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Latvian Competitiveness Report 2011

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1. Introduction and methodology

1.1 Introduction and background

The Latvian Competitiveness Report 2011 (LCR 2011) was commissioned by the State Chancellery of the Republic of Latvia to the Stockholm School of Economics in Riga in February 2011. The Report is funded 100 per cent by the European Union through the European Social Fund. Work on the Report commenced in March 2011 and was completed in XX.

The current Report is the first of its kind in Latvia and it can therefore be seen as an experimental study. As such, and as outlined in the Technical Specification of the project developed by the State Chancellery, the purpose of the Latvian Competitiveness Report 2011 is twofold:

- To provide an overall assessment of the competitiveness of the Latvian economy.
- To develop a methodological framework which could be employed when developing future Latvian competitiveness reports.

The twofold purpose is also reflected in the structure of the Report. As seen from Figure 1.1, the first part of LCR 2011 comprising chapters 2-4 can be seen as the actual competitiveness report with the explicit aim of providing a basis for fact driven policy orientation, i.e. addressing the first purpose by developing what could be considered as a 'traditional' competitiveness report essentially following the outline of a number of other national reports.

Aiming at fact-driven policymaking, the chapters of the first part of the Report intentionally present a significant amount of data. The ambition is to give the policymakers an opportunity to reach their own conclusions. Throughout the Report, the focus is on medium term trends or, as economists often call it, the supply side of the economy. Short term or demand conditions are, however, discussed where necessary, but are not the main contribution of the Report. Furthermore, most sections include both a summary assessment and list selected policy developments of relevance. These recent or planned policies will in many cases not have transformed the reality of competitiveness as experienced by the Latvian economy. But they provide an important benchmark to assess whether current weaknesses are a result of inappropriate policies, in sufficient implementation, or the normal lags to be expected until new efforts show an impact.

The fact that the LCR 2011 is required to contribute to the development of a methodology to be used in future Latvian competitiveness reports is seen in the frequent references to the academic literature and the fairly detailed explanations of key concepts – these are intended to guide and inform the authors of potential future reports.

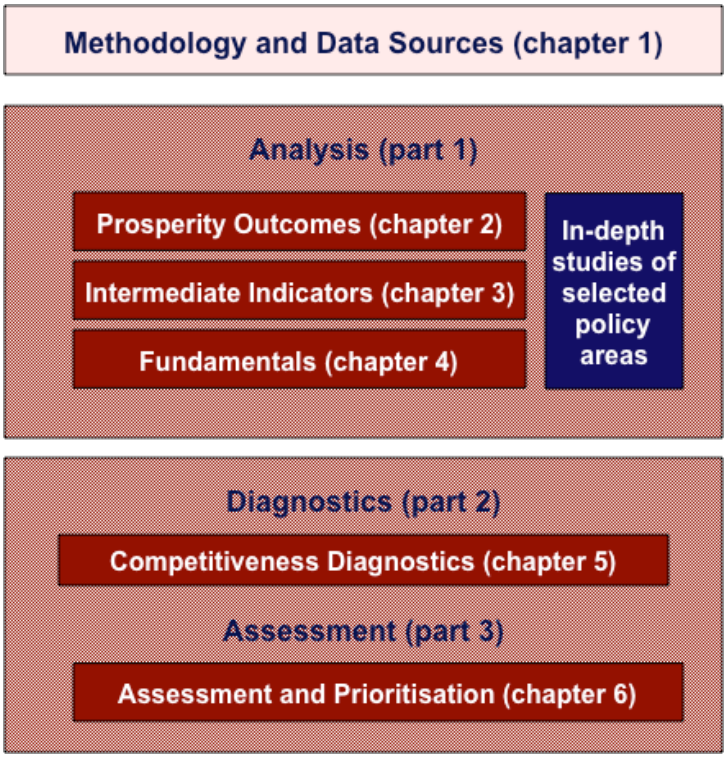
A unique feature of the LCR 2011 is the two in-depth studies written within the project. The complete in-depth studies are not included in the Latvian Competitiveness Report, but are available as separate documents. The two in-depth studies provide a product space analysis of exports and an analysis of

innovation, export and financing in small firms are the themes of the two studies. The topics of these two in-depth studies were agreed with the State Chancellery in the process of developing the Report. From a methodological point of view and for future Latvian Competitiveness Reports it would be desirable to identify the field(s) of the in-depth studies on the basis of the research generated by the Competitiveness Report.

The second part of the LCR 2011 comprising chapter 5 is devoted to competitiveness diagnostics. The aim is to show how the 'traditional' competitiveness analysis of first part of the Report can be taken further, thus providing us with a deeper understanding of the roots and causes of the observed outcomes. Chapter 5 is explorative in the sense that it investigates how the method of economic diagnostics could be applied to competitiveness analysis in order to identify bottlenecks as well as priorities in terms of addressing the factors restraining Latvian competitiveness. In all, this should support an action-oriented analysis.

The third and final part of the Report comprising chapter 6 provides an assessment and prioritisation of Latvian competitiveness issues based on the findings of the preceding chapters.

Figure 1.1: The structure of the Latvian Competitiveness Report 2011.



The remaining part of the current chapter focuses mainly on methodological issues and is organized as follows. The next section discusses and defines the concept of competitiveness employed in this Report. The sections following provide a detailed discussion of the elements of competitiveness assessment applied in chapters 2-4, i.e. prosperity outcomes, intermediate indicators and competitiveness fundamentals. The sixth section of the current chapter focuses on the competitiveness diagnostics, whereas the seventh section addresses

methodological issues related to the assessment and prioritisation of chapter 6. Section 1.8 addresses and discusses the data issues arising from the Report.

The actual process of generating and writing the current Report has involved a number of actors. The Report has been developed by a core team of four authors. At their disposal they have had a number of Latvian specialists providing contributions within their fields of expertise. Assistance in terms of getting and compiling data has been provided by a team of research assistants.

Starting with the outline of the overall methodology of the Report and continuing with various drafts of the Report, a number of experts and stakeholders have been participated in seminars and presentations and have provided feedback on the work undertaken and presented. In addition, a peer review and a following seminar was organized involving two leading international experts in the field as well as a number of Latvian experts. The has been independently written by the core team of authors who take full responsibility for its content. At the same time the core team has been involved in a more or less continuous dialogue with the State Chancellery in general and with the Economics Ministry of the Republic of Latvia in particular whose contributions have been much appreciated.

1.2 Definition of competitiveness

Competitiveness is far from a non-controversial concept – partly because it is not easily defined and partly, as Paul De Grauwe discusses[1]: "the concept is used (misused) so often". As for the "misuse" he elaborates:

The concept of competitiveness elicits discomfort if not rejection among many economists. The main reason is that the concept is often associated with a tournament in which countries are ranked. Such a ranking suggests that there are winners and losers. Thus competitiveness is seen as being similar to a sports competition like the Olympics. Countries fight in the economic arena. Some are winning medals; others gain nothing or even lose out in the international competitiveness struggle. This view of competitiveness is especially popular in business circles. … Failure to compete leads to punishment and even disappearance. This view also has been taken up by politicians. In numerous countries competitiveness councils or similar official bodies have arisen, advising governments on how to keep the country competitive so as to survive in a hostile world.

Even though it has its shortcomings[2], competitiveness is nevertheless a useful concept in particular when addressing issues related to a country's potential for economic growth and the challenges and obstacles on the way to enhanced economic growth and hence standard of living. Accordingly, competitiveness is a term that is frequently used in the economic policy debate. Although frequently used, the meanings associated with the term are often different and in many cases not made sufficiently clear. Box 1 presents a selection of competitiveness definitions employed in the literature.

[1] See De Grauwe (2010).
[2] See Grégoir and Maurel (2003) for a critical discussion of the concept of competitiveness.

Box 1: Alternative definitions of competitiveness

The academic literature applies the term national competitiveness in three main ways: as a measure of productivity, as an indicator of relative costs, and in terms of market shares in specific 'strategic' industries.

- Productivity is at the heart of the work on national competitiveness and other contributions that put competitiveness in the context of national wealth creation. The OECD's Growth Agenda and the EU's 2020 strategy are based on the same focus on productivity fundamentals.
- Relative costs, given by real exchange rates based on relative unit labour costs, are central to the measures of (cost) competitiveness regularly used by international financial institutions like the IMF. This measure is relevant for studying the sustainability of an economy's external balances.
- Market shares, measured by a nation's export intensity or value added per capita in manufacturing or industries classified as high tech, have been used by international institutions like UNIDO to measure (industrial) competitiveness. The view that strong market positions in some specific industries are central to achieving high prosperity is built on academic work on strategic trade industrial policy. The results of this research are debatable.

These three definitions of the term competitiveness are related, but distinct. Only the productivity-based definition implies a direct positive relation between competitiveness and national prosperity. For the other two, this relationship only holds under specific conditions. Cost competitiveness can increase as the result of wage suppression or devaluation, with often negative welfare implications. Industrial competitiveness can increase through targeted subsidies, again with lower national welfare as the result.

The competitiveness concept chosen for the Latvian Competitiveness Report focuses on productivity in a broad sense. This productivity-based approach to competitiveness is similar to the one taken by the European Union in various key policy documents, e.g. the European Competitiveness Report, and accordingly it focuses on factors that directly or indirectly affect productivity – see Box 2. From a theoretical point of view, this approach is very much in line with the framework developed by Michael E. Porter in his 1990 book "The Competitive Advantage of Nations" – a framework that has been refined by Porter and others during the last two decades[3]. This approach is well-grounded in economic theory and its roots go back to the path-breaking research on economic growth by

[3] This framework also provides the theoretical underpinnings for the Global Competitiveness Index developed by the World Economic Forum.

Robert Solow in the 1950s. Furthermore, an important contributions to this development was the research of Simon Kuznets on the fundamentals of economic growth and who, in his Nobel Memorial Prize Lecture in 1971, put it in the following way: "a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands".[4] Put differently, this approach defines competitiveness as the set of institutions, policies and factors that determine the level of productivity of a country. The level of productivity in turn determines the sustainable (long-term) level of prosperity which can be enjoyed by a society. Hence, everything else equal, an economy which is more competitive is able to produce higher levels of income for its citizens.

Box 2: Competitiveness in the European Competitiveness Report

The European Competitiveness Report 2011 defines competitiveness in the following way*:

"A competitive economy is one that raises living standards sustainably and provides access to jobs for people who want to work. At the roots of competitiveness are the institutional and microeconomic policy arrangements that create conditions under which businesses can emerge and thrive, and individual creativity and effort are rewarded. Other factors that support competitiveness are macroeconomic policies promoting a safe and stable business environment and the transition to a low-carbon and resource-efficient economy. Ultimately, competitiveness is about stepping up productivity, as this is the only way to achieve sustained growth in per capita income – which, in turn, raises living standards.

The notion of living standards encompasses many social aspects, so this broad definition of competitiveness comprises elements of all three pillars of the Lisbon Strategy – prosperity, social welfare and environmental protection.

In the concept of international trade, the (external) competitiveness of a country or sector is an elusive concept. Indeed, some indexes aiming to reflect this notion of competitiveness, such as the real effective exchange rate, have to be interpreted with care, because 'loss of competitiveness' in an individual industry may well reflect the outstanding export performance of other domestic industries. For example, a rise in the value of the euro may worsen the competitive position of a given industry, but this may simply reflect strong productivity growth in other industries, and hence strong exports and an increasing demand for the euro."

* European Competitiveness Report 2011: Commission staff working document, page 33.

Empirically[5] it has been shown that productivity is the primary factor when trying to explain differences in prosperity among different countries. However,

[4] See Kuznets (1971, 1973) for a further discussion.
[5] See Hall and Jones (1999).

as pointed out by Paul Krugman[6] when discussing the relation between competitiveness and productivity, what matters is not primarily productivity relative to other countries. Rather, it is a country's own absolute level of productivity and its dynamics that are at the heart of the matter.

At this stage, and in order to avoid any misunderstandings, it is important to make two remarks. Firstly, competitiveness is not a zero-sum game, i.e. one country's gain does not have to come at the expense of others. In other words, competitiveness is not about a country's share of the market for its products and services.[7] Secondly, an understanding of this is important since 'loss of competitiveness' has been used as an argument to justify policy interventions in order to tilt the (short term) market conditions in the favour of the home country, examples include industrial policy, "competitive devaluations", and various subsidies.[8] Nevertheless, in order to understand domestic productivity and its determinants benchmarking against other countries can be informative – this is to a large extent the methodological approach taken in the current Report.

As discussed in the forthcoming section on data sources (section 1.8 below), the Latvian Competitiveness Report documents and analyses the many different factors that determine the level of productivity and thus prosperity Latvia can reach. Economic policy can directly influence many of these factors, while the outcomes in terms of productivity or prosperity are then the end result of market processes involving the decisions and actions of many companies and individuals. A productivity based analysis of competitiveness, like the one pursued in this Report, hence requires an analysis of the factors influencing the decisions taken by companies and individuals as well as exploring how economic policy making (in a broad sense) can affect these decisions in a desirable way, thus improving productivity and thereby raising Latvian competitiveness.

To address these complex relationships the analytical approach summarized in Figure 1.2 will be employed. As seen from the figure, the general causal relationship runs from competitiveness fundamentals through productivity (an important outcome) to prosperity. To understand the linkages between fundamentals and prosperity, and hence to be able to assess Latvian competitiveness, its drivers and its bottlenecks, intermediate measures of economic activity can act as signals or indicators. However, it is important to keep in mind, and as indicated in figure 1.2, that the causal relationships are not unidirectional from competitiveness fundamentals and intermediate measures of economic activity to prosperity. The causality could go in the other direction as well from prosperity to competitiveness fundamentals, i.e. a feed-back loop from for example high GDP/capita (prosperity outcome) to a good infrastructure (a competitiveness fundamental). The understanding of these feed-back loops is important in order to identify policy measures with the highest impact on raising Latvia's competitiveness and ultimately the level of prosperity that the Latvian economy can generate.

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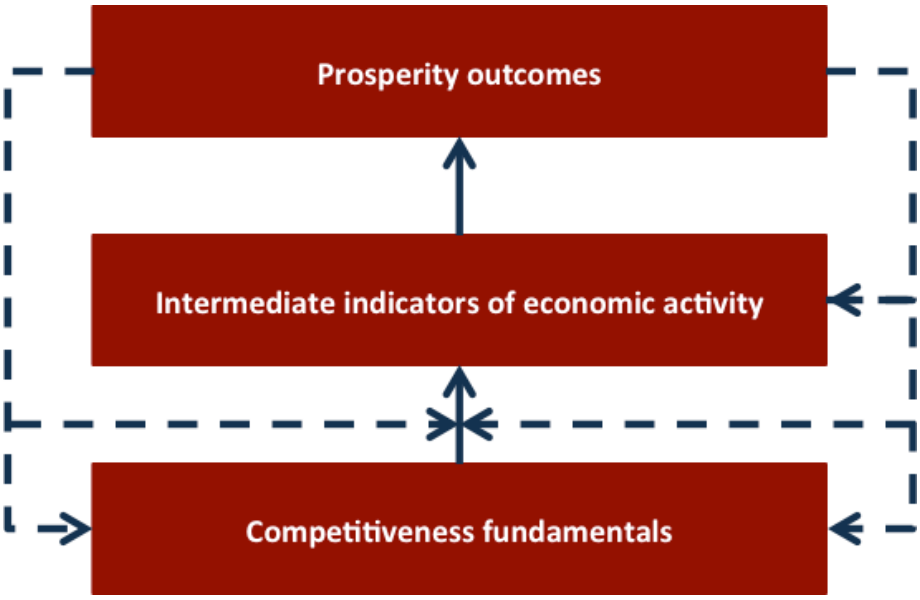
[6] See Krugman (1994). Furthermore the finding that relative productivity is of less importance raises doubts when it comes to using various ranking, such as the World Economic Forum Global Competitiveness Index and the World Bank Doing Business Index since they mainly focus on a relative analysis between nations. This issue is further discussed in section X on the sources of data used in the LCR 2011.

[7] See Porter (2003) for a further discussion.

[8] See Sala-í-Martin (2010).

