattle breeding.

The author obtained the data used in this research from the databases of Estonian Animal Recording Centre, Estonian Agricultural Register and from questionnaires.

The author conducted interviews with beef cattle breeders doing performance testing and with parish authorities.

Family enterprises have been studied in countries with traditional, stable market economies, but very few researches have been conducted in former socialist countries. Family business culture and traditions have been broken in Estonia. After regaining independence in 1991, entrepreneurs started to restore former farm places and wished to continue their forefathers' traditions. Literary sources claim that family enterprises form 85% of all entrepreneurs in the European Union, 90% in the USA and 70% in Finland, for example (Miettinen, Teder 2006).

Family enterprise in the context of this article is defined as follows: family enterprise is an undertaking operating with the participation of members of the family of the entrepreneur. The interviewees regard spouses, children, parents, siblings, aunts-uncles and their spouses as family members. It is of no significance whether the conjugal relations are official or not, only cohabiting counts. At the same time, they say that when the relationship has broken down it is not possible to coexist successfully in business either – it would cause tensions and more problems.

In Estonia, many active people have established their businesses as family enterprises, mainly in services, in agricultural areas. Many funds have supported such activities in the form of start-up capital and grants. Family enterprises are first and foremost characterised by that it is the main income source for the owners, their family members and their relatives. A positive phenomenon in family enterprises is the short decision-making chain. Manager of a family enterprise has to understand: in order to make the established family enterprise more viable and stable, one must not only think of today's success and income, but has to have one's 'blue bird' – a dream to aspire towards (Päss 2005). It is no use dreaming only, we need entrepreneurship policies focused on agricultural enterprises.

One cannot draw a clear borderline between family and undertaking, because the family is constantly participating in business processes. A family deals with business outside the working time as well; success is achievable only through the participation of the whole family (Craig, Lindsay 2002). Usually it is like that in the start-up years, later they maintain only control over their business.

Enterprises operating in rural areas are usually small, producing for near markets and operating in traditional fields of activity. Many of them have a short life cycle. A significant role in this is played by the present entrepreneurship policy that does not favour cattle breeding. For the ones aspiring further, competence and cooperation with other entrepreneurs is necessary, but such cooperation starts up slowly in rural areas. Developing rural areas is a topical challenge in almost all European Union countries.

No agriculturally necessary support system was implemented in Estonia in the transition and adaptation period to market economy; a great decline thus emerged. The European Union supported agricultural producers in the extent of more than

40% of production costs. In the WTO Agreement, Estonia had agreed to maintain governmental support on the maximum level of 10% of production costs. Thus, in order to compete with EU products, the Estonian agriculture had to be more effective by at least one third. A UN Food and Agriculture Organization expert Roger Norton described the fact that Estonia left a clause out of the WTO agreement of 1999 that would have left Estonia a chance to implement regular and balancing customs duties and export supports towards free trade countries, as follows: “It is difficult to find another country that would have created such a macroeconomic and trade policy, which was a real trial for farmers in their economic survival” (Overview ...).

The author’s attention is focused on family enterprises outside Tallinn and other county centres. The author plans to research all family enterprises occupied in agriculture in rural areas and to contribute to the development of agricultural/rural life through this research paper. The paper confines itself to beef cattle breeders performing animal recording.

The author of this article interviewed 278 beef cattle breeders in 2008. The choice was made from among the beef cattle breeders performing animal recording for which the author received contact information from the electronic database of the Animal Recording Centre. 83% of the interviewees regard themselves as family entrepreneurs and their business as a family enterprise.

Agricultural entrepreneurship

Agricultural entrepreneurship has been an important area of activity and source of income for Estonian population over time. Estonia has one of the best supply of agricultural land in the European Union – 0.64 ha per capita (for example, Germany 0.21 ha, France 0.43 ha). Agriculture is playing a substantial role in supplying people with foodstuffs, in rural entrepreneurship and development of cultural landscapes. The economic position of the agricultural sector has, owing to the growth of direct aid and rural life development support, improved in recent years (Põllumajandusministeeriumi ... 2009).

Development of rural areas is a topical challenge in almost all European Union countries. Rural life in Estonia is able to work only where there is a good infrastructure and entrepreneurship. Estonians have practiced agriculture through time.

Three controversial reforms were carried out in the Estonian agricultural area during the 20th century. Their impact on agriculture was dramatic. The following agricultural reforms were carried out (Roosmaa 1998):

- land reform – the sale of manor lands to farmers in 1919;
- farm collectivisation in the years 1947-1950;
- land and agricultural reform that started in 1991, the objective of which was to dissolve collective farms, state farms and restore family farms.

Farms evolved because after regaining independence, most of the collective and state farms were dissolved and were divided between the former owners of land and workers. Many farms consisted of a couple of cows, which were bred mostly for oneself. Milk buying-in prices were low and the breeding of one or two cows was not profitable. Thus, one either had to stop operation or start thinking of finding other directions. As many farms had uncultivated land, progressive farmers got the idea to breed beef cattle who found such land acceptable.

The first place in cattle breeding in 2008 was occupied by milk production. The dairy sector has been traditionally one of the bedrocks of Estonian agriculture, producing one third of the agricultural gross output. Remarkable success has been achieved in improvement of the milk quality. The second position was occupied by production of pork. Production and processing of pork has had long traditions and consumption of pork has been the highest over years. Beef cattle breeding is a new branch of cattle breeding in Estonia; the number of beef cattle is constantly growing and the branch is growing well. Average production of meat in 2008 was ca 70 thousand tonnes, of which 60% was pork, 21% beef, 18% poultry and 1% mutton and goat meat. The annual output of eggs was ca 200 thousand (Põllumajandusministeeriumi ... 2009).

Estonia has since 2004 implemented in agriculture the common area-related aid and other direct aid schemes. Less favourable areas for agricultural production in Estonia account for approximately 50% of the agricultural land. A big problem for agricultural producers is beaches overgrown with reeds, as birds now go in search of food to the fields with crops just come up. An alternative activity suitable for coastal meadows is, for example, cattle grazing, first of all for undemanding beef cattle (*Ibid.*).

The growth of the Estonian agricultural sector continued until 2007, and small and medium-sized producers grew bigger and specialised, some of them reoriented their business to achieving greater diversity or broke up. In 2001-2007, the number of unprofessional households decreased by 31,415, or nearly threefold (Muutused ... 2008).

Today the milk buying-in price is diminutive again (one litre of milk costs 2.50 EEK); enterprises have to liquidate dairy cattle and reorient to beef cattle breeding.

Estonian businesses practise corporate social responsibility towards the environment and the society, and sustainable development of entrepreneurship. Rural people in Estonia are enterprising and creative. The community supports enterprising people with a favourable attitude and acknowledges the role of entrepreneurship as the promoter of the country's economic development and welfare. Rural firm owners have the skills. They are not able to get the necessary resources from the markets because they have no high productivity, new or improved products and services. A large proportion of rural inhabitants suffer from the lack of financial resources, fear of failure and fear of debt as the greatest obstacles to starting a company.

Considering the low competitiveness of agricultural producers and the lack of enterprise promotion plans, it is important to have ancillary activities, which enable to manage risks, to earn additional income and to move over into another field of activity, if necessary. Those enterprises which choose a secondary activity that is not connected with agriculture are more successful. They can use various sources of finance. Rural tourism attracts a lot of direct foreign investments.

For the development of Estonian entrepreneurship policy, an action plan *Estonian Enterprise Policy 2007-2013* was worked out, which was approved by the Government of the Republic of Estonia. The terms “enterprise”, “economic operator” and “company” in the policy document are used in a generalised sense, to denote both companies and self-employed persons. The Ministry of Economic Affairs and Communications has mapped the problems and identified priority fields of activity in close cooperation with business representative organizations, has consulted with the general public and taken into account the results of a number of analyses and surveys (*Development trends of Estonian small and medium-sized enterprises* conducted in 2005 by Saar Poll) on entrepreneurship. The Enterprise Policy is also related to the development of others fields, such as the Estonian Rural Development Plan (Estonian Enterprise Policy).

The Enterprise Policy and the Estonian Research and Development Strategy “Knowledge-based Estonia II” promotes development of entrepreneurship through targeted activities to achieve the following objectives: foundation and growth of new innovative enterprises and technological renewal of enterprises, growth of their development capacity and productivity (*Ibid.*).

Cattle breeding enterprises cannot be very innovative in entrepreneurship, as cattle breeding is a specific area of activity. However, the breeding value of the existing cattle can be increased. Productivity of farm animals can be improved via breeding. A lot of attention should be focused on the breeding of pedigree herds, balanced feeding of farm animals, and building of new cowsheds and introduction of modern technologies.

The history of private business in Estonia after the re-establishment of independence is not long. But the enterprises have come a long way in a fairly short time, which is evident from the faster establishment, improved competitiveness and positive economic results of Estonian companies. In 2005, there were 441,223 active companies and 50,260 active self-employed persons in Estonia, today 100,357 active companies and 72,700 active self-employed persons (Estonian Tax and Customs Board 2009 and Centre of ... 2009).

The majority of news firms are established in Tallinn where more than half of the Estonian companies are located. Tallinn has a well-developed infrastructure and it is a rapidly developing entrepreneurship centre. Business opportunities in the capital are considered to be better than in other regions. It is very important that the business environment outside the capital was equally favourable and attractive for firms so that the full business potential of all Estonian regions could be realised and

the regionally balanced development became possible. For that it is important to develop the regions as development engines. The government has supported business investment by providing start-up support to starting entrepreneurs, and guarantees on business loans and leases to operating and rapidly growing firms, but not for rural firms.

Although entrepreneurship in Estonia has developed relatively fast and its competitiveness has improved significantly, it continues to be dominated by firms that operate in the traditional sectors. For Estonia to move towards a knowledge-based economy it is important to invest in increasing the knowledge and skills of managers and employees, to focus more on the value creating processes. But rural enterprises have few employees or are owned by self-employed persons and it is not possible for them to invest in knowledge. Estonian banks have no wish to finance rural enterprises. But in order to finance investments companies must have access to external finance.

Most of the Estonian rural firms operate only in the domestic market. The small volumes of Estonian market restrict the growth of firms focused on the domestic market alone. Effective cooperation between firms is critical in the case of smaller production capacities in rural areas. Small firms still have a fairly low degree of cooperation with partners, and of other elements of strategic management. In many enterprises strategic management is not carried out consciously, and managerial knowledge and skills do not meet the requirements of the contemporary increasingly knowledge-based economy.

Estonian firms see the tax burden, legislation and bureaucracy as the biggest obstacles to development. Estonia's enterprise policy is focused on four main fields of activity: knowledge and skill development, investment promotion, promotion of internationalization and development of the legal environment (Estonian Enterprise Policy). Rural enterprises use the following ways to raise funds: using personal savings, taking a loan against security of personal or company property as guarantee, involving investors and venture capital or using the help of friends and family. Estonia's capital market does not work for animal breeding firms in rural areas. These firms who have no security or financial history to confirm their creditworthiness are facing difficulties finding additional funding.

The Estonian Rural Development Plan 2007-2013 (hereinafter the ERDP) was prepared to support the regionally balanced development of rural areas through the European Union Common Agricultural Policy (hereinafter the CAP) measures. They priorities are:

- improving the competitiveness of the agricultural sector, training and information activities; setting up of young agricultural producers; modernization of agricultural holdings; development of new products, processes and technologies in the sectors of agriculture;

- improving the environment and the countryside; support for less-favoured areas; Natura 2000 support for agricultural land; support for the maintenance of semi-natural habitats;
- the quality of life in rural areas and diversification of the rural economy; diversification of the rural economy.

Agriculture is the sector of economy which has undergone the deepest changes during the transition period. Regardless of the decreased share of agriculture in the Estonian economy, its significant role of supplying rural population with food, in rural entrepreneurship and in shaping the cultural landscape has survived.

The development of rural areas is mostly influenced by the low population concentration and persistently decreasing share of agriculture in entrepreneurship. By now, the share of agriculture in the structure of rural entrepreneurship has decreased to approximately 50%. More machine power is used in agriculture, therefore many people have had to find occupation elsewhere (Estonian Rural ...).

Enterprise Estonia (EAS), established in 2000, promotes business and regional policy in Estonia and is one of the largest institutions of the national support system for entrepreneurship in Estonia, providing financial assistance, advisory, cooperation opportunities and training for the entrepreneurs, research establishments, public and third sector. Enterprise Estonia operates in the following domains:

- Increase of sustainability and acceleration of growth of the new companies;
- Improvement of export and product development capability of the Estonian companies;
- Attracting foreign direct investments into the Estonian economy;
- Increase of tourism export and development of domestic tourism;
- Promotion of regional development and civil society (Enterprise Estonia).

The strongest partners of EAS in counties are county development centres, i.e. independent development organisations located in all counties, which provide state financed advice to undertakings, non-profit organisations and local authorities.

Unfortunately, the priorities set out in the *Estonian Rural Development Plan 2007-2013* in order to raise the life quality in rural areas include local resource-based non-agricultural production, rural tourism, handicraft and services (hairdresser, repair shops, shoemaker etc.). Priority is given primarily to diversification of activity of smaller agricultural enterprises with other rural entrepreneurial activities than agriculture (Estonian Rural ...). The Development Plan underlines the significance of a strong local community and cooperation in rural areas. At the same time, many parishes have no information on enterprises occupied in agriculture on their administrative territory.

Life quality in rural areas is deteriorating; people need to go long distances for primary and secondary services, which is even more complicated by bad public transport facilities and not very good infrastructure. To come out of this, the

Development Plan of the Ministry of Agriculture's Area of Government 2009-2012 provides for focusing on non-agricultural entrepreneurship in rural areas. Preferred are investments that enable to use abandoned agricultural facilities for production or service providing purposes (Põllumajandusministeeriumi ... 2009).

In order to develop the rural life environment the Rural Development Foundation was founded. Its action plan 2008-2011 also supports non-agricultural secondary activities. The justifications include the low competitiveness of small agricultural producers. Non-agricultural secondary activities are seen as an opportunity for enterprises to earn additional income, manage risks and, if necessary, ease transition to a completely new area of activity. It recommends focusing more attention than so far on diversification of rural economy (Maaelu Edendamise Sihtasutus).

Action plans of all institutions unfortunately do not favour cattle breeding in rural areas. All this can be summarised unambiguously: give up cattle breeding and develop other than agricultural products! It's a pity that agricultural production including cattle breeding is no concern at all. This may lead to a situation that farm animals can be seen only in the zoo.

As agriculture is a part of rural life, the Estonian Chamber of Agriculture and Commerce (ECAC) feels responsible for what is going on. ECAC is taking part in the development of the image of Estonian rural life in cooperation with the newspaper *Maaleht*, the Rural Development Foundation and the Ministry of Agriculture. In collaboration with the *Maaleht* they have selected since 2001 the "Farmer of the Year" and in cooperation with RDF and the Ministry of Agriculture try to improve awareness of the youth of rural life opportunities through various creative projects (Estonian Chamber ...).

Family Undertakings in Rural Areas

Since 2001, the Commercial Register has registered the data of the sole proprietors in agriculture who are liable to value added tax. The sole proprietors have registered themselves as farms and as at 01.01.2009 they constituted (see Table) 74.4% of all undertakings in rural areas.

As at 01.01.2009, the number of sole proprietors had decreased by 15.0% in comparison with the year 2004; the decrease was caused by that since 01.01.2004 the sole proprietors may change their legal form without a tax liability occurring.

Since 2009, all sole proprietors who have registered their business with the Tax and Customs Board must also register themselves with the Commercial Register. This is the only right decision that provides for the openness of the entrepreneurship information. Since 2010, information of all enterprises will be public. So far only the information of those sole proprietors who have registered themselves in the Commercial Register is public.

Table. Agricultural, hunting and forest management undertakings registered in the commercial register according to their legal form in 2004 and 2009

Legal form	Number of undertakings 01.01.2004	Number of undertakings 01.01.2009
Number of registered undertakings including:	14 798	13 648
Sole proprietors	11 961	10 156
General partnerships	11	13
Limited partnerships	355	328
Private limited companies	2106	2852
Public limited companies	172	139
Commercial associations	192	159
Branches of foreign companies	1	1

Source: Centre of Registers and Information Systems 2009.

As at 01.01.2009, 74.3% of the sole proprietors engaged in agriculture (including forestry and fishing) were registered in the Commercial Register (Figure 1).

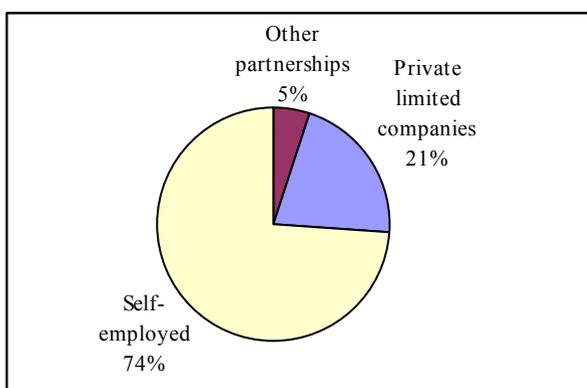


Figure 1. Distribution of undertakings across agriculture as at 01.01.2009. (Centre of Registers and Information Systems)

As of 01.01.2009 there were 118,145 enterprises registered in the Commercial Register of Estonia and only 11.6% of them were operating in agriculture (including forestry and fishing) (Centre of ... 2009).

A function of the Estonian Agricultural Registers and Information Board (ARIB) is to maintain the register of farm animals as well as the register of agricultural refunds and agricultural parcels and to allocate various agricultural, fishing and rural development aids. ARIB also implements the EU agricultural market regulation measures and the milk quota system.

Entered into the Register are cattle breeders who are breeding bovine animals, pigs, sheep, goats, horses, fowl, bees, fur animals and fish. As of 01.02.2009 there were 19,435 cattle breeders entered into the Register, 21% of them are family undertakings. And 6% of the latter are beef breeding family undertakings (Estonian Agricultural ...).

Performance testing is performed by 278 beef animal breeders, 79% of which are sole proprietors, including 98% of whom use the assistance of their family in business (Figure 2). 83% of the beef animal breeders consider themselves to be family businesses, since the entire family participates in the business.

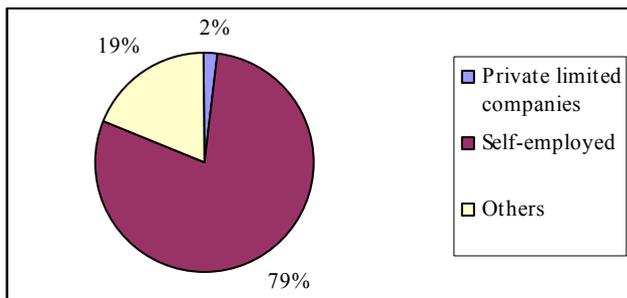


Figure 2. Beef cattle breeders by form of enterprise in 2008. (Compiled by the author)

Islands (24%) have the most beef cattle breeders who perform performance testing and Ida-Virumaa (2%) the least (Figure 3). Islands have a lot of natural pastures and some of them are uncultivated, which is an advantage in beef cattle breeding. Some small islands belong only to beef cattle; the beef cattle are driven to the islands in the spring and back to the farm in autumn. In the summer period, additional feed is brought, when necessary, and the animals are attended to in order to keep the cattle from turning wild. Many entrepreneurs keep a direct contact with the animals every day. Most of the people questioned attended to their animals actively every day.

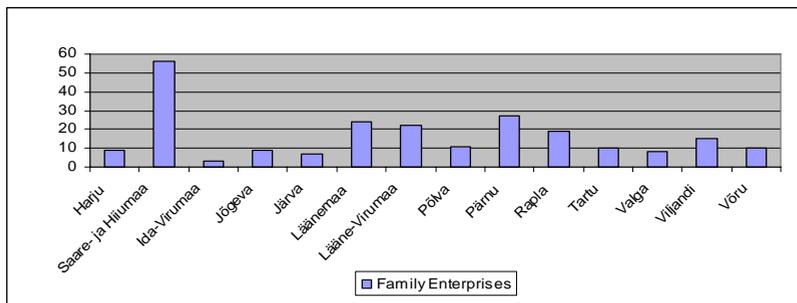


Figure 3. Distribution of beef cattle breeding family enterprises across counties in 2008. (Compiled by the author)

In comparison with dairy cattle, the breeding of beef cattle is less laborious and gives the owners enough free time. The free time-planning has been the reason for choosing beef cattle in many cases.

In 2008, the Estonian University of Life Sciences by order of the Ministry of Agriculture conducted a questionnaire survey “Outlooks of Agricultural Producers and Future Trends of Agricultural Policy”. 284 agricultural producers completed the questionnaire. The survey identified that most of the producers are using the workforce of their family (Estonian University ... 2008).

83% of the beef cattle breeders performing animal recording use the help of their family in business (Figure 4). Many family enterprises are family-focused; they like their family members being dedicated to the business.

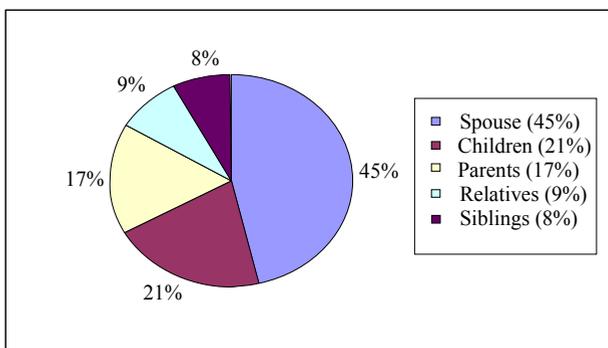


Figure 4. Participation of family members in family business. (Compiled by the author)

The Estonian Farmers Confederation (EFC) is standing most for the farms. They are developing the farmers’ alternative service, which is vitally important for farmers who do not use other workforce than their family members. Thanks to this service family members can have a vacation together. Farmers hope that the alternative service will work. The best farm in Estonia has been selected at the initiative of EFC for 16 years already. In 2008, the member organisations of EFC nominated 13 farms for the competition, which had proved the best in their county. The farms were evaluated in three different categories. Three best farms were identified from among production farms, farms pursuing alternative activities and young farmers. The title “Farm of the Year 2008” was awarded to Kalle Hamburg’s farm, the second place among production farms to Priit Soosalu’s Luha farm and the third place to Põllemaa-Saare farm. Additionally worth mentioning were Uue-Nõmme farm; Jüri Nurk’s farm and Kivi-Lillemäe farm in the category of production farms. The best among alternative farms were Ellisson’s Veskitalu Ltd; Koplimäe organic farm and Raja-Jaani farm. The best among young farmers were Tohuri-Andrese farm; Lepiku farm; Siimu farm and Taivo Kokk’s farm (Eestimaa ... 2009).

The farms which were worth recognition are all family enterprises. For example, in Priit Soosalu's Luha farm all fields are under the care of the head of household and cattle-breeding is his spouse's responsibility. There are 60 bovine animals in the farm, including 28 milk cows. The milk yield is 9,500 kg per cow. In 2005, the farm was awarded the title of the best dairy cattle breeder. Four years they have been with their cows in the election of "the best moo-cow in Estonia" and three years they have brought home the first place and one year the third place. The farm fortunately has a successor – their son is studying agriculture (Eestimaa ... 2009).

Things are the same also in Põllemaa-Saare farm where the number of cattle and arable land has been growing continuously. 50 cows are milking annually and their milk yield is 8,600 kg per cow. A reason for good production is good grasslands, as much emphasis is laid on their renewal. Cattle live in a free-range cowshed which was built a couple of years ago and they hope to buy a milking robot for this cowshed. It is a family farm where all four children help to the best of their ability and power (*Ibid.*).

In most of the farms engaged in both cattle breeding and cultivation of land, the latter is the task of the head of household and cattle breeding is the domain of housewives. Many undertakings have in addition to farms established also a private limited company. For example, Uue-Nõmme farm, which has 250 ha of arable land, has established a private limited company employing four people. The company has 200 hectares of arable land and additionally they offer transportation services and snow clearing in winter (*Ibid.*).

Many farms are small and can manage with the help of their family members (mother, father and children), while many have a bigger household where also siblings, parents and other relatives are involved in the business. For example, Jüri Nurga farm, where the brothers are engaged in the business. The brothers have 2000 hectares of arable land, and additionally they are breeding beef cattle and horses. They have built a meat processing plant where they provide game and beef animal chopping and packaging services. They have four employees all year round (*Ibid.*).

Rural life is diversified and rural entrepreneurship outside agriculture developed by alternative farms. For example, Ellisson's Veskitalu Ltd provides catamaran services on the Lake Kuremaa. The first generation family undertaking is the household of Koplímäe Organic Farm – they have been engaged in organic production for 12 years (*Ibid.*).

Farm culture in Estonia was interrupted and after Estonia regained independence they started to rebuild farms again. Some restored farms were returned to the family ownership, for example, Raja-Jaani farm. It is a hereditary farm, which belongs to their family for seventh generation already. In the spring of 2008 they still had 20 milk cows, but as AS Maag ceased to receive milk, they had to sell most of the cows and are now beef cattle breeders. It is sad that milk processors stop milk transport, or the purchase price offered by them is so small that farmers have to liquidate the

dairy cattle. They make plans to launch farm tourism and organise walking tours to the bog and surrounding forests (Eestima ... 2009).

Many family undertakings in rural areas have problems with offspring. Young people want to leave for town to lead easier life and to the world to obtain knowledge. Fortunately there are farms where a change of generation has already occurred and succession is no problem. Examples are a young head of Siimu family farm; and two siblings in Taivo Kokk's farm (*Ibid.*).

Members of farm households are also working as alternative farmers. For example, the housewife of Tohuri-Andrese farm is working in addition to her own farm also as a replacement farmer, thus giving rest days to other milk cattle breeders (*Ibid.*).

97% of the owners take part in the management of their family business and 45% are engaged only in the principal activity (beef cattle breeding including marketing of beef); the others are occupied for the purpose of risk diversification also in other activities (Figure 5). Secondary activity for 24% is other than agriculture or beef selling.

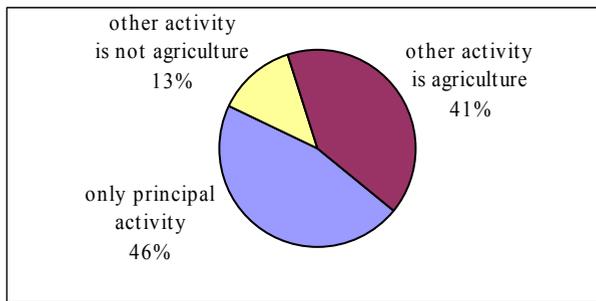


Figure 5. Participation in family business. (Compiled by the author)

The number of rural population has been stable in recent years – 35.4% of total population (Statistic ... 2009).

The Estonian Rural Development Plan 2007-2013 underlines that a strong local community and cooperation are very important in rural areas. Still, many parishes have no information on enterprises operating in agriculture. They have a complete picture of those undertakings which have to register their activity with the Register of Economic Activities.

If there are no people living in rural areas, rural life cannot develop there either. So as rural life could evolve, good living and working conditions need to be created for people there, including infrastructure (schools, kindergartens, internet etc.). Agricultural specialties must be made attractive for young people so that they would come to study rural economic specialties. When the number of students is declining, the entrepreneurs in rural areas have no successors.

For development of rural life it is essential to establish a dense cooperation network with parishes. The parishes should themselves develop the image of rural life and improve the living environment there.

According to the Ministry of Agriculture's *Estonian Rural Life Development Strategy 2007-2013* (Eesti maaelu arengu strateegia 2007-2013), development of entrepreneurship in rural areas is influenced by low concentration of population and continuously declining share of agriculture in entrepreneurship. Another indicator that characterises entrepreneurial activity in parishes is diversity of entrepreneurship measured by number of companies and sole proprietors registered on the territory of local government and areas of activity represented by institutions of state and local government. There is a big difference between rural municipalities (parishes) and towns. Compared to Estonia's average (19.9 areas of activity), there is a big difference between the average of parishes (17.8) and towns (30.4). The difference in the average number of companies between parishes (32) and towns (61) is also big compared to the average for Estonia (52 companies per thousand population). Only the closest parishes to Tallinn are dominating among parishes in this respect. In the parishes located in the borderlands or away from major transport routes the areas of activity are few, at worst limited only to public services and a few companies. Hence, economic activity in most of the rural areas is narrow and people have therefore less chance to find suitable employment there (*Ibid.*).

Considering the low competitiveness of small agricultural producers and lack of entrepreneurship promotion plans, the presence of secondary activity is still important, as it helps to manage risks and earn additional income. 2746 agricultural households out of approximately 37 thousand in Estonia earn income from non-agricultural activity, which account for 7.5% of all agricultural households (*Ibid.*).

During the past decades, service providers have moved their activity away from rural areas because of the lack of critical mass of consumers. This in turn has led to deterioration of the living environment, as rural people have to go much longer distances to get primary and support services. Bad accessibility of various services in rural areas is a complicated problem. They miss most a bank, sauna, shoemaker, manufactured goods shops and equipment repair shops. One possibility to maintain and improve the life quality is to find new solutions in providing services: Accessibility of services can be improved by providing them in one multifunctional building and by enabling mobile services (*Ibid.*).

The strengths, weaknesses and potentials of rural entrepreneurship and life quality are as follows (*Ibid.*):

- the risk that the share of agricultural sector might fall; many entrepreneurs have moved services away from rural areas;
- a weakness of economic activity is revealed in the small diversity;
- a risk to rural areas is shuttle migration, as rural people don't find appropriate job for themselves or the wages offered are not competitive;

- rural resources: facilities, nature and increasingly stronger local community provide possibilities for finding innovative solutions and by supporting community activities it would be possible to smooth down differences between town and country.

The strength of local community lies in the consolidation of rural population: nearly one fourth out of over 4000 villages have elected village elders to coordinate local activity, nearly 700 societies are busy with village development. Agricultural enterprises have to improve their competitiveness to be able after the end of the support programme period (after 2013) to cope under the diminishing market support and direct aids (Eesti maaelu arengu strateegia 2007-2013).

The specific aims in regard to rural life quality and diversification of rural economic activity until the year 2013 are as follows:

- to focus on local resource based non-agricultural production;
- to promote diversification of the activity of smaller agricultural enterprises with other rural entrepreneurship than agriculture;
- to prefer investments that would enable to use abandoned facilities and buildings, including manor houses, in production or services, thus contributing to creating employment opportunities and development of the services sector;
- to promote implementation of major investment projects (*Ibid.*).

The author sent a questionnaire to parishes. The questionnaire was simple and focused on cattle breeding farms/undertakings. In the questions the author asked information what have been the problems the entrepreneurs have referred to parish authorities and whether the parish administration knows all entrepreneurs located on its territory. The questionnaire attempted to get information on how the parish administration is informed of the cattle breeding undertakings operating on its territory. What is the awareness of the parish administration of the cattle breeding farms, what is their attitude towards the entrepreneurs and whether the parish authorities are interested in the development of cattle breeding.

Since Estonia regained independence and re-establishment of local governments professional local government leaders have developed – every eighth parish elder has been at the head of one and the same parish for more than 15 years. There are 193 parishes in Estonia today and 24 of them have the elder who has been re-elected in all local government elections, i.e. since 1993. The longest employed as parish elder is Lenhard Ermel, the elder of Sõmerpalu parish, who has been in the office for 27 years. The same parish elders for 15 years have been in the following parishes: Sõmerpalu, Padise, Antsla, Võnnu, Peipsiääre, Noarootsi, Surju Laheda, Hanila, Laekvere, Kolga-Jaani, Imavere, Albu, Kõo, Kernu, Paikuse, Kanepi, Tootsi, Häädemeeste, Vändra, Haljala, Pärtsi, Orissaare and Puka (Rozental 2009).

This allows assuming that parish elders know very well what is going on in their parish. However, from the above-mentioned parishes only the parish elders of Orissaare, Paikuse, Peipsiääre, Surju, Tootsi, Võnnu and Vändra parishes answered

the questionnaire. The others either did not consider it necessary or really were not aware of the activity of entrepreneurs in their parish.

In the meeting the head of development department of the parish of Ülenurme said that he knows people in his parish and their activity, including everything about entrepreneurship, but did not answer the questionnaire. Hence it seems that the information is still missing.

A very thorough answer was made by the development specialist from the parish of Jõelähtme. If all parishes had such employees, then entrepreneurship would definitely start growing in rural areas. If already the parish administration is interested in entrepreneurs and communicates with them, then entrepreneurs also want to show up innovativeness.

The author sent to all parishes a request for information and the response rate was 25% (Figures 6). Hence a conclusion that parish authorities are actually not interested in cattle breeding undertakings.

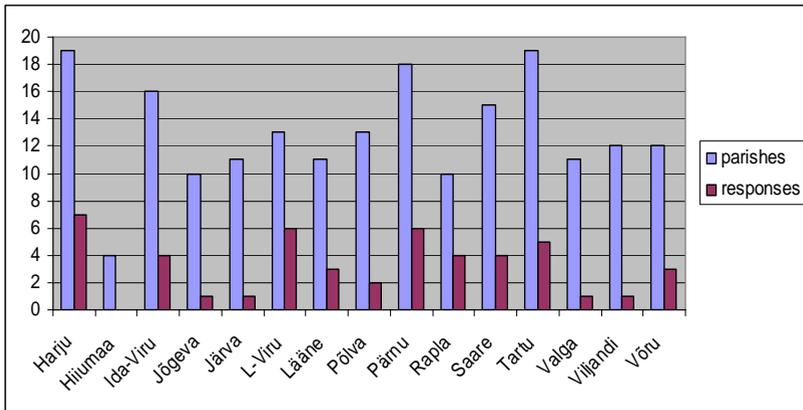


Figure 6. Parishes and responses from them across counties (Compiled by the author)

The parish elder of Põlva answered that “they have no answers to the questions. Enterprises in Estonia are operating on the basis of so-called free-market principles and local governments don’t assist them”.

All the respondent parishes which knew their undertakings could name the employers as well as the number of employees. They also mentioned the best entrepreneurs. The respondent parish elders are interested in development of entrepreneurship in their region and help entrepreneurs in every way.

Some parishes answered that “we don’t provide assistance and therefore cannot help entrepreneurs”. Entrepreneurs think the obligingness of parish administration is important in order to rapidly solve the problems that might arise.

The author is of the opinion that the parish administrations should cooperate with all entrepreneurs and have a complete picture of entrepreneurship in the parish. What are the parishes there for?

Entrepreneurs approached the parish administration with the following problems:

- land related issues;
- drinking and waste water;
- slurry storage;
- building and digging permits;
- bad infrastructure;
- driveways;
- registry controls;
- employment problems;
- buying-in prices;
- realisation of products.

Parish administrations in turn mentioned that they promote entrepreneurship development as follows:

- assist entrepreneurs communicating with Estonian Agricultural Registers and Information Board;
- where possible, support business start-up;
- keep driveways to cattle breeding facilities accessible;
- organise various information days;
- disclose information on available aids in local press.

Conclusions

Due to the changes that have taken place in agriculture within the last decades, there are many buildings in rural areas which are unoccupied, underutilised and useless. To save resources it would be important to find a new function for those buildings either in production and services or as residential buildings.

Development of rural areas is a topical challenge in almost all European Union countries. The key issues of development in the near future might be:

- combining agriculture and paid employment from outside the farm;
- joint activity and networking;
- development of local economy;
- sustainability;
- the skills should grow better and more effective;
- development of secondary activities;
- rehabilitation of cattle breeding.

Most of the cattle breeding undertakings in rural areas are family enterprisers. All family entrepreneurs:

- were positively-minded and wished to continue their business;
- had future plans and sound visions to enlarge and improve their business;
- were certain that their business is profitable.

Unexceptionally all family undertakings wished for direct support and higher meat prices. A common network is wanted to take products to the European market. People have realised that cooperation is the key.

The main problems are:

- lack of financial instruments;
- lack of cooperation between breeders;
- lack of qualified work force on vacation periods;
- lack of business-related knowledge;
- lack of experience;
- low competition;
- bad infrastructure in rural areas;
- bad quality of Internet communications.

In order to increase competition, family entrepreneurs wish for governmental financial support instruments, so they could operate sustainably.

The database of the Estonian Agricultural Registers and Information Boards includes 4,043 family entrepreneurs. 6% of them are cattle breeding family undertakings which are doing also performance testing.

Most of the entrepreneurs are convinced that the objectives will be achieved as well as profits made with the help of a strong and quick-witted family and good purposeful management.

Family enterprises are extremely vulnerable; their reserves for surviving critical periods are small or nearly nonexistent. They often depend only on one area of activity. In the current economic situation owners of family enterprises need to pay particular attention to strategic management, so as to survive in difficult situations. They must take right decisions and start looking for challenges.

The specific character of family enterprises and the need to be aware of their specific problems is growing in Estonia. The lack of younger generation is also a serious problem. The following issues become topical with the aging of the “first round” entrepreneurs: what happens after they stand off; whether the successor comes from the family and how to hand the management over. Presently, half of the rural entrepreneurs are middle-aged. Therefore, it is important to implement measures for increasing management potential in rural areas.

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REASONS FOR LOW PART-TIME EMPLOYMENT IN EASTERN EUROPE – ANY ROLE FOR LOW WAGES?

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Abstract

Many Eastern European countries are characterized by high wage inequalities and a relatively low proportion of labour force being employed on a part-time basis, yet there seem not to be so far made any studies on the part-time pay penalty. In this article we analyse whether there are any differences in the average wages of part-time and full-time employed in Estonia, a small Eastern European catching up economy. We use Estonian Labour Force Survey data from years 1997-2007; the part-time wage gap is estimated by using Oaxaca-Blinder wage decompositions and propensity score matching. The results are quite different for males and females. For females the raw wage gap is in favour of part-timers. After taking into account various worker characteristics, the wage gap becomes even larger. For males the full-time raw premium exists, but it is to a large extent explained by the different labour market characteristics.

Keywords: part-time work, pay-gap, Eastern Europe

1. Introduction

The incidence of part-time work has considerably increased in most developed countries in the past decades. There are several supply-side factors that have contributed to this tendency, most importantly the increase of the labour market participation of the females and the lengthening of the studying period of the youth. However, from the demand side, the structural changes that have occurred – most importantly the growth of the service sector – have favoured the triumph of the part-time work. Despite the increase in part-time work, in most developed countries part-time workers earn less than full-time employed.

It is *expressis verbis* declared in the Republic of Estonia Employment Contracts Act that part-time workers shall not be treated in a less favourable manner in an employment relationship than comparable full-time workers² unless different

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² Comparable full-time worker means an employee working for the same employer, who is engaged in the same or a similar work, due regard being given to other considerations which

treatment is justified on objective grounds arising from the law or collective agreement³. Moreover, an employer shall notify the representatives of the employees and a full-time worker in good time of the opportunity for part-time work and a part-time worker of the opportunity to work for full-time, considering the qualification and skills of the worker. To conclude, institutional framework in Estonia is fully in accordance with European Council Directive 97/81/EC of 15th December, 1997 concerning the Framework Agreement on part-time work concluded by UNICE, CEEP and ETUC (“Part-Time Directive”) which is aimed to remove all forms of discrimination against part-time workers and facilitate the development of part-time and other flexible working arrangements. The aim of this study is to explore whether part-time workers are in unfavourable labour market position compared to full-time employed despite the equal treatment provisions stipulated in law and which demand and supply side factors explain the differences.

Our study contributes to the existing literature in several directions. Firstly, although in developed countries full-time/part-time wage differences is a deeply surveyed topic, in Central and Eastern Europe (hereinafter also CEE) countries there exist to our knowledge no similar studies. It is interesting to analyze Estonia for various reasons. Estonia, as well as other Baltic States, is characterized by one of the highest wage inequalities among the European Union countries, in 2002 the value of the 9th to 1st decile exceeded 4.5, while in most EU countries that was from 3 to 3.5 (Employment in Europe 2005). That is in part caused by the institutional setting of the labour market like low minimum wages, low density of unions, low coverage of collective agreements. In such conditions, also the wage gaps between particular labour market groups (e.g. part-timers and full-timers) can be considerable. The earlier studies have, for instance, documented in the Estonian labour market large gender wage gap (see Rõõm and Kallaste 2005) and gap between the earnings of Estonians and Russians (Leping and Toomet 2008).

We use for our analysis the data from the Estonian Labour Force Surveys from years 1997-2007. The dataset is of fairly high quality and has been used in several internationally published studies. The data enables us to use both individual and firm specific information as explanatory variables. Moreover, the long time period covered – 1997-2007 – enables us to analyze the developments in time. Although the Estonian results are not one-to-one transferable to other CEE countries, this is a first attempt to map the situation in those countries.

We use different econometric methods to analyze the wage gap between part-time and full-time employed. As it is the tradition in this literature, the wage gap is decomposed using the Oaxaca-Blinder decompositions into the part explained by the differences in various labour market characteristics of part-time and full-time

may include qualification and skills of the employee. Where there is no comparable full-time worker employed at the same employer, the comparison shall be made by reference to the applicable collective agreement.

³ Where there is no collective agreement, a worker engaged in the same or similar work in the same region shall be deemed to be a comparable full-time worker.

employees, and the unexplained part. In addition to more traditional quantitative approaches the propensity score matching is employed. The comparison of the results of the different methods enables us to do more complex implications about the question in hand.

The rest of the paper is structured as follows. Section 2 gives a short overview of the existing literature on part-time/full-time wage gap and the possible explanations grounding wage differences. Section 3 presents the data and section 4 methods used. In section 5 we present the results of the empirical analysis. The last section concludes.

2. Literature Review

In many countries the raw pay gap between part-time and full-time employed is substantial. On adjusted basis (i.e. when taking into account *ceteris paribus* condition) the differences are usually much more modest and in some cases do not exist (Aaronson, French (2004) for women in US; Rodgers (2004) for both men and women in Australia; Hardoy, Schone (2006) for women in Norway) or part-time wage premium is observed (Booth, Wood (2006) for Australia; O'Dorchai *et al.* (2007) for Denmark). However, when comparing the scope of the adjusted part-time/full-time wage gap in different countries, one should be cautious because differences in the definition of the part-time workers, variables used in analysis, group taken under observation (for example only married women) may make the comparison of results of the studies inadequate.

There are several explanations provided in the literature that explain the wage penalty of part-time workers. To conclude, as summarized by Hirsch (2005), three most important factors determining an equilibrium part-time/full-time wage gap are heterogeneous skills, worker differences in preferred hours and employer preferences in working hours.

Dual labour market theory. According to the dual labour market theory, “good” jobs which are characterized by high wages and bonuses are converged to the primary labour market while jobs in the secondary labour market jobs are low paid and provide few opportunities of self-development. The wage gap exists because part-time jobs are disproportionately more converged to the secondary and full-time jobs to the primary labour market, i.e. the full-time jobs are (compared to part-time jobs) proportionally more often found in the sectors, occupations, geographic areas, etc where higher wages and non-wage benefits are paid (it is so-called “objective” gap).

However, on the adjusted basis several objective reasons may ground the existence of the part-time pay gap. From the employers’ side quasi-fixed costs and differences in productivity and accumulated human capital are often emphasized.

Existence of quasi-fixed costs. From the employers’ view, the reason for the part-time wage penalty is often grounded by the existence of the quasi-fixed costs, i.e. costs that are proportional to the number of employed rather than hours worked (for

example hiring costs, training costs, administrative costs, monitoring costs, coordinating costs, etc). As in the “good” jobs (i.e. the jobs where wage and bonuses are higher) the hiring and training costs are higher, employers prefer to employ full-time rather than part-time person to the position to get the maximum benefit from the investments made (Montgomery 1988). According to Rosen (1976), in case the position is filled with part-time worker, the fixed costs would entail lower hourly wage *ceteris paribus*.

Lower productivity of the part-time workers. According to Barzel (1973), the productivity of the worker fluctuates during the working day: in the beginning of the day, the productivity is lower than daily average, and then starts to increase gradually. In the last hour of the working day the productivity of the full-time worker is higher than average. Therefore, if the length of the working day is shorter, the wage should be lower.

Lower accumulation of the on-the-job human capital. If the productivity of the worker is determined mainly by the on-the-job experience rather than working experience in general, the lower wages of the part-time workers are well grounded because with the same tenure in years of the particular job they acquire less human capital (and are therefore less productive) than full-time employed (Hirsch 2005; Blank 1998; Manning, Robinson 2004). Russo and Hassink (2008) have found the empirical rationale to the statement using the Dutch data: according to the results of the study, among youth the wages of the part-time and full-time employed are equal; however, for the elderly the substantial part-time wage gap exists.

Lower level of human capital. According to classical human capital theory, the level of individual’s human capital is positively correlated with the potential wage; in turn, as individual’s wage increases, he/she will increase the desired number of working hours in the labour market (presuming that leisure time is normal good).

The most important supply-side determinant causing part-time penalty pointed out in most studies is *segmentation of the labour market*. According to this theory there are several segments in the labour market that prefer part-time jobs to full-time jobs. Three groups most often found to have strong preferences toward part-time participation are women, youth and elderly. For women (especially if they have small children) the part-time working provides a good possibility to reconcile the work and family responsibilities. Youth prefer part-time work because it enables them to flexibly combine participation in the labour market with studying. Elderly prefer part-time jobs due to the health conditions: while it may be too strenuous for the elderly to work full-time, they do not want to entirely exit the labour market and part-time working gives them an opportunity to optimally adjust their needs with the constraints stemming from the bad health condition. As the aforementioned individuals have clear preferences regarding the timing of working, employers are in a better bargaining position when determining their wages and may therefore offer those segments lower wages *pro rata*.

Another supply-side factor emphasized is the *geographic segmentation*. According to Ermish and Wright (1993), the supply of part-time workers may have a geographic dimension because part-time workers are disproportionately less than full-time employed willing to pay commuting costs. Moreover, their labour supply is less elastic than full-time employed because for them it is much more convenient to combine the family responsibilities and participation in the labour market when employer is easily accessible from their home. In case the employer exercises the monopsony power in the local labour market, the profit maximization requires paying the part-timers a lower wage than full-timers as their bargaining position is more unfavourable.

There are also explanations provided to explain the part-time wage premium observed in several studies; one of these concerns *fluctuations in workload*. On the contrary to the compensation theory, when employers have preferences concerning the working time, employees are in the better bargaining position and may therefore demand higher wages *pro rata*. Therefore in sectors where certain fluctuations in demand (for example during the working day or seasonally) exist and employers hire additional part-time workers to better meet the needs of demand, part-time workers may have enough bargaining power to demand a higher hourly wages than full-time employed. To conclude, in the sectors where the timing of the workload is fluctuating (ie primarily certain service sector jobs, for example sales workers, tellers, etc) part-time employed are more productive because they do not spend some time of the working day idle. Therefore, their wage should be higher.

3. Data, variables and raw pay gap

The extent of the part-time employment has been relatively stable in Estonia in recent years. While it is comparable to the average of new member states (EU10), fluctuating between 6.5-8%, the figure is much lower than in EU15 (see Figure 1).

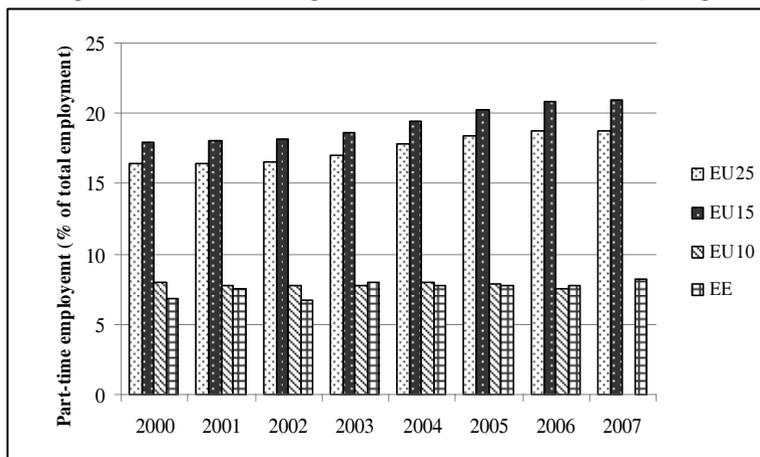


Figure 1. The extent of part-time employment in European Union. (Eurostat)

The general national standard for working time of employees is eight hours per day or forty hours per week in Estonia. According to Estonian Working and Rest Time Act, part-time working time is working time determined by an employer which is shorter than the established standard for working time and which is applied by agreement between an employee and the employer. Statistics Estonia defines part-time worker as employed person whose usual working time is lower than the comparable full-time employed. As the aforementioned definitions are too general and do not give any information how much shorter the working time should be, we follow the specification used by Statistics Estonia in Labour Force Survey (hereinafter *ELFS*) methodology: a part-time employee is an employed person whose usual working time per week is less than 35 hours.

However, there are several occupations provided in Working and Rest Time Act, whose full-time working hours are less than national standard:

- employees who perform underground work, work that poses a health hazard or work of a special nature - seven hours per day or thirty-five hours per week;
- teachers and educators working in schools and other child care institutions, and other persons working in the area of education, and psychologists and speech therapists working on the basis of employment contracts entered into with a provider of health care services - seven hours per day or thirty-five hours per week.

Our analysis is based on the Estonian Labour Force Survey (hereinafter also *ELFS*) data, which is a nationally representative random-sample panel survey of individuals. *ELFS* is appropriate for analysing the problem at hand as it contains information about working hours and pay in the main job as well as a rich set of other individual and job specific controls that are likely to affect wages. The first wave in 1995 was based on the 1989 census database and the later waves on the data from the population register. 1997-2000 the survey was arranged as an annual cross-section (see also Leping and Toomet 2008). Since 2000 the survey has been organised quarterly as a rotating panel sample: each individual is surveyed 2 quarters, then not observed sequent 2 quarters, and thereafter again surveyed for 2 quarters. The sample comprises of the permanent residents of Estonia at the age 15-74 years. Until 2000 the survey included also the retrospective data (questions on the past labour market experience) in addition to the data of the survey week.

ELFS contains a question “Why are you employed part-time”. Those employed who report that in their job less than 35-hour working week is considered to be full-time employment, are defined as full-time rather than part-time employed in our study. As Figure 2 indicates, the proportions of the full-time and part-time according to our data and Eurostat overlap almost one-to-one, indicating that there are no major errors.

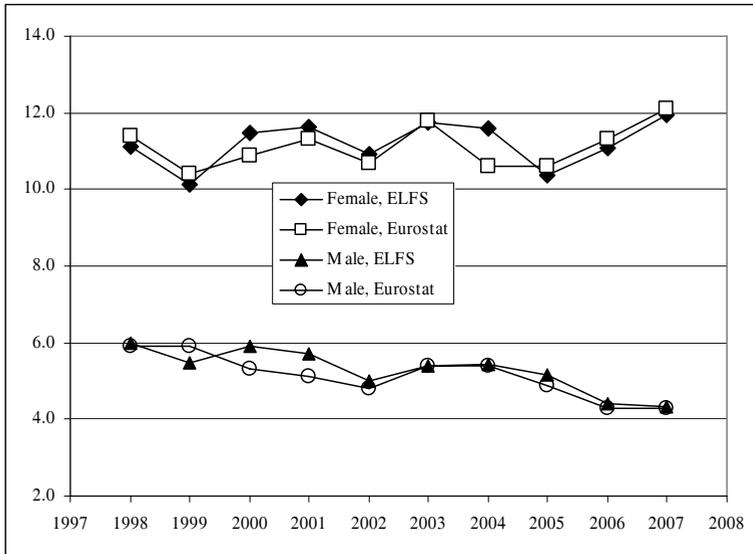


Figure 2. The proportion of part-time workers in Estonia according to ELFS and Eurostat data. (Own calculations based on Estonian LFS data and Eurostat)

The analysis covers the long time period: 1997-2007. In total there are 264,303 observations in the database, 12,585 part-time and 129,101 full-time employed. We estimate all models separately by gender as it is inappropriate to pool them given that the reasons for part-time employment differ between males and females. In our analysis we have used only the data on the survey week as only for the survey week it is possible to calculate the part-time status in the way that we have specified it above. As explanatory variables, we use different individual-specific and job-related characteristics.

The data describing the incidence of part-time employment indicates that the trends in Estonia are in line with the results of the other countries. Part-time work is much more popular among youth and elderly (when compared to middle-aged), in primary and tertiary sector (compared to secondary) and for those engaged with studies (compared to non-students). The number of small kids in the household motivates females to work part-time (especially in recent years) and males to work full-time. For the older children the effect is somewhat more modest for both genders. Unlike the results of the several studies, the comparison of the raw data does not strongly support the hypothesis that the marital status affects the females' decision to work part-time. However, cohabitating men tend to work full-time rather than part-time which indicates that in Estonia the men breadwinner tendency may hold. Somewhat interestingly, both men and women with primary and higher education tend to work part-time, while secondary educated are more frequently employed full-time.

The analysis of the raw wage gap indicates that for females there is on the hourly basis a part-time premium observable for the whole period in Estonia (see Figure 3). However, the scale of the wage gap has not been constant. In the beginning and in the end of the period under observation, the wages of the part-time and full-time employed females are almost equal, while in the middle of the period remarkable differences are observable. The part-time premium peaked in 2000 when the unemployment was at the highest levels due to structural changes in Estonian economy induced by Russian crisis.

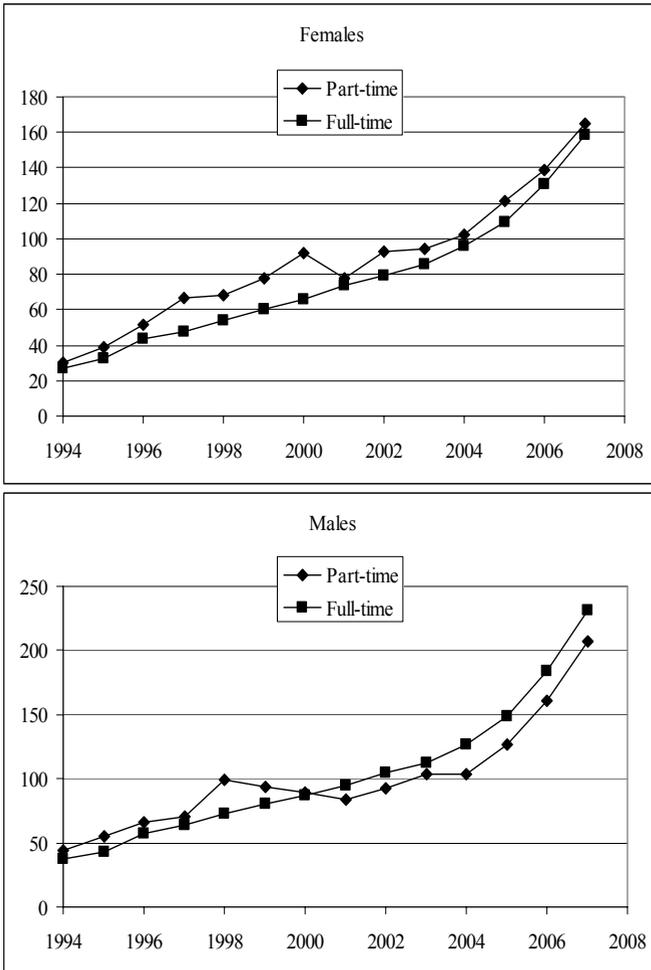


Figure 3. Average wages of part-time and full-time employed by gender in Estonia 1994-2007. (Own calculations based on Estonian LFS data)

On the contrary to females, for males the trend has turned over. In the beginning of the period, on the hourly basis only a modest part-time premium was observable. During the Russian crisis in the late nineties, a more substantial part-time premium appeared. The difference was the highest in 1998, when the extensive changes occurred in Estonian labour market. In 1999 the differences remained, but decreased to some extent. Year 2000, when the hourly wages of full-time and part-time employed males were almost identical, can be considered as a turning point. Since 2001 the males employed part-time have earned in absolute terms less than full-time employed. It is interesting to analyze whether the differences remain when we take into account *ceteris paribus* effect.

The information about wage gap by selected worker categories and gender are provided in Table 1. On unadjusted basis, for women in all education categories the substantial part-time premium occurs. For men, however, part-time premium is observable only for tertiary educated. The situation is similar when the comparison between different sectors is made: whereas for women in all sectors the gap exists and is especially large in tertiary sector, for men the same holds only for secondary sector, where the proportion of employed working part-time is the lowest. For white-collar females, the raw part-time premium is almost twice as high as for blue-collar workers. On the contrary, for white-collar males the part-time wage penalty is double of the level of the blue-collar workers. While the wages of the Estonians are higher than for non-Estonians, the part-time premium for the latter is much higher than for Estonians.

From demand-side indicators, we used in our analysis the size and ownership status of the enterprise. There appears to be two company categories (50-199 employed and more than 500 employed) where the substantial part-time premium is observable for both males and females. In other groups the premium is somewhat modest for females and part-time pay gap occurs for males.

In state-owned enterprises on the hourly basis both part-time working men and women are remunerated higher than full-time employed; for females, however, the effect is much more substantial than for males. For females, in private companies the part-time premium is smaller than in state-owned enterprises; for males in private-owned companies a part-time wage penalty occurs. The same results apply when wages by ownership status (domestic *versus* foreign-owned) are considered: for females part-time premium occurs in both categories; for foreign-owned enterprises the effect is smaller than in domestic companies. For males, in domestic companies the wages of the part-time and full-time employed are equal; in foreign-owned companies, however, a substantial part-time wage gap is observable.

Table 1. The wage gap by different worker categories (1997-2007, averages)

Variable	Females			Males		
	Proportion of part-timers	Wage gap	Wage of full-timers	Proportion of part-timers	Wage gap	Wage of full-timers
Basic education	15.0%	-18.9	53.4	7.3%	0.6	78.2
Secondary education	9.6%	-17.8	72.8	4.5%	-3.0	107.5
Higher education	12.6%	-16.9	118.4	6.2%	12.9	159.4
Primary sector	12.7%	-3.6	60.2	7.9%	8.0	71.4
Secondary sector	4.7%	-13.3	74.8	3.2%	-11.2	98.3
Service sector	12.9%	-17.7	81.7	6.0%	6.1	116.2
Legislators, senior officials and managers	4.6%	-13.6	114.9	2.4%	11.8	164.6
Professionals	14.5%	-29.5	109.9	12.5%	-7.5	140.9
Technicians and associate professionals	11.2%	-16.5	84.9	7.9%	9.9	120.7
Clerks	10.7%	-9.9	72.1	6.8%	14.3	113.7
Service workers and shop and market sales workers	9.9%	-27.6	60.0	6.4%	-4.6	85.8
Skilled agricultural and fishery workers	11.5%	-27.2	56.2	7.7%	4.8	73.1
Craft and related trade workers	5.2%	-5.2	62.4	4.1%	-13.3	100.7
Plant and machine operators and assemblers	2.3%	-19.1	75.2	3.5%	12.0	91.4
Elementary occupations	20.5%	-16.4	53.1	11.0%	1.9	68.7
Blue-collar	11.2%	-11.3	60.9	5.3%	3.9	91.1
White-collar	11.1%	-21.4	96.2	6.2%	7.6	144.3

Variable	Females			Males		
	Proportion of part-timers	Wage gap	Wage of full-timers	Proportion of part-timers	Wage gap	Wage of full-timers
Estonian	12.1%	-13.0	83.2	6.1%	4.5	109.8
Non-Estonian	8.3%	-34.9	67.6	4.0%	-1.4	97.1
Northern Estonia	11.3%	-24.2	99.9	4.9%	2.9	137.0
Central Estonia	10.5%	-15.5	72.0	5.2%	-26.9	88.9
North-Eastern Estonia	7.5%	-23.2	60.3	4.5%	-38.3	85.4
Western Estonia	11.4%	-13.1	72.1	6.1%	20.4	93.6
Southern Estonia	12.7%	-13.2	73.8	6.6%	6.6	91.0
Trade union	9.5%	-45.3	95.6	3.8%	-18.0	119.8
1-10	16.2%	-19.5	70.6	9.5%	6.8	94.5
11-49	11.1%	-18.0	79.8	4.5%	8.0	106.8
50-199	8.3%	-25.5	84.0	3.5%	-20.8	105.3
200-499	5.4%	-7.7	80.5	3.1%	1.9	111.9
More than 500	5.2%	-24.2	79.9	4.1%	-22.8	111.2
State firm	12.5%	-20.7	80.2	7.9%	-8.3	101.2
Private firm	10.4%	-15.8	78.1	4.9%	7.5	107.7
Domestic private firm	11.2%	-20.2	72.3	5.4%	0.9	98.4
Foreign firm	5.6%	-15.9	107.0	1.7%	17.7	162.5
All observations	11.1%	-18.5	78.9	5.5%	2.6	106.3

4. Econometric methods

To estimate the wage differences between part-time and full-time employed we use two econometric approaches: direct method and propensity score matching. According to direct method, separate wage equations are estimated for part-time and full-time employed (Bardasi and Gornick 2000):

$$(1) \quad \log(w_{pt}) = X'_{pt}\beta_{pt} + \varepsilon_{pt},$$

$$(2) \quad \log(w_{ft}) = X'_{ft}\beta_{ft} + \varepsilon_{ft},$$

where w_{pt} ja w_{ft} are (gross) wages of the part-time and full-time employed, respectively; X_{pt} ja X_{ft} are vectors of explanatory variables in the regression equations for the part-time and full-time persons, respectively; β_{pt} ja β_{ft} are vectors of the estimated parameters of the part-time and full-time wage equations, respectively; ε_{pt} ja ε_{ft} are the error terms of the part-time and full-time wage equations, respectively (normally distributed, with mean zero and standard deviations σ_{pt} and σ_{ft}).

Usually ordinary least squares method with White (1980) standard error correction is used to estimate the parameters of the equations (1) and (2). However, due to the research problem it is quite likely that there exists the problem of selection (because people select into part-time/full-time employment status non-randomly). Therefore, is several studies (for example Hardoy, Schone 2006) Heckman (1979) two-step estimation strategy is used to estimate the parameters of the wage equations (1) and (2) (but not in this article). After estimating the parameters, Oaxaca (1973) and Blinder (1973) methods can be employed to decompose the wage differentials into price effects and characteristics effects (for further details, see O'Dorchai *et al.* 2007). In particular, the wage gap can be decomposed into two parts:

$$(3) \quad \overline{\log(w_{ft})} - \overline{\log(w_{pt})} = (\overline{X_{ft}} - \overline{X_{pt}})\beta_{ft} + \overline{X_{pt}}(\beta_{ft} - \beta_{pt}),$$

where $\overline{\log(w)}$ is the average log hourly gross wage and \overline{X} is the vector of the mean values of explanatory variables. The first part in the right hand side of the regression equation describes the explained part of the wage gap, i.e. the part of the wage gap that is due to the differences in observable characteristics between part-timers and full-timers; that is also called “endowment effect”. The second term is the part of the wage gap that is caused by the differences in returns to observable characteristics; the term is often referred to as the price effect. Although it is often considered as the discrimination component, it also includes all potential effects in differences due to unobserved variables (Jann 2008). One decision to be made in case of the wage decomposition is the choice of the reference category (the category for which no discrimination occurs, Jann 2008). Though sometimes the full-time category is used in this place, in principle the part-time pay gap can be both positive and negative as we discussed earlier, so other options would be more appropriate, like using the coefficients from pooled regressions over both groups with the part-time. In our calculations we used the Oaxaca command for Stata developed by Jann

(2008); at the place of the reference coefficients the coefficients from the pooled model over both samples were used with pooled model containing a group membership indicator (i.e. the part-time dummy). In the explained part, also the contribution of each regression variable to the wage gap can be distinguished.

In addition to traditional econometric methods, we also use propensity score matching to estimate the wage gap between part-time and full-time employed. While initially used mainly in medicine to evaluate the treatment effects of the drugs, the scope of the application of propensity score matching (developed by Rosenbaum and Rubin, 1983) has widened substantially in past decade in economic studies, too. The general idea of the propensity score matching is to evaluate the treatment effects (in our case the “treatment” is the employment status: part-time *versus* full-time). Although according to the information available to authors, the method has not been used for analyzing part-time/full-time wage differentials so far, it has been employed to analyze gender wage differentials (Frölich 2007) and union-nonunion wage gap (Eren 2007).

In propensity score matching, it is assumed that following equation (known as conditional independence assumption, *CIA*) applies:

$$(4) E(Y_0 | D = 1, X) = E(Y_0 | D = 0, X), \text{ i.e. } Y_0 \perp D | X,$$

where Y_0 denotes the outcome variable, X is the vector of the observable variables, D is the treatment (1 if part-time, 0 if full-time employed).

The main advantage of the propensity score matching lies in the fact that the method enables to correct the selection bias while not making any strict assumptions about the functional form between outcome and explanatory variables. However, like any other matching procedures, propensity score matching has a certain limitations that should be kept in mind when making conclusions. Most importantly, like any other matching methods, PSM cannot match unmeasured contextual variables that may be important when determining the selection into treatment and control group (i.e. remaining hidden bias may be substantial, especially in cases when the treatment and control group do not have a substantial overlap).

There are several matching algorithms available (for more detailed overview, please refer to Caliendo and Kopeinig 2005). Basically in applying each of them involves a trade-off between bias and variance. In nearest neighborhood (NN) matching, the matching partner for each treatment group member from the comparison group is chosen to have the most similar propensity score. There are several NN matching methods developed, e.g.

- 1-to-1 NN matching (in this case only one matching partner with closest propensity score is chosen for each treated) and 1-to-n NN matching (N matching partners are chosen for each treated, the distance is calculated as an average);
- with replacement (each control group member can be used more than once as a match) and without replacement (each untreated can be used as a match only once).

In addition to NN matching, in the current study we also employ non-parametric kernel-based matching approach. Unlike the most of other PSM methods, kernel matching use weighed averages of all control group individuals when constructing the counterfactual outcome. The main advantage of the method is the lower variance due to the larger amount of information used. The major possible drawback is the scope of the bias caused by the bad matches. For the implementation of the propensity score matching we used the program `psmatch2` developed by Leuven and Sianesi (2003).

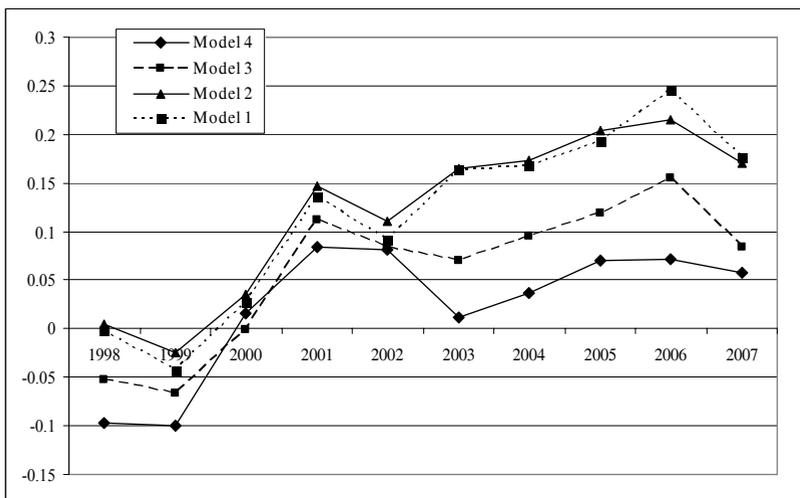
5. Part-time/full-time wage gap estimates

5.1. Direct method and Oaxaca-Blinder decompositions

We start the review of the econometric modeling results with Oaxaca-Blinder decomposition results. Naturally, all estimations have been made separately for men and women. The decompositions were made separately for different years as well as by taking different years together into 3 periods (1997-2000, 2001-2004, 2005-2007). This option was used also, because due to the relatively low frequency of part-time employment in Estonia there are not many part-timers in certain worker categories in a given year (e.g. among small firms, certain occupation, narrowly defined industry, etc.), thus parameter estimates could be become unstable and insignificant. Four different models were estimated, firstly only with constant term and year dummies (model 1), then with human capital variables (education, tenure at current job, model 2), additional controls like location, firm size, ownership dummies (model 3), and finally including also 9 occupational dummies (model 4). The list of control variables is based on earlier studies and is fairly standard. Due to the large number of different regressions estimated, we do not present the coefficients of all of these, but only for the model with the full set of control variables estimated on the sample where different years have been taken together (the parameters are not presented in the article, but are available from authors upon request). The parameters are mostly significant and with expected values, e.g. wages are higher in case of higher education, longer tenure, in capital area, larger firms, foreign owner firms, certain occupations. Differences between the parameters for full-timers and part-timers will be described below. For instance, previous evidence has shown that during part-time employment the accumulation of human capital is lower (i.e. there are very low returns to tenure). Although the returns to tenure are lower also among part-timers in our data, in Estonia especially in the beginning of transition tenure used to be relatively less important determinant of wages.

For females, the Figure 4 presents the decomposition results over years, while in Table 2 years have been aggregated into 3 periods. The results show that in all of the years and periods the observed wage-gap is negative, i.e. part-time employees earn more than the full-time employees; however, the wage gap is decreasing over time. The size of the gap varies from 20% to less than 5%. Part of the story could be either improved macroeconomic conditions that created labour shortage, thus the firms agree to higher part-time workers at relatively higher wages. Yet another explanation could be related to the introduction of the parental compensation since 2002 allowing one of the parents (usually, however, mothers use it) to stay at home for 15

months at the previous wage earned before parental leave, that may decrease labour supply at part-time positions during parental leave, however that would rather increase wage gap in favour of part-timers.



Note. The estimates are based on the Oaxaca-Blinder decompositions.

Figure 4. Unexplained wage gap in favour of full-time employees in case of females in Estonia.

As we can see, including more variables in the regression equation widens the wage gap, i.e. the unexplained wage gap is even larger when we control for various characteristics. Thus, part-timers are worse endowed regarding the characteristics controlled in the regressions, than the full-timers. For instance, relatively many of them have only basic education, or the proportion of part-timers is highest among the lowest-paying occupational group, elementary occupations. If we control for that worse endowment of part-timers, the wage gap thus increases.

The contribution of different factors to explaining the part-time wage gap is quite different, as we can see from Table 4. The most important ones are firm ownership, firm size and especially occupation, human capital variables are relatively unimportant. For instance as we saw, the percentage of part-timers is rather low in foreign owned firms, however these firms have on the average much higher wages. The wage-gap in favour of part-timers comes also from the occupational group “professionals” (that has the 2nd highest proportion of part-timers and in each period wage gap in favour of part-timers). Quite important indicator is the firm size – the proportion of part-timers is much higher among small firms (especially those with less than 50 employees) that have lower pay among full-timers. However, these are also the groups that have higher wages among part-timers while among the large firms the difference is much smaller. From here it is clear why controlling for firm-size has widened the gap in favour of part-timers – especially in conditions where

full-time employees have lower pay part-timers earn relatively more. The explanations for the lower pay among smaller firms is explained e.g. by the costs of employee monitoring, capital-skill complementarity and the complementarity between labour skills and advanced technology capital (Troske 1994). Concerning different sectors, part-timers are more often employed in the following industries: education, real estate, renting and business activities (i.e. part of business services), and other industries. Among these three, the positive wage gap in favour of part-timers is the largest in education.

Table 2. Estimated wage gaps and Oaxaca-Blinder decomposition, by periods, female

Year	Variable	Model 1	Model 2	Model 3	Model 4
Years together	Full-time	4.39	4.39	4.39	4.39
	Part-time	4.43	4.43	4.43	4.43
	Wage gap	-0.04	-0.04	-0.05	-0.05
	Explained	0	0.01	0.02***	0.05***
	Unexplained	-0.04***	-0.05***	-0.07***	-0.1***
19972000	Full-time	3.9	3.9	3.91	3.91
	Part-time	3.95	3.95	3.95	3.95
	Wage gap	-0.05	-0.05	-0.05	-0.05
	Explained	0	-0.01	0	0.05***
	Unexplained	-0.05**	-0.04	-0.05**	-0.1***
20002004	Full-time	4.21	4.21	4.21	4.21
	Part-time	4.28	4.28	4.28	4.28
	Wage gap	-0.07	-0.07	-0.07	-0.07
	Explained	0	0	0.01	0.03***
	Unexplained	-0.08***	-0.07***	-0.08***	-0.1***
20032007	Full-time	4.73	4.73	4.73	4.73
	Part-time	4.75	4.75	4.76	4.76
	Wage gap	-0.02	-0.02	-0.03	-0.03
	Explained	-0.01	0.01*	0.03***	0.06***
	Unexplained	-0.01	-0.03***	-0.06***	-0.1***
Year dummies		X	X	X	X
Human capital			X	X	X
Other controls				X	X
Occupation					X

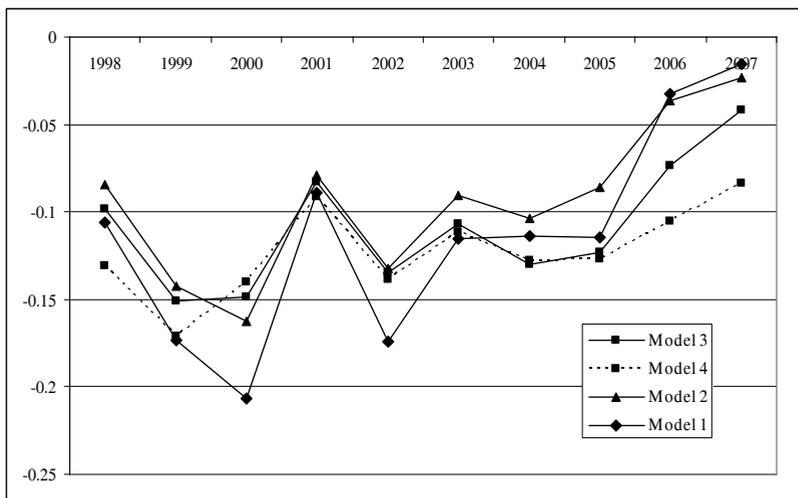
Note. * significant at 10%; ** significant at % ; *** significant at 1 %.

For males the picture is rather different (see Table 3 and Figure 5). In case of males, the wage gap is negative till 2000, and positive thereafter (meaning that full-time employees earn more); the magnitude of the gap is up to 25 percent (in 2006). Some pro-cyclical pattern can be noticed in the wage gap – the wage gap was growing during 2004-2006, the period of strong macroeconomic growth, while much smaller

in 1999 (the time of the economic downturn caused by the Russian crises) and decreased also in 2007, when the economic growth started to decelerate. The explanation could be that during the times of strong growth there was a labour shortage, so employers rather may have preferred to employ workers on the full time basis. On the other hand, concerning economic downturns, there is some anecdotal evidence that people previously working full-time and being moved to part-time basis start earning somewhat higher hourly wages.

Table 3. Estimated wage gaps and Oaxaca-Blinder decomposition, by periods, males

Year	Wage variable	Model 1	Model 2	Model 3	Model 4
Years together	Full-time	4.65	4.65	4.63	4.63
	Part-time	4.42	4.42	4.42	4.42
	Wage gap	0.23	0.23	0.21	0.21
	Explained	0.05***	0.07***	0.09***	0.14***
	Unexplained	0.17***	0.16***	0.11***	0.07***
19972000	Full-time	4.16	4.16	4.16	4.16
	Part-time	4.06	4.06	4.06	4.06
	Wage gap	0.1	0.1	0.1	0.1
	Explained	0	0	0.04*	0.09***
	Unexplained	0.1**	0.1**	0.06)	0.01
20002004	Full-time	4.44	4.44	4.43	4.43
	Part-time	4.26	4.26	4.26	4.26
	Wage gap	0.18	0.18	0.17	0.17
	Explained	0.01	0.03***	0.05***	0.08***
	Unexplained	0.17***	0.15***	0.12***	0.09***
20032007	Full-time	5.03	5.03	5.01	5.01
	Part-time	4.8	4.8	4.81	4.81
	Wage gap	0.23	0.23	0.2	0.2
	Explained	0.01	0.03**	0.05***	0.12***
	Unexplained	0.22***	0.2***	0.15***	0.08***
Year dummies		X	X	X	X
Human capital			X	X	X
Other controls				X	X
Occupation					X



Note. The estimates are based on the Oaxaca-Blinder decompositions.

Figure 5. Unexplained wage gap in favour of full-time employees for males in Estonia.

Concerning the importance of different factors (see Table 4), as we can see, human capital variables explain almost nothing of the part-time pay gap. One reason could be that as we saw also from the descriptive tables, among part-timers there are a relatively higher proportion of people with either primary or higher education, while among full-time employees there are a higher proportion of people with secondary education. When the model is extended with other controls, the explained part of the wage gap increases to about 70% of the total gap that is more similar to earlier studies. In align with earlier studies, occupation is rather important – adding the dummies for 9 occupational categories increases the explained share of wage gap almost twice (up to 60-70%). Concerning different years, the wage gap was negative until 2000 (i.e. part-time employees earned more till that time), and positive thereafter. The story then seems to be that male working part-time are occupied in positions with generally lower pay; differently, the within occupational group wage gap is significantly smaller than the overall wage gap. The descriptive data shows that the proportion of part-timers is only slightly higher at white-collar occupations relative to blue-collar occupations (during 2004-2006 6% versus 4.5%); however, closer look reveals that they are quite overrepresented among elementary occupations, that have the lowest wage in the white-collar group. In terms of firm size, part-timers are more frequently employed in smaller firms that have lower pay among full-timers. Concerning industries, the most frequent industries are somewhat different, these are education, hotels and restaurants and other. The results on the detailed decomposition results indicate that the factors most important for explaining the part-time wage gap are similar to those observed in case of females, namely firm

size, firm ownership, occupation, reflecting that part-timers work more often in smaller firms, domestic firms and occupations like, where pay is usually lower.

Table 4. The importance of different factors in accounting for part-time pay penalty or premium as percentage of the explained wage gap

Year	Variable	Model 4, females	Model 4, males
Years together	Explained	0.1	0.1
	Education	-2.2	5
	Tenure	9.7	4.5
	Sector	0.3	-2.1
	Region	-10.5	1.7
	Firm size	36.9	20.7
	Firm owner	26.7	15.1
	Occupation	51.1	31.3
	Nationality	-16.7	-9.1
	Union membership	0.7	0.9
	Year dummies	4.1	31.9

What could be the reasons for the part-time wage penalty being positive in case of men and negative in case of female? Russo and Hassink (2008) explained that in case of Netherlands with either men being more permanently earned on part-time basis and women switching between part-time and full time employment, and secondly, by the part-time employment being used more often in case of men as a screening device (e.g. to decide about promotions).

5.2. Propensity Score Matching

When applying the propensity score matching to analyse part-time/full-time wage gap in Estonia, following approach was used for each year and males/females separately. Firstly, the propensity score for each person was found using the probit model. Due to the small sample size, it is highly likely that the results are sensitive to the matching procedure applied. Therefore three different matching algorithms were used: gaussian kernel, epanechnikov kernel (default in psmatch2 command for Stata with kernel matching) and nearest neighbourhood matching (5 nearest neighbours from the control group were used as matching partners).

For females (see Table 5), in all years similar to raw wage gaps the statistically significant part-time premium is observable on the adjusted basis. The scope of the differences, however, varies according to matching method used. However, the average treatment effects of the different methods are quite similar in most years, results found using epanechnikov kernel and NN matching are very close (except in 2007) and Gaussian kernel gives estimates for the ATT somewhat higher than the results found by applying the other two methods. The scope of the wage differences shows no clear trend; however during the Russian crisis the part-time premium was

higher than for the rest of the period. For most of the years we can see that similarly to the Oaxaca-Blinder decompositions, after considering various factors the wage gap becomes even more extensive.

Table 5. Unmatched and matched wage differences by different propensity score matching methods for females (t-statistics in parentheses)

Year	Unmatched wage difference	ATT for various matching algorithms		
		Kernel (Epanechnikov)	Kernel (Gaussian)	1-to-5 NN
1994	-3.1 (-2.36)	-5.0 (-2.75)	-3.8 (-1.60)	-4.9 (-2.47)
1995	-11.6 (-6.45)	-13.2 (-4.90)	-10.6 (-2.42)	-12.9 (-4.43)
1996	-6.75 (-2.16)	-8.7 (-2.23)	-7.8 (-1.70)	-8.7 (-2.08)
1997	-14.65 (-9.73)	-16.8 (-5.26)	-17.1 (-4.89)	-17.6 (-5.42)
1998	-11.8 (-9.95)	-13.1 (-6.10)	-13.4 (-5.28)	-12.3 (-5.52)
1999	-17.2 (-10.38)	-17.9 (-5.66)	-16.9 (-4.52)	-17.0 (-5.20)
2000	-26.1 (-10.58)	-23.2 (-4.62)	-19.8 (-3.58)	-21.3 (-4.16)
2001	-5.1 (-2.30)	-4.2 (-1.58)	-6.9 (-1.78)	-6.3 (-2.14)
2002	-13.8 (-5.29)	-11.4 (-2.91)	-13.8 (-5.29)	-10.5 (-2.52)
2003	-10.9 (-4.22)	-10.7 (-3.55)	-10.4 (-2.38)	-11.1 (-3.27)
2004	-8.1 (-2.96)	-8.6 (-2.81)	-6.1 (-1.22)	-8.2 (-2.36)
2005	-12.2 (-3.71)	-13.1 (-2.94)	-11.2 (-2.01)	-14.5 (-3.06)
2006	-9.8 (-2.86)	-15.8 (-3.79)	-22.3 (-3.98)	-17.0 (-3.61)
2007	-6.8 (-1.84)	-17.5 (-3.77)	-11.3 (-1.48)	-13.8 (-2.66)

As we can see from Table 6, for the first half of the period, the part-time premium is observable for males in Estonia. The scope of the premium shows no clear trend, fluctuating year to year. On the contrary, since 2001 in most years the part-time penalty is observable. However, the values of the t-statistics indicate that the differences between part-time and full-time working men are in most years not statistically significant, most likely due to the small sample size. In most cases the ATT is smaller than the raw pay gap. That is in accordance with our earlier decomposition results – part time wage gap tends to decrease significantly once the differences in the part-time and full-time employers are taken into account.

However, during the Russian crisis statistically significant part-time premium is observable for males. Possible reason for this tendency may lie in the fact that when due to the deteriorated economic conditions in the companies shortened working time was used (the same tendency is observable at the moment, i.e. 2008), the working hours of the employed were reduced more than the wage.

Table 6. Unmatched and matched wage differences by different propensity score matching methods (males; t-statistics in parentheses)

Year	Unmatched wage difference	ATT for various matching algorithms		
		Kernel (Epanechnikov)	Kernel (Gaussian)	1-to-5 NN
1994	-6.3 (-1.82)	-9.3 (-1.88)	-9.8 (-1.84)	-11.0 (-2.21)
1995	-12.5 (-3.48)	-15.0 (-1.71)	-9.7 (-1.03)	-14.0 (-1.60)
1996	-9.0 (-1.57)	-11.1 (-0.92)	-17.5 (-1.42)	-9.4 (-0.79)
1997	-7.4 (-2.79)	-9.6 (-2.26)	-5.4 (-0.83)	-9.8 (-2.12)
1998	-26.9 (-6.71)	-29.7 (-2.11)	-34.8 (-2.43)	-31.6 (-2.23)
1999	-12.8 (-4.49)	-16.8 (-3.46)	-15.7 (-2.62)	-16.4 (-3.24)
2000	-3.3 (-0.74)	-6.8 (-1.33)	-3.1 (-0.37)	-5.2 (-0.92)
2001	11.7 (2.31)	7.6 (1.43)	6.1 (0.78)	8.8 (1.59)
2002	7.0 (1.31)	9.4 (1.66)	15.4 (1.38)	10.1 (1.50)
2003	3.4 (0.56)	-4.2 (-0.42)	6.1 (0.53)	-7.7 (-0.74)
2004	23.0 (3.57)	13.6 (2.44)	9.0 (1.00)	6.9 (1.04)
2005	24.5 (2.85)	8.3 (0.93)	24.0 (1.90)	12.8 (1.24)
2006	22.7 (2.52)	3.5 (0.26)	-17.9 (-1.06)	-2.23 (-0.16)
2007	12.9 (1.30)	5.0 (0.40)	-1.6 (-0.10)	-6.6 (-0.50)

6. Conclusion

In this paper we studied the wage gap between the pay of part-timers and full-timers by using the Estonian Labour Force Survey data from years 1997-2007. The wage gap was firstly estimated from the wage regressions using Oaxaca-Blinder decompositions and thereafter and propensity score matching technique. As explanatory variables, we used various human capital variables, firm size, regional and occupation dummies et cetera. Given that the reasons for part-time work differ considerable between male and female employees, all regressions and calculations were separately estimated for these two groups.

