

PhD News

The following are abstracts of recent PhD theses awarded to Baltic students.

Optimal transparency in trading mechanisms

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Full version of the dissertation awarded by University of Stanford is available at

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This dissertation consists of two disparate chapters.

Chapter 1 studies optimal trading mechanisms in an allocation problem with a broker and two privately informed traders who take non-enforceable actions. If the designer of the mechanism puts more weight on the broker than on the traders, the following trade-off is present. Disclosing some information about messages sent by the players during execution of a mechanism encourages a player to take an intended action (e.g. invest or learn). Withholding some other information precludes the player from using that information to act opportunistically. This trade-off explains partial information disclosure in financial transactions. For example, concealing that the probability of trade is small helps convince a trader to participate or acquire information when doing so is costly. The optimality of such concealment explains iceberg orders in electronic exchanges and secrecy in auctions.

Chapter 2 asserts that communication of ideas fosters technological progress and prevents regress. The paper develops a growth model wherein an economy's technology is endogenous to agents' communication decisions. In equilibrium, there is too little communication and insufficient risk-taking relative to the first-best. The model can generate an abrupt take-off of output growth without an exogenous "catastrophe." A numerical example illustrates such a take-off. In the example, the endogenous fall in the cost of communication leads to acceleration of the growth rate of output by facilitating the transmission of knowledge and by encouraging risk-taking.

Heterogeneity of human capital and its valuation on the labour market

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Full version available at http://dspace.utlib.ee/dspace/bitstream/10062/6094/1/leping_kristjan-olari.pdf

The aim of this dissertation is to study the heterogeneity of human capital and its valuation in the labour market. For most of the empirical analysis, Estonia is used as an example, except

for one study based on US data. Although most of the analysis is conducted on Estonian data, the aim of this research is to contribute to the literature on this topic generally.

This study does not aim to cover all aspects of the complex topic of the heterogeneity of human capital and its valuation on the labour market, but instead focuses on the following areas: specificity of human capital, the public-private sector wage gap, the ethnic wage gap, and the ethnic fringe benefit gap. This dissertation fills several gaps in the existing literature in these four areas.

Both Estonian and US data are used in the thesis, including the Estonian Labour Force Survey and the US National Longitudinal Survey of Youth. Different analytical methods are applied to these data, including quantile regression, ordinary least squares regression, and Blinder-Oaxaca decomposition.

The main results of this thesis include development of a human capital specificity measure, estimation of the public-private sector wage gap on Estonian data, analysis of the ethnic wage gap in Estonia and the black-white fringe benefit gap in the U.S. The results indicate that both the public-private sector and ethnic wage gaps in Estonia are related to the transition process. The black-white fringe benefit gap is to some extent explained by the black-white wage gap.

The diversity of individual values and its role for organisations in the context of changes

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This dissertation is based on four original publications. The objective of the study is to identify the interaction between individual values and organisations and provide an insight into the issue of value diversity in the context of large-scale societal and organisational changes based on the example of three Baltic countries – Estonia, Latvia, and Lithuania.

The object of the research is individual values, collectivistic attitudes, perception of organisational culture and their interactions among Russian-speaking employees in Estonian, Latvian, and Lithuanian organisations. Individual values are defined as “enduring beliefs that a specific mode of conduct (*instrumental values*) or end-state of existence (*terminal values*) is personally and socially preferable to alternative modes of conduct or end-states” (Rokeach 1969: 160). Value diversity is considered in this dissertation as differences in the relative importance of certain values for individuals across various groups or categories of people.

The author regards people’s cultural background as a factor influencing an individual’s value formation and emphasizes that in a multicultural society these sets of values may be quite diverse across different cultural groups. In general people belonging to the same cultural group

attribute similar importance to the same values and this is further reflected in their attitudes. This dissertation studies such connection by bringing into focus the collectivistic attitudes of employees belonging to the same and different cultural groups. In order to identify the manifestation of value diversity in organisations the author centers on the interactions of values and attitudes with organisational culture and potential organisational innovativeness.

This empirical study is based on the survey method. It was found that Russian-speakers in Estonia, Latvia, and Lithuania have a similar set of the most important terminal values, that is, the end-states of existence they look for: *family security, a sense of accomplishment, self-respect, wisdom*. However, the sets of most important instrumental values vary among these sub-samples, which means that they see the ways to achieve these end-states of existence differently. This finding shows that to some extent value diversity is also present among people of the same cultural background. One can suggest that this is the effect of the societal context one lives in, i.e. the country-of-residence effect. A similar variation was also found with regard to collectivistic attitudes of Russian-speaking employees in Estonian, Latvian, and Lithuanian organisations.

It was also found that the connections between employees' collectivistic attitudes and organisational culture differ with respect to the approach they take to construct their national identity. The author proposed that the collectivistic attitudes of respondents who base the construction of their national identity on ethnic and linguistic grounds may have stronger positive connections with organisational culture than those of respondents whose national identity formation was based on citizenship and assimilation. It is suggested that identity threat as a consequence of changes in society's institutional context, and in particular, citizenship and naturalisation of minorities policies, plays an additional role in this process. Since national identity is one type of social identity, it means that when evaluating workforce in terms of its diversity, social category diversity should be considered together with value diversity.

Another empirical finding is that Russian-speaking employees attribute more importance to values that should support the initiation phase of the organisational innovation process. Taking individual values as a basis for argumentation, it can be stated that more disciplined, responsible, and committed Estonians more highly evaluate the values that are important for the implementation phase of the organisational innovation process and therefore should do better in the implementation phase of the innovation process.