Figure 1.2: Causality relationships: From Competitiveness Fundamentals to Prosperity.



The schematic structure given in figure 1.2 is also reflected in the structure of the report where chapters 2-4 are devoted to an analysis of data on prosperity outcomes, intermediate indicators of economic activity and competitiveness fundamentals, respectively. Chapter 5 uses the diagnostics approach to show, among other things, how the complex relationships between these three areas can be analysed in order to identify bottlenecks of Latvian competitiveness and the policy areas. Addressing these areas will contribute to releasing the full potential of the Latvian economy.

The content of the three boxes in figure 1.2 is defined and discussed in the next three sections of this chapter. However, before proceeding with this discussion we will briefly relate the chosen approach to competitiveness to the Global Competitiveness Index (GCI) developed by the World Economic Forum and presented in the annual Global Competitiveness Report. The theoretical underpinnings of the GCI are the same as in the approach adopted in the Latvian Competitiveness Report as well as in other state-of-the-art national competitiveness reports, i.e. the framework developed by Michael E. Porter *et al*.[9] The main difference in terms of approach between the GCI and the national competitiveness reports lies not in the methodology as such but in the aim of the analysis and hence the way the results are presented. The GCI aims at presenting an overall index number and a number of sub-indices each country participating, whereas the national competitiveness reports (although to some extent using the GCI) aims at providing more of an in-depth analysis that allows for a deeper understanding of the roots and causes of a country's performance and which, in addition, provides a solid basis for policy making.[10] Like in the LCR, this is done by employing a wide range of indicators (which directly or indirectly) affect a nation's productivity. In this context it is worth emphasizing that a number of

[9] For a discussion of the GCI methodology and its linkages to the 'Porter framework', see Porter (2001, 2003, 2004), Porter *et al.* (2008), and Sala-i-Martin (2010).
[10] The Global Competitiveness Index is also discussed in section 1.8.

indicators explicitly addressed in the national competitiveness reports (like the LCR) also are used when calculating the various GCI sub-indices making up the overall GCI index. Furthermore, all twelve pillars comprising the GCI are covered, although much deeper, in the LCR.[11]

Finally, although at a first glance, the approach taken when calculating the GCI might seem more precise than the approach taken in the national competitiveness reports in the sense that it (unlike the LCR) generates a set of numbers, it is in the same way subject to judgment and knowledge of the individual researcher(s) undertaking the research.[12]

1.3 Prosperity outcomes

Prosperity outcomes are the consequence of competitiveness and represent the ultimate policy objective. The profile of prosperity outcomes provides insights into an economy's overall level of competitiveness as well as its patterns of strengths and weaknesses. The prosperity outcomes are a function of competitiveness fundamentals. However, through feed-back loops they can also affect competitiveness fundamentals as well as the outcomes measured by the intermediate indicators of economic activity. To facilitate the discussion, prosperity outcomes are divided into four elements:

- The first element is the average level of GDP per capita[13] that an economy achieves. GDP per capita gives an aggregate sense of the level of economic prosperity that the nation's inhabitants can enjoy.

- The second element concerns measures of income dispersion, i.e. inequality. These measures provide information as to whether the average level of GDP per capita provide an accurate indicator of the standard of living that the vast majority of the population can enjoy.

- The third element covers various non-income measures of the standard of living, such as access to basic education and health care, environmental quality, happiness, etc. These measures provide additional insights into the actual ability of a country's economy to support a general high standard of living.

- The fourth element decomposes average GDP per capita into its key components: labour productivity and labour mobilisation. Following the productivity based approach to competitiveness, labour productivity and

[11] The first pillar: Institutions – mainly covered in sections 4.1 and 4.6 of the LCR; Second pillar: Physical infrastructure – section 4.9; Third pillar: Macroeconomic stability – sections 3.3 and 4.2; Fourth pillar: Basic Human Capital – section 2.1; Fifth pillar: Higher education and training – section 4.4; Sixth pillar: Good market efficiency – section 4.8; Seventh pillar: Labour market efficiency – section 4.3; Eighth pillar: Financial market efficiency – section 4.4; Ninth pillar: Technological readiness – sections 4.5 and 4.8; Tenth pillar: Market size – sections 3.4 and 4.8; Eleventh pillar: Business sophistication – section 4.8; Twelfth pillar: Innovation – section 4.5. The labelling of the pillars follows Sala-i-Martin (2010).

[12] This problem is e.g. illustrated in Delgado et al. (2011) (when it comes to the treatment of raw data).

[13] Usually adjusted for purchasing power parity (PPP).

labour mobilisation are then further analysed to achieve deeper insights into the underlying patterns of country competitiveness.

1.4 Intermediate indicators of economic activity

Intermediate indicators of economic activity provide insights into the underlying patterns of a country's competitiveness. Typically they do not represent final goals of a society, but can be seen as signals or indicators, thereby providing an intermediate step in the translation and interpretation of an economy's underlying strengths and weaknesses into ultimate prosperity outcomes.

The intermediate indicators can be categorised into the following four groups:

- The first group captures the level and profile of trade and investment. In particular is a forward looking indicator which illustrate the confidence of both local and foreign investors in Latvia's future prospects.

- The second group of intermedate indicators covers the level of innovation and entrepreneurship. Innovation and entrepreneurship are both important drivers of future prosperity – in many cases through a direct impact on productivity.

- The third group of intermediate indicators captures macroeconomic imbalances. While such imbalances – for example in external economic relations; financial markets; or growth of specific sectors – may not lead to directly reductions in prosperity. However, the recent crisis in Latvia and elsewhere has shown that imbalances can severe consequences.
- The final group of intermediate indicators documents the composition and economic geography of the economy. While there is no automatic relationship between competitiveness and the specialisation in particular industries or the level of urbanisation, these patterns provide important insights into the underlying competitiveness profile of the economy.

1.5 Competitiveness fundamentals

Competitiveness fundamentals drive the prosperity outcomes and the intermediate indicators discussed in the previous two sections. These fundamentals can usefully be divided into macroeconomic and microeconomic competitiveness fundamentals.

Macroeconomic competitiveness fundamentals capture two distinct components. On the one hand they examine institutional quality. On the other hand, the capture the quality of macroeconomic policy. Institutional quality provides a critical context for the ability of individuals to engage in the economy and capture the value they create. Institutional quality also defines the context in which government legislation, affecting all dimensions of competitiveness, is located.

In turn, the quality of microeconomic policy has a significant short term impact on economic activity. Sometimes it even goes beyond the impact of other fundamental competitiveness factors. In addition to its short term impact, the general quality and predictability of microeconomic policies can severely affect the willingness of companies to make longer-term investments and hence have a long term impact on the economy and its competitiveness.

The broad field of microeconomic competitiveness fundamentals includes analysis of the following underlying structural and institutional factors:

- Factor markets: labour and capital markets
- Skills and the education system
- Innovation infrastructure
- Government: the tax system, administrative efficiency and the role of government in the economy
- Population: Latvia's demographic challenge
- Product markets: demand conditions and cluster development
- Physical infrastructure and energy

In addition to the macro- and microeconomic fundamentals Latvia's natural endowments are reported and discussed in the Appendix 2. Endowments cannot be changed by policy but they do have an impact on prosperity and they affect the impact that competitiveness factors have, for example when geographical location increases the value of efficient logistical infrastructure

1.6 The diagnostics approach

From the discussion so far it should be evident that the concept of competitiveness is too complex to be captured in one or even a set of indicators. A simple look at the data provided in the first part of the Report might not provide sufficient insight into the underlying factors and the linkages among them. The second part of the Report (chapter 5) therefore supplements the traditional competitiveness analysis as undertaken in many national competitiveness reports with a methodology that allows for a deeper understanding and hence provides for more informed policy advice.

The diagnostics approach represents part of the LCR 2011 methodological development. The diagnostics methodology as such has been developed by, among others, Ricardo Hausmann and Dani Rodrik at Harvard University's Kennedy School of Government and has previously mainly been applied to development economics.[14] The central message in this literature is that the economist/analyst should stop acting as categorical advocate for certain approaches to economic development and instead be diagnosticians who provide policy advice from a variety of contending models (based on economic theory). The fundamental idea underlying economic diagnostics is that all constraints facing a certain sector of the economy are not equally binding. The strategy is therefore to identify the most serious constraints and to do so the analyst uses economic theory and reasoning as well as empirical evidence to determine the signals a certain problem might send – in our case the signals are identified in chapters 2-4. The analogy with the medical doctor is obvious – confronted with a patient having a high temperature the medical doctor starts searching for other signs, e.g. a running nose or a swollen glandular, that will help him/her in diagnosing the problem.

The use of a diagnostics approach should not been seen as a substitute for the traditional competitiveness analysis as undertaken in the first part of the LCR 2011. It should, on the contrary, be seen as a complement and a natural next step in terms of deriving informed policy advice. Accordingly, this means that the

[14] See Hausmann, Rodrik, Velasco (2004), Hausmann, Klinger and Wagner (2008). The diagnostics approach is summarized in Rodrik (2010).

Latvian Competitiveness Report, from a methodological point of view, differs from the many reports undertaken for other countries by adding a further dimension to the analysis – a dimension that will provide us with a more solid basis for informed policy advice and ultimately better policy making.

In other words, the introduction of diagnostics provides an action-oriented analytical tool focussing on competitiveness upgrading. There is ample evidence that neither generic lists of priorities nor a focus on the most glaring weaknesses in competitiveness is an effective strategy. The competitiveness diagnostics therefore looks at the root causes of selected outcomes, thereby generating a short list of those elements of competitiveness that have an impact on critical aspects of the economy's performance.

The approach of chapter 5 where the diagnostics is developed is as follows. The first step, based on the discussion in chapters 2-4, identifies three areas where Latvia stands out in terms of underperformance relative to its comparator countries. These outliers are important signals of potential bottlenecks in Latvia. Furthermore, in order to get an understanding of the potential of the diagnostics approach the areas of study have been chosen to include one prosperity outcome, one intermediate indicator, and one competitiveness fundamental.

For each of the three selected areas, we construct a causal relations tree. These relation trees identify possible causes that could explain the observed outcomes and organise them in a hierarchical framework from the effect under study to the root causes. In discussing the trees we will employ findings from the analysis of the first part of the Report and combine them with economic theory and reasoning in order to pin-point causes that are the most important drivers of the observed outcomes. This approach allows us disentangle many of the intricate causal relationships behind the findings of chapters 2-4.

The results of the competitiveness diagnostics exercise then inform the assessment and prioritisation in chapter 6.

1.7 Assessment and Prioritisation

The sixth chapter and third and final part of the Report is devoted to overall assessment and prioritisation. It should be borne in mind that according to the Technical Specifications the Latvian Competitiveness Report does not have the mandate or ambition to develop a detailed policy agenda for the Latvian government. On the other hand, the suggestions on critical policy choices, priorities and directions are aimed at informing the policy debate and eventually political decision making.

Underlying chapter 6 is the premise that the Latvian economy should continue to aim at raising its prosperity level by ascending the economic development ladder. Of critical importance to such a path is to identify and prioritise constraints or bottlenecks with particularly long time lags from decision to implementation and then to actual outcome – examples of such factors include education and infrastructure investments.

1.8 Data sources and the choice of comparator countries

From the discussion of the previous sections it should be obvious that the competitiveness analysis has to be conducted based on data from a number of various sources. The Technical Specification for the Latvian Competitiveness Report project did not allow for any compilation of primary data. Hence, the

Report relies on data from many existing data sources, ranging from for example the Central Statistical Bureau of Latvia and Eurostat; through data in various policy documents and data collected by the World Economic Forum through its Global Competitiveness initiative; to data presented in research reports and articles in academic journals. Hence, the choice of data sources for the Latvian Competitiveness Report is pragmatic and inclusive. The methodology is based on the integration of different types of data and aims to be robust to changes in any individual data source. In other words the value of the Report is not in unearthing new data, but in providing a comprehensive perspective across the available information and the analysis of the overall profile that emerges.

The Report essentially relies on two types of data. 'Hard' data and 'synthetic' data, where hard data reflects data more or less based on direct observation such as GDP, unemployment, productivity and investment. Synthetic data is data constructed from various sources and usually presented in the form of an index number – examples include the World Economic Forum (WEF) Global Competitiveness Index (GCI) and its various components; and to some extent also the World Bank (WB) Doing Business index. This type of synthetic data has several generic shortcomings that have to be taken into account when employing them in economic analysis. They are typically ordinal measures, i.e. they provide a ranking of, in this case, the countries participating. They do not say anything about 'how much better' a country ranked 22 (with an index number of 203) is in comparison to a country ranked 108 (with an index number of 77). In fact knowing the numerical values of the two indices, in this case 203 and 77 does not provide us with any additional information – it simply tells us that the first country is ranked higher than the second. This should be contrasted with cardinal data where we can tell that e.g. a GDP/capita level of EUR 10 000 is half of a GDP/capita level of EUR 20 000.

Hence, the informational content of the indices is, except for the ranking as such, over and above for the ranking as such is low. It is, for example, hard to understand if an improvement in the ranking and in the index numbers is a consequence of an actual improvement in a country's performance or merely an effect of other countries doing worse.

In other words, indices like the WEF GCI and WB Doing Business index possess shortcomings that make them far from perfect when it comes the type of analysis undertaken in the Latvian Competitiveness Report. However, we will keep these shortcomings in mind and use several of these indices throughout the Report. This is particularly the case for chapter 4 on competitiveness fundamentals where it is difficult, if not impossible, to obtain any 'hard' data on e.g. the perceived quality of the business environment. Furthermore, we also use the New Global Competitiveness Index (discussed in Box 3 below) since it has several advantages compared with the GCI compiled by the World Economic Forum and presented in the annual Global Competitiveness Report. The New GCI may sometimes be used in sections where we have hard data. The reason for this complementary usage of the New GCI is that it provides a good way of informing us about Latvia's position relative to the comparator countries employed in the Report. In general chapters 2 and 3 rely to a large extent on hard data, whereas the discussion and analysis in chapter 4 requires substantial amounts of synthetic data.

Box 3: The New Global Competitiveness Index (the New GCI)

One of the sources for the competitiveness assessment of the Latvian Competitiveness Report is the World Economic Forum (WEF) Global Executive Opinion Survey. A feature of the Survey is that it includes dimensions of competitiveness otherwise poorly covered, is relatively up-to-date, and has data available across a large sample of countries. However, the indicator level data provided by the New Global Competitiveness Index is analyzed independently from the World Economic Forum, leading to some differences in reported rankings versus the WEF's Global Competitiveness Report:

- Use of annual data, not two-year moving averages
- Exclusion of market size as an indicator of competitiveness
- Differences in the aggregation procedure
  - Larger weight for institutional and macroeconomic factors
  - Smaller weight for physical infrastructure relative to other dimensions of the microeconomic business environment
- Reporting of ranks consistently done for stable sample of countries

This means that the rankings reported in the Latvian Competitiveness Report might deviate from the rankings reported in the World Economic Forum Global Competitiveness Report.*

* For a discussion of the New Global Competitiveness Index see Porter et al. (2008) and for a detailed description of the different use of the raw data see Delgado et al. (2011).

In the light of the above discussion of the characteristics of indices such as the GCI and WB Doing Business Index, it is worth mentioning their usefulness as instruments for policy making and policy targeting is limited. At their best, they can provide policymakers with information on individual aspects of competitiveness and how a country performs relative to other countries. Hence, the discussion of the current Report will not focus on how to improve Latvia's ranking according to the GCR or the WB Doing Business index. Our definition of competitiveness goes deeper than that. Furthermore, a focus on the rankings would take away the focus on the real and underlying issues since the rankings does not provide any information about bottle necks, priorities and sequencing of measures addressing competitiveness issues. To conclude, were it that simple that competitiveness could be captured in a few indices, then a study like the current one would be superfluous and an analysis of competitiveness could merely consist of a reporting of the indices and their construction and how to maximize the impact on the indices through policy making given the resources at hand. We do not believe that this type of policy aim fosters competitiveness in its true sense. Accordingly, it is not an approach to policy that is beneficial to Latvia.