The results were quite different for males and females. For females the raw wage gap was in favour of part-timers, i.e. the part-time employees earned in different periods about 5-20% more than full-timers. After taking into account various worker characteristics, the difference did not vanish but even enlarged, i.e. part-timers are with less favourable labour market characteristics (i.e. work more often in small firms with low pay), thus the unexplained part of the wage gap is larger than the raw wage gap. In case of men, part-timers earned more than full-timers before year 2000, but since then the pay of full-timers have been larger, and the wage gap grew to 25% in 2006. Differently from women, the part-time wage gap of male was to large extent explained by various variables, most important of which were the dummies for different occupational groups, firm size groups and firms with different owners (similar factors were important also in case of female). Thus, the results that in the

matching estimations only the pay gap of the women turns out to be statistically significant, is not only due to the much smaller frequency about the part-time employment among men, but also because in case of male the gap can be explained by differences in endowments between part-timers and full-timers, while not so in case of the female.

The study needs to be developed in several directions in order to fully understand the nature of part-time gap in our data. Firstly, we need to control for the non-random selection into part-time employment. Secondly, voluntary and non-voluntary part-timers can have rather different pay-gap. The previous evidence has showed that in Estonia among the part-timers relatively more are involuntarily while in Western European countries most part/timers are voluntary (Krillo *et al.* 2007).

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ANALYSING REPEAT VISITATION ON COUNTRY LEVEL WITH PASSIVE MOBILE POSITIONING METHOD: AN ESTONIAN CASE STUDY¹

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Abstract

The purpose of this paper is to investigate the capabilities and limits of the passive mobile positioning (PMP) method in studying loyalty of tourists on the macro level. The repeat visitors were identified using database of call activities of roaming phones in Estonia since 25.04.2005 till 31.01.2009. For this purpose was developed model which selected repeat visits on the basis of time interval.

The findings of the study revealed that it is possible to observe the duration, density, seasonality and dynamics of repeat visitations. In addition the local destinations and events most loved by repeat visitors and the trajectory they are using could be also identified. Another important finding revealed that repeat visitors stay longer in destination than first time visitors. The results presented in this paper could be used by Estonian Ministry of Economic Affairs and Communications and by Enterprise Estonia developing the Estonian tourism policy.

Keywords: loyalty, destination loyalty, repeat visitation, tourism marketing, passive mobile positioning method, Estonia.

1. Introduction

Tourism industry is for most of countries very important branch of economy. For example in year 2006 every second country in EU-27 got over 3 % of GDP from the international tourism receipts and every third country in EU-27 had this proportion even over 5%. Tourism plays even more important role in the new members of EU. – for example in Estonia was in year 2006 proportion of international tourism receipts in GDP 6.2%. (European ... 2008) Therefore tourism industry should be given high priority by the government and efforts should be taken in order to prepare a very professional marketing strategy of tourism industry on the macro level. Papadopoulos (1989) has pointed that for a national tourism organisation a well co-ordinated tourism marketing planning process is vital in order to survive and prosper in the tourism industry. During the past thirty years the emphasis of the marketing strategies has shifted from one-shot transactions to long-term relations. (Gummesson 1999) Nowadays the retention of loyal customers is more important than winning new ones. Research carried out by different authors has shown several reasons for that:

- Reduction of marketing costs (Rosenberg *et al.* 1984).

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- Lower customer management costs (Buttle 2004; Reichheld 1993).
- Increasing purchases (Bowen *et al.* 2001; Buttle 2004)
- Reduction of risks (Buttle 2004)
- Positive word-of-mouth (WOM) (Oppermann 2000; Buttle 2004; Petrick 2004; Bowen *et al.* 2001)

Above mentioned reasons are extremely relevant in the tourism industry as well. The increasing number of destination alternatives and thus competition for market share requires destination managers to think about customer retention and how to keep customer returning and continuing to repurchase. On the firm level customer returning is important due to all reasons mentioned above. On the destination region or country level Oppermann (1999) has added that the knowing of the amount and type of loyal tourists helps to forecast the total demand, design infrastructure and create positioning strategy.

Marketing strategy formation presumes gathering and analyzing data. There are two levels of analysis of loyalty: micro and macro (Jacoby *et al.* 1978) The micro level is linked with attitudes answering questions as why customer is loyal and what kind of variables affect his/her loyalty to certain brand or destination. Macro level measures behaviour – the outcome of attitude. Kyle, Graefe, Manning and Bacon (2004) have conceptualised psychological commitment as the attitudinal component of loyalty and an antecedent of behavioural loyalty. Oppermann (2000) suggests use behavioural characteristics of destination visitation for measuring destination loyalty because destination selection and trip planning are high-involved decisions and therefore spurious loyalty (not very positive attitude but high repeat purchase) is little likely to occur. On the country level it sounds quite reasonable suggestion because it should be easier to register quantitative events than carry out qualitative interviews. Nevertheless, conventional quantitative methods are too limited and restricted to answer complicated questions about international tourism flows in a globalising world. For example, the traditional statistics on tourist flows, such as border and accommodation statistics do not provide researchers information concerning the choice of destination or the evaluation of objects of interest and the infrastructure visited. Also, in many European Union (EU) member states as in Estonia, border statistics are no longer recorded. Accommodation statistics often have problems with tax violations in Eastern European and other countries, and overnight stays do not show the daily geographical movement of persons. (Ahas *et al.* 2008) Besides, by the best knowledge of the authors of the current paper only some European countries officially collect data about repeat visitations. Recent developments in information and communication technologies (ICT) such as geographical information systems (GIS) and digital databases are advancing surveying methods in geography and tourism studies. One of the emerging subjects in geographical studies is connected with mobile (cellular) phone positioning datasets and location-based services (LBS) Mobile positioning data has great potential for applications in space-time behaviour studies addressed in studying tourism geography, though there are various restriction and pre-conditions in ICT applications. (Ahas and Mark 2005; Ahas *et al.* 2008)

The objective of this paper is to investigate the capabilities and limits of the passive mobile positioning (PMP) method in studying loyalty of tourists on the macro level and thus bring out new inputs for formation of tourism strategies for regions and countries. Paper is opened by the overview about the previous research on customer loyalty. It follows by the explanation about the PMP method. Third section presents the results of the first empirical attempts and provides the discussion about strengths and weaknesses and further potential of the method. Paper concludes by the tourism policy implications of the proposed method in the case of Estonia.

2. Literature overview

There are multiple approaches to customer loyalty. The pioneering work by Melvin Copeland was published in 1923, which proposed that three types of consumers' attitude toward the brand could be identified: recognition, preference and insistence. In the case of recognition the relation with the brand is weakest: the recognized brand will be selected from the other unrecognized brands or from among unbranded merchandise. In the case of insistence the relation with the brand is strongest: customer accepts no substitute unless it is an emergency. (Copeland 1923) Until 1970 theories of behavioural loyalty (repeat purchase behaviour) were dominating. Some theories considered loyalty as a function of the share of total purchases (for example Cunningham 1956). Farley (1964) has stated, that customer is brand loyal if the number of different brands consumed is low in certain time period. Both Cunningham and Farley and also other authors (Jacoby 1971; Ehrenberg 1974; East *et al.* 1995) have not excluded that customer can be loyal to many brands in the same time. Other theories considered loyalty as a function of buying frequency or buying pattern (Tucker 1964; Sheth 1968) or function of repeat buying probability (McConnell 1968). There are a lot of studies investigating the validity of the statement that the probability of the repeat buying follows the Markov chain approach. According to this approach the probability of the event depends only on the last event and all other event before have no effect. (Harary *et al.* 1962; Sheth 1968) I.e. a customer is brand loyal if his possibility of buying a particular brand at time t , conditional on identical purchase at time $t-1$, is larger than the corresponding unconditional probability. (Wernerfelt 1991).

These approaches (except Copeland's) looked the brand loyalty as a stochastic behavioural phenomenon. These theories did not attempt to explain why customers behave loyally. Bass (1974) stated that even if behaviour is caused by some variables but the bulk of the explanation lies in a multitude of variables which occur with unpredictable frequency, then, in practice, the process is stochastic. During the late sixties the popularity of stochastic models dropped and some deterministic views on loyalty were proposed. In the year 1968 McConnell tried to prove that loyalty depends on the perceived value of the brand. (McConnell 1968). In the next year Day (1969) introduced the two-dimensional concept of brand loyalty, which stated that loyalty should be evaluated with both behavioural and attitudinal criteria. In his study he showed that 30% of customers who behaved loyally hadn't very or extremely favourable attitude toward the brand. (Day 1969) Jacoby and Kyner (1973) predicted also that repeat purchases of one brand by customers are not

stochastic and there exist variables influencing the customers choice. The approach they proposed is very much used also nowadays: brand loyalty is biased, behavioural response, expressed over time, by some decision-making unit, with respect to one or more alternative brands out of set of such brands and is a function of psychological (decision making, evaluative) process. (Jacoby *et al.* 1973)

Contemporary researches consider and accent the psychological (mostly attitudinal and emotional) factor of loyalty. For example Oliver (1999) defines loyalty as a deeply held commitment to rebuy or repatronize a preferred product or service in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour. Chaudury (1995) says that loyalty is a consumer's preference to buy a single brand name in a product class and it is a result of the perceived quality of the brand and not its price. According to Dupe, the loyalty is a continued psychological identification and social attachment arising from involvement with a social or political institution, whether a class movement, car brand, sports team, beer, political party, religion etc (Dupe 2000). For Reichheld the customer loyalty is about much more than repeat purchases. It is the willingness of someone (a customer, employee, a friend) to make an investment or personal sacrifice in order to strengthen a relationship. (Reichheld 2003). There are also approaches comparing loyalty with marriage (Hofmeyr *et al.* 2000; Lewitt 1983; Dwyer *et al.* 1987).

In the literature there is very often used term *brand loyalty*. According to Dupe's definition showed above, it is possible to be loyal to anything. Hence high variety of terms like *store loyalty*, *service loyalty*, *political loyalty* are used. In the tourist behaviour research the loyalty is not exactly defined. Most frequently there are two terms used: *destination loyalty* and *repeat visitation*. First pertaining to tourist's attitude toward a destination and second related with tourist's consumption behaviour.

There is a plenty of methods to measure behavioural or attitudinal loyalty. Jacoby and Chestnut described already in year 1978 about 53 methods to measure loyalty, of them 33 to measure behavioural and 11 to measure attitudinal loyalty. All of them are quite complicated and contain numerous and serious problems. (Jacoby *et al.* 1978) Jones and Sasser (1995) have proposed three measures of loyalty:

- **Customer's primary behaviour** – recency, frequency and amount of purchase;
- **Customer's secondary behaviour** – customer referrals, endorsements and spreading the word;
- **Customer's intent to repurchase** – is the customer ready to repurchase in the future.

In tourism literature several authors have adopted similar approach. Oppermann (2000) measured number of revisits, Petrick (2004) measured number of revisits, WOM and intents to revisit, Chen and Gursoy (2001) used tourist's willingness to recommend a destination as an indicator of their loyalty. Valle, Silva, Mendes and Guerreiro (2006) have successfully tested a hypothesis that revisiting intention and

willingness to recommend are adequate measures of destination loyalty intention. Due to the difficulties in measuring affective loyalty behavioural measures are generally utilized more often to measure loyalty (Petrick 2004). As mentioned before, Oppermann (2000) suggests the use of the behavioural characteristics of destination visitation for measuring destination loyalty. In the current study only the first behavioural measure - primary behaviour – is in the focus.

Method and data of the survey

There are many methods and approaches that can be used to locate mobile telephones. Technical solutions vary from handset-based systems with special telephone software to satellite navigation and peer-to-peer positioning tools using Bluetooth. Passive mobile positioning data is concerning the location of call activities or handovers of the mobile telephones in network cells that is automatically stored in the memory of service providers (Ahas *et al.* 2008). This data source offers good potential for the monitoring of the geography and mobility of the population, since mobile phones are widespread, and similar standardized data can be used around the globe. Issues of privacy and surveillance are very important aspects of any mobile positioning data.

Passive mobile positioning data is normally collected to the precision of network cells. Every cell has a certain geographical coverage area and unique identity code, and therefore this method is called Cell ID. The size of a network cell and all cellular networks is not fixed; the phone normally switches to the closest antenna or the one with the strongest radio coverage or best visibility. If the network is crowded or visibility is disturbed, the phones can be switched not to the nearest station but to any other in the neighbourhood.

In the current paper there is used data from the EMT which is the largest Estonian mobile operator. EMT covers nearly 99.9 percent of the total land area of Estonia, which measures 46,000 km². Geographical preciseness was determined with Cell ID (Figure 1). The method for data collection and analysis has been developed in Estonia in cooperation between private company Positium LBS, mobile operators and the Department of Geography of the University of Tartu.

The database used in the current study includes the locations of all call activities of foreign (roaming telephones) in EMT network: calls in and out, SMS in and out, and any other active use of network. The entries include the following parameters for every call activity:

- a) the time of the call activity;
- b) the random ID number for the phone (not related to phone or SIM card number);
- c) the cell ID with the geographical coordinates of the antenna;
- d) nationality – the country of origin of telephone.

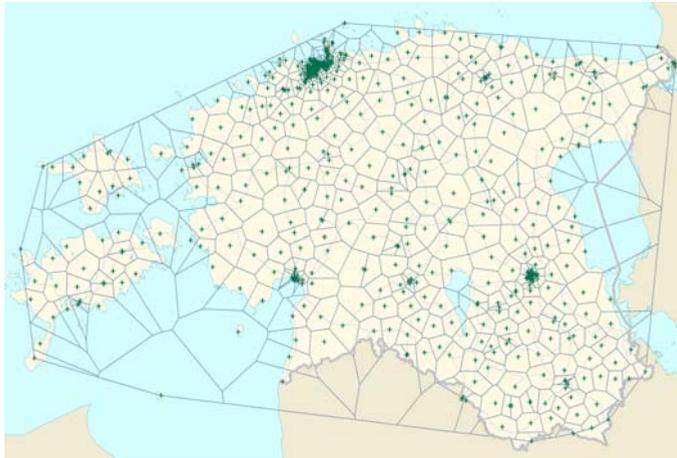


Figure 1. Distribution of networks cells (Cell ID) of EMT Network in Estonia (+ antenna, cells calculated by Voronoi tessellation).

Due to privacy issues, the database does not contain any personal information about the respondents, but only a randomly given ID for every phone. The random ID generated by the operator enables to identify the calls made by one person during the study period. There are hundreds of locations of calls for every ID, and analysis of this data is in the beginning. An example of the database is: Nationality Latvian; Time September 8. 2007. 22:03:11; ID 64353; Location E27-44-39.00 N59-25-49.00.

The use of mobile positioning data brings up the issue of privacy and surveillance. This is the major concern of general public as well as phone holders, operators, and researchers. Therefore the research team together with the mobile operators and the Estonian Data Protection Inspectorate checked carefully the accordance of data use with Estonian legislation and EU directives (Directive 95/46/EC; Directive 2002/58/EC). Mentioned study and discussions concluded that the personal privacy of respondents is protected. There is no personal information connected with data, and the generalisation level of the analysis does not allow the identification of single persons on geographical or temporal grounds. It is not possible to extract individual movement tracks from the data. Nevertheless, there is concern about issues of privacy and ethics, as any use of mobile positioning data is very sensitive in this respect.

The repeat visitors were identified using database of call activities of roaming phones in Estonia since 25.04.2005 till 31.01.2009. For this purpose was developed model which selected repeat visits on the basis of time interval. The study of frequencies of call activities in Estonia showed that majority (88.8 %) of calls were made with interval of 24 hours (Figure 2). Those calls made within 24 hours were probably made during same (single) visit to Estonia. The rest of 11.2% calls was

distributed over the all study period of 3 years. For determination of repeat visit was selected minimal interval of 7 days without calls in Estonia. Of course, the chosen 7 days is not ideal time unit. There is a need to analyse visiting frequencies of different nationalities and destinations and to make statistical model for selecting best interval for repeat visits.

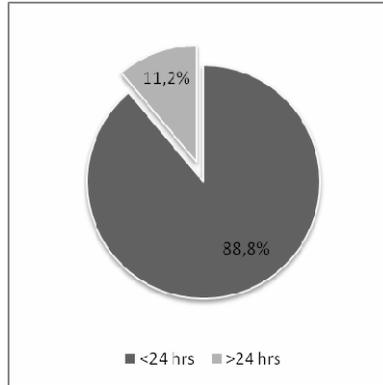


Figure 2. Temporal distribution of repeat calls: >24h and <24h.

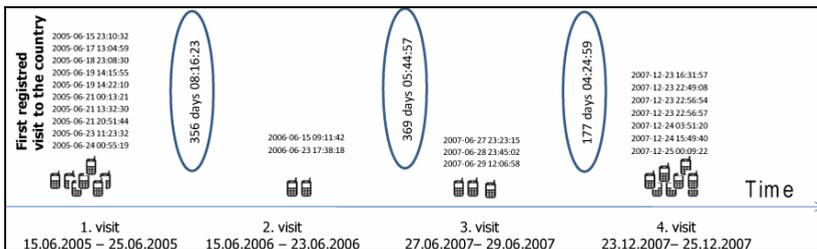


Figure 3. An example of visiting profile (call activities and timing) of one repeat visitor.

This interval of 7 days allowed to identify persons (telephones) which visited Estonia more than 1 times per 3.7 years of study period. The visualisation of model is presented in figure 3 with one randomly selected phone. Using this model were selected repeat visits from database of all visitors for period of 25.04.2005-31.01.2009. The duration of visits was determined as time interval between first and last call made in Estonia during one visit.

Results and discussion

All together there was 2.26 million visitors and among them was 675 000 visitors who visited Estonia more than 1 time during the study period. This makes 29.9% of total number of visitors repeat visitors (Figure 4A).

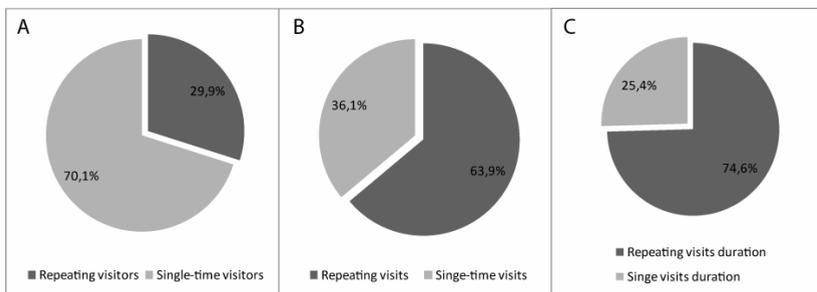


Figure 4. Share of repeating visitors (A); repeating visits (B); duration of repeating visits (C).

The proportion of repeating visits was much higher than number of repeating visitors. 63.9% of total number of visits to Estonia is made by persons visiting Estonia more than 1 times (the number of visits includes also the first visit of repeating person) (Figure 4B). The duration of repeating visits is even longer, 74.6% of visiting time in Estonia was spent by repeating visitors (Figure 4C).

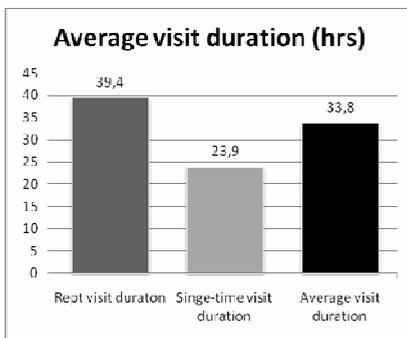


Figure 5. The average duration of visit for repeat visits and single visits.

The length of average repeating visit is longer than single visit. Repeating visitors stay in Estonia 39.4 hours, single time visitors 23.9 hours (Figure 5). The database of repeat visitors consist all together more than 100 nationalities. Different nationalities have different proportions of repeat visitors (Figure 6). This is influenced by geographical location as neighbouring countries are more frequent visitors. This share is also influenced by size of country and number of total visitors. Bigger countries have higher number of possible visitors. Smaller visitor number makes variability higher. There are also special cases Indonesia and Philippines. Many international ship crews are composed from those nationalities and if those ships visit regularly Estonian waters they are presented with high share of repeat visitors.

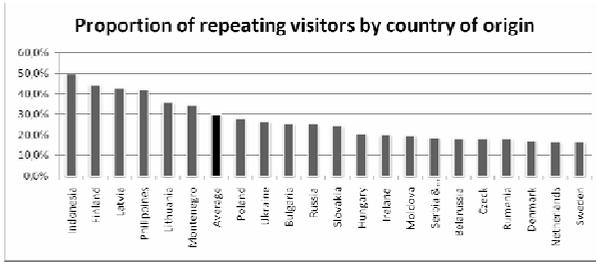


Figure 6. Proportion of repeating visits by country of origin in all databases.

National distribution of repeat visitors is different from share of all visitors (Figure 7). The share of repeat visitors is higher than share of all tourists for closest neighbours. Finns make 53% of all repeat visitors compared for share of 35% from total visitor number. Same number for Latvians is 13.1% and 9.1%; Lithuanians 4.7% and 3.9%. Numbers of visitors is remarkably smaller for other nations and differences in share of repeat visits are not visible in total visitor flow.

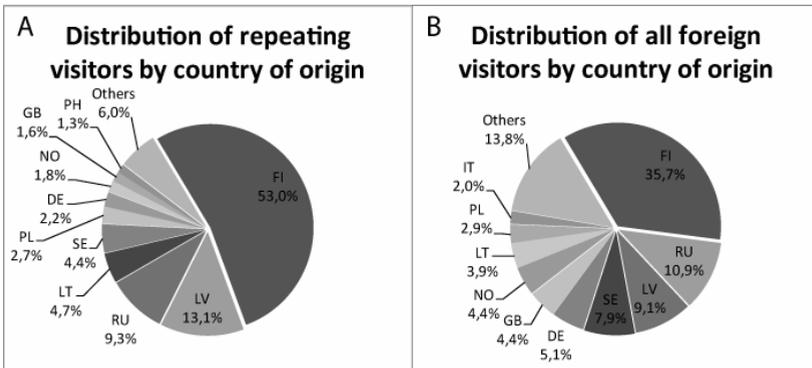


Figure 7. Distribution of all foreign and repeating visitors by country of origin.

The repeat visitors can be also divided into frequent and rare visitors. Rare visitors make 1-2 visits per year or few visits during all study period of April 2005 to January 2009. Frequent visitors can be identified as those who have made more than 5 visits during study period, frequency of their visits is higher and interval 1-10 weeks (Figure 8). The frequent visitors make 22.9% and rare visitors 77.1% of total number of repeat visitors.

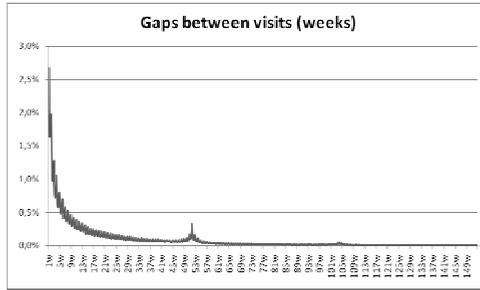


Figure 8. Distribution of regular visits, rare and frequent visitors.

The geographical distribution of repeat visits has special pattern (Figure 9). Tallinn and surrounding Harju county have highest percentage of repeat visits – 25.5. This is probably because Tallinn Harbour and Airport is major gateway for most of tourists visiting Estonia and especially for major visitor group Finns. Võru county has relatively low number of visitors but share of repeat visits is high: 23.7%. This can be because of crossing highway from Latvia to Russia.

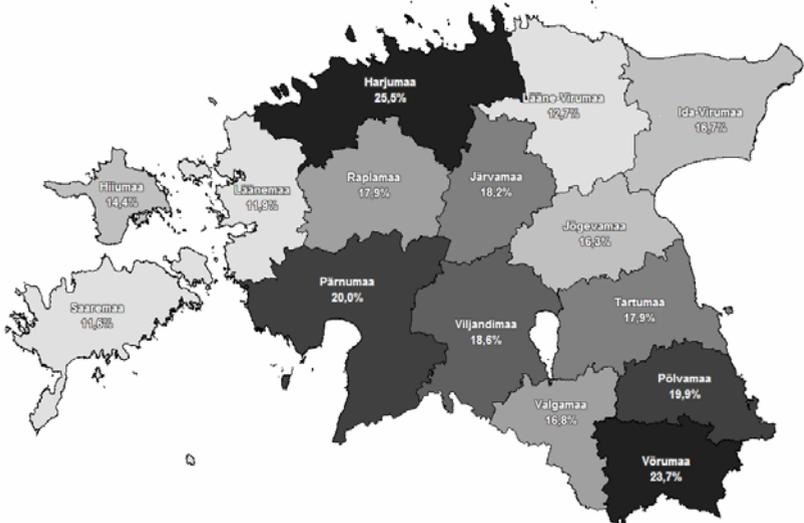


Figure 9. The geographical distribution of repeat visits in Estonian counties (% of repeat visits in total number of visitors).

Second cause can be that this Estonian region is most distant from Tallinn harbour and Airport which is major international Airport in Estonia. Distance is minimising number of irregular visitors and share of repeat visitors is rising. The higher share of repeat visits is also in Pärnu county, which is situated on major highway from Riga

(Varrssavi) to Tallinn (Helsinki, St Petersburg). Pärnu is major spa and beach resort for Estonian and foreign visitors in Estonia. Smallest number of repeat visitors is in Saaremaa (11.6%), Läänemaa (11.9%) and Lääne-Virumaa (12.7%) counties. Reason for such a distribution is not clear as Saaremaa and Läänemaa are also counties with a lot of tourism attractions and high number of visitors. The geographical distribution of repeat visits and visitors need more detail analysis.

Empirical data reveal the importance of the repeat visitors in the Estonian tourism industry. The proportion of repeat visitors was about 30 per cent of all visitors (see fig. 4 A), about 64 per cent of total visitations (see fig. 4 B) and 75 per cent of the total time spent in Estonia by all visitors during the observed time period. It reflects the behavioural difference of repeat visitors from first time visitors. They are visiting Estonia more often and their visit last longer than first time visits. Figure 5 indicates that duration of repeated visits (ca 40 hours) is on an average about 16 hours longer than first time visits. Authors have observed the average duration of repeat visits of several segments (results are not presented in current paper). It turned out that “infrequent” visitors stayed longer than “frequent” visitors. For example tourists visiting Estonia once per month or more seldom used to stay in Estonia on an average around 6 days. It is interesting result, which requires further research.

But already based on the current findings one could argue that there exists a very important reason accrued for governments to manage loyalty of tourists. Addressing the segment of repeat visitors, who prefer to stay longer in Estonia could be increased the tourism revenues. This proposition accords with the statement mentioned above about the long-term customers willingness more likely to expand the relationship with suppliers – in this particular case with the region or country.

Another important distinction is to explore the distribution of the repeat visitors by their countries of origin. As mentioned above Oppermann (2000) has stated that repeat visitors very likely have positive attitude towards the destination. According to Kuusik and Varblane (2009) there are multiple ways to segment customers by loyalty. These segments have different reasons to behave loyally and therefore in order to address their needs different strategies should be implemented. As seen on the figure 6 the proportion of repeat visitors is highest by Indonesians and quite high by Filipinos. It is very likely that repeat visitations of this segment are not associated with positive attitude – they are forced to be loyal and come back to the destination only because they are sailors. Thus, quite big portion of repeat visitations are probably made by sailors or long-distance drivers. In the future it is needed to develop the PMP method to better distinguish tourists from sailors and long-distance drivers. For example it should be possible to handle separately repeat visitors who visit old towns, beaches, events or sightseeing areas. On the other hand it is not reasonable to exclude sailors and long-distance drivers (repeat visitors who use mobile phones only on the harbour areas or near the highways) from further investigation. Because they form a quite big segment - solely Filipinos there are about 1.3 per cent among repeat visitors (see fig. 7 A). From the tourism policy prospective is necessary to explore how much and how often they use

accommodation, catering and other services offered in regions where they stay or drive through. This issue needs special discussion.

As seen on the figure 8 it is possible to segment repeat visitors by frequency of the visits. There are frequent visitors who visit Estonia every week or every month. And there are infrequent visitors who visit Estonia once in a year or in two years. Definitely they are distinct segments having distinct motives and attitudes and therefore it requires distinct strategies to approach to them. For example some of the frequent visitors could be foreign workers or business people. It is another avenue for the future research - surveys are needed to explore more precisely who belong to these segments and which is their calling behaviour. The problem is also, how to filter out the Estonians working abroad. It is highly probable that many of the repeat visitors are not traditional tourists but related to Estonia by work or family ties. They are not in Estonia permanently but with long intervals and they use in Estonia mobile telephone, which is registered in foreign country. In the current paper they were treated as repeat visitors. On the one hand they are like other foreign residents and through their spending in Estonia they also generate tourism receipts for Estonia. From this aspect they are as valuable for Estonia as “traditional tourists”. On the other hand it is not right to treat them as loyal foreign tourists and assign their behavioural specificity to the traditionally defined tourists.

Policy implications of the use of PMP method

The major strategic document regulating Estonian tourism policy is National strategic plan of tourism development of Estonia 2007-2013 ratified by Estonian government in 2006. The aim of the plan is to present the balanced strategy for increasing the international competitive ability of the Estonian tourism sector and therefore support the Estonian economic growth. The strategic aims of Estonian tourism policy address the importance to deal with (National ... 2006):

- Increasing the reputation of Estonia as tourism destination;
- Advancement of tourism product development (increase of knowledge and quality, several innovative products and activities, development of cooperation networks);
- Development of the information system of tourism.
- The execution and development of tourism policy is delegated to the Estonian Tourist Board of the foundation “Enterprise Estonia”. (National ... 2006) Enterprise Estonia is managed by 13-member supervisory board and 5-member management board consisting of the top entrepreneurs and officials and the members of the parliament. Enterprise Estonia has developed more detailed action program to achieve the first aim mentioned above. There are some major statements of the action program listed as follows (Promoting Estonia ...):
- In constant increase of the share of the independently organised trips the final consumer of the potential tourist is in the main focus.
- The aim is to extend the visit to Estonia, favour the first visits from the farther markets and repeated visits from the close markets and the visits beyond the

high season, also to expand the client base for the different age groups and more demanding and solvent client group.

- The campaigns, advertising introducing the attractive tourism products are directed to the publicity of target markets and the media relations are organised to perceive the reputation of Estonia as the appropriate tourism destination at the important target markets.
- The citizens of EU member states, especially close markets, incl the tourists of Finland, Sweden, Norway, Russia, Germany, Great Britain, Latvia, Spain are of high potential and priority for Estonia as the tourism destination.

It is clearly seen that the main focus of mentioned policies lies on the big campaigns which are directed to the big target markets. And even if there was stated that repeated visits from the close markets are wanted, there are no sufficient indicators for measuring that. In practice, it is possible to measure only export turnover of the tourism services and number of overnights made by tourists. The results of the empirical use of PMP method presented above clearly indicate high potential of its use in order to improve the quality of data about tourism flows in Estonia. Particularly relevant feature of the PMP method is that it allows to get information about the duration of the stay of visitors in Estonia. It creates potential for the Estonian tourism strategy to address completely new and very important segment – repeat visitors from the various aspects. It is possible to observe and measure the duration, density, seasonality and dynamics of repeat visitations. In addition the local destinations and events most loved by repeat visitors and the trajectory they are using could be also identified. Even if the aim of the Estonian tourism policy is to extend repeat visits there was impossible to measure the outcome of the policy and therefore was impossible to set clear tactical goals. PMP method could be a tool for the Enterprise Estonia to get valuable information and therefore implement more specific tactics to extend repeat visits.

Also the method allows to segment repeat visitors for example by countries of origin or frequency of visitation and therefore to deduce various conclusions about repeat visitors. For example Estonian tourism policy needs to answer questions, how to deal with such visitors as sailors and long-distance car drivers, as they still have potential to be loyal clients to Estonian service providers (shopping centres, taxis serving harbours, mobile operators serving their phones etc.). Estonia tourism strategy currently completely fails to address those issues. Adequately developed policy instruments targeting this segment may turn these visits more productive for Estonia increasing their spending. Also it is possible to use such visitors as promotional tool spreading the word in their native countries.

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RECHTS- UND WIRTSCHAFTSPROBLEME DER GEBIETSREFORM IN ESTLAND

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Abstract

The purpose of this paper is to analyze administrative-territorial reforms in Estonia, the comparative analysis of the public administration reforms in the Baltic Sea region, to formulate principles and purposes of the administrative-territorial reform in Estonia. An administrative-territorial reform has been topical since in the Estonia regained its independence but there are virtually no results. In 1995, a law was passed granting the Government the right to take decisions on the country's administrative-territorial division. Both the local authorities and the central government can initiate changes in the administrative-territorial division. A public opinion poll must be conducted before any decision on changes can be taken, although the Government is not bound by the results of the opinion poll. By the spring of 2009, there were 227 local governments in Estonia, including 194 rural municipalities and 33 cities. The administrative-territorial organisation of Estonia needs changing. The average population of Estonian rural municipalities is less than 2,500 people and, in spite of mergers, there are still inexpedient units where the centrally located settlement is separated from its hinterland in administrative terms. However, one must be objective when preparing and carrying out the administrative-territorial reform. The often expressed opinion that decreasing the number of rural municipalities would result in retrenchment of resources in terms of the number of local officials and administrative costs is misleading.

Keywords: administrative-territorial organisation, rural municipality, city, public administration reform, voluntary merger, economic environment, European Charter of Local Self-Government, association of local self-government

Einleitung

Das Streben nach einer rationalen territorialen Verwaltungsorganisation ist schon seit Jahrtausenden einer der Wünsche der Menschheit gewesen. So wurde z. B. im Alten Rom eine Stadtgröße von 5 040 Bürgern, daß *ca.* 30 000 Einwohnern (einschl. Sklaven, Dienstpersonal usw.) entsprach, als vernünftig betrachtet. Als Grundprinzip galt der Gedanke, daß alle Bürger einander kannten.

Nach Wiederherstellung der Selbständigkeit Estlands ist der Wunsch nach einer Verwaltungsreform ab Mitte der 1990-er immer wieder mit der Intensität einer Sinuskurve auf die Tagesordnung gekommen. Bedauerlicherweise ist es nur beim Wunsch geblieben, zum Unterschied zum Beginn der 1990-er Jahre, als gemäß des Beschlusses des Obersten Sowjets vom 8. August 1989 tatsächlich eine Verwal-

tungsreform durchgeführt wurde¹, die 1993 ihre relativ klaren Umriss erreichte, d.h. daß ein System der lokalen Selbstverwaltung wurde für die untere Ebene eingeführt.

Das Thema der Verwaltungsreform kam wieder aktuell auf Tagesordnung Anfang 2009, als der Regionalminister seinen 15+5 Vorschlag unterbreitete, der im Grunde genommen den vor 7-8 Jahren vom damaligen Regionalminister Toivo Asmer unterbreiteten „Reformplan“ wiederholte. Ich benutze Anführungszeichen, da es in Wirklichkeit weder damals noch heute im Jahre 2009 einen Plan gab oder gibt. Es existieren nur die magischen Zahlen 15+5, die wie mittels Zauberkraft unsere vielen regionalen sozial-wirtschaftlichen Probleme lösen sollten. Diese Vorschläge stützen bzw. stützen sich in beiden Fällen lediglich auf Emotionen und Annahmen. Obwohl man öfters hört oder liest (z.B. vom Regionalminister Siim-Valmar Kiisler, dem Generalrechnungsprüfer Mihkel Oviir u.a.), daß dieser Bereich schon genügend erforscht worden ist, und daß die Reform endlich durchgeführt werden sollte, behauptet der Autor dieses Artikels, dass mindestens die Vor- und Nachteile des 15+5 Modells wissenschaftlich gar nicht untersucht worden sind. Die Behauptungen des Generalrechnungsprüfers, dass die Ergebnisse der von seinem Amt durchgeführten Prüfungen die Verwaltungsunfähigkeit der lokalen Selbstverwaltungseinheiten durchaus bestätigen, gelten keinesfalls als Grundlage für die Annahme, daß die lokalen Selbstverwaltungseinheiten von einer Größe eines Landkreises zweckmäßig wären. Die in den Medien veröffentlichten Artikel werden von Illusionen über die Effektivität dieses Modells getragen. Bedauerlicherweise werden öfters als Argumente unrichtige oder zumindest unbegründete Fakten fraglichen Wertes² vorgebracht. Mehrere Ziele der Gebietsreform (Sparen von

¹ Die Verwaltungsreform wurde bereits zu sowjetischer Zeit (ab 1989) eingeleitet. Am Anfang wurde ein zweistufiges System eingerichtet. Die erste Ebene bildeten die Gemeinden (*vald*) und Städte (*linn*) und die zweite Ebene 15 Kreise (*maakond*) und 6 sog. kreisfreie Städte (*vabariiklik linn*). Im Dezember 1989 fanden die ersten Kommunalwahlen statt. Mit den ersten Veränderungen wurde die Dezentralisation der vollziehenden Staatsgewalt vorgenommen. Jedoch waren die Gemeinden und viele Städte noch nicht bereit, so viele Aufgaben zu erfüllen, wohl weil ein Mangel an den entsprechenden organisatorischen, personellen und finanziellen Möglichkeiten bestand. Ausserdem fehlten auf der Ersten Ebene entsprechende Erfahrungen um die Funktionen der öffentlichen Verwaltung zu erfüllen. In der zweiten Etappe der Verwaltungsreform ab Jahre 1993 wurde die zweite Ebene der lokalen Selbstverwaltung (d.h. Kreise als Selbstverwaltungskörperschaften) verzichtet. Die Landräte (*maavanem*) wurden als staatliche Verwaltungsbehörden auf der regionalen Verwaltungsebene eingerichtet. Prinzipiell sind die Landräte der verlängerte Arm der Zentralverwaltung; sie sind der Regierung unterstellt und die Kreisverwaltungen werden auch aus dem Staatsbudget finanziert. Die Landräte haben Aufsichts- und Beratungsaufgaben bezüglich der lokalen Selbstverwaltung.

² So behauptete Margus Tsahkna, Generalsekretär der Koalitionspartei Union der Pro Patria und Res Publica, am 26. März 2009 in seinem im Nachrichtenportal Delfi erschienenen Artikel, dass seit Anfang von 2000 (der Amtszeit des Innenministers Tarmo Loodus) wegen Nichtbeschäftigung mit Gebietsreform Milliarden Kronen in den Wind geschlagen worden sind. Soweit bekannt, sind nicht mal elementare Berechnungen gemacht worden, die diese Behauptung unterstützen würden. Dagegen ist es aber auch durch in Medien publizierte zahlreiche Artikel allgemein bekannt, dass Estland wegen schlechter Verwaltungstauglichkeit

Verwaltungskosten, Vermeidung der Peripherisierung usw.) sind die Öffentlichkeit irreführend (ja, sogar betörend) vorgestellt worden.

Dieser Artikel setzt sich zum Ziel, die Charakteristika der Entwicklung der verwaltungs-territorialer Aufteilung und Organisation in Estland aufzuzeigen und in einigen Mitgliedsstaaten der Europäischen Union (EU) aufzuzeigen. Die Ausführungen konzentrieren sich hauptsächlich auf die rechtliche und wirtschaftliche Analyse der Gebietsreform, einschließlich des Modells 15+5.

Termini

Heutzutage wird die Kennzeichnung einer Gebietsreform im Alltagsgebrauch der Begriff der Verwaltungsreform benutzt. Eigentlich sollte eine Verwaltungsreform eine Förderung (Regulierung) der zwischen unterschiedlichen Ebenen öffentlicher Verwaltung (ohne die Ebene der EU die zentrale staatliche Ebene, regionale Ebene und lokale Ebene) bestehenden Beziehungen der Rechts-, Managements- und Wirtschaftsbereiche, einschl. der Geldbeziehungen, beinhalten, die bis zu einer weiteren radikalen Änderung (Reformierung) bestehen soll. Dabei wird die Reform vom Autor ausschließlich im Sinne radikaler Änderungen verstanden, d.h. nicht als Prozess sogenannter evolutionärer Änderungen. Kleineren und öfters zustande kommenden Änderungen beinhalten lediglich eine Förderung öffentlicher Verwaltung, geht es aber wirklich um einen progressiven Prozess (nicht nur um eine sog. politische Erledigung des Gegners o. Ä.), so können wir diese Veränderung als Modernisierung öffentlicher Verwaltung bezeichnen.

Die Probleme, die mit Hilfe einer Verwaltungsreform gelöst werden müssen, können als Matrix (Tabelle 1) dargestellt werden. Diese Tabelle kann dutzende Spalten für Bereiche, die bei Bedarf zu reformieren bzw. zu ändern sind, enthalten.

Tabelle 1. Matrix der Verwaltungsreform

Ebene der öffentlichen Verwaltung	Institutionen	Haushalt	Öffentlicher Dienst	...	Territoriale Grundlage
Zentrale Ebene	Ministerien usw.	Staatshaushalt	Ähnlichkeiten	...	Verfassung § 122
Regionale Ebene	Landkreisverwaltungen	und	und	...	Gebietsreform
Lokale Ebene	Führungsstruktur der lokalen Selbstverwaltung	Verhältnis lokaler Haushalte usw.	Besonderheiten (Unterschiede)	...	Gebietsreform

Die Reihen in der Matrix stellen Ebenen öffentlicher Verwaltung dar, wobei alle EU-Mitglieder als oberste Ebene die EU-Ebene ausweisen sollten. Da es nicht in

vor allem der Institutionen mittlerer Ebene auf Milliarden Kronen aus den Strukturfonds der EU hat verzichten müssen.

unserem Zuständigkeitsbereich liegt, die dortigen Entwicklungen zu beeinflussen, wird diese Ebene bei unserer Reformanalyse der Verwaltungsreform weggelassen. Doch müssen wir die Entwicklungsrichtungen, die in der EU innerhalb der öffentlichen Verwaltung, d.h. der Förderung der Demokratie, Regionalisierung, der Einhaltung der Subsidiaritätsprinzipien usw bestehen, auskennen, und diese Entwicklungen bei der Durchführung der heimischen Verwaltungsreform auch berücksichtigen.

Unvermeidlich ist auch eine Funktionsanalyse der öffentlichen Verwaltung in EU-Mitgliedstaaten sowie die Erörterung bestehender Probleme und die Auswertung vorhandener Erfahrungen mit Verwaltungsreformen usw. Die Spalten der Matrix stellen größere oder kleinere Bereiche öffentlicher Verwaltung dar, die vor Einführung einer Gebietsreform analysiert werden sollten.

In jedem Quadrat der Matrix sollten Fragezeichen auf Probleme hinweisen, für die zweckmäßige Lösungen zu finden sind. Ebenfalls von großer Bedeutung ist die zeitliche Dimension des Prozesses. Innerhalb eines Quadrats gemachte Änderungen (unabhängig davon wie radikal sie auch sind), dürften nicht als Verwaltungsreform bezeichnet werden. Aber gerade diese Vorgehensweise ist charakteristisch für die Entwicklung unserer öffentlichen Verwaltung der letzten anderthalb Jahrzehnte, da fast jedes Ministerium oder Amt oder eine andere Institution in seinem Verwaltungsbereich sich isoliert reformiert. So wurden z. B. im Jahre 2009 das Naturschutzamt, die Strahlungsbehörde und die Umweltdienste der Landkreise mit dem Umweltamt zusammengelegt und sechs Regionen gebildet usw. Eine zusammenhanglose "Reformierung" einzelner Quadrate kann das ganze System aus dem Gleichgewicht bringen. Für diese Tendenz hat man schon den zutreffenden Begriff der "schleichenden Verwaltungsreform" geprägt.

Im Sinne unserer Matrix beinhaltet eine Gebietsreform die Ausfüllung der zwei letzten Quadrate. Im obersten Quadrat sollte die territoriale Grundlage der Landkreise, Bezirke und anderen regionalen Einheiten (Präfekturen usw) fixiert werden. Unter anderem sollte der unterste Quadrat Antworten auf die Fragen geben, wie viele Gemeinden und mit welchen Grenzen überhaupt existieren sollen. Unter dem Namen „Verwaltungsreform“ befasst man sich gerade mit diesen letztgenannten Fragen in sehr vereinfachter Weise. Übertragen ausgedrückt könnte man sagen, daß die Form des Essgeschirrs festgelegt wird, bevor es überhaupt klar ist, für welches Gericht oder Getränk es benutzt werden soll. Bevor die Festlegung der Zahl und Grenzen der Gemeinden vornimmt, sollten Fragen der Funktionsteilung zwischen dem Staat und der lokalen Selbstverwaltungseinheiten, der Finanzverfassung usw geklärt werden.

Natürlich kann eine Verwaltungsreform auch im Sinne der Gebietsreform benutzt werden, so wie vor Jahrhunderten z. B. alle ersten gedruckten Bücher Bibel waren, und in dem Zusammenhang sei auch gesagt, daß auf Finnisch das Wort „*raamat*“ (dt. Buch) bis heute Bibel bedeutet. Nur muss in diesem Fall berücksichtigt werden, daß für eine zukünftige, vollständigere Reform öffentlicher Verwaltung auch ein

neuer Begriff definiert werden muss (wie auf Finnisch die Entsprechung für das Buch „kirja“).

Wegen der ab und zu vorkommenden falschen Benutzung des Begriffs der Gebietsreform ist auch zu berücksichtigen, daß im Gesetz über die Verwaltungsgliederung Estlands, das 1995 verabschiedet wurde, Folgendes festgehalten wird:

- 1) das Territorium Estlands wird gemäß Verwaltungsgliederung in Landkreise, Gemeinden und Städte aufgeteilt;
- 2) unter der verwaltungs-territorialen Organisation des Territoriums wird die Zuweisung des Territoriums Estlands auf Verwaltungseinheiten verstanden, die gestützt auf die Verwaltungsgliederung einen mittels Gesetz und anderer Rechtsakte festgelegten Status und Namen sowie festgelegte Grenzen haben. Diese Institutionen üben staatliche und kommunale Verwaltung aus.

Erfahrungen der Europäischen Union

Es wird immer wieder ausgeführt, daß unsere lokale Selbstverwaltungseinheiten (Kommunen) im internationalen Maßstab zu klein sind. Manchmal wird betont (Oviir 2009), daß die Bevölkerungszahl unseres ganzen Landes mit „*einem Stadtteil einer anderen normalen Großstadt*“ zu vergleichen sei. Ohne die Frage zu beantworten, was eine normale Großstadt ist, sei zur Klarstellung darauf verwiesen, daß es in Europa insgesamt 10 Städte gibt, die eine größere Einwohnerzahl haben als Estland. Jedoch trifft die Behauptung für keinem einzigen Stadtteil zu. So haben z. B. auch die größten Stadtbezirke Berlins weniger Einwohner als Tallinn.

In der EU gibt es insgesamt 91 300 Kommunen, die eine durchschnittliche Einwohnerzahl von 5 400 Menschen und eine Durchschnittsfläche von 47 km² haben (Tabelle 2). Die entsprechenden Zahlen in Estland sind 5 900 Einwohner und 200 km².

Also entspricht eine durchschnittliche lokale Selbstverwaltungseinheit in Estland je nach Einwohnerzahl fast genau dem Durchschnitt der EU, der Fläche nach ist aber unsere lokale Selbstverwaltungseinheit sogar 4 mal größer als eine durchschnittliche Kommune in der EU. Unter 27 EU-Ländern sind wir je nach durchschnittlicher Einwohnerzahl der Kommune auf Platz 18 und je nach Fläche auf Platz 9. Unsere durchschnittliche Bevölkerungsdichte ist aber *ca.* um das Zehnfache niedriger als in Westeuropa.

Würden wir in Estland das 15+5 Modell umsetzen, hätten wir in jeder lokalen Selbstverwaltungseinheit durchschnittlich 70 000 Menschen und damit würden wir auf dem europäischen Festland den Platz 1 einnehmen! Noch höher wäre diese Kennziffer nur in Großbritannien (140 000 Einwohner), aber man sollte berücksichtigen, daß eine dortige lokale Selbstverwaltung auf einem System mit drei Ebenen basiert.

Tabelle 2. Kommunen in den Ländern der Europäischen Union

Land	Einheit der lokalen Selbstverwaltung	Einwohnerzahl (Mill. Menschen)	Durchschnittliche Einwohnerzahl in der Kommunal-einheit	Durchschnittliche Fläche der Kommunal-einheit (km ²)
Belgien	589	10,4	17 910	52
Bulgarien	264	7,3	29 090	420
Dänemark	98	5,5	55 480	440
Deutschland	12 312	82,4	6 690	29
Estland	227	1,3	5 930	199
Finnland	415	5,2	12 660	813
Frankreich	36 784	64,1	1 720	15
Griechenland	1 034	10,7	10 750	128
Großbritannien	434	60,9	139 480	562
Irland	114	4,2	37 310	612
Italien	8 101	58,2	7 270	37
Lettland	527	2,3	4 340	123
Litauen	60	3,6	56 570	1 088
Luxemburg	116	0,5	4 080	22
Malta	68	0,4	5 970	5
Niederlande	443	16,7	36 890	94
Österreich	2 357	8,2	3 510	36
Polen	2 478	38,5	15 390	126
Portugal	308	10,7	34 380	299
Rumänien	3 173	22,3	6 800	75
Schweden	290	9,1	31 310	1 552
Slowakei	2 891	5,5	1 870	17
Slowenien	210	2,0	9 560	97
Spanien	8 111	40,5	5 430	62
Tschechien	6 249	10,2	1 640	13
Ungarn	3 175	9,9	3 170	29
Zypern	378	0,8	1 660	18
INSGESAMT	91 206	491,4	5 410	47

Es stimmt durchaus, daß die durchschnittliche Einwohnerzahl einer Kommune in nördlichen Ländern zwei (in Finnland 12 700 Menschen) bis neun Mal (in Dänemark 55 100 Menschen) höher ist als bei uns. Dabei dürfen wir aber keinesfalls die Tatsache ignorieren, daß im Jahr 2007 der Anteil der lokalen Selbstverwaltung an den Kosten der öffentlichen Verwaltung in Dänemark 63,1%, in Schweden 46,6%, in Finnland 40,7%, in Estland aber nur 27,7% betrug. In der EU liegt diese Durchschnittszahl bei 33,9%. Auch ist es wichtig, die Betroffenen unbedingt auf die

folgende Tendenz aufmerksam zu machen. Im Jahr 2000 lag die Relation zwischen der lokalen Selbstverwaltung und dem BIP bei den damaligen 15 EU-Mitgliedern bei 11,0% und in 2007 bei 27 Mitgliedern bei 15,5%. So mancher Betrachter wird daraus eine voreilige Schlussfolgerung ziehen, nämlich dass es wahrscheinlich gerade die neuen Mitgliedsländer waren, die den Anteil der lokalen Selbstverwaltung am öffentlichen Sektor erhöht haben. Um solchen Behauptungen vorzubeugen, möchte ich unterstreichen, dass im Vergleich zum Jahr 2000 der Anteil der lokalen Selbstverwaltung am BIP bis zum Jahr 2007 in Dänemark von 30,6% auf 32,0%, in Schweden von 23,9% auf 24,5% und in Finnland von 17,3% auf 19,2% gestiegen war. (Local 2002: 10).

Gerade diese Angaben sollten unsere „Ideologen der Gebietsreform“ veranlassen, sich doch einige Gedanken zu machen. Wenn die Größe unserer lokalen Selbstverwaltungseinheiten drastisch erhöht und gleichzeitig ihre Zahl um *ca.* das Zehnfache reduziert werden soll, müßte man auch fragen, ob wir damit auch eine Erhöhung der Bedeutung bzw. des Anteils der lokalen Selbstverwaltung an öffentlicher Verwaltung einhergeht? Leider ist dieses Thema bis heute kaum erörtert worden.

Im Vorbereitungsprozess unserer Gebietsreform sollten die Erfahrungen anderer Länder (vor allem uns naheliegender Länder) analysiert werden. Die schärfsten Maßnahmen sind in Dänemark getroffen worden (Aalbu u.a. 2008). In den 1980-er Jahren wurde dort die Zahl der Kommunen um fast das Zehnfache reduziert, und vom 1. Januar 2007 an wurde noch eine weitere Reduzierung vorgenommen, nämlich von 275 auf 98. Als Ergebnis der letzten Änderung sind viele der früheren Aufgaben der regionalen Ebene der lokalen oder zentralen Ebene zugewiesen worden.

In Schweden hat man sich mit verwaltungs-territorialen Änderungen ab Mitte des XX Jahrhundert befasst. In 1946 gab es in Schweden *ca.* 2 500 Kommunen, die kleinste davon mit 78 Einwohnern. Als Ergebnis der Reform hatte man im Jahr 1952 *ca.* 1 000 Kommunen mit einer minimalen Einwohnerzahl von 2 000-3 000 Menschen. Die Anfang der 1970-er Jahre durchgeführte Zusammenlegung der Kommunen erfolgte auf Initiative des Staates (die sog. obligatorische Zusammenlegung bzw. Eingemeindung), und als Reformergebnis gab es in Schweden 278 Kommunen. Es ist wichtig zu betonen, dass den Kommunen gleichzeitig das Recht zum Austritt gegeben wurde. In einigen Fällen ist von dieser demokratischen Möglichkeit auch Gebrauch gemacht worden. Deswegen gibt es heutzutage, im Jahr 2009, in Schweden 290 Kommunen. Doch muss erwähnt werden, daß 2009 eine neue Etappe der Zusammenlegung von Kommunen angefangen hat.

Das Lettische Parlament faßte im Dezember 2008 den Beschluß, die Zahl der lokalen Selbstverwaltungseinheiten um *ca.* das Fünffache zu reduzieren, doch wird geplant, mit der Umsetzung des Vorhabens erst nach den Kommunalwahlen im Frühling 2009 anzufangen. An dieser Stelle sei erwähnt, daß die estnische Öffentlichkeit in der ersten Hälfte des Jahres 2009 durch Äußerungen in Medien z. B. in der Art, dass „Lettland hat es gemacht, warum schaffen wir es nicht?“ gewissermaßen irreführend worden ist. In Lettland wurde „lediglich“ die politische

Entscheidung zur Gebietsreform getroffen. Außerdem ist es unmöglich vorherzusagen, welche Folgen diese Reform in einigen Jahren mit sich bringen wird?

Im Prozess der Vorbereitung und Durchführung unserer Gebietsreform sollte das Hauptaugenmerk auf eine gründliche Analyse der Erfahrungen unserer nördlichen Nachbarn gerichtet werden. Leider gibt es bei uns auch in dieser Hinsicht viel Desinformation, weil die Reform in Finnland in 2009 erst auf halbem Weg ist. Die Zusammenlegung der lokalen Selbstverwaltungseinheiten (*kunta*) hat zwar begonnen, wird aber gemäß staatlicher Gesetzgebung als freiwilliger Prozess fortgesetzt. Als Ergebnis langfristiger und gründlicher Analysen hat man in Finnland 20 000 Einwohner als die Größe einer Region für die Kooperation im Bereich medizinischer Grundversorgung festgelegt. Die Kooperation der lokalen Selbstverwaltungseinheiten soll jedoch auf freiwilliger Basis erfolgen³. In Estland befasst sich die lokale Selbstverwaltung vornehmlich mit dem Bildungssystem und mit der Gesundheit nur in geringem Umfang.

Entwicklung der verwaltungs-territorialen Aufteilung und Organisation in Estland

Die räumliche Verwaltungsgliederung und -organisation betrifft einen der konservativsten Bereiche der öffentlichen Verwaltung. Dort gemachte Fehler sowie deren Korrektur⁴ können kostspielig werden. In Westeuropa (vor allem in Frankreich) gibt es bis heute eine ganze Anzahl von Kommunen in ihren historischen, aus napoleonischer Zeit stammenden Grenzen. Aus der Geschichte ist bekannt, dass neben der Deportierung und ähnlicher Aktionen jenen Maßnahmen zur Verewigung einer Okkupation oder die Sicherung einer Diktatur zählen welche die historische Entwicklung sowie das bestehende Besiedlungssystem usw. ignorieren und die bestehende verwaltungs-territorialen Gliederung und ihrer Organisation beseitigen. So wurde in den 1950-er Jahren auch in Estland verfahren als anstelle der früheren 248 Gemeinden und 13 Landkreise 641 Dorfräte und 39 Bezirke (Rayons) gebildet wurden.

Die erste radikale Gebietsreform, die ganz Estland umfasste, wurde in den 1890-er Jahren durchgeführt, als die Zahl der ursprünglichen Gemeinden, die an Gutshöfen ausgerichtet waren, von ca. 1 000 auf 400 reduziert wurde. Während dieser Reform wurden unter anderem viele relativ absurde Gemeinden, die aus territorial getrennt liegenden Teilen bestanden, liquidiert. In den 1920-1930-er Jahren wurde in Estland das Ziel verfolgt, Gemeinden mit einer Einwohnerzahl unter 2 000 Menschen

³ Laut Einschätzung der Fachleute finnischen Selbstverwaltungssystems (z. B. Pekka Linnainen, Leiter der Estnischen Vertretung von Kymenlaakso) stabilisiert sich bei ihnen als Minimumgröße einer Gemeinde 5 000 Menschen.

⁴ In Estland hat es einmal in einem Ort und innerhalb einer relativ kurzen Zeitperiode eine Änderung gegeben, die mit „Fehlerkorrektur“ verglichen werden kann, doch ist es unter unterschiedlichen Gesellschaftsordnungen passiert. Nämlich wurden 1989 die Dorfräte Kuussaare und Kaarma getrennt. Doch haben sie sich 1999 wieder zusammengelegt und diesmal zur Gemeinde Kaarma.

zusammenzulegen, weil die Verwaltungskosten solcher Gemeinden mehr als die Hälfte ihres Haushalts betragen. Bis zur eigentlichen Reform kam man aber erst am 1. April 1939, als die Zahl der Gemeinden von 365 auf 248 reduziert wurde. Dazu kamen noch 33 Städte. Als Kriterium für die Reform wurde festgelegt, dass als eine Gemeinde rationaler Größe den vorhandenen Aufgabenumfang am besten und zweckmäßigsten zu meistert, zugleich auch der Bevölkerung zugänglich und am billigsten zu unterhalten ist (Uuet 2002). Eduard Krepp, einer der Wirtschaftsanalytiker der Reform schrieb 1938, dass *„theoretische Berechnungen gezeigt haben, dass eine Gemeinde mit 2 000-3 000 Einwohnern bei unserer wirtschaftlichen Entwicklungsstufe und unseren Verkehrsverhältnissen als optimal wäre.“* (Krepp 1938) An dieser Stelle sollte auch unterstrichen werden, dass der Reform von 1939 auch die Schaffung einer rechtlichen Basis in Form vom Gemeindegesetz, Stadtgesetz und Landkreisgesetz vorausgegangen war.

Am Ende der Periode der örtlichen Sowjets existierten in Estland 15 Rayons (ab 1. Januar 1990 wurden sie als Landkreise bezeichnet), 6 Städte republikanischer Subordination, 24 Flecken und 192 Dorfsowjets. Anfang der 1990-er, als in Estland mit der Wiederherstellung lokaler Selbstverwaltung angefangen wurde, war die Situation in Sachen Gemeindegrenzen echt kompliziert. Obwohl man vielerorts Grenzen ändern wollte, wiesen die unterbreiteten Vorschläge bedeutende grundsätzliche Unterschiede auf. In einigen Ortschaften wollte man die Gemeinde in ihren Grenzen des Beginns der 1920-er Jahre wiederherstellen, anderswo aber in jenen der Gebietsreform von 1939. Hier und da wollte man eine Gemeinde aber auch in den Grenzen einer früher recht erfolgreichen sowjetischen Kollektivwirtschaftsbetriebes (Kolchos, Sowchos) errichten, denn die Dorfsowjetgrenzen waren im Laufe der Zeit immer mehr an die Grenzen der Betriebe die lokale soziale Infrastruktur unterhalten haben, angepasst worden. Im Nachhinein war es (angesichts der Widersprüche, welche die Inhalte dieser Reform in den 2000-er Jahren hervorgerufen haben) Vorteilhaft, dass Anfang der 1990-er Jahre auf eine intensivere Beschäftigung mit Grenzfragen verzichtet wurde. Die Reformaktivitäten hätte bestimmt von der Lösung vieler anderer, für die lokale Selbstverwaltung wichtigen inhaltlicher Fragen abgelenkt.

Der Expertenausschuß der Verwaltungsreform beim Präsidium des Obersten Rates mußte sich jedoch öfters mit Grenzfragen beschäftigen. Die allgemeine Ausschlußmeinung war, dass vor einer „Umstellung der Grenzpfähle“ die lokale Selbstverwaltung als solche im ganzen Staat und inhaltlich wiederhergestellt werden muß. Anschließend sollten Grenzfragen von gleichwertigen Rechtssubjekten, d.h. von Einheiten mit dem Status der lokalen Selbstverwaltung gelöst werden. Doch war der Ausschuß gezwungen, sich mit Lösung der Agglomerationsfrage von Kohtla-Järve zu befassen. Neben anderen Problemen unterstützte Kohtla-Järve zusammen mit den Städten Narva und Sillamäe die Idee eines autonomen Gebiets (Oblast) von Nordostestland (wie z B Transnistria in Moldau), die vom Inhalt her provokativ war und eine Demolierung der Ganzheit Estlands zum Ziel setzte. Im Landkreis Ida-Viru wurde 1990 der Flecken Kohtla-Nõmme gebildet. 1991 wurde Jõhvi mit dem Status einer selbständigen Stadt und des Kreisentrums wiederhergestellt. Im Oktober 1991 wurden ferner die Stadt Ahtme und die Flecken Sompaa, Oru und Kukruse gebildet,

aber schon im Jahre 1993 wurde dieser Beschluss für ungültig erklärt und vom Parlament (*Riigikogu*) das Gesetz über die Änderung des Verwaltungsbestandes der Stadt Kohtla-Järve verabschiedet, wonach der im Jahr 1950 gebildete Flecken Viivikonna als selbständige Kommunaleinheit liquidiert und sein Territorium im Bestand der Stadt Kohtla-Järve behalten wurde.

Zu großen Änderungen in der verwaltungs-territorialen Organisation Estlands kam es im Jahre 1993. Mit dem Beschluß des *Riigikogu* vom 11. März 1993 „Über die Trennung der Gemeinden Kernu, Saksi, Kaiu und Kiili von den Gemeinden Nissi, Kadrina, Juuru und Saku sowie die Wiederherstellung der Gemeinde Torgu“ nahm man sich vor, fünf neue Gemeinden zu bilden. Da in der Verfassung von 1992 Flecken nicht mehr vorgesehen waren, wurde 1993 mit entsprechendem Beschluss des *Riigikogu* den Flecken Abja-Paluoja, Karksi-Nuia, Narva-Jõesuu, Põlva, Rápina und Võhma der Status einer Stadt verliehen, und die Stadt Narva-Jõesuu, die früher als Flecken zum Bestand der Stadt Narva gehörte, wurde dem Landkreis Ida-Viru angeschlossen. Gemäß demselben Beschluss wurde der Regierung der Republik das Recht gegeben, aufgrund entsprechender Anträge der Abgeordnetenversammlungen über die Verleihung vom Stadt- oder Gemeindestatus an andere Flecken zu entscheiden. So wurde von der Regierung der Republik am 25. August 1993 beschlossen, aufgrund entsprechender Anträge der Abgeordnetenversammlungen⁵ den Flecken Kehra, Lihula, Loksa, Püssi und Saue den Status einer Stadt, und den Flecken Aegviidu, Järvakandi, Kohila, Kohtla-Nõmme, Lavassaare, Märjamaa, Pärnu-Jaaguپی, Tamsalu (hatte 1996 gemäß entsprechenden Antrages den Status einer Stadt bekommen), Tootsi, Võsu und Vändra den Status einer Gemeinde zu verleihen. Die Flecken, die den Status einer Gemeinde bekamen, behielten das Recht, in Sachbearbeitung und auf ihren Symbolen die Begriffe „Flecken“, „Abgeordnetenversammlung des Fleckens“ und „Verwaltung des Fleckens“ zu behalten, weil es zu einer kuriosen Situation gekommen war. Infolge der Reform hatte man die Gemeinden Kohila, Märjamaa und Vändra je zwei Mal hatte.

Am 9. März 1994 wurde vom *Riigikogu* das Gesetz über die Organisation der lokalen Selbstverwaltung von Paldiski verabschiedet. Auf dieser Grundlage wurden die Inseln Suur-Pakri und Väike-Pakri sowie die Halbinsel Pakri als Verwaltungsterritorien zwischen den Gemeinden Padise und Keila und der Stadt Keila aufgeteilt. Der Entscheidung lagen wirtschaftliche Zweckmäßigkeit, die Berücksichtigung der historischen verwaltungs-territorialen Organisation und Meinungsäußerungen den Abgeordnetenversammlungen zugrunde. Mit gleichem Gesetz wurde das Territorium der Stadt Paldiski mit jenem der Stadt Keila zusammengelegt, und nämlich als Stadtteil Paldiski. Nach den Kommunalwahlen vom 20. Oktober 1996 erhielt Paldiski wieder den Status einer selbständigen Stadt. Leider ist die Stadt Keila bis heute durch den damals für Paldiski aufgenommenen

⁵ Zwei Organe der lokalen Selbstverwaltung sind:

1. Repräsentationsversammlung (Stadt- bzw Gemeinderat) – Gremium der nach der Verfassung für die Republik Estland in freien Wahlen für drei (ab 2005 für vier) Jahre gewählt wird.
2. Gemeinde- bzw Stadtverwaltung – das vom Gemeinde- bzw Stadtrat gewählte ausführende Organ.

Wärmekredit belastet. Die Stadt Paldiski behauptet, dass die Kreditaufnahme von der Stadtabgeordnetenversammlung Keila entschieden wurde. Deshalb hat Keila den Kredit (samt inzwischen gewachsenen Zinsen) auch zurückzuzahlen.

Am 22. Februar 1995 verabschiedete der *Riigikogu* das Gesetz über die Verwaltungsgliederung des Territoriums Estlands und gemäß § 5 des Gesetzes wurde endlich mal Tallinn als die Hauptstadt Estlands festgelegt (das letzte Mal wurde es mit der Verfassung der ESSR getan). In der Zwischenzeit waren in Sachen Hauptstadt unterschiedliche Vorschläge gemacht worden. Am 17. Januar 1994 wurde im *Riigikogu* das Verfahren bezüglich des Gesetzesentwurfes (407 SE I) eingeleitet, worin die bizarr klingenden Worte standen: „1. Die Hauptstadt der Republik Estland ist Ruhnu⁶ ...“

Vor 1995 war eine Zusammenlegung (Eingemeindung) von Gemeinden bzw. Städten ohne den jeweiligen Beschluss des *Riigikogu* gar nicht möglich. Im Gesetz werden als verwaltungs-territoriale Einheiten Gemeinden, Städte und Landkreise vorgesehen und die Ordnung der Änderung der Grenzen und des Namens festgelegt.

Es ist äußerst wichtig den Paragraph 5 Abs. 5 dieses Gesetzes hervorzuheben, denn in ihm werden Faktoren definiert, die bei Änderung der verwaltungs-territorialen Organisation zu berücksichtigen sind:

- 1) historische Motiviertheit;
- 2) Einfluß auf Lebensbedingungen der Einwohner;
- 3) Zusammengehörigkeitsgefühl der Einwohner;
- 4) Einfluß auf die Qualität des Erweisens öffentlicher Dienstleistungen;
- 5) Einfluß auf Verwaltungsfähigkeit;
- 6) Einfluß auf die demografische Situation ;
- 7) Einfluß auf die Organisation von Transport und Kommunikation;
- 8) Einfluß auf das Gewerbemilieu;
- 9) Einfluß auf die Situation im Bildungswesen;
- 10) Ungeteiltheit der Einheit der Kommunalverwaltung.

Unvermeidlich erhebt sich die Frage, welche dieser Faktoren sind denn beim sog. 15+5 Modell berücksichtigt worden?

Bis im Jahre 1998 konnte eine Zusammenlegung ausschließlich auf der Grundlage ordentlicher Kommunalwahlen durchgeführt werden. Also konnte es zu ersten freiwilligen Zusammenlegungen erst im Oktober 1996 kommen, und damals haben sich die Gemeinde Halinga und der Flecken Pärnu-Jaagupi vereinigt. Gemäß einer entsprechenden Gesetzesänderung wurden Zusammenlegungen ab Februar 1988 auch in der Zeit zwischen ordentlichen Kommunalwahlen möglich. Diese Möglichkeit wurde im Herbst gleichen Jahres nur von der Gemeinde Abja und der Stadt Abja-Paluoja wahrgenommen. Dabei entstand das Problem ob die Abgeordnetenversammlung aus der Legislaturperiode zwischen ordentlichen Kommunalwahlen entscheiden durfte. In der Verfassung war eine dreijährige Legislaturperiode der

⁶ Die Insel Ruhnu ist nach der Bevölkerungszahl die kleinste Gemeinde in Estland.

Abgeordnetenversammlung einer lokalen Selbstverwaltungseinheiten festgelegt worden. Um weitere Mißverständnisse zu vermeiden, wurde die Zusammenlegungsmöglichkeit der in der Zeit zwischen ordentlichen Wahlen bald abgeschafft. Sie wurde durch die Änderung des Paragraphen 156 der Verfassung erst 2003 wiederhergestellt.

Im Zuge der Kommunalwahlen von 1999 haben sich vereinigt: die Gemeinde Antsla und die Stadt Antsla; die Gemeinden Kaarma und Kuressaare; die Gemeinde Karksi und die Stadt Karksi-Nuia; die Gemeinde Lihula und die Stadt Lihula, die Gemeinde Pühajärve und die Stadt Otepää; die Gemeinde Vihula und die Gemeinde (der Flecken) Võsu.

Die in den 1990-er Jahren erreichten Reformserfolge sind als eher spärlich zu bezeichnen. Eigentlich kann folgende Bilanz gezogen werden: fünf lokale Selbstverwaltungseinheiten haben sich 1993 getrennt und nur acht Paare haben sich 1996-99 vereinigt. Es gab viele Gründe für diesen spärlichen Erfolg. Gerade die Begeisterung des Volkes für eine demokratische Lebensorganisation verhinderte die Errichtung größerer lokaler Selbstverwaltungseinheiten. Eigentlich strebte man ein entgegengesetztes Ziel an, das gemäß des *Riigikogu* Beschlusses zum Teil auch umgesetzt wurde. Vor dem Jahre 1995, als das Gesetz über die Verwaltungsgliederung des Territoriums Estlands verabschiedet wurde, war ja eine Zusammenlegung von einzelnen Kommunalverwaltungen ohne jeweiligen entsprechenden Parlamentsbeschluß gar nicht machbar.

In der zweiten Hälfte der 1990-er Jahre entwickelte sich in der Gesellschaft der Wunsch nach einer radikalen Verwaltungsreform. Der Anfang dieser Periode kann mit dem Vorschlag von drei Ministern (Jaak Leimann, Mart Opmann, Raivo Vare) aus dem Ende 1996 datiert werden. Gemäß dieses Vorschlages wurde eine wesentliche Verwaltungskostenreduzierung angestrebt. Unter anderem erörterte man die Reduzierung der Zahl der Parlamentsabgeordneten um ein Drittel, eine Zusammenlegung von Ministerien, die Reduzierung der Anzahl der lokalen Selbstverwaltungseinheiten um mehr als die Hälfte usw.

Im Juni 1997 wurde von der Regierung der Republik der Expertenausschuß für die Ausarbeitung der Konzeption der Verwaltungsreform gebildet. Der entsprechende Entwurf „*Grundlagen der Förderung öffentlicher Verwaltung*“ wurde vom Ausschuss im Januar 1988 der Regierung vorgelegt. Zur verwaltungs-territorialen Organisation wurde in diesem Dokument Folgendes gesagt: *„Ausgehend von der Lokalisierung von Entwicklungszentren sowie der Interessen der sozial-wirtschaftlichen Ganzheit der Gemeinden und Städte wird die Zahl der lokalen Selbstverwaltungseinheiten wesentlich reduziert, wodurch die Fähigkeit dieser Einheiten, ihre Funktionen zu erfüllen und öffentliche Dienstleistungen bereitzustellen erhöht wird. Die Periode freiwilliger Reorganisation dauert bis zu den Kommunalwahlen von 2000. Die zweite Etappe der Gebietsreform erfolgt auf Initiative der Regierung der Republik. Zwecks Durchführung der verwaltungs-territorialen Reorganisation werden vorher notwendige Untersuchungen angestellt. Die auf Initiative der Regierung der Republik einzuleitenden verwaltungs-territorialen Umgestaltungen setzen*

Anhörungen der lokalen Selbstverwaltungseinheiten voraus, wodurch eine Berücksichtigung lokaler Interessen garantiert wird.“

Das Verfahren bezüglich der „Grundlagen der Förderung öffentlicher Verwaltung“ dauerte in der Regierung fast ein ganzes Jahr lang. Im Februar 1999 wurde das relativ vollständige Dokument genehmigt und dem *Riigikogu* vorgelegt. Die neue Regierung der Republik, die nach den im März desselben Jahres stattgefundenen Parlamentswahlen gebildet wurde, machte sich an die Ausarbeitung der Strategie der neuen Verwaltungsreform. Hauptsächlich aus Ministern wurde das Komitee der Verwaltungsreform gebildet. Bei der Tartuer Universität wurden sachbezogene Vorschläge in Auftrag gegeben, bei der Staatskanzlei wurde das Büro der Verwaltungsreform gebildet usw. Anfangs war eine umfassende Verwaltungsreform geplant, doch im Jahre 2001 wurde das Ziel bis auf eine Gebietsreform reduziert. In so mancher Hinsicht, z. B. wegen der im gleichen Herbst durchgeführter Präsidentenwahlen, verschwand dieser Vorschlag von Tagesordnung, obwohl eine sehr große Vorarbeit im Innenministerium (unter Leitung des Ministers Tarmo Loodus), in Landkreisverwaltungen, Landkreisverbänden der lokalen Selbstverwaltungseinheiten und an anderer Stelle geleistet worden war. Unter anderem wurde von der Regierung der Republik am 25. Juni 2001 der Erlass Nr. 437-k „Initiierung der Änderung der verwaltungs-territorialen Organisation“ verabschiedet, worin eventuelle Zusammenlegungen (Eingemeindungen) je nach Gemeinden und Städten sehr konkret vorgeschrieben wurden. Im Januar 2002 kam es zur Änderung der Regierungskoalition, und laut deren Koalitionsvertrag besteht eine klare politische Absicht nach freiwilligen kommunalen Zusammenschlüssen.

Im Jahr 2002 wurden in 11 lokalen Selbstverwaltungseinheiten verwaltungs-territoriale Änderungen durchgeführt, die sich hauptsächlich paarweise vereinigt hatten (die Gemeinde Anija und die Stadt Kehra; die Gemeinde Kohila und die Gemeinde (der Flecken) Kohila; die Gemeinde Rapla und die Stadt Rapla; die Gemeinde Räpina und die Stadt Räpina). Als Ausnahme gab es einen Zusammenschluss von drei Einheiten – der Flecken Märjamaa, die Gemeinde Märjamaa und die Gemeinde Loodna. Ende des Jahres 2002 gab es in Estland 247 lokalen Selbstverwaltungseinheiten, darunter 205 Gemeinden und 42 Städte. Nach den Kommunalwahlen vom 20. Oktober 2002 waren 241 lokalen Selbstverwaltungseinheiten übriggeblieben, einschl. 39 Städte und 202 Gemeinden.

Nach den Kommunalwahlen vom 16. Oktober 2005 reduzierte sich die Zahl der lokalen Selbstverwaltungseinheiten um 14 (um 6 Städte und 8 Gemeinden). Es erfolgten folgende Vereinigungen: die Stadt Tamsalu und die Gemeinde (zur Gemeinde Tamsalu); die Stadt Tapa, die Gemeinde Lehtse und die Gemeinde Saksi (zur Gemeinde Tapa); die Stadt Jõhvi und die Gemeinde Jõhvi (zur Gemeinde Jõhvi); die Gemeinde Avanduse und die Gemeinde Väike-Maarja (zur Gemeinde Väike-Maarja); die Stadt Suure-Jaani, die Gemeinde Olustvere, die Gemeinde Suure-Jaani und die Gemeinde Vastemõisa (zur Gemeinde Suure-Jaani); die Stadt Kilingi-Nõmme, die Gemeinde Saarde und die Gemeinde Tali (zur Gemeinde Saarde); die Gemeinde Kuusalu und die Gemeinde Loksa (zur Gemeinde Kuusalu);

die Stadt Türi, die Gemeinde Kabala, die Gemeinde Oisu und die Gemeinde Türi (zur Gemeinde Türi).

Zum ersten Mal wurden sich vier unterschiedliche lokale Selbstverwaltungseinheiten vereinigt. Dies erfolgte in zwei Regionen – im nördlichen Teil vom Landkreis Viljandimaa und im südlichen Teil vom Landkreis ja Järvamaa. Als Ergebnis der Vereinigungen vom Jahr 2005 erfolgten Änderungen auch in Grenzen der Landkreise, denn die Gemeinde Lehtse, die früher zum Landkreis Järvamaa gehörte, wurde in den Landkreis Lääne-Viru einbezogen. Probleme verursachten die Zugehörigkeit der ehemaligen Gemeinde Kabala zum Landkreis Järvamaa. Sie gehört zum unmittelbaren Hinterland von Võhma ist und Võhma selbst gehört zum Landkreis Viljandimaa. Konflikte hat es auch mit dem Status der Stadt Loksa gegeben. Weil die Gemeinde Kuusalu und die Gemeinde Loksa sich vereinigten, hätte auch die Stadt Loksa sich logischerweise ihnen anschließen müssen. Man hätte damit einen irrationalen Gemeindetyp beseitigt, wo inmitten der Gemeinde eine Stadt als selbständige lokale Selbstverwaltungseinheit liegt. Zweifellos rufen solche Fakten öfters Kritik an freiwilligen Vereinigungsprozess der lokalen Selbstverwaltungseinheiten hervor (sie desavouieren die ganze Idee der Gebietsreform usw.)

Gleichzeitig verweist die bisherige Entwicklung auch auf positive Folgen. Die im nicht gerade schnellem, aber immerhin mäßigen Tempo erfolgten freiwilligen Vereinigungen (in den Jahren 1996-2009 haben sich insgesamt 49 Gemeinden oder Städte vereinigt) haben wertvolle Informationen über positive Konsequenzen für jene lokalen Selbstverwaltungseinheiten, die diesen Schritt gewagt haben, aufgezeigt. Erfahrungen über eventuelle negativen Faktoren bzw. Einflüssen bei Vereinigungen oder in Folgeperioden wurden gewonnen.

Eigenartig bleibt, daß Ergebnisse freiwilliger Vereinigungen gerne kritisiert werden, aber mögliche Mängel sogenannter Eingemeindungen aus un spezifizierten Gründen niemand verdeutlichen möchte. Professor Wolfgang Drechsler hat über die in 1970-er Jahren in der Bundesrepublik Deutschland durchgeführte Gebietsreform, als die Zahl der Gemeinden um das Dreifache (nur!) reduziert wurde, geschrieben, dass „*sie als Ganzes als durchgefallen bezeichnet werden kann, dies im Hinblick sowohl auf ihre Effektivitätsanstrengung als auch auf Nichterreichung des Zieles.*“ (Drechsler 2000)

Ziele und Gefahren der Gebietsreform in Estland

Zweifellos stellt sich bei jeder Reform die Hauptfrage nach den Zielen der Reform? In den meisten Vorschlägen für unsere Gebietsreform und für die eventuelle Umsetzung des Modells 15+5 werden ein besseres öffentliches Dienstleistungsangebot, die Reduzierung der Beamtenzahl und der damit verbundenen Verwaltungskosten sowie der Stopp der Behördenkonzentration erwähnt. Über Gefahren der Reform sprechen und schreiben weder diejenigen, die sie ausgearbeitet haben (Regionalminister), noch Protagonisten, die diese Reform unterstützen (darunter Leiter verschiedener verfassungsmäßigen Institutionen wie der Generalrechnungsprüfer, der Rechtskanzler). Es scheint, daß teilweise einige Politiker und Beamter

vergessen, daß die Grenzen von den lokalen Selbstverwaltungseinheiten sind nicht zu verändern, ohne den Standpunkt der entsprechenden lokalen Selbstverwaltungseinheit gehört zu haben.

Statistisch gesehen, wird bei Vereinigung von Gemeinden und Städten ein größerer lokaler Haushalt erreicht. Dadurch wird eine Anstellung von höher qualifizierten Beamten ermöglicht. Es sind aber auch Behauptungen zu hören, dass man mit einem größeren Haushalt größere Investitionen betätigen kann, d.h. Straßen bauen usw. Leider werden aber die Grundsätze des Finanzausgleichs zwischen dem Staatshaushalt und dem lokalen Budget nicht geändert, d.h. dass keine weiteren Mittel hinzukommen werden, wenn Investitionsgelder auf 1 km² Fläche oder 1000 Einwohner geteilt sind. Mit Ausnahme des wesentlichen Vorteils, dass größere lokale Selbstverwaltungseinheiten bei ihrer Antragsstellung auf Gelder aus den Fonds der EU bestimmt erfolgreicher sein werden. Märt Moll, der Finanzberater des Verbandes Estnischer Landkreisverwaltungen hat treffend gesagt, dass eine Zusammenlegung von zwei armen lokalen Selbstverwaltungseinheiten keine reiche Einheit zum Ergebnis hat, sondern die Zahl der armen Einheiten sich um die Hälfte vermindert. (Moll 2009)

Was das eventuelle Einsparen von Verwaltungskosten anbetrifft, sollte die entstehende Möglichkeit und auch das Bedürfnis, Beamte mit höherer Qualifikation anzustellen, diese Illusion schnell widerlegen. Es besteht immer noch die Hoffnung auf Freiwerden von einer zahlreichen Armee von Beamten im Laufe einer radikalen Gebietsreform. Ende 2007 waren an staatlichen Behörden Estlands 20 824 Beamte angestellt (dazu kamen noch 3 507 Personen als berufliches Militärpersonal, die alle zu Beamten gezählt werden). Als Kommunalbeamte waren Ende 2007 insgesamt 5 449 Personen beschäftigt. In der Stadtkanzlei, den Behörden, den Verwaltungen der Stadtteile usw. von Tallinn arbeiteten 1 430 Beamte, in Abteilungen der Stadtkanzlei von Tartu 329 Beamte. Als die kleinsten gelten die Gemeindeverwaltungen von Piirissaare und Ruhnu mit je drei Beamten (Avaliku 2008: 66-67). Die Zahl der Beamten in den kleineren Gemeinden und Städten, die sich vereinigen könnten, liegt nur bei Tausend. Die tüchtigsten Beamten würden auch bei der maximalen Variante der geplanten Gebietsreform Arbeit finden, höchstwahrscheinlich im Landkreiszentrum liegenden neuen Gemeindehaus. Bestimmt wird eine Ökonomie an der Zahl der Mitglieder der Abgeordnetenversammlung erreicht. Das wurde als voraussichtliche Errungenschaft angeführt auch im Erklärungsschreiben zum Gesetzesentwurf des Gesetzes über die Reform der verwaltungs-territorialen Organisation, der vom Regionalminister im März 2009 vorgelegt wurde. Laut Meinung des Autors dieses Artikels dürfte bei unserer jungen politischen Kultur eine wesentliche Reduzierung der Mitgliederzahl der Abgeordnetenversammlung (d.h. des politischen Nachwuchses) doch nicht als Ziel gelten.

Oft wird behauptet, dass die Gemeinde als solche in vielen Ortschaften bedauerlicherweise der größte, zum Teil der einzige Arbeitgeber wäre. Wenn wir aber in Ruhe darüber nachdenken, stellt sich die Frage, wer oder was käme denn anstelle der abgeschafften (zusammengelegten) Gemeindeverwaltung? Natur duldet keine Leerstellen und an eine leere Stelle wächst bald Gestrüpp. In der Wirtschaft

existieren jedoch andere Gesetze. In einem solchen Ort erlöschen sich bald die letzten Lichter, und es kommt zu einer noch intensiveren Peripherisierung. Wir benötigen natürlich eine einheitliche Definition der Peripherie.