Competitiveness of telecommunication enterprises in Latvia

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The public defence of this Doctoral thesis was held at a session of the Doctoral Council of Management Science and Demography of the University of Latvia, on April 13, 2007.

*This Doctoral thesis is available at the Library of the University of Latvia,
Kalpaka bulv. 4, Riga*

Having analysed scientific publications and the situation in the Latvian mobile telecommunications market, the author has discovered several unsolved problems:

- The dynamics of the Latvian telecommunications market, including competition as well as the competitiveness and strategy of different operators, have so far been studied in a non-systematic manner, paying attention to only some aspects.
- No systematic research and mathematic models are available on the migration of telecommunications services users, including the substitution of fixed telecommunications voice telephony traffic by mobile telecommunications.
- Modelling and analysis of the effect of customer number portability service on the migration of customers between mobile telecommunications operators has not been carried out.

The author suggests that by analysing external environmental factors affecting the competitiveness of each telecommunications company, it is possible to illustrate the effect of the external environment on the strategic competitiveness of all companies within the sector, whereas internal environmental factors remain specific for each enterprise and thus fall outside the scope of this research.

To describe general external environmental factors that are significant for companies, the author deals with three aspects:

- The influence of the regulatory environment on competition within the mobile telecommunications market.
- Analysis of the actual prospects of the electronic communications technologies market in Latvia and other European Union Member States.
- Processes and analysis of mutual substitution of electronic communications technology services.

Analysis was performed by means of M.Porter's *Five Competition Forces Model*, adapted to the specificity of the ECT market, to include the impact of the Regulator as a separate factor affecting competitiveness. Expert assessment was taken into account by describing the dynamics of competitiveness over 15 years with the aim of developing a more precise description of competition forces affecting the market.

For analysis of competitors, the author assesses introduction of subscriber number portability to the telecommunications service and the effect of this process on the migration of customers.

The information obtained by means of this analysis was used to assess the competitiveness of mobile telecommunications market participants, i.e. existing telecommunications enterprises, and accordingly, their ability to achieve high profitability.

The summary of results of analysis regarding research carried out and applied mathematical models confirms the hypotheses put forward in the promotion paper and produces the following conclusions:

- Having employed M.Porter's *Five Competition Forces Model* adapted particularly for the telecommunications sphere, the author concludes that the regulatory environment and institutions governing the telecommunications market are becoming a significant force contributing to competition in the Latvian mobile telecommunications market and to the competitiveness of market participants.

- The critical point at which voice telephony traffic of fixed telecommunications is replaced by voice traffic of mobile telecommunications is the moment when voice telephony traffic of mobile telecommunications exceeds 50% of total voice telephony traffic.
- Introduction of a number portability service in Latvia has not led to the expected massive migration of customers and has remained practically stable compared to the period before introduction of this service.

Latvia's underground economy modeling: with an emphasis on tax policy

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The public defence of this Doctoral thesis was held at an open session of the Doctoral Council of Economics of the University of Latvia on October 16, 2007.

An electronic version of the full thesis work is available in the University of Latvia dissertations Data Base (via <http://www.lu.lv/eng/library/index.html>, Field to search: Word from Author = Brēķis).

There is a saying that it is possible to reduce the underground economy by decreasing tax rates. More usually the term direct tax rate reduction is used, to express a device aimed at decreasing individuals' motivation not to declare income. The saying is based on the assumption that indirect taxes are less vulnerable to evasion than direct taxes, and that policy measures can more effectively reveal or hamper tax evasion related to consumption than tax evasion related to income. In other words, a hypothesis exists that tax mix changes in favour of indirect taxes can reduce the underground economy.

The objective of this academic research is to evaluate the impact of direct - indirect tax mix changes on the underground economy's dimensions and significance in Latvia.

Schematically the structure of research work is as follows:

- 1) The money demand model enhances the significance of the time series of Latvia's underground economy.
- 2) Time series acquired are used for simulating the correlation of direct - indirect tax mix changes and changes in size of the underground economy.

Innovations proposed in conducting academic research are as follows:

1. Theoretical analyses make it possible to form a typology of the underground economy. This enables segregation of such terms as "grey", "illegal", "unregistered" economy, which in the literature are frequently used together to mark the same phenomenon – "the underground economy".
2. The estimated extent of the size of Latvia's underground economy was calculated by using econometric methodology. This research made it possible to develop a dynamic time series for the underground economy by annual quarters (1995-2005). Currently, no academic research work is being carried out in Latvia in calculating the impact of the underground economy by quarters of a given year or depicting it by time series.
3. Direct and indirect effects of tax revenue on the size of the underground economy are not unequivocal, and although the conclusions of empirical research vary, an econometric model is formed for evaluating possible effects on Latvia's situation.

A simple econometric model is used to analyze tax mix changes and their effect on the underground economy in Latvia. The Error Correction Method is used to analyze short-run effects. The model incorporates the following variables: the size of the underground economy, direct tax share in GDP, indirect tax (VAT) share in GDP, and real GDP per capita. The conclusions are as follows:

In the period examined (1995-2005) the hypothesis about the effect of direct – indirect tax mix changes on the underground economy cannot be either substantiated or rejected. The direct – indirect tax mix change for present Latvian economic conditions has little effect on reducing the size of the underground economy. Income tax or VAT rate reduction - both in the short run and in the long run - have little effect on size reductions in the underground economy. A more effective way to restrict the underground economy is to improve the overall economic situation (i.e., by improving all-encompassing economic structural aspects).