The aim has been to use data as recent as possible and data available up to December 1, 2011, have been considered. However this is an issue in particular when it comes to data that is 'processed' in particular taken from various scientific publications. It might be three to four years old due to the fact that it is based on scientific research (where there usually is a considerable time lag between the publication of the raw data as such and the final outcome of the

research based on the raw data). The reason for including this type of data despite the fact that it is being 'old', is at least twofold. Firstly, many of the indicators do not change drastically from year to year[15] – what was a competitiveness advantage according to 2007 is most likely still an advantage. Secondly, since the scope of this report also includes addressing methodological issues, including 'old' data shows how data, in particular 'old' data, when available, can be employed in future Latvian Competitiveness Reports.

The quality of data from the various sources discussed varies. Information drawn from official statistics tends to be the most reliable. But international entities often report data with a considerable time lag, and there can be meaningful differences in the definitions they use for specific indicators. Survey-based data is usually available more quickly but is subject to the quality of the survey process and sensitive to the way survey scores are transformed into rankings (cf. the discussion above on the New GCI).

The international comparisons, i.e. the choice of comparator countries, are based on an identification of peers that are relevant because of being at a similar stage of economic development or facing a similar policy context as Latvia. The two other Baltic countries, Estonia and Lithuania, are obvious entries on this list; with relatively similar starting conditions after regaining independence in 1991 (Latvia was actually slightly more prosperous). In fact, the experience of the Baltic states provides a natural experiment of the impact of different policy choices through the last two decades. Other relevant peers are the other Central and Eastern European countries – in particular the EU countries with history of economic transition similar to the one of Latvia. A third group of countries to be used as comparators include countries from other parts of the world that register similar levels of prosperity as Latvia does. The Baltic sea region countries also provide interesting comparators.

[15] This observation is worth taking into account when it comes to the frequency of future Latvian Competitiveness Reports. For example, it does not make sense to produce an annually or bi-annually Report.

2 Latvian prosperity

Competitiveness is ultimately about the standard of living that citizens in a country can enjoy. Any assessment of national competitiveness has to start with the actual standard of living that the country has achieved.

The first section takes three different perspectives on the standard of living that Latvians currently experience. These multiple dimensions together provide a comprehensive perspective on Latvian prosperity. The level of prosperity achieved in Latvia in turn depends upon how productive Latvian workers are and the dimensions of productivity are decomposed and examined in the second part of this section. Overall the analysis presented provides initial insights on the profile of strengths and weaknesses of Latvian competitiveness.

2.1 Prosperity outcomes

2.1.1 Income per capita

The main indicator employed in the Latvian Competitiveness Report as well as in other national competitiveness reports when it comes to measure income per capita is GDP per capita (PPP[16] adjusted). Although widely used, GDP per capita has, as seen from Box 4, a number of shortcomings as an indicator of social welfare. To at least partly compensate for these shortcomings a number of other measures of well-being will be applied in this chapter as well.

[16] Purchasing Power Parity.

Box 4: Measurement of Economic Performance and Social Progress

A comprehensive assessment of the limits of GDP as an indicator of economic performance and social progress, including the problems with its measurement is provided in a report by Stiglitz, Sen and Fitousi[1]. The report, produced under the auspices of the Commission on the Measurement of Economic Performance and Social Progress[2], examines what additional information might be required for the production of more relevant indicators of social progress and assesses the feasibility of alternative measurement tools. The report also discusses how to present the statistical information in an appropriate way.

The report suggests that:

- The measurement system should shift emphasis from measuring economic production to measuring people's well-being.
- To define what well-being means a multidimensional definition has to be used.
- Sustainability is an important separate issue and that assessment of sustainability is complementary to the question of current well-being or economic performance, and must be examined separately.

When evaluating material well-being, the report recommends to look at income and consumption rather than production, to emphasise the household perspective, to consider income and consumption jointly with wealth, and to give more prominence to the distribution of income, consumption and wealth.

The approach taken in the LCR is in line with the suggestions by Stiglitz *et al.*, since the LCR offers a multi-dimensional characterisation of competitiveness outcomes that include not just GDP per capita but also household and regional income distribution as well as non-income measures of well-being. Furthermore, the concern when it comes to non-production aspects of performance is reflected in the attention given to Latvia's inequality indicators.

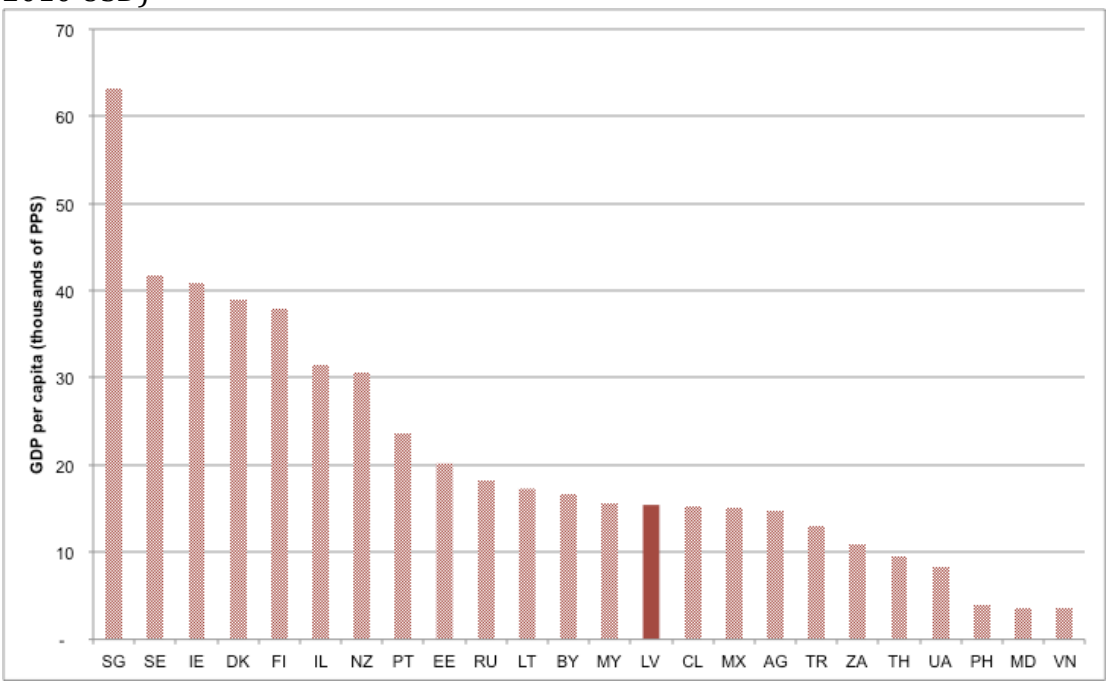
Despite the well-known deficiencies of GDP as an indicator of social welfare, especially in relation to measurement of welfare changes over time, GDP per capita adjusted for PPP is currently the best *available* indicator of material progress for Latvia, especially in relation to key comparator countries. Other measures such as Net National Income (NNI) or household based income measures have their own problems and are at the moment insufficiently developed to use consistently for the purposes of the LCR. Overall in the Latvian case it is not believed that the use of GDP creates any significant distortions as compared with say NNI.

[1] Sigltitz, J. Sen, A. and J-P. Fitoussi (2009) *Report of the commission on the measurement of economic performance et social progress* (September 14 2009) http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf
[2] See: www.stiglitz-sen-fitoussi.fr

In 2010 Latvia the level of GDP per capita (PPP adjusted) was 15420 USD. This puts the country internationally at the level of countries like Malaysia, Chile, Argentina, and Mexico. Within the European Union, Latvia's average prosperity

lags all EU members with the exception of the most recent new member states Bulgaria and Romania and currently (2010) stands at 52% of the EU average

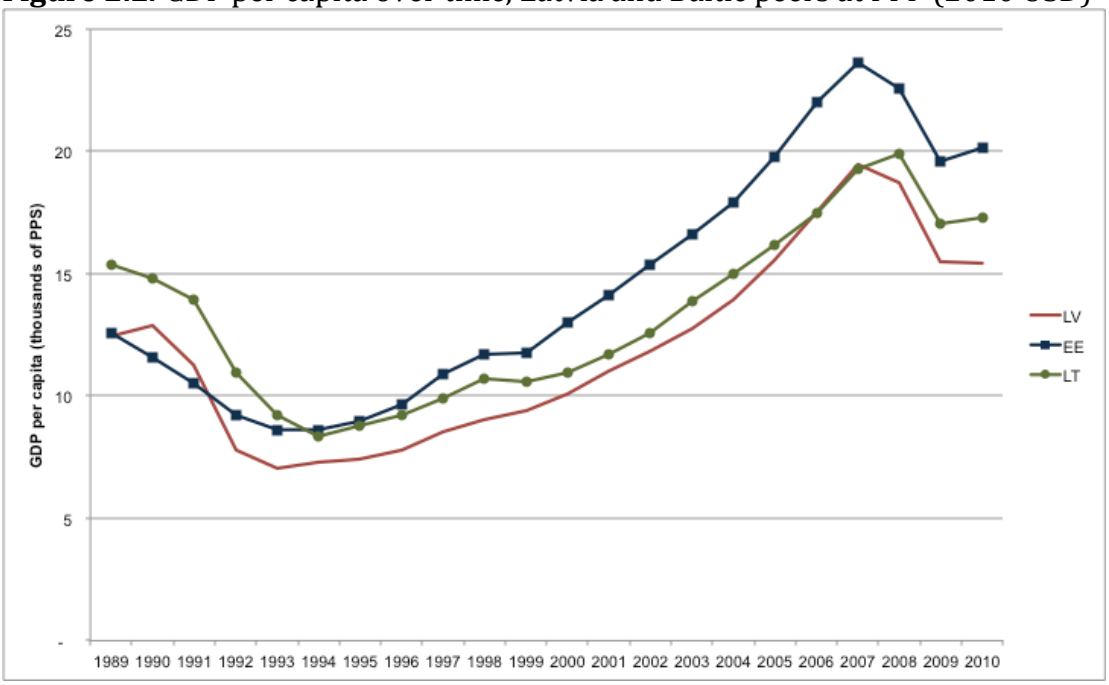
Figure 2.1: GDP per capita at PPP for selected countries in 2010 (measured in 2010 USD)



Source: Conference Total Economic database

Latvia's GDP per capita grew significantly after the end of the pre-transition crisis in the early 1990s. Between 1993 and 2007 prosperity levels increased by roughly 250%, equivalent to an annual growth rate of more than 7.5%. The crisis of the last few years has reduced prosperity levels by more than 20%, pushing real living standards back to the level of 2005.

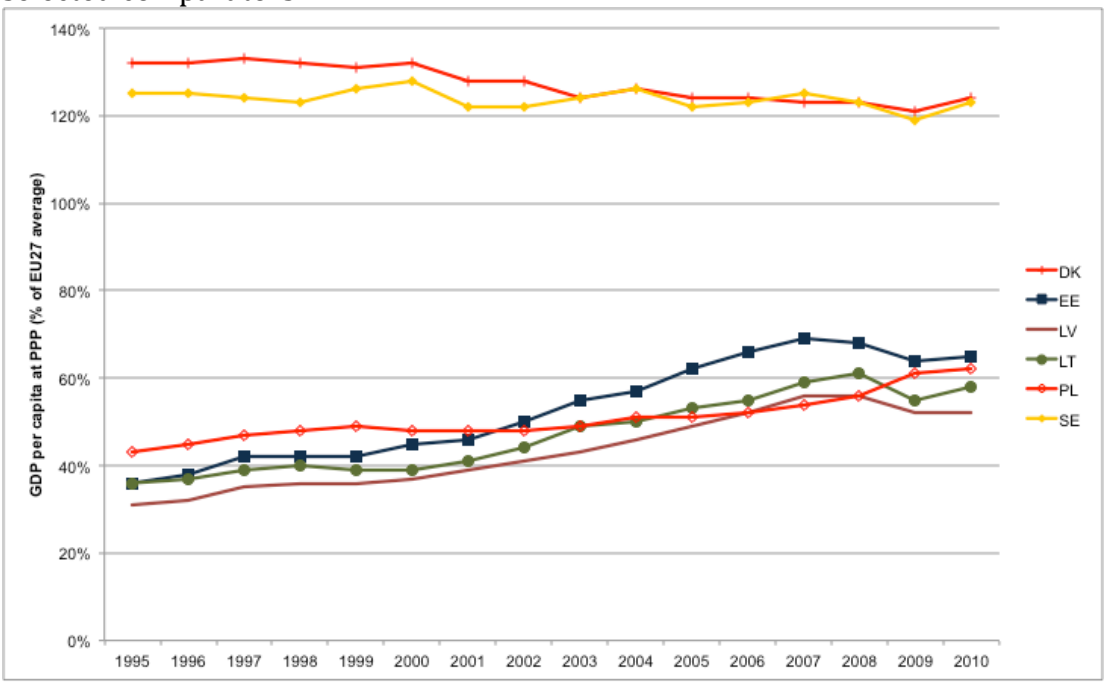
Figure 2.2*:* GDP per capita over time, Latvia and Baltic peers at PPP (2010 USD)



Source: Conference Total Economic database

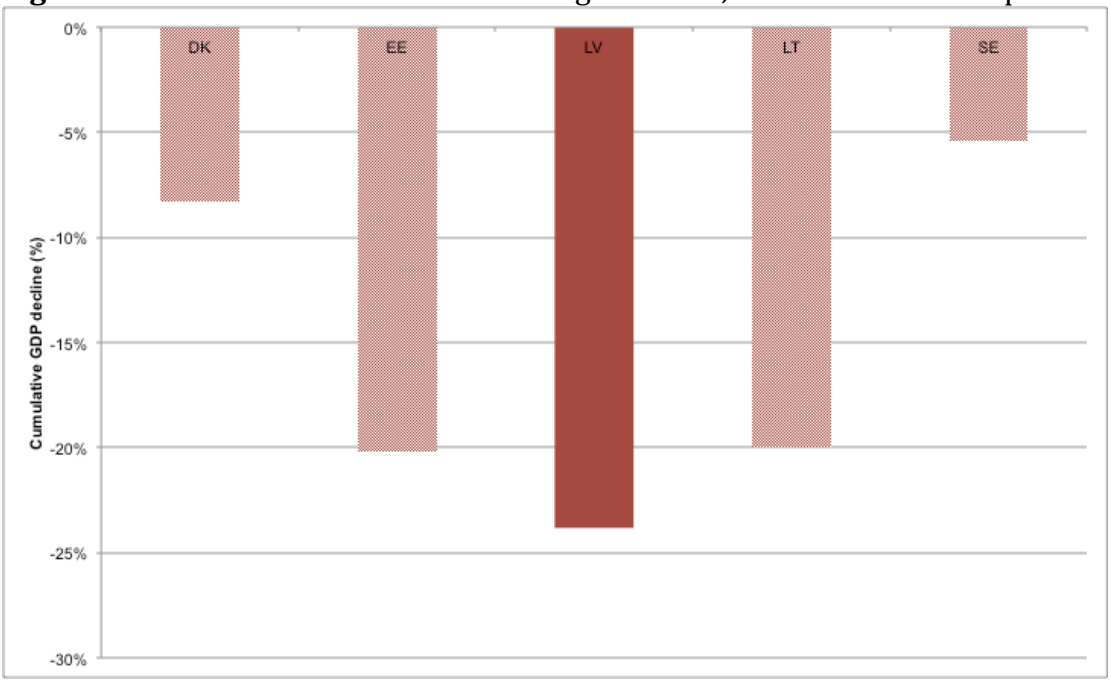
Latvia's prosperity growth prior to the crisis was significantly above the EU average. Even among the central European EU members only Estonia reached higher growth, with Lithuania roughly matching the Latvian performance but at a slightly higher absolute level of prosperity. The contraction during the crisis has been exceptionally strong, pushing Latvia behind peers like Poland that it caught-up to in the preceding high-growth period.

Figure 2.3: GDP per capita (PPS) over time relative to the EU-27, Latvia and selected comparators



Source: Eurostat

Figure 2.4*:* Cumulative GDP decline during the crisis, Latvia and selected peers



Source: Eurostat

Note: The start point and the end point of the GDP decline is different for different countries therefore an explicit period is not specified.