Im Gesetzesentwurf wird angeführt, daß eine Gegend zum Hinterland bzw. zur Peripherie werden kann: 1) physisch (der Abstand vom Gemeindezentrum vergrößert sich); 2) verwaltungsmäßig (Dominieren der Bedürfnisse und Interessen des Zentrums) oder 3) durch Verminderung der horizontalen Gebundenheit (des Zusammengehörigkeitsgefühles) der Gemeinde. Ausgehend von den bisherigen Zusammenlegungen der Kommunalverwaltungen in Estland wird behauptet, dass als Ganzes Peripherisierung in allen genannten Aspekten vermieden werden konnte, mit Ausnahme der Vergrößerung des physischen Abstandes.

Laut Autor des Artikels sollte Peripherisierung vor allem als wirtschaftliche Kategorie verstanden werden, die für in Peripherie bleibenden Regionen eine Rückentwicklung der Sozialsphäre und der ganzen Wirtschaft mit sich bringt. Deshalb ist der Autor des Artikels (zum Unterschied zu Behauptungen des Regionalministers und anderer) überzeugt, dass mit der Errichtung von Großgemeinden Peripherisierung nicht vermindert, sondern eher vertieft wird. Diese Meinung wird auch von schwedischen Kollegen auf Grund der Erfahrung durchgeführter mehrfacher Reduzierung der Kommunen bestätigt. Auch bei uns erinnern sich mindestens noch heute auf dem Lande lebende Menschen an die Ergebnisse, die als Folge der zu seiner Zeit durchgeführten Zusammenlegungen landwirtschaftlicher Unternehmen und der Bildung von Großbetrieben erreicht wurden. Viele Dörfer blieben nur als statistische Einheiten bestehen.

Der Schriftsteller Tõnu Õnnepalu hat bezüglich dieses Problems eine sehr lebensnahe Betrachtungsweise bekundet, denn er sagte, dass *„die Seelen, die vom Land weggezogen sind, weder von einer Gebietsreform noch deren Unterlassung ins Dorf oder in den Flecken zurückgebracht werden ... Man will die Verwaltungsorganisation ändern, weil das ein Ding ist, dass geändert werden kann, egal ob mit Kraft oder Schmeichelei. Aber wie viel wird dadurch das eigentliche, alltägliche Leben geändert?“* (Õnnepalu 2009)

Große Gemeinden schaffen es selbstverständlich, die sozialwirtschaftlichen regionalen Unterschiede zu verschleiern. Erfolgt die Regionalstatistik je nach Verwaltungseinheiten, können die absolut kleinsten (nicht existierenden!) regionalen Unterschiede (inhaltlich ein BIP pro Person u. Ä.) erreicht werden, wenn ein Staat nur aus einer Kommunaleinheit besteht.

Wenig argumentiert sind die in komplizierter Wirtschaftsumwelt gemachten Aussagen, dass große Gemeinden einen Beitrag zur Förderung, mindestens zur Stabilisierung, der Wirtschaft beitragen. In Wirklichkeit haben aber die lokalen Selbstverwaltungseinheiten schon ab Übergang zur lokalen Selbstverwaltung einer Ebene keinen nennenswerten Bezug zum Gewerbe vorzuweisen. Solche Behauptungen waren angebracht Anfang der 1990-er, als zu Aufgaben der lokalen Selbstverwaltung zweiter Ebene auch Befassung mit Beschäftigungsfragen gehörte

und unter anderem 35% der Körperschaftssteueraufkommens in den lokalen Haushalt einliefen. Momentan haben die lokalen Selbstverwaltungseinheiten keinerlei Verpflichtungen, eigene Wirtschaftsumwelt zu fördern (das Tallinner Gewerbeamt oder die Tartuer Gewerbeabteilung sind reine Initiativen dieser Städte). Das Erreichen dieses Zieles könnte aber eine der inhaltlichen Fragen der Verwaltungsreform sein. In Nord- und Westeuropa gehört die lokale Beschäftigungspolitik zu den wichtigsten Aufgaben der Kommunalpolitik.

Gemäß der 15+5 Reform werden bisherige Gemeinden zu Teilgemeinden umstrukturiert. An dieser Stelle sollen wir die Tatsache, daß Bildung einer Teilgemeinde gemäß Gesetz über Organisation der lokalen Selbstverwaltung zur Alleinzuständigkeit der lokalen Abgeordnetenversammlung gehört, unangetastet lassen. Also kann eine Bildung von solchen Gemeinden erst nach Wahlen zur Abgeordnetenversammlung dieser neuen, auf Basis des Landkreises zu bildenden Gemeinde entschieden werden, aber es ist auch eine Entscheidung möglich, diese Gemeinde gar nicht zu bilden. Ja freilich, Änderung des Gesetzes über Organisation der lokalen Selbstverwaltung bedarf nicht mal einer Stimmenmehrheit im *Riigikogu*, aber die Europäische Charta der lokalen Selbstverwaltung, wonach eine lokale Selbstverwaltungseinheit ihre inneren Leitungsstrukturen selbst festlegen kann, darf nicht umgangen werden. Noch komplizierter ist aber der Umstand, dass die Regulation einer Teilgemeinde (des Stadtteils⁷) in diesem Gesetz äußerst oberflächlich geregelt ist, und in Praxis die in ihrem jetzigen Rechtsraum lebenden Einwohner in Zukunft ohne Entscheidungsrecht in Fragen lokalen Lebens bleiben. Um es hier ein wenig zu übertrieben, aber immerhin sei gesagt, dass die Verwaltungsgremien der Stadtteile (Teilgemeinden) eher wie obligatorische Volksversammlungen auf irgendwelchen Kleininseln aussehen werden.

Falls auf der Basis der jetzt bestehenden Landkreise Viljandi, Lääne-Viru, Võru usw. Großgemeinden gebildet werden, können die bisherigen Landkreiszentren (hier Viljandi, Rakvere, Võru) als Teilgemeinden bestehen bleiben. Natürlich, soweit die Abgeordnetenversammlung der Großgemeinde dem zustimmt. Diese Städte mit ihrer langen Geschichte dürften zwar auch weiterhin ihre Oberbürgermeister haben, aber gemäß heute geltendem Gesetz wären sie eher mit Dorfältesten zu vergleichen. Zum Unterschied zur Oberhaupt eines Dorfes würde er immerhin das Recht zur Erstellung einer Einzelurkunde haben wie das auch beim Ältesten eines Stadtteils der Fall ist. Bevor man sich an die Umstrukturierung der jetzigen Gemeinden und Städte zu Teilgemeinden macht, müsste ihr zukünftiger Status mindestens konzeptuell geklärt werden. Das wäre eine der inhaltlichen Fragen der Verwaltungsreform, die auf eine schnelle Lösung warten.

Besondere Probleme entstehen dann, wenn in einem Landkreis zwei lokale Selbstverwaltungseinheiten akzeptiert werden. Das Landkreiszentrum könnte als eine selbständige Einheit bestehen bleiben. So wie gemäß 15+5 Modell der Landkreis Pärnu und die Stadt Pärnu, aber auch der Landkreis Tartu und die Stadt Tartu. Aber in diesem Fall würden ja Gemeinden neuen Typs des Ringes entstehen?

⁷ Tallinn ist ab Jahre 1993 in 8 Stadtteile geteilt.

Es ist auch wichtig, im Auge zu behalten, dass jeder Landkreis eigene Besonderheiten des Besiedlungssystems usw. besitzt. Mit einem spezifischen Fall im besonders großen Umfang haben wir zweifellos im Landkreis Harjumaa zu tun, und dies wegen der Hauptstadtregion. Auch z. B. bezüglich der Landkreise Ida-Virumaa und Hiiumaa kann nicht das gleiche Muster (15+5 Modell) umgesetzt werden. Eine Gebietsreform darf nicht wie ein Bau des Prokrustesbettes erfolgen.

Als Gegenstände der jetzigen Gebietsreform gelten (angeblich) schwächere Gemeinden und Städte. Als Reformziele werden die Verbesserung des Dienstleistungsangebot für die dort wohnenden Menschen und die Erhöhung der Verwaltungsfähigkeit ihrer lokalen Selbstverwaltungseinheiten definiert. Es ist zwar ein edles Ziel, aber ein Staat besteht ja nicht ausschließlich aus Gemeinden und Städten mit kleiner Einwohnerzahl und kleinem Budget. Wir hören oft Aussagen im Stil, dass die Einwohnerzahl in fast 2/3 unserer lokalen Selbstverwaltungseinheiten unter 3 000 liegt, aber warum wollen wir denn nicht die Tatsache berücksichtigen, dass fast 2/3 unserer Menschen in Gemeinden und Städten mit einer Einwohnerzahl über 10 000 und die Hälfte der Bevölkerung in Städten mit einer Einwohnerzahl über 20 000 Menschen leben (Tabelle 3)?

Tabelle 3. Lokale Selbstverwaltungseinheiten mit größter und kleinster Einwohnerzahl im Jahr 2009

Stadt oder Gemeinde	Einwohnerzahl	Stadt oder Gemeinde	Einwohnerzahl
Tallinn	404 304	Gemeinde Piiressaare	94
Tartu	98 478	Gemeinde Ruhnu	129
Narva	65 830	Gemeinde Vormsi	322
Pärnu	43 479	Gemeinde Torgu	343
Kohtla-Järve	41 987	Gemeinde Nõva	436
Viljandi	19 525	Gemeinde Öru	494
Rakvere	16 878	Gemeinde Alajõe	502
Maardu	16 471	Gemeinde Tudulinna	530
Sillamäe	15 856	Gemeinde Lavassaare	539
Gemeinde Viimsi	15 641	Gemeinde Kaisma	541
Kuressaare	15 081	Gemeinde Kihnu	631
Valga	14 160	Gemeinde Kärü	673
Võru	14 068	Gemeinde Meeksi	712
Gemeinde Jõhvi	13 133	Gemeinde Mustjala	746
Haapsalu	11 593	Gemeinde Kareda	749
Gemeinde Rae	11 195	Gemeinde Laimjala	761

Am Anfang von diesem Artikel wurde auf die Wirtschaftsprüfungen des Staatlichen Rechnungs- und Prüfungshofes hingewiesen, auf deren sehr fragliche Schlussfolgerungen die Öffentlichkeit durch Fachleute schon aufmerksam gemacht worden ist. Aus Prüfungsergebnissen darf gar nicht geschlossen werden, als ob Einheiten der Gebietskörperschaften vollkommen verwaltungsunfähig wären. *„Im Gegenteil, im Vergleich zu Einheiten zentraler Behörden haben lokalen Selbstverwaltungsein-*

heiten es z. B. mit Inanspruchnahme von Eurogeldern wesentlich besser gemeistert. Sie hätten es zu noch besseren Ergebnissen gebracht, wenn von Behörden rechtzeitig das Dokument für die Regulierung des Prozesses vorbereitet worden wäre.“ (Moll 2009)

Lokale Selbstverwaltungseinheiten haben selbstverständlich Funktionen zu erfüllen, die sich auf den ganzen Landkreis und sogar über seine Grenzen hinausragen (das Gymnasiennetz, öffentlicher Transport usw.) Aber bei der Mehrheit der sich aus dem Gesetz über die Organisation der lokalen Selbstverwaltung ergebenden Aufgaben, und *last but not least*, der Mehrheit der Möglichkeiten einer demokratischen Führungstätigkeit haben wir mit Aufgaben zu tun, die ausgehend aus den Prinzipien der Subsidiarität zum Zuständigkeitsbereich jeder Gemeinschaft gehören müssen. Hoffentlich werden auch unsere Einheiten der Gebietskörperschaften, genau wie es in entwickelten Ländern Europas der Fall ist, zukünftig in ihrem Haushalt über Gelder verfügen, die neben Erfüllung gesetzlicher Aufgaben auch für Erledigung freiwilliger Vorhaben (in Kultur, Sport, Freizeitgestaltung usw.) verwendet werden können. Die Gemeinden sollten solche Grenzen haben, in welchen auch eine Erfüllung freiwilliger Aufgaben erwünscht wird. So z. B. in der Gemeinde Kihnu Förderung der nur dieser Insel eigener Kichnuer Kultur, oder in Gemeinden des Setomaa in Südostestland die Förderung der dortigen Kultur.

Von großer prinzipieller Bedeutung ist die Entwicklung einer demokratischen Lebensorganisation und der Bürgergesellschaft sowie beim Modell 15+5 die eventuelle Rolle der Kommunalverwaltung als Garant der Demokratie. In der kommentierten Ausgabe der Verfassung der Republik Estland steht geschrieben: *„Einerseits ist die lokale Selbstverwaltung unzertrennlich von demokratischer Lebensorganisation, die sich zum Beispiel in periodisch durchgeführten Kommunalwahlen ausdrückt. Da es sich um eine der Einzelperson am nächsten stehende Macht handelt, würde lokale Selbstverwaltung ohne die Beteiligung lokaler Einwohner ihre inhaltliche Bedeutung einbüßen. Andererseits gilt lokale Selbstverwaltung als eine gewisse ausgleichende Macht im Vergleich zur staatlichen Zentralisierung (vertikale Machttrennung).“* (Eesti 2008: 722). Der Autor des Artikels ist der Meinung, daß lokale Selbstverwaltung als solche mit der Einführung des Modells 15+5 inhaltlich verschwinden und daß sie zu einem Teil der Staatsverwaltung reduziert würde. Das Beispiel mit den örtlichen Sowjets deutete auf eine solche Entwicklung hin.

Anfang der 1990-er Jahre, als in Estland in damaligen unvergleichbar schwereren politischen und wirtschaftlichen Bedingungen die lokale Selbstverwaltung wiederhergestellt wurden, galt der Wunsch des Volkes nach Demokratie und Selbstentscheidung in lokalen Fragen als dominierender Faktor. Folglich wurden in Estland viele kleine Gemeinden gebildet. Oder nehmen wir auch Bezug auf ein internationales Beispiel. Im Jahr 1953 wurde von Ländern Westeuropas, die sich gerade mit Liquidierung der Kriegsfolgen beschäftigten, die Europäische Charta der Freiheiten der lokalen Selbstverwaltungen (mit Akzent auf Wort – Freiheiten – S.M.) genehmigt, woraus ein Dritteljahrhundert später die auch uns gut bekannte Europäische Charta der lokalen Selbstverwaltung entstanden ist. Alexis de Tocqueville sagte vor anderthalb Jahrhunderten, daß *„ein Land, das keine lokale*

Selbstverwaltung hat, zwar Untertanen finden kann, aber niemals Bürger“.
(Tocqueville 1995)

Wir müssen akzeptieren, daß keine andere Reform so umfangreiche und zeitraubende Begründungsaktivitäten zur Information der Bevölkerung erfordert als eine Gebietsreform. Professor Edgar Kant, einer der Hauptideologen der Gebietsreform der 1930-er Jahre war sich darüber im Klaren. Er behauptete, daß „... die Reformierung lokaler Selbstverwaltungen immer und überall eine der schwierigsten Fragen im Verwaltungsbereich ist“. (Kant 1999)

Der Autor des Artikels will die Notwendigkeit der verwaltungs-territorialen Änderungen keinesfalls bezweifeln. Doch ist zur Gestaltung des Reformprozesses maximale Objektivität notwendig. Gleichzeitig ist der Autor der Meinung, daß die Zusammenarbeit zwischen den lokalen Selbstverwaltungseinheiten auf jede Art und Weise gefördert werden muss.

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IMPACT OF GLOBALISATION ON INDUSTRIAL RELATIONS

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Abstract

Globalisation means intensified competition, the transfer of investments, production relocation outside of Europe, job losses, unemployment and rapid structural changes. European labour markets are characterised as relatively rigid, with high social security and strong industrial relations (IR). The aim of this study is to find out, how the social partners, governments and researchers interpret the challenges of globalisation on future developments of industrial relations. The research is based on expert foresight survey where IR experts from 34 countries were interviewed. The project looked to the future, to the year 2025 and discussed on what industrial relations and social dialogue would look like after fifteen-twenty years.

The main findings convinced that decentralisation of collective bargaining is expected in old member states, while the situation will remain unchanged in majority of the new member states. We can conclude that European level convergence is expected in the area of industrial relations.

Keywords: globalisation, flexibilisation of labour markets, employment security, social cohesion, industrial relations systems.

Introduction

Over the past years, Europe has had to deal with strong challenges stemming from globalisation in the form of intensified competition, the transfer of investments, production relocation outside of Europe, job losses, unemployment and rapid structural changes. High expectations exist related to the competitiveness of the European economy, which means that labour markets will have to become more flexible as employers demand further deregulation of the labour market in order to successfully cope with worldwide competition. At the same time, the European social model underlines the importance of employment security and social cohesion as workers seek greater job security in light of rapid structural change and job relocation. The key issue is how to find a balance between an European social model and the flexibilisation of labour markets while remaining competitive.

The importance of modernising industrial relations has been debated in Europe already since the 1990s. Discussing on modernisation of industrial relations rises up questions on problems of today and also challenges of future. Today's problems have been analysed in the numerous academic reports. But we have only few studies analysing systematically what are the challenges of the future and what would be

¹ We are very grateful to Estonian Science Foundation Grant No. 6479, "The Valuation of Human Capital in the Estonian Labour Market: Issues of Over-education and Skill Mismatch", for support.

their impacts on industrial relations. How social partners, governments and researchers see challenges and future development of industrial relations? Developments in industrial relations systems will depend on the processes in environment. For example, pressures of globalisation affect employment relations and industrial relations at regional, national and international levels. These pressures interact with national characteristics: the economic and political system; the type of government; legislative developments; level of economic development; the exposure to globalisation; the influence of labour and the state in each country; and different policies regarding industrial relations. The effect of globalisation on industrial relations procedures and their substantive outcomes depends on the conditions under which industrial relations take place within a country. For instance how quickly will change the structure of industries, what will be the share of informal sector, and so on. It is obvious that the future of industrial relations systems will depend also on political and economical developments in the countries: which party will be on power; whether there will be shift towards right-wing policies, liberalisation, etc.

The aim of this study is to find out, how the social partners, governments and researchers interpret the challenges of globalisation on future development of industrial relations. Also we tried to test the hypothesis, whether we can find any evidence of convergence within EU concerning industrial relations.

This paper is based on data collected by authors during European Foundation for the Improvement of Living and Working Conditions project on “Impacts of globalisation on the European social dialogue models”. The purpose of the project was to produce “Industrial relations foresight 2025 for the EU27 and Global7² countries”. The basic question of the study was: How industrial relations look like in the respondents’ country in 2025 taking into account the ongoing process of globalisation? Output of the project is an analysis on impacts of globalisation on European industrial relations in the areas like industrial relations environment, actors, processes, outcomes and impacts. In this paper we focus mostly to general trends of globalisation, like working life flexibility, social security, flexible work forms and economic liberalism. Also we look at respondents’ opinions about future developments of industrial relations actors, processes and outcomes.

1. Globalisation and its dimensions

Globalisation can be defined as a process of increasing global connectivity, integration and interdependence in the economic, social, technological, cultural, political and institutional spheres. Globalisation refers, for instance, to the processes that reduce barriers between countries and involve greater integration in world markets, thus increasing the pressure for assimilation towards international standards (Macdonald 1997; Frenkel and Peetz 1998; Ali 2005). The economic aspects of globalisation are the most visible and important ones. These include intensifying economic competition among nations, rapidly expanding international trade and

² Global 7 countries in this study are Australia, Brazil, China, India, Japan, South Africa and the U.S.

financial flows and foreign direct investment (FDI) by multinational corporations (MNCs), disseminating advanced management practices and newer forms of work organisation and in some cases sharing of internationally recognised labour standards. Globalisation enhances competitiveness, both at company level and national level, which leads company management and governments to adopt strategies designed to increase labour effectiveness in terms of productivity, quality and/or innovation. In general, globalisation involves economies that are opening up to international competition and that do not discriminate against international capital. Therefore, globalisation is often accompanied by a liberalisation of the markets and the privatisation of productive assets. At the same time, globalisation has obviously contributed to raising unemployment, increasing casual employment and weakening labour movements (Ali 2005).

The most important effects of economic globalisation include the following:

- increasing integration of global economic activities,
- rising competitiveness,
- relocation of economic activities,
- structural changes in the economy,
- rapid technological advancements and innovation.

Increased competition in global markets has created the demand for more specialised and better quality items. This has led to a higher volatility in product markets and shorter product life cycles which, in turn, requires companies to respond quicker to changes in market demand. In terms of production organisation, new technologies increase the scope for greater flexibility in the production process and resolve any information and coordination difficulties which previously limited the production capacity of enterprises in different locations around the world (Macdonald 1997). Due to the growth in competitiveness, companies increasingly focus on the demands of international and domestic niche markets in a way that contributes to a growing individualisation and decollectivism of work. Moreover, new technology has made it possible to produce the same level of production output with fewer workers. In both situations, an increased emphasis is placed on workers having higher value capacities and skills to perform a variety of jobs. This development has blurred the functional and hierarchical distinctions between different types of jobs and between labour and management in general. In addition, efforts to improve products through innovation, quality, availability and pricing have led companies to set up cross-functional development teams, thus transcending the traditional boundaries between engineering, manufacturing and marketing. These developments have been accompanied by the erosion of the standardised, segmented, stable production process which had facilitated collective industrial relations (Macdonald 1997). These changes are also associated with a continuing shift in employment from manufacturing to service-oriented industries – in other words, jobs shift from traditional manual occupations to various forms of white-collar employment.

1.1. Globalisation and labour market effects

In terms of the labour market, the most influential effects of globalisation include the following:

- flexibilisation of labour markets;
- increasing labour migration;
- rising atypical and non-standard forms of employment;
- changes in work content and working conditions;
- skills mismatch, multi-skilling and the need for lifelong learning.

Employment issues are critical to every country. However, countries have approached these issues in different ways and employment standards thus vary widely across countries. Research partly attributes the differences between countries to the stage of their development at a given point in time. Nevertheless, employment standards continue to play a key role in determining a country's competitive advantage in terms of labour market development. Due to growing competitiveness, many countries are obliged to relax their employment protection mechanisms in order to increase their labour market flexibility. Therefore, a new balance between labour market flexibility and social protection will have to be established (HM Treasury 2005). Several countries propose labour market reforms as a way of coping with the challenges of flexibilisation while providing an adequate level of job and employment security. As a result of intensified competition, companies are now being required to innovate to deliver 'the right product at the right price and time' (Macdonald 1997). Hence, company management should also focus on promoting enterprise efficiency, both in terms of labour market flexibility and labour productivity.

Overall, employment rates are increasing, but non-standard forms of work such as part-time, fixed-term and self employment are also rising. Broad social developments in many countries have also led to an increasing participation rate of women in the labour market which, in turn, has augmented the demand for atypical forms of employment. As a result of these developments, working conditions do not improve for a lot of workers while their job security may decline. "Benchmarking working Europe 2007" (ETUI-REHS 2007) raises the question of whether the increase in employment is a trade off against the quality of employment. Moreover, the study argues that building employment growth on sub-optimal solution, such as involuntary part-time and other non-standard employment relationships, will only undermine Europe's efforts to become a knowledge-based society. In developing countries, outsourcing and subcontracting are part of a global trend towards lower employment standards, 'casualisation' of labour and permanent unemployment. The real problem for developing countries relates to underemployment and disguised unemployment.

In contrast, the majority of developed countries face serious labour and skill shortages which threaten their sustainability of economic growth, productivity performance and international competitiveness. In the EU, rising labour shortages

will put a push on increasing labour migration within the EU and also from non-EU countries. “Employment outlook 2001” (OECD) already highlighted that ‘while admissions of new permanent foreign workers are currently very few in number, especially in the European OECD countries, the temporary employment of foreigners appear to be becoming more widespread’. The temporary employment of foreign workers introduces flexibility into the labour market while also increasing competition between foreign and domestic labour with varying implications for the countries sending and receiving workers. The latter countries have introduced several policy measures to restrict labour market access for migrant workers, thus limiting competition for work between foreign and domestic workers.

Another area of enterprise activity to be affected by globalisation concerns the organisation of work. To achieve the flexibility and productive efficiency required to respond quickly and effectively to market changes, the need arises to reorganise work; for example, to put greater emphasis on team-based activities or to improve connections across business units within a company. Related changes have seen a ‘flattering’ of management hierarchies and the transfer of greater operational responsibility and authority to lower level managers, supervisors and work teams. All of these changes aim to increase workers’ commitment to the company and its business goals, as well as to establish closer relationships between managers and workers based on consultation and cooperation (Macdonald 1997). The European Trade Union Institute for Research, Education and Health and Safety (ETUI-REHS) argues in its 2007 benchmarking working report that while globalisation and rapid changes in economies demand that workers become proactive, adaptable, multi-skilled, responsible and competent, these demands put additional pressure on workers, thus exacerbating their difficulties at a time when working conditions are deteriorating and wages are compressed. The result of these changes will be at an unbearable price, notably a growth in ill-health associated with a decrease in quality of life and unfair costs for individuals and society.

1.2. Globalisation and industrial relations

Globalisation impacts directly and indirectly on industrial relations systems and its actors. The European economy is a good example of illustrating the different effects of globalisation on industrial relations. This is due to the fact that, over the past years, Europe has had to deal with strong challenges stemming from globalisation in the form of intensified competition, the transfer of investments, production relocation outside of Europe, job losses, unemployment and rapid structural changes. Europe’s performance has diverged from that of its competitors in North America and Asia: in this regard, the productivity gap has widened and the investments in research and development (R&D) have been inadequate (Sapir 2003; HM Treasury 2005). Therefore, European labour markets are currently facing major challenges. On the one hand, high expectations exist related to the competitiveness of the European economy. This means that labour markets will have to become more flexible as employers demand further deregulation of the labour market in order to successfully cope with worldwide competition. The casualisation of labour is also growing due to economic liberalisation, changes in ownership and technology, in

addition to cost-cutting competitive strategies of employers. On the other hand, the European social model underlines the importance of employment security and social cohesion as workers seek greater job security in light of rapid structural change and job relocation outside of Europe. The key issue is how to find a balance between a modernised European social model and the flexibilisation of labour markets while remaining competitive.

Pressures of globalisation affect employment relations and industrial relations at regional, national and international levels. These pressures interact with national characteristics of: the economic and political system; the type of government; legislative developments; industrial stages; the exposure to globalisation; the influence of labour and the state in each country; and different policies regarding industrial relations.

Figure 1 highlights some of the effects and challenges that globalisation has on industrial relations systems. As already mentioned, globalisation increases the competitiveness and inequality among countries. Productivity growth constitutes the key element of the economic convergence process. It is therefore important to note that productivity growth should be higher than wage growth; otherwise, it could harm employment growth. Over the past 20 years, the process of globalisation has accelerated as the internationalisation of trade, services, communications, transportation and investments has increased. Under globalisation, investments are easily made worldwide, and industries and services move from one country to another, thus restricting opportunities for permanent employment relationships to the benefit of economic performance. Driven by further technological advances, production processes are becoming increasingly fragmented, which enables economic activities to become more international, specialised and tradable. To improve their competitiveness, many MNCs sought to relocate their business operations to countries where labour is cheaper and workers are less protected. In an effort to attract investments, many countries have bid against each other in order to be able to lower wage levels and working conditions. As a result, living standards have been stagnating or even declining in these countries.

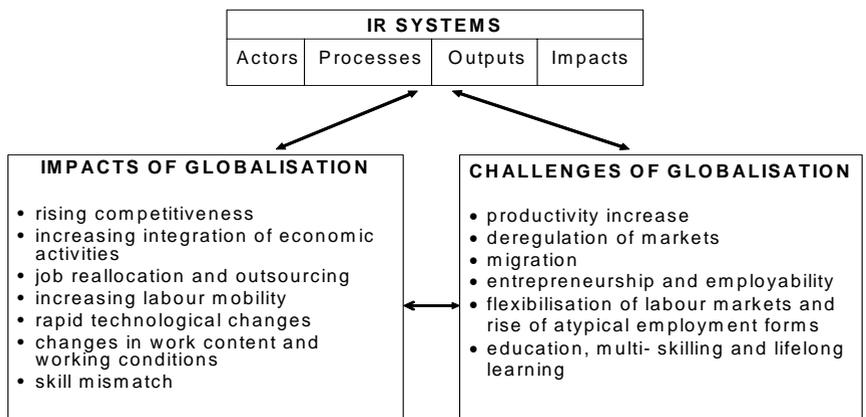


Figure 1. Effects and challenges of globalisation on industrial relations systems

In addition to the effects of globalisation, Europe, as well as some other economically more advanced countries, must also meet the combined challenges of low population growth and an ageing population. In light of these challenges, countries will have to improve labour productivity, employ more people and guarantee long-term growth and social cohesion. In this context, it appears to be impossible for developed countries to handle their current demographic situation without allowing for labour migration originating from developing countries; in particular, the migration of skilled workers is encouraged. At the same time, developing countries, especially China and India, are facing further population growth and a labour surplus. At least over the next 20-30 years, these countries will have a relative advantage over the more developed countries assuming they are able to control labour costs, since most of the labour intensive production will be concentrated in these countries and their neighbouring regions.

Although the current phase of globalisation facilitates the free movement of capital, as well as of goods and services, restrictions on cross-border movements of people have not been eased. Therefore, it remains a challenge for developing countries to overcome visa requirements and other restrictions regarding the free movement of labour. However, since labour migration raises competition between foreign and domestic workers with varying implications for countries sending and receiving labour, the latter countries have implemented legal measures to restrict labour market access for migrant workers, thus limiting job competition between foreign and domestic workers. Like any of the developed countries, the developing countries also fear losing skilled workers who were educated and trained at great public expense. At the same time, the developing countries will have to establish a reliable system for providing literacy and vocational skills training to all potential candidates in the labour market together with a support system to guarantee basic health and social security cover for workers. Nonetheless, the main problems that developing countries are currently facing relate to underemployment and disguised unemployment.

Globalisation has a contradictory impact on industrial relations. On the one hand, it is accelerating economic interdependence between countries on an intraregional and interregional basis and encouraging similar business approaches of individual companies in competitive markets. This may lead to some convergence in industrial relations arrangements worldwide. On the other hand, evidence exists that industrial relations in some countries resist the convergence trend; such resistance from industrial relations actors is based on particular national and regional circumstances, such as in Europe and Asia (Macdonald 1997). The effect of globalisation on industrial relations procedures and their substantive outcomes depends on the conditions under which industrial relations take place within a country. For instance, the pressure for greater flexibility in the use of labour is omnipresent, but the outcome is constrained by cultural norms valuing hierarchy and security. Countries' strategies vary due to historical circumstances, resources and internal political dynamics, including the influence of trade unions. Thus, the extent and impact of globalisation differs between countries, resulting in similar concerns for policymakers yet leading to variable responses and industrial relations outcomes

(Frenkel and Peetz 1998). No common understanding exists in research concerning the influence of globalisation on industrial relations; the viewpoints of the social partners mainly reflect two directions (Thelen and Wijnbergen 2003).

1. Globalisation pushes all countries towards economic liberalism based on the interests of a free market and minimal government interference, namely neoliberalism and deregulation. Globalisation processes thus encourage companies to lower labour costs and increase labour market flexibility while undermining the power of trade unions to prevent this trend.
2. The impact of globalisation varies considerably according to the institutional setting within each country, since the institutional framework influences employer strategies and business interests. Therefore, a stronger emphasis on economic growth based on free market forces and reduced government regulation will emerge in the liberal market economies but not in any of the coordinated market economies where companies have a stake in preventing deregulation.

The “Benchmarking working Europe 2007” report argues that ‘much depends on the nature of the process of globalisation. If for example, a new sector, such as ICT, is driving the expansion of global trade and world exports, then the economy needs to rely more on external flexibility in order to shift employment to new companies and sectors. In the first half of the present decade, however, the expansion of global trade has been dominated by the existing industries, such as steel, chemicals, machinery and transport equipment. In this case, the process of change can rely equally on internal flexibility of workers and jobs moving inside existing firms’ (ETUI-REHS 2007: 7). In the long term, the first scenario will probably be more realistic, at least for developed countries.

Research about tensions and challenges associated with globalisation focuses mainly on international issues, namely on: labour standards and trade; the problem of adjusting to international competition; the cross-cultural management of work and the transfer of ‘best practice’ examples; and the prospects for transnational trade unionism and collective bargaining. Giles (2000) argues that the majority of studies look at globalisation as an ‘external’ factor which affects industrial relations. In other words, globalisation is examined in terms of its ‘impact’ on what lies within the field. Globalisation is also commonly perceived as being external to individual countries and national labour legislation, thus originating ‘above’ the national level. In this context, globalisation is regarded as a pressure that comes from ‘outside’ the country. Since globalisation is portrayed as emanating from the outside, it is frequently reduced to a small number of relatively discrete changes or trends which, like other transformations in the industrial relations environment, represent challenges to or pressures on national industrial relations systems and institutions.

2. Research method and data collection

Foresight method has been used very much in technology studies even it has its roots already in the 1940s. For example from the Swedish technology foresight (2000) we can read that “We cannot plan the future but we can plan for the future.”

This includes one of the key principles of the foresight studies. We can visualise and discuss on different futures but we cannot plan that any of them will surely happen. In sociological research we can find many famous foresight reports. They have had great impact on societal decision-making even if their foresight visions have never materialised as such. For example Alvin Toffler's books on Future Shock (1970) and The Third Wave (1980) include foresights on possible futures and aroused worldwide discussion on future shocks and crises which are waiting for us if we don't do anything. John Naisbitt helped us to understand on Megatrends: Ten New Directions Transforming our Lives (1982). The book was two years on the best seller list of the New York Times. Already in 1967 Herman Khan and Anthony Wiener published The Year 2000 which arouse much discussion especially on the future of Western World. Eleonora Masini was a leader in two very influential UNESCO projects: The Futures of the Cultures and Women's International Network, Emergency and Solidarity. The reports had great impact on women position and entrepreneur policy in the developing countries. Aurelio Peccei set up a Club of Rome in 1968, which published later a book on the Limits of Growth. Even if most of its predictions were not correct the book was very much discussed and had great impact on debate on nature resources and the rise of the green movement. This is a very short description of some of the most influential foresight reports. They have shortcomings but influence on people's behaviour and decision-making has been worldwide. Essential in all writings is critical thinking on the future. That is followed by intensive debate in favour and against.

Foresight exercises are ways of obtaining opinions about future developments. Foresight is different from forecast, prognosis or prediction, which are based on the assumption that the future is pre-defined as a linear continuation of present trends. Time dimension in forecasts is a short term future. Prognosis and predictions are looking a bit further into the future and they are using an in-built simplification of the actual dynamics of social, economic and technological developments. In reality, future developments underlie reciprocal influences which cannot be assessed exhaustively in advance, thus not predicted. A new understanding of foresight gaining acceptance in the 1990s (starting with Irvine and Martin 1984) made clear that a targeted shaping of future developments is strictly limited and that the potential impacts of decisions can only partially be estimated. Hence, the foresight is striving for relatively "realistic" objectives and for example, in the context of policymaking, the most important intentions are:

- to identify a choice of opportunities, to set priorities and to assess potential impacts and chances,
- to discuss desirable and undesirable futures,
- to focus selectively on economic, technological, social and ecological areas as well as
- to start monitoring and detailed research in these fields.

An electronic expert survey concerning industrial relations situation in year 2025 was carried out in EU27 and Global 7 countries. The questionnaire consisted from 16 questions, which investigated respondents' opinions about future of industrial

relations actors, processes, outcomes and general trends in environment. The survey questionnaire allows compare main features of the industrial relations in 2025 to the existing industrial relations country profiles in 2004 and/or with present situation in the countries under observation.

Respondents of the survey were the representatives of trade union organisations, employer organisations and governments and also academic experts on industrial relations. National experts were selected by the European Foundation and Foundation's national centres assisted in finding experts and taking contacts if needed. Respondents, who participated in the survey, were experts in their field and as result we obtained specific, local knowledge and inside information from each country, which is quite reliable. Also different actors – trade union, employer organisations, government representatives and academic experts – participated in the survey and therefore more balanced opinions about future developments can be drawn. National experts were intensively involved in this project and the project seminars can be characterised as thought provoking open discussions with mutual learning.

The target was to collect four responses from each group of representatives in EU27 countries and at least 3 responses from academic experts from Global 7 countries. To meet abovementioned respondent rates, two rounds of the survey were conducted: the first took place from the middle of October to the beginning of November 2007 and the second round was conducted from the end of November to the end of December of 2007. In January 2008, there was follow-up of the survey in some countries, in order to meet agreed minimum response rates in all countries. In each country there was Foundation nominated local country expert who contacted respondents in order to help to get responses. The role of country experts was especially important during the second round and follow-up of the survey. In total we received 346 fulfilled questionnaires from 34 countries (respondent rate 76.4%).

However, this expert survey has some limitations. As this survey is dealing with foresighting the levels of different industrial relations' indicators for long-run period then many respondents expressed their doubts about scientific value of such exercise. They claimed that industrial relations are reflecting also political and economic changes, that simply cannot be predicted that far ahead. There is no doubt about that but it is worth to remember that foresight is not prediction of the future but it is a vision which should be discussed and which is in continuous change. Each of us have right to tell our vision and put it into discussion. That is good to remember when looking at criticism on foresight method. One respondent commented that these answers reflect simply optimism or pessimism about future developments.

3. Results

3.1. Foresight on trends in society and working life

There is a clear trend towards liberalism and individualism in EU Member States by 2025. This a joint view of industrial relations experts. Trend covers also Global 7

countries. Experts in the United Kingdom and in Estonia said that their system is already very liberal and that situation will remain the same. Very few had a foresight that trend would change against liberalism and individualism by 2025.

Another clear trend is towards labour market flexibilisation. Majority of respondents propose also that both, self-employment and atypical employment will increase and job security will decrease by 2025. Only majority of respondents from India claim that the share of self-employment will remain at the current level. In EU15 countries social security is expected to be as it is today but there are also plenty of those who foresee a decline in social security, while among EU12 there is general trend towards increase in social security.

According to experts' views, equal opportunities in EU labour market will increase in the future but this will not lead to income equality. Majority of respondents in all countries, expect that the gender wage gap will decrease by 2025. Thus overall picture is for increase of general inequality in incomes and decrease of gender wage gap in the future.

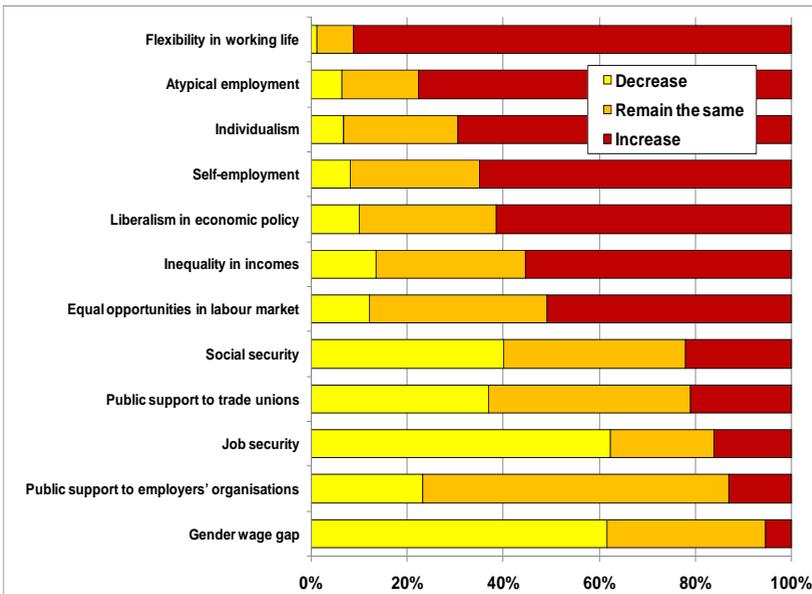


Figure 2. Respondents' opinion about general challenges of globalization. (Industrial relations foresight 2025 survey)

In total this survey covered 75 trade union representatives, 75 employer organisations representatives, 73 government representatives and 123 academic experts. This allows make following observations on differences of opinions according to groups by using Kruskal-Wallis statistically significant different test: Liberalism in economic policy – among government representatives more than two

thirds propose that the liberalism in economic policy will increase in the future and only one respondent from this group predict that liberalism will decrease by 2025. There were more respondents in other groups, who predict that liberalism in economic policy may decrease in the future.

Among academic experts, but also among representatives of employer organisations, there are more respondents who expect fewer changes in the liberalism in economic policy in the future.

- Liberalism in economic policy – majority of all groups has a view that liberalism will be the future direction of economic policy. Two thirds of government representatives have this view and much more than half in other groups. Academic were the most critical.
- Flexibility of working life – almost all respondents among employer organisation and government representatives expect that flexibility will increase in the future. While there is majority among academic experts, who propose that flexibility will increase, there is more respondents compared to other groups who believe that flexibility will remain at the current level or even decrease
- Flexibility of working life – high majority of all groups had a view that flexibility will increase. Almost all employers and strong majority of trade unionist and government people saw flexibility to increase.
- Atypical employment – among trade union and employer organisations representatives there are more respondents who believe that atypical employment will remain at the current level or even decrease, compared to the other respondents groups. At the same time government representatives and academic experts are in favour that atypical employment will increase in the future.
- Inequality in incomes – among employer organisation representatives less respondents expect that inequality in incomes will increase in the future and in this group of respondents even more than one quarter believe that inequality will decrease in the future. Representatives of trade unions and academic experts are most pessimistic that inequality will decrease by 2025.
- Equal opportunities in labour market – most pessimistic in the sense that equal opportunities in labour market will increase in the future are representatives of trade unions, while most optimistic that equal opportunities in labour market will increase by 2025 are representatives of employer organisations.
- Gender wage gap – while almost equal share of respondents among trade union representatives believe that gender wage gap will either remain at the current level or decrease, then from employer organisations' representatives more than four fifths propose that gender wage gap will decrease in the future.

Respondents' opinions in other aspects of working life environment – individualism, job and social security, self-employment – are quite similar and no statistically significant differences appear in their replies.

To sum up, answers show clearly, that most of respondents believe, that world is moving towards more liberal and individualistic approach. Respondents foresee significant effects of globalisation – labour market flexibilisation, the rise of atypical

employment forms and self-employment, as well as changes in work content and working conditions – to happen in the near future. The key issue for the social partners will be to establish a balance between labour market flexibility maintaining workers' social protection and companies' competitiveness in the global world.

3.2. Foresight on social partner unionisation

The trade union density differs significantly among the countries examined, ranging in 2004 from 80% in Denmark to 3-6% in India (for more detailed discussion see Philips and Eamets 2007 and Van Gyes *et al.* 2007). The same variability is expected to be in trade union density rates also in 2025, when according to experts' foresights the highest trade union density rates – over 60% - will be in Denmark, Finland and Sweden and the lowest rates – 10% or less – will be in France, U.S and India (see Figure 3). On average, the trade union density rates in Global 7 countries in 2025 are expected to be lower than in EU member states.

In majority of countries respondents expect some decrease in trade union density rates by 2025). In more than half of observed countries, the expected changes by 2025 compared to the level in 2004 are on average around -5 to + 5 percentage points.

- In the majority of EU15 countries, respondents expect that the trade union density rates will decline. The most remarkable decrease is expected in Sweden and Denmark (16 percentage points). Social partners and experts from Germany, France and Spain expect on average an increase in trade union density rates by some percentage points. Greater changes in trade union density rates are expected by respondents from EU12 countries.
- In the majority of EU12 countries, respondents expect that the trade union density rates will decrease by 2025. The most dramatic decrease is expected in Malta and Cyprus (19 and 14 percentage points, respectively), while the highest increase in trade union density rates are expected in Lithuania and Latvia (20 and 11 percentage points, respectively).
- In Global 7 countries majority of respondents expect some decline in the trade union density rates by 2025. However, the expected decrease in Global 7 countries is modest compared to the average decline expected in EU countries. Some decrease is expected in China, Japan, U.S and Australia (around 3 to 5 percentage points), while industrial relations experts from India foresee some increase in trade union density rate in the future.

In regard to the employer organisations' density rates, then majority of respondents from the EU15 countries foresee some decline, while the respondents from new member states expect an increase by 2025. These tendencies show that some convergence and unification in trade union as well as employer organisation density rates is taking place in Europe. However, no drastic changes are foreseen, these results show that today's levels are in the majority of cases projected into 2025. Both trade union and employer organisations density rates remain higher in EU15 countries, followed by EU12 and then Global 7 countries.

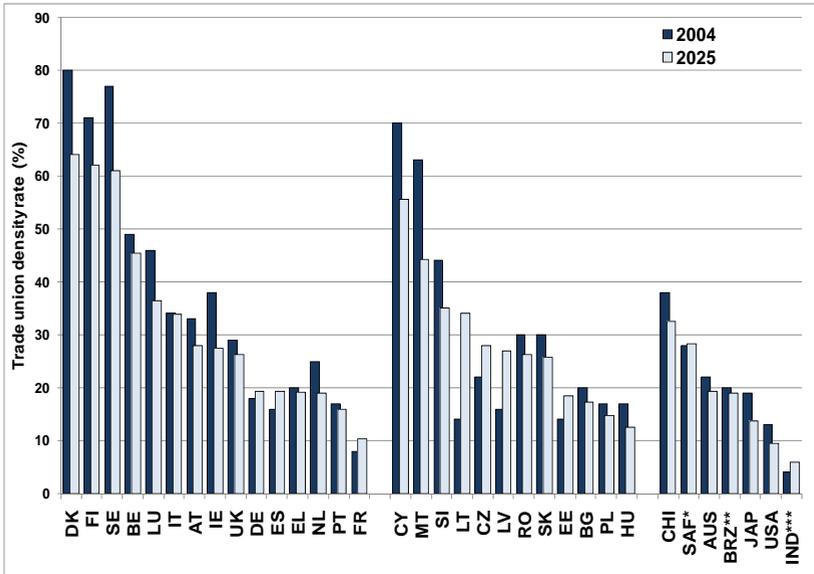


Figure 3. Trade union density rates in 2004 and foresight³ on trade union density rates in 2025 (percentage). (Experts’ survey and Van Gyes *et al.* 2007; Industrial relations foresight 2025 survey)

Many respondents have a view that there will be new actors present in industrial relations processes by 2025. The new actors, which enter into the industrial relations processes, are new employees’ organisations, which are different from the current trade unions. There might also be mergers or split-ups of current unions and employer organisations. In the future, current unions may also cover those groups of workers who do not have a representation today (e.g. migrant workers, workers in informal sector, temporary agency workers). The role of the third sector, NGOs and professional bodies is expected to increase by two channels: one is civil organisations interest to use trade unions for their interest promotion and also vice

³ Question: “Please estimate, what will be the trade union density rate (i.e. share of employees belonging to trade union) in 2025 in your country (%)”. Notes: *According to South African expert P. Hirschsohn, in 2001, trade union density rate corresponded to almost 43% of those employed in the formal sector of the economy, but only to 28% of the economically active population due to high levels of unemployment. ** - According to Brazilian expert H. Zylberstajn, the Brazilian unionisation rate in 2004 is overestimated for the following two reasons: first, Brazilian trade unions are entitled to a ‘union contribution’ which equals the wage of one and which is compulsorily and controlled once a year; secondly, older workers in rural areas need a statement from the trade union justifying that they are rural workers, in order to receive their pension benefit. *** - For India 2004 figures concern only the formal sector. Various sources provide different estimates for trade union density rate in India, ranging from 2.6% to 6%.

versa. Several respondents expect that the role of professional associations will rise and they will take over some functions of trade unions.

3.3. Foresight on collective bargaining and collective agreement coverage

The ongoing liberalisation and decentralisation processes in society will also affect the collective bargaining coverage rates. The majority of respondents from the EU15 countries expect some decline in collective bargaining coverage, while the respondents from the EU12 and Global 7 countries foresee an increase in coverage rates. Outliers are India and Japan, where the collective bargaining coverage rate is very low and where a modest increase is expected in the future. On average, the collective bargaining coverage rates will remain higher in the EU15 countries compared to the new member states. In the Global 7 countries, the coverage rates will be lower than the EU average.

In 2004, collective bargaining coverage rates varied widely – from 100% in Slovenia to 3% in India – in the countries examined. It was much lower in the EU10 countries – covering, on average, between 30% and 40% of the workforce – than in the EU15 countries, where around 75% of the workforce was covered by collective agreements; and in the Global 7 countries, on average the coverage rates were lower than the EU average (for detailed description see also Van Gyes *et al.* 2007; Philips and Eamets 2007). According to respondents' predictions the variability in collective bargaining coverage rates will remain also in 2025 – ranging from more than 90% in Belgium, Austria and France to less than 15% in India and Japan (see Figure 4).

Respondents have different opinions concerning the developments in collective bargaining coverage rates by 2025. Majority of respondents from EU15 countries expect some decline in coverage rates, while on average, some increase in collective bargaining coverage rates is expected in EU12 and Global 7 countries.

- In majority of EU15 countries, respondents expect that the collective bargaining coverage rate will decline by 2025 and the deepest decline is expected in Portugal, but also in Finland, Sweden and Spain. Respondents from Luxembourg, the United Kingdom, the Netherlands, France and Italy expect modest increase in the collective bargaining coverage rates.
- In EU12 countries, the changes in collective bargaining rates are more remarkable to both directions. In Slovenia, where the coverage is currently at very high level, a decline is expected on average by 26 percentage points by 2025. A decline around 10 percentage points is expected in Malta, Cyprus and Slovakia. The highest increases in coverage rates are likely in the Baltic States (24 percentage points in Lithuania, 20 in Latvia and 14 in Estonia).
- There are rather diverse expectations of the developments in collective bargaining coverage rates in Global 7 countries. Respondents from Australia and Japan expect that there will be a decline in the coverage rates by 2025, while respondents from China, India and the U.S foresee some increase in the rates. However, the expected rates differ remarkably: from around 7% in India up to 76% in Brazil in 2025.

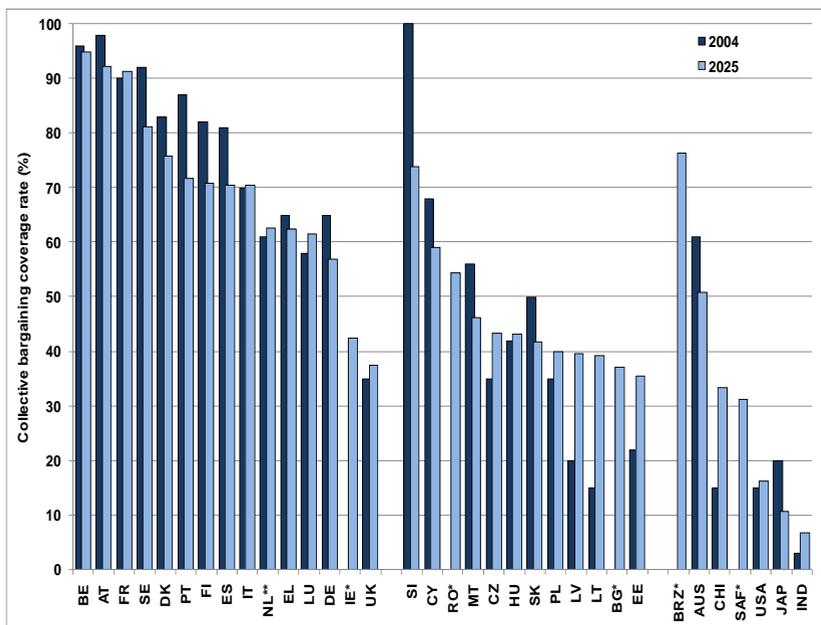


Figure 4. Collective bargaining coverage rates in 2004 and foresight⁴ on collective bargaining coverage rates in 2025 (percentage). (Experts' survey and Van Gyes *et al.* 2007; Industrial relations foresight 2025 survey)

Industrial relations experts foresee that there will be changes in the importance of different collective bargaining levels by 2025. In general, the majority of respondents expect that there will be an increase of collective bargaining at the international and enterprise level. With regard to the other levels of collective bargaining the picture is more patchy. Among respondents from the EU12 countries, the general attitude is that the importance of sectoral level collective bargaining will increase, while the respondents from EU15 countries expect that the enterprise level collective bargaining is gaining more importance in the future. This indicates also some convergence in the industrial relations systems of the old and new member states, as one can observe that the old EU member states are moving towards decentralisation and the new member states towards centralisation in collective bargaining. Not surprisingly the results from Global 7 are different: the dominant levels are expected to be the enterprise and regional level.

⁴ Question: Please estimate, what will be the collective bargaining coverage rate (i.e. the share of employees covered with collective agreements) in 2025 in your country (%). Note: * - There is no reliable information available about collective bargaining rate in 2004 for Ireland, Bulgaria, Romania, Brazil and South Africa. ** - According to comments of two respondents from the Netherlands, the collective bargaining coverage rate is around 80-85% ever since World War II.

In majority of EU15 countries, the dominant level of collective bargaining in 2025 will be sectoral level. Exceptions are Greece and the United Kingdom, where the enterprise level will be dominant and also Ireland, where the national level collective bargaining will be dominant. In majority of EU12 countries, still the enterprise level collective bargaining will be dominant in the future. Respondents from Bulgaria, Estonia, Lithuania and Slovenia expect that the enterprise level collective bargaining is replaced by sectoral level collective bargaining by 2025. Among Global 7 countries major changes are not expected: sectoral level collective bargaining is expected to be dominant in Brazil and South Africa and in other countries the enterprise level bargaining is expected to be dominant.

3.4. Foresight on wage, working time, and other working conditions

Following general trends can be drawn about determination of different working conditions in different countries and country groups:

- There are many countries, where respondents do not expect major changes happening in the wage determination procedures, while in majority of countries some decentralisation process in wage determination is expected. Respondents foresee that in the future wages will be still collectively regulated, but there will be more variability in wages and more differentiations in rules, which will introduce more variable/flexible pay.
- Respondents from majority of countries do not expect changes in the present system of determination of minimum wages. Currently national minimum wages are fixed in 21 of the EU27 member states, as well as in Australia and Brazil. Minimum wages in EU15 countries are set mostly at national level or sectoral level negotiations, and in EU12 countries minimum wages are set dominantly at national level negotiations.
- In the EU15 countries currently the working time is regulated in majority of countries by national legislation and/or by sector level collective agreements. In the countries, where changes are foreseen these changes are towards enterprise collective agreements or individual contracts. In the EU12 countries working hours are regulated by national legislations. Collective agreements play minor role and, if play, does not deviate from the statutory weekly working hours. In majority of cases no changes are expected in the current system. In Global 7 countries respondents' opinions about future developments in regulating working time issues are very different and no generalisation can be made.
- At present in a majority of countries the health and safety issues are regulated by national legislation and respondents do not expect changes in the system. Respondents also expect that the government's role in regulating health and safety issues will either increase or remain unchanged in the future.

Many of respondents pointed out that flexible employment arrangement (telework, temporary agency work, etc.) may increase because of need for reaction to expanding phenomenon in the future. Respondents foresee that the governments will have to deal with the increase of flexibility in the labour markets and the government's role as a promoter of flexible employment arrangement could rise, as

well as the regulation with respect to the flexible forms of employment will increase. The implementation of flexicurity is likely to require extensive legislation at national level, but the European Commission is also likely to have an increasing role in these matters. However, lot of respondents have an opinion that the minimum standards of working conditions (minimum wage, working time, and health and safety issues) will be fixed at national and/or EU level and sectoral and/or enterprise level agreements will settle more rights for workers.

Conclusions

Globalisation impacts directly and indirectly on the industrial relations systems and their actors. Different dimensions of globalisation – internationalisation of markets, increasing competition, free movement of capital and labour, rising importance of markets and ICT – impact on the working life and represent serious challenges for national industrial relations systems. The pressure exerted by globalisation affects employment and industrial relations at regional, national and international level. These pressures interact with national characteristics of the economic and political system, (e.g. type of government, legislative developments, role of the social partners, etc.).

Globalisation has a contradictory impact on industrial relations. On the one hand, it is accelerating economic interdependence between countries on an intraregional basis and encouraging similar business approaches of individual companies in competitive markets. This may lead to some convergence in industrial relations arrangements worldwide. On the other hand, evidence exists that industrial relations in some countries resist the convergence trend; such resistance from industrial relations actors is based on particular national and regional circumstances. Big multinational companies cover different countries and this means new challenges for social partners as well (see e.g. Papadakis 2008). Work standards and wages begin to level out internationally, different work culture, value systems means that unions have to adjust their recruitment policies, importance of international co-operation between trade unions will increase. Several respondents pointed out that the developments industrial relations systems in 2025 will be influenced by globalisation and competition.

In addition to the effects of globalisation, Europe, as well as some other economically more advanced countries, must also meet the combined challenges of low population growth and an ageing population. In this context, it appears to be impossible for developed countries to handle their current demographic situation without allowing for labour migration originating from developing countries; in particular, the migration of skilled workers is encouraged. At the same time, developing countries, especially China and India, are facing further population growth and a labour surplus. The majority of developed countries face also serious labour and skill shortages which threaten their sustainability of economic growth, productivity performance and international competitiveness. In the EU, rising labour shortages will put a push on increasing labour migration within the EU and also from non-EU countries.

In general, the country groups (EU15, EU12 and Global 7) are internally highly heterogeneous and countries are characterised by very high diversity in most of cases. Hence, all of the conclusions drawn up as part of this analysis should be handled with caution, since specific aspects relating to each country, such as historical and cultural developments, legislation and the role of the state, have to be taken into account. The following paragraphs highlight some of the main differences between the country groups in 2025 according to the survey results.

- In the EU15, the industrial relations indicators – trade union and employer organisation density rates, collective bargaining coverage and workplace representation – will have on average, the highest scores also in 2025: all of this indicates that employees will generally be more protected in the EU15 and that they enjoy greater employment security and social guarantees. In addition, social cohesion (more equal opportunities in the labour market, lower income inequality and gender wage gap) will be higher in the EU15 societies than in those of the other country groups.
- The EU12 countries will keep their position between the EU15 and Global 7 countries, showing higher social partner organisation density and collective bargaining coverage rates than the Global 7 countries. Workers will be better protected and inequality is lower in the EU12 when compared with the Global 7 countries.
- In the G7 countries, workers will be less unionised and less protected and low trade union density is accompanied with a relatively low rate of collective bargaining coverage also in 2025. Furthermore, employers are also less organised. The labour markets will be more flexible and employment protection will stand at a relatively low level also in the future.

This foresight study picked up also several “strong signals” of the changes in the industrial relations systems: declining unionism in observed countries, decentralisation processes in collective bargaining negotiations and in determining different working conditions. It seems also that EU level convergence is expected in the area of industrial relations. Convergence to the EU average level is more concern of the EU12 countries, which are more willing to expect an expansion of social partnership. In relation to trade union and employer organisations density, the member states, dominantly EU15 countries, are foreseeing a decline. In parallel the old member states are dominantly foreseeing a decline in the collective bargaining coverage rates, while the EU12 is expecting a rise. In general, decentralisation of collective bargaining is expected in old member states, while the situation will remain unchanged in majority of the new member states. It seems that European level convergence is expected in the area of industrial relations. On the background of this convergence increasing competition and globalisation push for higher flexibility, increase of atypical forms of work, decreasing job security.

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DISTRIBUTIONAL EFFECTS OF ENVIRONMENTAL TAXES IN ESTONIA

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Abstract

This paper analyses the distributional effects of Estonian environmental taxes in 2000-2007 and recent reforms in 2008 using Estonian Household Budget Survey data and a microsimulation model. The results show that the share of environmental taxes in consumption expenditures is about 1-1.5%. Environmental taxes in 2000-2007 were progressive due to the progressivity of motor fuel excises, which was the largest component of the environmental taxes until 2007. Since 2008, the taxes are less progressive, because of the new electricity excise and increased taxes on gas and other inputs used for distance domestic heating. To minimize the disproportionate effect of future ecological tax reform on low-income households, close monitoring of tax developments is required and necessary compensatory policies need to be implemented.

Keywords: environmental taxes, distributional effect, microsimulation model, Estonia

1. Introduction

In past years environmental taxes have been a popular instrument to tackle environmental problems. However, there is a strong opposition to rising environmental taxes, caused by a fear of reduced international competitiveness and a disproportionately bigger impact on low-income households. In order to address the regressivity concerns, several countries have implemented ecological tax reform, which includes increase of environmental taxes and decrease of labour taxes.

In Estonia environmental taxes have attracted wider attention since 2005, when the Ministry of the Environment and the Ministry of Finance initiated the ecological tax reform. The main reason was that energy and resource use in Estonia is inefficient and not sustainable in a long-run. The energy intensity of the Estonian economy measured by gross inland consumption of energy divided by GDP is one of the highest in the EU and exceeded the EU-27 average by more than four times in 2006. Although Estonia has implemented pollution charges for more than 15 years, the rates have been too low to give firms and households compelling signal to change their behaviour. According to the principles of the ecological tax reform adopted by the Estonian government in 2005 introduction of new taxes and increase of existing ones was agreed.

The share of environmental taxes was initially very low in Estonia compared to the EU average, but it started to increase quickly. In 1995 the revenue from environmental taxes was 0.8% of GDP (EU-15 average 2.7%). By 2000 it had increased to 1.7% and by 2006 to 2.2% of GDP (EU-25 was 2.6%) (Eurostat 2008).

In 2007 environmental taxes formed 6.5% (4.4 billion EEK) of state budget revenues. The main environmental tax in Estonia is fuel excise, which formed 98% of state budget revenues from environmental taxes. In addition to environmental taxes Estonia uses environmental charges levied on firms for the use of natural resources and emission of pollutants into air, groundwater or soil and upon waste disposal. Environmental charges are managed by the Ministry of the Environment and the revenues are used only for environmental purposes (e.g. investments). In 2007 state budget revenue of environmental charges was 840 million EEK. The impact of these charges on households is not analysed in this article.

Deriving from the agreed ecological tax reform principles and from the need to impose the minimum excise rates of the EU, the level of fuel excises has risen quite significantly in recent years. However, the distributional effect of environmental taxes has not been assessed in Estonia. There are two studies that briefly mention the issue: analysis of energy products taxation (Tallinna Tehnikaülikool 2007) and macroeconomic analysis of the implementation of a carbon tax (Strateegiliste Algatuste Keskus 2004). The analysis of energy products taxation focuses mostly on the impacts on primary energy supply, electricity production and environmental effects of different taxation scenarios. The objective of macroeconomic analysis of the implementation of a carbon tax is to compile different scenarios of CO₂-tax and to assess, among other impacts, their socioeconomic effect. However, the latter is constrained to the effect on employment. In general it can be said that no clear conclusions can be made on the distributional effects of the taxes researched.

Distributional effects of environmental taxes are important to consider in Estonia, because inequality is already relatively high and introducing new taxes or raising existing ones should not widen the income distribution. In 2007 Gini coefficient of disposable income was 0.33 in Estonia, higher than the average of the EU-25 (0.30), but similar to United Kingdom, and considerably higher than in Nordic countries: Sweden 0.24, Norway 0.24, Denmark 0.25, and Netherlands 0.28 (Eurostat 2009).

The objective of this paper is to assess the distributional effects of environmental taxes on Estonian households. To our knowledge, it is the first time distributional effects are analysed in post-soviet countries. It is a general trend in Eastern European countries that energy intensity is very high and energy taxes are low. In order to make economy more efficient, these countries are raising energy taxes, but their distributional effects have not been analysed. The relevant literature covers developed countries. An overview of these studies is presented in the next section.

To assess the distributional impacts of environmental taxes in Estonia we use a static non-behavioural microsimulation model ALAN. The model has been developed to evaluate distributional effects of income and consumption taxes and social benefits. The data used for simulation are from Household Budget Survey conducted by Statistics Estonia, from the period 2000-2007. From consumption and income data we impute both taxes and benefits. The tax policies we consider are from years 2000-2008.

The rest of the paper is organised as follows. In the next section there is an overview of the previous work on distributional effects of environmental taxes. The third section gives an overview of the microsimulation model and the data used, and the results are in section four. Section 5 concludes.

2. Previous literature

The empirical literature on the distributional effects of environmental taxes can be divided in two: the research that focuses only on direct effects of taxation and the research that covers direct and indirect effects. The latter means that taxes posed on producers are transferred to consumer prices and then the distributional effect on households is assessed. In this approach input-output tables are used together with microsimulation method. The examples are Canada (Hamilton, Cameron 1994), the UK (Symons *et al.* 1994), Australia (Cornwell, Creedy 1996), Spain (Labandeira, Labeaga 1999), Denmark (Wier *et al.* 2005) and Netherlands (Kerkhof *et al.* 2008).

Our research belongs to the branch of direct effects of environmental taxes, which is also carried out for example in Italy (Tiezzi 1999), Germany (Bork 2003), Denmark (Jacobsen *et al.* 2003), the United Kingdom (Dresner and Ekins 2006) and Ireland (Callan *et al.* 2009). Before giving an overview of the results of the work done in these countries, a question of why and how to measure distributional effect deserves attention.

Vertical equity usually refers to the idea that people with a greater ability to pay taxes should pay more, which reduces the inequality in the society. Such tax system, carried by the idea of vertical equity, is called progressive tax system. The question is how to measure such progressivity.

It is generally agreed that tax is progressive when the average tax rate rises with income; proportional when the average tax rate is constant and regressive, when the average tax rate falls with rising income. The difficulties arise, when talking about the redistributive effect. Different methods are used to gauge that. The use of different measures depends on the research question: if the objective is to analyse income distribution, then the measures showing the relation between post-tax and pre-tax income distribution should be used. Such measure is for example Reynolds-Smolensky index, based on Gini index. If the research interest is more in tax progressivity meaning the percentage distribution of taxes compared to percentage distribution of income, measures like Kakwani index could be used. Kakwani tax progressivity measure is the difference between the concentration index of taxes and the Gini index of the before-tax income (Kakwani 1977).

The environmental tax studied in distributional analysis is usually the carbon tax. Carbon tax is mostly levied on energy use based on the carbon content of energy. Climate change is recognized as one of the most challenging environmental issue and the Kyoto Protocol of UN Framework Convention on Climate Change sets specific national targets of reducing greenhouse gas emissions. Therefore the literature about distributional effects of environmental taxes has focused on carbon

taxes that could be applied in order to achieve the greenhouse gas emission reduction. Another common feature that can be noted is the use of revenue-neutral ecological tax reforms in many studies, meaning that not only the impact of applying new environmental tax is analysed, but also the effect of lowering labour taxes.

The earliest study of European carbon tax was done by Pearson and Smith (1991) who estimate the distributional impact of the tax in seven European countries (France, Germany, Italy, Netherlands, Spain, the UK and Ireland). In the first five they find that the burden of carbon tax payment is only weakly related to income, if at all, but in the UK and Ireland there is evidence of a significantly regressive pattern.

The work of Pearson and Smith was upgraded by Terry Barker and Jonathan Köhler in 1998 using the European energy-environment-economy model (E3ME). The countries covered are Belgium, Spain, Netherlands, Ireland, Italy, Luxembourg, Portugal, France, Germany, Great Britain, and Denmark. The researchers analyse the impact of a revenue neutral ecological tax reform and find that the taxation of fuels used for domestic heating is regressive. But if only transport fuels were taxed, the tax reform would be progressive in most of the studied countries (Barker, Köhler 1998).

More recently, the European researchers of environmental taxes' distributional effects have focused on a single country and use mostly microsimulation methods.

The evidence of the regressivity of environmental taxes has been found in Germany (Bork 2003), Great Britain (Dresner, Ekins 2006) and Ireland (Callan *et al.* 2009). In case of Germany taxes on heating fuels and electricity as well as tax on motor fuel show the regressive pattern, i.e. higher income classes bear smaller proportion of tax burden as compared to lower income classes. The regressive nature of taxes holds even with revenue-neutral tax reform via lowering social insurance taxes. In case of Great Britain the carbon tax imposed on gas and electricity in itself is regressive, but when compensation schemes are used, then the tax system on average is progressive, i.e. makes the average low-income household better off. However, as the variation in low income deciles is very big, there are still a significant proportion of low-income households that remain losers. In Ireland, it has been found that carbon tax is regressive, but a modest increase in welfare payments would offset the negative impacts of the tax in the lower half of the income distribution.

No evidence on regressivity has been found in Italy (Tiezzi 1999). The authors suggest that this is so due to the tax's bigger impact on motor fuels and smaller impact on domestic heating fuels.

Jacobsen and co-authors have shown the aggregate result is dependent on the variable used: according to disposable income the environmental taxes are regressive, but according to expenditures the environmental taxes are progressive (Jacobsen *et al.* 2003). However, if environmental taxes are further split, it appears that transport-related taxes are progressive and energy taxes are regressive. They

find also the Gini coefficients of different taxes and find that taxes on petrol and registration duty reduce inequality. Energy taxes increase inequality slightly more than VAT but less than duties on alcohol and tobacco.

Although in tax policy the wide tax base is preferred, some authors have argued that in case of environmental taxes a differentiated tax system could be more effective environmentally and distributionally (Aasness, Larsen 2003). They argue that if vertical equity principle is aimed, then the products with high income elasticity have to be taxed more and products with lower elasticity have to be taxed less. The authors illustrate their arguments with elasticities of transportation goods and show that taxing motor fuel could have adverse effects on low-income households, as its Engel elasticity is quite low (0.7). The examples of luxury goods, which could be taxed high, are air flights (income elasticity is 2.00), road tolls (2.00), taxi rides (1.74) and automobile (1.6). The authors claim that lower-income households spend less on the car quality, but more on gasoline. The higher-income households spend more on the car quality. If indirect taxes should also fulfil the redistribution objective, higher tax should be imposed on air flights, taxi drives and cars and lower taxes on mopeds, public transport, motor fuel and bicycles.

In general it can be said that the studies on distributional impact of environmental taxes are very different. Most of the studies analyse the impact of hypothetical carbon tax, only in Denmark the implemented carbon tax has been analysed. Also the studies differ in whether the focus is on environmental tax alone or revenue-neutral tax reform. The microsimulation models used for analysing environmental taxes do not include behavioural effects. Most of the studies described above have used the proportion of tax burden in different income classes to show the progressivity/regressivity of a tax. Only in Jacobsen *et al.* (2003) Gini coefficient is also used.

In addition to the research on distributional analysis of environmental taxes, there are very many papers on the empirical evidence of double dividend of ecological tax reform. Double dividend refers to two simultaneous benefits: combining a cleaner environment with economic improvement, see Patuelli *et al.* (2005) for an overview of such papers. However, these studies use mostly general equilibrium and macroeconomic models and do not handle the distributional effect, which is the main focus of the other strand of the literature. An interesting exception is the study of a hypothetical carbon tax in South Africa, where in addition to traditional double dividend also triple dividend has been included – alleviating poverty. The measure used is the total consumption by the poor. The study shows that different versions of carbon tax reduce CO₂ emissions, and in conjunction with a food tax decrease, they all increase GDP and reduce poverty (Van Heerden *et al.* 2006). This is also one of the few studies about impact of environmental taxes in developing countries. A vast majority of relevant literature is done in developed countries.

We acknowledge the importance of analysing the possible effects of new taxes. However, the issue of the distributional effects of the existing environmental taxes has not deserved sufficient attention. It is important to study different implications of

different taxes to build up a fair and effective tax system, especially in post-soviet countries, where the tax systems are constantly changing.

3. Data and the model

The model used in this research is the microsimulation model ALAN. The development of the model was started in 2005 to assess the redistributive impact of direct taxes and transfers by Alari Paulus and Andres Võrk. The earlier versions of ALAN model has been used to evaluate the impact of direct taxes and benefit system on income distribution (Paulus 2006), poverty and inequality (Võrk, Paulus 2007), work incentives (Võrk, Paulus 2006) and financing health care system (Võrk 2007). The model is continuously developed and improved. The version used in this article is from January 28, 2009. The detailed description of the model, all the assumptions and validation results are available in Võrk, Paulus, Poltimäe (2008).

The ALAN model is based on data from Household Budget Surveys 2000-2007 carried out by the Statistics Estonia. The data include monthly after-tax income and household consumption expenditures. The model simulates gross income, social benefits, payroll and income taxes, value-added tax, excise taxes on tobacco and alcohol, and environmental taxes for years 2000-2007 and for some taxes and benefits up to 2012. As the environmental excises are related to quantities, but the Household Budget Survey includes only expenditures in monetary terms, we use average prices of commodities to calculate quantities. The model calculates disposable income of all households. The households are compared using OECD modified household equivalence scale 1:0.5:0.3. All income deciles presented below include equal number of persons.

As the Household Budget Survey records household data during one month, it may happen that expenditures are higher than income of the same month, for example, when people are on vacation or sickness leave. The result is unusually high share of consumption taxes in the first income decile. Therefore in this article we use the environmental tax burden as a share of consumption expenditures, which includes monetary consumption expenditures and repair costs of dwellings and does not include purchase of fixed assets (houses, real estate) and savings. The alternative would be to leave out the observations where income is significantly lower than expenditures or forecast expenditures that would be accordant with income. The proportion of environmental taxes in income is a proxy of short-term effect, because income is very fluctuating in short term. The proportion of environmental taxes in expenditures gives a longer-term perspective, as expenditures fluctuate less than income, as by saving and borrowing people smooth their expenditures of different periods.

We stimulate the following taxes: excise on motor fuels (gasoline and diesel) and excise on fuels used for domestic heating. The domestic consumers have to pay excises for light fuel oil and heavy fuel oil and since 2008 also for gas and electricity. We have also calculated the implicit excise of distance domestic heating. It is assumed that the excises the producer has to pay are transferred to the

consumers via higher prices and thus we can calculate the excise based on the composition of fuel used in distance heating.

4. The distributional effect of Estonian environmental tax

The fuel excise proportion to other indirect taxes is given in Figure 1. It can be seen that the biggest share of disposable income forms VAT (13.6% on average). The share of excises is quite modest. According to the share in disposable income the indirect taxes are regressive, as they form the highest proportion of the income of the first decile. The reason is the monthly data of Household Budget Survey, where for some months income is significantly lower than expenditures, as people are on vacation or on sickness leave. Therefore we analyse also the proportion of indirect taxes of consumption expenditures (Figure 2).

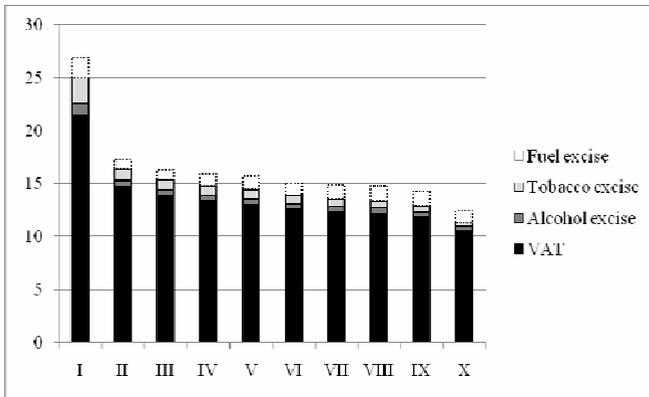


Figure 1. The share of consumption taxes in disposable income by deciles, average for 2000-2007, % of disposable income.

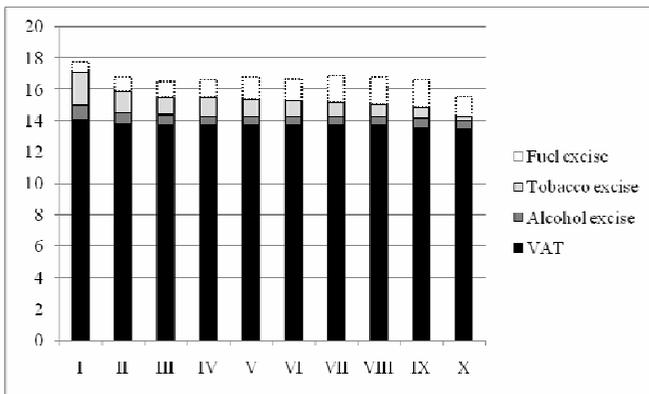


Figure 2. The share of consumption taxes in consumption expenditures by deciles, average for 2000-2007, % of consumption expenditures.

If the share of consumption taxes is compared to consumption expenditures, VAT is quite proportional (around 14%). Tobacco and alcohol excise show a regressive pattern, i.e. form a larger share in lower deciles. Fuel excise is progressive, but the highest share is not born by the tenth decile, but deciles VII-IX.

On average, environmental taxes constitute about 1-2% of household consumption expenditures in different deciles. The share of environmental taxes is larger in high-income groups (Table 1), except in decile X where it is lower again (1.5% in 2007). In 2000-2004 the proportion of environmental taxes in expenditures did not practically change, but since then the share of taxes has increased. This is driven by excise rate increase in 2004 for gasoline and diesel, and light fuel oil in the following year.

Table 1. The share of environmental taxes in expenditures by deciles, 2000-2007, %

	I	II	III	IV	V	VI	VII	VIII	IX	X
2000	0.6	0.7	0.7	0.8	1.0	1.1	1.2	1.2	1.5	1.3
2001	0.5	0.7	0.8	0.9	1.1	1.1	1.3	1.5	1.7	1.1
2002	0.6	0.9	0.7	0.9	1.0	1.1	1.3	1.3	1.5	1.1
2003	0.5	0.8	1.0	1.0	1.0	1.5	1.5	1.6	1.5	1.4
2004	0.5	1.0	0.8	1.2	1.5	1.7	1.7	2.0	1.8	1.7
2005	0.9	1.1	1.3	1.4	1.6	1.8	2.0	2.3	2.2	1.4
2006	0.8	0.8	1.2	1.2	1.5	2.1	2.0	1.9	1.9	1.1
2007	1.1	1.1	1.3	1.1	1.5	1.9	1.7	2.3	1.9	1.5

The majority of environmental tax burden on households is caused by excise on gasoline, which in 2000-2007 was on average 1% of expenditures (Figure 3). The highest share of gasoline excise is in VIII and IX deciles. The proportion of diesel excise is significantly lower, as the share of households owning diesel motor vehicles is not so big as compared to gasoline motor vehicles. Diesel excise is also progressive; the highest share is born by the VIII-X deciles.

The implicit excise on distance domestic heating is not significant: only about 0.03% of expenditures on average in 2000-2007. However, this excise shows a regressive pattern, as it forms higher share in the lowest deciles. The share of light fuel oil in expenditures is almost non-existent.

To analyse the change in 2000-2007, we group fuel excises into two groups: domestic heating excise and motor fuel excise. The proportion of motor fuel excises has been increasing in all deciles, from the average 1% to the average 1.5%. However, the most significant increase has taken place in the lowest decile: 2.1 times, in the highest decile the increase has been 1.1 times. Thus the gap between the richest and the poorest is narrowing. In 2007 the tax burden for the first decile was 1.1%, for the tenth decile 1.4%. The largest share of tax burden was for decile IX (2.2%). The tax burden of indirect taxes is strictly caused by a consumption of

the taxed good. The growth of gasoline consumption in households in 2000-2007 is largest in the lowest decile (187%) and lowest in decile X (37%). However, there is still a big difference in the absolute consumption level: the lowest income group consumed on average 30 litres of gasoline per household member in 2007, the highest income group 158 litres. Partly this may be due to different household age structure as there are more children and pensioners in the lower deciles.

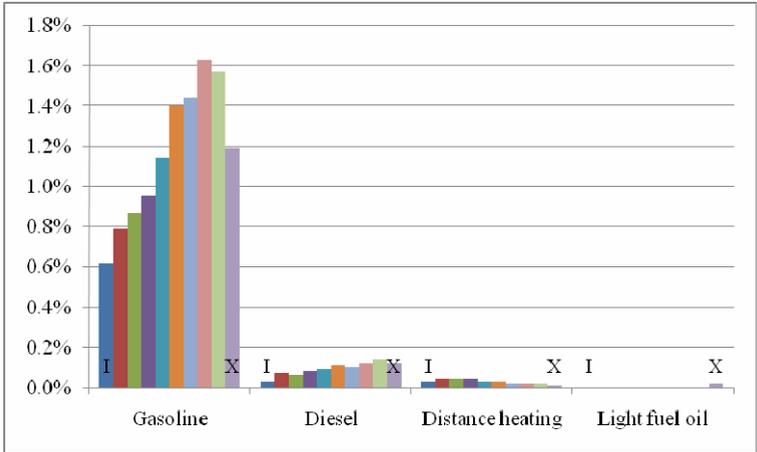


Figure 3. Share of environmental taxes in expenditures by deciles and by fuels, average for 2000-2007, % of consumption expenditures.

The proportion of domestic heating excise has also increased in 2000-2007, from the average 0.02% in 2000 to 0.04% in 2007. The biggest increase has taken place again for the poorest households: 5.4 times, for the richest the increase has been 3.6 times. The level of domestic heating excise is still very low.

In 2008 the fuel excise rates were raised quite significantly in Estonia: for gasoline the increase was 25%, diesel 35% and light fuel oil 39%. In addition, new excises were imposed on natural gas and electricity. In order to assess the impact of the fuel excise increase, we assume that all increase in excises will be transferred to consumer prices and that the consumption quantities of 2007 will remain unchanged. Total nominal consumption expenditures are assumed to increase uniformly at the average rate of 17.2% (predicted average nominal growth rate of income in 2008).

Figure 4 presents the impact of additional excises as a share of consumption expenditures by deciles. The increase of gasoline and diesel excises affects higher income groups more than lower ones. However, the electricity excise affects lower income groups significantly more than higher ones. Also the fuel excise on gas has a bigger impact on lower income groups, but its level is much lower than for electricity excise.

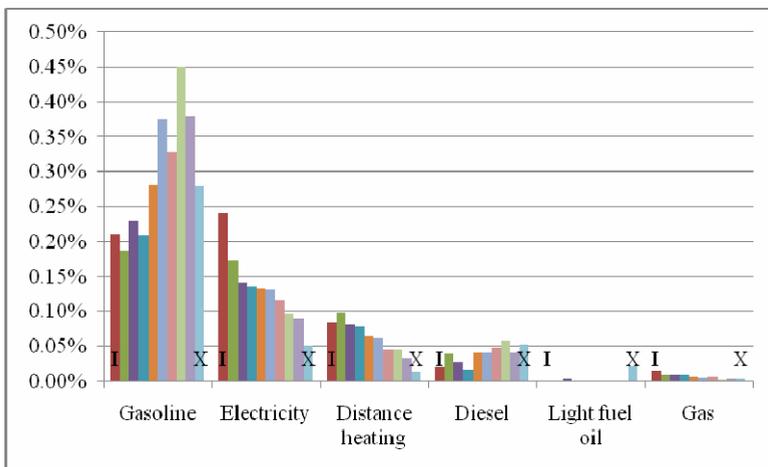


Figure 4. The increase of tax burden in 2008 as a share of consumption expenditures by deciles.

In addition to tax burden distribution across different income groups it is also important to analyse the distribution according to different sociodemographic characteristics of the households, which is done based on 2000-2007 data.

To analyse which social group is most affected by the environmental taxes, the environmental tax burden is analysed in five groups: households with one working member, households with two or more working members, unemployed, retired, other inactive. The results show that the motor fuel excise affects more these households that have working members, but the domestic heating excise affects relatively more unemployed and retired people (Figure 5). However, the level of domestic heating excise is significantly lower than that of the motor fuel excise.

One can suspect that the excise burden is different for urban and rural households, as rural households depend more on cars, they have to travel longer distances and the public transportation is not very developed. Also their income is lower. Our analysis supports that argument: rural households bear motor fuel excise which is almost twice as high as in urban households (Figure 6). The income of rural households is about 10-15% lower than in urban households.

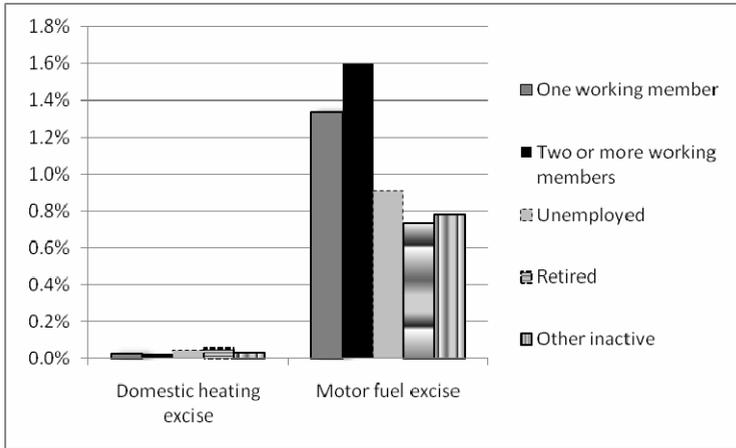


Figure 5. Share of fuel excise in consumption expenditure by the social group of household, average for 2000-2007.

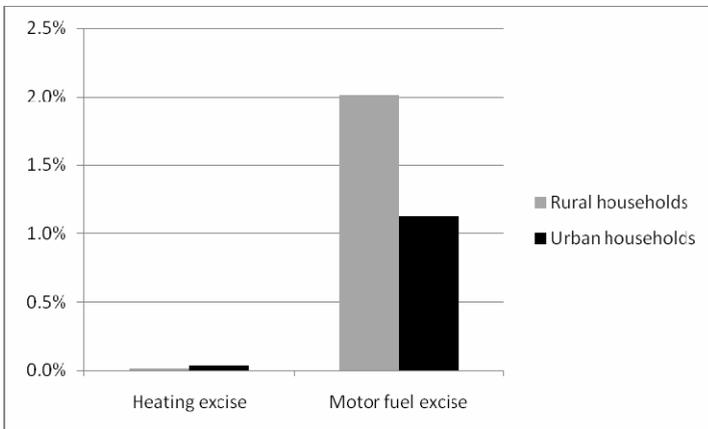


Figure 6. Share of fuel excise in consumption expenditures in rural and urban households, average for 2000-2007.

If we analyse tax burden according to the number of children in a household, we can observe that up to 2004 the share of motor fuel excise was the highest for families with 3 or more children, but since then the share has been falling and by 2007 it is even lower than for families with no children or with 1-2 children (Figure 7). Looking at quantities of consumed gasoline, we can see that households without children or having 1-2 children have been steadily increasing the consumed gasoline per household member in 2000-2007, but in households with three or more children,

the quantities increased up to 2004, but then started to decrease. One of the reasons could be the increase of gasoline prices in 2004 and 2005.

Although at the first glance the result seems favourable for families with several children, it is not clear how the decrease in fuel use in 2007 as compared to 2004 has affected the families' wellbeing. In order to do that, the personal car use needs to be more thoroughly analysed, whether this is a necessity good or convenience good. This could be done by assessing elasticities of car purchase and gasoline consumption, but it is out of the focus of the current article.

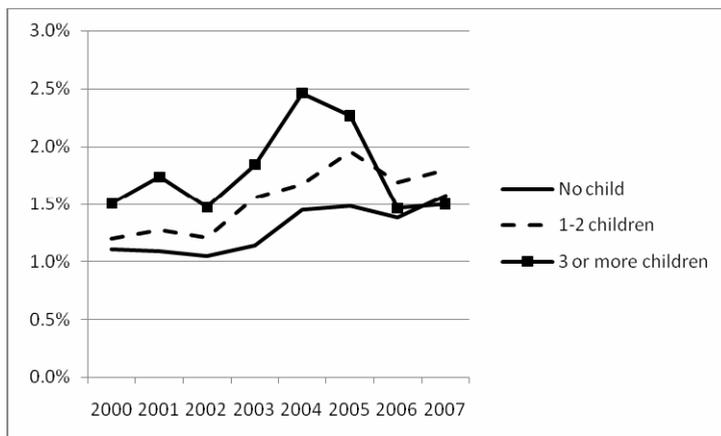


Figure 7. Share of motor fuel excise in consumption expenditures by the number of children in a household, 2000-2007.

To assess the progressivity or regressivity of Estonian excise duties, we use Kakwani index (Table 2). The fuel excise does not have a clear pattern as a whole, but if we analyse it separately, we can see that excise on fuels used for domestic heating is mostly regressive and excise on motor fuels has been progressive. However, the progressivity of motor fuel excise has decreased in recent years. The other excises – tobacco and alcohol are clearly regressive in Estonia, especially in recent years.

Table 2. Kakwani indexes of Estonian excise duties

	2000	2001	2002	2003	2004	2005	2006	2007
Fuel excise	0.08	0.07	0.05	0.07	0.07	0.02	-0.01	0.03
<i>Domestic heating</i>	-0.01	-0.16	-0.05	-0.22	-0.14	-0.07	-0.15	0.05
<i>Motor fuel</i>	0.08	0.08	0.05	0.07	0.08	0.02	0.00	0.03
Alcohol excise	0.01	-0.03	0.01	-0.02	-0.02	-0.10	-0.17	-0.18
Tobacco excise	-0.24	-0.23	-0.24	-0.18	-0.28	-0.31	-0.31	-0.30

So, in general we can draw twofold conclusions. First, the tax on domestic heating is regressive, as the level of domestic heating is quite stable over the deciles and, hence, forms bigger share in lower income households' budget. This is supported also by the Kakwani index. Second, for motor fuel excise, the Kakwani index shows decreasing progressivity. Here the Kakwani index hides different issues: improving living standard in all income classes and changing consumption patterns (growing car ownership also among the poor) during the observed period and therefore as a single number the index does not give a clear picture of the reasons of progressivity. Therefore one must be careful with presenting the progressivity or regressivity of a tax in a single number, especially in a country like Estonia, which is still lagging behind as compared to developed countries and consumption patterns are still evolving.

5. Conclusions and discussion

The objective of this paper was to assess the distributional effect of environmental taxes on Estonian households. The most significant environmental tax in Estonia has been fuel excise, contributing 98% of environmental taxes to state budget in 2007. In 2008 the tax base of excises was increased: excise duties on electricity and gas were introduced, taxes on motor fuel and light fuel oil were raised.

In general it can be said that the Estonian results are in line with other studies on distributional issues in Europe. Overall the environmental taxes in Estonia in 2000-2007 were progressive. This is because of the progressivity of motor fuel excises, which is the largest component of the environmental taxes with its level about 1-1.5% of total household consumption expenditures. The share of motor fuel excises is highest in VIII-IX deciles and lowest in bottom deciles. Taxing fuels used for domestic heating is regressive, low-income groups have higher tax burden than high-income groups, because of the larger share of heating costs of their expenditures. However, the level of tax burden of domestic heating excise in consumption expenditures is very low: 0.04% in 2007. Also the Kakwani index shows that taxing domestic heating is regressive and taxing motor fuels is progressive.

The environmental taxes, however, have become less progressive (or more regressive), because of changes in 2008. The new electricity excise is clearly regressive, and also increased taxes on gas and other inputs used for distance domestic heating are regressive. Their contribution to the overall tax burden is still low, but increasing. Electricity excise is still only about 5% of the overall environmental tax burden for households in 2008, but it constitutes about 20% of the increase, even more importantly about 40% for the lowest decile. It shows that close monitoring of future tax developments is required and if necessary, compensatory policies should be implemented either via reduction of income tax for low-earners or increased social benefits.

However, one should be cautious when using such progressivity measures alone. They do not tell anything about adequate level of consumption. For example, motor

fuel tax is slightly progressive: the share of taxes in total consumption expenditures are 1.1% in the first decile and 1.4% for the tenth decile. At the same time gasoline consumed per household member in the tenth decile was 5.3 times bigger than in the lowest decile. We may suspect that the quantities of motor fuel consumed by low-income families may not guarantee the adequate quality of life. The worrying signs of unfavourable effects are also the higher environmental tax burden for rural households and the dropping trend in quantities of consumed gasoline for households with several children.

Our paper focuses on the direct effects of environment taxes, meaning that we consider taxes paid directly by households. Except for distance domestic heating, we do not analyse other secondary effects of taxation: for example rising fuel excise will also raise producer prices and most likely also consumer prices of various goods. As for some goods the impact could be more significant than for the others, the distributional effects are of importance again. Still we do not expect that the overall results and conclusions change much. For example, motor fuel excise influences mostly transportation costs, but data show that household expenditures on transport are higher in high-income households, also when public transport is included. We also assume that excise on electricity, on the other hand, might also indirectly influence more low-income households, where the share of primary consumption goods (e.g. food products) is higher, and the share of labour-intensive services is lower. Further analysis using sectoral input-output tables are required for a precise assessment of indirect effects. The impact of environmental charges, omitted in the current analysis, could be analysed in similar fashion.

Finally, future research should also analyse behavioural effects, demonstrating how households react when environmental taxes and therefore consumer prices rise. Our results on the 2008 increase in excises taxes should be considered as a very short-run effect, where households are not allowed to change the quantities they consume. In long-run, the distribution of tax burden will change, especially when low-income and high-income households react differently. Given the reasonable range of price elasticities we expect that even when the quantitative results might be affected, the main conclusions on who bears the higher tax burden of new environment tax reforms will remain the same.

Acknowledgements

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THE DOMINANCE OF INDIRECT TAXES IN ESTONIAN STATE BUDGET

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Abstract

Recession has sharply erected the question of tax burden and the optimal proportion of different kinds of taxes among the incomes of the budget. Indirect taxes and consumption taxes, which proportion is different according to different methodologies, dominate in Estonian state budget. The buoyancy of a tax system based on taxes of that kind is especially weak during the recession.

Difficulties concerning the incomes of budget have arisen the necessity for lifting taxes, which is possible as the tax burden is low now. But a sharp question of the optimal level of taxes is going to be raised. A formula for indirect tax optimum according to Ramsey taxes and Slutski decomposition has been proposed in the article.

Keywords: Taxation, tax burden, Estonian state budget, Ramsey taxes, indirect tax optimum.

The problem

Everybody is familiar with the saying that death and taxes are the two most unpleasant as well as inescapable things. There are many goods that cannot be provided by the private sector but only by the state. Furthermore, with many goods provided by the private sector it is not possible to identify a consumer who would have to pay for them. It is the state that has to pay for these so-called public goods. According to Wagner's law the income elasticity of public expenditures is greater than 1, therefore the demand for state-financed services grows in proportion to the increase of income. That also means an increased demand for state budget revenues, mostly taxes. According to a popular opinion the state budget revenues should contain at least 90% taxes (loans not included).

Bigger state budget also means bigger taxes. Taxes in turn diminish the resources available to households and therefore welfare. So the question arises – which is bigger, the decrease in welfare of households and the state as a whole due to an increase of taxes, or the rise in welfare due to public goods and an increase in consumption? Naturally both these effects become evident through the behaviour of economic agents. Accordingly, with all taxes there is a question of their impact on the short- and long-term behaviour of economic agents.

In economic theory, this question can be approached from two viewpoints. First, it is possible to point out a set of principles, parameters and arguments, and construct models based on theoretical considerations, without taking into account particular numerical data. The other function of the theory is to provide a scientific set of analytical devices for the empirical data that would make giving practical

suggestions possible. This part of the theory also needs to explain what kind of data from the millions of practical cases need to be gathered.

Not all of these interconnected problems can be discussed on these pages. We set out to consider two issues: first, to demonstrate the large proportion of indirect taxes in Estonian state budget, and second, to consider the problem of optimum in indirect taxing.

Eliminating extranalties

As a general rule, establishing or increasing taxes also raises prices. Accordingly, the reaction of households to taxes consists of the sum of two effects – income and substitution effect (the latter can be marginal, if the prices of all goods rise in proportion to the tax increase. But as the demand and supply elasticities of goods differ, this possibility is only theoretical and will therefore not be considered here). To achieve actual substitution effect the rise in prices needs to be compensated to the consumer. There are two possibilities for that – either to grant a specific amount of money to the consumer (household) based on the method introduced to the economic theory by Slutsky, or to try to compensate for the increase of prices to both the consumer and the supplier. If we choose the first option, Pareto effective situation is achievable (of course, in the absence of external effects and on the condition that indifference curve and isoquant are traditional) as a point of balance where the state incomes and expenditures for ensuring purchase power are even. The second option is of primarily theoretical interest as it would entail moving sums of money back and forth, and the final result would be marginal. We will not examine this option.

Tax elasticity, buoyancy and incidence

With any taxation system, three of its characteristics are of vital importance: elasticity, buoyancy and incidence. First of these shows the ability of a tax or of the system of all nationwide taxes to generate increased tax revenues in case of positive shifts in the object of taxation, primarily income or turnover. In practice, of course, tax elasticity depends on not only the type of tax, but also (if not primarily) on the structure of the system of collecting the particular tax. There are different approaches to buoyancy, but for the purposes of this study it is sufficient to regard it as a certain elasticity indicator in the situation where negative shifts are taking place in the object of taxation. The greater the buoyancy of a tax (and the whole system of taxation), the smaller the risk that in case of negative deviation in economy, primarily in the object of taxation, state income is significantly reduced or the tax system even collapses.

The problem of the elasticity and buoyancy of tax systems was posed already in 1959 by R. A. Musgrave (Musgrave 1959). Since then, all taxes connected with consumership and sale (sale tax, excises, VAT etc) have been regarded as elastic. With income tax, opinions vary – it has been regarded as both elastic and anelastic. Customs tax and duties are universally regarded as anelastic (Goode *et al.* 1984).

With buoyancy, the situation is more difficult. When it comes to analysis of buoyancy, authors either confine themselves to the analysis of elasticity in certain special cases (in the case of negative elasticity coefficient) or essentially forgot it. The reason for that is simple – during the past few decades there has been no opportunity to study national tax systems in a situation of clear economic depression. The last bigger and more widespread depression took place in 1974-75 and even that was due to external factors (negative supply shock caused by oil prices), and therefore the analysis of the data from that period does not always produce “pure” results. Of course, it is not advisable to confine oneself to mere theoretical approaches or make conclusions based on 50-year-old data. In that sense the current depression in Estonia and elsewhere is an interesting base material for future research. However, these analyses can be properly made only in a few years’ time.

The questions of tax incidence have received more attention. The spreading on tax burden between demandant and supplier, but also between different social strata of varying income, is the key question of not only taxation, but of all macroeconomics and economic policy. By how much does the income of a certain social stratum decrease in real life and how much does the demand drop as a consequence? If the supplier becomes the tax bearer, then by how much do the prices rise? How much does that in turn reduce demand? It is a wide-spread view that indirect taxes, which dominate in developing countries and make up a particularly large percentage in Estonia, are regressive towards income. Unfortunately the latest in-depth statistical studies in that field date back to more than 30 years ago, when the tax systems of newly independent developing countries were actively researched. As those countries quickly changed the structure of their taxes, there are almost no studies about countries with a tax system analogous to that of Estonia today. Even of Eastern European countries only Latvia has a tax structure similar to Estonia.

Estonian taxation structure

In the initial stage of its transition period, Estonia (like most other Eastern European countries) was in a unique position – it essentially lacked a taxation system, a vital instrument of economic policy, which now needed to be constructed. In a perfect world, that would have meant building a system based on contemporary economic theory. Unfortunately Eastern European countries lacked pertinent knowledge, both in regard to taxation theory and the economic situation (an accurate description of the development phase and the processes).

Estonian budget and tax systems were largely developed in 1993-1994 and many of their key features have remained unchanged. The only important change has been the abolition of corporate income tax in 2000 (that experiment will not be analyzed here). Estonian tax system has been praised as unique, simple and conducive to economy, and criticized as primitive, helpless, not boosting the economy and generating social discrepancies. It is an issue of difference of values (as well as political competition) that have a particularly acute expression in this context. When

it comes to taxes, vastly different viewpoints are presented not only in scientific publications but also in textbooks (Truu 1987; Stiglitz 1995).

So what characterizes the Estonian tax system? Its characteristic features are a relatively low tax burden, simplicity bordering on primitiveness (which has significantly reduced the possibilities of using taxes as a control device of economy), a very high percentage of indirect and consumption taxes.

The tax burden in Estonia has been 33.7-35.1% since Estonia joined the EU (Estonian Ministry of Finance website; the data are slightly different in various parts of the website). That is lower than the EU average (41-42%). However, these numbers are not comparable. Estonian state budget includes social benefits tax, which has for many years been the greatest source of income for the state budget (Table 1). In most EU member states such a tax does not exist or is slight. When that is taken into account, the tax burden in Estonia appears to be about 25-26%.

Table 1. Income from taxes in Estonian state budget 2005-2008 (in milliards of kroons)

	2005	2006	2007	2008 (provisional)
Total taxes	53831	55208	67718	70396
Personal income tax	10911	3846	4786	4328
Corporate income tax	2365	3123	4083	4166
VAT	14021	18645	22304	20548
Excises	6424	7030	8195	8971
excise on tobacco	1205	1208	1529	2519
excise on alcohol	1838	2089	2314	2434
excise on fuel	3363	3728	4353	4697
excise on packaging	...	3	...	1
Gambling tax	292	354	467	484
Customs tax	347	401	549	508
Social benefits tax	18392	21764	27268	31299
Other taxes	1079	45	66	92

Source: Author's calculations based on Estonian Ministry of Finance website.

The economic crisis has brought attention to the issue of tax structure. Table 1 presents taxes in Estonian state budget from 2005, i.e after Estonia joined the EU. It is difficult to assess what is the percentage of indirect taxes in Estonian state budget. Indirect taxes clearly include VAT, excises and the customs tax. However, also the gambling tax has some features characteristic to indirect taxes, as it is not imposed on the revenues from economic activities but rather as a preventive lump-sum tax, i.e before launching the slot machine etc. The tax sum is transferred by the manager of the gambling business in some way (e.g by raising drink prices) to the actual bearer – the gambler, i.e consumer. Accordingly this tax also has the incidence

characteristic of indirect taxes and therefore it is more accurate to regard it as an indirect tax (at least when it is established in such a way as in Estonia).

As far as we know, there is no other country that has social benefits tax in the form that it exists in Estonia. The tax is paid by the employer, but it is calculated based on the amount of money paid to the employee. That tax is meant only for pensions and healthcare, i.e it functions largely as retirement and health insurance. Clearly, the defining criterium here is whether the employee's salary would increase by the amount that makes up the social benefits tax if that tax was abolished. If yes, the social benefits tax has enough characteristic features to regard it as an indirect tax; if not, the features of direct taxes probably prevail (the social benefits tax is the employer's expenditure). As this question is impossible to answer properly, authors classify it arbitrarily, depending on their views, as either a direct or indirect tax. Eurostat has taken a "diplomatic" position and classifies that Estonian social tax as a labour tax, regarding it therefore as primarily a resource tax (Eurostat. Taxation), but that is not entirely accurate as the income from social benefits tax is allocated for certain social expenditures.

It is probably reasonable to bring out the percentage of indirect taxes in different versions, with social benefits tax included and not. In the first case, the percentage of indirect taxes has made up 75.3-87.8% of state budget revenues ever since Estonia joined the EU; in the latter case the percentage has been 41.1-53.6%. If we take the first approach, we arrive at what is clearly the biggest percentage of indirect taxes among EU member states; even with the second approach the result is well above EU average.

When trying to determine the percentage of consumption taxes in Estonian state budget, we likewise have to face the question of how to classify some taxes that are different from those in other countries. Again we are talking mainly about social benefits tax. In the form that it exists in Estonia, it has been regarded as a tax on using one of the goods – labour – and hence as a resource tax. That, however, raises the question of whether it is a consumption tax. It is not the purpose of this study to discuss whether the multifunctional tax established during the transition period when there was no economic-theoretical knowledge available belongs to this or that category. Therefore – although the author does not share the opinion that the social benefits tax as it exists in Estonia is a consumption tax – also the percentage of consumption taxes has been given in two versions in Table 2 – with social benefits tax included and not. It is clear that consumption taxes include VAT and excises. But does the customs tax on alcohol, furniture, meat etc count as a consumption tax? More likely yes – without consumption there is no tax. It is also certain that customs increase the prices and limit consumption – nobody will import if there is no demand. Gambling tax, as it exists in Estonia, should probably be classified as a consumption tax as well. Factor payments for the local governments can also be counted in, but these are not reflected in the state budget and will therefore not be considered here.

Table 2. Indirect taxes in Estonian state budget 2005-2008.

	2005	2006	2007	2008 (provisional)
Total taxes	53831	55208	67718	70396
Indirect taxes (social benefits tax included)	40505	48217	58816	61856
Percentage of indirect taxes (% , social benefits tax included)	75.3	87.3	86.9	87.8
Indirect taxes (social benefits tax not included)	22113	29572	31548	30557
Percentage of indirect taxes (% , social benefits tax not included)	41.1	53.6	46.6	43.4
Consumption taxes, social benefits tax included	40505	48217	58816	61856
Percentage of consumption taxes (% , social benefits tax included)	75.3	87.3	86.9	87.8
Consumption taxes, social benefits tax not included	22113	29572	31548	30557
Percentage of consumption taxes (% , social benefits tax not included)	41.1	53.6	46.6	43.4

Note. Of “other taxes” 50% have been taken to be indirect.

Source: Author’s calculations based on the data from Table 1.

As seen from the figures presented in Table 2, a peculiar situation has taken shape in Estonia – if we take the above considerations (which are, admittedly, debatable) into account when classifying taxes, the percentage and amount of indirect and consumption taxes in the state budget coincide. Regardless of how exactly we classify these taxes, we have to acknowledge that their proportion in the state budget is big. The figures in Table 1 and 2 also demonstrate the marginal role of environment taxes (which make up part of the “other taxes”) in Estonian state budget.

It only takes basic calculation of percentage to demonstrate the growing dominance of social benefits tax in Estonian state budget – from 34.2% in 2004 to 44.4% in 2008. The economic crisis that started in 2008 will, however, in connection to the substantial rise in unemployment freeze the salaries to be paid in 2009. That in turn will lead to a drop in the income from social benefits tax. The halting of an increase in household incomes – or even their decrease – will, considering the big loan burden of households, lead to a decrease of VAT and excises.

That has already put enormous pressure on the 2009 state budget – it is clear that the absolute sum will be significantly smaller than in 2008. The revenues of a budget based on consumption taxes will probably have good elasticity during periods when incomes and consumption are quickly rising, but the buoyancy of such a system is weak. All prognoses, without exception, predict a substantial decrease in the rate of inflation (which has been high, ca 10% during the past few years) or even a decrease

in prices (Estonian Ministry of Finance ...). Given the 44.4% social benefits tax and 29.2% VAT in the 2008 state budget, that adds further pressure on the 2009 budget.

The question of increasing Estonian tax burden has become relevant. That brings forward the issue of optimal tax rates.

Optimal tax rates

As mentioned earlier, the decrease in state budget revenues has raised the question of a possible increase of tax burden in Estonia, and that already in 2009. Next we will try to construct a model to determine the optimum of the dominant indirect taxes.

In an attempt to maintain comprehensiveness, we will base our model on two common views on model-construction in taxation theory. First, the state revenues from taxes come as lump-sum taxes straight from households, and second, any transaction between the consumer and the supplier increases state revenues. There are no external forces, the indifference curve and isoquant are standard. In the absence of any other taxes such premise leads to Pareto optimum in the point where the increase in state revenues and the purchasing power redistribution curve meets with the lump-sum taxes curve. Adding any other taxes directs us away from that point. Essentially we are trying to find a solution that would bring about an increase in state revenues by increasing consumption taxes, while reducing the welfare of households as little as possible. If we expect taxes to be used for an increase in social welfare, we can claim that when the left side of equation (1) exceeds the right side, the total social welfare has increased.

To put it in the form of an equation: we are trying to choose the tax vector t in such a way as to maximize social welfare $V(q)$. If we designate the total revenue of subjects from indirect taxes with $R(t)$, we arrive at:

$$R(t) = t \cdot X(q) \geq \bar{R}, \quad (1)$$

where $X(q)$ is the vector of aggregated demand and

\bar{R} is the required tax revenue.

With taxes imposed, a quantity q is supplied for price t , but the consumer pays the price $(p+t)$. We designate the household welfare corresponding to quantity q with $v(q)$ and the household demand with $x(q)$ and arrive at equation (1). Again, $V(q)$ is the rise of social welfare caused by an increase in taxes.

The problem posed is easily solved if we use Ramsey's rule of optimal taxes and Lagrange's widespread method of determining maximum. We maximize $V + \lambda R$, where λ is the Lagrange multiplier, which in this case does not indicate the marginal utility of some particular good supplied by the private sector, but of the social welfare arising from the increase in state revenues.

We can write:

$$\frac{\partial V}{\partial t_i} + \lambda \frac{\partial R}{\partial t_i} = 0. \quad (2)$$

If we make the substitution

$$\partial V/\partial t_i = - \sum_h \beta^h x_i^h \quad \text{and} \quad \partial R/\partial t_i = X_i + t \cdot \partial X/\partial t_i,$$

and use Slutsky's compensated demand curve of demand derivative, we get:

$$\frac{\sum_k t_k \sum_h s_{ik}^h}{X_i} = -\sigma_i$$

$$\sigma_i = 1 - \sum_h \frac{x_i^h}{X_i} \frac{b^h}{\bar{b}}, \quad (3,4)$$

S_{ik}^h is the derivative of Slutsky's compensated demand curve on household h (the utility level preceding the tax increase has been maintained) and σ_i is negative because there is a covariance, b^h , of the social marginal utility of the net income of household h (where the "net" means there is an adjustment to the social marginal utility, β^h , for the marginal propensity to spend on taxes out of extra income, and b is the average of b^h) and the consumption of good i by household h , (x_i^h). Thus, σ_i is higher the more good is consumed by those who have a low social marginal utility of income.

As the above equations (1) and (2) take into account the most important aspects of the interconnection of taxes and social welfare, it can be successfully used to describe the social aspect of the efficiency of indirect taxes. However, these equations as well as those suggested earlier (Ahmed; Stern, 1989) are practicable only on the condition that we succeed in mathematically describing the function of the social welfare of households, from which we can then find the derivative. As a rule, the task of describing the function of the welfare of households is often difficult to solve with adequate accuracy, i.e the same kind of problems arise as in the case of using Hicks's method to subtract the substitution and income effect.

Conclusion

The following can be concluded from the above:

1. Determining the percentage of indirect and consumption taxes in the whole tax burden is complicated as there is no generally accepted method for it. Also, several of the taxes used in Estonia possess features characteristic of both direct and indirect taxes. Furthermore, it is not clear what we should consider a consumption tax – only

those taxes that affect household consumption, or also corporate ones in case the tax is imposed on final consumption.

2. Whichever approach we take to defining indirect and direct taxing, it is clear that indirect taxes prevail in the income of the Estonian state budget. The social benefits tax makes up a particularly big – and growing – proportion. Different approaches lead to the same conclusion: the percentage of consumption and indirect taxes in the state budget is equal, i.e indirect taxes have been imposed on consumption.

3. The structure of the revenues of the Estonian state budget differs considerably from that of other EU member states. The percentage of environment taxes is negligible, while the peculiarly structured social benefits tax, which constitutes the greatest and increasing source of revenue of the state budget, is difficult to classify as either a direct, indirect or labour tax. Due to the huge proportion of consumption taxes the buoyancy of Estonian tax system is weak. The provisional conclusions of 2008 demonstrate clearly that during periods of economic recession the state budget is very vulnerable.

4. The shortfall of income to the state budget in 2008 and especially at the beginning of 2009 has forced the government to make cutbacks up to 10% and has acutely raised the issue of increasing the tax burden. As the tax burden in Estonia is substantially lower than the EU average, it is possible. However, that raises the question of the optimal tax burden. Based on Slutsky's principle of compensated demand curve and Ramsey's optimal tax theory we can take the optimal level of indirect taxes (which are dominant in Estonia) to be the point where the household welfare reduction curve and the social welfare increase curve intersect.

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ESTLAND UND DIE WIRTSCHAFTSKRISE

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Abstract

This paper gives a brief overview of the important changes that have taken place in 2007-2008 and by the beginning of 2009 and the resulting problems that have arisen in the Estonian economy (non-conformity between the increase in salaries and increase in labour efficiency, real estate boom and decrease in real estate prices, incorrect economic forecasts, budgeting difficulties, increase in taxes, etc.). The main factors which contributed to the economic crisis in Estonia are dwelt upon. A brief overview of the measures taken by several EU Member States for the alleviation of and getting out of the economic crisis are presented. Forecasts for 2009-2010 are discussed, also the opportunities and choices available to Estonia in the conditions of the crisis, and a few examples are given of the international political relations which have an additional effect on economic crises.

Keywords: Economic growth, unemployment, inflation, state budget, tax revenues, crises, the European Union, economic forecasts, measures for the alleviation of crises, political impacts of economic crises.

Einleitung

In der globalisierenden Welt sind schwierige Zeiten angebrochen. Die Konjunktorentwicklungen in den USA, Japan, den EU-Mitgliedstaaten, Russland sowie vielen anderen Ländern sind rückläufig und befinden sich inzwischen in rezessiven Exzessen. Ausgelöst wurden diese Entwicklungen durch die allzu leichtfertige Vergabe von Hypothekendarlehen in den USA und deren anschließenden Verkauf als Finanzmarktprodukte (forderungsgesicherte Anleihen: ABS = Asset Based Securities) an renditesüchtige Banken in aller Welt. Als sich herausstellte, dass diesen Verbriefungen zum überwiegenden Teil Forderungen minderwertiger Bonität (Subprime Mortgages) zu Grunde liegen, ist die ABS-Blase geplatzt, und die anfängliche Hypotheken- und Finanzkrise der USA ist auf andere Länder übergeschwappt. Die Weltwirtschaft steckt nunmehr in der Krise. Auch die estnische Wirtschaft ist davon betroffen, größtenteils bedingt durch globale Einflüsse, aber auch durch das wirtschaftspolitische Handeln und Versäumnisse des estnischen Staates. Die Auseinandersetzung mit den Problemen dieser Wirtschaftskrise und die Diskussion über möglicher Maßnahmen zu ihrer Überwindung stehen in den meisten Ländern gegenwärtig und sicherlich auch in nächster Zeit im Mittelpunkt des öffentlichen Interesses.

Ziel des vorliegenden Beitrages ist, einen Überblick über die wesentlichen sozialen, wirtschaftlichen, politischen und übrigen Faktoren zu geben, die in Verbindung mit der Krise auf die estnische Wirtschaft einwirken und auch in nächster Zukunft

fortbestehen werden. In diesem Artikel sollen folgende Punkte näher betrachtet werden:

- Wesentliche im Jahr 2008 und Anfang 2009 eingetretene Änderungen und entstandene Probleme in der estnischen Wirtschaft.
- Erörterung jener Wirtschaftsbereiche und deren Probleme, die charakteristisch für die estnische Wirtschaftskrise sind.
- Prognosen der Europäischen Kommission für die Jahre 2009-2010.
- Erörterung politischer Aspekte, welche die Wirtschaftskrise beeinflussen können.

Im Folgenden beschränken sich die Ausführungen auf die vorstehenden Problemfelder und sollen einen kurzen Überblick vermitteln.

1. Wesentliche Änderungen in der estnischen Wirtschaft¹

Das Jahr 2008 ist in Estland – wie in der übrigen Welt – durch eine fortschreitende Verschlechterung der wirtschaftlichen Lage gekennzeichnet. Nach einer relativ langen Periode robusten Wirtschaftswachstums in den Jahre 2000 bis 2007 sind die Wirtschaftsaktivitäten 2008 rückläufig, so dass man im Vergleich zu früheren Jahren von einem Abschwung und einer eingetretenen Rezession sprechen kann.

- Alle früheren offiziellen Prognosen für 2008 haben sich als äußerst optimistisch, trügerisch, letztendlich gar als schlicht falsch erwiesen.
- Das Jahr 2008 ist gekennzeichnet durch deutliche Preissteigerungen im Hinblick auf die meisten Waren und Dienstleistungen, die in einer hohen, sich beschleunigenden Inflationsrate einen gebündelten Ausdruck finden.
- Bereits vor 2008 sind die Personalkosten bei nur mäßiger Entwicklung der Arbeitsproduktivität stark gestiegen, so dass sich die Lohnstückkosten 2007 um 18,9% erhöht haben.
- In zahlreichen Wirtschaftsbereichen sind die Auftragseingänge rückläufig, so dass die betroffenen Betriebe ihren Mitarbeitern Kurzarbeit oder Zwangsurlaub verordnen, im beiderseitigen Einverständnis Lohn- und Gehaltskürzungen vornehmen oder – soweit die Arbeitsverträge das zulassen – diese aufheben. Die Erwerbslosigkeit steigt.
- Immer mehr Betriebe müssen Konkurs anmelden, wodurch die Arbeitslosigkeit ansteigt.
- Zu Beginn des Jahres 2009 sind Steuersätze und Gebühren deutlich erhöht worden, wodurch die wirtschaftliche Entwicklung zusätzlich belastet wird.²
- Auf dem Immobilienmarkt übersteigt das Angebot erheblich die Nachfrage: Fertiggestellte Wohnungen und Einfamilienhäuser stehen leer und finden keine Käufer. Begonnene Bauvorhaben müssen abgebrochen werden, weil die Bauherren Schwierigkeiten mit den Anschlussfinanzierungen haben. Die Immobilienpreise sinken. Die Baubranche befindet sich in einer Krise.

¹ Der Artikel ist geschrieben im Januar 2009

² Vgl. hierzu Abschnitt 2.

- Es wächst die Zahl jener Menschen, die Schwierigkeiten bei der Tilgung ihrer aufgenommenen Kredite haben.
- Nach optimistischen Prognosen wird die Rezession bis Ende 2009 dauern; realistischere Einschätzungen gehen davon aus, dass der Abschwung noch mindestens zwei bis drei Jahre andauern wird.

Die geschilderten inlandbezogenen Fakten und Probleme sind nicht die einzigen, mit denen die estnische Wirtschaft zu kämpfen hat. Hinzu kommen negative Prozesse in der Weltwirtschaft, wie Turbulenzen an den Finanzmärkten und im Energiebereich, einbrechende Exportmärkte weltweit. Die Einführung des Euro in Estland, die nach dem erklärten Willen der estnischen Regierung bis zum Jahre 2011 geschehen soll, wird in Anbetracht der jüngsten Entwicklungen immer fraglicher. Dennoch setzt die estnische Regierung alles daran, dieses Ziel im gesetzten Zeitrahmen zu erreichen.

Auf Grund widersprüchlicher Prognosen hatte die Regierung große Schwierigkeiten bei der Aufstellung des Staatshaushaltes für das Jahr 2009. So legte sie im September vergangenen Jahres dem Parlament zunächst einen Haushaltsentwurf für das Jahr 2009 vor, der erstmals wieder ein Defizit von knapp einer Milliarde Kronen auswies. Nach heftigen Debatten beschloss das estnische Parlament *Riigikogu* schließlich am 11. Dezember 2008 einen Staatshaushalt, der nach Ausschöpfung aller Einsparpotenziale Einnahmen von 97,8 Milliarden Kronen und Ausgaben von 96,7 Milliarden Kronen vorsieht (Riigieelarve 2009). Er beruht auf folgenden Grunddaten des Jahres 2008 (Tabelle 1).

Tabelle 1. Estnischer Staatshaushalt 2008

Haushaltsposten	Absolute Beträge in Mrd. EEK	Prozentsatz der tatsächlichen Beträge im Vergleich zu den Planungsansätzen	Veränderungen der absoluten Beträge gegenüber 2007 in Mrd. EEK	Prozentsatz der Veränderungen gegenüber 2007
Gesamteinnahmen	84,9	94,1	+ 2,9	+ 3,5
Steuereinnahmen inklusive Sozialabgaben; davon:	70,4	95,8	+ 2,7	+ 4,0
- Einkommensteuer von natürlichen Personen	4,3	104,3	- 0,5	- 10,4
Einkommensteuer von juristischen Personen	4,2	102,9	+ 0,1	+ 2,4
Umsatzsteuer	20,5	90,1	- 1,8	- 8,1
Verbrauchssteuern	9,0	91,9	+ 0,8	+ 9,8
- Sozialabgaben	31,3	99,2	+ 4,0	+ 14,7
übrige Einnahmen	14,5	87,0	+ 0,2	+ 1,4
Ausgaben	90,1	94,4	+ 14,1	+ 18,6

Quelle: Riigieelarvesse ... 2009.

Die Staatseinnahmen sind 2008 deutlich niedriger als erwartet ausgefallen. Besonders am Jahresende sind die Einnahmen gesunken. Im Dezember 2008 wurden lediglich 1,4 Milliarden estnische Kronen an Steuereinnahmen erzielt, das sind 31,6% weniger als im Vorjahresmonat. Vor allem das Umsatzsteueraufkommen ist gesunken, was im Wesentlichen auf die geringeren Vorauszahlungen, erhöhte Umsatzsteuerschulden und umfangreichere Verschiebungen der Umsatzsteuererklärungen in das Jahr 2009 zurückzuführen ist (*Ibid.*). All das erklärt die anfänglichen Fehlplanungen der Regierung bei der Aufstellung des Staatshaushaltes 2009.

Am Ende des Jahres 2008 überstiegen die Ausgaben im Staatshaushalt die Einnahmen um 5,2 Milliarden estnische Kronen (*Ibid.*). Der Fehlbetrag ist durch Einsatz von Reservemitteln finanziert worden. Und genau das wollte man vermeiden.

2. Steueränderungen

Die Aufstellung des estnischen Staatshaushaltes für das Jahr 2009 war äußerst schwierig, weil gegenüber den Vorjahren zur Vermeidung eines Defizits zahlreiche Änderungen in der Steuergesetzgebung vorgenommen worden sind und Ausgaben an verschiedenen Stellen gekürzt werden sollten. Zum 1. Januar 2009 sind im Wesentlichen folgende Steueränderungen in Kraft getreten (Muudatused ... 2009):

- Obwohl auf längere Sicht geplant war, den **Einkommensteuersatz** jedes Jahr um einen Prozentpunkt zu senken, wurde in Anbetracht der jüngsten Entwicklungen dieses Vorhaben bis auf weiteres aufgegeben; der Einkommensteuersatz bleibt zunächst unverändert mit 21% auf dem Niveau des Jahres 2008, und auch der monatliche Freibetrag bleibt unverändert bei 2250 Kronen.
- Ab Januar 2009 erhöht sich für Dienstfahrten mit dem eigenen PKW **der monatliche Höchstsatz für steuerfreie Kostenerstattungen** von bisher 2000 Kronen auf 4000 Kronen.
- **Die Sozialabgaben** werden im Allgemeinen vom ausgezahlten Einkommen berechnet, wobei der monatliche Mindestbetrag für 2009 auf 4350 Kronen festgelegt wird.
- Der verminderte **Umsatzsteuersatz** wird von 5% auf 9% erhöht; er gilt unter anderem für folgende Güter: Bücher, Periodika und Arbeitshefte, Medikamente, Sanitäts- und Hygieneartikel sowie Hilfsmittel und Hoteldienstleistungen (wie z. B. Frühstück).
- **Die Umsatzsteuer** wird von bisher 5% auf 18% für folgende Güter erhöht: Entsorgung gefährlicher Stoffe, Bestattungsdienstleistungen und Bestattungsbedarf sowie Konzert-, Theater- und sonstige Veranstaltungskarten.

Für zahlreiche öffentliche Leistungen sind auch die Gebühren erhöht worden.

3. Entwicklungsperspektiven der estnischen Wirtschaft

Die estnische Wirtschaft ist in letzten Jahren verhältnismäßig stark gewachsen; 2006 lag die Zuwachsrate im Vergleich zu 2005 sogar bei 10,4% und 2007 bei immerhin noch 6,3% (Tabelle 2). Obwohl für 2008 eine erneute Reduzierung der Wachstumsrate vorausgesagt wurde, war die Prognose dennoch zu optimistisch. Bereits 2008 sind die Wirtschaftsaktivitäten in Estland zurückgegangen, und zwar um 2%. Die Inflationsrate, die vor allem 2007 und 2008 den Referenzwert der Europäischen Wirtschafts- und Währungsunion in besorgniserregendem Ausmaß überstieg, könnte sich unter den Einflüssen der Rezession wieder zurückbilden auf 3-5%. Die Löhne und Gehälter werden aber weiter steigen, obwohl die Erwerbslosigkeit zunehmen (geschätzte Arbeitslosenquote 10-15%) und die Auslastung der Produktionskapazitäten weiter zurückgehen wird (Eesti majandusreiting ... 2008).

Nach einer Befragung, welche das Estnische Konjunkturinstitut (EKI) durchgeführt hat, waren 53% der Wirtschaftsexperten der Meinung, dass die Kontraktion voraussichtlich im zweiten Halbjahr 2009 ihren Tiefpunkt erreichen wird. Anfang 2009 ist das Vertrauen in die wirtschaftliche Zukunft und das Sicherheitsgefühl in allen Wirtschaftszweigen und auch bei den Verbrauchern auf den niedrigsten Stand seit der Wiedererlangung der nationalen Souveränität im Jahre 1991 gesunken (Eesti majandusreiting ... 2008).

Nach EKI-Expertenmeinung wird der Export in der ersten Jahreshälfte 2009 weitgehend stagnieren, obwohl 58% der Unternehmungen Schwierigkeiten bei ihren Ausfuhren gemeldet haben. Der allgemeinen Wirtschaftsentwicklung entsprechend wird der Import deutlich abnehmen. Während die Kreditzinsen gegenwärtig in etwa auf dem Niveau des Vorjahres liegen, befinden sich die Aktienkurse im Abwärtstrend. Ob sie sich 2009 wieder stabilisieren, bleibt abzuwarten.

Nach Aussagen des Konjunkturinstitutes werden wegen unzureichender Nachfrage im Laufe der ersten drei Monate dieses Jahres 39% aller estnischen Unternehmungen ihre Mitarbeiterzahlen reduzieren, davon 49% der Industriebetriebe und 69% der Baufirmen. Im Dezember 2008 lagen bei 63% der Betriebe die Auftragseingänge unter dem längerfristigen Durchschnitt, und die vorliegenden Auftragsbestände sichern nur noch für das erste Quartal 2009 die Produktion bei normalem Auslastungsgrad der Anlagen. In der Baubranche hat sich die Auftragslage bei 81% der Firmen laufend verschlechtert; nur 4% der Firmen hoffen auf Besserung. Der Indikator für das Sicherheitsgefühl ist bei Baufirmen auf einen historischen Tiefstand gesunken (Eesti majandusreiting ... 2008).

Tabelle 2. Kennziffern zur Lage und Entwicklung der estnischen Wirtschaft

Kennziffern	2006 ¹ tatsäch-lich	2007 ¹ tatsäch-lich	2008 ² durch- schnitt-licher Prognosewert	2008 ² tatsäch-lich	2009 ³ durch- schnitt-licher Prognosewert
Wirtschaftswachstum (%)	10,4	6,3	5,05	- 2,0	- 4,48
Verbraucherindex (%)	4,4	6,6	7,7	10,4	3,6
Durchschnittslöhne und Gehälter (EEK)	9.407	11.336	12.866	12.785	13.242
Arbeitslosigkeit (%)	5,9	4,7	5,5	5,5	9,05
EEK/USD (zum Vergleich: 1 € =15,6466 EEK)	1 USD = 12,5 EEK	1 USD = 11,4 EEK	1 USD = 11,4 EEK	1 USD = 10,7 EEK	1 USD = 12,0 EEK
Benzinpreis E95 pro 1 Liter (EEK)	...	14,40	15,95	11,90	13,00
Talibor (Tallinn Interbank Offered Rate im 6- Monats-Durchschnitt (%))	...	7,55	6,73	8,15	7,37
Börsenindex OMX Tallinn	...	739	769	275	347

¹ Eesti majandusnäitajad ... 2009;

² der Durchschnittsprognose 2008 liegen Prognosen folgender acht Institutionen zugrunde: Eesti Pank, Hansabank Markets, SEB Pank, Rahandusministeerium, DnB Nord Grupp, Eesti Konjunkturi Insituut, LHV, Postimees. / Quelle: Uusen 2008, hingewiesen auf Raudjärv 2008: CD-ROM;

³ der Durchschnittsprognose 2009 liegen Prognosen folgender 13 Institutionen zugrunde: Eesti Pank, Hansabank Markets, SEB, Marfin Pank Eesti, Rahandusministeerium, DnB Nord Grupp, Eesti Konjunkturiinstituut, LHV, Nordea Pank Eesti, Redgate Capital, Tarkinvestor.ee, East Capital, Postimees. / Quelle: Karnau 2009: 4-5.

Das rasante Wachstum und die dadurch bedingte Überhitzung der Wirtschaft bis Ende 2007/Anfang 2008 spiegelten sich in den Ergebnissen der Wirtschaftsanalysen wider. Dabei wurde immer wieder auf folgende Fakten hingewiesen:

- Gute Konkurrenzsituation und Ertragslage estnischer Unternehmungen, begünstigt durch positive Entwicklungen auf den Auslandsmärkten.
- Für ausländische Investoren sind die Rahmenbedingungen in Estland attraktiv, vor allem im Hinblick auf das Steuersystem, die Rechtssicherheit und die verhältnismäßig niedrigen Personalkosten für hoch qualifizierte Arbeitskräfte, so dass es für ausländische Investoren interessant ist, ihre Produktion nach Estland zu verlagern oder mit estnischen Firmen Kooperationsverträge zu schließen.
- Estland verfügt über einen entwickelten Immobilienmarkt, so dass neue Büro-, Logistik- und Wohnflächen entstehen können.
- Auch der Bankensektor ist so entwickelt, dass er Firmen- und Privatkunden die Inanspruchnahme günstiger Kredite ermöglicht. Hier kam es allerdings in der Vergangenheit zum Teil zu Auswüchsen, indem nicht selten Wohnungsbau- und sonstige Anschaffungskredite vor allem im Privatkundengeschäft regelrecht aufgedrängt wurden. Dies trug einerseits zum Wirtschaftswachstum bei, hat aber

andererseits auch zu Finanzkrisen geführt, wenn die Kreditnehmer ihren Schuldendienst nicht mehr erfüllen konnten.

Bereits im Verlauf des Jahres 2008, zunehmend im zweiten Halbjahr, besonders aber im vierten Quartal ist der Konjunkturumbuch in der estnischen Wirtschaft durch folgende Entwicklungen bewirkt worden:

- Die sich 2007 deutlich beschleunigende Inflation.
- Die Bevölkerung zeigt zunehmend ein sparsameres Einkaufsverhalten. Diejenigen, deren Einkommen schrumpfen, sind dazu gezwungen. Andere sind sich des Ernstes der wirtschaftlichen Lage bewusst und handeln vorausschauend. Hinzu kommt, dass Kreditnehmer immer häufiger in Schwierigkeiten geraten, weil sie ihre Risiken falsch eingeschätzt haben. Die Tilgung eines langfristigen Kredites ist oft aus verschiedenen Gründen nicht mehr sicher – es gibt keine Arbeitsplatz- und Lohngarantie, durch die Preissteigerungen wird die Aufrechterhaltung des erreichten Lebensstandards immer schwieriger. Viele Menschen sind durch die Verschlechterung der allgemeinen Wirtschaftslage unerwartet in Zahlungsschwierigkeiten geraten. Diese Tendenz setzt sich fort.
- In gleicher Weise trägt auch die weltweite Finanz- und Wirtschaftskrise (z. B. durch: Schwankungen des Ölpreises; Liquiditätsschwierigkeiten von Großbanken; gravierende Finanzengpässe in einigen Ländern, wie z. B. Island und Lettland; Absatzprobleme zahlreicher Branchen, wie z. B. Autoindustrie und Maschinenbau und deren Zulieferer, Transport) über den Außenhandel zu sinkender Nachfrage bei.
- Die Bereitschaft der Banken zur Kreditvergabe lässt nach; so erschöpfen sich langsam die Möglichkeiten zur Kreditaufnahme.
- Sinkende Nachfrage und steigender Konkurrenzdruck zwingt die Unternehmungen zu größerer Vorsicht und Lagerabbau, was sich im Rückkoppelungseffekt auch auf die vorgelagerten Produktionsstufen auswirkt.
- Indirekt ist Estland auch von dem wiederholten russisch-ukrainischen Gasstreit betroffen, der Anfang Januar 2009 den Stopp der Gaslieferungen in einige Abnehmerländer mit sich brachte.

Eine nicht unbedeutende Rolle spielen auch Engpässe in der Versorgung Estlands mit Rohstoffen und Zulieferprodukten:

- Unzureichende Nutzung eigener Naturressourcen und Erschließung erneuerbarer Energiequellen in Estland, z. B. durch unvernünftige Forstwirtschaftspolitik, die auf Grund ungünstiger Besteuerung zu Desinteresse bei vielen Grundbesitzern an Holzschlag und Wiederaufforstung geführt hat.
- Export-Import-Probleme, vor allem bei der Öl- und Gaseinfuhr. Schwierigkeiten treten immer wieder mit dem Nachbarland Russland auf, das im Jahre 1998 durch Doppelzölle und die Einführung nichttarifäre Handelshemmnisse den Leistungsaustausch behinderte und auch heute hin und wieder auf Maßnahmen dieser Art zurückgreift. Dabei spielen auch die andauernden kühlen politischen Beziehungen zu Russland eine Rolle.
- Schwierigkeiten haben einige Wirtschaftsbereiche, wenn z. B. unzureichendes Interesse vor Ort an der Herstellung und Verarbeitung landwirtschaftlicher

Produkte besteht, wenn schlechte Straßen die Transportströme behindern und generell die Infrastruktur unzureichend ist.

Alle diese Einflussfaktoren müssen auch vor dem Hintergrund wachsender Umweltproblematik und steigender Gefahr zunehmender Naturkatastrophen gesehen werden, welche nicht nur die Wirtschaft der Partnerländer, sondern auch Estlands in Mitleidenschaft ziehen können. Deshalb ist Estland aufgerufen, mit allen zur Verfügung stehenden Mitteln die Ursachen dieser Probleme zu bekämpfen.

4. Internationale Perspektiven

Die Wirtschaftskrise ist gegenwärtig ein weltweites Problem. Institutionen der Europäischen Union empfehlen, dass jedes Land ab 2009 zusätzlich mindestens 1% seines BIP für beschäftigungsbelebende Maßnahmen ausgeben sollte (Euroopa riigid ... 2009: 6). Insofern sind die Länder bestrebt, mit mehr oder weniger umfangreichen Konjunkturprogrammen die Krise zu bekämpfen. Im Vordergrund stehen Maßnahmen, mit denen man glaubt, die bereits freigesetzten Arbeitskräfte wieder in den Leistungserstellungsprozess zu integrieren und gefährdete Arbeitsplätze zu sichern. Dazu gehören auch Fortbildungs- und Umschulungsmaßnahmen, um die Leistungsprofile der Arbeiter und Angestellten auf die Anforderungsprofile fortschrittlicher Arbeitsplätze einzusteuern. Die Regierungen haben zur Umsetzung ihrer Konjunkturprogramme erhebliche finanzielle Mittel zur Verfügung gestellt.³ Ob es gelingen wird, in absehbarer Zeit den Abschwung zum Stillstand zu bringen und in eine Erholungsphase überzuleiten, wird davon abhängen, wie und wann die Maßnahmen greifen werden. Welche Folgen die Wirtschaftskrisen in den einzelnen Staaten, in der EU und in der gesamten Welt haben werden, wird sich erst im Laufe der nächsten Jahre zeigen.

Prognosen der Europäischen Kommission für die Jahre 2009-2010 zeigt Tabelle 3. Dieser Übersicht ist zu entnehmen, dass sich im internationalen Vergleich

³ So hat beispielsweise die Koalitionsregierung der Bundesrepublik Deutschland zur Stützung des Bankensektors fast 500 Mrd. Euro an Eigenkapitalhilfen und Bürgschaften für Bankenschuldverschreibungen bereitgestellt. Darüber hinaus hat sie zwei Konjunkturprogramme in einem Gesamtvolumen von über 80 Mrd. Euro beschlossen. Kernstück der Programme sind zusätzliche Ausgaben für Infrastruktur sowie Bildung, Forschung und Entwicklung (18 Mrd. €); ferner: Einkommensteuerentlastungen durch Senkung des Eingangsteuersatzes und Erhöhung des Grundfreibetrages sowie Abflachung der progressiv verlaufenden Tarifkurve; Senkung der Beiträge zur gesetzlichen Krankenversicherung; einmaliger Kinderbonus von 100 € sowie Erhöhung des Kinderregelsatzes beim Arbeitslosengeld II; finanzielle Unterstützung der Kurzarbeit durch Übernahme der Hälfte der Sozialversicherungsbeiträge; Unterstützung der Automobilindustrie durch Abwrackprämien in Höhe von 2500 € für über neun Jahre alte Kraftfahrzeuge beim Kauf eines neuen umweltfreundlichen Autos sowie Steuerbefreiung bei Neuzulassung umweltfreundlicher Fahrzeuge für 1 bis 2 Jahre; 'Schutzschirm' für vor allem mittelständische Unternehmungen durch ein öffentliches Kredit- und Bürgschaftsprogramm in Höhe von 100 Mrd. €. (Reuters ... 2009; Euroopa riigid ... 2009: 6; Vosman 2009: 10-11) „Wir werden alles dafür tun, um zu gewährleisten, dass Deutschland nicht nur die Krise bewältigen, sondern auch aus der Krise gestärkt hervorgehen wird.“ (Bundeskanzlerin Angela Merkel)

voraussichtlich starke Divergenzen in den Entwicklungslinien von Bruttoinlandprodukt (BIP) und Erwerbslosigkeit ergeben werden. Für neun EU-Staaten (Bulgarien, Zypern, Tschechien, Griechenland, Malta, Polen, Rumänien, Slowenien und die Slowakei) zeigen die BIP-Prognosen sowohl für 2009 als auch für 2010 positive Wachstumsraten. Für vier Staaten (Spanien, Lettland, Litauen, Portugal) erwartet man in beiden Jahren ein negatives Wachstum. Die übrigen Mitgliedstaaten – also die Hälfte aller EU-Länder – können nach Rückgängen in diesem Jahr bereits 2010 auf ein positives Wachstum hoffen. Während für Estland in diesem Jahr ein besonders dramatischer Rückgang des BIP im Ausmaß von 4,7% vorausgesagt wird (EU-Durchschnitt minus 1,8%), besteht für das kommende Jahr die Chance eines überdurchschnittlichen Wirtschaftswachstums in Höhe von + 1,2% (EU-Durchschnitt + 0,5%).

Die Situationen an den Arbeitsmärkten werden sich wegen der erfahrungsgemäßen Zeitverzögerungen zwischen Wirtschaftsaktivitäten und Beschäftigung zunächst noch weiter verschlechtern. Die höchsten Arbeitslosenquoten erwartet man in diesem Jahr in Spanien, Lettland und der Slowakei, die sich im kommenden Jahr – bis auf die Slowakei – sogar noch weiter erhöhen können. Lediglich in drei Ländern kann die Erwerbslosenquote leicht zurückgehen (Rumänien, Slowakei, Großbritannien), aber allenfalls nur um 0,1 Prozentpunkte. In allen anderen EU-Staaten wird eine Steigerung der Arbeitslosigkeit erwartet, in Spanien sogar bis auf 18,7%. Estland wird mit der Erwerbslosigkeit nach einer Arbeitslosenquote von 5,1% (Euroopa Liidu esikolmik ... 2009) im Jahre 2008 in diesem und im kommenden Jahr in etwa auf dem Durchschnittsniveau der EU liegen (2009: 8,8%, EU-Durchschnitt 8,7%; 2010: 9,7%, EU-Durchschnitt 9,5%) (Tabelle 3).

Die Europäische Kommission geht in ihren Prognosen offensichtlich davon aus, dass die Maßnahmenpakete, die in den verschiedenen Ländern beschlossen worden sind, zur Milderung und Überwindung der Wirtschaftskrise führen und die wirtschaftliche Erholung einleiten werden. Auch für Estland wird im kommenden Jahr ein Wiederanstieg der Wirtschaftsleistungen vorhergesagt. Falls sich die Volkswirtschaften in den meisten Ländern wirklich erholen sollten, wird auch Estland über seine Exporte⁴ davon profitieren, wenn man das zu nutzen weiß. Es ist allerdings fraglich, ob die seit 2008 sich rapide ausbreitende Wirtschaftskrise in so kurzer Zeit überstanden sein wird. Die Prognosen der Europäischen Kommission zeugen wohl eher von Wunschenken als von realistischen Einschätzungen.

⁴ Welche zu etwa 70% in die EU-Länder gehen.

Tabelle 3. Prognosen der Europäischen Kommission, Veränderungen jeweils in %

Länder ⁵	BIP		Arbeitslosenquote	
	2009	2010	2009	2010
AT (Österreich)	- 1,2	+ 0,6	5,1	6,1
BE (Belgien)	- 1,9	+ 0,3	8,0	9,2
BG (Bulgarien)	+ 1,8	+ 2,5	6,3	6,4
CY (Zypern)	+ 1,1	+ 2,0	5,1	5,5
CZ (Tschechien)	+ 1,7	+ 2,3	5,7	6,6
DE (Deutschland)	- 2,3	+ 0,7	7,7	8,1
DK (Dänemark)	- 1,0	+ 0,6	4,5	5,6
EE (Estland)	- 4,7	+ 1,2	8,8	9,7
ES (Spanien)	- 2,0	- 0,2	16,1	18,7
FI (Finnland)	- 1,2	+ 1,2	7,8	8,0
FR (Frankreich)	- 1,8	+ 0,4	9,8	10,6
GB (Großbritannien)	- 2,8	+ 0,2	8,2	8,1
GR (Griechenland)	+ 0,2	+ 0,7	9,0	9,4
HU (Ungarn)	- 1,6	+ 1,0	8,8	9,1
IE (Irland)	- 0,5	0,0	9,7	10,7
IT (Italien)	- 2,0	+ 0,2	8,2	8,7
LV (Lettland)	- 6,9	- 2,4	10,4	11,4
LT (Litauen)	- 4,0	- 2,6	8,8	10,2
LU (Luxemburg)	- 0,9	+ 1,4	4,9	5,8
MT (Malta)	+ 0,7	+ 1,3	7,4	7,9
NL (Niederlande)	- 2,0	+ 0,2	4,1	5,5
PL (Polen)	+ 2,0	+ 2,4	8,4	9,6
PT (Portugal)	- 1,6	- 0,2	8,8	9,1
RO (Rumänien)	+ 1,8	+ 2,5	7,0	6,9
SE (Schweden)	- 1,4	+ 1,2	7,9	8,7
SI (Slowenien)	+ 0,6	+ 2,3	5,2	5,2
SK (Slowakei)	+ 2,7	+ 3,1	10,6	10,5
EU insgesamt	- 1,8	+ 0,5	8,75	9,5
andere Länder				
CN (China)	+ 6,7	+ 8,0
JP (Japan)	- 2,4	- 0,2
RU (Russland)	- 1,0	+ 2,2
US (Vereinigte Staaten)	- 1,6	+ 1,7

Quellen: Euroopa Komisjon ... 2009; Euroopa Liidu prognoos ... 2009; Euroopa Liidu esikolmik ... 2009.

⁵ Grundlage für die Bezeichnungen der Länder sind Ländercodes als Buchstabenkombinationen, die unter Federführung der ISO in Zusammenarbeit mit der UNO und anderen internationalen Organisationen ausgearbeitet wurden. Die Länder sind in der Tabelle alphabetisch nach Ländercodes geordnet.

5. Estnische Konjunkturpolitik

Wenn nach Plänen der estnischen Regierung zur Milderung und Überwindung der Wirtschaftskrise gefragt wird, ist nichts konkretes zu erfahren. Die Öffentlichkeit ist jedenfalls nicht konkret über geplante Maßnahmen zur Konjunkturbelebung informiert worden. Wichtig ist, dass durch zielgerichtete Aktivitäten wieder eine zuversichtliche Grundstimmung in der Wirtschaft geschaffen wird, weil sie die Basis für jede Erholung ist. In einem zu entwickelnden Konjunkturkonzept sollten folgende Gesichtspunkte berücksichtigt werden:

- Zur Stützung und Wiederbelebung der Beschäftigung muss die gesamtwirtschaftliche Nachfrage gesteigert werden. Dazu sollten vor allem wegen der unmittelbaren Nachfragewirkungen die öffentlichen Ausgaben für Sanierung und Ausbau der landesweiten materiellen Infrastruktur erhöht werden.
- Zur Erhöhung der Konsumausgaben könnten Steuer- und Abgabensenkungen in Betracht gezogen werden. Dabei ist aber zu bedenken, dass diese im Gegensatz zu öffentlichen Ausgaben keine unmittelbaren Wirkungen auf die Binnennachfrage haben, weil die Bürger die zusätzlich verfügbaren Einkommen nicht mit Sicherheit für mehr inländische Waren und Dienstleistungen, sondern möglicherweise zum Teil für Importgüter ausgeben oder – was in Anbetracht der gefährdeten Arbeitsplätze wahrscheinlicher ist – zumindest teilweise sparen werden. Deshalb sollten die knappen Mittel des Staates wirksamer zur Erhöhung der Staatsausgaben als für Steuersenkungen eingesetzt werden.
- Probleme ergeben sich dabei im Hinblick auf die Frage, wie diese zusätzlichen Ausgaben zu finanzieren sind.
 - Durch das Currency-Board-System ist es der Eesi Pank verwehrt, der Regierung weder Kassenkredite noch längerfristige Darlehen zu gewähren, weil dadurch die in der Gesamtwirtschaft befindliche Menge an Zentralbankgeld erhöht würde. Diese so genannte Geldbasis ist im Currency-Board-System streng an die Ankerwährung gebunden, im Falle Estlands also an die Bestände von Euro und in Euro frei konvertible Währungen.
 - Eine Finanzierung der zusätzlichen Staatsausgaben durch Emissionen von Staatspapieren ist in Anbetracht des noch wenig entwickelten Marktes für estnische Staatsanleihen nur in beschränktem Ausmaß möglich.
 - Eine zusätzliche Auslandsverschuldung ist auf Grund der bereits bestehenden hohen Verschuldung im Ausland problematisch, wäre aber in Anbetracht der gegenwärtigen außerordentlichen Situation grundsätzlich noch vertretbar.
 - Im Übrigen kann die Finanzierungsfrage im Wesentlichen nur durch eine grundlegende Umgestaltung des Steuersystems gelöst werden, wobei stärker als bisher dem Grundsatz der steuerlichen Leistungsfähigkeit Rechnung getragen werden muss.
- Bei der Umgestaltung des Steuersystems ist darauf zu achten, dass die Konkurrenzfähigkeit vor allem der mittelständischen Wirtschaft, die das Rückgrad der Beschäftigung darstellt, gestärkt wird.
- Neben dem Ausbau der materiellen Infrastruktur bietet die personale Infrastruktur nicht nur Ansatzpunkte für eine Wirtschaftsbelebung, sondern zugleich für ein zukunftsgerichtetes Wirtschaftswachstum. Zu denken ist dabei an

die Schaffung eines effizienten, auch die ländlichen Bereiche erfassenden Aus-, Weiter- und Umschulungssystems. Dadurch können den Menschen in jungen Jahren von vornherein Fähigkeiten vermittelt und im weiteren Lebensverlauf Möglichkeiten geboten werden, ihre Leistungsprofile den sich ständig wandelnden Anforderungsprofilen moderner Arbeitsplätze anzupassen.

- In der Frage der Finanzierung zusätzlicher Staatsausgaben wird zuweilen an eine Senkung der Renten gedacht. Abgesehen davon, dass eine solche Maßnahme in Zeiten der Wirtschaftskrise ausgesprochen prozyklisch wirkte, weil sie die Ausgaben der konsumstarken Rentnerhaushaltungen senkte, ist eine solche Maßnahme sozialpolitisch nicht zu vertreten, zumal die Renten in Estland weit unter dem Niveau in den so genannten „alten“ EU-Ländern liegen. Auch eine Aussetzung anstehender Rentenerhöhungen, nur um zusätzliche Ausgaben für andere Zwecke zu sparen, ist entschieden abzulehnen. Menschen, die ihr Arbeitsleben während der Okkupationszeit mit allen erdenklichen Entbehrungen verbringen mussten und danach zum Aufbau ihrer wieder unabhängig gewordenen Heimat beigetragen haben, dürfen jetzt nicht im Alter mit finanziellen Sorgen belastet werden. Im Übrigen tragen Rentenerhöhungen auf Grund der nahezu einhundertprozentigen marginalen Konsumneigung ihrer Bezieher konjunkturkonform genau so stark zu notwendigen Nachfragesteigerungen bei wie Erhöhungen öffentlicher Ausgaben.

Für Estland ergibt sich durch die unmittelbare Nachbarschaft zu Russland noch ein besonderes Problem. Die räumliche Nähe sowie die geschichtliche Vergangenheit – und dazu gehört auch die für Estland außerordentlich schmerzliche Zeit der Okkupation in den Jahren 1940 bis 1991 – haben zu engen kulturellen, wissenschaftlichen und selbstverständlich auch wirtschaftlichen Beziehungen geführt. Diese sind auch in Zukunft in der ganzen Breite weiter zu entwickeln. Dennoch ergeben sich durch russische Inszenierungen⁶ immer wieder Probleme, die zeigen, dass Russland ein unberechenbarer und dadurch unzuverlässiger Partner ist. Deshalb ist es ein Gebot wirtschaftlicher Vorsicht, dass estnische Unternehmer ihre Außenwirtschaftsbeziehungen weltweit diversifizieren.⁷ Das ist ganz besonders in

⁶ Ein Beispiel sind die Krawalle und vandalischen Ausschreitungen in Tallin im April 2007, ausgelöst durch den Beschluss der estnischen Regierung, das Denkmal für die Sowjetsoldaten (den so genannten „Bronzesoldat“ – für die Esten ein Symbol der sowjetischen Besatzung in den Jahren 1940-1991) aus der Tallinner Innenstadt auf den Militärfriedhof zu versetzen. Vorausgegangen waren provokative Verleumdungen und Lügen über Estland in russischen Medien, die sich auch nach den Ereignissen fortsetzten. Verstärkt wurde diese Hysterie durch anti-estnische, von russischen Behörden geduldete, teils gewalttätige Kundgebungen in Moskau und in anderen Teilen Russlands. Hinzu kamen Cyber-Attacken gegen staatliche und andere Institutionen in Estland. – In diesem Zusammenhang hat sich gezeigt, wie wichtig für Estland die missbilligenden Reaktionen des Westens auf diese provokativen, von Russland gesteuerten Handlungen waren. Inhaltlich stellten diese Ereignisse eine grobe Einmischung Russlands in die inneren Angelegenheiten Estlands dar.

⁷ Für die estnische Volkswirtschaft ist das auch wichtig, um nicht erpressbar zu sein. Der russisch-ukrainischen Gaststreits Anfang 2009 – der nicht der erste war und sicherlich auch nicht der letzte sein wird – hat gezeigt, dass Russland wieder einmal Lösungen wirtschaftlicher Probleme nicht auf konsultierendem Wege zu suchen, sondern durch erpresserischen Druck

Zeiten der Wirtschaftskrisen von Bedeutung, wenn Russland selbst – wie in der Gegenwart – von Ihnen betroffen ist.

6. Erkenntnisse und Schlussfolgerungen

Weltweit hat das Fehlverhalten von Vorstands- und Aufsichtsratsmitgliedern zahlreicher Kapitalgesellschaften die Wirtschaftskrise ausgelöst. Leiter von Unternehmungen, für die der eigene wirtschaftliche Vorteil und nicht das längerfristige Wohl der von ihnen geführten Unternehmungen und ihrer Mitarbeiter im Vordergrund ihres Handelns steht, können, wie vor allem Beispiele aus den Finanzsektoren zeigen⁸, die Ihnen anvertrauten Unternehmungen an den Rand des Ruins führen und Millionen von Arbeitsplätzen gefährden. Auch kann die durch maßloses Gewinnstreben ausgelöste Gier nach ungezügelter Expansion zu gleichen Ergebnissen führen. Vor der gegenwärtigen Wirtschaftskrise war in Estland der Glaube an die Selbstheilungskräfte des Marktes noch weit verbreitet – vielleicht auch eine Folge der schlechten Erfahrungen aus der sozialistischen Vergangenheit; man glaubte weitgehend daran, dass in marktwirtschaftlichen Systemen der Eigennutz eines jeden Einzelnen gesamtwirtschaftlich zu optimalen Ergebnissen für alle führen werde. Dieser Glaube ist auch in Estland spätestens mit den Erkenntnissen über die Ursachen der jüngsten Wirtschaftskrise grundlegend erschüttert worden. Das hat mit zu der pessimistischen Grundstimmung in der Wirtschaft beigetragen. Insofern wird es schwer sein, einen vertrauensvollen Neuanfang zu finden. Dieser muss aber gefunden werden, indem verantwortungsvolle Pionierunternehmer im Schumpeter'schen Sinne mit schöpferischen Ideen als Entscheidungsträger die Schlüsselpositionen in der Wirtschaft einnehmen.

Am Anfang des Jahres 2007 schrieb der Autor des vorliegenden Artikels: „... In der estnischen Wirtschaft und in der Sozialsphäre wurden viele Fehler gemacht und viele notwendige Veränderungen sind nicht vollzogen worden. Die Umsetzung einer Reihe von bedeutenden Reformen zieht sich in die Länge oder ist ins Stocken geraten. Aber immerhin hat sich der Lebensstandard bei der Mehrzahl der Bevölkerung im Laufe der sechzehn Jahre nach der Wiedererlangung der Selbstständigkeit deutlich verbessert. Parallel zum wirtschaftlichen Erfolg wird aber häufiger über Abschwung und mögliche Krisen nachgedacht. Man kann sogar behaupten, dass der Ausbruch einer eventuellen Wirtschaftskrise immer aktueller wird.“ (Raudjärv 2007: 212); „Wenn man die jetzige Wirtschaftslage einschätzen will, so kann man feststellen, dass sie insgesamt relativ erfolgreich ist und sich in der Phase des Aufschwungs befindet, oder sogar in der Phase der Hochkonjunktur.“ (*Ibid.*)

seine Willen durchzusetzen versuchte. [Hinweis: Damit der geplante Pipeline-Bau durch die Ostsee nicht zu einer politisch gefährlichen Abhängigkeit der EU-Länder von Russland führt, muss einer gemeinsamen Energiepolitik der EU-Mitgliedstaaten höchste Priorität eingeräumt werden.]

⁸ Der deutsche Bundespräsident sprach in diesem Zusammenhang zutreffend von den „Monstern der Finanzmärkte“.

„Das Wirtschaftswachstum kann sich noch mehr verlangsamten oder sogar zum Stillstand kommen. Selbstverständlich handelt es sich um ein sehr pessimistisches Entwicklungsszenario, aber man muss auch darüber nachdenken.“ (*Ibid.*: 213).

Die Lagebewertung der estnischen Wirtschaft am Ende 2008 und am Anfang 2009 ergibt ein düsteres Bild: Die Wirtschaftskrise ist in Estland angekommen und die Hochkonjunktur ist vorerst vorbei.

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DIE ENTWICKLUNG DER KONZEPTION DER NACHHALTIGKEITSANALYSE¹

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Abstract

This article concerns limits and development possibilities of the sustainability analysis concept. Discussed are the qualitative sustainability measurement, and connections to the methodological basis of development assessment and the essence of evaluating sustainability. At first the sustainability definition is tackled, followed by an analysis of the nature of sustainability. The third section highlights the requirements for decision making that guarantees sustainability.

Keywords: sustainability; sustainable development, decision making process.

Einführung

Im Prozess der wissenschaftlichen Erkenntnis der Welt und des Gesellschaftslebens kommt man von Zeit zu Zeit in die Situation, wo es sinnvoll wird, für die Verallgemeinerung der angehäuften neuen Kenntnisse und Probleme, zu einem neuen Paradigma überzugehen. Bei den Versuchen, dieses neue Paradigma zu schaffen, hat sich im letzten Jahrzehnt als ein oft verwendetes Stichwort "die Nachhaltigkeit"³ gebildet. Der Begriff der „Nachhaltigkeit“ ist im Laufe der Entwicklung aktiv verwendet worden, besonders wenn man das künftige Ziel einer beabsichtigten Handlung, den Zustand der Natur oder der Gesellschaft charakterisieren möchte. Die Nachhaltigkeit bezeichnet den Zustand, in dem die Gemeinschaft oder auch Erscheinung durch eine interne Verstärkung und die Besserung der Positionen in Bezug auf die Konkurrenz (nachhaltige Entwicklung) oder wenigstens durch eine längere Dauer (Stabilität) gesichert ist.

Im neuen Paradigma äußert sich der Wunsch, die Stabilität (das Bestehen des Sicherheitsgefühls) und die Entwicklung (das Streben nach dem Neuen) gegenseitig auszubalancieren. Im Begriff der Nachhaltigkeit impliziert man meistens ein Glaube

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³ In Estland fehlt die Einigkeit in der Interpretation dieses Fachwortes. Als Entsprechung zu *Sustainability* werden „Nachhaltigkeit – jätkusuutlikkus“ und auch das Wort „Sparsamkeit – säästev“ angeboten, letztes vor allem von den Wissenschaftlern in Bezug auf die Ökologie (s. Eesti 21. sajandil ... 1999). In diesem Aufsatz wird konsequent der Terminus „Nachhaltigkeit“ verwendet, der am besten die Lösungswege der gesellschaftlichen Entwicklungsprobleme charakterisiert.

an die Zukunft, indem man das Verschwinden unerwünschter Erscheinungen und die Verstärkung erwünschter Entwicklungen anstrebt.. So wird die Nachhaltigkeit oft als Gesamtporträt der positiven Entwicklung, an dem ein Individuum oder die Gesellschaft interessiert ist, angesehen.

Das Ziel des vorliegenden Aufsatzes ist die Erörterung einiger Probleme und Weiterentwicklungsmöglichkeiten der der Nachhaltigkeitsanalyse. Um dieses Ziel zu erreichen, müssen folgende Forschungsaufgaben gelöst werden:

- Analyse der Probleme der Festlegung des Begriffs der Nachhaltigkeit;
- Analyse des Wesen der Nachhaltigkeitskonzeption;
- Festlegung der Anforderungen an den Entscheidungsprozess, welcher die Nachhaltigkeit der Entwicklung sichern soll.

1. Die Probleme der Nachhaltigkeitsdefinition

Der Nachhaltigkeit als ein verallgemeinerndes und breit verwendbares Stichwort und den mit ihm verbundenen Paradigma wird in verschiedenen Bereichen ein verschiedener Inhalt zugemessen. Taylor (2002) schreibt in seiner Übersicht, dass verschiedene Autoren mehr als 70 Definitionen der Nachhaltigkeit gegeben haben. Nach einigen Schätzungen (Moffatt u.a. 2001: 4) gibt es sogar über 100 Bestimmungen der Nachhaltigkeit. Es ist verständlich, es kann keine befriedigende Definition der „positiven Entwicklung“ einzig und allein geben, die von allen Subjekten (Menschen???? Oder Rechtssubjekte?) in jeder Zeit und jeder Situation akzeptiert wird. Die Vielfältigkeit und sogar die Widersprüchlichkeit der Nachhaltigkeitsfestlegungen ergibt sich direkt aus den Interessenwidersprüchen der Individuen oder Gemeinschaften im Entwicklungsprozess.

Diese Widersprüche kann man nicht durch „einen einfachen ideologischen Grundsatz – die Entwicklung ist ein Mittel für die Verbesserung des Lebens der Menschen – lösen. Es hängt von den Menschen selbst ab, wie sie für sich das bessere Leben definieren, die Prioritäten in ihrem Zielsystem setzen und welche Mittel sie zum Erreichen dieser Ziele anwenden.“ (Soubotina 2004: 2). Verschiedene Anschauungen über die Zukunft ergeben sich aus dem Unterschied zwischen der Ausgangssituation verschiedener Individuen (Gemeinschaften, Gesellschaftsgruppen) und der zur Verfügung stehenden Mittel, ebenso aus den Unterschieden subjektiver Wertschätzungen. Aufgrund der Ideenvielfalt, die sich aus objektiven Gründen ergibt, muss in jedem Bereich eine spezifische Behandlungsweise ausgearbeitet werden, mit deren Hilfe die Entwicklungsnachhaltigkeit analysiert wird.

Eine Konzeption der Entwicklungsnachhaltigkeit hat sich noch nicht klar herausgebildet (s. Übersichtsartikel von Moffatt u.a. 2001: 1-15; Pezzey u.a. 2002; Taylor 2002; Tafel 2003). Forschungen über die Tätigkeit internationaler Organisationen folgern, dass die Innovation von Zielen und Programmen zur Stärkung der Nachhaltigkeit mehr terminologisch als konzeptuell betrachtet wird (Barrachlough 2001: IV). Für die Analyse, die Auswertung und die Steuerung der

Entwicklungsnachhaltigkeit fehlen in konkreten Bereichen sowohl die allgemein anerkannten Voraussetzungen, eine akzeptierte Methodologie und adäquate Kennzahlen. Sie sind für jeden konkreten Fall auszuarbeiten. Zum Beispiel hat der Internationale Währungsfond eine komplexe Analyse der finanziellen Nachhaltigkeit ärmerer Entwicklungsländer präsentiert (Barkbu *et al.* 2008). Man nutzte dabei die theoretischen und praktischen Erfahrungen, die bei der Behandlung der Nachhaltigkeit in anderen Bereichen erlangt wurden..

Der Begriff der Nachhaltigkeit wurde in Verbindung mit ökologischen Problemen extensiver Wirtschaftsentwicklung und verschwenderischen Verbrauchs formuliert. Immer mehr wird die Regenerierung der Natur durch die menschliche Tätigkeit gefährdet. Als Gefährdungsfaktoren wurden vor allem die rasche Ressourcenausschöpfung und -verschwendung, die lebensqualitätverschlechterung durch Schadstoffemission, von Menschen verursachte Klimaveränderungen und die Verringerung der natürlichen Pflanzen- und Tiervielfalt hervorgehoben. International wurden erhebliche Anstrengungen zur Identifikation ökologischer Probleme globaler Nachhaltigkeit geleistet. Große Erfolge wurden auf dem Gebiet der Konventionsschließung erzielt (s. z.B. NGLS Handbook ... 2000: 341-364).

Mit dem Begriff der Nachhaltigkeit bezeichnete man zunächst die möglichst langfristige Überlebensfähigkeit ökologischer Biogemeinschaften sowie vorbeugende und schützende Aktivitäten zu deren Erhaltung für die nachfolgenden Generationen. Die ökologischen Probleme führen zur Neubestimmung der Beziehungen der Menschen zur Natur, deren Resultat beinhaltet eine neue Nachhaltigkeitskonzeption.

Ähnlich den ökologischen Biogemeinschaften werden infolge des Verschwindens der schützende Grenzen (Globalisierung) viele in relativer Isolation entwickelte soziale, kulturelle, politische und wirtschaftliche Gemeinschaften schwächer oder verschwinden. Neben den positiv anerkannten Veränderungen resultieren ebenso Entwicklungstendenzen, die als schädlich für die Gesellschaft gehalten werden. Die Menschheit geht nicht nur mit der Natur rücksichtslos um, sondern auch mit den sozialen, kulturellen und anderen Werten, die sie selbst geschaffen hat. Bei der Suche nach dem Neuen werden oft die alten Werte vernachlässigt. Andererseits beeinträchtigt die Bevorzugung des Traditionellen gegenüber dem Neuen die Entwicklungsmöglichkeiten der Menschen (der Gesellschaft). Auch bezüglich der Kultur, der Sozialsphäre, sowie in Politik und Wirtschaft müssen die Beziehungen zwischen dem Menschen und seiner Umwelt neu bewertet werden. Deswegen ist auch verständlich, warum das Paradigma der Nachhaltigkeit auf sehr unterschiedlichen Gebieten bei der Behandlung der Entwicklung relativ schnell angewendet wurde.

Die Popularität des Begriffs der Nachhaltigkeit kann auch von der Gegenreaktion der Menschen dem immer schneller werdenden Lebenstempo und der Anhäufung der gesellschaftlichen Veränderungen gegenüber ausgehen. Unter den Bedingungen schneller Veränderung wird der Wunsch nach Stabilität in der Gesellschaft immer größer, der Mensch möchte sich sowohl räumlich (in allen Subsystemen der

Gesellschaft) als auch zeitlich (in einer kürzeren oder längeren Perspektive) sicher und geborgen fühlen.

Die Nachhaltigkeit der Gemeinschaften oder der Erscheinungen kann man positivistisch betrachten, aufgrund objektiver Gegebenheiten ihre Verstärkung oder ihre Verschwindung und ebenso die Faktoren, die die Veränderungen verursachen, feststellen. Die positivistische Betrachtung der Nachhaltigkeit bietet nichts Neues im Vergleich zu dem bisherigen Prozess der wissenschaftlichen Erkenntnis der Gesellschaft und der Natur. Die Nachhaltigkeit oder die Nichtnachhaltigkeit der Gemeinschaft (Gesellschaft?) werden bestimmt durch objektive Gesetze und Gesetzmäßigkeiten, die das Wesen dieser Gemeinschaft (Gesellschaft?) und ihrer Umwelt charakterisieren. Das Kennenlernen dieser Gesetze und Gesetzmäßigkeiten ist eine wichtige Voraussetzung für den Erfolg der menschlichen Tätigkeit. Die ineffiziente Verwendung eines neuen Paradigmas für die Vertiefung oder Systematisierung des wissenschaftlichen Erkenntnisprozesses wäre aber (???) nicht sinnvoll, denn sie würde nur ein terminologisches Durcheinander verursachen, ohne die Erkenntnismöglichkeiten zu erweitern.

Die Verwendung des Begriffs der Nachhaltigkeit wird erst im Zusammenhang mit einer bewussten, normativen Tätigkeit der Menschen für beabsichtigte Gesellschaftsentwicklungen sinnvoll. Der Mensch versucht sich nicht nur an die Umwelt anzupassen. Um seine Existenz zu sichern und zu stärken, versucht er sich selbst und seine Umwelt zu verändern. Die Erkenntnis der Nachhaltigkeit (Nichtnachhaltigkeit) bedeutet, dass diese Veränderungen aus der Sicht eines Wertenden gemäß einer Wertungsfunktion bewertet werden. In diesem Sinne ist der Begriff der Nachhaltigkeit der Entwicklung mit den Begriffen Demokratie, Freiheit und soziale Gerechtigkeit verbunden (The politics of sustainable ... 1997: 7). Die nachhaltige Entwicklung bedeutet die Sicherheit des Lebens, Voraussetzungen dafür sind die Achtung dem Leben gegenüber, die Gerechtigkeit (auch in der Wirtschaftsordnung), die Toleranz, die Ehrlichkeit und die Gleichheit (On the Way ... 1997: 20).

Die Wertschätzungen machen den Begriff der Nachhaltigkeit subjektiv. Barry und Baxter (2004: 3) meinen, die Betrachtung der Nachhaltigkeit sei nicht materiell, sondern eine seelische Betrachtung der Entwicklungsprobleme. Noch mehr, die Nachhaltigkeit der Welt sollte ihrer Meinung nach mehr religiös als wissenschaftlich behandelt werden. Diese Meinungsäußerung würde zur Verstärkung von Antropozentrismus führen, denn im Unterschied zur Innigkeit ist es schwer, die Religiosität den außerhalb des Menschen liegenden natürlichen Gemeinschaften zuzuschreiben.

Der Begriff der Nachhaltigkeit im Zusammenhang mit der Entwicklung wird relativ verstanden⁴. Die Grenzen des Bestehens des Gemeinschaftswesens und des

⁴ An dieser Stelle wird die Nachhaltigkeit der Entwicklung nicht konkret behandelt, dann kommen im engeren Sinne die Erhaltung (Verbesserung) der Qualität der ökologischen

Übergangs (der Entwicklung) zu einer neuen Qualität sind verschwommen. Das Verschwinden bestehender Gemeinschaften ermöglicht und eröffnet neue Wege für die Entstehung neuer Gemeinschaften. Ohne das Verschwinden des Alten wäre die Entstehung des Neuen überhaupt nicht möglich. Die Entwicklung bedeutet einen ununterbrochenen Prozess der Veränderungen (des Verschwindens und der Entstehung) der existierenden Gemeinschaften. Je schneller die Entwicklung ist, desto mehr wird das Bestehen der für einen Menschen wichtigen Eigenschaften der existierenden Gemeinschaften in Gefahr gebracht.