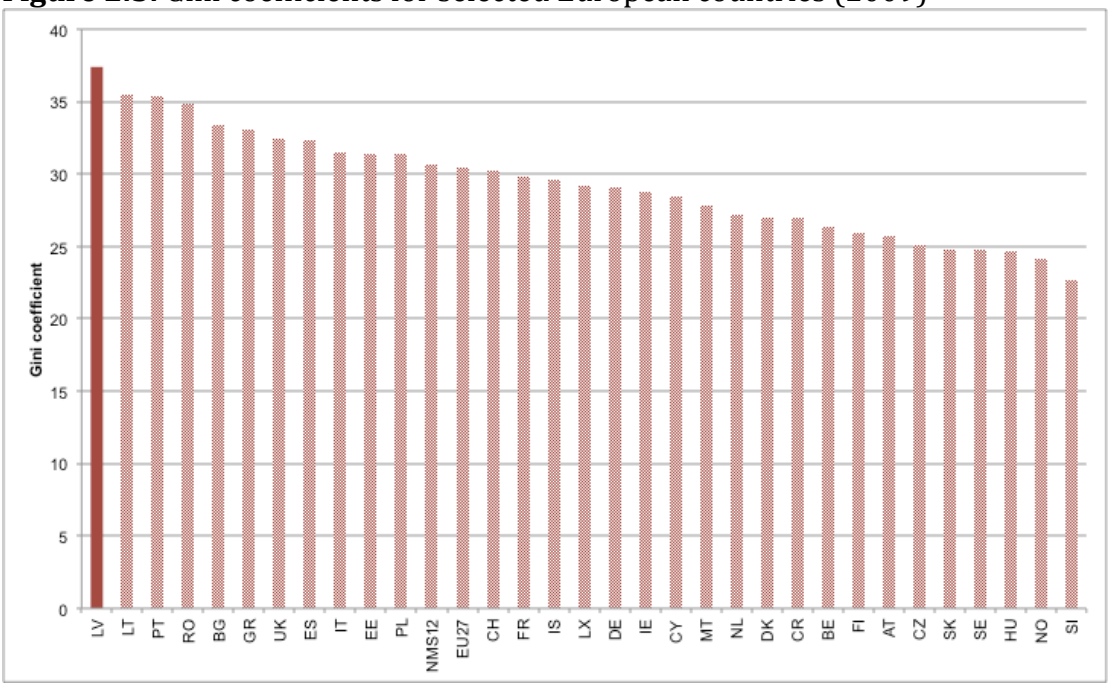
Looking over the entire period from 1995 to 2010, Latvia's GDP per capita grew at an annual rate (CAGR) of 5% compared to the EU-27 average of 1.7%. At a 3.3% annual catch-up rate Latvia would reach the EU-27 prosperity level by 2035. The catch up rate over the last fifteen years was similar to Estonia. Lithuania made up less ground in the first few years but then has been catching up more strongly over the last decade.

2.1.2 Income distribution

Average GDP per capita provides an incomplete view of the actual standard of living if income levels differ widely across society. Inequality is often the result of barriers that some individuals or groups face in increasing their capabilities or participating actively in all parts of the economy.

The Gini coefficient is a standard measure of income inequality[17]. Figure 2.5 presents this indicator for Latvia in an overall European context.

Figure 2.5: Gini coefficients for selected European countries (2009)



Source: Eurostat

This shows that Latvia in 2009 had the highest Gini coefficient of the 29 countries analysed. Hence Latvia has the highest socioeconomic inequality, among this set of European countries. The dynamics of the Latvian Gini coefficient show that it has fallen over the period 2006 to 2009 from 39.2 to 37.4 indicating a modest decrease in inequality as the recession reduced the share of income of the richest income receivers.

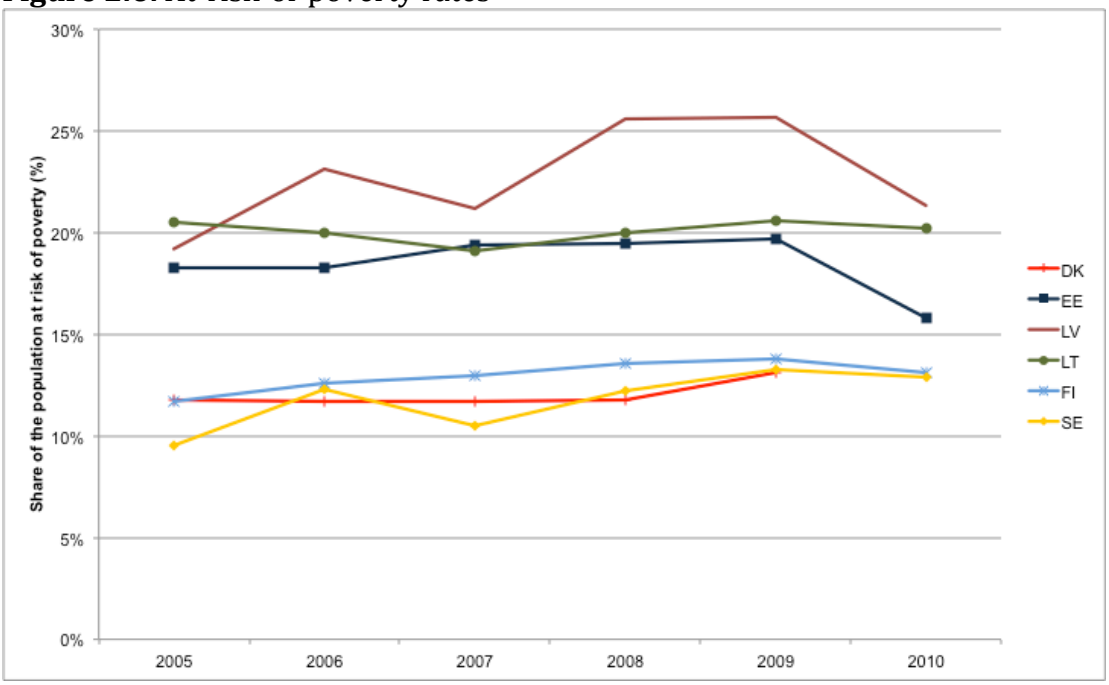
The pattern of growing inequality is not unique to Latvia. Similar patterns can be found in many countries undergoing economic transition. During the transition demand for qualified labour and opportunities for entrepreneurs increase,

[17] The Gini coefficient ranges from 0 (absolute equality) to 100 (absolute inequality).

leading to significant income growth for these groups while the rest of the population remain behind. Hence, increased inequality as such might not be wholly undesirable – in particular if there is a well functioning social welfare system and other public services that supports lower income groups. However, in Latvia this is not the case – many indicators suggest that the social safety net in Latvia is particularly weak. Overall social protection per expenditure capita in Latvia when adjusted for price levels was about 27% of the EU-27 average in 2008 and just 20% of the Danish level. Neighbouring Estonia and Lithuania had social protection expenditure levels about 40% higher than in Latvia – only Bulgaria and Romania had lower indicators.

Another indicator – the at-risk-of-poverty rate presented in Figure 2.6 – provides a similar picture.[18] The Latvian at-risk-of-poverty rate is the highest among the comparator countries and one of the highest in the EU again indicating that Latvia has a very uneven distribution of income. Interestingly, the economic downturn has in Latvia (and Estonia) reduced the at-risk-of-poverty rate. This is because the indicator calculates poverty relative to a benchmark and this fell significantly in 2010 for some countries, including Latvia. This does not mean that absolute poverty fell. Thus in 2010 173 000 Latvians received poor people support.

Figure 2.6: At-risk-of-poverty rates

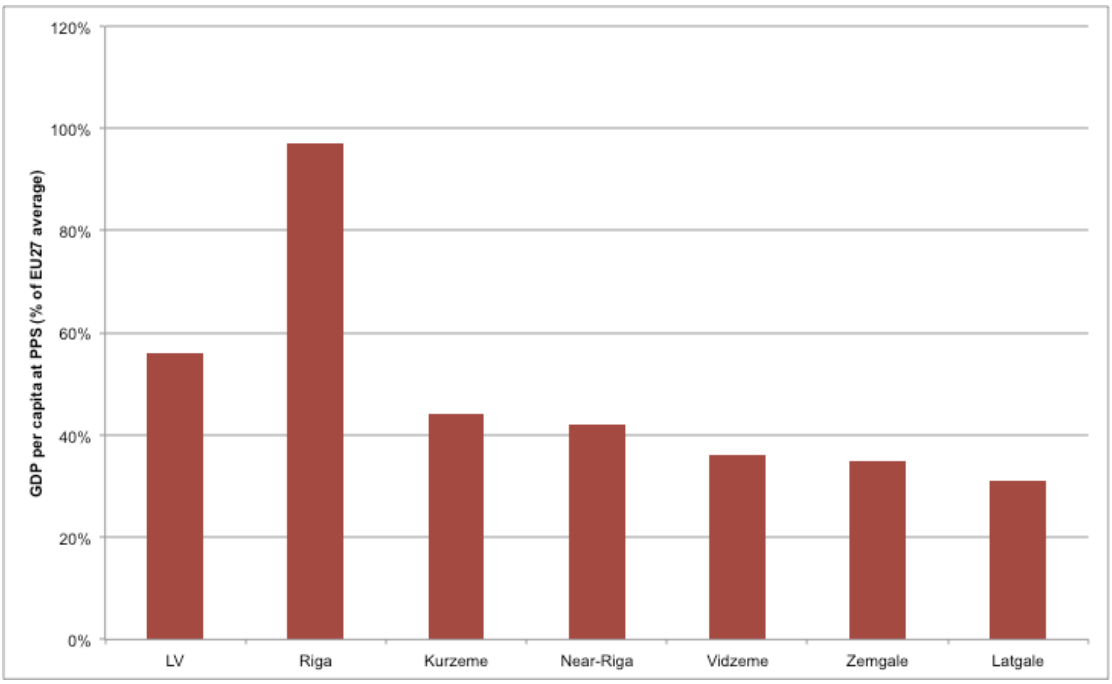


Source: Eurostat

Another dimension of inequality concerns the differences in living standards by regions within the country. The most recently available data on regional prosperity levels (GDP per capita) in Latvia is for 2008. See Figure 2.7.

Figure 2.7: GDP per capita (at PPS) as % of EU average in Latvia's regions (2008)

[18] The at-risk-poverty rate is the share of people with an equivalised disposable income (after social transfers) below the at-risk-of-poverty threshold, which is defined as 60 per cent of the national media of equivalised disposable income after social transfers.



Source: Eurostat

This shows that Riga was in 2008 overwhelmingly the most prosperous region in Latvia – the only region to approach EU average levels of prosperity. It is most unlikely that this picture will change when the next regional level figures become available. Other indicators such as employment, unemployment, and regional investment per capita tell the same disparities story. Overall in Latvia there is a strong sense that prosperity differences between the centre and the periphery and between urban and rural regions, in particular between Riga and the rest of the country, have increased. While such differences exist in many countries, they can signal gaps in accessibility and systematic weaknesses in the competitiveness of some parts of the country that reduce the overall level of prosperity that Latvia can achieve.

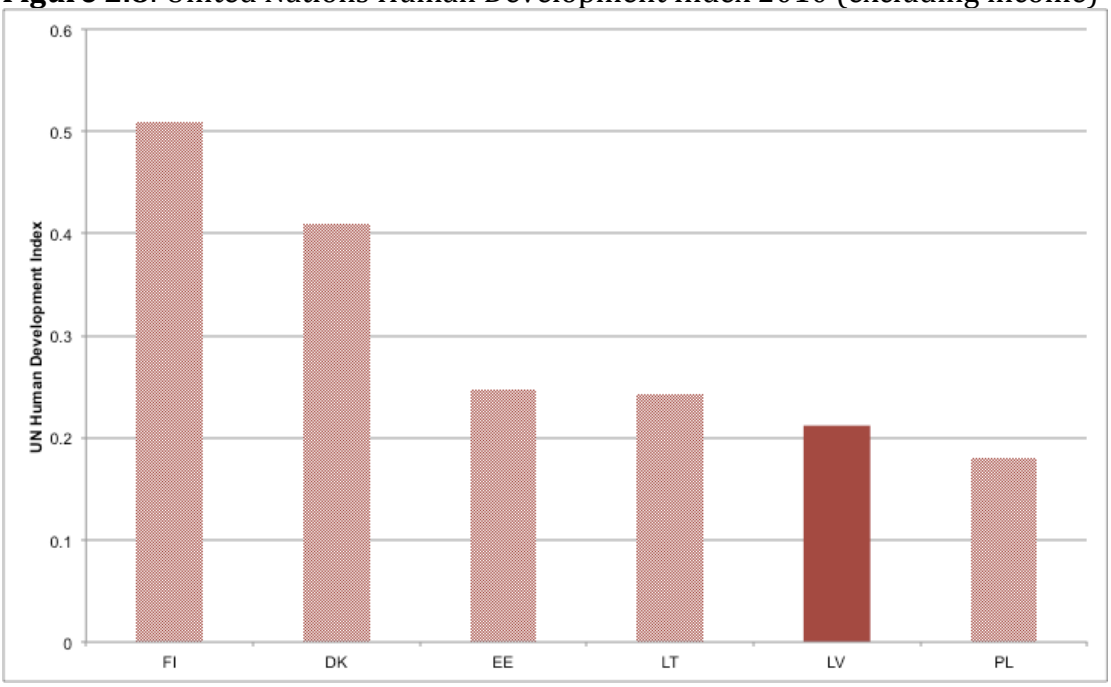
There has been a growing concern among researchers that the situation in parts of Latvia may represent a case of poverty trap that would seriously affect prospects for economic development. Poverty hinders economic development directly through lower human capital level and social deviance (crime, addictions etc.). Latvia has a prime interest in putting heavy emphasis of human capital value and its utilisation. Poor people are at a disadvantage in terms of the life chances open to them. Unequal access to health service means less human capital (shorter economic life expectancy, higher morbidity etc.). Unequal access to education means suboptimal utilisation of human capital potential, less chances to get higher education and consequently higher income. The inequality in accessing higher education in Latvia has been empirically supported. Even though a roughly equal amount of money 'follows a child' from the central government to finance primary and secondary education, the other added part – municipal money – is very unequal (from 50 Lats to a couple of thousand per child depending on the municipality). De facto inequality due to differences in individual income tax contributions translates into unequal access to and offers of education. The lower value of human capital development in poor regions in turn exacerbates economic inequalities and further lowers the tax base as a result of outmigration, fewer paid jobs and more social benefits paid out. This reinforces territorial disparities and a poverty trap emerges.

2.1.3 Non-income dimensions of the standard of living

In addition to monetary indicators, such as GDP per capita, the quality of life also depends on other factors such as access to basic education and health care, the quality of the environment, and the subjective perception of living conditions.

On access to basic education and health care, and other non-income dimensions of well-being one of the most commonly used measures is the Human Development Index (HDI) developed by the United Nations Development Programme. Figure 2.8 shows the HDI for selected countries with the income component removed[19].

Figure 2.8: United Nations Human Development Index 2010 (excluding income)



Source: UN

Latvia comes in at the end of the countries presented with a score that is 50% or less than in Finland and Denmark, whereas Lithuania and in particular Estonia score somewhat higher than Latvia.

Life expectancy is one of the key components of the HDI. While overall life expectancy in Latvia improved considerably between 1994 and 2009 Latvians

[19] Included components are: health, inequality, education, gender, sustainability, and human security

can still expect at birth to live on average just over eight years less than if born in Sweden.

Table 2.1: Life expectancy at birth, Latvia and Sweden

	Total		Males		Females	
	1994	2009	1994	2009	1994	2009
Latvia	66.4	73.3	60.7	68.1	72.9	78.0
Sweden	78.9	81.5	76.2	79.4	81.6	83.5

Source: Eurostat

For men in particular the gap is even bigger at just over eleven years. Men have much higher rate of death due as a result of non-natural causes (for example car fatalities and suicides in both of which Latvia has high indicators) and cardio vascular diseases, largely attributable to living habits and diseases. Although health care system is undergoing reform process, the focus has not shifted towards combating unhealthy habits and on social health.