Statisch gesehen beinhaltet die Entwicklung einer konkreten Gemeinschaft das direkte Gegenteil der Nachhaltigkeit – die Veränderung bedeutet, dass bestimmte Eigenschaften oder Komponente verschwinden. Vom dynamischen Standpunkt kann die Entwicklung Grundlage für die Nachhaltigkeit sein – die Anpassung an die neuen Bedingungen in einer anderen Form sichert das Bestehen (die Nachhaltigkeit) des Wesens). Es ist sinnvoll, den Nachhaltigkeitsbegriff aus dynamischer Sicht zu behandeln, weil das Bestehen der Gemeinschaft in einem veränderten Hintergrundsystem (während der Zeit) charakterisiert und eingeschätzt wird. Der Autor definiert als Nachhaltigkeit (der nachhaltigen Entwicklung) positive Veränderungen, bezogen auf die Zukunft eines Individuums oder einer Gesellschaft, die das langfristige Bestehen (die Verstärkung) dieses Individuums oder dieser Gemeinschaft sichern⁵. Man muss betonen, dass direkt und inhaltlich die Nachhaltigkeitsformulierung nur vom konkreten Subjekt (Individuum, Gemeinschaft, Gesellschaft?) ausgehend von seinen latenten Interessen erfolgen kann. Dieses Subjekt (???) versucht seine Aktivitäten, seine internen Ressourcen und die Umweltbedingungen zu gestalten, um sich möglichst bessere langfristige Entwicklung zu sichern,

Die Veränderungen, die die Existenzdauer einer Gemeinschaft (Gesellschaft?) bestimmen (sichern oder gefährden), können intern bestimmt, aber auch von den äußeren Faktoren (Veränderungen, die in der Umwelt passieren) beeinflusst sein. Deshalb ist es für die bewusste Nachhaltigkeitsgestaltung zweckmäßig, die innere und äußere Nachhaltigkeit einer Gemeinschaft zu unterscheiden. Eine innere

Umwelt des Menschen und im breiteren Sinne mit der Gesundheit, der Bildung und des sozialen Wohlstandes verbundene Probleme hinzu (The politics of sustainable ... 1997: 6).

⁵ Manchmal wird das terminologische Durcheinander durch Umstand verursacht, dass die untersuchende Erscheinung keine gesellschaftliche Gemeinschaft, sondern die Veränderung dieser Gemeinschaft ist. Zum Beispiel wird in der Politik über den Zuwachs von BIP als „Nachhaltigkeit der wirtschaftlichen Entwicklung“ gesprochen. Wenn man als Forschungsobjekt die bestimmte Veränderung einer Erscheinung (z.B. Zuwachs an BIP) definiert und wenn man seine Nachhaltigkeit (Dauer im Gegensatz zu Möglichkeiten der Verringerung von BIP) untersucht, begnügt man sich nur mit der wissenschaftlichen Terminologie. Der Zuwachs an BIP bedeutet die Entwicklung der Wirtschaft aber nur in dem Fall, wenn der Zuwachs in Bezug auf die Sicherheit der wirtschaftlichen Perspektiven erzielt wurde. Man kann die wirtschaftliche Kräftigung (d.h. Nachhaltigkeit der Entwicklung) mit dem Zuwachs an BIP nicht gleichsetzen. Zum Beispiel der Zuwachs an BIP wirkt der Nachhaltigkeit der Wirtschaft entgegen, wenn der Zuwachs durch die Verschwendung der Ressourcen oder die Gefährdung der Umwelt erzielt wird.

(äußere) nachhaltige Entwicklung bezeichnet die Veränderungen, die in der untersuchenden Gemeinschaft (in der Umwelt, die die untersuchende Gemeinschaft beeinflusst) stattfinden und die eine möglichst bessere langfristige Entwicklung dieser Gemeinschaft sichern. Einerseits muss die Gemeinschaft sich anstrengen, um sich intern zu verstärken. Andererseits muss die Gemeinschaft sich an die historisch-kulturelle, sozial-ökonomische, politische und ökologische Umwelt anpassen – Möglichkeiten möglichst besser auszuschöpfen und Gefahren zu vermeiden.

2. Die Behandlungsunterschiede des Wesens der Nachhaltigkeit

Intellektuell interessant ist die breite Bestimmung des Subjektes, das die Nachhaltigkeit bewertet. Die Beseelung, die den Tieren und den Vögeln beigemessen wird, wird manchmal sogar den Bäumen und den Steinen zugeschrieben. Die Beseelung der natürlichen Biogemeinschaften und die Wertschätzungen, die damit verbunden sind, sind vom Standpunkt des Nachhaltigkeitsparadigmas doch Pseudoprobleme. Gehen wir vom methodologischen Prinzip aus, dass jedes Subjekt (???) die stattgefundenen, stattfindenden und zu erwartenden Veränderungen bewertet.. Um seine eigene Nachhaltigkeit zu sichern, beeinflusst es die Veränderungen im Rahmen seiner Möglichkeiten aufgrund seiner Wertschätzungen. Dabei ist es nicht wichtig, ob der Mensch die Innigkeit (die Beseelung) nur sich zuschreibt und die Natur für ihn einfach als gefühlloses Mittel ist (Tüür 2000: 13) oder ob er an die Beseelung eines Steins, eines Baums oder eines Tiers glaubt. Jedes Individuum (Gemeinschaft) schätzt die Entwicklung und ihre Nachhaltigkeit interessenbezogen, seinen Kenntnissen und seiner „Sittlichkeit“ entsprechend und sichert die Nachhaltigkeitsentwicklung gemäß seinen Interessen und Möglichkeiten.

Wenn einem Subjekt die Beseelung beigemessen wird, bedeutet das nicht, dass dieses Subjekt von anderen Subjekten gut behandelt oder beachtet wird. Dies äußert sich am besten , wenn Menschen gegen einander ihre Interessen vertreten oder sie beschützen. Es kann zu gegenseitiger Belästigung, zum Angriff oder sogar zur Vernichtung führen. Im Rahmen gegenseitiger menschlicher Beziehungen lässt sich der Mensch nicht von dem Werteprofil der Kommunikationspartner , sondern im breiteren Sinne von der Wertschätzung, die sich für ihn aus diesen Beziehungen als Nachteil oder Vorteil ergibt.

Methodologisch besteht kein Grund, dass ein beliebiges Subjekt (???) die Entwicklungsnachhaltigkeit anderer Gemeinschaften anderer Weise einschätzt und dass sich die daraus resultierende Aktivitäten als uneigennützlich erweisen. Die den Bäumen, Pilzen, Beeren und dem Wild zugeschriebene Beseelung ist bestimmt keine notwendige Voraussetzung für das Prinzip der Wirtschaftlichkeit, wenn die holzbearbeitende Industrie oder die Jägerei betrieben werden. Das Bestehen der Natur wird allgemein nicht von solchen Wertschätzungen bestimmt, wie das Recht und die Gerechtigkeit, die für die menschlichen Gesellschaft von Bedeutung sind. Selbst wenn wir allem, was außerhalb des Menschen liegt, den Status des Subjektes entziehen (d.h. der Mensch verfolgt immer nur seine Interessen), ist die Konzeption

der Nachhaltigkeit der Entwicklung wegen der Subjektivität im Inneren (???) widersprüchlich.

Im Folgenden wird die Subjektivität (???) bezüglich der Nachhaltigkeit nach zwei Richtungen behandelt, indem die bisherigen Versuche, den Begriff zu definieren, in „streng“ und „weich“ eingeteilt werden können (Taylor 2002: 2; Bartelmus 2000: 360; Barry, Baxter 2004: 2; Williams, Millington 200X: 4):

- Die allgemeine Sicherung der Nachhaltigkeit in einem „strengen“ Sinne bedeutet, dass durch die bewusste, zielsichere Tätigkeit der Menschheit eine möglichst langfristige Dauer aller bestehender ökologischen, kulturellen, sozialen usw. Gemeinschaften geschützt oder unterstützt wird. Diese auf die Minimierung der Veränderungen gerichtete Handlungsweise würde eigentlich zum Entwicklungsstand führen, weil es im Falle der Erhaltung und Aufbewahrung des Existierenden nicht genügend Raum und keine Ressourcen für die Entstehung des Neuen geben würde. Somit steht, die „strenge“ Nachhaltigkeitsdefinition im Gegensatz zu dem Bedürfnis, umwälzende Veränderungen für die Steigerung des Lebensstandards der Menschen, d.h. für die Verbesserung ihrer wirtschaftlichen und sozialer Lage zu erreichen. Diese dogmatische, mit Entwicklungsbedürfnissen in Konflikt geratene Nachhaltigkeitsbestimmung wird im Allgemeinen nicht akzeptiert.
- Die Probleme entstehen auch in Bezug auf bestimmte von der Menschheit ausgewählte Gemeinschaften, wenn das Prinzip der „strengen“ Nachhaltigkeit angewendet wird. Von wem und aus welcher Sicht sollten die aufbewahrten und geschützten Gemeinschaften ausgewählt werden? Jede Auswahl beeinflusst den Wohlstand der unterschiedlichen Gesellschaftsmitglieder unterschiedlich, deshalb ist auch die Einstellung der Auswahl gegenüber meistens unterschiedlich und oft sogar widersprüchlich. Außerdem bedeutet die wahlfreie Anwendung der „strengen“ Nachhaltigkeit inhaltlich den Übergang auf die „weiche“ Behandlung der Nachhaltigkeit, weil auch die Letztgenannte die Erhaltung der existierenden Gemeinschaften erfordert solange ihr Bestehen der Menschheit einen Nutzen bringt. Dies bedeutet, dass nur die Menschheit als das Subjekt betrachtet wird.

Nach der „weichen“ Behandlung der Nachhaltigkeit kann die Menschheit das Verschwinden einiger Gemeinschaften akzeptieren, aber nur in dem Fall, wenn an ihre Stelle die neu entstandenen oder gründenden Gemeinschaften den Gesamtwohlstand der Menschen erhöhen. Der Wohlstand ist aber keine Erscheinung, die von allen Menschen in gleicher Weise verstanden quantitativ geschätzt wird. Selbst die Definition des Wohlstandes als wirtschaftlicher Reichtums ist kompliziert, denn für viele Gesellschaften und Güter fehlt eine Maßeinheit (z.B. die Marktpreise). Noch komplizierter wird die Nachhaltigkeitsformulierung, wenn der Wohlstand breiter als nur der wirtschaftliche Reichtum definiert wird, wenn natürliche, soziale, kulturelle und politische Aspekte der Lebensqualität, z. B. auch die Zufriedenheit der Menschen mit ihren Lebensverhältnissen und mit ihrer gesellschaftlichen Position einbezogen werden. Selbst, wenn Möglichkeiten qualitativer Bestimmung und quantitativer Messung des allgemeinen Wohlstandes bestehen, werden trotzdem Verteilungsprobleme der Veränderungsergebnisse resultieren.

Die speziellen Interessen der einzelnen Gesellschaftsmitglieder und das Privatrecht (??)akzeptieren kein Prinzip der Erhöhung des allgemeinen und auf die ganze Menschheit bezogenen Wohlstandes. Objektiv ist es nur sehr begrenzt möglich, die allen Gesellschaftsmitgliedern entsprechenden und verallgemeinernden Wohlstandveränderung zu bestimmen (Paretoprinzip), weil die Gesellschaft aus Mitgliedern mit widersprüchlichen Interessen besteht. (Vorsicht Welfaretheorie!!!, Literatur Verwaltungslexikon!)

Somit drücken die Behandlungen der Nachhaltigkeit vor allem die Sorge der Vertreter einer Interessengemeinschaft um die Entwicklungen/Missbildungen in der Natur oder in der Gesellschaft aus und ebenso den guten Willen in Zukunft negative (nach der Meinung dieser Interessengemeinschaft) Veränderungen zu vermeiden. Leider betrachten verschiedene Gesellschaftsmitglieder sowohl die Probleme als auch die möglichen Entwicklungsvarianten aufgrund ihrer Interessen oder Einschätzungen unterschiedlich. Darum ist es verständlich, warum dem Begriff der Nachhaltigkeit bedingt durch den Anwendungsbereich und die Verallgemeinerungsstufe, aber auch durch die Behandlungsweise des Individuums oder der Gemeinschaft sehr unterschiedliche Bedeutungen zugeschrieben werden. Wegen des Unterschiedes zwischen den Interessen und den Wertschätzungen der Gesellschaftsmitglieder entsteht keine einheitliche und gesamte Einschätzung der Nachhaltigkeit. Es ist darum sinnvoll ständig an der Vereinheitlichung und Vervollkommnung der methodologischen Grundlagen der Bewertung und der Nachhaltigkeitsanalyse zu arbeiten.

Unbegründet wird dem sog. dominierenden gesellschaftsorientierten Paradigma (*dominating social paradigm – DSP*) ein neues naturorientiertes Paradigma (*new environmental paradigm – NEP*) (s. Tafel 2003: 149)⁶ gegenübergestellt. Bezüglich der Natur erscheint, das alleinige Bestreben einen Zuwachs an Produktion und Verbrauch zu erzielen, als rücksichtslos. In den Konzeptionen nachhaltiger Entwicklung wird das Wirtschaftswachstum nicht mehr mit der gesellschaftlichen Entwicklung gleichgestellt, früher wurde das für natürlich gehalten (Becker u.a. 1997: 10).

Bis heute gibt es kein wirksames System, das die Umwelt vor sinnlosem Verbrauch und vor einer nur zum Verbrauch auffordernden Werbung schützt. Nach der Ausarbeitung eines derartigen Systems wird in der staatlichen Politik nur marginal gestrebt. Die Schwierigkeiten, die mit der Ratifizierung des Kyoto Protokolls, mit der Annahme der nationalen Entsorgungsgesetze und mit der Einführung der „Ökosteuern“ entstanden sind, zeigen uns, dass die Interessen des Kapitals (Kapitaleigentümer) in der Entwicklungsbehandlung der Welt dominierend sind. Die Interessen der Kapitaleigentümer dominieren nicht nur bezüglich der Natur, sondern auch in der Sozialsphäre, ebenso auf dem Gebiet der Kultur und Politik. Ungeachtet des Wirtschaftswachstums brachten die sog. „Entwicklungsjahrzehnte“ die

⁶ Richardson behandelt die Probleme der nachhaltigen Entwicklung als Vergleich zwischen der anthropozentrischen und der biozentrischen Behandlungsweise (The politics of sustainable ... 1997: 44-48).

weltweite Kreditkrise, eine drückende Armut, eine unkontrollierbare Bevölkerungszunahme (oder -abnahme) und Umweltprobleme mit sich (On the Way ... 1997: 25).

Wie oben erwähnt, besteht das Problem nicht in der herrschenden antropozentrischen Weltanschauung (Deep Ecology ... 1995: X). Für die Sicherung der Entwicklungsnachhaltigkeit stehen der Mensch und die Natur nicht unbedingt gegeneinander. Das Problem besteht in der despotischen Macht der Interessen der Kapitaleigner über alle andere gesellschaftlichen Subsysteme und über die Naturumwelt. Aber auch die Fiskalinteressen der Staaten – ein bedeutender Teil der Budgeteinnahmen wird mit Hilfe von Verbrauchsteuern erzielt – kann ein wichtiger Grund sein, warum die Staaten keine effektiven Massnahmen gegen Verbrauchsförderung ausgearbeitet haben.

Um nachhaltige Entwicklung zu sichern, muss man von der bisherigen wirtschaftsbezogenen Entwicklungsstrategie auf die menschenbezogene übergehen (s. Annist u.a. 2000: 54), indem die Menschenentwicklung der wirtschaftlichen Tätigkeit (sowohl Einzelperson als auch die Entwicklung der gesellschaftlichen Verhältnisse) an den Bedürfnissen nach Nachhaltigkeitssicherheit ausgerichtet werden.

Das Dominieren der Kapitalinteressen in der Entwicklungsbehandlung zeigt am besten die Tatsache, dass in dem 1987 erschienenen Rapport der Weltkommission für Umwelt und Entwicklung (die sog. Brundtland Kommission) „Unsere gemeinsame Zukunft“ (The World Comission ... 1987), der für die UNO erstellt worden war, der verwendete Begriff der nachhaltigen Entwicklung⁷ gemäß der Meinung Taylors (2002: 2) nur auf die Vermehrung des wirtschaftlichen Reichtums der Menschheit ausgerichtet ist. Laut dieser Ansicht könnte grundsätzlich auch der soziale, kulturelle, politische und psychologische Reichtum zur Betrachtung kommen, aber das Interesse, die Entwicklungsstufe und die Dynamik zu messen, stellt die materiellen Werte in den Vordergrund, weil sie sich besser quantifizieren lassen. Bisher waren soviessio alle gesellschaftlichen und ökonomischen Leitbilder waren auf Wachstum ausgerichtet (Wachstumsmodellen, Konsummaximierung usw.)

Zum Beispiel ist die von der Weltbank ausgearbeitete Methodik der Bewertung der Nachhaltigkeit der Entwicklung (s. Nömmann u.a. 2002) vollkommen kapitalorientiert. Als Ziel wird die Vermehrung des Kapitals angestrebt, außer der Natur wird auch der menschliche Wert nur als Input der Produktionsprozesse (als Natur- und Humankapital) anerkannt. (Sustainable Development 2002: 2). Deshalb wird die Konzeption der Vermehrung des wirtschaftlichen, sozialen und natürlichen Kapitals als Behandlung der wirtschaftlichen Nachhaltigkeit klassifiziert (s. Moffatt u.a. 2001: 75), so wie die wirtschaftlichen Ergebnisse (z.B. das durchschnittliche Verbrauchsniveau der Menschen) betrachtet werden.

⁷ Der nachhaltige Entwicklungsweg, der die Bedürfnisse und die Bestrebungen der jetzigen Generation befriedigt, ohne die gleichen Interessen der künftigen Generationen zu gefährden.

Die dominierende Kapitalbezogenheit in der Entwicklungsbehandlung versucht ihr Wesen mittels der neuen Terminologie zu vertuschen. Die Meinung, bei der nachhaltigen Weltbehandlung geht es um eine der hinterlistigsten und manipulierbarsten Ideologien der letzten Jahrzehne, scheint nicht grundlos zu sein (Pravdic 2002: 95).

Eine genaue Bestimmung der problematischen Beziehungen im Entwicklungsprozess (Wirtschaft-Natur; Gesellschaft-Natur; Wirtschaft-Gesellschaft) ist wichtig, wenn man das Wesen der Missbildungen verstehen und die entsprechenden Lösungswege planen will. Die Überbewertung der wirtschaftsorientierten Betrachtung der Nachhaltigkeit der Entwicklung verursacht bestimmte Probleme. Leider bietet auch die Überbewertung eines anderen Bereichs (z.B. Natur) keine ausgewogenen und anwendbaren Lösungen. Zum Beispiel die sog. ökozentristischen Vorschläge für die Gewährleistung der nachhaltigen Entwicklung (s. Pelstring 1997: 2) – die Einschränkung der Industrialisierung, das Null-Tempo des Wirtschaftswachstums (*steady-state economy*???), die Nichtanwendung der natürlichen Ressourcen, die Kontrolle über den Bevölkerungszuwachs und Ähnliches – sind in der Praxis wegen des objektiven und unüberwindlichen Widerspruchs zwischen den Interessen verschiedener Gesellschaftsmitglieder in allgemeinem nicht realisierbar.

Der Hauptwiderspruch der ökozentrischen Behandlung der Entwicklungsprobleme ergibt sich aus den Entwicklungsunterschieden verschiedener Gebiete und Staaten der Welt. Der Autor vertritt den Standpunkt, dass man das Wirtschaftswachstum und die Benutzung von Naturressourcen – bei den ärmsten Völkern (jährlicher Stromverbrauch pro Person 80 kWh) und bei den reichsten Völkern (jährlicher Stromverbrauch pro Einwohner 8000 kWh) – nicht aufgrund gleicher Kriterien behandeln. (s. Sustainable Development ... 2001: 10-11) sollte. Jeder Mensch hat das Recht auf ein gesundes und vollwertiges Leben (Wiman 2000: 30-32). Es ist schwierig, die Einschränkung des Wirtschaftswachstums im Namen der Bedürfnisbefriedigung der künftigen Generationen von der heutigen Generation zu verlangen, wenn deren heutige Bedürfnisse unbefriedigt sind (Soubbotina 2004: 32). Auch in den reichen Ländern gibt es Menschen, deren elementare Bedürfnisse nach Nahrung, Kleidung und Unterkunft unbefriedigt sind, schon gar nicht die hochstufigen Bedürfnisse nach Arbeitsstelle, gegenseitige Rücksicht, Bildung und Gesundheit (Moffatt u.a. 2002: 2). Über die Einschränkungen könnte man nur bei Gesellschaftsmitgliedern mit einer höheren Verbrauchsstufe diskutieren, denn es gibt kein Recht und keine Möglichkeit, den Zurückgebliebenen das Streben nach dem Niveau der Vorangehenden zu verbieten.

Der radikale Ökozentrismus würde bedeuten:

- die Einschränkung des Verbrauchs in den Staaten (Regionen) mit einem hohen Wohlstandsniveau bis die Staaten (Regionen) mit einem niedrigeren Verbrauchsniveau den gleichen Stand erreichen;
- die Einschränkung der Einkünfte und des Verbrauchs bei dem wohlhabenderen Teil der Gesellschaft, damit der Verbrauch des ärmeren Teils der Gesellschaft den vergleichbaren Stand erreicht;

- die Möglichkeit, die Einschränkung der Industrialisierung in diesen Staaten zu fordern, wo die Industrieproduktion pro Kopf auf einem höheren Niveau ist, neue Investitionen und Arbeitsplätze sollten in den in wenig industrialisierten Regionen erlaubt werden;
- die Festsetzung der Einschränkungen der Benutzung von Naturressourcen in diesen Staaten, wo der Stand dieser Benutzung pro Person im Durchschnitt höher ist, das Benutzungsniveau sollte an den Stand der Staaten mit einem niedrigeren Entwicklungsniveau angepasst werden;
- die Festsetzung der obligatorischen Einschränkungen in Bezug auf den Abbau von Bodenschätzen in den Staaten, wo viele Bodenschätze liegen, damit sie global und für lange Zeit ausreichen.

Die oben erwähnten radikalen, ökozentristischen Ziele sind nicht nur wirtschaftlich, sondern auch sozial, politisch und psychologisch unakzeptabel. Diese Ideen sind aus näherer Sicht gesehen ohne reale politische Kraft und ohne Verwirklichungsmechanismus – sie sind nur Emotionen, weil für die Durchführung dieser sog. globalen Interessen eine genügend Macht besitzende Institution fehlt. Die Bewegung in Richtung der ökologischen Einschränkungen ist insofern möglich, als die Staaten mit einem höheren Entwicklungsstand Einschränkungen vereinbaren und den deswegen entstehenden wirtschaftlichen Verlust der Staaten mit einem niedrigeren Entwicklungsstand ausgleichen.

Der interessante Versuch von Tafel-Terk besteht darin, dass die Konzeption der menschenorientierten Nachhaltigkeit gleichgewichtsorientiert weiterentwickelt wird (Tafel, Terk 2003: 152-153). Nach der Betrachtungsweise von Oja (1999: 9-10) wird der menschenorientierten Konzeption der Nachhaltigkeit eine ethische Dimension hinzugefügt – der Mensch soll sich in seiner Handlung zu Allen und Allem ethisch verhalten, was auf dem Planeten Erde existiert. Die ethische Dimension wird von Anfang an als die vierte Dimension neben der wirtschaftlichen, sozialen und ökologischen vorgestellt – auf dem Weltkongress der Umweltnachhaltigkeit in Rio de Janeiro wurden 27 Prinzipien der Ethik hervorgehoben (Moffatt u.a. 2001: 3-6). Ethisch bedeutet ein vorsichtiges und vorsorgliches, mitleidiges und verantwortliches, sparsames, gleichwertiges und gerechtes Verhalten. Das neue ethische Verhalten der Menschen der Umwelt gegenüber wäre in dem Fall das Gegenteil zu dem Alten, weniger Ethischen. (Kantsche Imperativ?)

Die Zufügung der ethischen Dimension bedeutet eigentlich dieselbe menschenorientierte Entwicklungsbetrachtung, gegen die protestiert wird. Es gibt keine außermenschliche Ethik, die Ethik ist eine gesellschaftliche Erscheinung. Die Ethik entstand und verändert sich mit der Gesellschaft. Deshalb ist sie immer das Prinzip der menschenorientierten Betrachtungsweise gewesen, wenn auch das Wesen und der Umfang unterschiedlich sind.

Um sich von den ideellen Wünschen zu befreien, muss man zugeben, dass die Betrachtungsweise des Menschen den Entwicklungsproblemen gegenüber unvermeidlich menschenorientiert bleibt. Wenn wir die Widersprüche zwischen

verschiedenen Menschengemeinschaften als ein isoliertes Problem ansehen, hat die Menschheit bei der Lösung ihrer Entwicklungsprobleme mit verschiedenen Bereichen zu rechnen (s. Tafel 2003: 154): Individuum, soziales System, Kulturumwelt, gesellschaftliche Institutionen, System der politischen Verhältnisse, Wirtschaftsbeziehungen, Naturressourcen und natürliche Lebensumstände. Wenn neben dem umstrittenen Begriff der Nachhaltigkeit anstatt des Menschen irgendein einzelner Bereich im Mittelpunkt steht, kann die Aufmerksamkeit wohl auf die Unterschätzung oder das Missverständnis dieses Bereichs in den bisherigen Entwicklungsbetrachtungen gelenkt werden, aber eine solche Fragmentation kann nicht zur Grundlage einer vollkommeneren Entwicklungskonzeption werden. Es wäre falsch zu behaupten, dass mit dem aufgeworfenen Problem nachhaltiger Entwicklung vollkommen neues menschliches Fehlverhalten oder dessen Vermeidung entdeckt wurden. Es ist falsch, die Nachhaltigkeitskonzeption mit den früheren Entwicklungsbetrachtungsweisen zu konfrontieren – es wäre eher eine Weiterentwicklung der früher ungenügend akzeptierten Probleme.

Obwohl die Wirtschaftsorientiertheit der Entwicklungsinterpretation kritisiert wird, muss betont werden, dass die nachhaltige Entwicklung nicht mit dem Wirtschaftswachstum konfrontiert werden sollte, Man muss die Natur, den Menschen und/oder die Gesellschaft schädigende Aktivitäten, stoppen, die erfolgen, um Wirtschaftswachstum zu erreichen. Auf der Tagung des Europarates 2001 in Göteborg hat man bezüglich der Strategie der nachhaltigen Entwicklung hervorgehoben, dass die klaren und stabilen Ziele nachhaltiger Wirtschaftsentwicklung neue und bemerkenswerte Möglichkeiten eröffnen. Sie beinhalten ein Potenzial, das aufgrund neuer technologischer Innovationen und Investitionen Wirtschaftswachstum und neue Arbeitsplätze schafft. Der Europarat fördert die Industrie, insbesondere Die Energie- und Transportbranche auf,, die umfangreiche Förderung der neuen naturfreundlichen Technologien zu nutzen.. Der Europarat betont, dass es vom Standpunkt der Gewährleistung der ökologischen Nachhaltigkeit wichtig ist, zwischen Wirtschaftswachstum und Ressourcenverschwendung zu unterscheiden. (A European Union strategy ... 2002: 9)

Die Theoretiker, die die Konzeption der ökologischen Nachhaltigkeit auf andere Lebensbereiche erweitern, haben oft den Fehler der Verfasser der „grünen“ Grundkonzeption wiederholt, indem sie die Subsysteme des Gesellschaftslebens miteinander konfrontieren. Bei der einseitigen Betrachtung versucht der Vertreter jedes Bereiches zu zeigen, dass die Vertreter anderer Bereiche Entwicklung seines Bereichs diskriminieren und bremsen. Bei einer Schlechterstellung aufgrund von Marktallokationen fordern die Verlierer die Einmischung des Staates (Angebot an öffentlichen Gütern) und die Schaffung eines für sie vorteilhaften Zustandes. Weil viele öffentliche Güter keinen Marktpreis haben, dann kann staatliche Intervention zu den Marktverzerrungen, die die Entwicklungssn schädigen, führen.

Die historischen Erfahrungen beweisen, dass eine gesellschaftliche Entwicklungsstrategie, die einen bestimmten Bereich bevorzugt, wegen der Gefahr der Fehlallokationen zugunsten des bevorzugten Bereichs zur niedrigeren Effizienz

führt. Während der Entwicklungsprozesse kollidieren nicht verschiedene Bereiche, wie Natur, Wirtschaft, Kultur u.a., sondern die Interessen ihrer Vertreter (Individuen oder Gemeinschaften, deren Lebensstandard von der Entwicklung der betreffenden Bereiche abhängt). Da alle Bereiche vom Standpunkt der gesellschaftlichen Entwicklung von Bedeutung sind, kann der Entwicklungserfolg durch Interessenausgleich ihrer Vertreter erreicht werden, wenn man ein gemeinsames Ziel zu einer inneren Stärkung der Gesellschaft und der Besserung der Lebensqualität aller Gesellschaftsgruppen befolgt. Der originelle Inhalt der Betrachtungsweise der Nachhaltigkeit entsteht nicht durch die Verneinung der Menschenorientiertheit (Subjektorientiertheit), sondern durch die Konsequenz dieser Orientierung.

Die Beliebtheit des Nachhaltigkeitsbegriffs unter den einflussreichen Menschen ergibt sich aus einem immer breiter werdenden Verständnis, dass jedes jede Gesellschaft ihre Zukunft allseitig und systematisch zu gestalten hat. Dazu müssen institutionelle und methodologische Probleme gelöst werden. Das Hauptproblem der Nachhaltigkeitskonzeption besteht darin, dass die menschlichen Interessen und Bedürfnisse in Bezug auf irgendeinen Bereich (darunter auch die Natur) abstrakt gleichartig sowohl im geografischen, demografischen als auch sozialen Sinne betrachtet werden. In der oben zitierten Bestimmung der Brundtland Kommission wird das Dasein der gemeinsamen Interessen einer Generation als eines einheitlichen Gesellschaftssubjekts vorausgesetzt. Einerseits existieren in einer Gesellschaft keine eindeutig abgegrenzte Generationen, Andererseits sind die Interessen der Menschen und ihrer Gemeinschaften, die aufgrund ihres Alters zu derselben Generation gehören, unterschiedlich und oft sogar gegensätzlich.

Institutionell betrachtet beinhaltet Nachhaltigkeit einen Gesellschaftsaufbau, in welchem die Interessen aller Gesellschaftsgruppen bei der Entwicklungsplanung und ihrer Realisierung angemessen vertreten sind. Zur Regelung der Interessender Gesellschaftsgruppen soll eine Institution vorhanden sein, um die Interessen richtig zu bemessen und komplex auszugleichen. Andererseits muss diese Institution genügend Macht und Ressourcen besitzen, um die gemeinsamen Interessen der Gesellschaft den Interessen einzelner Gesellschaftsmitglieder gegenüber durchzusetzen. In dieser Hinsicht wächst die Nachhaltigkeitskonzeption mit der Institutionentheorie zusammen. Diese Probleme werden in der vorliegenden Aufsatz nicht behandelt.

Zusammenfassend muss man folgern, dass das Wesen der Nachhaltigkeit mit dem Ausgleichszustand und der ausgewogenen Entwicklung des Gesellschaftslebens gleichzusetzen ist. Für die Gewährleistung der nachhaltigen Entwicklung muss man die Interessen aller Gesellschaftsgruppen, die Ziele und die Ressourcen, die Möglichkeiten aller gesellschaftlichen Subsysteme usw. komplex ausbalancieren. Dieses Verlangen bedeutet, dass die nachhaltige Entwicklung den Entwurf eines Entscheidungsprozesses, voraussetzt, der optimale Entscheidungen garantiert.

3. Die Probleme der Gewährleistung der Nachhaltigkeit durch den Entscheidungsprozess

Die Konzeption der nachhaltigen Entwicklung verlangt den Bedarf, die Veränderungen sowohl in der Umwelt als auch eigener Aktivitäten der Gesellschaft (Gemeinschaft?) allseitig zu analysieren, zu planen und zu bewerten. Gleichwertig wichtig ist alle Bereiche des gesellschaftlichen Lebens – die demografischen, kulturellen, psychologischen, sozialen, politischen, wirtschaftlichen und natürlichen – zu betrachten und auszutarieren. Eine vollständige Analyse setzt voraus, dass verschiedene Bereiche in gegenseitiger Wirkung, d.h. systematisch, analysiert werden. Der Autor unterstützt die Auffassung von Spangenberg (2001: 185), dementsprechend die nachhaltige Entwicklung sich als ein Prozess der Funktionierung und Optimierung des äußerst komplexen Systems darstellt. Die Komplexität (Ausführlichkeit und Systematik) der Entwicklungsbetrachtung wurde ebenso Jahrzehnte vor der Entstehung der Nachhaltigkeitskonzeption gefordert. Indem die Aufmerksamkeit auf die Nichterfüllung dieser Forderung in den bisherigen Entwicklungsbetrachtungen gelenkt wurde, konnte man mit der Nachhaltigkeitsbetrachtung keine neue Konzeption herausarbeiten, sondern auf die Überbewertung der einzelnen Bereiche (der Verbrauch und die Produktion) die Aufmerksamkeit lenken. So gelangte man mit der Nachhaltigkeitskonzeption zurück zu dem längst bekannten Grundsatz des globalen Optimums, demnach die Welt in ihrer Entwicklung als Ganzes zu betrachten ist.

Vom methodologischen Aspekt her muss ein Schema für die Vorbereitung, die Ausführung und die Verwirklichung der Entscheidungen entworfen werden, das ausführlich und systematisch die Entwicklungsnachhaltigkeit garantieren soll. Auf die Verbindung zwischen der Nachhaltigkeitskonzeption und der Entscheidungstheorie verweisen viele Autoren. Die Informationen über die Nachhaltigkeit sind im politischen Entscheidungsprozess vorzubereiten (Sustainability Indicators 1997: 6-7). Die Nachhaltigkeitsmodellierung soll den Entscheidungsprozess unterstützen (Moffatt u.a. 2001: 196-198). Moldan hat beispielsweise ein Schema über den politischen Entscheidungszyklus für die Gewährleistung der Nachhaltigkeit angeboten (Sustainability Indicators 1997: 59-62).

Bei der Vorbereitung der nachhaltigkeitsbezogenen Entscheidungen werden drei Dimensionen – organisatorische (institutionelle), informative und analytische – unterschiedlich beachtet. Vom organisatorischen, d.h. institutionellen Aspekt her ist zum Ausgangspunkt das Ideal der Vertreter der grünen Denkweise "die Nachhaltigkeit durch die Demokratisierung" geworden (Bell 2004: 94-95). In demselben Sinne hat die Europäische Wirtschaftskommission von UNO 1998 die sog. Aarhus Konvention gefasst.⁸ Aufgrund dieser Konvention soll die Demokratie

⁸ The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters was signed at the Fourth "Environment for Europe" Ministerial Conference in Aarhus, Denmark on 25. June 1998.

das Zugangrecht zur umweltbezogenen Information und zum Entscheidungsprozess garantieren, ebenso die Möglichkeit das Gericht anzurufen, um diesem Recht Geltung zu verschaffen. Wenn wir die Nachhaltigkeitskonzeption von der Umwelt auf die ganze Gesellschaft ausdehnen, so muss der Zugang zur Information und zum Entscheidungsprozess in allen gesellschaftlichen Fragen, sowohl in kulturellen, sozialen, regionalen als auch in wirtschaftlichen Fragen, garantiert werden. Damit sind die Verwaltungsinstitutionen der Gesellschaft umzustrukturieren und allmählich (gemäß der wachsenden Vertretungs- und Kooperationsfähigkeit der Gesellschaftsgruppen) von der bisher herrschenden Vertretungsdemokratie zur Beteiligungsdemokratie überzugehen.

Vom informativen Aspekt her beschäftigt man sich mit der Ausarbeitung des Systems in dem die Angaben der Nachhaltigkeit dargestellt werden, und mit der Formulierung einer methodologischen Basis, um die nötigen Grundinformationen zu sammeln und zu bearbeiten (Sustainability Indicators 1997; Indicators of Sustainable ... 2001). Um die Nachhaltigkeit der Entwicklung zu bewerten und zu prognostizieren, versucht man in den daran interessierten Staaten mit Hilfe von nationalen Institutionen die Sammlung und Aufbewahrung von notwendigen Angaben, die Überführung der Grunddaten in Indikatoren und die Vermittlung von Erkenntnissen an die interessierten Institutionen zu koordinieren.

Bis jetzt wurde dem analytischen Aspekt der Entscheidungsvorbereitung relativ wenig Aufmerksamkeit zugewendet. Eigentlich können auch demokratische Institutionen aufgrund der ihnen zukommenden Information die Entscheidungen über die Nachhaltigkeit der Entwicklung treffen, aber nur unter der Bedingung, dass das System der zielstrebigsten Analyse geschaffen ist. Mit der Kräftigung der Demokratie und der Steigerung der Informationsmenge wird die Schwäche des Analysesystems als Faktor angesehen, der die Nachhaltigkeitsbetrachtungen ohne zuverlässige Entscheidungsbasis lässt.

Um ausgewogene Entscheidungen über die Gewährleistung der Nachhaltigkeitsentwicklung zu treffen, müssen für die Lösung der Verwaltungsaufgaben bestimmte Anforderungen erfüllt werden. Am wichtigsten sind folgende:

- die Ganzheit – alle für den Prozess bedeutsamen Elemente und Zusammenhänge sind komplex als Ganzes zu betrachten, um alle Aspekte (Veränderungen, Einflüsse) künftiger Entwicklungen vorausszusehen;
- die Ausgewogenheit – die Interessen aller Gesellschaftsgruppen und die Entwicklungsbedürfnisse aller Subsysteme des menschlichen Lebens (demografische, soziale, wirtschaftliche, kulturelle, politische, psychologische, ökologische) sind ausgewogen zu betrachten, um die gleichwertige Qualität der Befriedigung der Bedürfnisse aller Gesellschaftsgruppen in allen Subsystemen zu gewährleisten;
- die Perspektivität – bei der Planung der auf lange Sicht beabsichtigten Aktivitäten sind sowohl direkte als auch indirekte Einflüsse dieser Aktivitäten auf die verschiedenen Subsysteme der Gesellschaft und aller

Gesellschaftsgruppen vorauszusehen, um Konflikte zwischen den lang- und kurzfristigen Entwicklungszielen zu vermeiden;

- die Verantwortung – dem entscheidenden und/oder handelnden Subjekts (????) sind alle von ihm verursachten positiven und negativen Ergebnisse zuzuweisen, damit jedes Subjekt die positiven Resultate seiner Aktivitäten zu maximieren und die negativen Resultate seiner Handlung zu minimieren versucht;
- die Ethik – bei der Entwicklungsplanung sind die Interessen aller Subjekte (der Privatpersonen, der gesellschaftlichen Gruppen und Schichten, der Bevölkerung in der unterschiedlichen Regionen, der verschiedenen Generationen), die vom Prozess beeinflusst werden, zu beachten und zu unterstützen, um einen gerechten (ihren Interessen entsprechenden), barmherzigen und verantwortungsbewussten Umgang aller Subjekte zu gewährleisten; im Umgang mit der Lebensumwelt (Natur, Kultur, soziale Sphäre, Wirtschaft) wird das Recht, aus diesen Subsystemen zu nehmen, mit der Pflicht der gerechten Rückgabe (laut gesellschaftlicher Erkenntnis) ausgeglichen;
- die Sparsamkeit – die knappen natürlichen und gesellschaftlichen Ressourcen sind auf die beste Weise auszunutzen;
- die Optimalität – zusammenfassend ist die möglichst beste Entwicklungsvariante zu wählen, indem mit allen oben erwähnten Bedingungen ausgewogen gerechnet wird.

Die Bedingungen (Standards, Normen, Grenzwerte), die in den Nachhaltigkeitsbetrachtungen an verschiedene Subsysteme gestellt werden, geben die Informationen für die Strukturierung konkreter Führungsaufgaben. Diese Bedingungen bestimmen die Beschränkungen der Optimierungsaufgaben, die von jedem Gesellschaftsmitglied berücksichtigt werden sollen, das im Rahmen der Entwicklungsvariante eine Maximierung des Wohlstandes anstrebt.

Bezüglich der Nachhaltigkeit sollten bei der Ausarbeitung der optimalen Entwicklungsstrategie folgende Aspekte Beachtung finden⁹:

- die Abstimmung der lokalen Optima mit dem globalen Optimum – fordert die Verteilung der Handlungsergebnisse zwischen den Gesellschaftsgruppen so, dass anstatt der einer konkreter Gruppe nützlichen Handlungsvariante (lokal) die der allen Gesellschaftsgruppen ausgewogen nutzbringendste Alternative gewählt wird (global);
- die Präferenz längerfristiger Aktivitäten gegenüber kurzfristigen Aktivitäten – fordert einerseits, dass die langfristigen Resultate einer Handlung zu bewerten sind, und andererseits die Anwendung von Mechanismen, die die Überschätzung des kurzfristigen Vorteils auf Kosten des künftigen Nutzens vermeiden und den Gesamtnutzen der langfristigen Prozesse zu maximieren erlauben;
- die Abgrenzung der beeinflussbaren Faktoren (des Raums von Alternativen) und der nicht beeinflussbaren Bedingungen (der Umweltbedingungen) – erfordert die Festlegung der Kompetenzen und der Verantwortung der Entscheidenden bei der Planung und Realisierung;

⁹ Diese Fragen sind vom Autor in seinen entscheidungstheoretischen Untersuchungen behandelt worden: s. Рейльян 1989: 206; Reiljan, Kasemets 2001: 348.

- die Berücksichtigung objektiver Kriterien und subjektiver Einschätzungen – erfordert die Nützlichkeit und die Risiken der Aktivitäten aus der Sicht der Handlegenden, Betroffenen usw. zu erkennen und zu bewerten;
- die Lösung der Entscheidungsaufgaben mit mehreren Optimumkriterien – erfordert die Lösung der Skalierungsprobleme und der Aggregation (Zusammenfassung, gemeinsamer Messung) der qualitativ unterschiedlichen Nutzenindikatoren der betreffenden Aktivitäten.

Es ist nicht eine leichte Aufgabe, die Kenndaten festzulegen, mit deren Hilfe die Nachhaltigkeit charakterisiert und analysiert wird. Das Hauptproblem besteht nicht darin, dass für die Nachhaltigkeitskontrolle und -bewertung die notwendigen Angaben fehlen, sondern in deren Vielfältigkeit, und in der Berücksichtigung der gegenseitigen Zusammenhänge. Als eine international große Herausforderung für alle Staaten ist es, zu einer Vereinbarung über eine einheitliche Datenbank zu gelangen. (Sustainability Indicators 1997: 7). Eine solche Vereinbarung ist für die Sicherheit der internationalen Vergleichbarkeit der Bewertungen der Entwicklungsnachhaltigkeit von Bedeutung.

Der soziale, wirtschaftliche, ökologische, kulturelle, politische und psychologische Zustand der Gesellschaft (das Entwicklungsniveau) wird durch viele Massen- und Volumenkenzzahlen charakterisiert. Andererseits kann man für die Charakterisierung der Nachhaltigkeit Relations- und Strukturdaten benutzen, die die Stärke (Lebenskraft, Rationalität, Sparsamkeit, Akzeptierung, Wahrscheinlichkeit der positiven Ereignisse) ihrer inneren Struktur ausdrücken. Die Stärkung der inneren Struktur der Gesellschaft ist ein Merkmal dafür, dass die Nachhaltigkeit sogar oft unter Bedingungen der Verringerung der Massen- und Volumenkenzzahlen vorhanden ist. Die positive Lebensauffassung, das Gefühl der Zusammengehörigkeit und die Aktivität wirken nachhaltig auf die Gemeinschaft auch mit geringerer Bevölkerungszahl ein. Der umgekehrte Zustand bringt die Momente zum Vorschein, die die Nachhaltigkeit der Entwicklung einer Gemeinschaft entkräften (mit dem Wachstum von Volumen und Masse entsteht das Nachlassen der inneren Struktur). Zum Beispiel die Zusammenfügung der zur Kooperation nicht bereiten Gemeinschaften (Gesellschaften?) führt zur Verschärfung der Widersprüche und Konflikte und vermindert die Nachhaltigkeit der Entwicklung der neuen vergrößerten Gemeinschaft.

Die große Datenmenge, die sich in der Stärke und Schwäche der inneren Struktur und der Masse (Volumen) der Gesellschaft charakterisiert die Vielfältigkeit der Nachhaltigkeitsanalyse. Sie verlangt die Verarbeitung von Daten, die das objektive Wesen und die Veränderung der Gesellschaft charakterisieren, aufgrund der oben erwähnten Prinzipien einer allseitigen systematischen Betrachtungsweise. Die mit der statistischen Erhebung verbundenen Probleme charakterisieren die Kompliziertheit der Analyse der Entwicklungsnachhaltigkeit.

Für die erfolgreiche (ergebnisvolle) Nachhaltigkeitsanalyse muss man zwei komplizierte Prozesse nicht nur zusammenführen, sondern inhaltlich vereinigen. Der organisatorisch komplex aufgebaute Vorbereitungsprozess der

Verwaltungsentscheidungen, ist mit deren methodisch und informationell komplex gestaltete empirische Datenbearbeitung in Einklang zu bringen. Diese Aufgabe zu lösen, dies ist die grösste Herausforderung der Nachhaltigkeitsanalyse, die die konsequente Anwendung der oben behandelten Prinzipien voraussetzt.

Zusammenfassung

Im Artikel wurde die Nachhaltigkeit allgemein und abstrakt definiert. Die Entwicklung aller Individuen, Gemeinschaften, Wirtschaftssubjekte kann mittels dieser Definition charakterisiert werden. Die Nachhaltigkeit (die nachhaltige Entwicklung) bezeichnet die positiven Eigenschaften eines Individuums oder einer Gemeinschaft oder die günstigen Umweltbedingungen (deren Veränderungen), die das langlebige Bestehen (die Wirksamkeit) des betrachteten Individuums oder der Gemeinschaft in Zukunft gewährleisten. Die Bewertung der Nachhaltigkeit ergibt sich aus den Wertschätzungen des bewertenden Subjekts und dient als Grundlage für seine Handlungen mit dem Ziel seiner Zustandsverbesserung. Diese Bezeichnung beruht auf den konkreten (der Fachliteratur entnommenen) Definitionen der Nachhaltigkeit und wird in der Analyse des Wesens der Nachhaltigkeit verwendet.

Weiter wurden die Widersprüche, die sich aus einer einseitigen Betrachtungsweise der Nachhaltigkeit ergeben, analysiert. Die bisherigen Betrachtungen der Nachhaltigkeit drücken in erster Linie die Sorge der Vertreter des Nachhaltigkeitsparadigma um die Missbildungen in der Umwelt und der Gesellschaft aus, aber auch den abstrakten Wunsch, die negativen Erscheinungen zu beseitigen. Leider beachtet man dabei den Umstand nicht, dass verschiedene Individuen und Gemeinschaften aufgrund ihrer Interessen sowohl die Probleme als auch deren Lösungen unterschiedlich ansehen. Die radikalen Nachhaltigkeitsbetrachtungen benutzen die idealistischen und emotionalen Einschätzungen und bieten die Entwicklungswege an, die das Kräfteverhältnis der gesellschaftlichen Interessengruppen nicht beachten, um die Aufmerksamkeit von der tatsächlichen Quelle, d.h. die Präzisierung der Interessen der Wirtschaftskreise in allen gesellschaftlichen Entscheidungen, abzulenken. Bei der Lösung der Nachhaltigkeitsprobleme sollte man von der wirtschaftlichen Nachhaltigkeitsbetrachtung zu der Betrachtungsweise der Entwicklung, die auf die Besserung der Lebensqualität der Menschen gerichtet ist, überzugehen.

Im dritten Teil wurde gezeigt, dass die Gewährleistung der Nachhaltigkeit als Entscheidungsprozess mit den spezifischen Eigenschaften und den Einschränkungen zu betrachten ist. Dieser Prozess berücksichtigt allseitig alle Aspekte, die das Funktionieren der Gesellschaft sichern. Es ist unmöglich, die Nachhaltigkeit zu gewährleisten, wenn man nur ein Aspekt der Entwicklung als bedeutend betrachtet wird. Bei der Entscheidungsfassung sind alle Aspekte in die Ausgewichtslage zu bringen. Da die organisatorischen (institutionellen) und die informativen Aspekte des gesellschaftlichen Entscheidungsprozesses über die Sicherung der Nachhaltigkeit in der Fachliteratur genügend erörtert worden sind, wurde im vorliegenden Artikel vor allem die analytische Seite betrachtet.

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CONTRIBUTION OF THE PUBLIC SECTOR TO THE DEVELOPMENT OF INNOVATION: POSITION OF ESTONIA

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Abstract

Under conditions of regional competition the authors discuss the role of the public sector in developing innovation activities and the ways to encourage innovation in the private and the public sector. Innovation policy gets linked to modern stage theories of development that focus on innovation. Estonia has reached the investment driven stage. With respect to several innovation indexes and measures of innovation policy a statistical comparison between Estonia and European Union member countries shows whether Estonia belongs to the group of leaders, renegades from leader role, losers or to that of aspirers. The indexes and indicators applied refer to the Community Innovation Survey, Summary Innovation Index, and Global Competitive Index. Although public higher education and R&D expenditures and co-operation of firms are above EU levels the analysis demonstrates that total R&D expenses are below European average. Co-operation between Universities and private firms is low and the number of patents as well. The knowledge creation and the ability to apply innovations enabled Estonia to reach an “aspirer position” whereas with respect to global competition Estonia possesses a “looser” position partly due to the lack of scientists, engineers, etc. Estonian public sector should develop and promote actively the necessary and promising fields of innovation analysed.

Keywords: innovation policy, economic development, public sector innovation, private sector innovation, European comparison, Estonia’s innovation situation

Introduction

The globalization of competition has raised new tasks for the public sector – to support innovation in the socio-economic development of a country. Therefore, in recent decades economics has been increasingly concerned with the role of the public sector in ensuring the effectiveness of public policy in innovation processes. In this article the problems of Estonia as a small member state of the EU will be explored in this field.

Traditionally, the role of public policy is seen as supporting private entrepreneurs as innovators oriented towards the production of goods for existing markets. The active role of the public sector in demand creation for innovative products/technologies has to be developed. For firms it is advantageous to avoid the costs involved in research and development (R&D) as long as the framework conditions do not change much.

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However, these conditions may change if: the needs and desires in a country become satisfied, production costs in other countries become cheaper or if the protection of shipping costs decreases, if production factors become scarce (e.g. labour, energy) and if new needs develop. These changes may hamper economic development if innovation is the task of private firms alone (Hauff, Scharpf 1975). Therefore, a co-ordinated public sector innovation policy is necessary, and it also seems necessary to determine which stages of the innovation chain should be financed or operated by public institutions.

The objective of the current article is to find out which Estonian innovation policy measures are competitive from the international perspective and which need to be improved. In order to achieve the objective the following research tasks have been set:

- describe the public sector's role in developing innovation activities and systematize public innovation support measures;
- analyze innovation policy implementation in Estonia;
- compare Estonian innovation policy measures with other European Union members and assess the position of the Estonian public sector in regard to support for innovation.

The source of data used for the empirical analysis is the *Eurostat* database. Some data originates from the European Innovation Scoreboard and Global Competitiveness Reports.

1. Main fields of public sector intervention for developing innovation

Estonian economic development until now has been mainly based on the production and export of traditional labour and resource intensive products, whereas innovation has played a less important role. Under the conditions of a sharpening deficit of labour resources, rising prices for all inputs and unbalanced regional development, the formulation of appropriate innovation policies are of essential importance. The misalignment of public policy in these fields has become one of the limiting factors of economic development in Estonia (Varblane *et al.* 2007; Ukrainski, Varblane 2006; Ukrainski 2006a).

The fashionable term *innovation* is understood and interpreted differently (J. A. Schumpeteri 1989: 62; Michael E. Porter 1990: 45; Oslo Manual 2005: 46; Fagerberg 2006: 8; Tidd *et al.* 2006: 5; V. A. Thompson 1969: 5; Grupp 1998: 13; Kurik *et al.* 2002: 19; Marx, Hacklin 2005: 414; Francisa, Bessant 2005: 172; Smart Innovation 2006: 13). The fact that the term *innovation* is not understood clearly in Estonian society, is supported by the PRAXIS Center for Policy Studies 2005 study "Innovation and Estonian opinion leaders" (Kalvet *et al.* 2005).

The central aspect concerning innovation is implementation – are renewals put into practice. At the same time the innovation process should be viewed widely within the organisational and social context. Giovanni Dosi (1988: 222) describes the

following innovation stages: the search for new products, production processes or organisational structures, testing, development, imitation and acknowledgement. Peter Drucker (2004: ix) emphasises that innovative action must be systematic. Marinova, Phillimore (2003: 47-48) and Edquist (2006: 182) highlight the importance of cooperation in promoting innovation process.

According to Porter's development model, three stages can be distinguished in economic development (Porter 1990: 545-556): the factor-driven stage common to low level of income, the investment-driven stage common to medium income levels, the innovation-driven stage common to higher income levels. This theory of stages is strongly related to the actual theories of developmental stages. "A developing country, in the context of an open economy, industrialises and goes through industrial upgrading, step by step, by capitalising on the learning opportunities made available through its external relationship with the more advanced world" (UNCTAD 1995: 259). In combination with two kinds of markets (i.e. domestic and export markets) and five types of industries (i.e. R&D-intensive and easily imitable high-tech industries, as well as capital-, labour- and natural resource-intensive industries), the stages of economic and industrial development can generally be divided into three phases, through which countries progress (Akamatsu 1961; Kojima 2000; Nam 2006):

- stage 1: natural resource and labour driven;
- stage 2: capital and imported technology driven;
- stage 3: R&D and innovation driven.

In the third R&D and innovation driven stage, firms are challenged by the increased levels of world competition to innovate new products derived from high levels of technology and know-how. Apart from the well-known impacts of the modern R&D infrastructure and high-quality human capital in generating and implementing new technologies in the development of new products (Ranis 2004), the networks that innovative industrial firms (institutionalised and therefore long-lasting) have with research institutions and high-tech business service firms as well as other industrial companies in the context of a national innovation system become crucial for the country's continued economic and industrial growth in the third stage.

This concept can be applied to regions that are to be found on the continuum within and between these stages. Within this approach decline leads to less innovation, less learning activities, weaker competitive strength, over specialization, etc. and the countries fall back along the continuum (Friedrich, Nam 2009).

In general, countries at the first stage are less developed. There, a whole range of measures to overcome such underdevelopment could be applied. Countries that have reached stage two or fallen back to the second stage have to foster measures to provide capital (also venture capital) and to enforce technological development and import technological knowledge. Countries falling back in position within the third stage should push technological development, co-operate with industrial partners in other developed countries, develop modern service industries and concentrate more on technological strategic branches that fit into their overall economic structure. The

objective of every country should be to reach the innovation-driven stage. Such development demands direct state intervention – the implementation of innovation-directed policies (Lundvall, Borrás 1997: 37).

Innovation has long been understood as a linear process in which the public sector’s objective is to support R&D activities and direct knowledge transfer from one innovation process stage to another. In the mid 1990s, the creation of an operating innovation system was emphasised: starting from a functioning education system and science through to a suitable tax system, patent laws etc. All policies (i.e. regional, education, competition etc.) should be innovation-friendly (Rutten, Boekema 2006). The role of the public sector is to work beside the development of R&D and innovation systems and to support innovation cooperation (Innovation ... 2002: 10-11; Cooke *et al.* 2007; Karlsson 2008; Capello, Nijkamp 2009). The objective of the public sector is also to produce, diffuse and use innovations (Edquist 2006: 190; Windrum, Koch 2008).

Table 1 presents a summary classification of innovation-oriented policy measures based on Edquist’s approach.

Table 1. The classification of public sector policy measures oriented to innovation

1. Provision of knowledge inputs for the innovation process
Financing R&D
Raising the competence of the workforce: financing vocational, technical engineering and academic higher education
Develop inventions and innovations in public sector research institutions, military and civilian public offices, large public firms such as hospitals, public utilities, agriculture, forestry, public industrial companies, shipyards, space and aircraft industries, etc.
3. Provision of markets – demand-side factors
Innovation oriented laws, regulations and standards (i.e. safety and environment standards)
Public technology procurement, investment in future energetics
4. Provision of constituents for the innovation system
Support of SME innovation activities, for instance loan guarantees, start-up and risk capital support
Supporting innovation cooperation, for instance inter-firm cooperation programs, exchange of information, financing of cooperation projects
Creating legislative environment for innovation, for instance patent law
5 Support services for innovation firms
Creating favourable conditions for innovation, for instance tax system, access to risk capital market
Support of innovative firms, for instance consulting, financial support, guaranteeing loans
Investment in information and communication technology

Source: Composed by authors and based on Edquist (2006).

Investments in infrastructure development are in general recognized as one of the major tasks of the public sector for promoting innovation in socio-economic development (Feng, Popescu 2007; Baldwin *et al.* 2003; Subramanian *et al.* 2001; Piet, Shefer 1999). Empirical research conducted in Western countries points to a positive correlation between the development of public infrastructure and investments of private capital (Aschauer 1989a; Aschauer 1989b; Aschauer 2000; Seitz 1994).

The systems of education and research are important instruments of public infrastructure that enable a country to increase sustainability and enhance innovative activities. It is important to raise people's awareness of science and technology (Innovation ... 2007: 18). Inputs and outputs of the education system are mainly assessed using a comparative analysis of financing and effectiveness of educational institutions (Spraul 2007; Unnever *et al.* 2000; Bates 1997), but also more broadly as the knowledge base in innovation systems (Lundvall 1992; Leydesdorff, Etzkowitz 1996; Breschi, Malerba 1997). These problems are highly relevant in Estonia as well (Reiljan, Reiljan 2005; Ukrainski 2006b).

Invention and innovation also take place in large public research institutes that operate in the fields of basic and applied research. Examples include institutes in the natural and technical sciences, in agriculture, in meat research, in bioscience, forestry, space science, materials development, atomic research, arms development, defence, health equipment, etc. (Niopek 1986). These institutes sometimes operate closely with related private firms. Sometimes these firms are also spin offs of state universities using the forms of private or public law. Public enterprises are also important units in encouraging innovations. Examples include the public railway systems in France, Germany, Japan, China etc. and former state owned air line carriers, public shipyards, shipping lines, municipal transportation companies, public utilities, public water providers, public forestry firms and wineries, public enterprises in agriculture, mining; however, also in banking, insurance, exchanges, fair companies, public chemical industries, public industrial enterprises, postal services as a major technical developer in Germany after the second world war, etc. In some countries like Estonia the public universities act as public enterprises as well. Sometimes public offices do research themselves, especially if this research and development of inventions and innovations have to take place under secrecy. There exist public offices dedicated to technical knowledge and development like the European and national patent offices, safety monitoring institutions, water control authorities. This public research may lead to common projects with private firms within the framework of PPP, or in research and development co-operation. Some times they are embedded in official programs to encourage materials, biotech, energy, nano-research etc. Apart from these technical and commercially oriented activities public bodies also encourage cultural development and innovation through educational and cultural administrations, such as vocational training (vocational schools, colleges) and higher education institutions (universities) and public firms like museums, operas and theatres.

This support of innovation takes place at the EU level, the national, sub state and municipal level. The intensity of public sector research, development and innovation support also depends on the competitive situation in the society and economy in question. In times of harsh competition, cold wars and games of survival, the need for public sector activities is felt more than in times of peaceful market economy development or if a leading nation is indirectly governing other nations via free trade, market economy concepts, etc.

The objective of a state innovation system is to raise the innovative potential of society, which means promoting science and education, and setting them as the foundations of societal development (Köörna 2005: 55). It is up to the state to decide what proportion of the state budget is meant for education. Rappaport empirically found (1999: 33-34), that state expenditure on education is positively connected to local development. Still, a quick result from education and science expenditure growth cannot be expected. Sørensen emphasises (1999: 429) that R&D is non-profit in the context of a low level of human capital, and it only becomes profitable when human capital reaches a certain level.

The threats of public intervention in innovation processes must also be taken into account. Liberal market economy supporters think that regulation restrains innovation and ties them down with bureaucracy, which in turn results in growth in the cost of new products and technology, a slowing of innovation transfer and increased risks. Incompetent economic policy can hinder innovation (Köörna 2005: 19-20). Support for new product development can shorten the life cycle of existing products often for no good reason (Grupp 1998: 387). In addition, it has been found that public sector support for innovation raises the risk of a regional imbalance of development: innovations, which are vital for European growth and competitiveness in general, might further aggravate regional disparities (Fagerberg 2002: 56). Every country must find suitable innovation policy instruments.

The instruments of public policies have to be applied differently, taking into consideration the economic situation of the country. According to current knowledge, to form an innovation-oriented public sector in Estonia, it is important to take into account the impact of the following factors:

- The phase of transformation as one of the main complexes of historical path-dependency indicators and embeddings in a Political and Economic Union that constitutes the most important change in the international environment of Estonian socio-economic development;
- The size of the country limiting the extent of the tasks and instruments of public policy, but also determining the position of the country in broader regional competition (Batey, Friedrich 2000; Feng, Friedrich 2002);
- The structure and efficiency of the public sector as the main complex of political path-dependency indicators, actual and future political needs for the formation of an innovation-oriented public sector;

- The inequalities in attainable public services as part of the consumption basket, which can expand the gap in welfare internationally and between communities as well;
- The structure of industries and the size distribution of firms in industries as objects of public innovation policy.

2. Analysis methodology

The values of volume, share and relationship of competitiveness indicators for a certain economic sector provide an overview of the situation achieved through historical development, which is in turn the basis for future development. The competitive position can be calculated through comparing the economic sector's indicators with some standard (for instance with the same indicator values for the most successful or average competitor). Using partial comparisons based on all indicators, the total assessment of path dependency for an economic sector can be brought out using competitive position.

The indicators chosen depend greatly on the characteristics of regional competition (Buhr, Friedrich 1978; Batey, Friedrich 2000; Feng Friedrich 2002). It may occur as macroeconomic competition where representative bodies in sectors and regions act using macroeconomic instruments like aggregate demand, tax receipts, taxation and subsidization to enforce the application of innovations, expenditure for education, research and so on, or as microeconomic competition dealing with microeconomic parameters of action such as zoning, real estate, projects, special fees, etc. Competition can be development competition concentrating on planning and educational or research infrastructure, or project competition such as attracting high-tech firms, skilled workers, an educated population and public offices. The outcome of regional innovation oriented competition also depends on the market forms of competition. In such competition one normally finds more suppliers than demanding firms. This competition occurs worldwide, for example, in Europe, USA, India, China, Brazil and Russia. Within the European Union 27 member states compete and about 100 sub-states and provinces are engaged in innovation-oriented competition and thousands of municipalities support innovation activities. They are engaged in development and project-oriented competition. At least with project oriented competition there are few demanding firms and public offices. Regional competition within the framework of supporting and attracting innovation also depends on the goals of the competitors. Their goals may be quite different, such as the re-election of politicians and parties, the greater centrality of cities, higher income, higher employment, a high-tech sector structure to name just a few. Also, if the competitors try to achieve the same goals, their operational goal, for example in terms of income and employment, may be different as the goal might be acted upon at the national or only the municipal level. Many times the main goals for competitors refer to income maximization. Any success in innovation competition is then reflected in an increase in regional income.

In the following empirical part of our investigation we refer to nations within the EU as competitors who want to achieve high income and income growth. We do not use these directly as success indicators. We apply indicators that reflect the positive conditions for achieving these aims and that describe innovation competition as a kind of regional competition. The macroeconomic parameters of action we chose as relevant in macroeconomic competition to launch and intensify innovations are shown in figure 6 with indicators 1 to 10 (excluding indicator number 2). Other indicators show favourable innovation competition conditions and parameters of action that have evolved in the Community Innovation Survey (CIS), the Summary Innovation Index (SII) and the Global Competitiveness Index (GCI). They also help to identify the country's position in terms of innovation competition.

The growth rates of competitiveness indicators help us to assess the direction and speed of change of different aspects of competitiveness. The growth rate of competitiveness indicators must also be compared with a standard. Those comparisons make up the total assessment of the competitiveness dynamics.

When comparing the competitive position and its dynamics indicators, a standard could be:

- the values of the competitive position and the dynamics of the most successful competitors (*benchmarking*), in order to assess the lag of the economic sector under observation from the top level of the world economy;
- the average value of the competitive position and the dynamics of the set of competitors, in order to assess the managing capabilities of the economic sector in comparison with average competitors in the world economy;
- the values of the competitive position and the dynamics of the weakest competitors, in order to assess the possibility of the displacement of that economic sector from the world economy.

The scales for the competitive position and the dynamics form a competitiveness field for each aspect of competitiveness according to the definition given in figure 1. On the figure's X-axis we can see the scale of the position measure and on the Y-axis, the scale of the dynamics measure. For the cut-off point for those axes it is analytically reasonable to choose the average value of both scales (see figure 1).

I quadrant "aspirers"	ΔY_i	II quadrant "leaders"
IV quadrant "losers"		III quadrant "renegades from leader role"

Figure 1. Economic competitiveness assessment field with the help of figure Y_i level scale and dynamics scale ΔY_i .

Countries in the first quadrant are “aspirers” with a less than average competitive position, but with a higher than average growth rate. In the second quadrant there are countries with a higher than average competitive position and growth rate known as “leaders”. In the third quadrant there are countries with a higher than average competitive position, but a lower than average growth rate and are termed “renegades from leader role”. The countries in the fourth quadrant have a lower than average competitive position and growth rate and are referred to as “losers”.

When implementing the competitive field method, the analysis of the competitiveness of the economic sector can be conducted from the aspect of the competitive position and its dynamics:

1. **Indicator analysis.** The analysis of the indicators of economic competitive position and its dynamics is carried out separately for each indicator Y_i . By placing the most successful and unsuccessful competitors on the field formed by the level of the indicator and its dynamics, we get a complex assessment of the state’s competitiveness as assessed through indicator Y_i . The nature of the analyzed indicator broadly reflects the necessary work categories and public sector measures needed in order to raise economic competitiveness.
2. **Pattern analysis.** We obtain an overview of the economic competitiveness pattern by putting assessments of competitive position and dynamics calculated with the help of all indicators in one competitiveness analysis field. When standardizing position assessments, and if necessary the variation of dynamics indices calculated using partial indicators of competitiveness in a set of comparable competitors (the measurement unit here is the deviation from the average in the meaning of standard deviation), we create similar scales of different partial level and dynamics indicators. This in turn makes competitive position and dynamics indicators comparable in respect to all partial indicators of competitiveness. Using different partial indicators of competitiveness, a different assessment of the sector’s competitive position and dynamics is calculated. In some aspects of competitiveness, a sector can be a “leader”, in other aspects an “aspirer”, “renegade from the leader role” or a “loser”. Complex analysis of different competitiveness aspects helps to create a complete description of the economic competitiveness pattern, which helps us to describe single critical points for competitiveness formation as well as synthesize public sector policies for increasing competitiveness.
3. **Dynamic analysis.** To analyse competitiveness dynamics, competitive position and dynamics values for different periods are put in the competitiveness assessment field. In order to forecast competitiveness, it is important to see the development path in the competitiveness field for the last 5-10 years in comparison with the position or path of the competitors. Changes in the development path describe the results of previous public policy measures and changes in the market environment.

When using the competitiveness assessment field method, the main objective is to bring out and connect different aspects of the sector’s competitiveness exposure, in order to create a basis for understanding competitiveness development mechanisms and determine directions for research to find factors for raising competitiveness.

3. The position of Estonia in terms of public sector innovation activities

According to Porter's development model and modern stage theories, Estonia is at the moment in the investment-driven stage. The production of firms is not sufficiently competitive to succeed in foreign markets; they are lacking investments in technology and development activities. With the current low cost levels and lack of production development, subcontracting is the main option for selling on foreign markets (Eesti ... 2002: 28-29). That is why Estonia has not reached the innovation-based development phase.

In order to bring Estonia into the innovation-driven development stage more attention has been paid to creating and developing national innovation system. Estonian R&D guiding document is at the moment Estonian research, development and innovation strategy 2007-2013 "Knowledge-based Estonia" (2007).

As an overall indicator of strategy implementation it has been projected that the cost of R&D shall reach 1.5% of GDP by 2008, 1.9% by 2010 and 3.0% by 2014. Public sector R&D investments have been projected at 0.8% of GDP by 2008, 1.0% by 2010 and 1.4% by 2014 (*Ibid.*: 36).

Funds in the state budget intended for research is given to the Eesti Teadusfond (*Estonian Science Foundation*). Eesti Teadusfond distributes scientific grants to individuals and research groups through competition. The objective of the Eesti Teadusfond is to support high quality scientific research, new ideas and search as well as degree studies (Estonian ... 2009).

The agent implementing state innovation policy support measures is the Ettevõtlike Arendamise Sihtasutus (EAS – *Enterprise Estonia*). During 2005-2007, 150 different innovation audit programs were implemented with the help of EAS, which was aiming to raise the awareness of innovation among managers and motivate them to initiate, promote and carry out innovative activities in their firms (Eesti ... 2007: 14). At present the innovation awareness program "Hea Eesti Idee!" (*Good Estonian Idea!*) is being implemented. Through EAS cooperation is also supported more precisely through the technology development centre program and the COMPERA program.

Providing loan and lease guarantees to innovative firms is also the task of the Krediidid ja Ekspordi Garanteerimise Sihtasutus KredEx (*Credit and Export Guarantee Foundation KredEx*) operating under the administration of the Ministry of Economic Affairs and Communication, which among other objectives offers guarantees for small and medium sized enterprises (KredEx 2009).

Next we will explore how Estonia manages certain innovation policy measures compared to other European Union countries. In terms of providing knowledge inputs for the innovation process, we will analyse public sector expenditure on R&D and education. We will also look into how Estonia provides the various elements for the system of innovation, by analysing cooperation in innovative projects between

firms and institutions, but also innovative small and medium sized enterprises (SME). We will analyse public sector support services and measures for innovative firms, and finally, we will look at Estonia's position on the European Innovation Scoreboard and the innovation chapter of the Global Competitiveness Report.

In terms of creating innovation knowledge it is extremely important that the state supports the arrangement of R&D. The position of Estonia and other European countries according to public sector (state and higher education sector) R&D expenditure in 2005 (in relation to GDP) and related dynamics for 1999-2005 can be seen on the competition field diagram (see figure 2). Figure 2 demonstrates that Estonia was situated in the 1st quadrant during all the years viewed; that means it was an "aspirer". Estonia is characterized by a R&D cost level lower than the EU average, but at the same time has a higher growth rate. That is why Estonia is slowly but confidently approaching the average EU level.

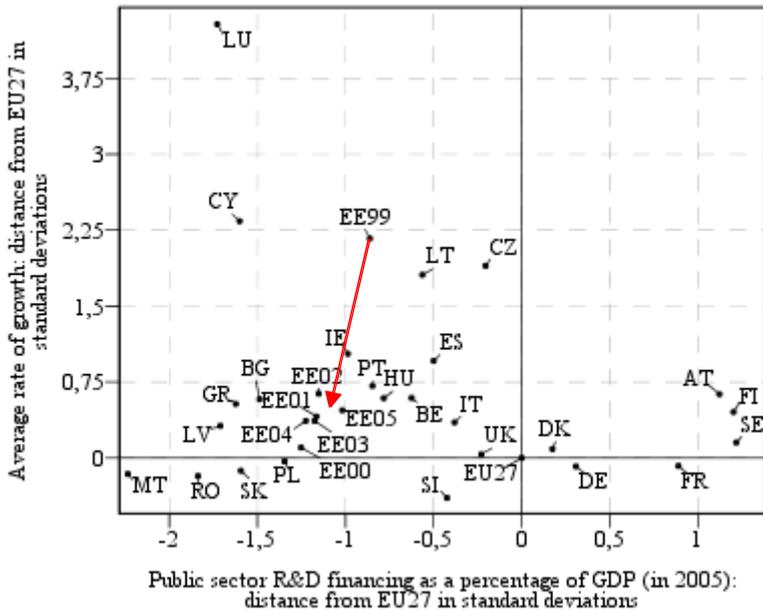


Figure 2. Estonia's position in EU according to public sector R&D financing (relationship to GDP) and dynamics. (Eurostat; calculation by the authors)

Estonia has a public sector R&D expenditure level about a third less than the EU average: respectively 0.42% and 0.64% of GDP. The highest R&D cost share of GDP is in Finland and Sweden (0.9%).

When viewing Estonia's R&D expenditure change over time, it can be seen that public sector R&D as a percentage of GDP for 1998-2005 has risen. The highest

increase was in 1999 compared to 1998, when the share of R&D expenditure from GDP grew 18.4%.

Most of the new knowledge created by the state is created at universities and public sector institutions. The higher education sector enjoys the majority of public sector expenditure and that share has been relatively even in Estonia: 64-73% of public sector R&D expenditure.

Besides creating innovation knowledge, the preparing a competent workforce is very important. Next, we will analyse public sector education cost level and dynamics in comparison to other EU members (see figure 3). The development path of Estonian education costs can be viewed for 1999-2005. The background of other EU members has been created using 2005 data. From figure 3 it can be seen that Estonia was in quadrant II, which means it was a “leader”, but for 2000-2003, Estonia dropped into quadrant III, which means it became a “renegade from leader role” and was moving towards quadrant IV. During the years 2004-2005, Estonia was already among the “losers” when taking into account the education cost level, lagging behind the EU average in respect to the public sector education cost level as well as the growth rate. That is why Estonia’s competitive position viewed from that aspect has become worse among EU countries.

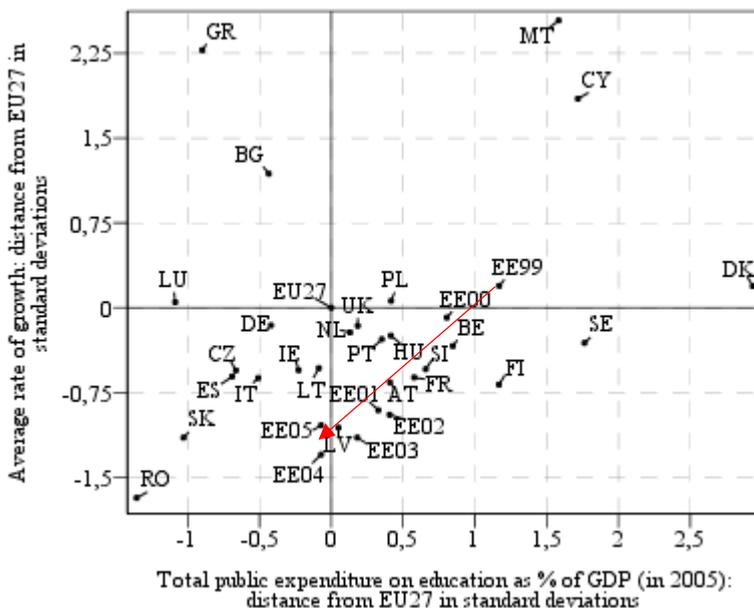


Figure 3. Estonia’s position in EU when taking into account public sector education cost level (relationship to GDP) and dynamics. (Eurostat; calculations by the authors)

The education cost level as a percentage of GDP was 4.92% in Estonia in 2005, and the EU average was 5.00%. Compared to countries with the highest public education sector costs level (Denmark 8.3% and Sweden 7.0%), Estonia's level is respectively 40% and 30% lower.

As the number of students differs among different countries, then public sector education costs per student should be compared. Therefore, we will only view those education costs per student that go directly to educational institutions. In figure 4, a competition field diagram has been presented, where Estonia's and EU countries' public sector education costs level (per student) and dynamics has been presented. Estonia's development path can be viewed for 2000-2005 and the background for other EU members has been given on the basis of 2005 data. In the period 2000-2002, Estonia was in quadrant IV and so among the "losers", but starting from 2003, the average growth rate of that indicator has been above the EU average. That means that for 2003-2005, the level of public sector education costs (per student) was less than average in Estonia, but higher than the EU average growth rate and this put Estonia in quadrant I among the "aspirers".

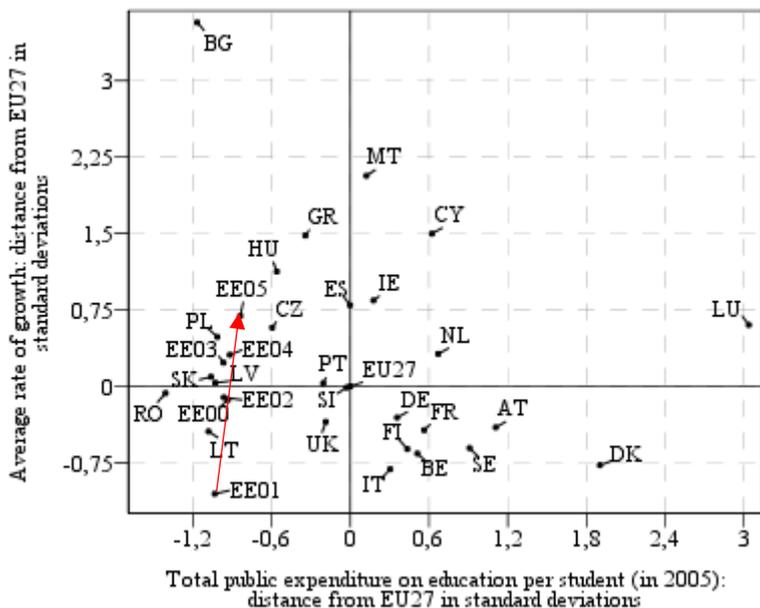


Figure 4. Estonia's position in EU in respect to the level and dynamics of public sector education costs per student. (Eurostat; calculations of authors)

In 2005, total public expenditure on education per student was 3 204 EUR (PPS). The average in the EU was 4 527 EUR (PPS) per student; that means about 1.5 times higher than in Estonia.

Next, (see figure 5) the Estonian innovation competitiveness pattern is presented in respect to the levels and dynamics of all previously viewed components plus two other innovation indicators are added: business sector and higher education sector R&D expenditures (in relation to GDP).

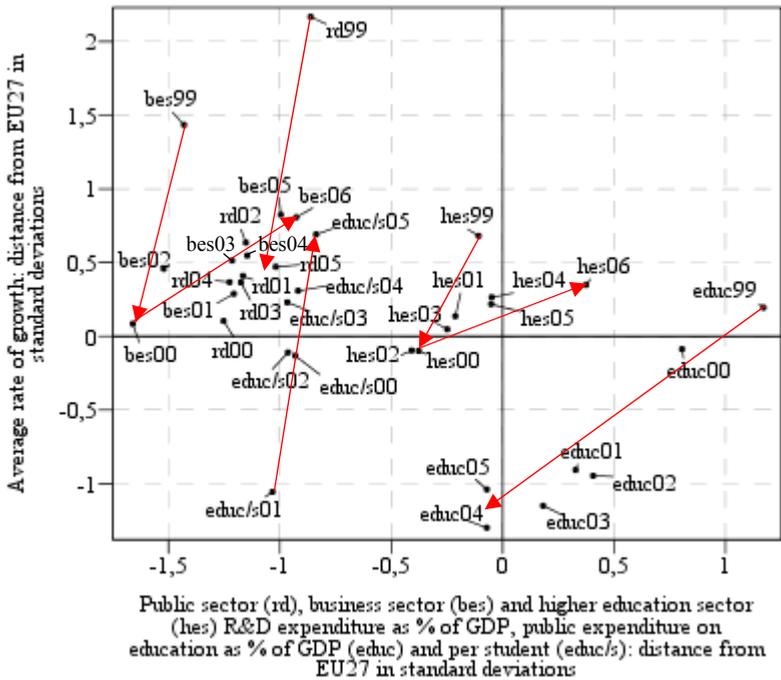


Figure 5. Estonia’s innovation competitiveness pattern in the EU in respect to set levels and dynamics of components of innovation. (Eurostat; calculations by the authors)

When looking at the business and higher education sector R&D expenditure, Estonia’s development path can be viewed for 1999-2006. According to business sector R&D expenditure, Estonia is in quadrant I, which means among the “aspirers” – business sector R&D costs were lower than the EU average, but the growth rate was higher. According to higher education sector R&D expenditure, Estonia has moved between different quadrants in the years under observation, but in 2006, Estonia was in quadrant II, which means among the “leaders” – higher education sector R&D costs and average growth rate were higher than the EU average.

In conclusion, the following chart is drawn (see figure 6), which relies on the relationship of the Estonian and EU average innovation indicators to the set’s highest value. As there was no EU average for some indicators, then for those only the Estonian share of the highest value has been presented. Figure 6 provides a good

overview of which indicators are higher in Estonia compared to the EU average and how the Estonian values compare to the highest value for each indicator in the entire sample.

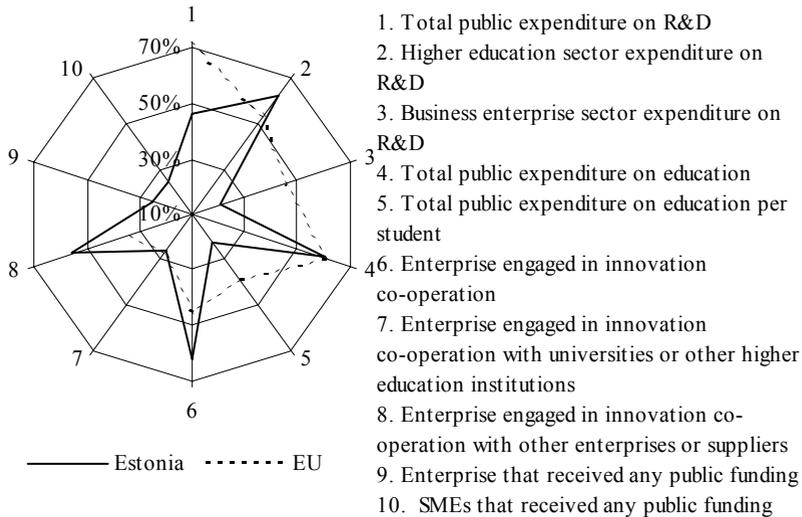


Figure 6. The level of Estonian innovation indicators in comparison to the EU average. (Eurostat; composed by the authors)

In Estonia, the values for indicators 2, 6, and 8 are higher than the EU average. That is why the costs in Estonia higher education sector R&D are relatively high and innovation cooperation is carried out by a relatively large share of innovative firms. Cooperation with other firms and suppliers is remarkably higher in Estonia compared to the EU average. At the same time, all three indicators make up below 65% of the highest value.

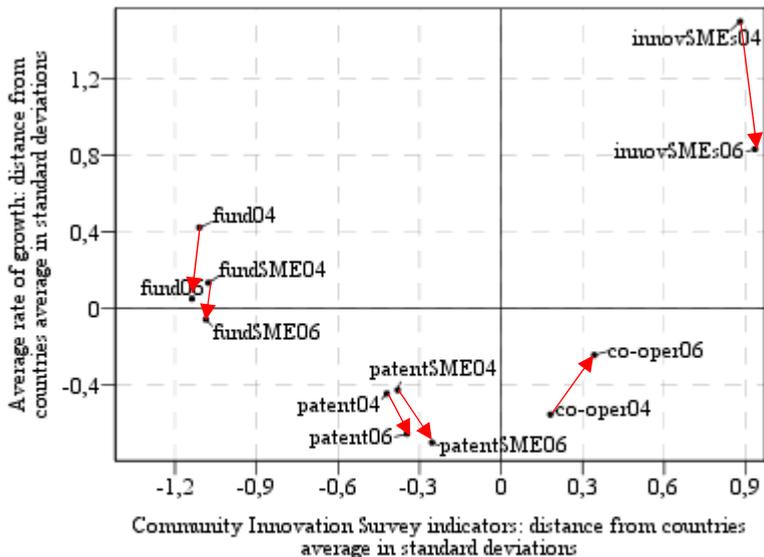
The values for indicators 4 and 7 are roughly on the EU average level. That is why public expenditure on education (from GDP) and the share of innovative firms that cooperate with universities and other higher education institutions in Estonia is on about the same level as the EU average. The average Estonian level is respectively 60% and 25% of the highest values. The Estonian public sector must provide more support for cooperation between firms, universities and public sector research institutions.

The values for indicators 1, 3 and 5 are lower than the EU average in Estonia. That is why public sector R&D costs, public expenditure on education per student and business sector R&D costs are low in Estonia. From this the Estonian public sector should increase public sector R&D expenditure and education costs. Attention should be drawn to encouraging the private sector, so that firms can also increase R&D costs.

There is no comparison with the EU average for figures 9 and 10, but only in one member state are values lower than in Estonia. That is why SME innovation activities have been left without attention and financial support to innovative firms is very low in Estonia.

4. Assessing Estonia’s innovative position using indicators from the Community Innovation Survey and innovation charts

In figure 7, the pattern of Estonian innovation competitiveness is presented using the level and dynamics from certain indicators in the Community Innovation Survey (CIS). These indicators are the share of innovative firms involved in innovation cooperation, the share of firms that have made patent applications, the share of innovative SME and the share of innovative firms that received any public funding. The Estonian development path can be viewed with the help of CIS4 and CIS2006.



Share of innovative firms making innovation cooperation (co-oper) and that received any public funding (fund), share of firms/SME that have made patent applications (patent/patentSME), share of innovative SME (innovSME), share of innovative firms/SME that received any public funding (fund/fundSME).

Figure 7. Estonia’s innovation competitiveness pattern using the values and dynamics for CIS indicators (Eurostat; calculations by the authors).

Using the innovation cooperation indicator, Estonia is situated in quadrant III, which means it is among “renegades from leader role”. So Estonia is characterised by a greater share of firms that have made innovation cooperation than the EU average, but a less than average growth rate.

In the period 2002-2004, at least some innovation cooperation was carried out by 34.82% of innovative firms; the EU average was 25.50% of innovative firms. To some extent, more innovative firms were involved in innovation cooperation (39.47%) in the period 2004-2006. Table 2 summarizes the share of firms that have been involved in innovation cooperation from the total number of innovative firms and this has been observed using different cooperation partners.

Table 2. Share of firms that have been involved in innovation cooperation from the total number of innovative firms in 2002-2004 and 2004-2006 (%)

	Estonia	EU	Highest	Latvia	Lithuania
In period 2002-2004 (CIS4)					
All types of innovation co-operation	34.82	25.50	Lithuania 56.11	38.83	56.11
Innovation cooperation with universities or other higher education institutions	8.57	8.84	Finland 33.1	13.86	12.03
Innovation cooperation with government or public research institutes	6.07	5.67	Finland 26.35	12.10	9.60
Innovation cooperation with other enterprises of the same sector	18.49	8.34	Finland 34.22	25.08	25.44
Innovation cooperation with consultants, commercial labs, or private R&D institutes	9.98	8.89	Finland 32.67	18.26	24.94
Innovation cooperation with suppliers	23.32	16.52	Lithuania 45.45	32.56	45.45
In period 2004-2006 (CIS2006)					
All types of innovation co-operation	39.47	-	Cyprus 68.8	39.11	51.16
Innovation cooperation with universities or other higher education institutions	9.34	-	Finland 35.99	16.86	18.81
Innovation cooperation with government or public research institutes	4.95	-	Finland 27.86	14.05	8.69
Innovation cooperation with other enterprises of the same sector	16.05	-	Finland 35.59	20.73	18.33
Innovation cooperation with consultants, commercial labs, or private R&D institutes	10.73	-	Cyprus 44.76	18.15	22.78
Innovation cooperation with suppliers	22.76	-	Cyprus 62.42	32.79	40.42

Source: Eurostat; calculations by the authors.

From table 2 we see that according to the CIS4 questionnaire in Estonia, innovation cooperation was conducted at a higher level than the EU average with other enterprises of the same sector, suppliers, consultants, commercial labs or private R&D institutes. To some extent less cooperation was conducted with universities or other higher education institutions than the EU average. The cooperation figures were highest for 2002-2004 in Finland and in Lithuania. Attention should be drawn to the fact that among all cooperation partners more innovation cooperation was conducted in Latvia and Lithuania than in Estonia.

In the period 2004-2006 (CIS2006), more innovation cooperation was conducted in Estonia with universities and other higher education institutions, consultants, commercial labs or private R&D institutes than for 2002-2004 (CIS4). Among other cooperation partners, the share of innovative firms that have cooperated has fallen. Most cooperation in the period 2004-2006 was conducted in Finland or in Cyprus, and still all the shares of firms that have cooperated is higher in Latvia and Lithuania than in Estonia.

Derived from this, it can be concluded that compared to the other EU member states, Estonian firms cooperate relatively more with other firms (from the same economic sector as well as with suppliers). At the same time, the cooperation of firms with universities and public research institutes is relatively low in Estonia. That is why Estonia should support cooperation between firms, universities and public sector research institutions. For instance, the state could initiate a communication channel, so that universities and research institutions could be informed about which innovations firms need, and so that firms could be informed about what research universities and research institutions could offer.

When looking at patent application indicators, it can be seen that Estonia is in quadrant IV, which means among the “losers” (see figure 7). In Estonia the share of firms that have applied for patents and their growth rate is lower than the EU average. That is why Estonia’s competitive position among EU countries is low when viewed in this area.

Of the Estonian firms questioned in CIS4, only 3.22% had applied for a patent in 2002-2004. In the CIS2006 survey, the figure dropped even more – in the period 2004-2006 only 2.29% of firms applied for patents. The share of SMEs that applied for patent in 2002-2004 and 2004-2006 was also very low in Estonia – respectively 2.85% and 2.15%. Private sector innovation is strongly supported by SMEs and the public sector should help them.

We will now look at the European SMEs that answered the CIS4 and CIS2006 questionnaires. When taking into account the innovative SME figure, then Estonia is in quadrant II, which means among the “leaders” (see figure 7). In other words, Estonia is characterised by a greater share of SMEs and a greater growth in the number of SMEs than the EU average.

Of Estonian SMEs questioned in CIS4, 47.79% were engaged in innovative activities and the EU average was 38.22%. In CIS2006 the share of innovative SMEs in Estonia was somewhat smaller (47.11%). The highest share of SMEs was in Germany – 63.5% (CIS4) and 61.0% (CIS2006).

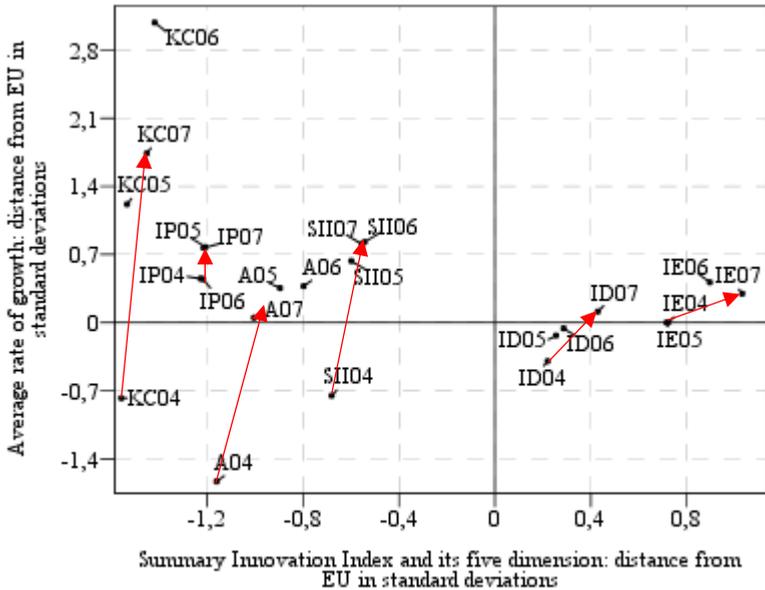
According to public sector financial support figures, Estonia is in quadrant I, which means among the “aspirers” (see figure 7) – the share of innovative firms that received any public funding was lower than the EU average, but the growth rate was higher. At the same time Estonia is moving towards quadrant IV. The share of innovative SMEs that received any public funding in Estonia has reached quadrant IV, which means among the “losers”, having lower than EU average growth rate.

The share of innovative firms that received public sector financial support in 2002-2004 and 2004-2006 was low in Estonia compared to other EU countries – respectively 9.71% and 9.49%. Only in Bulgaria was the figure lower – respectively 4.9% and 8.1%. The share of innovative SMEs that received any public funding in 2002-2004 and 2004-2006 was also low in Estonia – in both cases 9.32%. These figures were only lower in Bulgaria – respectively 4.1% and 7.7%.

A relatively large number of SMEs are engaged in innovative activities in Estonia. At the same time, only a small proportion of Estonian innovative SMEs received public sector financial support. Governments in Estonia should pay more attention to supporting innovative activities among SMEs. The share of large firms that received public sector financial support was two times higher in Estonia than the share of SMEs. One reason for this could be that SMEs do not have the competence to apply for support. That is why measures should be taken to raise the awareness of public sector financial support applications among SMEs.

The European Innovation Scoreboard, created at the initiative of the European Commission, lists EU member states according to innovation capability. The innovativeness of countries is measured using the Summary Innovation Index (SII). To calculate the SII index, 25 innovation indicators are used, which have been divided into five categories: innovation drivers, knowledge creation, innovation and entrepreneurship, applications and intellectual property (European ... 2008: 8). The first three categories involve innovation input indicators and the other two, output indicators.

Figure 8 presents the Estonian innovation competitiveness pattern using the European Innovation Scoreboard indicators and their dynamics. The Estonian development path can be seen for 2004-2007.



ID - innovation drivers; KC - knowledge creation; IE - innovation and entrepreneurship; A - application; IP - intellectual property

Figure 8. Estonian innovation competitiveness pattern using European Innovation Scoreboard indicators and their dynamics. (European Innovation Scoreboard; calculations by the authors)

According to SII, Estonia was in quadrant IV in 2004, which means among the “losers”, but starting from 2005 Estonia had a lower value in SII than the EU average, but at the same time a higher growth rate. So Estonia is now situated in quadrant I, which means among the “aspirers”. In Estonia, the SII value was 0.37 in 2007, which is to some extent lower than the EU average – 0.45. In Sweden the SII value was the highest (0.73).

In terms of innovation drivers, we see that Estonia was in quadrant III in 2004-2006, which means among the “renegades from leader role”, moving towards quadrant II. In 2007, Estonia arrived among the “leaders”, having more than EU average value in the innovation driver category and to some extent a higher growth rate. So the structural changes needed for innovation in Estonia are better than average. The best structural conditions had been created in Denmark, Finland, Sweden and UK in 2007.

In terms of knowledge creation, Estonia was in quadrant IV in 2004, which means among the “losers”, but from 2005, Estonia is described as having low knowledge creation value, but a higher growth rate than the EU average. So Estonia is now in

quadrant I, which means among the “aspirers”. In terms of knowledge creation, Estonia is among the stragglers in the EU. Only in four countries were R&D investments on a lower level than in Estonia in 2007 – Latvia, Malta, Slovakia and Romania. The EU average for this indicator was three times higher than in Estonia. The highest R&D investments were in Sweden, Finland and Germany.

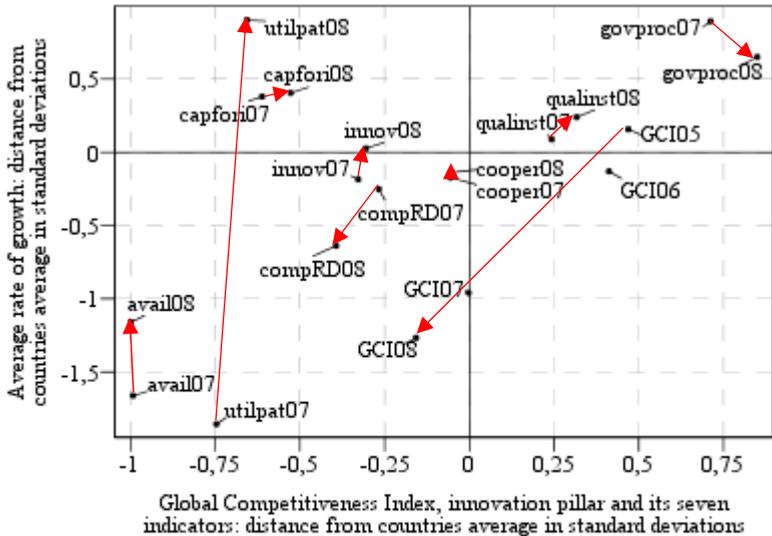
In terms of innovation and entrepreneurship, Estonia has been in quadrant II, which means among the “leaders” during all years under observation, having more than the EU average indicator value and growth rate. In terms of innovative entrepreneurial activity, Estonia was in fourth place in the EU in 2007. Only in Sweden, UK and Cyprus were innovation activities higher than in Estonia.

In respect to the application of innovation, Estonia was in quadrant IV, which means among the “losers” in 2004, but since 2005 Estonia has had a lower than average innovation implementation value, but at the same time higher than average growth rate. So Estonia is now situated in quadrant I, which means an “aspirer”. In respect to innovation implementation Estonia was in 20th place in the EU in 2007. On the same level with Estonia were Poland and Bulgaria. The effectiveness of innovative sectors was the highest in Malta and Germany.

With respect to intellectual property, Estonia was in quadrant I in 2004-2007, which means among the “aspirers”. Estonia is characterized with relatively low intellectual property category value, but higher than EU average growth rate. From intellectual property aspect Estonia was lower than EU average in 2007. In respect of knowledge growth best results were achieved in Germany, Luxemburg and Sweden.

The Global Competitiveness Report from the World Economic Forum lists world countries on the basis of competitiveness. Competitiveness is measured using the Global Competitiveness Index (GCI). The GCI shows 12 different pillars, of which the last is dedicated to innovation. Within this framework, the ability of an economy to produce new technologies is assessed using seven indicators: capacity for innovation, quality of scientific research institutions, company spending on R&D, university-industry research collaboration, government procurement of advanced tech products, availability of scientists and engineers and utility patents (The Global ... 2008).

Next (see figure 9), Estonia’s position in comparison to other EU members will be viewed in respect to the GCI, innovation pillar and its sub-indicators. Using the GCI we can monitor the Estonian development path for 2005-2008, but the innovation pillar and its indicators only for 2007 and 2008.



innov - innovation pillar; capfori - capacity for innovation; qualinst - quality of scientific research institutions; compRD - company spending on R&D; cooper - university-industry research collaboration; govproc - government procurement of advanced tech products; avail - availability of scientists and engineers; utilpat - utility patents

Figure 9. Estonian innovation competitiveness pattern using the GCI, innovation pillar and its indicators values and dynamics. (Global Competitiveness Report; calculations by the authors)

According to the GCI, Estonia was in quadrant II, which means among the “leaders” in 2005, but moving through quadrant III reached quadrant IV, which means among the “losers” in 2007, where it also stayed in 2008. So Estonia’s competitiveness and its growth rate are lower than the EU average. In Estonia the GCI value in 2008 was 4.67, which was somewhat lower than the EU average – 4.75. The GCI value was highest in Denmark (5.58).

In terms of the innovation pillar, Estonia was in quadrant IV, which means among the “losers” in 2007, but in 2008 it reached quadrant I, which means among the “aspirers”. So Estonia can be said to have an innovation indicator lower than the EU average, but a higher than average growth rate. Estonia was in the middle of EU ranking – 13th place, according to 2008 innovation assessment. Finland, Germany, Sweden and Denmark had the highest rankings.

Estonia’s strengths in the field of innovation are government procurements of advanced tech products, the quality of scientific research institutions, capacity for innovation and utility patents. Estonia’s problems are a lack of scientists and

engineers, university-industry research collaboration and low company spending on R&D. So the public sector should pay attention to creating new knowledge and raising the qualifications of workers, but also encouraging firms to increase their R&D expenditure.

Conclusions

During the last decade Estonian economic development was mainly based on the production and export of traditional labour and resource intensive products, whereas innovation has played a less important role. Although innovation has been defined in various ways, and it takes place within private and public economic units, some authors stress that innovation activity should provide competitive advantage and economic profit.

The modern stage theory of development focuses on innovation. Three developmental stages are considered. In stage 1 development is natural resource and labour driven, whereas in stage 2 capital and imported technology are the main developmental factors. Stage 3 development is dominated by R&D and innovation. Therefore, innovation policy is a central instrument of development policy. Estonia has reached the investment driven stage 2. It has to apply instruments of innovation policy to develop from a technology importing country to an innovation-based country.

Therefore, innovation policy is one of the main tasks of Estonian economic policies. The public sector has to provide knowledge and other inputs for the innovation process. Moreover, it should provide and develop innovations in its research institutes and public offices – universities, vocational colleges and public enterprises. The public sector is responsible for an innovation friendly legal environment and should control and encourage innovations via procurement and investment policy. Much financial assistance should be offered to start ups, to developing innovative firms and as far as it possesses large firms that have to apply innovative technologies. Co-operation among them should be backed and investment in information and communication technology needs to be a priority.

For Estonia as a small transformation country the potential of the public innovation policy is rather limited. Moreover, this policy is embedded in macroeconomic and microeconomic regional competition, which takes place as development competition and in the form of project oriented competition. Rather harsh oligopolistic competition prevails in development competition. Monopsonies and oligopsonies prevail in project oriented regional competition.

To discover the actual competitive situation with respect to competitive innovation policy, a statistical comparison between Estonia and European Union members and the average situation in the European Union was carried out. A successful competitive innovation policy raises the national income and its growth. The conditions for a public innovation policy to contribute positively to these items and the potential of success of innovation policy are expressed through indicators. The value of the indicators mainly used in Estonia and partly chosen by the authors as

well as indicators applied in the Community Innovation Survey (CIS), the Summary Innovation Index (SII) and the Global Competitiveness Index (GCI) were used, determined and calculated by the authors. The position of the member countries of the European Union are calculated and measured along the X-axis of a coordination system and the changes are determined and measured along the Y-axis. In this way members who are “leaders” in the second quadrant, “renegades from the leader role” in the third quadrant, “losers” in the fourth quadrant and aspirers in the first quadrant were identified.

The investigation of the first group of indicators shows the following interesting results. Estonian higher education sector expenditures in R&D and the co-operation of firms concerning innovations are above the average EU level. Total public R&D expenditures and that of businesses are lower than the European average.

Therefore, the Estonian public sector should promote cooperation between firms, universities and public sector research institutions and should spend more on public sector R&D expenditure and education programs to encourage firms to increase R&D. The Community Innovation Survey (CIS) refers to the share of innovative firms involved in innovation cooperation, the share of firms that made patent applications, the share of innovative SMEs and the share of innovative firms receiving public funding. Estonian firms cooperate relatively often with other firms in the same economic sector and with suppliers. However, the cooperation between firms and universities and public research institutes is relatively low. The number of patents is low in Estonia and with respect to support for innovative small firms we obtained the same result as with the first indicator group.

The innovativeness of EU-countries is measured using the Summary Innovation Index (SII), where 25 innovation indicators are assigned to five categories: innovation drivers, knowledge creation, innovation and entrepreneurship, applications and intellectual property. During the last years, Estonia has developed from a “looser” position to that of an “aspirer”. Successful structural reforms in innovation policy signal innovation driver indicators here in Estonia to move in the direction of a “leader” position. Entrepreneurial innovativeness category is also among leaders. The positive development of knowledge creation and an innovation application system has resulted in Estonia reaching the “aspirer” position where also protection of intellectual property category stands.

Competitiveness measured using the Global Competitiveness Index (GCI) refers to the role of innovations as well. The respective seven indicators are: capacity of innovation, quality of scientific research institutions, company spending on R&D, university-industry research collaboration, government procurement of advanced tech products, availability of scientists and engineers and utility patents. In total, Estonia’s competitiveness and its growth rate are lower than the EU average. Estonia possesses a “loser” position. According to single indicators, Estonia does well in the field of government procurements of advanced tech products, with respect to the quality of scientific research institutions, capacity for innovation and utility patents.

The problems in Estonia are the lack of scientists and engineers, university-industry research collaboration and low company spending on R&D.

The Estonian government sector should promote new knowledge creation, improve workers' skills and encourage firms to increase their R&D expenditure. The public sector has to execute an active innovation policy using the instruments mentioned, and the government can learn about the necessary and promising field of innovation policy from this comparison with European indicators.

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TOWARDS EFFECTIVE EDUCATIONAL POLITICS THROUGH IMPROVING THE PERFORMANCE MEASUREMENT SYSTEM

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Abstract

Educational field is impelled to increase performance and quality, financial discipline, strategic behaviour and its goals in order to enhance “effectiveness”. As a result the incorporation of private sector management practices into the educational field is taking place. But it is important to notice that a proliferation of private managerial practices into the educational field goes along with a conflict-laden and contradictory process. Education provides an important area of implementation for techniques of performance evaluation aimed at improving the performance of public services. One of the most common conceptual frameworks in measuring organisational performance takes the form of a production function where the educational institution is seen as analogous to a company transforming inputs into outputs and outcomes through a production process. But the problems and the vagueness in determining educational system’s inputs, outputs and outcomes cause difficulties in making political decisions and that is why clear policy prescriptions have been difficult to derive.

The purpose of this article is to create a discussion whether performance measurement should be a part of decision-making in educational politics. The authors debate about incorporating private sector management practices into the educational field. The debate is based on the example of evaluating the social impact in the educational field and the performance of teachers’ work in the educational system. The article consists of three parts. Firstly, the theoretical background of the performance measurement in educational field is discussed. Secondly, the important criteria for performance measurement design and political issues are argued. Thirdly, the evaluated shortcomings in Estonian educational organisations, which restrict them to be effective, are brought out. Relieving some of these shortcomings could be in authority of Estonian educational politics.

Keywords: performance, efficiency, measurement, appraisal, educational politics

Introduction

In recent years, educational field organisations have witnessed many changes in their environment. Public schools must compete with private schools. These pressures have pushed them to continuously improve their performance. During the 1990s, in what has become known as the “new public sector”, many services in advanced economies have come under pressure to become more efficient and effective, so as to reduce their demands on taxpayers, while maintaining the volume and quality of services supplied to the public (Brignall, Modell 2000: 281). To achieve this, several private sector management techniques like performance management and performance evaluation are incorporated to public service practice.

But it is important to notice that a proliferation of private managerial practices into the public sector and also to educational sector goes along with a conflict-laden and contradictory process.

For example the dominant view in the public policy and administration literature is that public and private organisations are so different that New Public Management prescriptions, which tell that public organisations should import managerial processes and behaviour from the private sector, are inappropriate. While many of the issues that arise in its use are common to both sectors, researchers studying the behaviour of public sector organisations have recently drawn attention to the fact that the public sector is different from the private sector and, therefore, a public sector organisation faced with change in incentives will not necessarily behave in the same way as a private sector one. (Propper, Wilson 2003: 251) Same criticism accompanies educational institutions. But still performance management is used in both the private and public sectors and is becoming more common in educational institutions.

Management techniques cannot be exported successfully from one sector to another because of differences in organisational environments, goals, structures, and managerial value etc. These variables represent a set of contingencies that require different approaches to management in public agencies and private firms. (Boyne 2002: 118) Boyne also tested many hypotheses about the differences between public and private organisations. The findings show that only three of the hypotheses are supported by a majority of the empirical studies: public organisations are more bureaucratic, and public managers are less materialistic and have weaker organisational commitment than their private sector counterparts (Boyne 2002: 97). Authors believe that it is possible to incorporate private sector managerial processes to public including educational field, if their singularity is taken into account. Thus, if public managers are to derive lessons from the private sector, the first step is to ascertain more clearly the determinants of performance in private organisations, compare them to the ones in their sector, and then develop an appropriate system based on public service organisation's objectives. The authors make the same proposal to educational institutions.

Performance management involves aligning human resource management practices so that employee performance and development are enhanced, with the aim of maximising organisational performance (Hartog et. al 2004: 558). High performance is proposed to positively affect employees' commitment, trust, and motivation. Employees will be motivated by personal as well as organisational success. For example, performance affects commitment as much as vice versa. Empirical support for such processes is available from several researches (Locke, Latham, 2002: 707-708).

Lately, performance management is more valued in both Estonian private and public organisations, which also creates the need to evaluate the work performance of the organisations, their divisions, and employers. The term "performance management" is used differently by many authors, but it mainly stands for managing the

organisation by its objectives. Good performance management provides direct benefits to the organisation through a rigorous, focused approach to the achievement of goals (Macaulay, Cook 1994: 7; Winstanley, Stuart-Smith 1996: 66-67, Hartog *et. al.* 2004: 556).

Introducing performance management into industry, trade, and service organisations was common in developed countries during the 80's. In the last decade, it is used to motivate public servants. From the motivational systems research of the State Chancellery of the Republic of Estonia, the results show that performance management is one of the fields that would increase public servants' devotion and performance (Avaliku teenistuse motivatsioonisüsteemide ... 2007: 45). Unfortunately there is no such research about employees in educational field; therefore there is no proof of willingness to adapt new management approaches into educational institutions. That is a problem, because for example Marsden and French (1998: 121) claimed in their research that teachers' resistance to new performance management system result from the resistance to changes.

Performance measurement is a topic which is often discussed, but is not defined very often. It is said to be the process of quantifying action, where measurement is the process of quantification and action leads to performance (Neely *et al.* 2005: 1228-1229). The authors point out that measurement may be the process of quantification, but its effect is to stimulate action, because all organisations' strategies are realized only through consistency of action.

Irrespective of the multitude of the literature and articles written on the topic, the perpetual "reliable criterion problem" and the creation of effective measurement system continues to receive considerable attention within the performance management literature (Fletcher 2001: 474). It is said that it is impossible to manage something if you cannot measure it. Senior executives understand that their organisation's measurement system strongly affects the behaviour of managers and employees (Kaplan, Norton 1992: 172). But there is a danger that organisations implementing measurement systems can become too obsessed with performance measurement, potentially at the expense of performance management. That is why the question is raised – how to develop dynamic rather than static measurement systems and how to ensure an appropriate focus on organisation's performance management, rather than simply performance measurement. (Neely 2005: 1272) There is another question for politicians – should performance measurement be a part of decision-making in educational politics?

Nowadays managers realize that no single measure can provide a clear performance target or focus attention on the critical areas of the organisation's action. The balanced view is used, where both qualitative and quantitative performance indicators are used.

Performance measurement and political issues in educational field

Performance management is progressively used in managing educational institutions, which also creates the need to evaluate the work performance of these institutions and pedagogues. Performance management is a way of helping educational institutions to improve by supporting and improving pedagogues' work, both as individuals and in teams. Performance management focuses attention on more effective teaching and leadership to benefit pupils, teachers, and educational institutions (Performance management in ... 2000). It sets a framework for pedagogues and school leaders to agree and review priorities and objectives within the overall framework of schools' development plans.

Though performance measurement has many positive impacts, there are also reasons why politicians are not interested in constructing an effective measurement system. Based on third sector examples Dees (2007) argues that there are at least two reasons why not to be interested in performance measurement. First, if not to invest in performance assessment, then more money goes for programs. Secondly, it might be more popular to support a needy organization, rather than one that seems to be doing well, even if the latter could create more impact dollar for dollar. Resource flows depend more on sentiment, popular causes, personal charisma, and marketing skills than on social value creation. Additionally, it is said to be one of the main weaknesses of democratic societies that instead of launching long-term projects, politicians just tend to hold selected positions. Therefore, short-term planning is common in politics and it is essential to achieve mostly tangible objectives and to do it quickly. The reason is that the process of evaluating impact is so difficult and time-consuming, and politicians are afraid that their effort is attained to others who will get selected later.

The principles and tasks in public, including educational field are quite multiple and vague, therefore performance relative to these goals is difficult to measure. Performance measures in the public sector as in education are substitutes for profitability measure in the private sector. They are essentially measure of productivity and efficiency. Whereas the ultimate test of a private sector organisation's performance is the bottom line of profit, measuring the performance of public sector organisations (central and local government, schools, hospitals, etc.) is more difficult and calls for a complex mosaic of indicators. Some areas of performance do not allow quantification. For many decisions the immeasurable might be more important than the measurable. Quantification also often means simplification. This is especially true when considering quality, consumer satisfaction and the effectiveness of many social services. (Jackson 1988: 11-14) Education provides an important area of implementation for techniques of performance evaluation aimed at improving the performance of public services. Education is currently an area with a high national priority in Estonia, in the United Kingdom, United States, and elsewhere.

One of the most common conceptual frameworks employed in the economic analysis of organisational performance and also in educational field takes the form

of a production function (Worthington 2001: 245). Here, the educational organisations are seen as analogous to companies transforming inputs into outputs and outcomes through a production process (see figure 1).

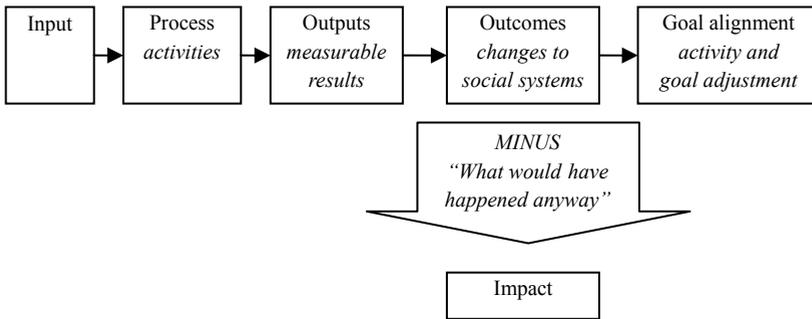


Figure 1. The transformation process of inputs to outputs, outcomes, and goal alignment. (Clark, Rosenzweig, Long, Olsen 2004: 9)

Input includes all the resources that are committed to the organisation, which means both tangible (pecuniary and non-pecuniary means) and intangible (mainly workforce) resources. Typical inputs in the education production function are the characteristics of the teaching and learning environment (Worthington 2001: 245). The general conceptual model describes the achievement of a given student at a particular point in time as a function of the cumulative inputs of family (socio-demographic characteristics of the families), peers or other students (aggregate summaries of the socio-demographic characteristics of other students in the school), and schools (class sizes, facilities, administrative expenditures, and so on) and teachers (education level, experience, sex, race, and so forth). These inputs also interact with each other and with the innate abilities, or “learning potential”, of the student. Hanushek (1986: 1155) brings out two points that deserve emphasis: the inputs should be relevant to the students being analyzed; and the educational process should be viewed as cumulative – past inputs have some lasting effect, although their value in explaining output may diminish over time. Failure to recognize these points has probably caused the greatest problems in interpreting individual studies, the teachers’ work performance and schools’ performance.

While measuring educational organisations’ performance, the value added to the society is being discussed. Therefore the measurement of the process is essential. Output, outcomes, impact and goal alignment all express the benefits that arise from the educational process. Generally there is an opinion that the most proper measure for value added is the evaluation of impact. The impact is the portion of the total outcome that happened as a result of the activity, above and beyond what would have happened anyway (Clark Rosenzweig, Long, Olsen 2004: 9). Impact is difficult to measure; therefore, it is measured indirectly through measuring outcomes and qualitative analysis. Outcomes comprehend all the changes in the social system while output stands for all the results that can be directly measured. Outputs for an

after-school program, for example, could include the number of children participating in the program, the percent that drop out, and the percent that re-enrol the following year. For the after-school program, desired outcomes could include higher self-esteem for participants or higher educational achievement for participants. (Clark Rosenzweig, Long, Olsen *et al.* 2004: 8) It is important to notify that it is difficult to determine the output and outcomes of educational process that is itself influenced by numerous elements which lie outside the formal education context (the socio-economic environment of the family, innate abilities, accumulated human capital etc.) (Mancebon, Bandres 1999: 134). Although it is difficult to measure whether the outcomes have been achieved, it is essential for educational organisations to define all these desired outcomes and outputs that correlate with these outcomes.

The outcome of the educational process – that is, the achievement of individual students etc. – is directly related to series of inputs. Some of these inputs – the characteristics of schools, teachers, curricula, and so forth – are directly controlled by policy makers. Other inputs – those of families and friends plus the innate endowments or learning capacities of the students – are generally controlled. Further, while achievement may be measured at discrete points in time, the educational process is cumulative; inputs applied sometime in the past affect students' current levels of achievement. (Hanushek 1986: 1150) To sum up, problems and the vagueness in determining inputs, outputs and outcomes makes the policy decisions for policy makers much harder.

Educational production outcomes are generally defined in terms of students' test scores. Considerable uncertainty exists about the appropriateness of using test scores as outcome measures. Existing empirical evidence is inconclusive about the strength of the link between test scores and subsequent achievement outside schools. How effective test scores are in measuring the contribution of schooling to subsequent performance probably varies at different points in the schooling process. Specifically, test scores might be more appropriate in the earlier grades, where the emphasis tends to be more on basic cognitive skills – reading and arithmetic- than in the later grades. (*Ibid.*: 1153-1154).

Measuring school's performance by test scores also brings out some difficulties that may lead to inefficiency. The average test results are compared between different schools and therefore schools are ranked by these average scores. But failure to maintain a high ranking may result in adverse consequences, such as poor chances of career advancement for individual teachers and head teachers, and a lower level of demand for places in the school from parents to whom the published school league tables are readily available. Once the performance management system places pressure on each educational institution to maximise its aggregate point score, the result may be a switching of pupils out of subjects that are perceived to cause difficulties for achieving target grade levels. Another problem is that those pupils who are on the borderline of achieving higher grades are identified and additional resources and attention is directed towards this borderline group. (Mayston 2003: 680) It is important to notify that schools also have to deal with students with poorer

performance by offering support systems for learning; and school's performance also depends on its socio-demographic environment. Each school's circumstances and efforts have to be taken into account to avoid misleading conclusion.

The use of academic test scores to measure the performance of teachers is also quite misleading. Particular problems in this regard include: statistical uncertainty, especially in the case of small classes; the fact that few schools use measures of year-on-year value added progress for all year groups; some classes are taught by more than one teacher; some teachers have greater access to teaching assistants than others; some parents use part-time private tutors to boost their children's performance; some pupils experience personal or home problems which may affect their academic performance; again, performance is not measured for the majority of subjects taught; and test scores do not take account of the fact that primary school teachers' job responsibilities usually include more than the academic performance of their pupils. (Brown 2005: 474-475) The complexity and multiple tasks of teacher profession make evaluating teachers' performance difficult. Also each teacher's effort and specific context has to be included to the evaluation.

However, a disturbing pattern in the multitude of studies of this type is that no strong empirical evidence exists to support the contention that traditional educational inputs have the expected positive influence on educational outcomes (Worthington 2001: 245). Many previous economic studies have concluded that school inputs do not matter because school output is often uncorrelated with input variations (Brown, Saks 1975: 571). That brings problems to educational policy makers who have made their decisions based on this input-output-outcome model. They often assume that inputs are strongly and positively correlated with outcomes but have not analysed the causal relations between these three parts of performance measurement.

Because of the vagueness in determining certain production model, including input, output and outcomes, clear policy prescriptions are difficult to develop. For example it is often believed that higher school expenditures and the optimal size of a class have an important positive influence on pupils' achievement. Therefore, in a number of programs, states either set explicit class size maximums or provide monetary incentives to have smaller class sizes. They also believe that higher school expenditures are related to school performance and, therefore, extra monetary incentives are directed to them. But researches have shown that none of these practices seem very useful from a public policy view related to student achievement. Likewise, the fact that a school spends a lot of money on each of its students simply gives little information on whether or not it does well in terms of value added to pupils. Instead states' primary justification must come in terms of compensating teacher or restricting the supply of teachers (Hanushek 1986: 1170).

Educational institutions worldwide are increasingly the subject of analyses aimed at defining, measuring and improving efficiency. The educational process is very complex, so any performance measurement system will at best be an imperfect measure of the multiple tasks undertaken by school and some of these tasks may be

inherently immeasurable. Educational institutions' performance, unlike the business corporations' performance, is impossible to measure in the value of money. Evaluating the performance of educational institutions is complicated because instead of measuring financial performance, the value added to the society needs to be measured. Evaluating the non-financial part of performance is the most difficult part of measurement.

Schools' main objective is to shape individuals who are active, capable of developing and to create the fundamentals for their successful subsistence in society (Eesti Vabariigi Haridusseadus 1992). It is very difficult to measure it reliably, therefore, there is a need to develop a measurement system and find information sources that accord to the schools' goals the most and which are associated with teaching and learning.

There are several characteristics of the educational process that complicate the evaluation of efficiency (Engert 1996: 250; Mancebon, Bandres 1999: 133-134):

1. Educational organisations have multiple objectives and multiple outputs and outcomes. Moreover, there are often conflicting opinions regarding the goals, and the relative importance of these goals, by the stakeholders of education. For example, emphasis could be placed on short-term cognitive results, intermediate "follow-up" tests, or long-term employment outcomes and prospects in higher education.
2. Many of the outcomes of an educational organisation cannot be unambiguously measured or quantified. For example, many educational outcomes are non-separable so that improvements in skills in one area may lead to improved skills in another, and/or be associated with an enhancement of self-esteem. Still other educational outcomes, such as socialization, do not allow parameterization.
3. The subject of exchange in the education market is not one single good with a physical and directly observable form, but rather an outcome made up of elements having a diverse nature (knowledge, attitudes, rules of behaviour, values) which are produced in a joint form and are difficult to measure and aggregate.
4. Many of the components in the process of education only reveal themselves later, once the education years have finished and even throughout the length of an individual's life cycle (attitudes towards life, position on the economic scale etc).
5. The educational process is cumulative over time.
6. An indeterminate part of education received by an individual is not the consequence of his passage through the education system but rather that of his personal experiences, of the communication media or of the relationships that he has had (family, social, friendships).
7. The educational process is carried out by the customer itself (the pupil), who represents a fundamental input and whose involvement is an authentic determinant of the products obtained (the time dedicated to learning, his interests, his innate capacities).
8. Limited knowledge of the true correspondence relating inputs to outputs in the educational production process is a major problem (Hanushek 1986: 1154).

All these characteristics mentioned above, need to be taken into consideration while analysing the evaluation results of educational institutions', teachers' and pupils' performance.

Creating an effective performance measurement system

There is a lot of literature on the topic of performance measurement and it is believed to be a very effective mean in management. Performance measurement system helps to identify organisation's key areas, problem areas, assists the organisation in updating strategic objectives and helps to make tactical decisions to achieve these objectives. It also allows feedback about the success of the decisions made. Performance measurement, if used appropriately, has the potential to support better decision making (Lancer Julnes, Holzner 2001: 693). Therefore, one might expect a movement toward its universal acceptance in support of better government. Instead, performance measurement is still not being used in many educational organisations.

It is argued that traditional models and approaches to performance management generally do not succeed in meeting their objectives, are flawed in implementation, act to demotivate staff, and are often perceived as forms of control which are inappropriately used to "police" performance (Winstanley 1996: 66). By one method or another, performance management and management information and performance indicators will continue to be key issues for organisations. If people's energies and activities are to be effective, then some thought needs to be given to an interlinked set of questions: clarity of objectives; communication of them; evaluation of progress measured against objectives chosen; and so on (Storey 2002: 336)

Different authors bring out several common flaws of performance measurement systems (Winstanley 1996: 67-70; Kravchuk, Schack 1996: 350):

- concentrating too much on the mechanics and design of performance management and measurement systems and on the control mechanism rather than managing organisation's performance;
- difficulties of setting performance objectives, their inability to reflect intangibles, their lack of flexibility to respond to change, and the problems of making objectives cover the whole job;
- poor development of the mission, vision and values;
- lack of fairness arising from the subjectivity and bias of the appraiser, as well as their lack of skill (there are two kinds of unfairness, procedural unfairness, in terms of the methods used, and outcome unfairness, in terms of the effects these have on people);
- the absence of unitary view of the organisation; usually only employers' view is represented.
- unfair and unreliable measurement criteria which do not cover the important areas and activities of the organisation or measures do not relate to the rate of improvement been introduced or which do not relate to both the long- and short-term objectives of the organisation.

Performance measures need to be positioned in a strategic context, as they influence what people do. Performance measures should be derived from strategy; that is, they should be used to reinforce the importance of certain strategic variables (Neely *et al.* 2005: 1231). This does not always appear to happen in reality. Performance measures can also be used to influence employees' behaviour. Actually the concept of measuring performance has broadened substantially during years. Earlier, it had rather elementary and raw control function, during what employees' performances were given quantitative estimations by its superiors (Pratt 1991). Nowadays it also concludes a lot of activities by what organisation tries to evaluate its employees, motivates them, trains, develops and promotes them and tries to improve organisations efficiency, also rewards are given for efficient work (Mani 2002: 141-142).

Here the authors bring out criteria for performance measurement design based on many sources (Globerson 1985: 640; Neely *et al.* 2005: 1244-1245; Storey 2002: 331; Neely *et al.* 2005: 1229-1231; Modell 2004: 44; Kravchuk, Schack 1996: 350)

- Measures should be directly related to the organisation's strategy.
- The measures should be designed so that they stimulate continuous improvement rather than simply monitor.
- Performance criteria must be chosen from the organisation's objectives.
- Performance criteria must make possible the comparison of organisations which are in the same business and also comparable on different moments.
- Measures should be adaptable and flexible meaning that they should change while circumstances change.
- Measurement strategy must be explicit. The purpose of each performance criteria must be clear, the measures should be simple and easy to use and provide fast feedback.
- Data collection and methods of calculating the performance criteria must be clearly defined.
- Both financial and non-financial measures should be adopted.
- Performance criteria should be under control of the evaluated organisational unit and it should be recognized that measures vary between locations – one measure is not suitable for all departments or sites.
- Performance criteria should be selected through discussions with the people involved (all interest groups).
- Both objective (quantitative) and subjective (qualitative) performance criteria should be taken into account.

Therefore, while developing a performance management system, the first step is to clearly define organisation's mission statement. The mission statement is also a guide for identifying organisation's strategic objectives. If there is a goal orientation in the organisation, adoption and implementation of performance measures is more likely to occur (Lancer Julnes, Holzner 2001: 695). Performance measures are supposed to capture the key dimensions of what constitutes success or failure for the organisations concerned and, therefore, an understanding of each functional area's role in achieving the various strategic objectives needs to be developed. All strategic

objectives should be communicated to all levels of the organisation so that each of the lower levels could establish more specific performance criteria that are consistent with strategic objectives. The creation of the effective performance measurement system is a continuous process, so the appropriateness of that system should be re-evaluated periodically and changes should be made if needed.

But it is important to notify that all the parties involved should be joined into the creation process of performance measurement system. If it is not done this way, measurement systems won't work even when they are suitable and reflecting exactly the organisation's objectives, strategy and other important processes. Researches show that appraisal systems merely created by top-management did not lead to desired changes and did not become an inseparable component of management processes. The reason for that was insufficient involvement of personnel into the development process of measurement systems and the lack of consensus in the opinion of its role. It is also pointed out that those teachers who were involved in the development of appraisal systems were much more aware of and accepted the expectations set on their performance, understood the appraisal process better and were much more committed to it (Kelly *et al.* 2008: 44). The research of Williams and Levy showed that the understanding of used appraisal systems was positively correlated with work satisfaction, organisational commitment and perception of justice (Williams, Levy 1992: 841).

While there are many examples of shortcomings in the process of measurement system design and measuring organisation's performance in the world, the authors were interested in determining that situation in Estonia on the example of three educational institutions.

Methodology

For the empirical part of the article together with *Heateo SA* (Good Deed Foundation, which is a launch pad for new and exciting social initiatives) three educational institutions were evaluated. The evaluation was carried out between October 2006 and March 2007. Every organisation's evaluation was executed in three stages (see figure 2).

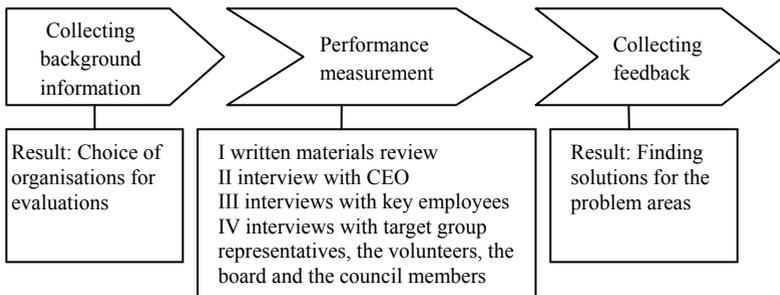


Figure 2. Evaluation process. (Compiled by authors)

In the first stage of the evaluation, background information about Estonian education field was collected. Based on public written information analysis and interviews with specialists on the field, it was determined what the main problems in the field are and how they are being solved. As a result of first stage three most influential organisations were selected (from now on, X, Y and Z). Influence was interpreted as the ability to bring most impact on Estonian society. It means that the activities of these three organisations take place on state level and these organisations purpose is to make a qualitative change in educational system. The selected organisations acted in the variety of educational areas including teaching methodology improvement for kindergartens and primary schools, leadership training, schooling of adults on environmental issues and offering supplementary programs for public schools. Also these three organisations cover the sector starting from preschool education and ending with life-long learning including formal and informal education. The rest of the article is based on knowledge, observations and problems that emerged evaluating these three organisations.

In the second stage of the evaluation (performance measurement), information on specific organisations was collected. This included familiarising with written materials connected to the organisation and interviews with management, council, and target groups. Target group was defined as people whose educational problems or improved social wellbeing are important primary goals for the organisations.

Written materials' analysis included the following documents and information sources: homepage, statutes, annual reports, annual short-term and long-term goals and publications. In organisation X the researchers viewed strategy discussion results, annual reports from last three years, organisation overviews for the financiers. In organisation Y the documents were the current strategy, annual reports from the last three years. In organisation Z the documents were the strategic directions, annual report, annual plans for the organisation and its subsections, self-audit report. In all three evaluated organisations the homepages including statues and publications were analysed.

Structured interviews were conducted with the CEO and at least two key employees in every organisation. All people were interviewed separately, the interviews lasted two hours, and the interviewers were the researchers and a specialist on evaluating organisations from *Heateo SA*. Both interviewers made separate notes that are stored on paper and electronically. Both interviewers compiled their own conclusions and after a discussion it was determined in what areas they needed additional information from the board and/or council and/or volunteers and/or partners.

In organisation X four employees and three members of the council were interviewed. In organisation Y three employees, one volunteer and two partners were interviewed. Two of the employees were also members of the board and the volunteer was a member of the target group. In organisation Z two paid employees, five volunteers, one member of the advisory body and two members of the target group were interviewed. The advisory body was a form of council but there was no official council. All specific interviewees were selected randomly.

As a result of second stage the problem areas were charted by interviewers. The evaluations from the interviews coincided in a significant amount (around 80%). There was no difference of opinion on the existence of problem areas. The differences occurred due to one side not discovering/detecting certain problem areas. The third stage of the evaluation was gathering feedback from the management. The discussion included the strengths and problem areas detected by the evaluators. Only the problem areas (shortcomings) agreed to by the management are reported in this article.

Shortcomings of the organisations in the education field

The shortcomings agreed by the evaluators and the organisation representatives have been summarised in table 1. In the table “⊕” represents existing shortcoming and “⊖” the shortcoming not existing. “⊙” represents it was not possible to determine whether the shortcoming existed or not. Bold typing highlights the shortcomings that were discovered in all three organisations. The development of the evaluations is explained and reasoned as follows.

Vision was lacking in all three organisations. In organisation X the key interviewees’ had significantly different understandings of the direction aimed as they gave different answers to the related question. A certain amount of stagnation was sensed from the organisation Y as their vision was solely based on existing resources and changing or rearranging activities had never been considered. In organisation Z was no real action plan towards achieving that vision. The vision was shared on the board level but it was not familiar to the regular members of the organisation.

In all organisations secondary activities were related to the goals but there was no qualitative analysis on whether all areas had been covered and whether the same goals could be achieved using different resources. All organisations acted based on the fact how they had been founded but a later analysis on whether all activities are justified were lacking.

The short-term goals dominated as there was a lack of or unclearness of long-term goals. Organisations did not even have year-long plans related to the quality of training (though it is the main activity of these organisations) and did not engage the research and strategic development plans in producing added value. It stood out in all three organisations that the members had theoretical knowledge that should be used in managing the organisation but that knowledge was left unutilized. Organisation X had the knowledge that the current management structure did not make it possible to make changes but the know-how about improving the structure was missing. Organisation Y had repeatedly compiled various detailed strategic development plans and a communications’ strategy but there was no skill on how to act on them. Organisation Z made detailed plans every year but due to lack of clarifications and information this was not in sync with subdivisions’ activities. Lack of planning did not enable the employees to focus their work efforts on the important fields and therefore the work was fragmented between many projects.

Table 1. Main shortcomings of the organisations in the educational field (based on interviews with active management, confirmation from the short interviews)

Weaknesses		Organisation	X	Y	Z
Problems related to organisation' goals	Mission is understood	☹	☹	☹	
	Vision is shared	☹	☹	☹	
	Secondary activities are related to vision and mission	☹	☹	☹	
	Short-term goals are related to long-term goals	☹	☹	☹	
	Plans and research is implemented	☹	☹	☹	
Problems related to performance measurement	Reliable effectiveness evaluation	☹	☹	☹	
	Reliable comparative data	☹	☹	☹	
	Reliable accounting	☹	☹	☹	
Problems related to employees and members	Effective division of labour	☹	☹	☹	
	Motivated employees	☹	☹	☹	
	Relations between members	☹	☹	☹	
	Spread of information	☹	☹	☹	
	Goals and activities are related	☹	☹	☹	
Resources and possibilities for gaining additional income	Possibilities for economic activity and income	☹	☹	☹	
	Financial resources	☹	☹	☹	
	Non-material (means, facilities)	☹	☹	☹	
	Human resources	☹	☹	☹	
	Knowledge, skills	☹	☹	☹	

In the table “☹” represents existing shortcoming and “☹” the shortcoming not existing. “☹” represents it was not possible to determine whether the shortcoming existed or not.

Problems related to setting goals directly influence performance measurement. Lack of goals made performance measurement harder because there was nothing that the results could be compared to. Theoretically, there are three types of comparative data: comparison to ideals/goals, comparison to other similar organisations and comparison to the same organisation in the past. In the educational field there are not enough similar organisations that one can compare itself to and often there is no available data. In order to evaluate oneself compared to the past constant evaluation is necessary. Constant evaluation only allows objective view on whether the observed objects have improved or not. This evaluation includes the risk of missing one or more aspects of performance and it is also hard to put these results on an absolute scale of success. Comparing to plans presupposes professional planning that would set realistic goals. The evaluated organisations as examples have shown that plans are often missing and, therefore, the comparative data is not useful.

Employees of all three organisations claimed that they had tried to evaluate the number of people who had received training but had given up since the actual number had little merit. This was due to two reasons: first, there was no comparative data to interpret the result and second, the qualitative component of the training

evaluation had been discarded. Since the organisations had not found means to evaluate the quality of trainings, there was a trend of giving up on evaluating entirely which of course is not improving performance. Lack of qualitative criteria made the quantitative analysis useless since the interviewees felt that accumulated data did not adequately reflect the organisation's activities.

One of the reasons for the lack of qualitative criteria was the accountancy in the organisation. Accountancy was aimed at the outside user and did not support organisation based performance and effectiveness analysis. So far the supports and the national reports only demanded quantitative indicators. Since the organisations had only the obligation to analyse quantitative indicators, they sensed that creating further organisational reporting would have been too bureaucratic.

Personnel management requires extra attention because often workers in the educational field receive much lower wages and, therefore, personal motivation plays a bigger part. Lower wages causes lack of human resources that is enhanced by unclear division of labour in the organisations that resulted in the employees getting tired. Lack of performance analysis does not enable to improve the division of labour (work allocation) and focus on more important areas and also resulted in decline in motivation. Employees not in the leader position felt that information is not accessible to them.

Since personal motivation is very important in the field of education, contradictions between personal goals and organisational activities affected the relations between employees a lot. In organisation X extra tension came from the salary system that was focused on short-term goals and quantitative indicators. The salary depended on how many people were trained and that did not allow ensuring quality.

There was no analysis of lacking resources and effectiveness. Middle-management decisions derived from financial possibilities and the scarce resources were more inclined to be given to current members and activities instead of more qualitative activities. Long-term development was also disturbed due to using resources only focused on short-term gain. No attention paid to infrastructure and acquiring the needed resources to achieve long-term goals.

Surprisingly the resource-related problems in the organisations were not related to shortage of financial means as could be guessed but lack of human resources and know-how. It should also be pointed out that weakness in financial accounting and managerial accounting did not make it possible to get an overview of usage of finances. The know-how was missing for implementing theoretical knowledge in practice.

Conclusion: Analysis of the connections between shortcomings in the organisation and the need for effective performance measurement system

Important areas where the shortcomings existed in the evaluated organisations are the following (synthesis by the authors based on main problem areas discovered in the interviews):

- Analysis of activities and analysis of management and management processes:
 - Which activities are connected to the mission
 - Which activities are necessary to achieve the goals
 - Areas that are relevant for achieving goals but that are not dealt with
 - Setting goals and analysing results
- Analysis of personnel shortcomings:
 - Personal characteristics (danger of opportunist behaviour, readiness to act)
 - Motivation
 - Professional competence
 - Relationships within personnel
- Analysis of financial capabilities:
 - Financial analysis (exit possibilities for outside supporters)
 - Resource demand (material and human resources)

In the evaluated organisations in the education field there were shortcomings in almost all forementioned areas (occurrence in the evaluated organisations pointed out in table 1): (1) problems related to setting goals in the organisation; (2) problems related to personnel and personnel management; (3) problems in planning and analysis that did not allow evaluation and improving of effectiveness; (4) problems related to resources and self management.

Foregoing problems are entwined by the authors' vision on main reasons for the problems and connections between different problems are presented in figure 3.

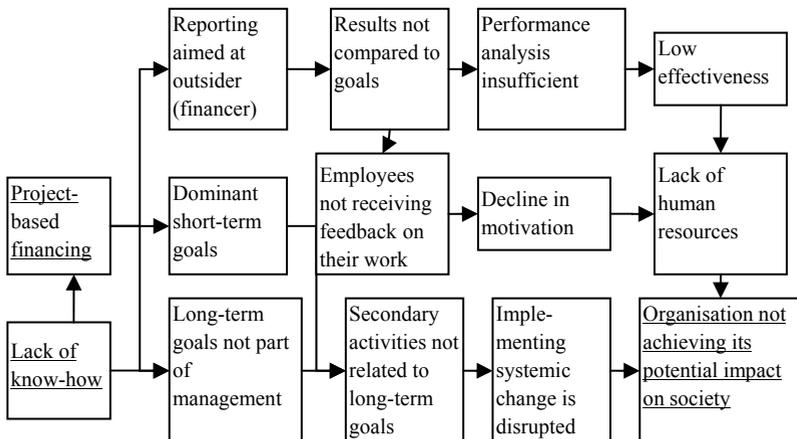


Figure 3. Connections between shortcomings in organisations in the educational field. (Compiled by authors)

Main problems related to goal setting are no common vision, secondary activities not related to goals and mission, dominance of short term goals, weak or nearly non-existent planning.

Problems related to goal setting starts from either missing long-term plans or that the plans cannot be used as part of practical leadership. Short-term plans are dominant or sometimes absent as well. Lack of plans or non-fulfilment of plans was excused with concentration on quality instead of quantity in all three organisations. At the same time, none were able to identify minimal quality requirements.

Weak planning leads to weakness in evaluation of results. If no clear goals have been set, performance is very difficult to measure. So far practice has shown that performance is only measured in quantity. Since there is no comparative data and qualitative analysis, it is difficult to evaluate performance indicators. Lack of evaluations does not allow increase the effectiveness in work or identify shortcomings in the organisation's everyday practice

A great emphasis should be put on a complex analysis, both quantitative and qualitative when evaluating organisations. Complex in this sense means that the qualitative and quantitative performance indicators should not be separated or analysed separately. Intra-organisational evaluation should be marked by consistency because only consistent data collecting allows acquiring information on changes in performance. Both internal and external evaluators should pay attention to changes in the environment and activities of other organisations in the same field. This allows finding comparative data for the performance measurement and provides both new ideas for enhancing productivity and new opportunities for improving performance through co-operating with other organisations in the same field.

It is surprising that the main reasons why educational organisations are not effective do not lie in the lack of resources. As a matter of fact, the analyzed organisations were even not able to say how much resources they are in need of. That leads the authors to the opinion that just giving more money to educational organisations without an analysis of performance is not an effective way to build up educational politics. Thus, performance measurement may be a part of decision-making in educational politics. Unfortunately that presumes the existence of reliable performance measurement system in every educational institution, which is still distant future in Estonia.

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BRAUCHEN WIR EINE NEUE WELTFINANZARCHITEKTUR?

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Abstract

Every crisis in the financial sector leads to the question: Do we need new reform in this sector or actually a new architecture? This question is still alive since the end of the last great international financial agreement is more than 36 years ago, namely The Bretton Woods System. In particular against the background of the latest crises the G20 states came to the compromise that a new structural design in the financial sector is needed as fast as possible. The objective of this recent architecture should be to avoid new troubles. But one of the biggest problems on the way to the new financial design is time. It seems very unrealistic to establish such a new system in only a few weeks time, especially against the background that the preparation of the Bretton Woods System took more than three years. This is only one problem if you try to answer the question above and lots of other issues are still appearing. Furthermore this kind of resolutions could be classified as microeconomic approaches. But there are also macroeconomic answers to the question above. Therefore this paper will concentrate on the macroeconomic approaches and tries to shed some light on the discussion about a new financial architecture as well as discuss some other problems which may occur on the way to it.

Keywords: Financial architecture, Bretton Woods System, Bretton Woods II, Exchange rates, Monetary Policy, Interest rate stabilizing policy

„Wirtschaftliche Schwierigkeiten lösen unweigerlich wirtschaftliche Reformvorschläge aus. Die asiatische Wirtschaftskrise (im Jahre 1997, Anm. der Verfasser) und ihre Nachwirkungen veranlassten viele Menschen zu der Meinung, dass das internationale Währungssystem zumindest im Hinblick auf die Entwicklungsländer überholt werden müsse. Die dahingehenden Vorschläge subsumiert man inzwischen unter der imposanten, wenn auch vagen Überschrift: Pläne für eine neue ‚Finanzarchitektur‘.“ (Krugman, Obstfeld 2006: 815)

Im Zuge der Asienkrise tauchte also erstmals ernsthafter die Frage auf, ob wir eine neue Weltfinanzarchitektur brauchen, die aber insbesondere die Krisenanfälligkeit der Peripherie des Weltfinanzsystems und deren künftige Vermeidung zum Gegenstand hatte. In der Folgezeit wurden deshalb auch eine Fülle an Einzelmaßnahmen und Vorschlägen diskutiert, die vornehmlich den von der Asienkrise betroffenen Entwicklungsländern helfen sollten.

Diese Vorschläge bezogen sich auf eine Verbesserung der Transparenz, d.h. sie sollten einer besseren Verfügbarkeit finanzieller Informationen dienen, damit sich Kapitalanleger ein klareres Bild über die bestehenden Risiken in diesen Ländern machen können. Zudem zielten viele Vorschläge auf eine Stärkung der Banken ab,

„sowohl durch eine schärfere Überwachung der von ihnen eingegangenen Risiken als auch durch eine Heraufsetzung der Mindestkapitalvorschriften, die gewährleisten (sollten), dass das Risiko der Geldbesitzer stets in erheblichen Maße diese selbst trifft“ (Krugman, Obstfeld 2006: 818).

Darüber hinaus wurde auf die Vorteilhaftigkeit vieler globaler Reformpläne verwiesen und deren Anwendung und Umsetzung empfohlen. Beispielsweise auf schwankende Wechselkurse, wie in Mexiko und Brasilien, auf Kapitalverkehrskontrollen, wie in China und Malaysia, auf vollständig feste Wechselkurse über Currency Board Regelungen, wie in Hongkong oder in Estland, oder auf die Vorteile der Abschaffung nationaler Währungen und die Einführung des US-Dollars oder des Euros für inländische Transaktionen (vgl. Krugman, Obstfeld, 2006: 820). Wie wir heute wissen, hat sich aus diesem allgemeinen Gerangel um die vermeintlich besten Lösungen, wie es von Krugman und Ostfeld beschrieben wurde, bislang noch keine einheitliche, neue Architektur herausgebildet.

Was sich mit dem Beinahezusammenbruch des Hedge-Fonds LTCM 1998 bereits andeutete ist mit der heutigen Finanzkrise Realität geworden, nämlich, dass sich das Zentrum des weltweiten Finanzsystems letztlich als ebenso krisenanfällig erwiesen hat, wie seine Peripherie (vgl. BIZ 2008: 4). Insofern steht die Frage nach der Notwendigkeit einer neuen Finanzarchitektur heute wieder, und zwar drängender denn je, ganz oben auf der Agenda.

Formal warten wir jedoch bereits seit dem Zusammenbruch des Bretton Woods-Systems im Jahr 1973 auf eine neue Finanzarchitektur. Das 1944 beschlossene Bretton Woods-System, u.a. mit der Einführung des Goldstandards, einem System fester, aber anpassungsfähiger Wechselkurse und der Schaffung von IWF und Weltbank als supranationale Institutionen, war jedenfalls der letzte geschlossene internationale Ordnungsrahmen, der den Namen Weltfinanzarchitektur wirklich verdient. In den Folgejahren, bis zum heutigen Zeitpunkt, dominierte, überspitzt ausgedrückt, die Ideologie des Laisser-faire, begleitet von zahlreichen eher isolierten Ad-hoc-Maßnahmen.

Unter dem Eindruck der schwersten Finanzkrise aller Zeiten, wie es momentan heißt, oder zumindest seit der Weltwirtschaftskrise von 1929, haben die G20-Staaten, also die wichtigsten Industrie und Schwellenländer, auf ihrem Treffen im November 2008 in Washington in der gemeinsamen Abschlusserklärung die feste Absicht bekundet, bereits innerhalb weniger Monate, konkret bis zum nächsten Folgetreffen im April 2009 in London, die Grundpfeiler für eine neue globale Weltfinanzarchitektur zu erarbeiten, damit sich, wie betont wurde, eine derartige Krise in der Zukunft auf keinen Fall wiederholen soll.

Allerdings sollte man bei derart hochgesteckten Ambitionen daran erinnern, dass die Vorbereitungen für das Bretton-Woods Abkommen immerhin drei Jahre gedauert haben, obwohl es zur damaligen Zeit eigentlich nur um die Interessen der USA und Großbritanniens bzw. Europas ging. Die bislang wenig positiven Erfahrungen mit den sich seit Jahren hinziehenden globalisierten Verhandlungsrunden über ein

Welthandelsabkommen zeigen zudem, wie schwierig es heute ist, einen gemeinsamen Nenner zu finden, wenn es jenseits einer krisenhaften Zuspitzung um die Einigung über Detailregelungen geht, von denen die einzelnen Teilnehmerstaaten u.U. ganz unterschiedlich stark betroffen sind.

Und bei der Schaffung einer neuen Weltfinanzarchitektur wird es eben nicht nur um Grundpfeiler oder Eckpunkte gehen, sondern insbesondere um die Lösung einer Fülle von sehr strittigen Detailregelungen. Die Gefahr, dass der Reformeifer, wie schon nach der Asienkrise, schnell wieder erlahmt, wenn die größten Krisenfolgen, also die bevorstehende starke Rezession in den Realwirtschaften halbwegs überwunden sein werden, sollte deshalb nicht zu gering eingeschätzt werden.

Professor Wolfgang Filc unterscheidet zwei grundsätzliche Positionen bei den Vorschlägen, die sich mit Maßnahmen zur Erreichung einer neuen, stabileren Finanzarchitektur befassen, nämlich die Position der sogenannten Strukturalisten auf der einen Seite und die Position der sogenannten Systemkritiker auf der anderen Seite. (vgl. Filc 2001: 200). Dabei lassen sich die Vorschläge der Strukturalisten auch als die mikroökonomischen Ansätze bezeichnen und die Vorschläge der Systemkritiker als die makroökonomischen Ansätze.

Die Vorschläge der Strukturalisten, und damit die mikroökonomischen Ansätze, zielen darauf ab, Strukturprobleme im Finanzbereich zu erkennen und abzustellen, also z.B. Defizite bei Transparenz, Bankenaufsicht, Risikoversorge und Ausbildung der Finanzmarktbeschäftigten sowie falsche Verhaltensanreizstrukturen zu beseitigen oder abzubauen, deren unbestritten negative Folgen oft noch verstärkt werden von einem zerstörerischen Beziehungsgeflecht zwischen Wirtschaft und Politik (vgl. Filc 2001: 200).

Man kann nun feststellen, dass die überwiegende Zahl der sowohl in der Vergangenheit erörterten Vorschläge als auch die Vielfalt der heute wieder ins Gespräch gebrachten Maßnahmen schwerpunktmäßig in diese Position der Strukturalisten und damit in die Kategorie der erforderlichen Strukturreformen gehören. So hat beispielsweise die von der Bundesregierung eingesetzte Expertenrunde unter dem Vorsitz des ehemaligen Direktoriumsmitglieds der EZB, Otmar Issing, diesbezüglich weitreichende Vorschläge erarbeitet, die sich mit der Verbesserung der Anreizstrukturen, der Erhöhung der Transparenz, der Verschärfung der Aufsicht und der Weiterentwicklung internationaler Institutionen befassen. Auch die auf dem Treffen der G20-Staaten im November 2008 in Washington erklärte Absicht, schnellstmöglich die Grundpfeiler für eine neue globale Weltfinanzarchitektur zu erarbeiten, zielt fast ausschließlich auf die Positionen der Strukturalisten und damit auf die Beseitigung von Strukturproblemen

Vernachlässigt wurden dagegen sowohl nach der Asienkrise als auch in den heutigen Diskussionen die Positionen der Systemkritiker und damit die makroökonomische Dimensionen der Reformfordernisse. Diese betonen nämlich, „... dass Strukturreformen, so notwendig sie im Einzelfall aus sein mögen, nicht genügen, um Finanzkrisen auszuschalten. Dazu bedarf es vor allem eines überschaubaren

wirtschaftlichen Umfelds, der Begrenzung von Risiken an Finanzmärkten, die sich aus einer un stetigen wirtschaftlichen Entwicklung ergeben, als Folge wirtschaftspolitischer Maßnahmen in nationalen Wirtschafts- und Währungsräumen, ohne dabei die internationalen Auswirkungen zu berücksichtigen, die im Zeitalter der Globalisierung zwangsläufig auftreten.“ (Filc 2001: 200)

Für die Systemkritiker sind deshalb Finanzkrisen nicht allein auf mikroökonomisches bzw. einzelwirtschaftliches Fehlverhalten und Strukturdefizite zurückzuführen, sondern sie haben immer auch eine makroökonomische bzw. gesamtwirtschaftliche Dimension (vgl. Filc 2001: 200). Unter diese Kategorie von Ursachen für Fehlentwicklungen können z.B. die folgenden Faktoren fallen: Unvorhersehbar scharfe oder exzessive Wechselkurschwankungen, aber auch einseitig falsch fixierte Wechselkurse, auf Dauer nicht tragfähige Ungleichgewichte im Außenhandel, der überdimensionierte Aufbau von Währungs- oder Devisenreserven sowie eine falsche Ausrichtung der nationalen Geldpolitiken. Jeder dieser Faktoren vermag die Stabilität der Finanzmärkte nachhaltig zu gefährden.

Drastische Aufwertungen der Inlandswährung führen dazu, dass das von Ländern normalerweise in Fremdwährungen gehaltene Auslandsvermögen, z.B. US-Dollar-Anlagen, welches aber von den Wirtschaftsteilnehmern im Inland in nationaler bzw. heimischer Währung bilanziert wird, drastisch an Wert verliert, was Abschreibungen bzw. Wertberichtigungen erforderlich macht und zu sich ausbreitenden Schieflagen bei Finanzinstituten führen kann, die sich in Zeiten der Globalisierung schnell auf andere Länder übertragen oder ausbreiten können.

Drastische Abwertungen der Inlandswährung können dagegen zu Problemen bei der Auslandsverschuldung von Ländern führen, da der auf die Auslandsschulden zu leistende Schuldendienst zu enormen Belastungen führen kann, wenn immer mehr Inlandswährung dazu aufgewendet werden muss.

„Stabile gesamtwirtschaftliche Rahmenbedingungen für Finanzmärkte verlangen (...), die Kursentwicklung an den Devisenmärkten in einschätzbarer Weise systematisch an ökonomischen Fundamentalfaktoren der Länder zu orientieren. Fehlt es hieran, so können an den Devisenmärkten ausgelöste Fehlentwicklungen das Finanzsystem eines Landes infizieren und zu einem Crash führen. Im Zeitalter der Globalisierung kann das bis in den letzten Winkel der Welt übertragen werden.“ (Filc 2001: 203).

Aber nicht nur erratische, von den relevanten Fundamentalfaktoren losgelöste und sich oft trendmäßig über einen längeren Zeitraum in eine Richtung ändernde Wechselkurse stellen eine Gefahr für die Finanzmarktstabilität dar, sondern solche Gefahren gehen auch von einseitig auf einen falschen Niveau fixierten Wechselkursen aus. Dass willkürliche oder nach nationalen Belangen einseitig fixierte Wechselkurse eine große Gefahr für die internationale Finanzmarktstabilität sein können, lässt sich an den Folgen des oft als „Bretton Woods II“ bezeichneten Arrangements asiatischer Länder aufzeigen.

Das sogenannte Bretton Woods II, nicht zu verwechseln mit dem in den Medien zum Teil auch so bezeichneten außerordentlichen Weltfinanzgipfel der G-20 Länder im November 2008 in Washington, ist ein offiziell nicht kodifiziertes Wechselkursystem in dem (ost-) asiatische Währungen, vor allem aber der Chinesische Yuan, einseitig an den US-Dollar gebunden wurden. (vgl. Dooley u.a. 2003). Durch eine deutliche Unterbewertung ihrer Wechselkurse haben sich diese Länder erhebliche wirtschaftliche Vorteile im Außenhandel verschafft. Hohe Leistungsbilanzüberschüsse der asiatischen Länder und hohe Leistungsbilanzdefizite der USA, insbesondere aus dem Wirtschaftsverkehr mit dem asiatischen Raum, waren die Folge.

Um die Unterbewertung ihrer Währungen aufrechtzuerhalten, kauften die asiatischen Länder in hohem Umfang US-Dollar auf. Dadurch haben sie in den letzten Jahren in einem unvorstellbaren Ausmaß Währungsreserven angesammelt. (vgl. BIZ 2008: 98). Berücksichtigt man den weiteren Anstieg der Währungsreserven z.B. von China im Jahr 2008 um weitere rd.418 Mrd. US-Dollar (vgl. Deutsche Bundesbank 2009: 82), so verfügt allein China momentan über Währungsreserven in Höhe von weit über 1900 Mrd. bzw. 1,9 Billionen US-Dollar.

Die Leistungsbilanzdefizite der USA haben dagegen mit Werten von mehr als 5 Prozent, gemessen am Bruttoinlandsprodukt, Größenordnungen erreicht, die bei anderen Ländern auf Dauer als untragbar angesehen werden. Länder mit Leistungsbilanzdefiziten sind auf Kapitalimporte angewiesen und müssen sich gegenüber der übrigen Welt verschulden. Dieser Zustand lässt sich nur aufrechterhalten, solange die übrige Welt ein hinreichendes Vertrauen in die Werthaltigkeit des US-Dollars hat. Erfahrungen der Vergangenheit haben jedoch immer wieder gezeigt, dass das Vertrauen in Währungen, auch wenn es sich um sogenannte Leitwährungen handelt, sehr plötzlich, mitunter auch nur vorübergehend verloren gehen kann. In der Literatur spricht man dann auch vom sogenannten Leitwährungsdilemma. (vgl. Köhler 1979: 170/171, S.194, S. 254 ff.).

Im Falle einer durch einen möglichen Vertrauensverlust ausgelösten Umstrukturierung der internationalen Währungsreserven zulasten des Dollars wäre mit einer drastischen Abwertung des US-Dollar zu rechnen. Drastische Abwertungen des US-Dollars können allerdings auch dann eintreten, wenn ein Vertrauensverlust nur vorübergehend auftritt. Dazu reicht es gegebenenfalls bereits, dass die Länder, die aus der Bretton Woods II –Strategie heraus extrem hohe Währungsreserven angehäuft haben, eine solche Umschichtung als Drohpotenzial politisch in die Waagschale werfen oder aber aus verstärkten Renditeüberlegungen auch nur Teile ihrer Dollarreserven umschichten.

Die Folgen einer starken Abwertung des US-Dollars seien hier nur in Stichpunkten angesprochen: Kräftige Verteuerung der US-Importe und damit steigende Inflation in den USA. Drastische Zinserhöhungen zur Inflationsbekämpfung sowie zur Attrahierung der erforderlichen Kapitalimporte. Hohe Verluste der Gläubigerstaaten an ihren Dollarreserven und bei sonstigen Dollarvermögenswerten, jeweils gemessen in heimischer Währung, Rückgänge der Exporte in die USA und daraus

resultierend ein verringertes Wirtschaftswachstum. Im Extremfall könnte es zu einer „Flucht aus dem US-Dollar“ und damit zu schweren Verwerfungen an den Kapitalmärkten und in der Weltwirtschaft kommen.

Diese Szenarien, auch wenn sie für manche nur im Falle hoher Preisniveausteigerungen in den USA in Betracht kommen (vgl. Remsperger, Winkler 2009: 21-38), was vor dem Hintergrund einer augenblicklich extrem expansiven Geldpolitik in den USA in absehbarer Zeit durchaus relevant werden könnte, zeigen aber, wie wichtig Wechselkursregelungen für die Finanzmarktstabilität sein können, bzw. welches Zerstörungspotenzial sich u. U. aus einseitig, nach nationalen Interessen fixierten Wechselkursen und der damit verbundenen Anhäufung von Währungsreserven bzw. dem Aufbau von Ungleichgewichten ergeben kann. Damit die Wechselkurse nicht zum Spielball nationaler Interessen werden, ist dafür Sorge zu tragen, dass sich die Wechselkursentwicklungen stärker an den eigentlich relevanten Fundamentalfaktoren, wie Inflationsdifferenzen und Zinsdifferenzen, zu orientieren haben.

Um also die möglicherweise auch nur potenziellen Gefahren aus einseitig, nach nationalen Interessen gestalteten Wechselkursen für die Finanzmarktstabilität von vornherein auszuschließen, sollte deshalb eine an den relevanten Fundamentalfaktoren abgestimmte „kontrollierte Wechselkursflexibilität“ (Filc 2001: 214) ein zentrales Element einer neuen Weltfinanzarchitektur sein. Zumindest aber benötigt man auch heute wieder, wie im ursprünglichen Bretton Woods System von 1944-1973 enthalten, feste und verbindliche Regeln zum Abbau bzw. zur Begrenzung von Ungleichgewichten. Solche Regeln sind aber unvereinbar mit sich völlig selbst überlassenen Devisenmärkten und flexiblen Wechselkursen.

Die insgesamt sehr positiven Erfahrungen mit dem Europäischen Währungssystem (EWS) von 1979 bis 1998 sowie mit der Nachfolgeregelung, dem sogenannten Wechselkursmechanismus II (WKM II bzw. EWS II), seit 1999 haben gezeigt, dass die Vorstellungen von einem glaubhaften Einstieg in eine währungspolitische Kooperation zwischen den großen Wirtschafts- und Währungsräumen der Welt und die Fortentwicklung zu einer „kontrollierten Wechselkursflexibilität“ keine Wunschträume oder Utopien sind.

In die makroökonomische Kategorie der Ursachen für Fehlentwicklungen an den Finanzmärkten gehört auch eine falsche Ausrichtung der nationalen Geldpolitiken. In diesem Zusammenhang findet sich heute häufig der Hinweis, dass ein zentraler Grund für die augenblickliche internationale Finanzkrise eine viel zu lang andauernde und viel zu expansive Geldpolitik gewesen sei, die sich völlig unzureichend um die gesamtwirtschaftlichen Auswirkungen gekümmert habe.

Ausgelöst durch eine extreme Niedrigzinspolitik der US-Notenbank im Anschluss an das Platzen der sogenannten New Economy-Blase im Jahre 2001 und den deshalb befürchteten Rezessionsgefahren sowie einem damit verknüpften Auftreten von Deflationsängsten. Dieser anhaltenden, expansiven amerikanischen Geldpolitik mit ihren bis dahin historisch niedrigen Zinsen haben sich weltweit viele Notenbanken

angeschlossen, so auch das Eurosystem. Während die Federal Reserve Bank erst im Laufe des ersten Quartals 2004, also nach mehr als zwei Jahren äußerster Niedrigzinspolitik, wieder zu Leitzinserhöhungen übergegangen ist, hat das Eurosystem seine expansive Niedrigzinspolitik sogar bis Ende 2005 aufrechterhalten.

Die über einen langen Zeitraum sehr niedrigen Zinsen veranlassten die mit ehrgeizigen Renditezielen operierenden Finanzakteure fast zwangsläufig zu risikoreicheren und damit renditeträchtigeren Geschäften. Verknüpft wurde die Politik niedriger Zinsen mit einer äußerst reichlichen Liquiditätsbereitstellung durch die Zentralbanken. Dieses führte zu einem starken Wachstum der monetären Mengenaggregate und löste kräftige Zuwächse bei den Vermögenspreisen aus. Verbunden mit der in den letzten Jahren zunehmend durchgeführten Umstellung der bilanziellen Bewertung nach Marktpreisen (Fair Value) gemäß der Methodik des IFRS (International Financial Reporting Standards) wurde so für Banken „... die Möglichkeit geschaffen, unrealisierte Gewinne in ihren Bilanzen auszuweisen. Das erhöhte in guten Zeiten das Eigenkapital und damit den Kreditschöpfungsspielraum des Finanzsystems. Im Vergleich zu einer Bilanzierung, bei der keine unrealisierten Gewinne ausgewiesen werden dürfen, fällt dann der Einbruch in wirtschaftlich schlechten Zeiten entsprechend stärker aus, was die (...) Prozyklizität des Systems erhöht.“ (Sachverständigenrat zur ... 2008: 166).

Der Hauptvorwurf gegenüber der Geldpolitik bezieht sich letztlich auf die in den letzten Jahren zu starke, fast einseitige Betonung der Zinsen und die dabei zunehmend vernachlässigte Entwicklung der monetären Mengenaggregate. (vgl. dazu Rohde, Kurth 2009). Hinzukommt, dass sich die Geldpolitik in der jüngeren Vergangenheit zunehmend den Prinzipien der Transparenz, der Glaubwürdigkeit und der Berechenbarkeit der geldpolitischen Steuerung verschrieben hat (vgl. Rohde 2006: 189-202), was letztlich Interpretationsmöglichkeiten und insbesondere Fehleinschätzungen des geldpolitischen Kurses in der Öffentlichkeit vermeiden soll. In der Konsequenz läuft eine solche Geldpolitik auf die Vermeidung oder Minimierung von Zinsschwankungen am kurzfristigen Geldmarkt, dem eigentlichen Operationsfeld der Geldpolitik, hinaus. Mit einer solchen Zinsstabilisierungspolitik beabsichtigt die Geldpolitik ihre geldpolitischen Absichten glaubwürdig an den Märkten zu verankern, oder, wie es die Bank für Internationalen Zahlungsausgleich aus der Rückschau auf die praktische Geldpolitik der jüngeren Vergangenheit formuliert hat: Bei allen Zentralbanken „... stand an oberster Stelle, die Tagesgeldsätze effektiv mit den geldpolitischen Zielen in Einklang zu halten.“ (BIZ 2008: 10).

Beispielhaft für eine solche Zinsstabilisierungspolitik sei auf die Geldpolitik des Eurosystems verwiesen, die sich bereits seit November 2004 ausdrücklich zum Ziel gesetzt hat, den kurzfristigen Geldmarktzins in unmittelbarer Nähe ihres Hauptleitzinses, dem Zinssatz ihrer Hauptrefinanzierungsgeschäfte zu halten, so „... dass sich die geldpolitische Ausrichtung des EZB-Rates am Tagesgeldmarkt unverzerrt widerspiegelt.“ (Deutsche Bundesbank 2009: 34). Erforderlich für eine solche Zinspolitik, die die Zinsschwankungen am Geldmarkt minimiert, ist die

Gewährleistung ausgeglichener Liquiditätsverhältnisse am kurzfristigen Geldmarkt, denn bei ausgeglichener Liquidität sollte der Tagesgeldsatz, nach Auffassung der EZB, normalerweise in der Nähe des Zinssatzes der Hauptrefinanzierungsgeschäfte liegen. Und um die Finanzinstitute von der Glaubwürdigkeit dieser geldpolitischen Absicht zu überzeugen, veröffentlicht die EZB die Höhe des jeweils erforderlichen Liquiditätsbedarfs mittels regelmäßiger Schätzungen der sogenannten Benchmark-Zuteilungen vor jedem Hauptrefinanzierungsgeschäft. Dabei hat sich die EZB ausdrücklich vorbehalten, vom geschätzten Benchmark-Zuteilungsbetrag abzuweichen, wenn es gilt, einer Divergenz der kurzfristigen Geldmarktsätze vom Zinssatz der Hauptrefinanzierungsgeschäfte zu begegnen (vgl. Europäische Zentralbank 2004: 20-22).

Tatsächlich hat die Umsetzung dieser Geldpolitik jedoch dazu geführt, dass drastische Überschreitungen der Benchmark-Zuteilungen und darüber hinaus ein zusätzlicher Einsatz von Feinsteuerungsoperationen seit November 2004 praktisch regelmäßig vorgenommen werden und damit zur Normalität in der Geldpolitik geworden sind. Im Rahmen einer solchen Zinsstabilisierungspolitik werden die Zentralbankgeldbereitstellung und im Anschluss daran die Geldmengenaggregate zu völlig endogenen Größen, und somit zu uninteressanten bzw. irrelevanten Größen für die Geldpolitik. In diesem Sinne hat sich die praktizierte Geldpolitik den Vorstellungen der Neo-keynesianischen Theorie angenähert, die von der Irrelevanz der Geldmenge für die Geldpolitik ausgeht und eine Konzentration auf die Zinsentwicklung propagiert. (vgl. Woodford 2006).

Eine solche Geldpolitik, die sich ausschließlich auf die Zinsstabilisierung konzentriert, gerät allerdings systematisch zu expansiv, da sie jeglichen Bedarf an Zentralbankgeld der Finanzinstitute zu decken hat, um die ansonsten zu verzeichnenden Zinssteigerungen zu vermeiden. Eine durchgängig zu expansive Ausrichtung der nationalen Geldpolitiken trägt damit aber nicht unerheblich zu Fehlentwicklungen an den Finanzmärkten bei. Insofern steht zu befürchten, dass die im Zuge der momentanen, weltweiten Finanz- und Wirtschaftskrise äußerst expansive Ausrichtung der Geldpolitiken, mit Leitzinsen von Null oder nahe Null Prozent sowie mit zusätzlichen Maßnahmen der sogenannten quantitativen Lockerungen, durch den Kauf von Staats- und Unternehmensanleihen durch die Zentralbanken, bereits den nächsten Grundstein für neue Verwerfungen an den Finanzmärkten legen.

Wenn man also fragt, ob wir eine neue Weltfinanzarchitektur brauchen, so ist diese Frage sicherlich eindeutig zu bejahen. Allerdings sollte man vor Schnellschüssen, wie die einseitige Konzentration auf die durchaus notwendige Beseitigung der sich nach jeder Krise zeigenden Strukturdefizite warnen. Im Rahmen einer wirklich neuen Gestaltung der Weltfinanzarchitektur sollte man sich auch Gedanken über die makroökonomische Dimension der Risiken für die Finanzmarktstabilität machen und somit Fragen der adäquaten Wechselkursregelungen sowie der vernünftigen Ausgestaltung der nationalen Geldpolitiken berücksichtigen. Da bezüglich Wechselkursfragen und Strategie der Geldpolitik die Meinungen im internationalen Rahmen jedoch seit je her sehr kontrovers sind, überrascht es somit letztlich nicht,

dass auf dem Treffen der G-20 Staaten im April 2009 in London Einigungen fast nur bei mikroökonomischen Reformvorschlägen erzielt wurden.

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THE POLICIES CONCERNING THE STRENGTH OF INTELLECTUAL PROPERTY RIGHTS PROTECTION: THE CHOICES FOR ESTONIA IN WIDER CONTEXT OF EU¹

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Abstract

The foreign direct investment (FDI) can be substitute for the contractual transfer of intellectual property rights in a situation where these rights are weakly protected. Hence, stronger intellectual property rights protection may reduce incentives for FDI. This is, however, only one line of reasoning. Stronger intellectual property protection can also increase motivation to invest into completely new products and processes. Thus, from the slightly different perspective FDI and strength of intellectual property protection can be seen as complementary. This duality of impact makes the search for efficient protection very difficult and complex. The aim of this paper is to outline the policy choices open for Estonia in influencing the relative strength of intellectual property rights protection and its impact on FDI. The vital secondary research agenda by this concerns the influence of EU-membership on the autonomy of such policy choices. Given the fact that there exist European patents and patent registry, certain intellectual property rights protection measures and legislative practices are undoubtedly pre-determined by this embeddedness into EU-wide protection systems. The national level policies and enforcement issues may still vary.

Keywords: intellectual property rights protection, FDI, Estonian policy, EU policy

Introduction

The interaction between foreign direct investment (FDI) and intellectual property rights protection is not straightforward. In situations, where intellectual property rights are weakly protected, FDI may be a substitute for contractual transfers via licensing or franchising. Therefore, strengthening of intellectual property rights protection can reduce interest in investing because contractual entry modes become less risky and more visible. This substitution effect is only one possible outcome.