On environmental quality, Latvia's performance is rather high given its income level. According to the Yale Environment Performance Index (EPI)[20] Latvia ranks 21 from 163 countries with an EPI score of 72.5 against an average of 71.5 for Europe as a whole and 64.8 for Latvia's peer income group.

On subjective perceptions of living conditions, World Values Surveys[21] have consistently shown Latvia's inhabitants as rather unhappy, compared to other nations, including the neighbouring EU countries. For example the subjective well-being indicator for 2007 was -0.75 (negative – showing that the majority of the population was dissatisfied with life) – as compared to 4.24 (Denmark) and 3.58 (Sweden)[22]. Relative unhappiness is a phenomenon characterising many post-communist and other countries with rapidly developing inequalities. Yet pressures on public finances and squeeze on ability to provide quality and accessible public services would diminish the government's credibility to alleviate the negative impact of income inequalities, also expressed in lower levels of subjective well being. As a result, benefits from growth and increased competitiveness of the country may well be subjectively suspect (as being allegedly unequally distributed) and thus do not contribute to an overall positive motivation of the populace.

The recently published second wave of the Life in Transition Survey[23] produced by the EBRD confirms Latvian disenchantment with life, the economy and politics. Thus only 38% of Latvians are satisfied with life as compared with 43% for the transition region as a whole and 72% in Western Europe. Latvia together with the other Baltic states (and Belarus, Slovenia and Romania) reported the biggest drop in life satisfaction as compared with the first survey in 2006. Belief in democracy and the market economy is particularly low – only 14% of Latvians believe in both democracy and the market economy as compared with an average of 42% in Western Europe.

[20] Environmental Performance Index www.epi.yale.edu
[21] http://www.worldvaluessurvey.org/
[22] One has to recognise though that other two Baltic states – Lithuania and Estonia both have negative indices too.
[23] http://www.ebrd.com/downloads/research/surveys/LiTS2e_web.pdf

Overall, the non-income measures of prosperity are roughly in line with the income-based measures of prosperity.

2.1.4 Assessment

- Overall, prosperity levels in Latvia remain low in comparison to peers. The high degree of inequality is an additional concern.

- Despite major progress since the beginning of transition Latvia remains a relatively poor country within the European Union. Over the last fifteen years Latvia reduced the prosperity gap with the EU-27 by 21 percentage points but Latvia's prosperity level in 2010 still stands at 52% of the EU average. Only Bulgaria and Romania from EU countries have a lower PPP adjusted GDP per capita. At the average 3.3 catch-up rate experienced over 1995 to 2010 Latvia would reach average EU-27 living standards by 2035.

- Latvia's distribution of prosperity as measured by the Gini coefficient is the most unequal in the EU, its risk of poverty rate is the highest in the Baltic states and regional income, unemployment and investment disparities are particularly wide. Inequalities are if anything exacerbated by one of the lowest per capita expenditures on social protection in the EU.

- The high level of inequality across groups and geography suggests that the standard of living of Latvian society is lower than the average GDP per capita figure suggests. Understanding the drivers of this, even in comparison with relevant peers, high level of inequality is a key issue for the further analysis.

- In the light of these facts it is unsurprising that Latvians are rather unhappy and dissatisfied with the both the economy and with the political system.

- The one bright spot in an otherwise dismal picture is Latvia's good environmental profile, which confirms the popular perception of Latvia as environmentally clean.

2.2 Prosperity decomposition

The level of prosperity generated in Latvia depends on how productive the Latvian economy is. This in turn depends on how productive Latvian workers are (labour productivity) and on output developments that are not directly the result of factor accumulation (increased inputs, i.e., total factor productivity (TFP) explained below). A major determinant of productivity levels is how effective Latvia is in terms of integrating its population in the active labour force (labour mobilization).

2.2.1 Productivity

Latvia's GDP per hour worked in 2010 stood at EUR 15.6 (Purchasing Power Standards adjusted), as compared with EUR 18.45 in Lithuania and EUR 20.6 in

Estonia. In the EU only Bulgaria and Romania register lower levels of labour productivity.

Table 2.2 shows productivity per hour developments for the Baltic states and selected EU average figures.. At least two observations can be made: firstly, Latvian labour productivity has been consistently below Estonia and Lithuania and below the EU new member state average; secondly, even for Estonia, the best Baltic states performer, the productivity gap with the EU-15 average remains at about 50%.

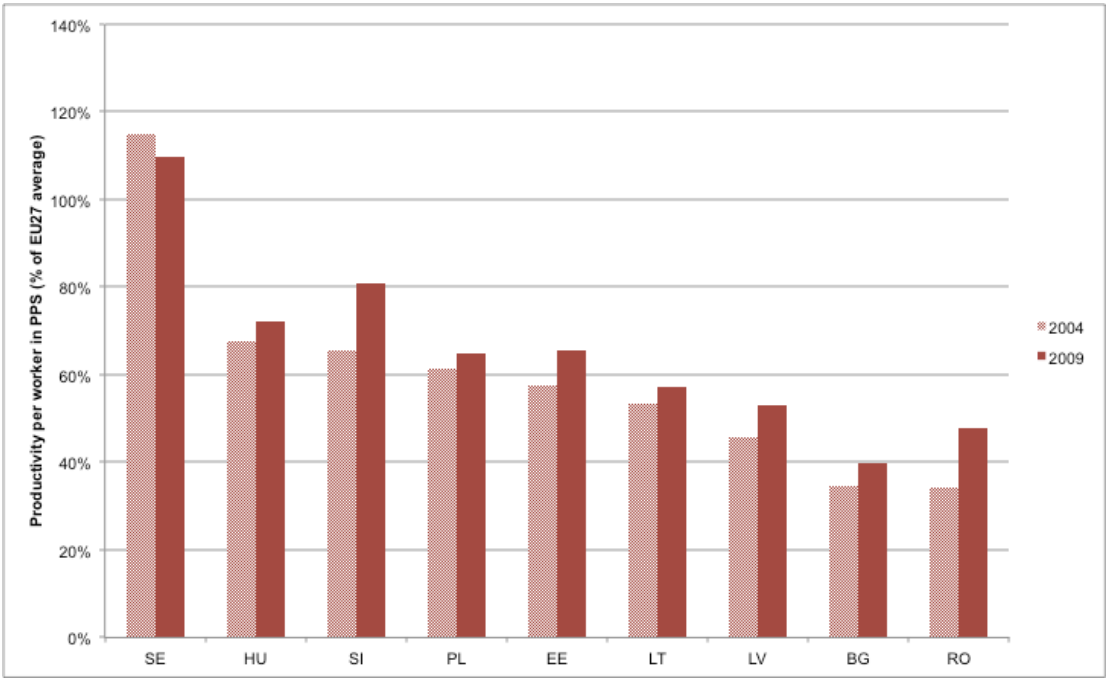
The average growth of Latvian labour productivity between 1993 and 2007 was at 7%, similar to Estonia and ahead of the 5.7% registered by Lithuania. Since then labour productivity has remained largely stagnant in Latvia and Lithuania while it further increased in Estonia.

Table 2.2: Development of productivity per hour worked in PPS (EUR)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estonia	11.0	12.0	13.0	14.2	15.3	16.5	18.1	18.0	18.9	20.6
Latvia	8.6	9.3	9.7	10.7	11.4	12.2	13.5	14.1	14.4	15.6
Lithuania	11.6	12.5	13.8	14.6	14.8	16.1	17.4	17.7	16.3	18.4
EU-12 average	11.3	12.4	13.0	14.0	14.6	15.5	16.7	17.3	17.2	
EU-15 average		32.0	32.5	33.6	34.7	36.2	37.6	37.5	36.4	
EU-27 average	26.4	27.6	28.1	29.2	30.2	31.5	32.8	32.8	31.9	

Source: Eurostat , own calculations

Figure 2.9: Productivity per worker in PPS as % of EU27 average selected countries

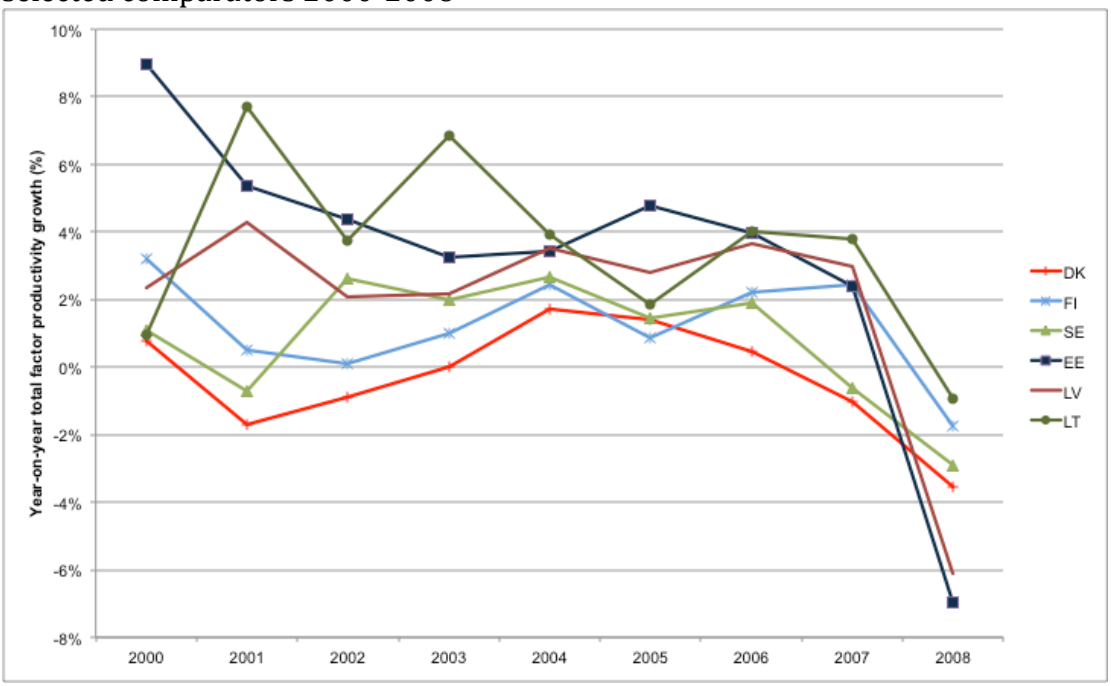


Source: Eurostat

If decompose productivity per worker by sector, then in manufacturing, Latvia's most important tradable sector, in 2010 this was 45% of the EU average (up from 41% in 2009) and out of EU countries ahead only of Bulgaria.

Total factor productivity (TFP) growth since 2000 (after the Russian crisis) for Latvia was a rather steady 2%-4% a year until 2007, significantly higher than for the Scandinavian comparators but typically less than for Estonia and Lithuania (and also less volatile than Lithuanian TFP). See Figure 2.10. After 2007 TFP growth turned negative as the output collapse outpaced the reduction in factor inputs.

Figure 2.10: Annual total factor productivity (TFP) growth for Latvia and selected comparators 2000-2008



Source: Conference Board Total Economy Database

Total factor productivity growth measures the part of output growth that is not directly attributable to increases in factors of production i.e. to increases in the workforce or capital stock. Thus it includes the impact of changing technology,

the impact of changes the way technology is being used and the way in which firms and the economy are organised. Thus in the long run it provides an indicator of how the potential for creating prosperity is developing, but in the short run TFP growth can also pick up cyclical factors, as was the case in 2008. The pattern observed in Figure 2.10 is thus very much to be expected as the Baltic states continued to develop faster than the already well developed Scandinavian countries. However, Latvian TFP growth has consistently lagged behind that of Estonia, though the post 2007 collapse has been equally severe.

2.2.2 Labour mobilization

A country's degree of labour mobilization is the outcome of a number of factors including: the demographic profile, conditions on the labour market, and the nature of working relations.

Demographics

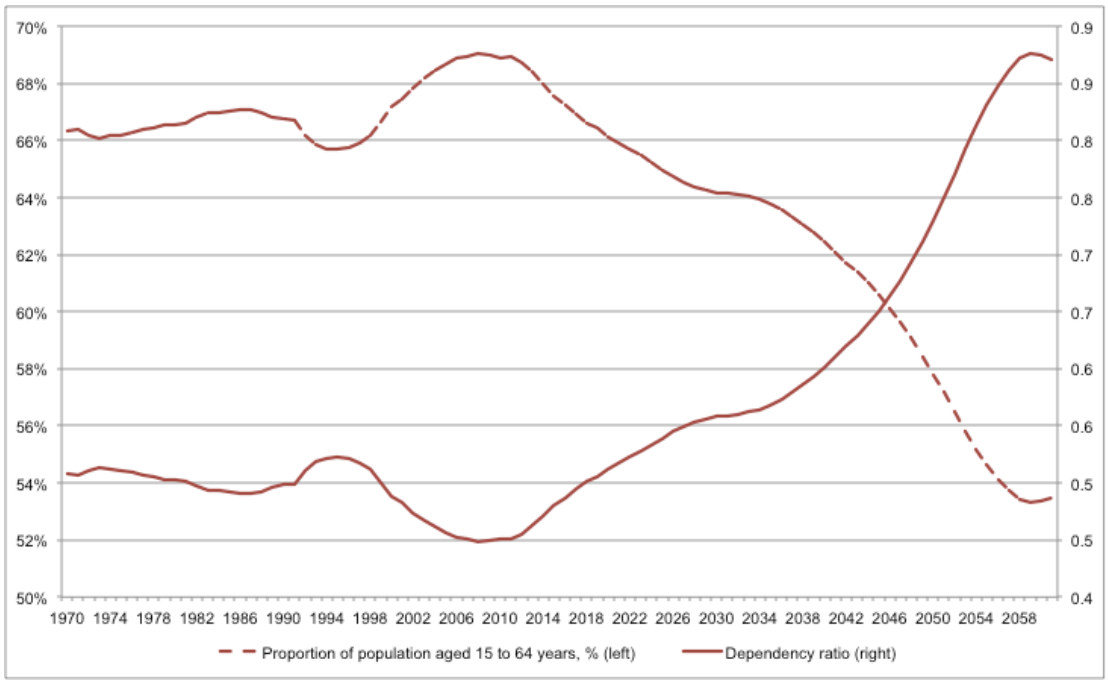
According to official statistics, the share of working age population in 2008 in Latvia was 69.0% representing, historically the highest ever value of this indicator. 1989 was the year of the highest ever absolute size of working age population, namely 1.78 million. Since then the number has decreased by 14% to 1.54 million, and according to Eurostat projections, will continue to shrink in the future, falling to only 898 thousands by 2060.

Accordingly, currently Latvia experiences a period with historically the lowest demographic pressure. The drop in birth rates (in the 1990s) has meant an increase in the share of working age population, the number of children is small, women work, and also the number of older people is relatively small. This represents the so-called demographic window i.e. a period of demographic development, when the proportion of population of the working age group is particularly high[24].

The UN (UN, 2004) has estimated that the demographic window in Europe emerged around 1950 and continued till 2000. In Eastern Europe it will continue until around 2015. It is perceived that in the Soviet republics the demographic dividend was not sufficiently exploited and that the high proportion of the labour force in society was not translated into sustainable economic growth. In Latvia the demographic window period is running between 1999 and 2017. Currently Latvia thus experiences a particularly favourable demographic structure, when the dependency ratio is less than 0.5. After the end of this period both the absolute size and the proportion of working age population will only decrease (Figure 2.11). The margins of the period as well as definition of the period are rather conventional, but the tendency is evident that the current favourable demographic structure is bound to change.

Figure 2.11: Proportion of population aged 15-64 and dependency ratio in Latvia, statistics 1970 – 2010, projections 2011-2060

[24] The precise definition of the demographic window can vary. The UN Population department defines it as a period, when share of children is under 30%, and share of 65+ population does not exceed 15%. Hence the total share of dependent population is around 55%. In a wider sense, it is a period of time observable in statistics and specifically is characterized with high working age population relatively to other periods, as for example in Latvia 2003 – 2017.



Source: Authors' estimations based on Eurostat (Population Statistics and EUROPOP2008).

However, the demographic window is always followed by "worsening" demographic structure – ageing. Aging causes important macroeconomic consequences. Increasing resources will be required to finance pensions, health and social care, increasing the pressure to the state budget. Other budget positions including education and investments will become more difficult to finance.

It should be noted that the demographic projections of Figure 2.11 do not include the possible impact of migration. In Latvia there has been a quantitatively unknown but almost certainly significant emigration since 2004 – almost all of it is working age people. Hazans (2011) has estimated that between 200 and 250 thousand people have emigrated between years 2000 and 2011. Thus, emigration is likely to exacerbate the already worsening Latvian age structure.

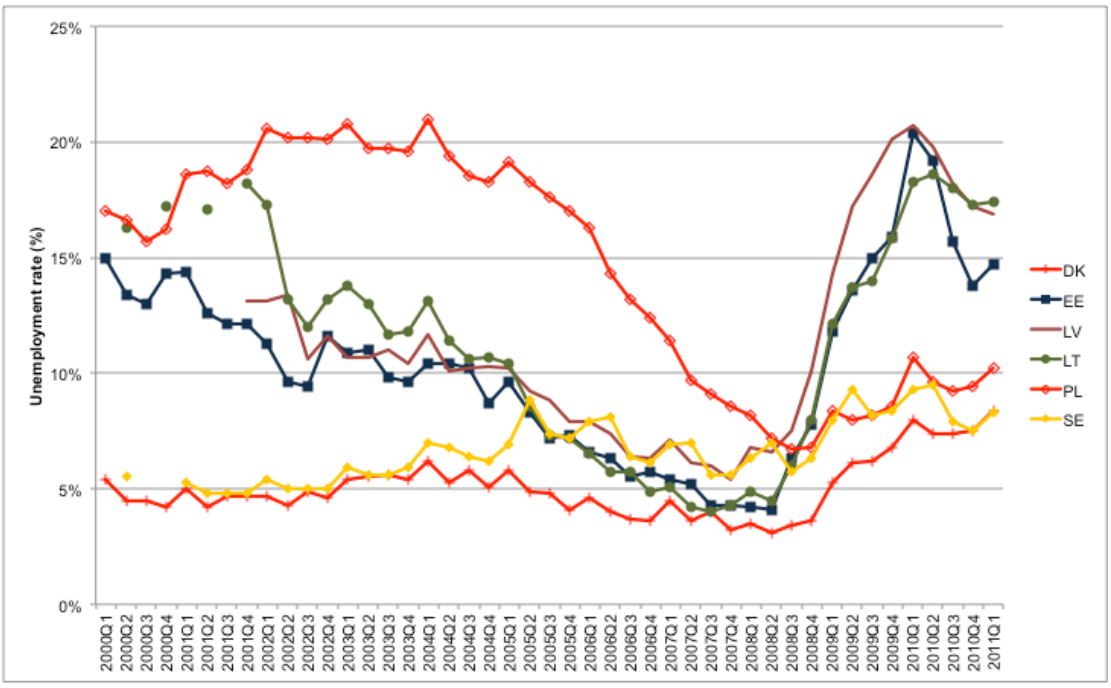
Labour market conditions

The following indicators characterise labour market conditions: unemployment rates, employment and participation rates, and structural features of the labour market.

Unemployment

In the second quarter of 2011 unemployment in Latvia stood at 16.2% and of down from 20% at the height of the crisis but still one of the highest unemployment rates in the EU. In the crisis Latvia registered the highest unemployment rate of all EU countries, a position that it has in the meantime handed over to Spain.

Figure 2.12: Unemployment rate, LFS data, seasonally adjusted



Source: Eurostat

Long-term unemployment as a percentage of the active population is also high and rising in Latvia. It higher than in Estonia and Lithuania, and is more than twice the EU average and more than four times the rate in the Scandinavian countries. Apart from being a direct waste of resources long-term unemployment is also factor in the potential emergence of a poverty trap (see the discussion of the previous section).

Table 2.3: Long term unemployment, % of active population selected countries

	2003	2004	2005	2006	2007	2008	2009	2010
European Union-27	4.1	4.2	4.1	3.7	3.1	2.6	3.0	3.9
Denmark	1.1	1.2	1.1	0.8	0.6	0.4	0.5	1.4
Estonia	4.6	5.0	4.2	2.9	2.3	1.7	3.8	7.7
Latvia	4.4	4.6	4.1	2.5	1.6	1.9	4.6	8.4
Lithuania	6.0	5.8	4.3	2.5	1.4	1.2	3.2	7.4
Poland	11.0	10.3	10.3	7.8	4.9	2.4	2.5	3.0
Finland	2.3	2.1	2.2	1.9	1.6	1.2	1.4	2.0
Sweden	1.2	1.4	1.0	1.0	0.9	0.8	1.1	1.5

Source: Eurostat

Youth unemployment has tripled since 2007 when it was below the EU average but now stands at more than 60% above the EU average.

Table 2.4: Developments in youth unemployment (% of workforce age 15-25)

	2003	2004	2005	2006	2007	2008	2009	2010
European Union-27	18.3	18.7	18.9	17.5	15.7	15.8	20.1	21.1
Denmark	9.2	8.2	8.6	7.7	7.9	7.6	11.2	13.8
Estonia	20.6	21.7	15.9	12.0	10.0	12.0	27.5	32.9
Latvia	18.0	18.1	13.6	12.2	10.7	13.1	33.6	34.5
Lithuania	25.1	22.7	15.7	9.8	8.2	13.4	29.2	35.1
Poland	41.9	39.6	36.9	29.8	21.7	17.3	20.6	23.7
Finland	21.8	20.7	20.1	18.7	16.5	16.5	21.5	21.4
Sweden	17.4	20.4	22.6	21.5	19.2	20.2	25.0	25.2

Source: Eurostat

Employment and participation

In terms of economic activity (participation) Latvia performs better than the EU average, better than Lithuania and about the same as Estonia, though not as strongly as the Scandinavian countries.

Table 2.5: Development of participation rates (15-64 age group)

	2003	2004	2005	2006	2007	2008	2009	2010
European Union-27	68.9	69.3	69.8	70.3	70.5	70.9	71.0	71.0
Denmark	79.5	80.1	79.8	80.6	80.2	80.7	80.7	79.5
Estonia	70.1	70.0	70.1	72.4	72.9	74.0	74.0	73.8
Latvia	69.2	69.7	69.6	71.3	72.8	74.4	73.9	73.2
Lithuania	69.9	69.1	68.4	67.4	67.9	68.4	69.8	70.5
Hungary	60.6	60.5	61.3	62.0	61.9	61.5	61.6	62.4
Poland	63.9	64.0	64.4	63.4	63.2	63.8	64.7	65.6
Finland	74.5	74.2	74.7	75.2	75.6	76.0	75.0	74.5
Sweden	77.3	77.2	78.7	78.8	79.1	79.3	78.9	79.5

Source: Eurostat

In relative terms the participation of women in the Latvian economy is even more pronounced. It is much stronger than the EU average and significantly above countries such as Hungary and Poland. Interestingly, the female participation rate has grown quite strongly since 2003 and has not been halted by the recession.

Table 2.6: Female participation rates (15-64 age group)

	2003	2004	2005	2006	2007	2008	2009	2010
European Union-27	61.0	61.7	62.4	63.0	63.3	63.9	64.3	64.5
Estonia	65.7	66.0	66.9	69.3	68.7	70.1	70.6	71.0
Latvia	64.7	65.3	65.1	66.7	68.3	70.5	71.0	70.7
Lithuania	66.5	65.6	64.9	64.6	65.0	65.5	67.8	68.8
Hungary	53.9	54.0	55.1	55.5	55.1	55.0	55.3	56.7
Poland	58.0	57.9	58.1	56.8	56.5	57.0	57.8	59.0
Finland	72.2	72.0	72.8	73.3	73.8	73.9	73.5	72.5
Sweden	75.4	75.2	76.3	76.3	76.8	76.9	76.4	76.7
Denmark	75.1	76.2	75.9	77.0	76.4	76.8	77.3	76.1

Source: Eurostat

Table 2.7: Employment rate 15-64 age group, selected countries

	2003	2004	2005	2006	2007	2008	2009	2010
European Union-27	62.6	63.0	63.5	64.5	65.4	65.9	64.6	64.2
Denmark	75.1	75.7	75.9	77.4	77.1	77.9	75.7	73.4
Estonia	62.9	63.0	64.4	68.1	69.4	69.8	63.5	61.0
Latvia	61.8	62.3	63.3	66.3	68.3	68.6	60.9	59.3
Lithuania	61.1	61.2	62.6	63.6	64.9	64.3	60.1	57.8
Hungary	57.0	56.8	56.9	57.3	57.3	56.7	55.4	55.4
Poland	51.2	51.7	52.8	54.5	57.0	59.2	59.3	59.3
Finland	67.7	67.6	68.4	69.3	70.3	71.1	68.7	68.1
Sweden	72.9	72.1	72.5	73.1	74.2	74.3	72.2	72.7

Source: Eurostat

By contrast the employment rate in Latvia has been badly hit by the recession, falling from over 68% in 2007-8 to less than 60% in 2010. From a peak of over 1.1 million, employment has fallen by nearly 20% to 0.94 million. Given, the demographic developments a 1 million level of employment is unlikely to be seen again for a long time.

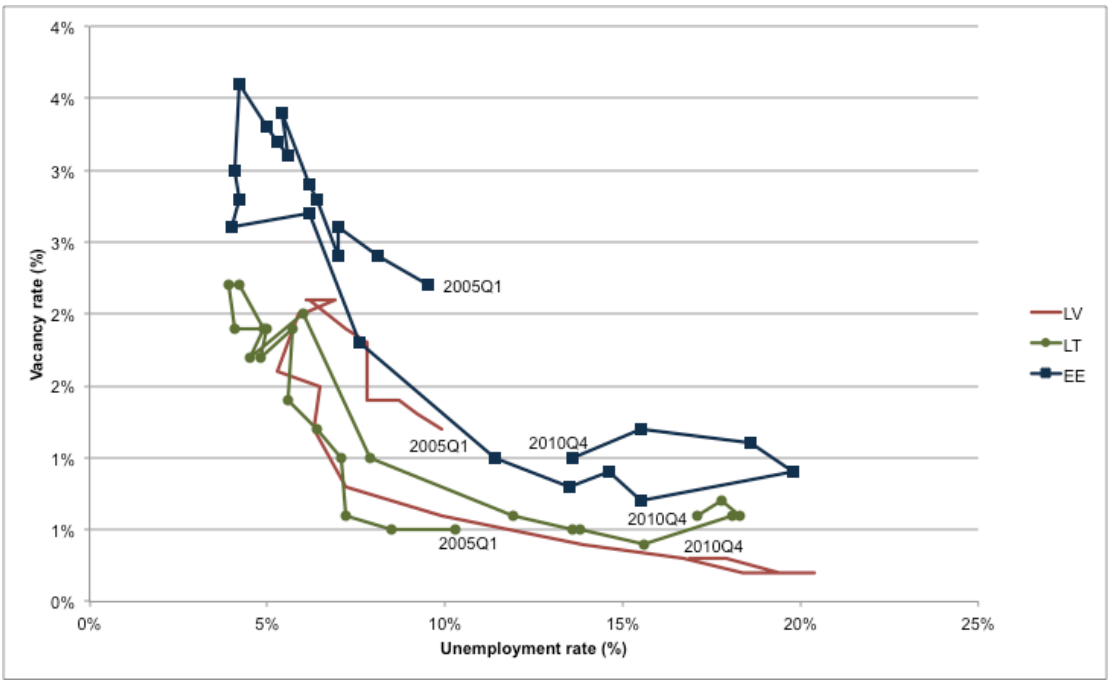
Structural aspects of the labour market: the Beveridge curve

The emergence of high long term unemployment and the coexistence of this with the observation that wages are again rising has raised fears of the emergence and persistence of high levels of structural unemployment i.e. of a labour market in which it is difficult to match unemployed workers with jobs.

One approach to evaluating the efficiency of job match is in examining the relationship between the unemployment rate and availability of vacancies, the so-called Beveridge curve. The vacancy rate (the ratio of unfilled vacancies to the sum of unfilled vacancies and the number of jobs filled) and the unemployment rate are expected to be negatively correlated: an increase in the vacancy rate should lead to a reduction in the rate of unemployment. However, if a mismatch occurs between the skills demanded and supplied in the market, the increase in the vacancy rate may leave the unemployment rate unaffected. Therefore, an outward shift in a Beveridge curve is a signal of worsening efficiency of job match.

For the Baltics the Beveridge curves suggest that the gradual rise in the vacancy rate, which has been observed during the recovery, was accompanied by a reduction in the rate of unemployment. In particular, Latvia and Lithuania seem to move along the curves, whereas in Estonia initially a slight outward shift of the curve was observed but in recent quarters the decline in unemployment has not accompanied by a growing vacancy rate, suggesting a gradual improvement in the job match. In short, in the Baltic states in general and in Latvia in particular the Beveridge curve does not support the idea of a growing labour market mismatch.

Figure 2.13: Beveridge curves for the Baltic States, 2005Q1 – 2010Q4



Source: Eurostat

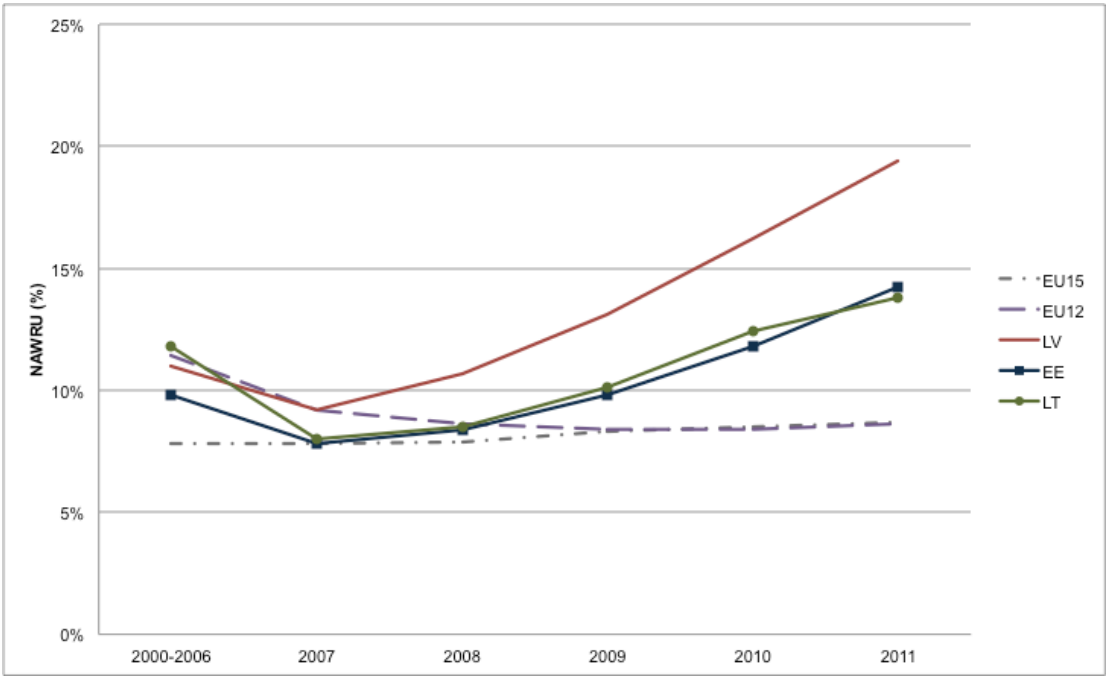
Equilibrium unemployment

One method of identifying the long run structural equilibrium in the labour market is to estimate the unemployment rate at which either the price inflation rate is constant (non-accelerating inflation rate of unemployment or NAIRU) or the unemployment rate at which wage inflation is constant (non-accelerating wage inflation rate of unemployment or NAWRU).

The European Commission recent estimates of NAWRU for EU countries have caused some alarm in the Baltic states, especially in Latvia.