Stronger intellectual property rights protection may on the contrary increase the motivation for FDI, because investments into new products and processes as well as into new proprietary technologies are safeguarded by legal protection. The strength of intellectual property protection can be seen as one of the important proxies for socio-economic development (at least in western hemisphere). Stronger protection

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characterises usually more developed countries described by attractive consumer markets and numerous business opportunities. Thus, from these viewpoints FDI and intellectual property protection are likely to be complementary and not substitutes.

Because of this dual impact on FDI, it is difficult to find such a level of intellectual property rights protection, which would offer sufficient risk reduction without discouraging FDI. The efficient strength of protection may well depend on the country or region concerned. In less developed countries, where knowledge transfers support mainly imitation, the substitution effect is likely to be more prominent than in so called innovator countries and regions.

Stronger intellectual property protection can also increase motivation to increase into completely new products and processes. Thus, from the slightly different perspective FDI and strength of intellectual property protection can be seen as complementary. This duality of impact makes the search for efficient protection very difficult and complex.

The aim of this paper is to outline the policy choices open for Estonia in influencing the relative strength of intellectual property rights protection and its impact on FDI. These policy choices are considerably influenced and restricted by the EU-membership. European patenting itself prescribes some EU-wide protection systems and legislative practices. Despite these measures, the national policies and especially enforcement issues are still likely to differ.

The structure of this analysis is following. The discussion starts with an introduction of theoretical concepts and earlier studies that focus on multinational transfers of intellectual property and FDI. In the next sections we describe the intellectual property and FDI in Estonia. Thereafter, the intellectual property usage and protection policies in Estonia are discussed in greater detail. The concluding section outlines the main results, limitations, and suggestions for future researched.

The theoretical background

The relationship between the strength of intellectual property rights protection and FDI has found considerable research interest. The research made in the context of product cycle model (describes technology transfer from an innovative region to an imitating region) found that stronger intellectual property rights protection in the imitating region might help to restrict imitation, but difficulty of imitation also generates resource wasting and disincentives which reduce FDI and innovation. Thus, resource engagement in imitation can crowd out FDI. From this perspective, stronger protection of intellectual property rights has adverse effect on FDI. (Glass, Saggi 2002)

Similar study outlines in addition that imitating of multinationals' technologies in so called imitating region increases FDI and innovation for quality improvements, but new varieties offered by innovator companies reduce incentives for that. Therefore, stronger intellectual property rights protection is likely to shift innovation away

from product improvements towards the development of entirely new products. (Glass, Wu 2007)

Even more recent contribution of Parello (2008) found that stronger intellectual property rights protection in imitating region has only a temporary impact on the innovation rate and negative long-run impact on the imitation rate. The study concludes also that stronger intellectual property protection might be ineffective in attracting technological knowledge when the local skill-level is low. The results of these innovation-imitation studies show that the relationship between intellectual property and FDI as channel for technology transfers is very complex.

Other authors indicate that in case when FDI has purpose of deterring local competitors the stronger patent protection reduces incentives to invest and substitutes FDI, while in case of other motives the reduced competition due to protective measures can encourage FDI. The sufficiently large market potential of the host location or relatively small R&D expenditures reduces the likelihood that strong patent protection facilitates FDI into that location. Hence, on large and attractive markets licensing is viable alternative. (Pfister, Deffains 2005)

Some authors studied the relationship between patent protection and FDI on the basis of data from 63 random countries. The study included also other control variables like market size, levels of corruption, unemployment rates, and international trade orientation of host countries. These results revealed clear positive relationship between stronger patent protection and levels of FDI. (Seyoum 2006)

The different impact of intellectual property rights protection on the innovation rate in developed and developing countries is outlined by Schneider (2005). In developed countries stronger protection supports domestic innovation, but in developing economies the impact can be negative. This suggests once more the imitative or adaptive nature of innovations in these economies.

There is a contribution that takes a more specific look on FDI and intellectual property to connection. This study investigates the impact on composition FDI on the basis of company data from Eastern Europe and former Soviet Union. The findings suggest that weak protection deters investors in technology-intensive sectors, because they rely on intellectual property. Weak intellectual property rights protection in the host country encourages FDI into distribution, but discourages local production. This implies that sales are not seen as possible channel for involuntary transfers or unwanted spillovers. (Smarzynska Javorcik 2004)

In a higher level of capital flow composition, the development economies gain indeed better access to intellectual property via attracting FDI, portfolio equity, or long-term loans, as opposed to short-term bank loans. (Williamson 2001)

The study made by Organisation of Economic Cooperation and Development (OECD) in 2003 revealed a positive but diminishing association between increased FDI and strengthening of intellectual property rights protection in developing

countries. Hence, countries with very weak initial protection may benefit most from stronger rules. (OECD 2003)

The relationship between intellectual property rights protection and location of R&D conducted by multinationals has been researched as well. The study on topic shows that in developing countries location of R&D activities is motivated by need to adapt products or processes to market conditions and determined by the scope of multinational company's FDI. In developed countries however, the strength of intellectual property protection is very important factor in influencing the location of R&D. This analysis indicates also that technology transfers to food and chemical industries in developing countries are more facilitated by weaker patent protection. (Sanyal 2004)

Du *et al.* (2008) found that US investors in China clearly prefer regions, where property rights are better protected and contracts reliable. Thus, intellectual property rights protection and contract enforcement are important economic institutions by determining the location choices of foreign investors. Other authors point out that even if Chinese culture has certain adverse influence on intellectual property rights, the political, business, and social environment may still facilitate the acceptance of intellectual property rights and respect for them. Therefore, new more protective regimes are likely to emerge, as they have in Taiwan. (Berrell, Wrathall 2007)

Fahy *et al.* (1999) show also an example of Hungary that protection of private and intellectual property can be considered as one of the major factors behind FDI success.

Osland *et al.* (2001) studied the determinants of foreign market entry modes. Their results reveal that Japanese investors tend to be more sensitive to external risks, including insufficient intellectual property rights protection, than US investors. In case of US investors intra-corporate considerations dominate over external risks. Thus, not only attitude towards these rights and towards their protection, but also the intellectual property transfers and their modes are shown to be culturally sensitive. Slater *et al.* (2007) offer even more elaborate conceptualisation of ethnicity and decision making.

There is a study which takes another interesting perspective on the issue. He claims that by making FDI into emerging markets, during pre-investment environmental scanning, the managers often fail to account for the probability of intellectual property theft and infringement. The causes for this lie in false assumptions about similarities in intellectual property cultures. As the business grows more global the likelihood of losing intellectual property during FDI only increases, because regions differ. (Haley 2000)

Haley (2000) proposes to use the cross-environmental technology audit procedure, which investigates not only different environments (political, economic, legal, social-cultural, etc.), but also their interaction from intellectual property rights protection viewpoint. This could help to avoid extensive risks during FDI.

MacGarvie (2005) investigated the diffusion of technological knowledge on the basis of patent citations. The findings showed that diffusion is supported by physical and technological proximity and by sharing common language. FDI was positively associated with technology diffusion, but trade facilitates diffusion when countries innovate in similar fields.

Some authors differentiate in their study between non-affiliated contractual transfers to third parties and affiliated transfers within multinational company via FDI. They conclude that the choice between these two options is considerably influenced by the host market size, the degree of fragmentation or integration on regional basis, and the cultural and institutional barriers on FDI that increase transaction costs. In small and culturally alien markets which do not participate in regional integration non-affiliate transfers via licensing or franchising contracts are preferred to affiliated transfers. However, the preferences of multinational companies are likely to change as the markets develop. For example, the development and EU integration of Eastern European countries is likely to divert US investors towards affiliated methods. (Clegg, Cross 2000)

It has been also argued that low or high intellectual property rights protection standards encourage integrated governance, and FDI, while moderate standards are to be associated with a contractual protection. This is contrary to thinking that stronger standards will reduce the role of FDI as method of equity-based protection and increase the usage of licensing agreements as market-based method. (McCalman 2004)

There are works which show that intellectual property rights protection agreements and legislation often benefit the interest of large multinational companies from industrial countries rather than developing countries. Thus, the benefits of globalisation and international regimes of intellectual property protection remain dubious for developing regions. (Hartungi 2006) Ismail and Fakir (2004) show that internationally protected trademarks may devolve into protectionism. The overall social utility of transnational corporation from the perspective of allocative efficiency is criticised also by Jones (2000), who argues that they extract rents from countries and workers mostly in the name of shareholders wealth.

Other authors offer even more detailed analysis of knowledge transfer practices within multinational corporations. They conclude that hegemony of headquarters tends to cause loss of knowledge at the local level, while coercive practices are also used to implement transfers. When dealing with poorer nations multinationals may indeed invoke imperial attitudes. (Mir *et al.* 2008)

Schultz II and Nill (2002) analyse the social dilemmas associated with intellectual property rights violations from game-theoretical perspective. This study identifies several problems that make finding the global intellectual property rights protection system, which would serve the best long-term interests of largest number of society stakeholders, very difficult.

The study by Yang and Cheng (2008) relates the intellectual property rights protection with the context of privatisation of state-owned companies. Their model incorporates a multinational company, a local corporation, and host country government. They find that in case of a relatively small market size of host country stronger intellectual property protection or higher trade tariffs attracts more FDI. The high tariffs are likely to be used to attract FDI only when intellectual property is in small market weakly protected. In case of a relatively large host market neither these measures are likely to attract more FDI.

This discussion indicates that the relationship between intellectual property rights protection and FDI as well as the general context of technological knowledge transfers within and outside multinationals is very dependent on development levels, roles in international product life cycle, cultural differences, interplay of other environmental factors, in particular countries or regions. In the following section we describe the intellectual property rights creation and protection in Estonian.

The intellectual property and its protection in Estonia

European Innovation Scoreboard 2007 indicates that Estonia belongs to a country group of moderate innovators. The summary innovation index of this group is slightly below EU average. The calculated index for Estonia is 0.37, while index for EU27 is 0.45. Nevertheless, together with Czech Republic and Lithuania, Estonia was seen in scoreboard study as one potential candidate for catching-up within a decade. During the period from 2003-2007 the summary index of Estonia has improved from 0.35 to 0.37. (European Innovation Scoreboard 2007, 2008)

In this paper the focus is on intellectual property rights protection. Unfortunately when placed according to sub-indexes of knowledge creation² and intellectual property³ Estonia ranks lower than in other sub-indexes. In dimension of knowledge creation has 5th lowest rank among all 38 observed countries and in intellectual property dimension 11th lowest. (*Ibid.*)

In comparison to other Baltic countries Lithuania has somewhat higher and Latvia somewhat lower knowledge creation index than Estonia. In terms of intellectual property, however, Estonia ranks considerably stronger because Lithuania and Latvia rank as 5th and 6th lowest accordingly. (*Ibid.*)

Knowledge creation is according to scoreboard championed by Sweden and intellectual property by Switzerland. Innovation efficiency in terms of converting inputs into outputs is championed by Germany and Luxemburg, while all Baltic countries have relatively low efficiency in providing intellectual property and

² input dimension that includes public and private R&D expenditures as % of GDP, share of medium-high-tech and high-tech R&D in these expenditures, and share of enterprises receiving public funding for innovation

³ output dimension that includes EPO patents, USPTO patents, triad patents, new community trademarks, and new community designs (all per million population)

applications. However, placement of Estonia is considerably stronger than that of other Baltic countries. The share of non-R&D innovators is in Estonia about 57%, which is well above EU average of 46%. (European Innovation Scoreboard 2007, 2008)

In terms of patents, trademarks, and designs per million population Estonian data indicate 15.5 EPO patents (2003), no US patents (2003), 1.4 Triad patents (2005), 42.5 trademarks (2006), and 19.4 industrial designs (*Ibid.*)

Thus, in general Estonian innovations are not very intellectual property centred. Although the position is better than that of closest post-socialist neighbours the gaps with countries leading the knowledge creation and intellectual property aspects remain very large. All in all Estonia is a country with the small open market and predominantly imitative knowledge transfers.

The intellectual property statistics about 2008 are reported by the Estonian Patent Office. In terms of patents in total 72 applications were received 7 of which were PCT applications submitted via the Estonian Patent Office (See also Table 1). Although Estonian residents submit the majority of local applications, most entries into patent registry (final stage) concerned patents belonging to non-residents. The number of local patent applications is growing year by year. The numbers of registry entries have also increased. This is an indication that local patenting activities are gaining in importance. However, although before the EU accession the number of applications to local registry was far lower than now, the Estonian Patent Office processed much higher number of PCT applications than during 2006-2008. In 2001 for example 662 PCT applications, in 2002 663, in 2003 571, the number dropped after accession to EU.

Table 1. The applications and entries into local registries in 2006-2008

	Local applications		PCT/Intern. applications	Registered (Residents)
	Residents	Non-residents		
Patents 2008	62	3	7	172 (12)
Patents 2007	44	8	11	148 (3)
Patents 2006	36	7	2	95 (4)
Models 2008	132	4	4	65 (59)
Models 2007	117	5	2	61 (57)
Models 2006	67	6	2	69 (55)
Trademarks 2008	1426	374	2917	1238 (934)
Trademarks 2007	1537	443	3199	1178 (876)
Trademarks 2006	1284	420	3430	1379 (971)
Designs 2008	84	10	45	134 (87)
Designs 2007	62	59	70	157 (110)
Designs 2006	91	40	192	81 (46)

Source: The Estonian Patent Office, 2009.

Highest number of non-resident patents was in 2008 issued to Swedish owners (43 patents 25% share from all issued patents). Other foreign patent owners are from Germany (25; 14.53%), USA (23; 13.37%), France (18; 10.47%), Finland (8; 4.65%), and Belgium (7; 4.07%). The position of Finland in this list is in comparison to other neighbour Sweden is somewhat surprising. Also in 2007 Finland was in similar place. (The Estonian Patent Office 2009)

For utility models the general tendencies look quite similar. However, the share of Estonian residents among owners of registered models is higher than in case of patents. The figures in table 1 show that change in utility model registration has been slower than that of patent registration. (*Ibid.*)

The non-resident utility models were in 2008 owned by Russian residents (3 models or 4.62% share from all registered models). Denmark, Netherlands and Sweden were the other non-resident origins by one registered utility model each. (*Ibid.*)

The number of trade and service mark applications is much larger than in two earlier categories of intellectual property. It is natural because the creation of unique trademark is often pre-scribed by the nature of branding process. Also in this category applications of residents dominate. However, the share of non-resident applications from total number is much higher than for patents and utility models. If we include international registrations applied to be registered also in Estonia, then non-resident applications become dominant. Unlike in case of patents, the share of resident owners from all owners of registered trademarks is again high. There is no clear growth tendency in applications of trade and service marks. The registration numbers fluctuate also. Perhaps indeed different economic aspects prevail in trademark registration and patenting decisions. In some sense the statistics point also to the fact that intellectual property in distribution is much more common in Estonia than the proprietary aspects related to products and processes.

In 2008 local but non-resident trade and service marks were registered to US owners (82 trademarks; 6.62% from total of registered marks) and to owners from Switzerland (35; 2.83%), Finland (24; 1.94%), and Germany (21; 1.7%). When we include internationally registered non-resident trademarks that came into force in Estonia in 2008, then Germany dominates as the country of origin with 414 trademarks, followed by France (227), Russia (193), and Switzerland (189). (The Estonian Patent Office 2009)

Last major category of intellectual property governed by patent offices is industrial design. The figures in table 1 reveal considerable decline in local applications. From 2006 to 2008 the number of forwarded international applications has also decreased from 192 to 45. These statistics imply considerable setback in terms of new industrial designs, the causes of which are yet to be identified.

From locally registered non-resident industrial designs in 2008 42 designs or 31.34% of registered designs originated from Finland, 3 (2.24%) from Ukraine, 1 (0.75%) from France and 1 (0.75%) from Spain. The total of local and international

registered non.-resident designs was in 2008 dominated by owners from Switzerland (97 designs) followed by Finland (42), Germany (6), and Spain (4). This shows that the origin of registered non-resident patents, utility models, trade or service marks, and industrial designs is by no means limited to very close countries. (The Estonian Patent Office 2009)

Foreign direct investments into Estonia

Despite its smallness Estonia has succeeded in attracting the foreign capital. The incoming FDI has helped to re-build Estonian economy. Figure 1 shows the changes in the inward and outward FDI flows of Estonia between 2002 and 2007. Thus, it captures the period before and after EU-accession. It can be seen that inward flows have been far more prominent. However, after the EU-accession in 2004 the outward investments from Estonia have also gained in importance. In 2006 and 2007 the outward flows grew more consistently than inward flows. (Bank of Estonia 2009)

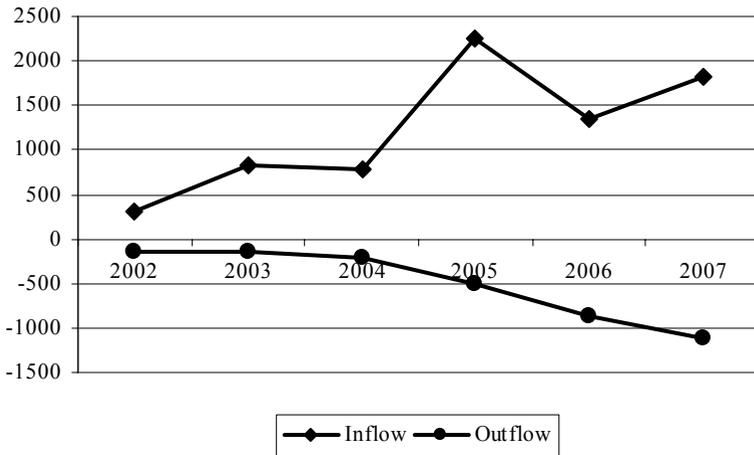


Figure 1. Inward and outward FDI flows in Estonia between 2002 and 2007 (in millions of EUR). (Bank of Estonia)

The total stock of Estonian inward FDI amounted to EUR 11929 million as of the end of September 2008, which is close to three times more than outward FDI (EUR 4728 million). The ratio between the stock of outward and inward FDI was 39.6% in September 2008 (35.4 % in the end 2007). This indicates that outward stock is indeed growing faster. (Bank of Estonia 2009)

By the fields of activity the most important sectors are financial intermediation with 32.7 % of total inward FDI (36.8% from outward FDI), followed by real estate and business services 28.1 % (35.1%), and manufacturing industries 14.3% (4.3%). In outward FDI stock third largest sector is transportation and telecommunication

sector with 12.0%. The FDI into Estonia is thus characterized by the dominating role of services. (Bank of Estonia 2009)

However, in years 1994-1995 most foreign investments were made into manufacturing industries. Based on the business statistics collected by Statistical Office of Estonia, we can say that in 1995 food, beverages and tobacco industries got 26.9% of all FDI made into manufacturing industries and production of chemicals, chemical products and oil shale accounted for 24.3%

If during years in between the chemical industries became most prominent recipients of inward FDI by getting 1/5 or even a quarter of all FDI into manufacturing, then for the year 2000 the relative importance of food and beverage industries increased again. In 2006 food and beverages accounted again for 23.5% of inward FDI. The pulp and paper industries got in the middle of 90s 8-10 percent of investments. Since 1997, the share of textile industries has fluctuated between 10 and 15 percent, being higher in a period 2001-2003. In 2004-2006 FDI into wood and wood products has increased above 12%. (The Statistical Office of Estonia 2009)

2003 and 2007 were the years of intensive investments into wholesale and retail trade. If in 2004, 2005 and 2006 the inflows of FDI to trade sector were smaller then the year 2007 became record-breaking in terms of amount invested into Estonian wholesale and retail sector. In that year about 345 million euros were invested into that sector. These industry level data reflect the ongoing expansion of predominantly foreign owned retail chains in Estonia. (*Ibid.*)

After the relatively volatile levels of investment inflows into transport, storage and communication, during the years 1999-2001 the annual flows stabilised above 64 million euros. During that period the inflow of investments into communication was supported by the privatisation process of Estonian Telecom and the abolishment of monopolistic agreements concerning communication services. From 2002 the inflows have been again more unstable. In some years sector gains foreign assets and in others loses. (*Ibid.*)

There have been certain very important changes in attractiveness of Estonian financial intermediation companies for foreign investors. When in 1994-1996 the FDI into that sector was modest in comparison with investments into manufacturing and trade, then the foreign interest peaked first in 1998 with acquisitions of strategic shares of two largest banks. In connection with these deals more than 275 million euros were invested into financial intermediation. The level of FDI inflow into that sector has been even higher in 2005-2007, fluctuating between 785 million and almost 2 billion euros annually. (*Ibid.*)

In the year 2007, more than 310 million euros were also invested into Estonian real estate, renting and business activities. In earlier years, 1994-1997, only below 13 million euros inward FDI went annually into that industry, but in recent years the level has been much higher but very fluctuating. In other industries the FDI inflows have been in general much smaller than in described industries. (*Ibid.*)

According to data from September 2008 39% of inward FDI has been received from Sweden, 24.7% from Finland, 6.3% from Netherlands, 3.9% from Norway, 2.8% from Norway, and 2.7% from Russia. Outward FDI has been made predominantly to Latvia (33.3%), Lithuania (28%), Cyprus (9.1%), Finland (4.7%), Russia (4.6%), Ukraine (3.9%), and Italy (3.2%). (Bank of Estonia 2009)

In the next section we will discuss the intellectual property rights protection policies for Estonia in connection with EU-membership and FDI. This should help to determine appropriate solution for attracting knowledge related FDI, while accounting for EU-wide protection systems.

The policy choices for intellectual property rights protection in Estonia

The national intellectual property rights protection in Estonia re-emerged with the re-establishment of the Estonian Patent Office in 1991. Patent law and utility model law were passed in spring 1994. Industrial designs have separate legal regulation since 1998 (the law was passed in November 1997). Trade and service marks received separate law from date of accession to EU (1st of May 2004), although legal acts were prepared two years earlier. All these laws have been by now refined several times. (The Estonian Patent Office 2009)

The general intellectual property rights protection is in accordance with various international treaties and conventions. The Estonian Patent Office processes also international patent applications related to Washington 1970 Patent Cooperation Treaty (PCT) and by the European Patent Convention 2002. The rights protection cooperation in the international and EU-wide patent networks prescribes strict processing and submission rules that are to be followed.

Thus, in terms of legislative and procedural standards Estonia is in accordance with EU-wide protection policy. This policy can be described as strong, harmonising, and aimed at community-wide cost efficiency. Prior to the accession to EU, and especially before new millennium, the Estonian intellectual property rights protection system dealt predominantly with applications from non-residents that were seeking legal protection in Estonia. Only the applications concerning utility models were mainly domestic in origin. In many respects the foreign patenting initiatives dominate even now. (The Estonian Patent Office 2009)

Although the legal framework has developed throughout the last 18 years, the larger problem in terms of sufficient protection has been the enforcement. In 1990-s Estonian police force lacked at first the experience and tools for adequately preventing the infringements. These difficulties of enforcement are usually most explicit in the field of copyrights for software and audio visual materials. In late 80-s and early 90-s the image of entire post-socialist region was characterised by widespread piracy in public markets. As the living standards have gradually grown, the police and NGO initiatives for better enforcement practices have emerged as well. The legal offerings are now also more affordable for an average consumer.

However, via internet based P2P software solutions certain intellectual property rights (especially copyrights) are now under global rather than local attack.

The copyright enforcement strength and practices in a country may serve as an important signalling tool about the general strength of intellectual property rights protection there. When police force, courts and other public or private guardian units fail to offer sufficient protection in these explicit infringement matters, far more fuzzy and implicit patent misuses are perceived as highly likely in such an environment.

Hence, the true strength of intellectual property rights protection is indicated not by regulatory standards *per se* but by strong cases of sufficient enforced protection in cases of claimed infringements. In Estonia the actual (enforced) level of protection is now considerably stronger than in 1990-s. This is especially true about the corporate usage of intellectual property.

In terms of intellectual property rights protection policies, the relative strength and attractiveness of the system are influenced not only by legal and enforcement issues. The other policy domains include the visibility of commercial usage, academy-industry links of intellectual property creation, and market size. In addition to these the general facilitation of innovativeness, short term vs. long term investment horizons, and intellectual property protection traditions came into play.

The relatively low level of domestic patenting in Estonia can be at least partially attributed to the weak links between academic research and commercialisation of results. Unlike in Sweden and Finland there is no long lasting tradition of industrial contracts. Although first signs of industry-driven research initiatives can be seen, the general research tradition in universities lacks strong connections to leading edge technological problems in Estonian industries. The ideas about the applicability of particular proprietary innovation in industries remain often too vague.

This aspect of intellectual property governance calls for following policy measures:

- Better utilisation of EU-wide financing schemes to facilitate academic research based on international industrial contracts (customised research for an industrial partner);
- Establishment of national financing schemes and development programs for the facilitation of applied research and academy-industry cooperation (by first screening the areas with highest intrinsic potential for such cooperation);
- Establishment of public promotion unit similar to International Financial Corporation from World Bank group, which can temporarily take equity ownership in spin-offs oriented for intellectual property commercialisation;
- Establishment of commercialisation consultancy unit for high-tech spin-offs by the Enterprise Estonia;
- Supporting Inter-university cooperation on applied research projects via the Ministry of Education and Research and its sub-units.

- Extended cooperation with other EU-members (especially Nordic countries) on intellectual property generation and utilisation practices.

Due to the extreme smallness of Estonian market for leading edge products the regional integration into EU in terms of exporting and industrial contacts is paramount in the facilitation of intellectual property commercialisation. Estonian market alone is inherently too small for solely national offerings. Access to wider Baltic, Nordic and EU markets is inevitable precondition for the efficient utilisation of domestically created intellectual property.

The smallness of our market can also explain the low usage of contractual entry modes (especially licensing in) in comparison to importing and inward FDI. The more extensive transfers of proprietary technology via licensing could be made visible by regional rather than local representation rights. These rights, however, are not easily obtainable and remain very sensitive to political as well as economic developments in target region. The Baltic-wide representation is quite visible possibility. The extension of such international target area to include Nordic region or Russia and Ukraine is unfortunately unlikely.

These facilitation policies might not bring sufficient impact without wider shift in industrial and economic policy towards valuing intellectual property creation. At present the Estonian economy is too reliant on application of imported solutions. Some innovative industry clusters in information technology (including Skype, Playtech, Webmedia, Regio) and in biotech (including Asper, Quattromed and others) have emerged, but even they do not always control core ideas. For example, Skype is still developed in Estonia, but the core solution is not domestic in origin.

The key issue for post-crisis Estonian economy will be the governance of domestic knowledge. It includes the eminent need to increase the general level of innovativeness and entrepreneurship in Estonian society. One serious barrier, to be accounted for in this process, concerns the short term profit expectations of post-socialist investors. Unlike imitative or distributive business models, the innovative projects require often considerably longer time before rendering considerable returns. The clearly defined public policies are also needed to facilitate long term risk taking by potential investors. In the initial stages of policy shift, this may require strong financial safeguards until long term investing becomes more habitual.

Estonia does not have deeply rooted intellectual property rights protection traditions, like for example USA, Japan, and Netherlands. The building of national patenting system prior to World War II was interrupted by Soviet era during which the fruits from intellectual property were obtained by government bodies and not by innovators. This reward policy did clearly alienate innovators from the fruits of their work and led to general public devaluation of intellectual property. Unlike in China, the causes for disregard were not deeply embedded in culture, but in prevailing public ideology. The almost two decades of independence have certainly helped to remedy this alienation to some extent, but it will take more time and joint effort to build strong tradition of intellectual property creation. This is a matter of not only

economic or industrial policies, but also for education policy concerning curricula in schools and maybe even in pre-schools.

These wider policy issues are also likely to impact the relationship between the strength of intellectual property rights protection in Estonia and inward FDI. On the bases of our discussion above it might seem that stronger and improved intellectual property rights protection and enforcement measures have clearly positive relationship to inward FDI. However, we have to ask, how important intellectual property is for foreign-owned companies in Estonia?

Proxy indicators of intellectual property usage by foreign-owned companies are included into 5th Community Innovation Survey, which covers the period from 2004 to 2006. From total of 1924 companies, who participated in survey⁴, 2.7% or 52 companies had applied for patent during 2004-2006, 1.7% or just 32 companies had registered an industrial design, 12.9% or 248 companies had registered trade or service mark, and 2.3% or 45 companies had applied for copyright. (Community Innovation Survey 5 2008)

More detailed view on these four intellectual property rights protection measures by ownership type reveals that patenting was undertaken slightly more in minority and majority foreign-owned companies. Minority foreign-owned companies registered trade or service marks also more than other types. Largest share of fully foreign companies made use of copyright laws. The intellectual property transfers and protection in domestic companies was in general more moderate than in the companies with some foreign ownership. (Community Innovation Survey 5 2008)

35.9% of all respondents from 1068 who answered to particular question said that in period 2004-2006 they had transferred patents, non-patented inventions, know-how, or other knowledge from other organisations.

Table 2 indicates that these inward transfers were somewhat more extensive in foreign-owned companies (especially in majority foreign or fully foreign companies). It has, however, to be notified that these transfers include also non-proprietary knowledge.

Table 2. Intellectual property rights protection and transfers (% of respondents)

	Foreign-owned companies				Domestic companies
	All	< 50%	50-99%	100%	
Patent application	3.6	4.5	5.9	2.3	2.3
Industrial design	2.0	2.7	1.5	1.9	1.5
Trade/service mark	13.7	18.2	16.9	10.6	12.6
Copyright application	2.7	2.7	1.5	3.2	2.2
Inward transfers	42.6	37.1	45.6	43.2	32.3

Source: Community Innovation Survey 5: 2004-2006, 2008.

⁴ all also answered particular intellectual property questions

To generalise, it seems that although the foreign ownership ties facilitate intellectual property rights creation and transfers, the relationship between foreign investments into Estonia and intellectual property in Estonia is rather weak.

This evidence is supported by various surveys of foreign investors. These indicate that investors are not primarily motivated by strategic assets (including intellectual property rights) and new technologies in investing into Estonia. The market presence and growth are far more important motivations. Patents and licenses are also not the main sources of their competitive advantage. Inward-outward transfers of patented technology ranked also low among other types of knowledge transfers and are thus not very important and common. (The Survey of Estonian Outward FDI 2006; The Survey of Estonian Inward FDI 2006)

Given this more detailed information from surveys, it seems more appropriate to conclude that due to low creation and usage of intellectual property by foreign investors in Estonia the strength of intellectual property rights protection and inward FDI flows are weakly related or even autonomous. There are no strong complementarities between the intellectual property and FDI. This can be also attributed to the small market size here in Estonia, which does not provide attractive incentives for intellectual property usage. Other cause might be that the large investments into service sector rely on specific knowledge types, which cannot be directly patented.

The discussion of policies showed that although legal framework is to the large extent pre-scribed by international and EU-wide cooperation. The strengthening of intellectual property rights protection can occur through enhanced enforcement practices and image. However, the relative strength of the protection system is influenced considerably by the visibility of commercial usage via academy-industry links, market size, the general facilitation of innovativeness, short term vs. long term investments, and intellectual property traditions. The relationship between the strength of intellectual property rights protection and FDI into Estonia was shown to be uncommonly weak.

Conclusions and implications

The relationship between the strength of intellectual property rights protection and FDI and is not straightforward. The strengthening of intellectual property rights protection in imitating region (for example in catching-up country like Estonia) can also reduce incentives for FDI to there and innovation. The policy of multinational companies may also be rather hegemonic and rent reaping. It is difficult to determine globally acceptable and economically as well as socially suitable standards of intellectual property protection.

The comparative levels of knowledge creation and intellectual property in Estonia are relatively low. This implies that unlike in Sweden, Switzerland, USA, Germany and Finland, insufficient public or private funding is provided for innovation, and that the available funds fail to render an efficient output in terms of international

patents, trademarks and industrial designs. In comparison to other Baltic countries Estonia has still the strongest position and from general innovation perspective the catching-up to EU average level might happen faster than in several other member-states.

During 2006-2008 local applications and registrations of patents by the Estonian Patent Office have increased in numbers. More massive submission of applications for international PCT patents took place in 2001-2003 and thus prior to EU accession. The utility model registration applications are in Estonia more common than patents. Most popular registration efforts concern trade and service marks. Industrial designs are submitted less intensively than some years earlier.

Estonia has been very successful in attracting inward FDI. Outward flows have grown predominantly in new millennium. The largest share of FDI has been received by financial intermediation sector followed by real estate and business services. The inward FDI into Estonia can in general be described by the dominance of service sector. Sweden and Finland have contributed the dominant share of inward FDI.

The legislative aspects of intellectual property rights protection in Estonia have been formalised and gradually improved starting from 1994. Much like in other post-socialist economies, the initial situation with enforcement was poor and reflected badly on general image of intellectual property protection. At present the enforcement measures are considerably better. The legal framework is by now indeed largely determined by international and community-wide intellectual property protection standards. The further strengthening of intellectual property rights protection can take place by enhancing the local enforcement practices and subsequently international image.

The relative strength of the intellectual property rights protection system is influenced also by the visibility of commercial usage via academy-industry links. The policy mix of international and national efforts is needed to facilitate these links. The small market size in Estonia is an important barrier for intellectual property transfers. Enhanced regional integration to govern rights in larger target region is needed.

The general facilitation of innovativeness and additional public incentives for long term investments into innovative projects as well as re-establishment of interrupted intellectual property traditions are vital policy issues as well.

The relationship between the strength of intellectual property rights protection and FDI into Estonia is rather weak. The intellectual property and FDI are in Estonian context not strongly complementary. The reason might lie once again in a small market size that is insufficient for the provision of attractive intellectual property usage incentives. It may also relate to the fact that the large and dominant investments into Estonian service sector rely on specific knowledge types, which cannot be patented or otherwise legally protected.

The results of this policy discussion are limited by the lack of comprehensive survey on the subject. The available proxy indicators used in this study do not capture the entire complexity of the intellectual property rights protection issue. Patents, utility models, trademarks, and industrial designs cover only most legal and explicit types of proprietary knowledge. The statistics and survey results provide preliminary possibilities for generalizations, but the true nature of international knowledge transfers is often very tacit and embedded in particular governance structures.

Hence, the theoretical implications from our discussion point to a need for the investigation of FDI and intellectual property protection relationships from management perspective. The studies done so far are often at macro level and to aggregating in nature.

Managers can benefit from this study by mapping out their role in contributing to the various suggested intellectual property policies and by monitoring the potential for academic research contributions into intellectual property development in their particular business area. The managers' involvement in the public discussion about the appropriate commercialisation policy measures is vital for the emergence of inherently functioning initiatives and academy-industry links.

The future research could focus on providing more detailed data about the main types of knowledge involved in international intra-corporate transfers. Other important research venue relates to the efficiency of intellectual property usage in small open economies and to the possibilities for enhancements in that field. The discussion of intellectual property rights protection and its strength could also benefit from detailed case studies, which would help to discuss the particular causes of intellectual property creation and usage.

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THE IMPACT OF INNOVATION POLICY ON THE SECTORAL STRUCTURE OF THE ESTONIAN ECONOMY

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Abstract

The current global economic crisis has increased the awareness of the role of knowledge-based economy in raising international competitiveness. For contributing to faster economic restructuring, knowing the quantitative effects of innovation policy decisions is relevant. Using an exports structure as an indicator of a production structure, a pooled data approach allows estimating the elasticity of the exports structure on innovation indicators. Admitting estimation limitations of the short time series available, the estimation results confirm a statistically significant effect of enterprises' expenditures on research and development, and labour productivity on exports structure. The elasticity of the specialisation on higher technology intensity industries is generally higher than the elasticity of lower technology intensity industries. Knowing quantitatively confirmed effects in the past contributes to more effective competitiveness supporting policy decisions ahead.

Keywords: innovation, competitiveness, catching-up, specialisation, knowledge-based economy, structural change, medium-high technology (MHT) and high technology (HT) intensity industries

Introduction

The role of innovation policy has increased in catching-up economies like Estonia, where the sources of international cost-competitiveness are about to be exhausted. The Estonian economy has benefited from a comparative advantage arising from relatively low labour costs over the last 10-15 years. Strong cost-competitiveness has attracted extensive investments and has allowed the economy to converge with the advanced economies at a fast pace. For further convergence, the Estonian economy needs a significant qualitative shift towards more productive production structures. The authorities can initiate and contribute to the shift by creating a supportive environment, including developing and implementing innovation policy.

Estonia has recognised the crucial role of innovation capability of the corporate sector for sustainable growth of the economy and has established a supportive framework. The government has adopted a research and development and innovation strategy "Knowledge-based Estonia 2007-2013" and implements it on a continuous basis. The effectiveness of the policy can be measured by respective indicators, also listed in the implementation plan of the strategy. In regular policy assessments the effect of policy decisions on actual changes in production structures are not common, therefore lacking quantitative impact estimations. The current paper aims at providing additional quantitative information on the elasticity of production structures on changes in the research and development and innovation

environment. The estimates of the linkages in the past can be used for assessing the expected impact of future policy decisions. The adequate policy measures, including innovation policy decisions, have become even more relevant in the context of the current global economic crisis. The faster the economy can adjust in the changed environment, the higher the probability of achieving sustainable growth.

In the following analysis, a traditional pooled data approach is used in order to increase the number of observations for statistically representative results. The methodology allows estimating an impact of a research and development indicator on a pool of higher technology intensity industries. Changes in the production structure or the dependent variable is measured as changes in the exports of the respective industries. Exports structure is directly linked to the production structure of the exporting sectors and reflects generally the changes in specialization. Additionally, the innovation strategy is focused on improving international competitiveness of firms, therefore exports structure serves as an adequate indicator for structural changes.

Theory and empirical findings

In contemporary economics it is widely accepted that the economic growth is faster the higher the openness of the economy, i.e. the more the country exports and imports (see e.g. Perera-Tallo 2003). Innovation is increasingly seen as an additional source of economic growth that increases international competitiveness (e.g. León-Ledesma 2002). An introduction of modeling endogenous innovation gained followers increasingly in the 1990s (see e.g. Grossman and Helpman 1990).

The literature on the economics of product variety agrees that the “*degree of product variety increases with the competitiveness of the market*”, which is mainly seen in the context of market structure: “*the variety is greater under monopolistic competition than under monopoly*” (Lancaster 1990). The concept could be augmented to a macro-economic approach, suggesting that a more competitive economy produces and exports a greater variety. The introduction of product variety or product diversity in trade models roots back to extensions of the traditional Heckscher-Ohlin model (see e.g. Lawrence and Spiller 1983), also referred to as the new trade theory (Borkakoti 1998). The new trade theory takes into account market imperfections, mostly referring to monopolistic competition in international trade (see Helpman 1988). After the opportunities of inter-industry specialisation have been exploited (e.g. specialisation in textiles or machinery), intra-industry specialisation in similar products (e.g. specialisation in sports cars or passenger cars) takes over in further integrating international trade (Balassa 1966). The trade partners specialise in similar products belonging to the same industry in order to differentiate the exported products from the production of the destination country.

In recent studies export variety has been analysed mainly in the context of its impact on economic growth, as in Ventura (1997) and Jones (1998). Ventura (1997) shows in his theoretical setup how economic growth is driven by physical capital accumulation and that countries specialise according to comparative advantage,

explaining export-led growth. He also notes that exporting manufacturers specialising in capital-intensive sectors may have played a key role in the rapid East Asian growth process.

Jones (1998) also acknowledges that countries investing more strongly in physical capital tend to be richer. A simple semi-endogenous growth model is provided in which economies become more productive as a widening of the spectrum of available products occurs. The model emphasizes the importance of product variety since the steady state income level depends on the degree of product variety. In the model, increased product variety accelerates per capita income levels by more fully realising dynamic economies of scale. Similarly, Feenstra and Kee (2006) introduce a growth model with similar aspects as the Melitz (2003) monopolistic competition model. They show that in the presence of monopolistic competition and heterogeneous firms relative export variety enters positively in the GDP function.

The linkages between innovation and a catching-up process (incl. convergence in productivity levels) have been empirically tested on OECD countries, confirming positive elasticities (León-Ledesma 2002). Additionally, a statistically significant favourable role of technological upgrading in OECD economies' international competitiveness has been empirically shown (Montobbio 2003; Madsen 2008). The empirical evidence on the US confirms that net exports have a positive elasticity on industry productivity growth and support "*the technology-gap model of trade*" (Wolff 2003). In case of the UK it has been concluded that "*innovation improves the average quality and the variety of products of offer which attracts more demand*" (Greenhalgh *et al.* 1994). Empirical studies on the US suggest that "an institutional environment favourable to innovation" has strongly contributed to the development of high-tech sectors, and consecutively to a generally strong economic growth (Simonazzi 2003). On the other hand, by increasing research and development expenditures, imports needs might decrease, favouring a sustainable development in terms of external balances (Anderton 1999).

Together with innovation and technological upgrading, product variety has been empirically confirmed to be a determinant of general export performance in OECD countries (Madsen 2008), contributing to international competitiveness and to the catching-up process. A continuously widening product differentiation or product variety increases globally trade and welfare (Hummels and Klenow 2005 and Broda and Weinstein 2004). Several studies have confirmed "*a direct link between export variety and productivity*" (Feenstra and Kee 2004), i.e. a positive effect of a variety to country's productivity (Feenstra *et al.* 1999; Funke and Ruhwedel 2001, 2002, and 2005). The specialisation in variety can be measured in comparison to a trade partner (e.g. CES production function approach, see Feenstra 1994), but also as a count-based approach for one country (number of products produced, exported or imported). For Eastern European transition economies export variety has been measured relative to the export variety in the U.S., based on CES production function approach (Funke and Ruhwedel 2005). The results for 14 Eastern European countries show that export variety in Estonia lags far behind that in Czech Republic, Hungary, Poland and even Russia and Lithuania, but is leading Latvia. As an

alternative measure, Funke and Ruhwedel (2005) apply product counts. Denoted as “the simple count-based measure”, this alternative method leads to a similar ranking of the countries, except for indicating a higher diversity in Estonian exports compared to Lithuanian exports. The authors also distinguish between capital intensive and labour intensive goods, and find much higher export variety in capital intensive goods in Estonia. For labour intensive goods, a huge drop in export variety was registered for Estonia in 1998 with a gradual increase afterwards, reflecting the impact of the Russian crisis.

Innovation policy in Estonia

Estonian innovation policy focuses on ensuring innovation and growing capability of Estonian enterprises, using a variety of supportive measures. Innovation policy addresses both the development of internationally competitive production higher technology-intensity industries, and the promotion of innovation and technology-intensity in traditional and also currently competitive industries. Estonian innovation policy is implemented by the Ministry of Economy and Communication.

For increasing the efficiency of innovation policy, Estonia has adopted the research and development and innovation strategy 2007-2013 “Knowledge-based Estonia” (Estonian ... 2007). The strategy focuses on 1) coordinating research and development activities, 2) entrepreneurship and competitiveness, and 3) the public sector and the formation of research and development and innovation policy.

The strategy prioritises increasing the innovation capability of enterprises, by raising it to one of the three main objectives of the strategy: innovative entrepreneurship contributing to the value added of the global economy. Innovation capability of enterprises is directly addressed by one of the four main measures of the strategy (Measure 3).

The research and development and innovation strategy is implemented based on its implementation plan (Eesti ... 2007). General implementation plan for 2007-2013 foresees the Measure 3 “Increasing the innovation capability of the enterprises” to provide a number of expected results. For the structural change, the directly related indicators are an increase of new products and services, increase of their sales revenues in total turnover, an increase of research and development and innovation investments in total turnover, and an increase in total productivity of enterprises. Additionally, the strategy targets acceleration of the increase of technology-intensive industries and the increase of the share of medium-high and high technology industries in value added, exports and employment.

The effectiveness of meeting the priorities set in the strategy is measured by specific indicators defined in respective governmental research and development programmes. The achievements of meeting the objective of the strategy “Increasing the innovation capability of the enterprises” have been relatively significant in terms of increasing expenditure on research and development (in 2001-2007), while sales revenues of new products remained low (Eesti ... 2008). The current analysis

complements the innovation strategy intermediate report results by focusing directly on the effect of innovation policy measures on exports behaviour. Additionally, while the intermediate report presents innovation indicators of relative shares and indices, the current analysis provides estimates of elasticity-type linkages of processes.

Estonian exports structure

Estonia is a highly open small economy with merchandise exports above 50% of GDP. The Estonian exports structure is relatively heterogeneous, dominated by machinery exports (20% of total merchandise exports in 2007), and followed by metals and metal products (10%), and timber products (10%). For statistical reasons, Estonia reports high exports of mineral products (10% of total merchandise exports in 2007) that reflects transit related trade of motor fuels. Transit-type trade transactions also trigger a high share of motor vehicles in Estonian exports (9% in 2007).

In terms of technology-intensity, Estonian exports are dominated by medium-low technology intensity exports, mainly due to a high share of motor fuels in total exports (see Chart 1). Excluding transit-type exports-transactions (incl. motor vehicles that are classified as production of medium-high technology intensity industries), Estonia exports mainly products of low technology intensity: timber products, food and beverages, and textiles and clothing (see Annex 1 for the complete classification).

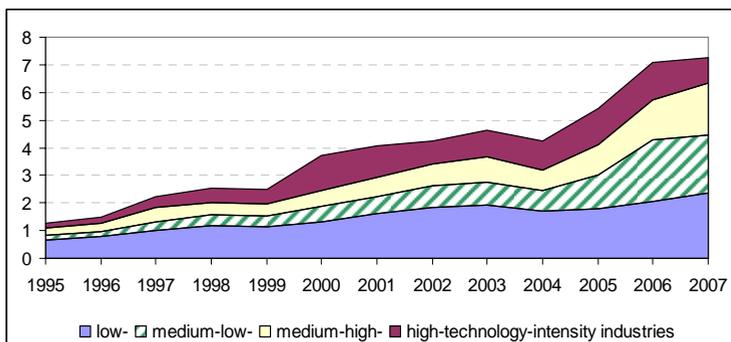


Chart 1. Structure of Estonian manufacturing exports based on technology intensity of industries, 1995-2007 (bn EUR). (Eurostat Comext database)

In terms of export product variety, the ranking of industries does not overlap with the ranking in terms of export value. The most diversified in terms of Harmonised System (HS) 6-digit products has been the export of non-electrical machinery. Over the 10 years, the industry contributed up to 5% of total manufacturing export value. Of total number of HS 6-digit products exported, non-electrical machinery products constitute 11-12%, comparable to diversification of textiles, chemicals and food industries.

Although the increase in export value of an industry can be related to introduction of new products exported, it does not mean that the largest exporting industries have the highest number of products exported. For example, in case of food industry the value of exports amounted to 25% of total manufacturing exports while food products constituted only 12% of total manufacturing products exported. Also, the exports of one of the largest exporters, the wood and pulp industry, have a relatively low diversification in products, wood and pulp products constituting 2% of total manufacturing products exported. The same applies for electronics-communication products, the share of which in total products exported has remained at 2% although its contribution to total manufacturing exports value has increased to 16%.

In terms of relative concentration, product diversification has been distributed somewhat more evenly across industries compared to export value. In contrast to the more significant changes in relative shares of industries in exporting value, there are no large changes over time in relative shares of products exported across industries. The total number of exported manufacturing products increased by 20% between 1994 and 2007. The largest absolute increase took place in the textiles industry. Large relative increases of exports product variety in electronics-communication and wood and pulp industries match the strong increases in export value of these industries, confirming the positive correlation between two growth rates.

In the distribution of export products according to technology-intensity based groups, the relative shares of four groups have remained relatively unchanged, confirming the results discussed above (see Chart 2). Products of low-technology intensity industries still account for 40% of total manufacturing products exported, while the share of such industries in export value has dropped from 50% to 40%. Low-technology intensity industries include food, textiles, clothing and other manufacturing products that are among the industries with the highest product diversification, but also the wood and pulp industry with a relatively low product variety but a high contribution to export value.

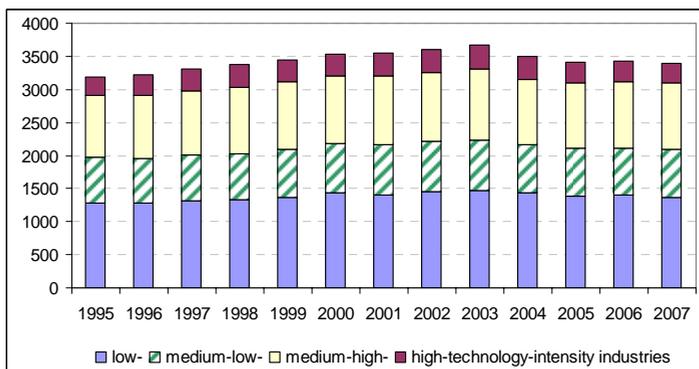


Chart 2. Structure of the product variety of Estonian manufacturing exports based on the technology intensity of industries, 1995-2007 (number of product groups). (Eurostat Comext database)

The share of the exported products of medium-high technology intensity industries (including high product variety industries in Estonia: chemicals and non-electrical machinery) has remained 30%, while the share of products of medium-low-technology intensity industries (incl. basic metals and fabricated metal products) still constitutes 20%. The share of high-technology intensity products (incl. scientific instruments) has remained at about 10%. In the trade statistics, some slight decrease in low-technology products and a slight increase in high-technology intensity products can be distinguished over the years (about 1 percentage point), but as this can also be due to small errors in data collection, so no firm conclusions can be drawn.

Methodology and data

The impact of innovation policy on exports structure is estimated based on the pooled data approach, using the traditional ordinary least squares estimation method. The estimation test an hypothesis whether innovation indicators have a statistically significant positive effect on exports, more specifically on exports structure. Four alternative exports variables are used for the dependent variable ($structure_{it}$), distinguishing four groups of manufacturing sectors, based on technology-intensity:

$$\Delta \ln structure_{it} = \alpha \Delta \ln innovation_t + \varepsilon_{it}$$

The issue of exports structure is addressed by estimating the effect of innovation indicators on higher technology intensity industries (excluding low technology intensity industries) and comparing the results to the estimates for the total set of industries. Innovation indicators are not industry-specific, therefore explanatory variables are common for all industries, varying only across time ($innovation_t$). According to standard ordinary least squares estimation method, the estimation includes residuals (ε_{it}). For eliminating the unit root from series, first differences (Δ) are used for estimating the coefficients (α) or the effects of innovation indicators.

Exports structure is used as an indirect proxy for production structure of the economy, partly reflecting the international competitiveness of the industries. To estimate product variety in Estonian exports, disaggregated foreign trade statistics of Estonian exports are necessary. The current paper uses the disaggregated Comext database of trade statistics provided by Eurostat.

As the focus of the study is on differentiated products, it is important to limit the data to manufactured products (Classification of economic activities in the European Community NACE Rev. 1.1 at 2-digit level the levels 15-36). The highest available disaggregated product level is the 6-digit level of the Harmonised System (HS) classification that is used in the following analysis.

From the perspective of competitiveness and sustainable economic growth the changes in product variety of high-technology products is especially important. In order to estimate the relevance of changes in product variety of technology-intensive products in Estonian exports, the grouping of industries according to the Eurostat

classification of manufacturing industries by technology intensity has been used. Eurostat classifies all manufacturing industries into four technology-intensity based groups (see also Annex 1):

- 1) high-technology (aerospace, pharmaceuticals etc.),
- 2) medium-high-technology (electrical machinery, motor vehicles, etc.),
- 3) medium-low-technology (rubber and plastic products, non-metallic mineral products, etc),
- 4) low-technology (food, beverages and tobacco, textile and clothing, etc.).

The Eurostat classification of economic activities by technology intensity is based mainly on NACE 2-digit level aggregation. From chemicals (NACE 24) the pharmaceuticals (NACE 24.4) are classified as high-technology products, while the remaining chemicals are classified as medium-high-technology products. NACE 3-digit classification is also applied for transportation equipment, classifying aerospace (35.3) as high-technology, shipbuilding as medium-low-technology (35.1) and other transportation equipment as medium-high-technology industries.

Estonian foreign trade statistics are product-group based and are classified according to NACE 2-digit aggregation level but not according to NACE 3-digit aggregation level. In order to follow the technology intensity classification of Eurostat, pharmaceutical (NACE 24.4), aerospace (NACE 35.3) and shipbuilding (NACE 35.1) products are distinguished by the verbal product description in trade statistics in the following analysis. Despite its subjectivity, this is the only possible approach to the NACE 3-digit industries product classification. As the descriptions on 6-digit aggregation level are relatively detailed the possible bias should not be very significant and therefore should not seriously influence the results of the analysis. The number of industries included in the analysis is 27, distinguished according to Eurostat's economic activities technology intensity based classification (NACE 2-digit and 3-digit).

Innovation policy intermediate results are measured in terms of standardised innovation and research indicators, provided by Eurostat (Eurostat. Structural ...). Taking into account time series length limitations and the relevance of the indicators for exports structure, the effect of the following indicators was tested:

- Spending on human resources, in terms of total public expenditure on education as a percentage of GDP;
- Gross domestic expenditure on research and development;
- The share of the enterprise sector in total gross domestic expenditure on research and development;
- Patent applications to the European Patent Office EPO, number of applications per million inhabitants.

Additionally an indicator of labour productivity per person employed was used, partly reflecting changes in the general economic background. All data are of annual basis, starting generally in 1997 or 1998, and ending in 2006 or 2007.

Estimation results

Estimation results are consistent with general economic intuition and confirm the hypothesis that innovation indicators have contributed to changes in exports structure. Three innovation indicators of the tested four show a statistically significant impact on exports, and an additional structural indicator labour productivity shows also a statistically significant effect on exports value structure in the estimation period 1996-2007.

Due to data availability, the sample period varies across innovative indicators, implying a varying number of observations (see Annex 2). The estimates of the impact on all industries are based on 30-40 observations, while the estimates of the impact on more technology-intensive industries is by one fourth lower, as the data on low technology-intensity industry are excluded from the dependent variable. The shortest estimation period (seven years) is for the research and development expenditure in the business enterprise sector, while for labour productivity and education expenditure variables the estimation period is the longest (nine years).

In case of structural changes, the changes in earlier periods of innovation indicators or lagged impact might affect exports variables. In the current analysis, statistically significant lagged effects were confirmed for four variables. An increase in a previous period ($t-1$) in expenditure on education had a statistically significant effect on the number of products exported. An increase in two periods earlier ($t-2$) in the number of patent applications and in the business sector expenditure on research and development had a statistically significant effect on both exports values and the number of exported products. An increase in labour productivity and in expenditure on education had a statistically significant effect on exports value in the same period.

The effect of innovation indicators is stronger on exports of more technology intensive industries in case of all tested variables, indicating the effectiveness of innovation policy. While innovation policy aims at increasing innovation in all industries, for increasing international competitiveness and ensuring sustainability of economic growth the development of more technology-intensive industries is of high priority.

Conclusions

Innovation policy is one of the government's main tools to promote and contribute to the structural change that the economy needs for sustainable growth. The current global economic crisis has speeded up the need for considerable changes in the economic structure in order to face slowing or declining external and domestic demand. The efficiency of innovation policy has now become even more important. Well targeted policy measures could be used for helping the enterprises to adjust quickly and smoothly to the changed economic environment and to build a basis for longer-term international competitiveness.

While the need for innovation is inevitable, the quantitative strength of the linkages between innovation policy and actual changes in economic structure are rather unclear. The current analysis contributes to the background knowledge of the impact of earlier policy measures on the economic structure. Knowing the likely impact of the measures in the past might increase the efficiency of the following policy decisions.

Estonian economic structure is dominated by low technology-intensity industries that have to introduce innovative changes in their production in order to maintain international competitiveness. For further sustainable economic growth, the currently low share of higher technology-intensity industries has to increase both in production and in exports. Estonian innovation policy, supported by ongoing implementation of a medium-term research and development and innovation strategy, targets an increase of new products and services, introduction of new technologies, and development of technology-intensive industries.

Distinguishing exporting manufacturing industries by their technology intensity, detailed exports data allows estimating the impact of changes in innovation indicators on exports structure. The elasticity of exports structure on changes in innovation environment is estimated by using Eurostat data of innovation indicators as intermediate results of Estonian innovation policy. Pooled data estimations of annual data of 1998-2007 show that out of the five tested variables, four indicators are statistically significantly and positively related to exports value and three indicators are statistically significantly and positively related to the number of exported products. In all cases the effect of higher technology intensity industries is stronger than on total number of industries. The estimations confirm expectedly that an increase in 1) total public expenditure on education, 2) the enterprises' expenditure on research and development, 3) patent applications to the European Patent Office and 4) the overall increase in labour productivity increase the exports value. Labour productivity does not have a statistically significant effect on the increase in the number of exported products, while the other three tested indicators show a statistically significant contribution to the increase of the number of products exported. Research and development expenditure of all economic sectors (including the public sector) does not have a statistically significant effect neither on exports values nor the number of products exported probably due to a too high aggregation level of data. For further more detailed assessments, estimations could be run on firm-level based innovation data, collected by the European Union-wide *The Community Innovation Survey* (CIS). Estonian firms have participated in three surveys (CIS3, CIS4 and CIS5), covering information up to 2006. The data would also allow international comparisons across EU Member States, providing information on relative effectiveness of Estonian innovation policy compared to policies of other Member States.

The analysis confirms the existence of statistically significant linkages between innovation indicators and the Estonian exports structure in the recent decade. The knowledge of a size and significance quantitative effects might be used as a

background knowledge for assessing possible impact of current of future policy measures and contribute to more effective innovation policy.

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Annex 1. Classification of industries according to technology-intensity

Technological intensity group	NACE¹ Rev. 1.1 industries
High-technology	Aerospace (<i>NACE</i> 35.3) Pharmaceuticals (24.4) Computers, office machinery (30) Electronics-communication (32) Scientific instruments (33)
Medium-high-technology	Electrical machinery (31) Motor vehicles (34) Chemicals (excl. pharmaceuticals) (24 excl. 24.4) Other transport equipment (35.2+35.4+35.5) Non-electrical machinery (29)
Medium-low-technology	Coke, refined petroleum products and nuclear fuel (23) Rubber and plastic products (25) Non-metallic mineral products (26) Shipbuilding (35.1) Basic metals (27) Fabricated metal products (28)
Low-technology	Other manufacturing and recycling (36+37) Wood, pulp, paper products, printing and publishing (20+21+22) Food, beverages and tobacco (15+16) Textile and clothing (17+18+19)

Source: Eurostat.

¹ *NACE* – Classification of economic activities in the European Community.

Annex 2. Pool estimation results

Explanatory variable		Dependent variable			
		Value of exports in all industries	Value of exports, excl. low technology intensive industries	Number of exported products in all industries	Number of exported products, excl. low technology intensive industries
1. Labour productivity per person employed	Coefficient value	2.6118*** ²	2.974***	0.055	0.016
	Std. error	0.734	0.948	0.111	0.139
	No. of observations	40	30	40	30
	R-squared	0.031	0.048	0.005	0
	sample	1998-2007	1998-2007	1998-2007	1998-2007
2. Total public expenditure on education as a percentage of GDP (t and t-1)	Coefficient value	2.265***	2.671***	0.212**	0.135*
	Std. error	0.815	1.034		
	No. of observations	40	30	40	30
	R-squared	0.241	0.219	0.056	0.059
	sample	1996-2005	1996-2005	1996-2005	1996-2005
3. Patent applications to the European Patent Office (EPO): Number of applications (t-2)	Coefficient value	0.301***	0.335***	0.027***	0.035***
	Std. error	0.076	0.099	0.01	0.0125
	No. of observations	36	27	36	27
	R-squared	-0.001	-0.022	0.155	0.22
	sample	1997-2005	1997-2005	1997-2005	1997-2005
4. Gross domestic expenditure on research and development (t-1)	Coefficient value	-0.029	-0.059	-0.02	-0.059
	Std. error	0.045	0.055	0.0459	0.055
	No. of observations	32	24	32	24
	R-squared	0.001		0.001	0.027
	sample	2000-2007	2000-2007	2000-2007	2000-2007
5. Gross domestic expenditure of research and developments: Business enterprises sector (t-2)	Coefficient value	0.754***	0.84**	0.097**	0.126**
	Std. error	0.287	0.371	0.0436	0.053
	No. of observations	28	21	28	21
	R-squared	0.033	0.056	0.123	0.19
	sample	2001-2007	2001-2007	2001-2007	2001-2007

² Statistical significance of the coefficients is indicated as follows: *** - statistical significance at 99% level, ** - at 95% level, and * - at 90% level.

COST OF CAPITAL IN PRICE-REGULATED COMPANIES: THE CASE OF ESTONIA¹

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Abstract

In case of price-regulated companies it is the role of appropriate government agencies to introduce clear, internally consistent, theoretically sound, and unambiguous methodology for finding the regulative cost of capital. The aim of the paper is to describe and analyze the cost of capital estimation methodology for regulated companies in Estonia and discuss some issues arising in applying this methodology. The current paper focuses on two topical issues associated with the estimation of regulative cost of capital in Estonia: estimation of market risk premium and inclusion of currency risk premium into the cost of capital. Current turmoil in financial markets has increased investors' risk aversion as well as level of risks.

Keywords: price regulation, cost of capital, market risk, currency risk

Introduction

There are some industries that are said to be natural monopolies. In such industries one firm can produce a desired output at a lower social cost than two or more firms. Mostly these are the industries where business is based on transmission networks (railways, telecommunications, public utilities etc). As with other monopolies, a monopolist who has gained its position through natural monopoly effects may engage in behavior that abuses its market position (e.g. charge a far higher price than justified by the production costs and earn an excess profit on its capital). Therefore such industries are often subject to government price regulation.

The regulated price (plus possible subsidies from the government) should cover all the costs of necessary production inputs including the cost of capital. In case of monopolistic companies a target rate of return pricing is often used. In a competitive market most companies are not able to earn rate of return above their cost of capital continually. Therefore many regulators follow closely the cost of capital of regulated utilities in their price regulation activities.

The cost of capital can be defined as the minimum rate of return required by the investor on some specific investment. If the expected rate of return on the investment project is lower than the cost of capital, such a project should be rejected according to the value maximization principle. The latter is the cornerstone of modern financial theory (Jensen 2002)

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There are many different approaches how to estimate the cost of capital (especially ambiguous is the estimation of cost of equity) and while some methods are more “theoretically” sound than others, their implementation still raises many questions. In case of price regulation, any ambiguity can lead to a dispute between the regulator, the company and its customers. In order to reduce ambiguity, Ministry of Economy and Communication as well as Estonian Competition Authority have developed a methodology how to estimate the cost of capital in regulated companies. Despite their efforts some issues still remain open and forensic debates are not uncommon.

The aim of the paper is to describe and analyze the cost of capital estimation methodology for regulated companies in Estonia and discuss some issues arising in application of this methodology.

The paper is structured as follows. First section discusses main distinctive features of cost of capital estimation in regulated industries based on previous literature. Then, the methodology for estimating the cost of capital developed and used by Estonian regulators will be described. The last section analyzes some problems arising in applying this methodology in practice as well as proposes possible solutions to them.

The distinctive features of cost of capital estimation in regulated industries

Literature about cost of capital and rate regulation list many distinctive features of cost of capital estimation in regulated companies. The following summarizes only the most important ones.

The first distinctive feature of estimating the cost of capital in price regulated industries is that the cost of capital affects the price of the product and thereby also operating cash flows of the company and the actual rate of return. In a competitive market the market forces should bring the rate of return to its equilibrium, i.e. to the state where in the long run the rate of return equals the cost of capital. Most price regulated companies operate as natural monopolies, i.e. without any competition. Therefore the price regulators use the cost of capital figure as benchmark for accepted rate of return and set prices according to that. According to Pedell (2006) the assessment of cost of capital directly affects the cash flows of the regulated utility. The cash flows and their expected variability on the other hand influence market value and risk-adjusted cost of capital of the regulated utility, which introduces a specific circularity problem of rate regulation in the cost of capital assessment. Such circularity prevents of using market value of debt and equity as the regulatory rate bases and forces to rely on book values instead. Conventional regulatory “cost of capital” is therefore based on book value weights (Patterson 1995). Circularity issue also hinders the estimation of cost of equity by using Market-to-Book Ratios or DCF Models (*Ibid.*).

Next distinctive feature is that the regulatory commission has to take into account an appropriate risk-adjusted cost of capital when calculating prices, and, at the same

time, its directives are one of the major risk drivers or even the most important risk driver for the regulated firm (Robichek 1978; Pedell 2006). The appropriate estimate of cost of capital for regulated firm should take into account how the regulation affects the risk level of the company. In case of a perfect rate-of-return regulation that would guarantee the regulated firm a pre-specified rate of return on all investment at any moment of time all risks would vanish and the appropriate cost of capital would be risk-free interest rate (Patterson 1995). This, however, is hardly a case in practice as it would require perfect information as well as continuous adjustments in regulated prices (*Ibid.*). In practice, while through regulation the company is promised to earn the pre-specified rate of return, the regulation itself creates so-called asymmetric risks. If prices are fixed by the regulatory commission for a certain period, the regulated firm cannot adjust to (unexpected) changes on its selling market neither can it adjust its output prices flexibly to fluctuations in input prices (Pedell 2006). Partly this problem can be mitigated by pass-through clauses for certain (exogenous) cost elements or by indexation of rates (*Ibid.*). Pedell (2006) reviews in his book several previously published papers and concludes that empirical evidence is not unanimous, but tends to indicate that systematic risk is reduced by rate regulation and confirm the buffering hypothesis formulated by Peltman in 1976.

Another distinctive feature of estimating the cost of capital in price regulated industries is that the tax advantage of debt is usually not taken into the account when estimating the cost of capital (Patterson 1995; Armitage 2005). Under the classical corporate tax system, the interests on debt capital are viewed as business expenses and hence not taxed at corporate level, while payments to shareholders (i.e. dividends) are made from the after-tax profit. Therefore the use of debt capital reduces company's tax burden and increases the after-tax free cash flows as well as the value of the company (at least to some extent). In case of regulated industries any tax savings from the use of debt usually benefit the consumers instead of owners. Estonia introduced distributed corporate profit taxation system in 2000 and under such a system debt capital has no tax advantage in most cases². Therefore the further analysis of this feature in the context of current article is not necessary.

And the last distinctive feature is the fact that there is regulation for estimating the cost of capital *per se*. Modern finance theory provides many different approaches to estimate the cost of capital, which may also lead to rather different estimates of WACC. In case of price regulation, however, there should be unambiguous rules that must be followed when estimating the cost of capital. In the next section the methodology used by price regulators in Estonia (e.g. Estonian Competition Authority and Estonian Technical Surveillance Authority) will be described and analyzed.

²A more detailed treatment of this issue can be found in Sander (2005).

Regulation for estimation of the cost of capital in regulated companies in Estonia

This part of the article is mainly based on the regulative act formulated by the minister of economy and communication on how to calculate the charges for the use of railway infrastructure (RTL 2008, 36, 522)³. The current version of the regulation will be compared with the previous one (valid between June 14, 2004 and May 25, 2008) as well as usual practice in non-regulated companies.

The cost of capital for railway infrastructure should be calculated by the following formula (RTL 2008, 36, 522, § 7, lg.1):

$$(1) \quad WACC = r_e \times \frac{E}{D + E} + r_d \times \frac{D}{D + E},$$

where r_e denotes the cost of equity, r_d denotes the cost of debt, E denotes the amount of equity and D denotes the amount of interest-bearing liabilities. The proportion of debt capital of the railway infrastructure company should be at least 50%. If the actual share of debt capital is higher the actual proportions will be used (RTL 2008, 36, 522, § 7, lg. 4).

The formula for calculating the cost of capital in non-regulated companies is basically the same as formula (1), but may include also other sources of capital (e.g. preferred shares, convertible bonds etc) (Bruner *et al.* 1998). The question arises whether the price regulated company using also other sources of capital besides vanilla debt and common shares could take them into the account when estimating its cost of capital or not. The common sense suggests that this should be allowed; however the regulation does not provide model and methods to estimate the cost of hybrid instruments correctly. Fortunately, this problem is not very important in practice as Estonian companies usually rely on vanilla debt (mostly in form of bank loans or leasing) and equity in form of common shares. In countries with traditional taxation of corporate profit the cost of debt should be calculated on after-tax basis (Vernimmen *et al.* 2005). In regulated companies, however, the usual practice is to calculate the cost of debt on pre-tax basis (Patterson 1995; Armitage 2005) similar to formula (1). The cost of capital regulation specifies also the capital structure to be used in formula (1). In case of non-regulated companies usually the actual or target capital structure is used (Bruner *et al.* 1998). While the financial theory mostly

³ Very similar regulation, in respect of cost of capital estimation, is used for price regulation in electricity and oil shale production (Elektrienergia ja põlevkivi tootmise hinnaregulatsiooni põhimõtted 2008), to calculate electricity network charges (Elektrienergia võrgutasude arvutamise ühtne meetoodika 2008), to calculate the ceiling price of central heating (Soojuse piirhinna kooskõlastamise põhimõtted 2008), to calculate the ceiling price of natural gas sold to home consumers (Kodutarbijatele müüdava gaasi piirhindade arvutamise ühtne meetoodika 2006), to calculate gas distribution network charges (Gaasi võrguteenuste hindade arvutamise ühtne meetoodika 2006).

suggests using proportions based on market values, book values are sometimes used in practice (Sander 2003).

There are several methods which can be used to estimate the cost of equity. Most often in financial literature we can find following approaches (Clayman *et al.* 2008; Vernimmen *et al.* 2005; Copeland *et al.* 2000):

- Capital Assets Pricing Model (CAPM) approach,
- Dividend Discount Model approach,
- Bond Yield Plus Risk Premium approach,
- Arbitrage Pricing Theory (APT) approach.

Of these four approaches financial advisors use most often the CAPM (Bruner *et al.* 1998; Pereiro 2002). However, the application of the plain CAPM to emerging markets is a controversial endeavour (Pereiro 2002). Therefore several CAPM-based variants have been emerged for those markets. The survey conducted six years ago among Estonian financial advisors and investment banks also confirmed the popularity of CAPM (Sander 2003). In Estonia, five analysts out of six claimed to use classical Capital Assets Pricing Model (*Ibid.*).

Both the current and previous version of regulation for estimation the cost of capital in regulated companies in Estonia, prescribe the use of CAPM for estimating the cost of equity (RTL 2008, 36, 522, § 7, lg. 2) as follows:

$$(2) \quad r_e = r_f + \beta \times r_m,$$

where r_f denotes the risk-free rate, β denotes the systematic risk of the company, and r_m denotes the market risk premium. This model is also used by regulatory bodies in other countries (e.g. in the UK, regulatory bodies have almost exclusively relied upon CAPM (Jenkinson 2008), in the U.S. the single-stage DCF method⁴ for estimating the cost of equity was replaced with multi-stage DCF and CAPM in 2008 (Surface Transportation Board ... 2009)). The same formula (2) is also used in non-regulated companies.

While both regulated and non-regulated companies use the same formula, the estimation of its components is rather different. The table 1 compares the current regulation with the previous regulation and with common practice in non-regulated companies.

⁴ This is in principle the same as Dividend Discount Model.

Table 1. Guidelines for estimating the CAPM components

	Current regulation	Previous regulation	Common practice in non-regulated companies
The risk-free rate of return.	The average yield of the 10-year government bond with the highest credit rating in Euro zone during the last five years should be used (RTL 2008, 36, 522, § 7, lg. 2).	The risk-free rate is estimated by adding to the average interest rate of the 10-year government bond with the highest credit rating in Euro zone during the last five years the country risk premium. In case Estonian government has issued long-term bonds, their interest rate can be used instead (RTL 2004, 74, 1213, § 7, lg. 2).	Usually the yield to maturity (YTM) of long-term government bond is used as the benchmark for risk-free rate of return (the use of 10-year government bond is often recommended). At any given point of time risk-free rates in different currencies may be different. One should match the currency of cash flows and discount rates (Damodaran 2008b)
The measure of systematic risk (beta)	The systematic risk of the railway company is estimated based on the arithmetic average beta of listed railways companies in a manner that reflects the risks associated with that particular railway company (RTL 2008, 36, 522, § 7, lg. 2).	The systematic risk of the railway company is estimated according to the betas of comparable companies that own railway infrastructure and have monopolistic power. The beta should reflect the risks associated with that particular railway company (RTL 2004, 74, 1213, § 7, lg. 2).	In case of listed companies, systematic risk can be estimated based on historical prices. Most practitioners use published sources (Bruner <i>et al.</i> 1998). In case of non-listed companies betas of comparable firms or bottom-up betas may be used.
The market risk premium	The market risk premium is estimated as the arithmetic average of long-term market risk premiums in U.S. and European markets (RTL 2008, 36, 522, § 7, lg. 2).	The market risk premium is estimated based on long-term market risk premiums in U.S. and European markets (RTL 2004, 74, 1213, § 7, lg. 2).	In theory, the market risk premium should be forward-looking (Damodaran 2008a). In practice most analysts use either historical mean or fixed rates (Bruner <i>et al.</i> 1998)

According to the current regulation the cost of debt (r_d) should be estimated as the weighted average interest rate of the interest-bearing debt of railway infrastructure company in previous fiscal year (RTL 2008, 36, 522, § 7, lg. 3). The previous regulation was rather different by stating that the cost of debt should be calculated by adding to the five year average interest rate of 10-year government bond with the highest credit rating in Euro zone, the risk premium for the country risk and for the company risk. The country risk premium had to be estimated based on credit rating of Estonia. If Estonia has issued long-term government bonds, one can add company risk premium to its interest rates to estimate the cost of debt (RTL 2004, 74, 1213, § 7, lg. 3). Financial theory on the other hand usually recommends of using interest rates at which the company is able to borrow the money at the moment (Pereiro 2002). Still, some analysts use historical costs of debt (Bruner *et al.* 1998).

When we compare the current regulation for the estimation of cost of capital with financial theory, we can conclude that in major part they coincide, but there are many differences in details and as one old saying state: “the devil lies in details”.

Some topical issues in estimating the regulatory cost of capital

The global financial and economic crisis has caused the premiums for bearing different kind of risks to jump to somewhat unprecedented heights. Historically, the market risk premium (calculated as the geometric average) has been around 3%-5% (Dimson *et al.* 2006). Currently, forward-looking risk premiums estimated by different sources are around 7.5-10% (see table 2), i.e. double of their historical averages.

Table 2. Forward-looking market risk premium in January 2009

Source	Estimated risk premium
Associés en Finance	9.60%
Bloomberg	7.46%
Factset	8.00%
Fairness Finance	8.15%

Source: The Vernimmen.Com Newsletter, January 2009.

The problem is that not only has the forward-looking market risk premium gone up, but historical market risk premium has decreased. The historical or *ex-post* risk premium is calculated as the difference between the actual return of a stock market index and actual return of risk-free instrument (usually government bond). The fundamental linkage between forward-looking and historical risk premiums is following. The uncertainty about future prospects of financial markets or investors' risk aversion increases and that will lead to higher forward-looking risk premiums and discount rates. Higher discount rates cause share prices to drop and realized rates to decrease. This, in turn, means that historical risk premium, calculated as showed in the text above, decreases. The following table 3 shows that if we use a short estimation period, the *ex-post* risk premium might even turn out negative! By

accepting such result we are essentially saying that investors should be satisfied if the value of their risky assets decreases.

Table 3. Estimation of historical market risk premiums

The Estimation Period	Market Risk Premium	
	Arithmetic Average	Geometric Average
1928-2008	5.65%	3.88%
1959-2008	3.33%	2.29%
1999-2008	-6.26%	-7.96%

Source: Adopted from Damodaran 2009.

In his analysis Estonian Technical Surveillance Authority has used the estimation period of five years. This is clearly not long enough. While the longer estimation period does not eliminate the contradiction between forward-looking and *ex-post* risk premiums, it clearly reduces the problem.

Another issue, which topicality has recently increased, is whether the currency risk premium should be taken into the account when estimating the cost of capital for regulated companies. Currency risk premium affects both the cost of equity and cost of debt. According to Damodaran (2008b), it is quite common practice that when there are no long term government bonds in the local currency that are widely traded, analysts decide that is easier to estimate risk-free rates and risk premiums in a mature market currency. However currency mismatch (i.e. situation when cash flows and discount rates are not in the same currency) can lead to serious problems (*Ibid.*). Risk-free rates in different currencies can be rather different (see e.g. table 4).

Table 4. Risk-free rates in main currencies (as of February 10, 2009)

Maturity	Country (currency)			
	U.S. (\$)	Germany (€)	U.K. (£)	Japan (¥)
1 year	0.56%	1.08%	1.14%	0.32%
5 years	1.41%	2.41%	2.83%	0.76%
10 years	2.94%	3.37%	3.91%	1.31%

Source: www.bloomberg.com

During 2000-2006, the differences in interest rates of EEK and EUR denominated bank deposits were quite low. However, since the mid-year of 2007 the currency risk premium started to rise at fast pace and currently (i.e. beginning of 2009) interest rates of bank deposits denominated in EEK are approximately 300 basic points higher than similar deposits denominated in EUR (see figure 1).

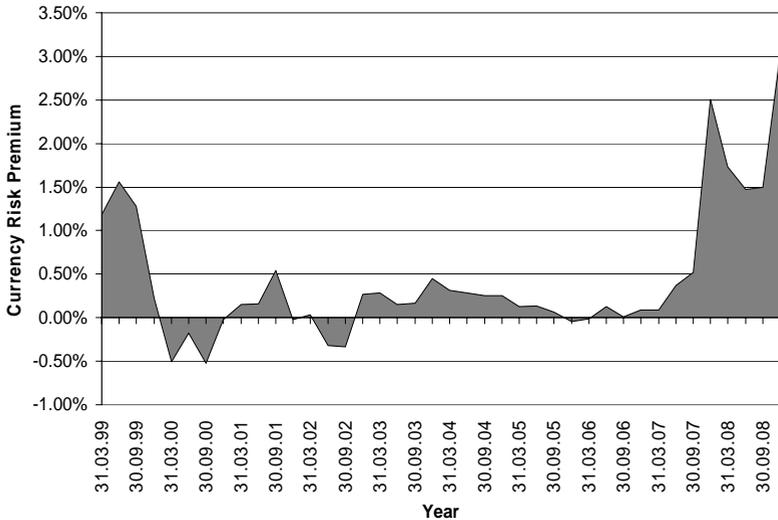


Figure. 1. Currency Risk Premium based on interest rate difference between EEK and EUR denominated deposits in Estonian commercial banks 1999-2008. (Bank of Estonia)

This is a sign that investors do not eliminate the possibility for devaluation of Estonian local currency, despite the fact that Estonia follows fixed exchange rate system with currency board. In the history, there have been occasions when even countries with currency board systems were forced to devalue their currencies (like Argentina in 2002).

Current regulation for estimation the cost of capital in regulated industries does not permit to take currency risk into account when estimating the cost of equity (see the rules for estimation of CAPM components in table 1). The previous regulation, however, did allow the premium for bearing country risk. One component of country risk is the possibility of currency devaluation – that is, currency risk (Pereiro 2002).

According to the current regulation, the currency risk premium gets reflected in the cost of debt only when company has taken loans denominated in local currency because the cost of debt is currently estimated for regulated companies as the weighted average interest rate of the interest-bearing debt in previous fiscal year (§ 7, lg. 3). Under the previous regulation, the currency risk could be considered as a part of country risk, for which specific risk premium was intended for.

It is a matter of discussion whether the investors or consumers of regulated companies should bear the currency risk. However, the current regulation encourage regulated companies to take loans nominated in local currency as this is the only way how the currency risk could be passed to consumers.

Conclusions

There are companies that operate as natural monopolies. For those companies the government usually creates such a regulation that tries to simulate the environment of competitive markets. In their price regulative activities authorities follow closely the cost of capital of regulated companies to ensure that natural monopolies have no opportunity to earn return in excess of that. The financial theory does not have fully unified methodology for estimating the cost of capital. Such ambiguity, however, is not possible in case of regulated industries. Therefore, appropriate government agencies should constitute clear, internally consistent, theoretically sound, and unambiguous methodology for finding the regulative cost of capital. The circularity problem, inherent to the estimation of cost of capital for regulated companies, is the main issue that restricts of using exactly the same methodology as for non-regulated companies.

In Estonia, new methodology for estimating the cost of capital in price regulated companies was introduced recently. While the main principles did not change and the models are basically the same as most popular ones for non-regulated companies, there had been some important changes in details. Changes affected the estimation of components of CAPM as well as the estimation of the cost of debt. While the changes, which were put into effect, increased the unambiguousness of the methodology, they also gave rise to some additional issues.

Under the current regulation, it is difficult for investors in price regulated companies to get fairly compensated for bearing currency risk. Financial theory suggests that both cash flows and cost of capital should be in the same currency. However, the current regulation does not permit to take currency risk into account when estimating the cost of equity. In case of debt capital, the currency mismatch remains if a company uses loans denominated in foreign currency. Lately, financial markets have become more concerned about possible devaluation of Estonian Kroon despite the fact that Estonia is following currency board system. The interest rate differences between EUR and EEK denominated deposits have increase up to 300 basic points.

Another topical issue stems from the fact while in theory market risk premium should be forward-looking in practice usually *ex-post* (i.e. historical) risk premiums are used. While under the normal circumstance, if the estimation horizon is long enough, such a contradiction does not create any problem; the same does not hold when investors became very risk averse. Under the latter scenario forward-looking and *ex-post* risk premiums move in opposite direction. In order to reduce possible problems the time horizon for estimating *ex-post* risk premiums should be long and the rules for estimating the cost of capital in regulated companies should not change over time. Frequent changes in regulations create additional systematic risk for price-regulated companies and could also increase the cost of capital in those companies.

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HOW TO IMPROVE THE SUPPORTIVE ROLE OF ESTONIAN INNOVATION SYSTEM TOWARD LAUNCHING NEW PRODUCTS BY HIGH TECHNOLOGY COMPANIES?

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Abstract

The purpose of the study is to evaluate how supportive is Estonian national innovation system toward the launching of new innovative products by high technology firms. The article intends to combine two broad areas of research – national innovation system approach and the different models of the new product launching. Based on the literature review and in-depth analysis of three case studies of Estonian high-tech company's major barriers as well success factors of highly innovative product launches were identified. The barriers of the new product launching were linked with the systemic failures of the national innovation system. The most relevant failures of Estonian national innovation system inhibiting the new product development are capability and networking failures. The sources of innovation of high-technology firms are too narrow, linkages with domestic firms and higher education institutions as well with foreign firms are poorly developed. High-tech firms have also serious capacity problems due to the extremely weak support mechanism by national innovation system on the seed funding stage of product development and prototype building stage as well. Paper argues that resources needed for the innovation should not be looked too narrowly following linear innovation model approach. Instead interactive approach is needed, which combines capability building, network development, interactive learning with direct investments into fundamental research.

Keywords: launch strategy, national innovation system, innovation system failures, improvement of innovation policy

Introduction

Due to the intensity on rivalry and shortening product life-cycles companies are forced to invest extensively into innovative activities and to bring new products into market. Only few of products introduced to the market are successful. Measuring new product success and evaluating success factors is popular research topic among academic researches and also among practitioners, because of high risk of new product development process. Some estimates put the failure rate of new products between 75 and 80 percent (Ambler, Styles 1997). That is why becoming successful and examination of new product success factors is very important.

Another problem is that only few of new products launched to the market are radically new, meaning new for the company and create new market (new to the customer) as well. New products are often related with the terms innovation and high-tech. A completely new product is the result of radical innovation and often

made by a high-tech firm (Sepp 2008). In Estonia very little research has been made on this subject.

The new product development and launching is executed inside the boundaries of the national innovation system. Therefore the intensity and success of the new product development depends on the functioning of national innovation system. The current paper is trying to evaluate how supportive is Estonian national innovation system toward the product innovation by high technology firms. The aim presumes: 1) finding out major barriers and critical success factors of the launching new innovative products by Estonian high-tech firms 2) investigating links between barriers of launching new products by firms and systemic failures of the Estonian innovation system. Finally policy recommendations, which may help to reduce the manifestation of systemic failures of national innovation system, are proposed.

The article is opened with the creation of the theoretical framework about the success factors of new innovative product launch process. Following section is devoted to the opening of the concept of systemic failures of national innovation systems. It deals also with the issue, how the improvements in the functioning of national innovation system could support the launching of the new innovative products. Next section is providing results about the barriers and success factors of highly innovative product launches based on in-depth case studies of three Estonian high-tech firms. Last part of the paper is trying to indicate which systemic failures of Estonian innovation system are behind the barriers identified on the firm level research and some recommendations are given how tackle those problems.