Figure 2.14 shows the Commission's estimates which suggest that in Latvia the equilibrium unemployment rate, after declining to less than 10% in 2007 increased to 10.7% in 2008 and to 16.2% in 2010 and is forecast to further increase to 19.4% in 2011. If believable, this spells very bad news for Latvia and is an issue that needs to be urgently addressed to ensure Latvia's competitiveness.

Figure 2.14: European Commission's NAWRU estimates for the Baltics, EU-15 and EU-12



* forecast

Source: D'Auria et al, 2010, authors' calculations

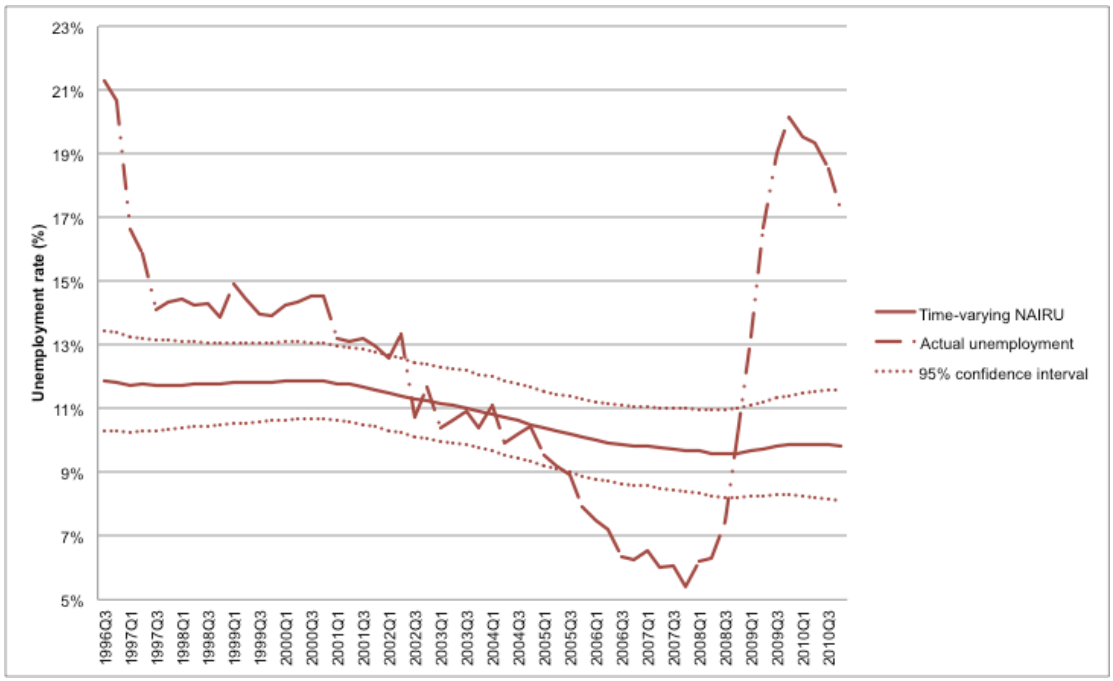
A less alarming picture is provided by the independent research presented in Zasova (2011). The findings for Latvia are shown in Figure 2.15 and the comparison with the European Commission estimates in Figure 2.16.

According to the independent estimates the Latvian NAIRU gradually decreased from the mid-1990s when it was 11.9% 2008 to 9.6% in 2008, but, following the 2008 crisis, it slightly rose (to 9.9% in 2nd quarter of 2010) but in the 3rd and 4th quarters of 2010, the NAIRU started to decline and at end-2010 was 9.8% (with 95% confidence interval of 8.1% - 11.6%) in the end of 2010.

The results for the early 2000s correspond to other available estimates for Latvia e.g., for the period 2000-2003 it is very close to the results of Camarero et al (Camarero et al, 2005)[25] and for in 2000-2006 (around 11% on average) it is also very close to the European Commission's (D'Auria et al, 2010) estimate of equilibrium unemployment rate.

Figure 2.15: Seasonally adjusted actual unemployment rate, the NAIRU and its 95% confidence interval

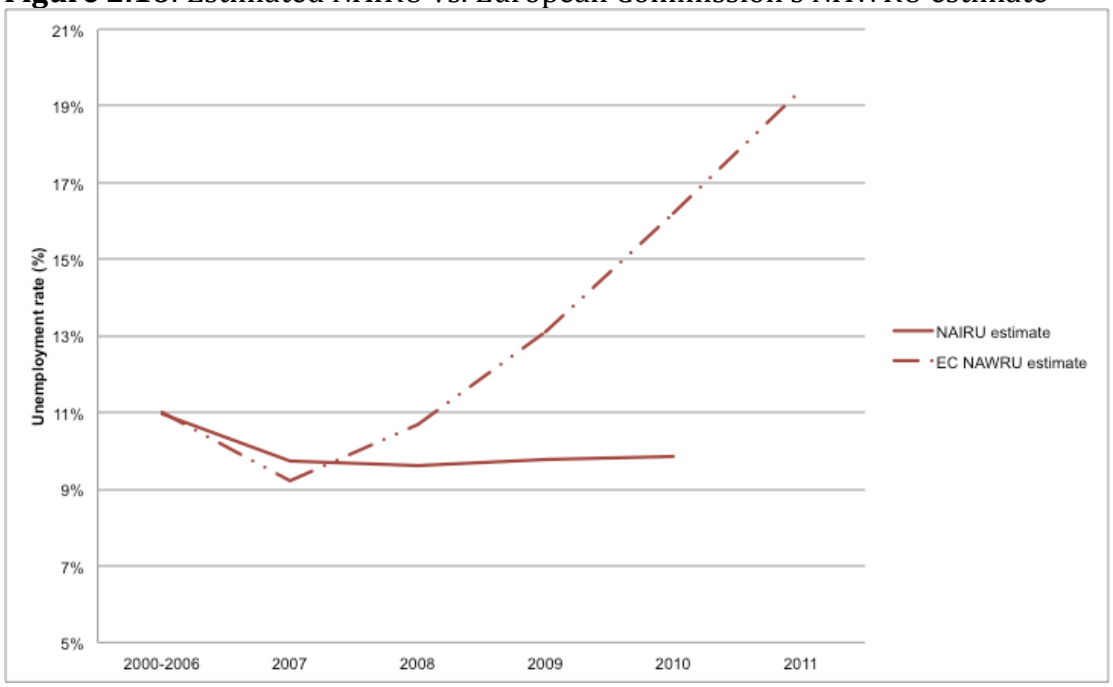
[25] Camarero et al (Camarero et al, 2005) estimate covers period up to 2003.



Source: Eurostat, ILO, authors' calculations

After 2007 however, as Figure 2.16 shows the results diverge substantially from those of the EC. The discrepancy in results between the two estimates at least partly can be explained by differences in methodology[26].

Figure 2.16: Estimated NAIRU vs. European Commission's NAWRU estimate



* forecast

Source: D'Auria et al, 2010, authors' calculations

Nevertheless, there are reasons to suppose that the surge in unemployment after 2008 was not just cyclical e.g., construction experienced a more than 50%

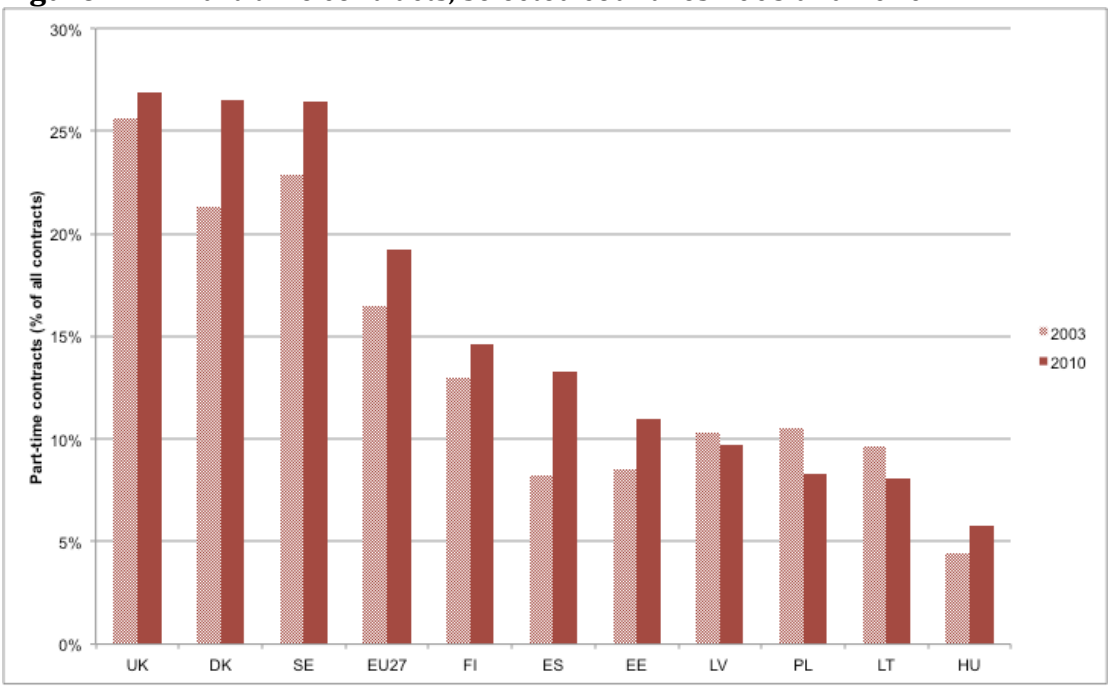
[26] In the European Commission's paper, the elasticity of unit labour costs with respect to deviation of unemployment rate from equilibrium unemployment rate was calibrated, not based on econometric estimation. The calibrated elasticity is very high – for Latvia and Poland it is the highest among the new EU member states, which makes the estimated equilibrium rate of unemployment unresponsive to the dynamics of unit labour costs and results in a NAWRU estimate that is quite close to the actual unemployment rate.

reduction in employment and there is little reason to expect that construction volumes will return to a pre-crisis level in the foreseeable future. At the same time, it is implausible that the growth in unemployment, which followed a cumulative GDP decline of more than 25%, can be fully attributed to structural developments.

Employment conditions

Employment conditions in Latvia are governed by employment legislation. From the point of view of labour mobilization the main feature of Latvian legislation is that it is rather difficult to create non-standard employment contracts. The net result of this is that Latvia has a rather low prevalence of both part-time and temporary workers. This is illustrated in Figure 2.17 and Figure 2.18.

Figure 2.17: Part-time contracts, selected countries 2003 and 2010

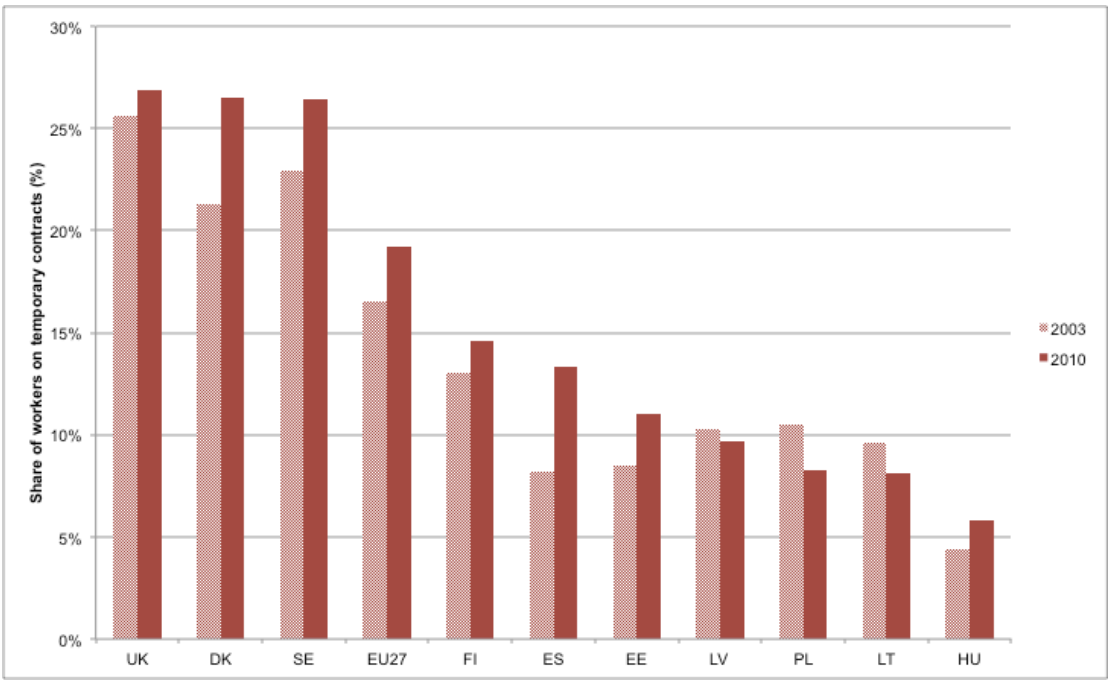


Source: Eurostat

In terms of both kinds of non-standard contract Latvia is below the EU average. The prevalence of part-time working is very similar to that in other former communist countries, but half the rate observed in the UK and Scandinavian labour markets. Even the recession has not brought an increase in the share of part-time contracts in the Latvian labour market.

Temporary contracts, at 5%, are even scarcer and much below the prevalence observed in Spain or Poland. Arguably, this may be a good thing since in Spain temporary contracts together with high employment protection for permanent workers has meant that temporary workers have borne the brunt of the lay-offs generated by the recession.

Figure 2.18: Share of workers with temporary contracts, selected countries 2003 and 2010



Source: Eurostat

2.2.3 Assessment

- Latvian prosperity is held back by low labour productivity.
- Labour mobilization is at normal levels as compared with peers. Latvian economic participation rates are relatively good but low employment and high unemployment rates reflect both cyclical and structural factors and the possibility of transition from the current cyclical unemployment to structural unemployment is a concern.
- The beneficial demographic situation has already started to turn and will increasingly deteriorate, with the natural change in population structure exacerbated by emigration.
- Identifying the barriers to higher productivity and promoting a reduction in the structural rate of unemployment is a key task for analysis.

3. Intermediate indicators

This section considers a number of indicators that reflect some of the important causal relations between competitiveness, economic activity, and prosperity in the Latvian economy. We label them intermediate indicators because typically they represent outcomes that are not valued as such but signal something about competitiveness. For example, consider export performance: the general tendency is for strong competitiveness to lead to, say, high exports, which then support high prosperity. However, high exports can also be the result of other factors, including policy interventions, like currency devaluation, that are unrelated to competitiveness as understood here and, importantly, do not necessarily or directly lead to higher prosperity. Because of this complexity, economic activity indicators are used here as a diagnostic tool, not as a benchmark for policy success or even as a direct policy objective. Confusion about these different roles often leads to misguided policy intervention that is may not be welfare enhancing.

We consider the following five intermediate dimensions of economic activity:

i) Trade and investment;

ii) Entrepreneurship and innovation;

iii) Macroeconomic imbalances

iv) Intermediate indicators of institutional quality;

v) Structural composition of the economy

These multiple dimensions provide together a rich perspective on the patterns of current and prospective future value creation in the Latvian economy. The different outcomes in these dimensions provide insights into the profile of strengths and weaknesses of Latvian competitiveness.

3.1 Trade and investment

A country's international trade reflects both the degree to which its economy is interconnected with that of the outside world (shown by the ratio of the value of trade to GDP) and its ability to generate income to pay for goods and services produced elsewhere (reflected by export performance). In both of these aspects, trade serves as an intermediate indicator of a country's international competitiveness.

Investment, whether in the form of Foreign Direct Investment (FDI) or as the overall investment rate as measured by gross fixed capital formation is a forward looking indicator in at least two dimensions: in the first place it is a barometer of expected returns and general confidence in the economy i.e. high investment rates indicate high expected returns; and secondly fixed capital formation directly expand the future productive capacity of the economy.