Theoretical framework for new innovative products

In order to define new innovative product, different aspects of product at first have to be pointed out. After that, possible types of new products and degree of product newness were discussed. Product can be considered material (product) and immaterial (service, place, idea etc). Product newness is related with its' type of innovation. But innovation can appear in several areas, not only in product. Innovation can be classified: product, process, position, paradigm innovation (Tidd *et al.* 2005). Literature also offers other possibilities to categorize innovation (Markides 2006: 19; Tamm *et al.* 2007: 3; Trott 2002: 14):

- product, process, organizational, management, production, commercial or marketing and service innovation;
- incremental, radical, modular, architectural and systemic innovation;
- developmental, evolutionary, expansionary and total innovation;
- competence enhancing and destroying innovations;
- disruptive (product, business model and technology) innovations.

Technical idea, when it can not be marketed, is not an innovation (Trott 2002; 2005). In this study major success factors of launching new products are identified and therefore marketing, organizational and other types of innovation are not discussed.

Besides classification based on innovation object, types of innovation are pointed out by the range and newness of the product. Most common product newness measure is level of product novelty (Langerak, Hultink 2006). Innovation can be radical or incremental, continuous or discontinuous. Highly innovative products are defined as “new-to-the-world” products that create an entirely new market (Ali *et al.* 1995). New to the world products are result of radical or discontinuous innovation and they are new both to the market and the firm. Radical product innovations in this study are defined as technologically better and more capable of meeting consumers’ needs than prior technologies (Montaguti *et al.* 2002). Some authors also define radical as breakthrough innovation (Mohr *et al.* 2005). To achieve real competitive advantage, companies’ focus of innovation should be on radically new (new-to-the-world) or new-to-the-market products (Kuczmarski 2003: 539).

The success of new product relies on its success on the market, consumers and their adoption plays an important role. Adoption of innovation is described through different types of consumers. It’s important to cross the “chasm” (Mohr *et al.* 2005), which means to attract to your product sufficient number of target customers. To be successful, innovation must be important, unique, sustainable and marketable (Doyle 1998). So it is important, that during development processes consumer needs are also analyzed (Rosen *et al.* 1998). Radical new product, which can be perfect technologically, will not be successful, if consumers do not see the benefit in the product.

Radical innovation is often discussed in terms of high-tech markets and products. High-tech markets are often uncertain and make people distrustful. To define high-tech markets *OECD* classification is used by which high-tech sectors are related with computers (IT), biotechnology, telecommunication etc. In high-tech markets marketing must be highly related with research and development. In little start-ups too often marketing (including launching) decisions are underestimated or there is lack of knowledge in it (Mohr *et al.* 2005).

The radically new product must be with enhanced product capability and advanced technological capability, then product innovation is technologically and commercially discontinuous (Veryzer 1998) and most likely therefore more successful at the marketplace.

New products launch strategy analysis and success factors

Of all the steps in the new product development process, the product launch often requires the largest commitment in time, money, and managerial efforts (Hultink, Hart 1998). Product launch is defined as the portion of the new product development process when specific product is presented to the market for initial sales (Hart 2005). Important aspects of product launch are also maximizing profit and target market (Guiltnan 1999; Hultink, Langerak 2002) and the tactical level of market entry (Hart, Tzokas 2000).

The specific way of launching new product depends on the launch strategy of the firm. Dundas and Krentler have defined launch strategies as tools to guide new product launches (Trim, Pan 2005). So the launch strategy consists of marketing decisions that are necessary to present a product to its target market and begin to generate income from sales of the new product (Hultink *et al.* 1997: 245; Garrido-Rubio, Polo-Redondo 2005: 30).

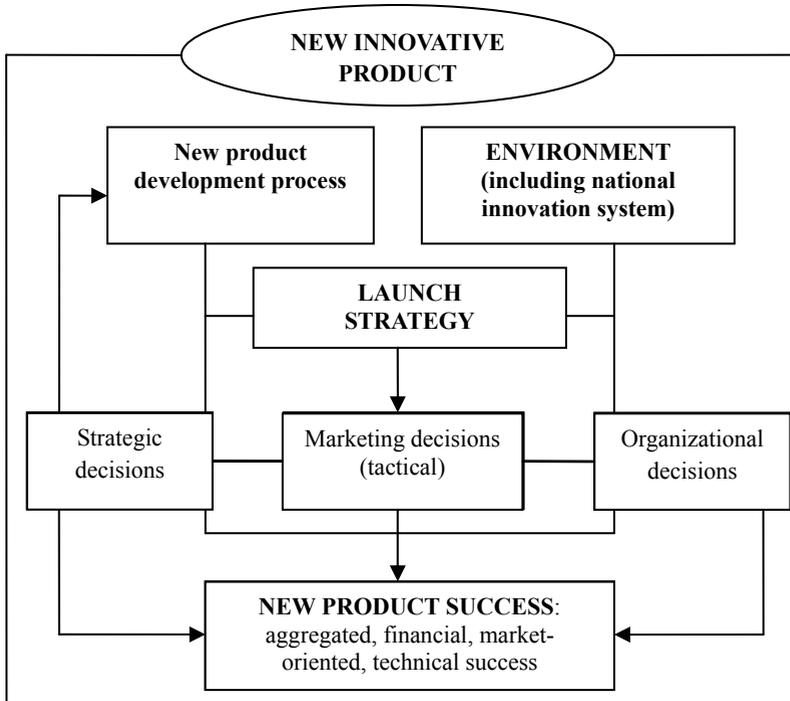


Figure 1. Framework of new product launch success factors.

It was discovered that launch strategies can be classified by the time of entry (Barczak 1995, Chiu *et al.* 2006), range of the launch (Avlonitis, Papastathopoulou 2006), strategic range (Garrido-Rubio, Polo-Redondo 2005), level of product innovativeness and product newness to the firm – niche innovators versus mass marketers (Chiu *et al.* 2006). New product performance is determined by the interaction of the market environment with new product strategy and development process (Pattikawa *et al.* 2006). Choice of company’s strategy will affect new product launch success.

For measuring the success of launch strategy and new product performance, different ways have been pointed out in literature. Success of launch strategy is

affected by strategic, organizational, process (Pattikawa *et al.* 2006, Chiu *et al.* 2006) and marketing (Chiu *et al.* 2006) variables. Organizational influences such as leadership launch management, but also soft measures like organizational culture. Marketing variable represents the marketing mix as the tactical decisions for product launch. Strategic variable cover general indicators related to the market and external innovative environment – supportive role of the national innovation system.

Different new product performance measures are divided into four main categories: aggregated, market-oriented, technical and financial success measures (Chiu *et al.* 2006; Baker, Sinkula 2005; Lee, O'Connor 2003, Green *et al.* 1995). Conceptual framework of analyzing new product success in the market is presented on Figure 1.

Systemic failures of national innovation system (NIS)

The above described processes of firms to develop and implement their new product launching innovation strategies are not executed in isolation, but being actors of the national innovation system. Therefore is important to understand the functioning of the innovation system and find its bottlenecks. The systemic approach toward innovation presumes that innovation is seen as a continuous nonlinear cumulative process involving not only radical and incremental innovation, but also the diffusion, absorption and use of innovation. (Johnson *et al.* 2003). There is plurality of sources for innovation – most of the new knowledge needed for innovation has not come directly from universities and technical research and in many industries not even from research and experimental development, but rather from other sources like production engineers, customers, marketing, etc. The problem is to integrate these broader contributions into a concept of the innovation process (Lundvall *et al.* 2002). National innovation system (NIS) is defined as the elements and relationships which interact in the production, diffusion and use of new, and economically useful, knowledge (Varblane *et al.* 2007).

Systemic approach toward innovation has caused the paradigm shift from the “market failure” rationale to “systemic failure” rationale (De La Peña 2008). It means, that cause of failure is not on the market, but in the system. In the innovation system approach, the policy rationale is not based on market failures, but rather on systemic failures or problems. The scholars in the innovation system tradition reject the option of optimality (and thus that of equilibrium or failure). Innovation processes are path-dependent and context-specific and it is not possible to specify an ideal or optimal innovation system. (Chaminade *et al.* 2008)

The literature on national system of innovation has defined systemic failures or problems as systematic imperfections that might slow down or even block interactive learning and innovation in a given system of innovation (Woolthuis *et al.* 2005, Chaminade *et al.* 2008). Among those systemic problems, different authors distinguish between infrastructure problems, transition and lock-in problems, institutional, organizational, network problems, information and coordination problems or problems with the complementarities or diversity of capabilities

(Chaminade *et al.* 2008). Various authors paid attention to systemic imperfections, leading to the following list of system imperfections (Woolthuis *et al.* 2005):

1. Infrastructural failures being the physical infrastructure actors that need to function (such as IT, telecom, roads) and the science and technology infrastructure.
2. Transition failures being the inability of firms to adapt to new technological developments.
3. Lock-in/path dependency failures being the inability of complete (social) systems to adapt to new technological paradigms.
4. Hard institutional failure being failure in the framework of regulation and the general legal system. Formal institutions.
5. Soft institutional failure being failures in the social institutions such as political culture and social values. These institutions evolve spontaneously for which reason refer them as informal institutions.
6. Strong network failures being the “blindness” that evolves when actors have closely linked and as a result miss out on new outside developments.
7. Weak network failures being lack of linkages between actors as a result of which complementarities, interactive learning, and creating new ideas are insufficiently used. Malerba (1997) refers to the same phenomenon as dynamic complementarities’ failure.
8. Capabilities’ failure: Smith (1999) and Malerba (1997) both refer to the phenomenon that firms, especially small firms, may lack of the capabilities to learn rapidly and effectively and hence may be locked into existing technologies, thus being unable to jump to new technologies.

Interactions and cooperative relationship between the actors in the NIS are a central element to the analysis. These interactions not only involve relationships with other firms, but also the interaction with the government, public knowledge institutes, third part consultants etc. (Woolthuis *et al.* 2005)

Already in 2000 Jacobsson and Johnson identified following flaws in the innovation system: poorly articulated demand, local research processes which miss opportunities elsewhere, too weak networks (hindering knowledge transfer), too strong networks (causing “lock in”), legislation in favour of incumbent technologies, flaws in the capital market and lack of highly organized actors, meeting places and prime mover (Smits, Kuhlmann 2005).

Systemic failures are related to missing bridges between organizations or related to dysfunctional institutions (Falk, Leo 2006). To improve innovation policy through analysis of NIS failures, the first step is to analyze the innovation at micro level – firm’s new product launch strategy. So the critical success factors of launch strategy (market entry) can be linked with the failures in the innovation system.

How the improvements in the functioning of national innovation system could support the launching of the new innovative products

In tandem with national system of innovation is the concept of entrepreneurship, which involves identifying and exploiting opportunities in the external environment, such as the opportunity to launch (commercialize) innovation. Given that NIS seeks to foster innovation, and entrepreneurship has innovation as central component, NIS should promote entrepreneurship within an economy. (Golden *et al.* 2003)

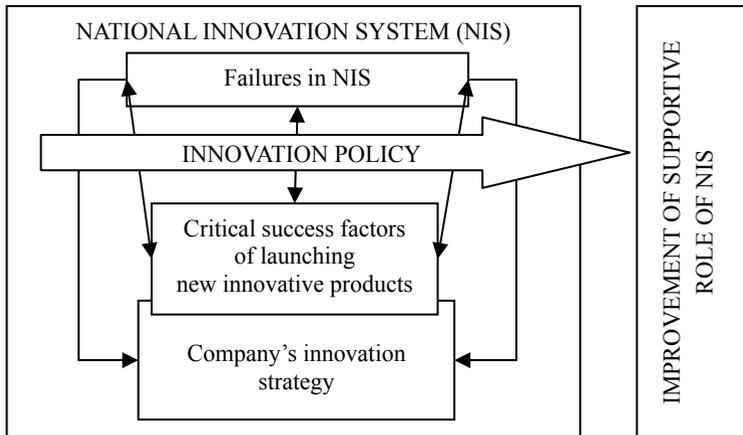


Figure 2. Linkages between NIS, new product launch strategy success factors and innovation policy.

Debates on the role and scope of innovation policy intervention have three main research areas: size of the budget, composition of funding and contents of programs (Falk, Leo 2006). Yet there are lack of analyze in new innovative product launch strategies critical success factors and its' relations with government innovation policy. The important role for innovation policy making is “bottleneck analysis” – continuously identifying and rectifying structural imperfection (Rametsteiner 2007). If critical success factors of new product and new product launch strategies have analyzed and pointed out most common failures in national innovation system (NIS), it is possible to create connections and recommendations to improve national innovation policy (Figure 2). From incompatibility between systemic failures of national innovation system and new product launch success factors, the bottlenecks appear and NIS can be improved and innovation policy enhanced. Innovation policy drives it all into overall result – innovation performance.

Innovation policy is implemented by innovation policy mix containing science, technology, education, labour, industry, framework, environmental, rural and regional and other sectoral policies. Innovation policy instruments are divided into three main groups (Rametsteiner 2007):

- Regulatory (norms, intellectual property rights, competition rules),

- Economic (public funding of research, taxation),
- Informational (statistics, reports, foresight, strategies).

In developing countries, a vast majority of firms lack the minimum capabilities to engage in interactive learning and innovation (capability problems) and even when those capabilities exist, linkages among the actors within the systems of innovation are weak (network problems) and institutional frameworks are ill developed (institutional problems). (Chaminade *et al.* 2008)

Although many research on the field of innovation systems are rather practical than create theoretical frameworks to use and there is now ideal or optimal systems, the main goal is to improve the system. As there is big difference in defining national innovation system failures and its' links with companies new innovative products launch strategies or identifying these problems in specific NIS, this article is an initial study to create framework for more deeper empirical study and analyze.

Methodology and an empirical study

The new innovative product launch strategy analysis is based on the in-depth case studies of three Estonian high-tech companies. The aim of the case study was to find out, which are the critical success factors (strategic, organizational, process, marketing) launching radically or incrementally new products. Choice of the companies was made by level of product innovativeness, company's OECD classification and recent new innovative product launch.

To investigate new product launch strategies in Estonian high-tech firms, interviews were made. In all interviews a semi-structured interview plan was used including 30 open-ended questions that were divided into four sections addressing: general information about the company and product(s), product novelty, launch tactics and strategy of specific new product, and success measurement and critical success factors. Interviews lasted 1-3 hours and the answers were transcribed. Main characteristics of the companies are presented in table 1.

First case was Microsoft Estonia and interview with developer and platform evangelist Andres Sirel was made. Microsoft Estonia launched three products at once (Visual Studio 2008, SQL 2008, Windows Server 2008). Microsoft Estonia is a part of the bigger global corporation and they are not involved with the initial development of the new product, but instead fulfilling the other functions by the launching of new products. There is no research and development department in Estonia and Microsoft Estonia is mainly focused on marketing new products, sales and customer support. These new products were sample of incremental innovation.

Table 1. Main characteristics of analyzed Estonian high-tech firms

	Microsoft Estonia	Regio	Quattromed
Founded	2003	1990	1999
Location	Tallinn	Tartu	Tartu
OECD classification	IT	Communication	Biotechnology
Employees	37	ligi 80	77
Turnover 2006 (million EEK)	40	54	38

Source: Compiled by authors.

Second case was Regio and interview with product manager Jaan Jagomägi was made. Regio's (globally known as Reach-U) new product was Work Force Management (WFM), which has elements both from radical and incremental innovation. By the marketing of its new product, Regio is using the help from Ericsson, the strategic partner at global market.

Third case was biotechnology firm Quattromed (Icosagen from March 2009) and interview with head of sales and marketing – Hardi Tamm – was made. Quattromed launched radically new product – FITkit. FITkit is an immunological test for measuring natural rubber latex allergens from variety of rubber products, and is first-ever test for the measurement of clinically relevant allergens.

Analyzed new product development processes vary on length substantially. Quattromed FITkit was developed by the research and development department within the three years and was launched at the end of 2001. In opinion of the firm the complete launching of the product takes 10 years. Regio (Reach-U) on the other hand got idea for the new product on summer of 2007 and in May 2008 the software to position field-workers was given already to the client (mobile operator). Product launching process of Regio lasted less than a year. As an indicator of the high level of innovativeness, all the products were launched globally.

Through the case studies the main barriers and critical success factors of new product launch strategies were revealed. Among the most common barriers were mentioned the lack of benefit for the customer and insufficient testing on market. As barriers were listed also the lack of financing, competence and contacts, which all inhibit the introduction of the new innovative product to the market. Success factors of new product launch strategies by Estonian high-tech firms were most often related with product newness (benefits of the product, competition, legislation). Also measures related with organization were important (competence, synergy of marketing and R&D). Particularly was stressed the importance of the networking – existence of reliable partners and collaboration. As two out of three firms are in fact previous spin-offs from the university, the cooperative relationship with academicians was mentioned as their competitive advantage.

Most important tactical launch decision (after product) was choice of distribution channel. It was also noted, that if consumer could identify the benefit of the product, the price sensitivity is declining. Although uncertainty decreases in new product development process, the resource requirements increase substantially during the process and product launch is the most crucial at the success achievement. Main findings of the product launch strategy success factors of Estonian high-tech companies are summarized in table 2.

Table 2. Success factors of Estonian high-tech companies’ new product launch strategies

Success factors	Microsoft Estonia	Regio	Quattromed
Strategic	Product with potential to develop (incremental innovation) Global market Partnership program to anticipate competitors	New, functionally best product Quick R&D process Market with potential	Radical new product and specified market No competitors
Organizational	Corporation support (R&D and marketing)	Using strategic partnership (intermediary) to sell own competence	Supportive in-house services
Process	R&D is global, local marketing and supportive services	Product manager 24/7 supportive services	Competent marketing and sales team
Marketing	Strong brand and intensive marketing activities	Distribution channel (partnership with Ericsson)	Specific specialty conferences and constant lobby and explanation

Source: Sepp 2008.

Major problems related with the implementation of the innovative product launch strategy were also figured out. Most of the barriers mentioned are related with the market and customers. Also important were organizational, marketing and problems with budget. Main problems related to barriers of new product launch appeared:

- Market is not ready for the product,
- Consumers do not see the benefit from the product,
- Product testing before launch insufficient,
- Crossing the “chasm” at target market is much more difficult with radical new products,
- Lack of financial and human resources
- Hard to establish contacts with globally relevant players,
- Decision-makers in investment and innovative technology field are different,
- Lack of distribution channels, not enough trustful partners
- Company small and unknown, hard to internationalise.

In the following part of the section the success factors of the new product launching identified from case studies were linked with the systemic failures of the national innovation system. On the Figure 3 are presented three most common groups of systemic failures of national innovation systems of catching up economies as well the major groups of success factors of launching innovative products.



Figure 3. Three most important systemic failures of NIS to affect success of new product launch.

The most relevant failures of Estonian national innovation system inhibiting the new product development are capability and networking failures. Capability failures are manifesting themselves through the technology and innovation adoption problems, but also by the lack of marketing knowledge (including R&D, market testing and launch), overall innovation awareness needs improvement. Lack of resources is eternal problem.

High-tech firms have also serious capacity problems due to the extremely weak support mechanism by national innovation system on the seed funding stage of product development and prototype building stage as well. This failure is even more serious due to the fact that neighbouring countries (Sweden, Finland) are supporting strongly the capacity building of their new product developing firms. The networking failures are widely spread. The sources of innovation of high-technology firms are too narrow, linkages with domestic firms, other pioneers and higher education institutions as well with foreign firms are poorly developed. Network failures reveal also by the knowledge sharing and learning process (including generating new ideas for radically new products). Finally also institutional failures of the national innovation system affect the success of new product launching. The overall innovation awareness in Estonia is too low. On the broader international arena Estonia is still unknown or with unclear image, which affects the international (global) launching of new products by high-tech firms. Innovation awareness has been seriously overlooked by the Estonian innovation policy.

Recommendations for innovation policy improvement and conclusion

Government plays the role of facilitating actor in the national innovation system and therefore should address the systemic failures, which affect negatively the new product development and launching process in the high-tech firms. Innovation policy is implemented by the institutional framework of national innovation system. The institutional framework (structure of NIS) gathers four types of institutions – policy designers, program makers, administrative institutions and projects (Polt *et al.* 2007). Greatest responsibility for innovation program administration lies on Enterprise Estonia and related institutions.

Enterprise Estonia established in 2000 promotes business and regional policy in Estonia and is one of the largest institutions of the national support system for entrepreneurship in Estonia, providing financial assistance, advisory, cooperation opportunities and training for the entrepreneurs, research establishments, public and third sector. They have mission to assist to implement the effective ideas and vision to work for the good reputation of the state Estonia with the best business environment in the world. (EAS 2009)

Another rather important institution is Estonian Development Fund, which was established in 2006 with the aim to provide seed funding for the knowledge intensive firms and monitor and analyze global technology trends. Estonia has also adopted rather well structured strategic document “Knowledge based Estonia – Estonian science, technology and innovation strategy 2007-2013”, which creates rather good fundamentals to tackle the above mentioned systemic failures.

But based on the current interviews, as well our previous works (Varblane *et al.* 2007) Estonian S&T and innovation system reveals serious problems with the intermediaries, who should offer services relevant for the potential radical innovators like technology watch, collection of information on relevant existing technologies, technological audit, seed funding evaluations, etc. The levels of competence of the employees of these Estonian governmental institutions are inadequate. Usually the employees of the client knowledge intensive or high-tech SMEs know much more about the new technologies and production possibilities existing in their area than the intermediaries. It reveals that capability failure exists not only on the firms, but also governmental intermediary level. Intermediaries are able to help enterprises on the general level, but not in specific areas.

1. In order to reduce the negative effect of systemic failures and improve the functioning of the national innovation system bringing more radically new products into (usually global) marketplace, following direction in the innovation policy are recommended:
2. To address seriously capability failure issue. It requires much more efforts improving the knowledge transfer. Therefore system of innovation in Estonia as the small catching up economy should support the development of the system of absorption and diffusion of knowledge produced outside and inside of the local economy. It requires opening of the innovation awareness

- programs, use innovation vouchers program in order to improve the absorptive capacity on the firm level etc.
3. Capability problems could be also solved using more policies, which are aimed to intensify networking between local entrepreneurs, firms and different knowledge creation organizations (universities, non-governmental research units) and also foreign owned firms. Government could support capability building also by the demand side innovation policy using public procurement, establishing new standards etc., which all motivate firms to enter interactive learning process.
 4. Extremely urgent is to create better links between domestic and foreign owned firms and through those links also with the research organizations from the home countries of the foreign investors. Their knowledge base could be used in order to develop further radical innovation ideas, which could not be supported from the Estonian research organizations. This linkage is now extremely weakly developed. Innovation policy should be combined with the FDI policy in order to integrate local firms into knowledge networks of foreign investors.

Radical innovation requires also very good knowledge about the potential customers and marketing channels, how to reach to the customers. Estonian innovation system currently is not addressing seriously enough the development of skills in marketing and exporting. But it is highly relevant particularly launching radically new products. Innovation policy recommendations for Estonia based on our study are summarized in table 3.

Table 3. Summary of innovation policy recommendations

Failure of NIS	Manifestation of failure by the new product launching of high-tech firms	Innovation policy recommendations
Network failures	Lack of cooperation with other domestic pioneer firms; Weak knowledge sharing and learning; Narrow sources of innovation; Poor partnership with the higher education institutions; Difficulties in creating linkages with foreign firms.	Enterprise Estonia includes horizontal cooperation clause into major support measures. Special tools will be designed in order to facilitate cooperation in the industry associations' level. Innovation policy should be coordinated with the policies of attracting foreign investors.
Capability failures	Difficulties in adoption of technologies; Lack of knowledge about marketing and launch (including market testing and launch tactics); Lack of seed funding and weak venture capital.	Activate the seed funding through Estonian Development Fund. Expand support of Enterprise Estonia to the product development and prototype building and launching stage.
Institutional failures	Low overall innovation awareness in Estonia; Estonia unknown or with unclear image.	Enrich and expand the Enterprise Estonia support mechanisms with innovation awareness measures. Activate the country of origin campaign of Enterprise Estonia.

Source: Compiled by authors.

In conclusion it has to be pointed out, that resources needed for the innovation should not be looked too narrowly following linear innovation model approach. Instead interactive approach is needed, which combines capability building, network development, interactive learning with direct investments into research.

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REAL ESTATE BUBBLE BURSTS AND GOVERNMENT POLICY DURING CRISIS: EXAMPLES OF ESTONIA, IRELAND AND SWEDEN

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Abstract

The objective of current article is to view previous experience with real estate crises and taking into account such experience find suitable policy reactions to overcome the current Estonian crisis as smoothly as possible. Beside overall theoretical guidelines for overcoming the crisis, examples of Sweden and Ireland are viewed. The policy issues suggested for Estonia include some changes in tax laws, avoiding expansionary fiscal policy, making lending stricter and borrower responsible to higher extent, cooperation of different authorities to tackle problem of bad loans, initiating wage and price cut, paying more attention to exporting sector.

Keywords: real estate crisis, asset bubble burst, crisis policy.

Introduction

Recessions, crises or other problems are common in a nowadays economic environment, occurring systematically over time. In the light of the world economic downturn in 2008 Estonia faces a real estate bubble burst, which is spreading rapidly into the real economy. In such difficult times government has an important role to play and its action can lead to recovery or deterioration of the situation. Although problems are often country specific, depending on the monetary system, taxation, membership in international organizations and other factors, still several universal guidelines could be brought out from the previous crisis overcoming policy practice. The first part of current paper summarizes main theoretical and practical policy reactions to real estate bubble burst. The second part summarizes the course of different real estate bubble bursts (examples of Sweden, Ireland and Estonia). The last part of the paper suggests government policy measures for minimizing and overcoming real estate bubble burst impact on Estonian society, using also the comparative examples of Swedish and Irish activities. Results of the paper can be very well used for further academic research, but also by policy makers to widen their understanding of crisis processes.

1. Theoretical background

1.1. Economic crises and real estate bubble bursts

A very popular topic in modern economic research (both in micro- and macroeconomic levels) has been economic crisis, viewed from its different sides – policy responses to crisis, crisis management, crisis causes, crisis processes etc. The term *crisis* has a variety of different definitions, of which one is: a situation where there are a lot of problems that must be dealt with quickly so that the situation does not get worse or more dangerous (Longman English dictionary). Similarly to crisis

definition, *economic crisis* has a variety of meanings, but in the commonest sense we understand it as sharp downturn in economic environment that does not settle quickly and needs intervention. It is evident, that changes in economic environment must be rapid to grow into crisis, because otherwise market participants can react to changes swiftly without any extremes. The term crisis is often used alongside with terms *recession*, *bubble burst*, *bust*, *end of cycle* etc. – their meanings dependent of situation and of author can be the same or different. From literature we can find a number of different economic crisis forms: asset bubble bursts (i.e. US real estate market in 2008), currency crisis (i.e. Zimbabwe dollar in late 2000s), sharp rise in imported product prices (Russian gas price rise in 2008-2009), loss of competitive advantage of some industry (European clothing industry in last decades) etc. In all previous examples we see a sudden sharp anomaly compared to former situation, which without further intervention can give rise to extremely negative scenarios in economic environment.

Real estate bubble burst (or real estate bust) can be seen as one example of economic crisis and its most common features in literature are (not necessarily all occurring simultaneously):

1. remarkable decrease of real estate transactions,
2. remarkable decrease of real estate demand and growth of real estate supply,
3. remarkable drop in real estate prices,
4. growth in the number of bad mortgage loans,
5. bankruptcies and payment difficulties of real estate firms and individuals.

In many cases the previously mentioned features succeed each other in some logical chain, for instance sharp drop in buying activity results in the drop of prices. In wider economic perspective the features of real estate bubble burst are inevitably connected to other economic indicators, whereas real estate bubble burst can precede or succeed some other crisis processes in local or international economic environment. For instance high unemployment can cause sharp rise in the number of people having payment difficulties, which in turn rises the share of property or loans connected to such people, eventually for instance rising real estate supply at market through defaulted mortgage sales. Derived from the previous when viewing a real estate bubble burst, its reasons and effects on economy, other processes in economic environment have crucial importance on determining the depth and length of real estate crisis.

Literature suggests several indicators that could be used for asset bubble burst measurement. Most of such indicators are mainly widely used macroeconomic measures, which historically have proven to be good crisis markers. Detken and Smets use in their framework variables grouped into three categories: asset prices, real variables, monetary variables (Detken, Smets 2004). In case of real estate as one type of assets, the list of possible indicators is in many cases much more specific, taking into account even different qualitative measures (see Jaffee 1994b). Helbling proved in his work that real estate bubble burst occurs simultaneously with sharp slowdowns in economic activity and with outright recessions, which gives support for the usage of not real estate specific indicators (Helbling 2005).

When looking into previous literature of real estate bubble bursts, the common burst preceding features marked are:

1. too risky lending (high leverage, insufficient guarantees, lack of business planning etc.),
2. poor regulations (financial, bankruptcy, urban planning, real estate etc.),
3. rapid economic growth (especially because of abnormal local consumption),
4. low interest rates and debt growth,
5. grown imaginary welfare.

(see for instance: Herring, Wachter 1998; Collyns, Senhadji 2002; Berg, Ostry 1999)

It must be noted, that due to remarkable differences in economic environment and situations, previously listed features can have some variation among countries and circumstances, but in cross-section of previous examples of features most of them are still present. More variation we can find in the extent and influence of specific features.

1.2. Policies to overcome crisis

Every crisis more or less needs government intervention, whether it would be with financial, legislative, communication or other measures. As real estate bubble burst is often preceded or succeeded by other problems in economy, in literature we can find a lot of evidence of policies of overall stabilization that are not only real estate sector specific. Such distinction between policies is necessary, because otherwise there are possibilities to interpret government action not correctly – for instance state loan to support some industry has definitely no direct effect on real estate sector. In large, the literature divides policies into two: short-term and long-term policies (see Moreno *et al.* 1998). Short-term policies are directed to solve or minimize the problems (economic environment stabilization), whereas long-term policies are directed to problem avoidance in the future and creating basis for new growth. Table 1 gives a list of main government policies during asset bubble burst.

Previously given policies are in many cases cross-sectoral and not only real estate sector specific. For instance buying problematic firms is common policy in banking sector, but it is tightly connected to real estate sector, as such loans can be mostly mortgage loans.

An important issue lies if and to what extent should government pay to overcome real estate crisis and in the following examples part we see cases of government cost. For instance it is important to argument, whether it is justified to pay with government funds for losses of private firms and excessive risks taken. Different crisis situations have cost governments up to 25% of GDP (Caprio, Klingebiel 1996).

Table 1. Short-term and long-term policy measures to off-set an asset crisis

Short-term	Long-term
<p>1. Direct financial aid. Aid can be in a form of loan or irredeemable support. Recent evidence comes from USA financial and automotive sector.</p> <p>2. Reorganization of problematic firms. Firms are reorganized, which can mean breaking a firm into several parts, carrying out fundamental changes without breaking a firm, incorporating firms etc (i.e. in USA procedures according to Chapter 11).</p> <p>3. Buying problematic firms. Government buys problematic firms or a part of them (i.e. Parex Banka case in Latvia).</p> <p>4. Suppressing panic. Media is used as an instrument to avoid further serious problems (Russian government action, although rouble was devaluated). In many cases media plays crucial role in determining the extent and length of crisis.</p> <p>5. Fiscal measures. Decisions about taxation are common during crisis. Some type of fiscal measures can be still classified as long-term initiatives (for detailed discussion about fiscal measures during crisis see Blanchard <i>et al.</i> 2008).</p>	<p>1. Audit of regulations that failed to prevent the bubble formation and burst. The most common action after bubble burst is to go through different regulations to find out why such situation could emerge and make necessary correctives (i.e. G20 leaders, IMF and other institutions have agreed in the necessity to improve international financial market regulations).</p> <p>2. Recovery of international and local trust and capital flows. The restoration of international /local trust and capital flows can be achieved with the help of different measures. It can include package fiscal, monetary, labour, foreign trade etc. polivy measures.</p>

Source: Composed by authors.

2. Swedish experience with property crises

This section deals with the largest crisis in the Swedish property market since the Second World War. It occurred during the early 1990s, following a rapid growth of house prices and construction volumes in the other half of 1980s. After five years of remarkable growth, the market experienced a three year period of falling property prices and the crisis spread to other sectors of the economy as well. Overall, the Swedish GDP shrank by 6% and unemployment rose from 3% to 12% during the most difficult years.

Table 2 summarizes some of the main indicators of the Swedish property market development, highlighting the start of the boom in 1985, start of the crisis in 1990 and the end of the crisis in 1997. As always, it is judgmental to set a univocal date for the beginnings and ends in an economic crisis. However, based on other scholarly works and official statistics, these years were turning points for most of the indicators.

Table 2. Selected indicators of the Swedish property market (1980-1997)

Indicator	Base year 1980	Start of the boom 1985	End of the boom 1990	Middle of the crisis 1993	End of the crisis 1997
Investments in the construction sector (real prices, 1980 = 100)					
One-family homes	100	62	88	39	26
Apartment buildings	100	198	241	195	76
Corporate property	100	93	107	84	96
Property value in real prices (1980 = 100)					
One-family homes	100	70	97	72	76
Second homes	100	75	103	83	87
Apartment buildings	100	94	165	93	n.a.
Corporate property	100	244	422	144	n.a.
Number transactions (1980 = 100)					
One-family homes	100	113	108	65	107
Second homes	100	118	125	93	111

n.a. – not available

Sources: Jaffee (1994a) based on Swedish Statistics Office and Bank for International Settlements and authors' estimations or calculations based on *Bostads- och byggnadsstatistisk årsbok* (2008).

The main reasons behind the boom and the later crisis in the Swedish property market could be outlined as follows:

1. Aggressive marketing of property credits during the boom years, following the liberalization of the credit market in 1985. Before that the Swedish banks were allowed to determine neither their credit volumes nor their interest rates (Boksjö, Lönnborg-Andersson 1994). After the liberalization, most banks saw a window of opportunity thanks to the relaxed regulations. The Swedish stock of credits rose rapidly from 100% of the GDP to 150% of the GDP. During 1986 and 1988, the annual growth rates of credits exceeded 20% (Wohlin 1998).
2. Generous subsidies and tax breaks to loan takers and housing developers. In the early 1980s Swedish homeowners were allowed to discount 64% of their interest payments in their tax declaration (Jaffee 1994a). In addition, housing developers could apply for a subsidy from the government for the construction of rental apartments to vulnerable groups, such as students and pensioners. It has been estimated (Jaffee 1994a) that various kinds of subsidies to the construction sector were around 4% of the GDP, a figure that was considerably higher than those in France or Finland (around 1.5% of the GDP) and the Federal Republic of Germany (1% of the GDP).
3. Macroeconomic conditions made credits cheap. During the late 1980s, Sweden ran a comparatively high rate of inflation, which reduced the real interest rates. An analysis done at Uppsala University demonstrates that for a while, the real interest rates were negative when considering the tax breaks mentioned in

point 2 (Boksjö, Lönnborg-Andersson 1994). Table 3 provides further details of the macroeconomic development prior and during the crisis.

4. Imbalances in the property market development. During the construction boom of the late 1980s, an uneven number of dwellings were completed in different parts of the country. While in the major cities, the construction volumes were lower than population increase, the opposite was true for some smaller towns. As the crisis hit in 1990, the imbalances led to steeper price decreases in those towns where comparatively too many new homes had been built (Jaffee 1994a).

Table 3 demonstrates that macroeconomic conditions also supported first the boom and later a crisis in the property market. Following two devaluations of the Swedish krona, there was an upward pressure on inflation. The consumer price index doubled during the period of 1981 to 1991. Interest rates increased steadily as the crisis commenced. For two days in September 1992 the main interest rate of the Swedish Central Bank was 500 per cent in a desperate effort to maintain the fixed exchange rate of the krona. Thereafter the fixed exchange rate policy was given up.

Table 3. Selected macroeconomic indicators in Sweden (1980-1997)

Indicator	Start of the boom 1985	End of the boom 1990	Middle of the crisis 1993	End of the crisis 1997
Consumer prices change (%)	7.0	10.1	4.8	0.4
GDP change (%)	2.2	1.0	-2.1	2.5
Main interest rate (January 1)	n.a.	12.0	11.0	4.1

Sources: Swedish Statistics Office, Central Bank of Sweden.

Once the crisis hit, the Swedish government took a number of measures to tackle the economic and property market crisis.

1. One of the most influential steps was the establishment of “bad banks” to take over the problematic loans. Two banks (Nordbanken and Gota Bank) had run into serious difficulties by 1992. The government decided to take over the ownership in those banks. The mortgage portfolio was analyzed and problematic credits were transferred into “bad bank”, independent financial institutions aiming to find a solution to the credits. Initially, the “healthy” parts of the two banks continued operate as normal. In 1993, the banks were merged and later partially privatized. The “bad banks” operated until 1997, when it was deemed that they were no longer needed (Lundgren 1998). Jennergren and Näslund (1998) estimate that the total cost of using „bad banks” as an instrument to deal with the financial crisis was around 35 billion Swedish kronor. It has been estimated that the total cost of bad credits that the Swedish banks had to bear was around 200 billion kronor (Lundgren 1998).
2. Already before the crisis had begun, some of the generous tax breaks and subsidies to homeowners were altered. The share of interest payments that could be discounted in the income declaration was first reduced from 64% to 50% and later on to 30% (Jaffee 1994a).

3. Bank Support Committee (*Bankstödsnämnden* in Swedish) was formed. The aim of the Committee was to evaluate the need for public sector support to financial institutions and, in case support was deemed to be necessary, to determine the amount. The Committee considered where it was likely that bank would survive the crisis in medium term, given the share of bad credits, value of mortgages and other factors. During the crisis, all seven larger banks in Sweden applied for the credit, with the exception of Handelsbanken. S-E-Banken withdrew its application but all other banks received financial support from the Committee (Ingves and Lind 1998).
4. The central government ran an expansionary fiscal policy during the crisis. This caused a budget deficit of up to 12% of the GDP at its highest. In a short term perspective, such a measure stimulated the economy and consequently avoided an even greater drop in the GDP (Bäckström 1998). However, such a policy is not sustainable in the long run and could lead to higher taxes at a later stage. Indeed, the overall share of taxes in the GDP increased during 1995 to 2000 (Ekonomifakta 2009).

Ingves and Lind (1998) suggest that one of the reasons for a rapid recovery from the crisis was the politician's ability to collaborate at difficult times. For example, the opposition parties were included when major decisions, such as the establishment of the Bank Support Committee, had to be taken. In addition to economic policy measures, the crisis was also tackled through the actions of households and enterprises. While during the boom years, consumption had exceeded savings, the trend was quickly reversed in the early 1990s. Exporters also contributed to a relatively smooth and rapid solution of the crisis (Bäckström 1998).

3. Ongoing property crisis in Ireland

Taking into account different data and position of analytics, it can be said that the Republic of Ireland is currently witnessing a real estate bubble burst. Ireland has seen enormous growth rates during the past years and has been called one of the most prosperous countries in the world (so-called Celtic Tiger). However currently there has been significant drop in its position in the world's competitiveness list (World Competitiveness Yearbook). The situation in Ireland is deteriorating gradually, but no major problems (compared to the magnitude of Swedish experience) have risen so far and that is why by now no specific data of government measures and their effectiveness is available. Still certain action has been announced and they can be analyzed for suitability in Estonian circumstances.

First of all main factors contributing to Irish real estate boom are being viewed:

1. Employment and income started to rise, which increased the possibilities of buying real estate and that in turn the demand for real estate. At the same time productivity was stagnant.
2. Ireland's high salaries made it an attractive working place for people all around Europe, especially for a large number of Eastern European workers, which in turn accelerated the demand for real estate.

3. Favourable euro-zone interest rate policy made cost of loans low and in addition high growth in real estate value made real estate collateral practically risk free.
4. Government's budget constantly rose, which made it possible to spend more and contribute to private sector driven bubble.
5. Ireland had remarkably liberal planning policy and there were no remarkable development obstacles throughout the country.

Table 4 shows main indicators of Irish property market. A downturn has been evident starting from 2007, reflecting in following features:

1. Sharp drop in house completions.
2. Sharp drop in loan approvals.
3. Drop in property prices (since the mid-2008 situation has become much worse, being also property type and location specific, but there was no official data available)
4. Problems in servicing the loans, liquidation sales.

Table 4. Selected indicators of the Irish property market (1988-2008)

	1988	1998	2006	2008
Total house completions	15 654	42 349	93 419 (peak figure)	48 190 (11 months)
Estimate of housing stock (incl. vacant)	1 005 000	1 329 000	1 804 000	1 882 000 (year 2007)
Loan approvals	42 543 (1 430.0 €m)	68 925 (5 654.9 €m)	114 593 (31 382.2 €m)	35 181 (9 948.3 €m) – half year
Average new house and apartment price (€)	52 450	125 302	305 637	313 678 – half year
Average second-hand house and apartment price (€)	50 501	134 529	371 447	356 638 – half year
National house building cost index	100 – year 1991	124.9	194.2	209.4 (average 10 months)

Source: Department of Environment, Heritage & Local Government.

Table 5. Selected macroeconomic indicators in Ireland (2006-2009)

	2006	2007	2008	2009 (forecast.)
GDP growth	5.7%	5.3%	-1.4%	-4.0%
Unemployment	4.4%	4.5%	6.3%	9.2%
CPI	4.0%	4.9%	4.1%	-1.0%

Sources: Bank of Ireland; Addendum to the Irish Stability Program Update.

The Government of Ireland has agreed upon package of economic measures to fight the forthcoming difficulties and the measures include three main categories: stabilizing public finances, short-term stabilization of economy and working to

initiate major reforms in society. Of those main attention has been drawn on economy stabilizing measures as most urgent and tightly connected to real estate. (Irish Government Agreement ... 2009)

Beside measures like stimulating and restructuring economy, cutting government costs, working to keep as many jobs as possible, certain action has already been planned concerning problems in real estate sector and in banking sector influenced by real estate sector. For instance Irish government is going to assist those who get into difficulties with their mortgages and in early 2009 a new statutory Code of Practice in relation to mortgage arrears and home repossessions will be brought forward, and the mortgage interest scheme will be reviewed; it is recognized that stabilizing the financial and banking sector is essential (Irish Government Agreement ... 2009).

Ireland has so far been known for very low repossession rates of real estate by banks and building societies, mainly because of the Irish Banking Federation Code of Practice for Mortgage Arrears (Irish Banking Federation). The first half of year 2009 will show how the government directed changes in that code, but also other assistance measures will have effect. As repossession rates have so far shown no rapid growth, government has so far given no financial aid to banking sector.

4. Estonian experience with real estate crises combined with structural and cyclical crises

Following section deals with the Estonian real estate and construction sector crises, which started to spread into the other economic sectors in the early 2009. The real depth of the crises is not clear yet and therefore currently is possible to explain the main reasons of the crises and describe the expansion mechanism of the crises. Beginning of the Estonian real estate crises was under rather different macroeconomic environment compared with highly developed economies (Swedish case above). But it shares some common elements of the catching up economies with extremely rapidly growing domestic demand and excessive loans inflow (partly the Irish case).

In order to provide better insights into the logic of Estonian real estate crisis development the Estonian macroeconomic environment as well fundamentals of the privatization policy of the housing used by Estonian government will be provided. Major stylized facts about the reasons of real estate crises are following:

- 1) During the 1990's Estonia just started its rapid economic convergence process and Estonian income level was still lagging seriously behind the EU-15. Estonian PPP adjusted GDP per capita formed only 42.3% of EU-15 average in year 1999 (Eurostat 2009). Therefore all factors facilitating nominal and real convergence process (e.g. differences in factor prices, unmet demand of customers, outdated housing stock etc) started to work. Between 2000 and 2007 Estonian economy experienced in average GDP growth rate of 8.2% which is among the highest in the group of emerging economies (Eurostat 2009).

- 2) During the late 1990's due to the Asian and Russian crises the interest rates in Estonian economy were very high – around 12% (see Table 6), reflecting the high risk perceptions of foreign banks toward investing into Estonian economy.
- 3) Message given in 1998 by EU about the inclusion of Estonia into the first group of EU new entrants provided foreign investors (particularly from Finland and other Scandinavian countries) strong incentives to invest into Estonian economy. The inflow of FDI into Estonia increased rapidly.
- 4) After the Russian crises in 1998 almost 95% of Estonian banking sector was acquired by foreign investors (SEB, Swedbank). Positive news about the Estonian future joining with EU reduced the risk perspectives and ended up with the rapid reduction of interest rates provided by foreign banks to customers in Estonia.
- 5) Privatization policy of Estonian government was extremely important enabling factor of the real estate boom. Prior to privatisation in January 1993 the Estonian state owned 25.8%; municipalities 34.7%, cooperatives 5% and private sector 34.5% of all housing units (Eesti eluruumide ... 2002). Through the privatisation process ownership as well responsibility and maintenance of housing was transferred from the state and municipal governments to individuals. Virtually the whole housing stock built during the Soviet period by state and municipalities (around 400 000 square metres) was given using so-called privatization vouchers (without any real payment) to the families living in those apartments (Derrick *et al.* 1999). By the end of 2001 the privatization was finished and around 95.8% of housing units were in private ownership, which was among the biggest ratios in the Europe (Eesti Vabariigi ... 2002).
- 6) The outcome of the privatisation was the creation of the huge group of owners, who gained opportunity to use their property as collateral in order to get loans from the banking sector. This lucrative opportunity created strong interest among foreign commercial banks to offer housing loans for the renovation and building new better quality houses and apartments. Extremely intensive competition between foreign banks for the Estonian customers combined with the decline of EURIBOR created rapid reduction of interest rates. It was already the launching signal of the real estate boom.

The above described combination of the use of privatized housing stock, reduction of interest rates and huge increase in housing loans provided by the foreign owned commercial banks, strong economic growth, moderate inflation and rapid wage increase resulted in the unprecedented growth of housing market. This imbalance was further fuelled by the tax incentives provided by the Estonian government to the individuals in the form of deductions from the housing loan interest payments.

Table 6. Growth of selected macroeconomic and real estate sector indicators in Estonia between 1999 and 2008 (cumulative, 1999=100)

Indicators	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Nominal GDP	100	114	130	145	163	181	208	246	286	299
Consumer price index	100	104	110	114	115	119	124	129	138	152
Average gross wage	100	111	124	138	151	164	182	212	255	282
Stock of home loans in value	100	133	180	276	444	698	1219	1992	2619	2891
Apartment price in Tallinn *	100	106	173	233	225	300	339	508	573	480
Numbers of transactions with property	100	114	124	120	140	150	187	187	148	86
Total value of property transactions	100	132	158	190	250	328	566	847	657	309
Average interest rate of home loans*	12.1	11.6	11.0	9.6	5.2	4.1	3.8	4.1	5.4	6.6
Growth of living space (in thousand. m2)	68	65	80	70	110	220	280	330	390	570

* Average quality apartments, price of the square metre, 3 rd quarter of all years

** Interest rates in percentage during the third quarter of all years

After the break-up of the Soviet Union in 1991 housing construction in Estonia dramatically decelerated and between 1996 and 2001 only around 60-70 thousand square-metres of living space was built (Eesti Vabariigi ... 2002). But in 2003 the dwelling stock increased by 110 and in 2008 already around 570 thousand square-metres. The housing market boom was supported by a massive expansion of the mortgage market. Outstanding housing loans grew from EEK 4.5 billion (€286 million) in 2000 to EEK 97 billion (€6.2bn) in 2008 or in relative terms from 4.7% of GDP in 2000, to 41% in 2008. It means that housing loans grew 29 times between 1999 and 2008 (Estonian Bank 2009). It created huge demand for properties in Estonia – e.g. the average price of 2-room flats in Tallinn (capital of Estonia) rose by 573 % from 2000 to 2007 (see in Table 6). Estonia experienced between 1998 and 2008 the highest house prices increase within the whole Europe (see Figure 1). The percentage changes in house prices (or the house price index) over 10 years using the latest data available, not adjusted for inflation was in Estonia 352 percent, followed by Spain (172%) and Ireland (157%). In contrast the housing price increase in Germany was only 3%. (Global Property Guide 2009).

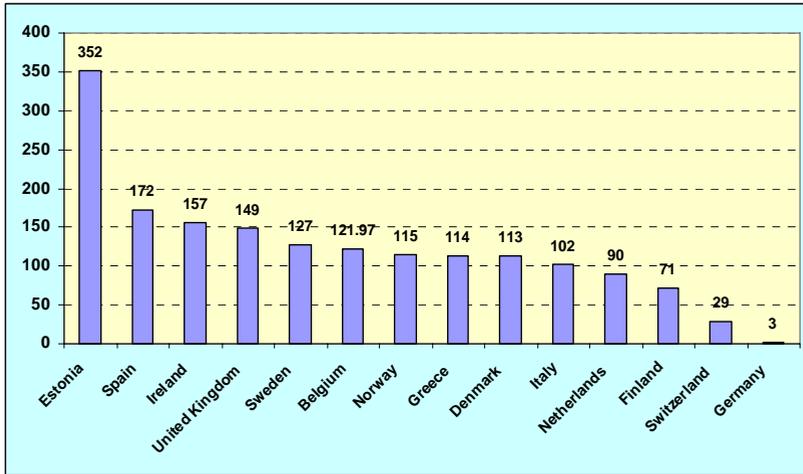


Figure 1. House price change in Europe within last ten years in % (between 1998 and 2008). (Global Property Guide 2009)

But after the years of rapid growth, the Estonian property market experienced a stagnation in late 2007 and during the 2008 property prices started to decline. Tightening loan standards in the wake of the international financial crisis, falling house prices and an abrupt turnaround of consumer confidence have put an end to expanding domestic demand, which has been shrinking since mid-2008. Pro-cyclical fiscal policy of Estonian government has added negative stimulus.

The rapid decline of the property prices is just beginning in early 2009. The spreading of the crises from the real estate and construction sector into other sectors of the economy started during the second half of 2008. Overall, the Estonian GDP shrank by 2% in 2008 and the forecasts for the GDP decline in 2009 are between 5 and 8 percent. Unemployment rose from 4.5% in 2007 up to 9% by the end of 2008 and forecasts are around 12-14 % for the end of 2009.

Estonian government behaviour during the current crises has been quite weak and followed pro-cyclical approach. During the rapid economic growth years fiscal policy was expansionary and aimed to reduce taxes and expand government spending. Particularly toward property market government launched tax incentives to the individuals in the form of deductions from the housing loan interest payments. The most important problem of the government was postponement of the accepting the idea, that property market crises will spread over into the whole economy. The government accepted late 2008 a state budget of Estonia for the 2009, which was extremely optimistic and unrealistic. Already in February 2009 the need for the huge negative supplementary budget (EEK 8bn or €500million) became evident and it will be sent to the parliament mid February 2009.

Conclusion and policy recommendations

In this article we have discussed the causes and courses of property market crises and pointed to policy measures to overcome the crises using examples from Sweden, Ireland and Estonia. While the macroeconomic conditions might vary, a number of similarities can be found across the three countries and their respective situations.

Based on the examples discussed above, we can suggest that a property crisis is preceded by a period of rapid economic growth and/or expansion of the credit market. In a situation where the possibility of borrowing at a low interest rate emerges, banks and households take the opportunity offered by the market. As a consequence, the loans flow into the mortgage market putting an upward pressure on prices, which in turn generates a highly speculative property market. For a while, the credit and property markets will expand but at a point where the discrepancy between the fundamentals of the economy and the actual price levels becomes unsustainable, the bubble bursts and the country slides into a crisis. An important issue is also favourable planning policy and availability of building permits, which additionally boosts property market.

Based on a comparison of the Irish and Swedish experiences with the Estonian case, we propose the following policy (of which some are short-term and other long-term) recommendations for the management of the current property crisis in Estonia:

1) Subsidies and tax breaks are a common tool to stimulate property markets but they should be employed with caution. The Swedish experience suggests that generous subsidies may cause an overheated credit market where the risks are born by the government. For example, before the Swedish property crisis, 50% of interest costs were tax deductible, leading to negative real interest rates at certain periods. In Estonia, the situation is potentially worse, because taking into account maximum deduction sum a large proportion of borrowers can deduct 100% of interest cost. However, we would not recommend changing the tax rules stricter for the time being because this could do further harm to those affected by the crisis. Instead, provisional change of tax rules to help the most endangered social groups could be thought of. For instance one possibility in local circumstances would be to give problem families temporary possibility to deduct not only interest payments, but also principal payments. Other options would include connecting deductions with number of children, working members of household, area of living space per one member of household etc. But after coming out of the crises it is recommended to phase out favourable tax treatment and credit guarantees of housing loans, which fuelled the housing boom (see e.g. also OECD recommendations, 2009).

2) In the long-term, we would encourage policy measures that give the loan-taker more responsibility and make lending stricter. At the moment the bubble has been driven by relatively free lending policy of commercial banks and poor credit scoring. The other issue is the lack of sufficient self-finance (many loans were issued with 0% self-finance). Leaders of G20 countries agreed already in late 2008 that banking regulations need to go through thorough audit (G20 declaration full text). The short-

term regulative issue would be to force Estonian banks to start cooperation through Estonian Bank Association to agree upon unified code of practice on mortgage arrears.

3) Expansionary fiscal policy would expose Estonia to considerable risks. In the Swedish case, the government opted for a solution based on an expansionary fiscal policy, leading to budget deficit and inflation. The conditions of the Estonian economy, most importantly the fixed exchange rate regime (currency board system) and the prospects of joining the Euro in a few years, make such an approach unfavourable for Estonia. Heavily expansionary policy could increase the inflationary threat and also push budget deficit above the three percent thus eliminating any prospects to fulfil Maastricht criteria and join euro-zone.

4) In order to restore competitiveness of the Estonian economy resources should be shifted from serving domestic demand (including property market related activities) to producing for export demand, despite the currently very weak international demand. This measure would help to avoid loss of jobs due to contraction of businesses oriented to domestic market. Government has already announced extensive package for export oriented SMEs.

5) For compensating the collapse of the domestic demand households and firms need to accept lower prices and wages. Deflation is better than devaluation for several reasons. The most important is the fact, that the whole housing loan stock of households and also big part of firms loans are nominated in euro (around the size of 95% of annual GDP). Correction in bubble-time living standard back to more steady state level is needed. When price correction is mostly done by market without government intervention (except no additional value added tax should be introduced) then wage drop could be made easier through labour law.

6) Financial stability should be strengthened, while distortions that contributed to the housing boom should be removed. Given the role of foreign-financed credit in the boom combined with the current recession Estonian Financial Supervision Authority should carefully monitor risks and intensify cooperation with the foreign supervisory bodies. In addition government and municipalities should look through land zoning and building permit issuing regulations in order to cool down development activity.

7) Government should work together with Estonian Bank and foreign commercial banks in order to tackle “bad loan” problem and find balanced solutions to avoid collapse of housing market and create system of softening conditions for households in difficulties.

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THE IMPACT OF START-UP GRANTS ON FIRM PERFORMANCE IN ESTONIA

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Abstract

As in economic theory start-up enterprises have been seen as important sources of growth, the government support measures to enterprises have been a common practice around the world for decades. As the governmental support to enterprises is often of a considerable amount of money there is a need to assess its efficiency. In the present article we study the impact of Estonian start-up grants distributed in 2002 and 2003 on various indicators of firm performance with econometric methods, namely propensity score matching. We use the data from the Estonian Business Register in order to study the impact of start-up grants on various economic indicators like the number of employees, turnover, equity, fixed assets and firm survival. The results showed that the start-up grants proved to affect positively the number of employed people and turnover, yet the impact on productivity was negative. One implication of the study is that it is difficult to achieve different goals to the same extent with a single governmental grant.

Keywords: start-up grants, impact evaluation, Estonia

1. Introduction

In the economic theory entrepreneurship is seen as an important source of economic growth and enhancing the development of entrepreneurship is one of the possibilities to sustain stable economic growth. Start-up enterprises which usually grow faster than the incumbent enterprises enrich the economic development by creating new jobs and by stimulating innovation. The government support measures to enterprises have been a common practice around the world for decades. There are many different ways to support enterprises – e.g. loans with below market average interest rate, loan guarantees or simply financial grants given to enterprises. But as the governmental support to enterprises is often of a considerable amount of money there is a need to assess its efficiency. The aim of the impact analysis of support measures can be to obtain information about the performance of different measures

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or projects or to learn about the ways of enhancing the existing support programs (instruments).

In the academic literature there can be found many studies estimating the impact of government grants to enterprises (for literature reviews, see e.g. Masso and Vildo 2006; Klette *et al.* 2000; David *et al.* 2000). Quite many of these are about the R&D grants, for instance, whether the public R&D funding crowds out the private funding or not (see e.g. Czarnitski and Licht 2006). There have been made much less studies on the impact of start-up grants. The few examples that we know are as follows. Del Monte and Scalera (2001) estimated the life duration of the new firms in Italy; their results showed that the subsidies proportional to the size of projects induced a bias towards larger and more risky firms. Almus (2001) found in case of Germany that firms receiving public start-up assistance performed better in terms of employment growth over a six year period. Crepon and Duguet (2003) found from the analysis of French data with propensity score matching techniques that start-up subsidies increased significantly the survival of the firms created by former unemployed people; and the allocation of subsidies acted as a screening process improving the performances of the bank loans; the effect of subsidies was stronger than that of bank loans.

While these studies are on the developed countries, less is known about the effectiveness of start-up grants in case of developing and transition economies (previous studies on governmental grants have analyzed the effectiveness of R&D grants in Central and Eastern European countries, see e.g. Czarnitski and Licht 2006; Burger *et al.* 2006). As summarized by Masso *et al.* (2007), during the transition from a socialist to a market economy, the business sector is expected to be especially dynamic with lots of entries and exits taking place; while in such conditions it might have been for newcomers easier to find a niche in the underdeveloped industries and survive, on the other hand, start-up's were hurt by the underdevelopment of market economy institutions, constraints in capital and labour markets, and the entrepreneurs lacking experience on how to operate a business in market economy.

The goal of the present article is to estimate the impact of Estonian start-up grants with econometric methods. The impact of start-up grants given in 2002 and 2003 are under investigation. We seek to estimate the differences between supported and not supported enterprises in terms of different economic indicators like the number of employees, turnover, equity, fixed assets. Also the impact on the survival of supported and not supported enterprises was studied. The estimation is done in addition to descriptive tables with the use of statistical methods like propensity score matching technique. In case of matching techniques the goal is to form a counterfactual for the treated unit (in this case supported enterprise), that is the expected potential outcome of the supported enterprise in case of not being granted the support, by using the performance of the enterprises not granted a support. Therefore, we seek a 'perfect twin' for each observation of the treatment group, i.e. at least one observation of the potential control group that is as similar as possible to the treated observation with respect to a given distance measure. Thus, our

contribution to the literature is that this is one of the first studies on how the policy measures towards start-up firms in late or former transition countries have succeeded.

The rest of the paper is structured as follows. In section 2 we describe the data and the characteristics of the start-up grants' programme used in Estonia during 2002-2003. Section 3 describes our methodological approach to the estimation of the impact of the governmental grants, while section 4 presents firstly the results from the descriptive tables and thereafter from the econometric estimations. The final section concludes.

2. Overview of the data and the Estonian start-ups grants

The entrepreneurial support scheme that is under consideration in this paper is governmental start-up grants that were given out in 2002 and 2003 by Enterprise Estonia. According to a study that was conducted in 2003, start-up grants were the most well-known governmental support measure among entrepreneurs in 2002 and 2003 (Saar Poll 2003).

The main aim of the start-up grants measure was to support the starting and development of small enterprises (Stardiabi ettevõtluse toetamiseks 2001, Stardiabi programmi kord 2002). As the Estonian business activity is lower than the average in Europe, there is a need to increase the business activity and to encourage the potential entrepreneurs (Eesti elanike ... 2004).

In 2002, the following costs that were directly connected to an explicit business plan allowed to be financed with the start-up grant: investments (machinery, equipment and other industrial or services industry related fixed assets); purchase and renovation of facilities or their reconciliation with EU requirements; developmental activities (patent research, license purchase etc). In 2003, in addition to these aforementioned restrictions working assets, real estate and facilities purchases were not allowed to be financed with the start-up grant.

The applicants that were eligible for the start-ups grant had to be business associations and self-employed entrepreneurs registered in Estonia and they had to be in the phase of starting their business. In 2002, projects that were aimed at advancing entrepreneurship outside of Tallinn, Tartu and Pärnu were favoured. In 2003, projects that were aimed at advancing entrepreneurship outside of Tallinn were favoured. Enterprises that corresponded to the following criteria were considered to be eligible:

- 1) Enterprises that had up to 50 employees and less than 10 million kroons of turnover and that had actually operated for maximum of 2 years. In 2003, the eligible enterprise was allowed to have actually operated for maximum of 1 year.
- 2) The enterprise was not allowed to be a subsidiary of any other legal person.
- 3) The enterprise was not allowed to have any accrued taxes or the accrued taxed had to be given the dates of payment.

- 4) The enterprises were not allowed to be under bankruptcy proceedings.

In 2003, there were also a couple of additional requirements – governmental institutions were not allowed to be the owners of the supported business entities and more than 50% of the holding or capital stock had to belong to an Estonian citizen. Eligible sectors were manufacturing, industrial production, services that were supporting manufacturing industry and tourist services. In 2002, the maximum limit of the grant was 50 000 kroons (approximately 3 200 euros). In some exceptional cases, when the business plan was oriented to developing exporting activities or to the substantial growth of the enterprise, the maximum limit was 100 000 kroons (approximately 6 400 euros). Each enterprise was allowed to apply only once. In the case of enterprises from Harjumaa (the region around the capital of Estonia, Tallinn), the self-financing ratio had to be 45%, in enterprises active in other counties, the self-financing ratio had to be 35% of the worth of the project. In 2003, the maximum grant limit was 100 000 kroons but not more than 75% of the costs associated with the project.

Several different criteria were taken into account by Enterprise Estonia while deciding to whom the grant was given. Among other things, projects that aimed at creating new jobs or retaining existent jobs, that were oriented at developing exports, that were aimed at making use of new technology or that were research and development projects and projects that had higher share of self-financing were favoured (Stardiabi ettevõtluse toetamiseks 2001; Stardiabi programmi kord 2002). Taking into account the size of the grant and the average size of the equity capital of supported enterprises, it seems that the grant was of a sufficient size for starting a business. On the other hand, the number of different objectives and their spectrum seems to be too large. Based on different theoretical and empirical articles one might say that in the case of business start-ups, the growth of the enterprise is of a substantial importance. Therefore, the fact that enterprises which aimed at fast growth were supported is anticipated.

So far only two studies have somewhat analyzed the efficiency of Estonian start-up grants. The reason for this is very simple and it is the lack of data. Therefore, the analysis conducted so far has utilized qualitative research methods. Two different institutions have researched the efficiency of start-up grants – National Audit Office of Estonia (NAOE) and Centre for Policy Studies “PRAXIS” on the request of Estonian Economic and Communications Ministry (Riigikontroll 2004b; Riigikontroll 2004a; Kuusk, Jürgenson 2007). NAOE’s aim was to estimate the impact of different governmental entrepreneurial support measures to employment in supported regions. Among the analyzed measures were also start-up grants. PRAXIS’s aim was to analyze the overall efficiency of start-up grants – they tried to estimate to what extent the start-up grants had fulfilled their objectives.

NAOE’s main implications were connected to the overall design of business support measures. They claimed that the objectives specified so far were not clear enough and they emphasized the need to work out a unitary set of desirable outcomes which

would contribute to a more aligned government policy package (Riigikontroll 2004a; Riigikontroll 2004b).

The study by PRAXIS concluded that the start-up grant was an important support scheme which was known and used widely among entrepreneurs (Kuusk, Jürgeenson 2007). Entrepreneurs that had received the start-up grant claimed that without the grant they would not have carried out the project in the planned volume and it would have taken a lot more time – therefore, the dead-weight component of this measure was estimated to be on a medium level. The critique that was brought out in the study was directed to the time when the grants' effect was over. It was claimed that there weren't any instruments to support entrepreneurs who were not start-ups any more but were in the phase of fast growth. The lack of these kinds of instruments could have jeopardized the results achieved with the start-up grant.

In the present article we use for the estimation of the start-up grants' impact the Estonian Business register data on new start up firms from year 2002 till 2003. The data includes all registered firms without any size limit, and it covers all sectors with the exclusion of banks. In addition to the general data on enterprises like the year of registration, number of employees, ownership, legal form etc., also the items of balance sheets, incomes and costs are available. We excluded from the analysis all start-up enterprises that due to the aforementioned reasons were not eligible for the grant. In the period 2002-2003 there were in our data altogether more than 5 thousand start-up enterprises; according to Statistics Estonia, the overall firm entry rate was in 2002 11.1% and in 2003 12.3%. The data is linked then with the data from the Enterprise Estonia on the supported enterprises (altogether 188 firms). One disadvantage of the data is that we have no information about the person who started the enterprise.

3. Methodological approach

The array of methods that are used to analyze the impact government support measures is very wide. The majority of the methods can be divided into two broad categories – qualitative and quantitative methods. Taking into account the goal of the impact study, different methods can be combined. The present impact analysis is done by using quantitative methods. An overview of the rationale behind the used method is as follows.

When estimating the impact of grants, the main problem is that the knowledge about the value of the efficiency indicator we are interested in is not known – we don't know how the enterprise would have acted without the governments' support. Let us use Y to denote the variable under interest that is used to evaluate the grant's impact (e.g. labour productivity, level of employment, probability of survival etc.). Let $GRT_{it} \in \{0,1\}$ be an indicator (a dummy variable) whether the firm i received a grant or not at time t . Let us also denote $Y_{i,t+s}^1$ the value of the outcome with grant and $Y_{i,t+s}^0$ without grant. The causal effect is then defined as $Y_{i,t+s}^1 - Y_{i,t+s}^0$ (the

impact of the grant, treatment effect). The problem is that for those treated, the first term is observable but not the second; for those not treated, the situation is vice versa. Thus we can only observe $Y_{i,t+s} = Y_{i,t+s}^0 + GRT_{i,t} \cdot (Y_{i,t+s}^1 - Y_{i,t+s}^0)$. Without strong assumptions, the treatment effect cannot be estimated at the firm level, however the average treatment effect can be estimated without bias if the selection is due to observables. Average treatment effect of the treated (ATE_1) can be written as (Rosenbaum and Rubin 1983):

$$\begin{aligned}
 ATE_1 &= E\{Y_{i,t+s}^1 - Y_{i,t+s}^0 \mid GRT_{i,t} = 1\} = \\
 (1) &= E\{Y_{i,t+s}^1 \mid GRT_{i,t} = 1\} - E\{Y_{i,t+s}^0 \mid GRT_{i,t} = 1\} = \\
 &= \frac{1}{N^1} \sum_{i=1}^{N^1} (Y_{i,t+s}^1 - Y_{i,t+s}^0)
 \end{aligned}$$

The term N^1 denotes the number of treated (grant receiving) firms. Since the last term ($E\{Y_{i,t+s}^0 \mid GRT_{i,t} = 1\}$) is unobservable, the causal inference is dependent on the construction of the counterfactual that is the outcome of the grant recipients in case they would not have received the grant. That is estimated by the value of the outcome of the firms that did not receive grants, i.e. $E\{Y_{i,t+s}^0 \mid GRT_{i,t} = 0\}$. The calculation of term as an average over all of the firms not receiving grants will yield biased estimates if the receipt of grants is not random but correlated with observable firm characteristics. Thus, in order to obtain unbiased estimates, the valid counterfactual needs to be constructed.

Many studies have tried to estimate the efficiency of grants by using matching techniques, which is one of the possibilities to construct valid counterfactuals. The matching technique gained popularity with the evaluation of the impact of labour market programmes. In case of matching techniques the goal is to form a counterfactual for the treated unit (in this case supported enterprise), that is the expected potential outcome of the supported enterprise in case of not being granted the support, by using the performance of the enterprises not granted a support. Rosenbaum and Rubin (1983, pp. 50) point out that matching “[...] is a method for selecting units from a large reservoir of potential comparisons to produce a comparison group of modest size in which the distribution of covariates is similar to the distribution in the treated group.” Therefore, we seek a ‘perfect twin’ for each observation of the treatment group, i.e. at least one observation of the potential control group that is as similar as possible to the treated observation with respect to a given distance measure. The success of these approaches depends on several conditions that allow the identification of the potential effect (Heckman, Hotz 1989).

One of the most popular ones among the matching techniques is propensity score matching that uses for matching the probability of receiving the grant (propensity

score) conditional on several firm-specific indicators, i.e. the following probit model is used (Caliendo and Kopeining 2005):

$$(2) \quad E[GRT_{i,t} | X_{i,t}] = P(GRT_{i,t} = 1 | X_{i,t}) = F(X_{i,t}),$$

$$\forall i = 1, \dots, N^0 + N^1,$$

where $X_{i,t}$ is the vector of covariates including possibly firm level variables, regional and industry dummies, lagged values of $GRT_{i,t}$. The choice of variables should capture the factors that are connected to the funding agency's decision making (Girma *et al.* 2005) and the firm's decision to participate in the program (like the return from the participation). Usually the probit model is used to estimate the participation probability, in that case $F(X_{i,t}) = \Phi(X'_{i,t} \cdot \hat{\beta}_{i,t})$, where $\hat{\beta}$ is the vector of parameter estimates of the participation equation and $\Phi(\bullet)$ is the cumulative density function of the standard normal.

To get unbiased estimates with it, it is important to have a presence of common support. It means that all the enterprises that are in the sampling have to have the possibility to be supported or not to be supported. For example, if enterprises in trade sector were not eligible, then there should not be any trade sector enterprises also in the sampling. In the case of propensity score matching, it is important that any of the variable X-s would not define completely the participation or non-participation in the program.

After estimating the probability of receiving the grant it is important to eliminate those observations from the sample which probabilities of receiving the grant lie in a range that don't have observations from both groups. After the probabilities of default are estimated and observations without common support are eliminated from the sample one can start matching.

Let us denote P_{it} the predicted probability of receiving grants (probability of treatment) at time t for firm i that actually receives the grants. A firm j not receiving the grants is then chosen as the match for the firm i according some matching algorithm. In the next step the observation is deleted from the observed group (the group of enterprises that were supported by government). The deletion of the control enterprise depends on whether matching with replacement or without replacement was used. These steps are repeated as long as there are no observations left in the group of enterprises that got the governmental support. The effect of the program is the mean of the supported enterprises $E(Y_{1i} - Y_{0i})$ which is compared to the mean that is derived from the non-supported group of enterprises. In the case of the algorithm without replacement, the observation is deleted from the group of enterprises that were not supported. In the case of the algorithm with replacement, the observation is not deleted from the control group and can be used again. With

replacement algorithm allows to use the same observation repeatedly and therefore it is possible to find more similar twins (Leping 2004).

One of the most often used matching algorithms is the nearest neighbour matching (the firm to the comparison group is chosen is the one with the propensity score P_{it} closest to the treated firm P_{jt}), caliper matching (that imposes a tolerance level on the maximum propensity score distance $P_{jt} - P_{it}$) etc. (Caliendo and Kopeinig 2005). In our study we use the nearest neighbour matching with either two or five neighbours, as well as the caliper matching. After the matching has carried through for all firms that have received the grant, the ATE_1 can be calculated by taking the average of the treatment effect over all firms treated (given a grant). As to the Hausman (2001), matching leads to more robust results on the treatment or casual effect compared with other methodologies approaches.

4. Econometric results

The tables below present the estimation results of the propensity score matching. The impact of grants on four economic variables was investigated; these were the number of employed, labour productivity, turnover (sales) and fixed assets. Table 1 presents first the estimation results for the probit model for the probability to receive the start-up grant; the probabilities from the model were used for matching. As we can see, the probability to receive the grant was negatively dependent on the size at the time of the start-up; among different economic sectors, firms in manufacturing had a relatively higher and in services relatively lower probability to receive grants; among different regions, firms in North-West of Estonia (the area with the most difficult economic situation in the study period) had the highest probability to receive the grants.

Before calculating the effect of the grant (ATT) we also controlled for the success of matching by looking at the differences of the supported and non-supported firms before and after matching by the use of a standard t-test. In case the matching is successful, the differences in the mean values after matching should not be statistically significant; that was indeed the case (the results are not reported in order to save space).

Table 1. The probit model for the probability to receive state aid

Variables	Parameters and z-statistics
Number of employees	-0.042 (0.87)
Central Estonia	1.206 (6.28)***
North-Eastern Estonia	1.585 (8.84)***
Western Estonia	1.278 (7.14)***
Southern Estonia	0.986 (5.91)***
Construction	-0.816 (5.55)***
Business Services	-0.262 (2.69)***
Public services	-0.513 (3.51)***
Observations	7263
Log-likelihood	-471.479
Pseudo R-squared	0.167

Note. Absolute value of z statistics in parentheses. * significant at 10%;
** significant at 5%; *** significant at 1%.

The reference categories are manufacturing and North-Estonia.

Next we move on to the results of propensity score matching. As we can see from Table 2, the estimated impact of grants on job creation varies across the used matching algorithms. Although the numbers are positive for all estimations, only in the 2nd and 3rd years the impact is statistically significant in case of Kernel matching. The size of the impact – among the new firms receiving start-up grants the employment growth rate was up to 25 percentage points higher – thus in addition to being statistically significant these results can also be considered to be economically significant. When using instead of the percentage change the absolute employment change, the impact was positive in the 1st year, but statistically insignificant; in the 2nd year the results were positive and significant in case of nearest neighbour matching with 5 neighbours (NN5) algorithm.

Table 2. Effects of start-up grants on job creation (ATT), propensity score matching results

Matching method	ATT 1-year		ATT 2-years		ATT 3-years	
	Dif.	T-stat.	Dif.	T-stat.	Dif.	T-stat.
Unmatch	0.100	'(1.45)	0.228	'(2.52)**	0.178	'(1.86)*
NN 5	0.020	'(0.20)	0.174	'(1.36)	0.041	'(0.27)
NN 2	0.103	'(1.25)	0.249	'(2.44)**	0.019	'(0.17)
Kernel	0.083	'(1.20)	0.213	'(2.53)**	0.256	'(2.45)**

Note. * significant at 10%; ** significant at 5%; *** significant at 1%. NN – 5: nearest neighbour matching with 5 matches; NN – 2: nearest neighbour matching with 2 matches; ATT - Average Treatment Effect on the Treated (ATT), t-statistics are in parentheses. In case of Kernel matching, the Epanechnikov kernel has been used, the bandwidth has been set at 0.06 (the default value in psmatch2 program).

Secondly we studied the impact on labour productivity (valued added or sales per employee). As can be noted, the results vary over the years – the impact is negative for the 1st year, but becomes positive and statistically significant at the 3rd year. In earlier studies in most cases rather the negative impact on productivity has been revealed (see e.g. Bergström 1998, Lee 1996, Beason and Weinstein 1996). Thus in this case even the result that no statistically significant negative impact can be tested is in a way a positive sign of the grant programme. If the goal of the grant programme is primarily job creation then the missing or negative impact on labour productivity is not unexpected. Because of that it is important to define clearly the goals of the grant programme and how the institution managing the programme estimates its impacts. One possible reason for the insignificant result is the hiring of the new jobs at the beginning of the period because the hiring of new employees is accompanied by the labour turnover or adjustment costs (time spent on the training of new employees, the poor quality production produced by new employees, their initially lower productivity). This result refer also to the contradictions in some of the goals of the grant programme – increasing the number of the employees and increasing productivity (e.g. via the preferred support of R&D activities) are mutually conflicting targets. Probably the training of new employees for their specific tasks undertaken in the enterprise takes time, thus the positive results in productivity could be seen only after the new employees have obtained a sufficient level of competence, thus in the 3rd or 4th year after the support was granted.

Table 3. Effects of start-up grants on productivity (ATT), propensity score matching results

Matching method	ATT 1-year		ATT 2-years		ATT 3-years	
	Dif.	T-stat.	Dif.	T-stat.	Dif.	T-stat.
Unmatch	-1.219	'(1.51)	-0.167	'(0.04)	0.621	'(3.49)***
NN 5	-1.211	'(0.77)	0.389	'(0.96)	0.711	'(2.63)***
NN 2	-0.866	'(0.53)	0.101	'(0.23)	0.622	'(2.39)**
Kernel	-1.233	'(0.79)	0.250	'(0.23)	0.528	'(2.08)**

The results were most robust in case of sales growth rate – for all years and estimation methods significant positive effect could be seen. The supported enterprises increased their sales about 22-28% more than the enterprises not supported in the 1st year, 18-39% in the 2nd year, 33-43% in the 3rd year. We can note that the estimated treatment effects are sometimes greater than the unmatched differences; the reason could be that the supported enterprises have characteristics that otherwise reduce the sales growth (e.g. they could belong to industries where start-ups have usually lower sales growth). In many cases the size of the grant was considerable and equal to the owners' equity. When instead of the percentage sales growth the absolute change of the sales was analyzed, the supported enterprises had somewhat higher sales, but the difference was in most cases statistically insignificant.

Table 4. Effects of start-up grants on turnover (ATT), propensity score matching results

Matching method	ATT 1-year		ATT 2-years		ATT 3-years	
	Dif.	T-stat.	Dif.	T-stat.	Dif.	T-stat.
Unmatche	0.30632	'(3.67)***	0.38856	'(3.87)***	0.381	'(3.53)***
NN 5	0.22529	'(2.15)**	0.31478	'(2.33)**	0.43739	'(2.88)***
NN 2	0.28114	'(3.25)***	0.42425	'(4.09)***	0.37041	'(3.29)***
Kernel	0.28488	'(4.28)***	0.34335	'(4.41)***	0.33896	'(3.95)***

Next, also the impact on the fixed assets was analyzed; the results can be found in Table 5. The impact was statistically significant in year 2, but insignificant in year 1 and 3. The reason for the insignificant result could be that because in most cases the supported enterprises had at the time when they were supported more fixed assets (relative to unsupported enterprises), thus they might have had lower need for the additional investments.

Table 5. Effects of start-up grants on fixed assets (ATT), propensity score matching results

Matching method	ATT 1-year		ATT 2-years		ATT 3-years	
	Dif.	T-stat.	Dif.	T-stat.	Dif.	T-stat.
Unmatche	0.00853	'(0.09)	0.15991	'(1.51)	0.09294	'(0.78)
NN 5	0.01946	'(0.17)	0.39465	'(2.72)***	0.13593	'(0.87)
NN 2	0.08393	'(0.86)	0.22302	(2.00)**	-0.02316	'(0.18)
Kernel	0.00505	'(0.07)	0.18764	'(1.77)*	0.08651	'(0.76)

Finally the impact on the firm survival chances was investigated, by comparing the survival rates of supported economically active enterprises during the years after the grant was given, and the other enterprises after they started their activities. The results in Table 6 show that at the end of the 1st year 87% of natural (unsupported) and 95% of supported enterprises had survived. At the end of the 2nd year the numbers were respectively 75% and 85%, and at the end of the 3rd year 65% and

77%. Also the study undertaken by Praxis reached the similar conclusions – at the 2nd year after the receipt of the grant the firms survival rate was 89% (Kuusk and Jürgenson 2007). Although the positive impact of start-up grant on firm survival may seem to be a positive development, the possible problems may emerge if due to the grant the firms’ cost functions seem to be at the moment lower than they actually are; in such case, inefficient enterprise may survive in the market initially until the subsidy ceases to be in operation (Santarelli and Vivarelli 2000). Thereby also the market selection process by which efficient enterprises are sorted out becomes significantly distorted.

Table 6. The survival rates for supported and unsupported enterprises

Interval	Survival rate	Standard deviation	95% confidence intervals	
			Lower	Upper
Unsupported				
1...2	0.87	0.003	0.8641	0.8757
2...3	0.75	0.005	0.7438	0.7614
3...4	0.65	0.006	0.6398	0.6619
Supported				
1...2	0.95	0.02	0.9071	0.9740
2...3	0.85	0.03	0.7827	0.8985
3...4	0.77	0.04	0.6769	0.8440

In addition to the life tables also probit model on firm survival was estimated. The results in Table 7 show that in the 1st year after receiving the grant the firm survival is negatively affected by the initial number of employees (firm size). The firm survival was positively affected by the initial (that of the year, when grant was given) level of sales and fixed assets: the survival chances were higher also in case of enterprises in manufacturing, construction and business services. The parameter for the dummy for grant is in the regression equation positive, but not statistically significant. In the 2nd year after grant the results were somewhat different: the firm survival chances were improved by their location in certain regions (Central Estonia, Southern Estonia, Western Estonia) and the larger firm size in the first year. The dummy for the grant turned out to be statistically insignificant again. Thus we can say that although the grant may improve firm’s survival chances, based on our data we are unable to find statistically significant effects. Of course the relatively small number of supported enterprises may make it more difficult to find out statistically significant relations.

Table 7. The probit model for firm survival

Variables	1 st year	2 nd year
Initial number of employees	-0.092 (-2.65)**	-0.142 (-3.44)***
Initial sales	0.058 (2.56)*	0.093 (3.56)***
Initial fixed assets	0.011 (0.63)	-0.051 (-2.37)*
Manufacturing	-0.448 (-4.77)***	-0.406 (-3.76)***
Construction	-0.296 (-2.98)**	-0.254 (-2.12)*
Business services	-0.373 (-4.20)***	-0.393 (-3.91)***
Central Estonia	0.110 (1.01)	0.066 (0.52)
North-Eastern Estonia	0.137 (1.22)	0.141 (1.04)
Western Estonia	-0.083 (-0.97)	0.054 (0.48)
Southern Estonia	0.112 (1.79)	0.090 (1.19)
Start-up grant	-0.044 (-0.25)	0.637 (2.16)*
Constant	0.991 (3.34)***	1.301 (3.76)***
Number of observations	5506.000	3925.000
Log-likelihood	-1421.865	-975.727
Pseudo R-squared	0.014	0.023

Note. Absolute value of z statistics in parentheses. * significant at 10%; **

The reference categories are manufacturing and North-Estonia.

5. Conclusions

Because the governmental business support measures distribute often a substantial amount of money, there is a clear need to estimate their performance and efficiency. The goal could be either to collect information on the successfulness of the grant programme, improving the performance of the programme or projects, or advising the further developments in government's policies. The present study undertakes the ex post analysis of the success of the Estonian start-up grants distributed in year 2002 and 2003 by the Regional Development Agency of Enterprise Estonia. For that purpose the propensity score matching approach was used in order to construct for supported enterprises a comparison group that would characterize the outcome of

supported enterprise in the hypothetical case when it would have not received the grant.

We analyzed the impact on various economic indicators like the number of employees, sales, owner's equity, productivity. The impact on both on percentage change relative the initial level as well as on the absolute numbers was analyzed. According to the probit model the probability to receive the grant was higher for enterprises in North-East Estonia, business services and smaller enterprises. When estimating with propensity score matching the impact on job creation, the impact was positive and statistically significant only in the 2nd year after the provision of the grant; for the other years the impact was positive, but not statistically significant. While in case of productivity no significant effect could be detected (albeit the impact was positive), the impact on sales growth was strongly positive and statistically significant for all years after entry. The reason for lack of impact on the growth rate of fixed assets might have been the initially higher level of the fixed assets, thus the supported enterprises probably did not have additional need for investments into fixed assets. Concerning firm survival, the survival rates of supported enterprises were in each year higher than those of not supported enterprises, e.g. in the 2nd year 77% of supported and 65% of unsupported enterprises had survived. However, after controlling for various other firm characteristics in a probit model, the results did not indicate that the start-up grants had increased the supported firms' survival chances.

In the authors' opinion the following policy implications follow from the above analysis. In the allocation of the business aid one needs to specify very precisely the requested outcome of the grant. If one wants to increase with the same grant both the number of jobs, productivity and R&D expenditures, then the grant might not fulfil any of these goals. The business aid is beneficial if by its development the market situation is taken into account and it offers a financing mean that is not supplied by the private sector due to the market failures. As the present study showed, in case of a well-elaborated financing instrument it is possible to achieve the desired targets and promote the development of entrepreneurship. On the other hand, although this study has demonstrated the possibility to use quantitative approaches for the impact analysis, we would rather suggest the combination of different methods. One possible further development would be to analyze the enterprises investigated in this study over a longer period of time so that short-lived influences on firm performance are eliminated. The future studies should be also based on more detailed databases, e.g. including information on that who are the entrepreneurs behind the start-ups.

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