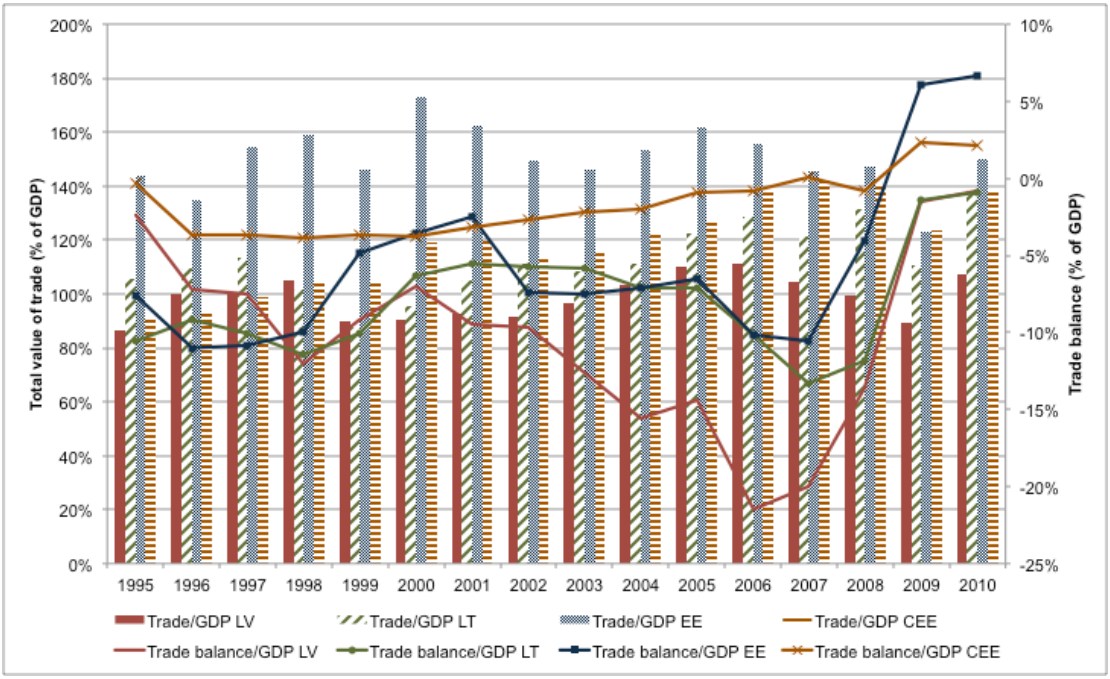
For both, trade and investment, both the level as well and the quality of activity provide important insights for the diagnostics.

3.1.1 Foreign trade

Figure 3.1 shows that Latvia trades less overall than the economies of the other Baltic States and the countries of Central and Eastern Europe, despite the fact most of these countries are larger than Latvia. In the 1990s, this was possibly because of relative (e.g. as compared with Estonia) slowness to remove trade barriers, and the impact of the 1998 Russian financial and economic crisis which hit Latvian trade particularly hard. However, the relatively "low" share of total trade to GDP may indicate that Latvia has not been as successful as its neighbours in attracting companies to use Latvia as a link in their global manufacturing and supply chains

The total Euro value of Latvia's exports increased about 4.4 times over the 1995-2010 period but then experienced a decline of 20% during the economic downturn in 2009. Since then exports have shown a remarkable recovery, rising by 30% in 2010 and surpassing pre-crisis levels. Export growth has been accompanied by export diversification, as measured by the Herfindahl index of concentration, which is generally regarded as a positive development indictor.

Figure 3.1: Comparison of the international trade of the Baltic states and CEE countries[27]



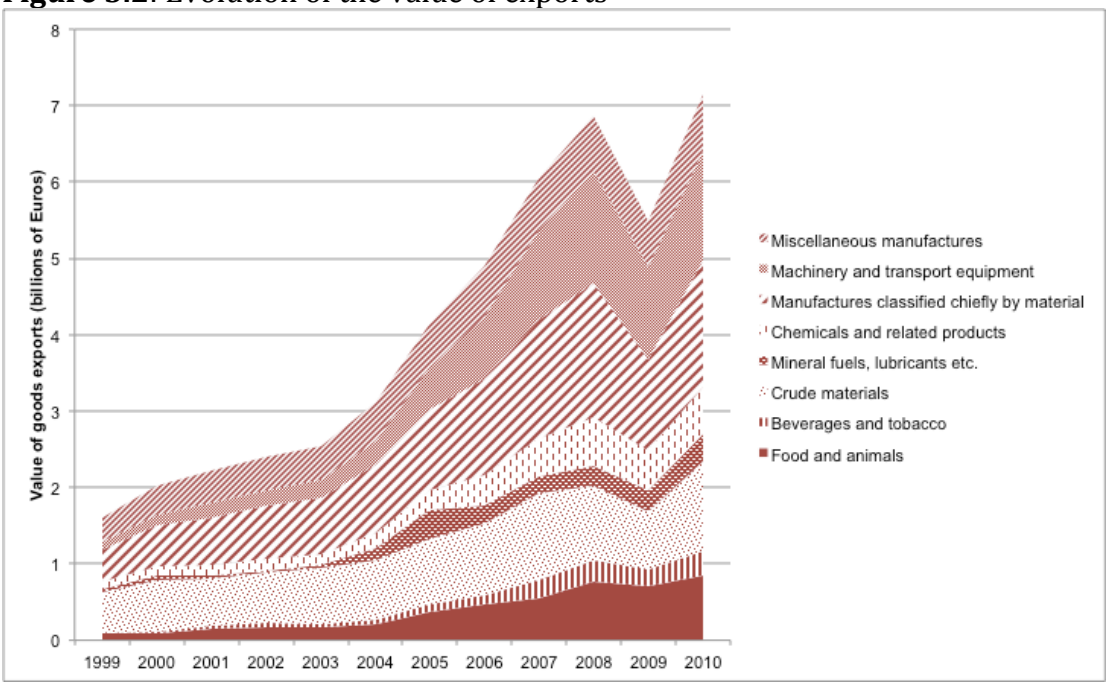
Source: Eurostat

The diversification process was marginally reversed during the crisis and the subsequent recovery, perhaps because export growth was greatest in established industries in which expanding production did not require much in the way of investment and in which demand was most sensitive to recovery abroad (e.g., wood and simple wood products, which are used extensively in construction).

[27] Defined hereinafter as the countries countries of central and eastern Europe that joined the European Union at the same time as Latvia did: the Czech Republic, Hungary, Slovenia, Slovakia, and Poland. Before the breakup of the Soviet Union these countries were similar to Latvia in terms of their economic, societal and technological development, and they represent a valid base for comparison.

This lends some support to the view that there has not really been a major reorientation of the economy in this period.

Figure 3.2: Evolution of the value of exports

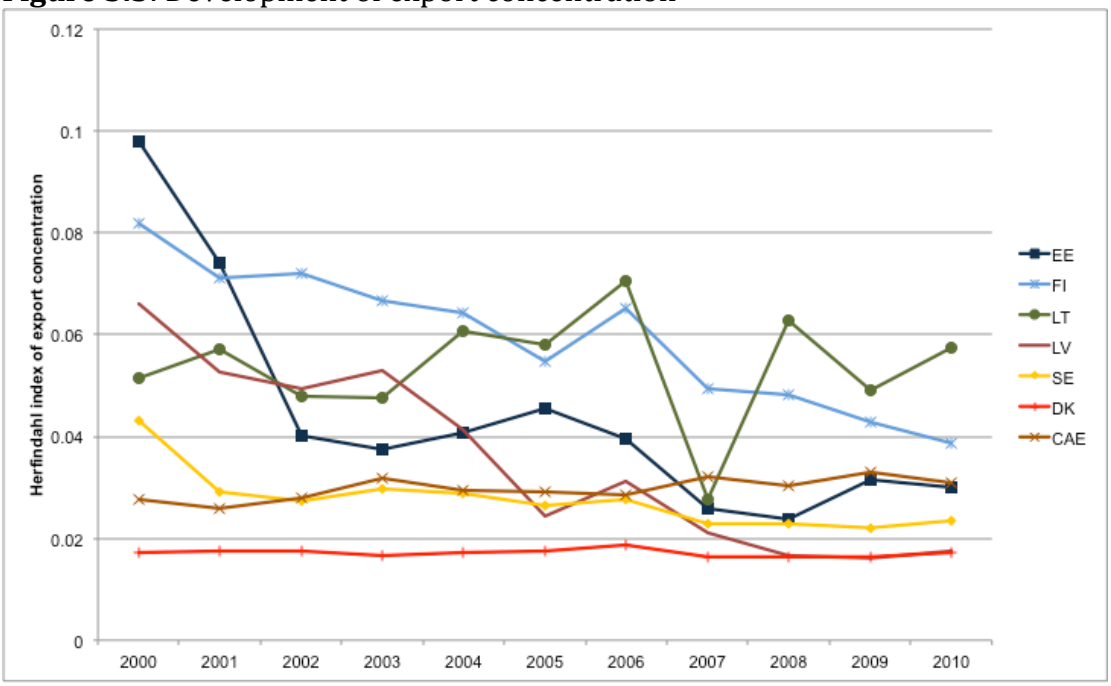


Source: Eurostat

Figure 3.3 illustrates development in the concentration[28] of Latvia's exports. Over 2000-2010, the Herfindahl index of concentration has decreased from about 0.06 to less than 0.02. Surprisingly perhaps, Latvia now has the least concentrated exports in the group of peer countries shown, with a level of concentration that is about the same as in Denmark. This is a substantial relative improvement from 2000, when Latvia's exports were more concentrated than in Lithuania and in Central and Eastern Europe on average (although in this instance less concentrated than Estonia). Lower export concentration or higher diversification is generally regarded as a positive development signal. A theoretical and empirical study of export diversification by Hesse (2008) argues: 'the process of economic development is typically a process of structural transformation where countries move from producing "poor-country goods" to "rich-country goods." Export diversification does play an important role in this process. We provide robust empirical evidence of a positive effect of export diversification on per capita income growth.

[28] Export concentration is the inverse of diversification. So lower concentration is equivalent to higher diversification.

Figure 3.3: Development of export concentration[29]



Source: Eurostat; authors' calculations.

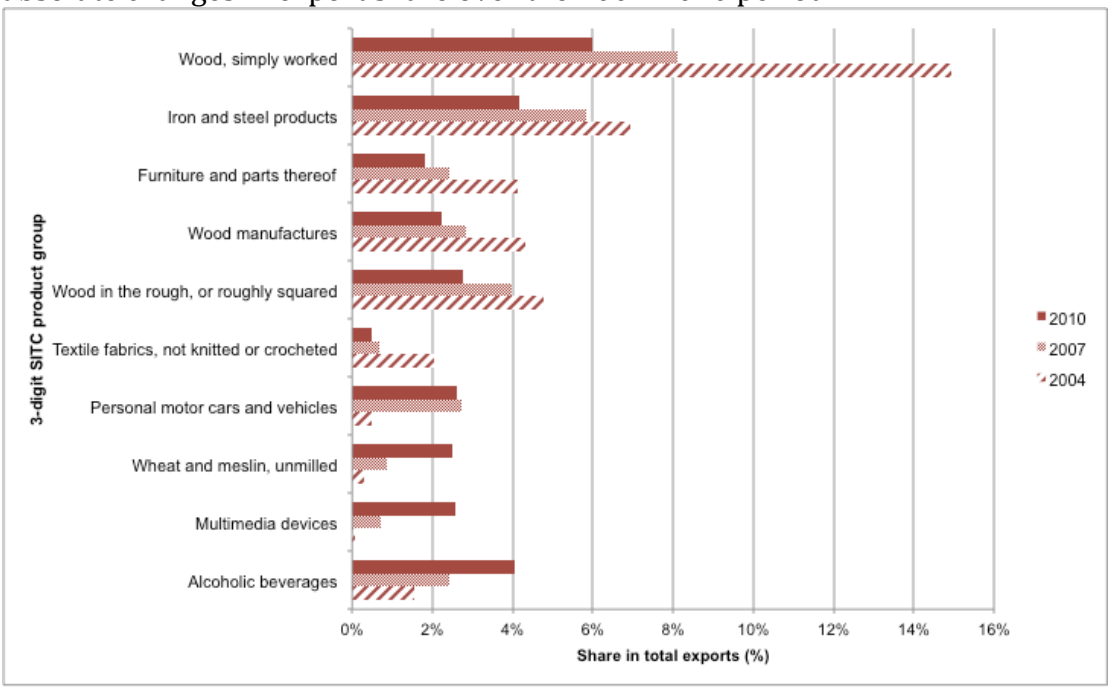
Thus the medium term decline in the concentration of exports represents an export success story in line with the process outlined by Hesse. The largest declines in export shares in over the 2000-2007 period have occurred in traditional sectors (see Figure 3.4). For example, the export share of simply worked wood declined by 13.6 percentage points and that of wood in the rough declined by 2.3 percentage points. On the other hand there have been increases in the export shares of multimedia products, medicaments, and manufactures of base metals, to name but a few[30]. In other words diversification has been associated with an expansion in the shares of more advanced goods.

Overall, one can see that the decreases in export share have mostly taken place in the large export categories (Figure 3.5), while the offsetting increases in export share have been spread out across many product groups, thus accounting for the lower concentration indicator.

[29] Export concentration is measured with the Herfindahl index, which is defined here as the sum of the squared export shares of all commodity groups at the level of the 4-digit SITC (Standard International Trade Classification) classification. For the sake of viewability, the value of exports is shown in the 2-digit SITC classification.

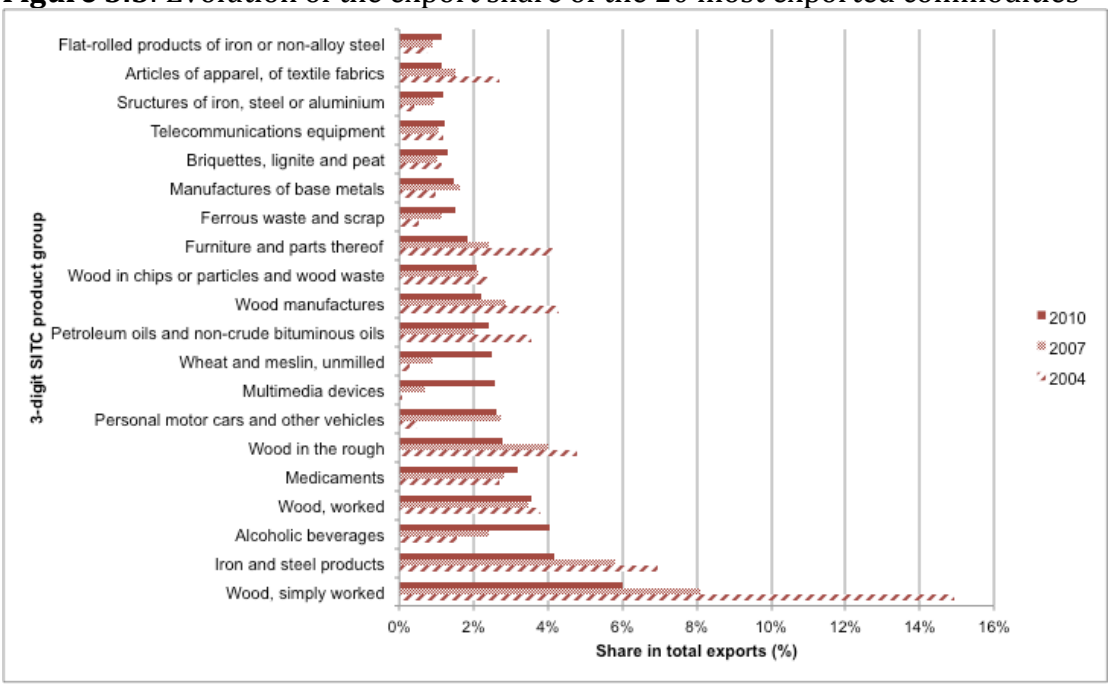
[30] The increase in the export share of personal cars and motor vehicles is likely a temporary phenomenon, as this mostly reflects the re-export of cars that were confiscated from lessees and debtors who were no longer able to pay their obligations [5]. Similarly, the increase in the export share of grains simply reflects the increase in the global price of grain in 2010 [6].

Figure 3.4: Evolution of the export share of the commodities with the biggest absolute changes in export share over the 2004-2010 period[31]



Source: Eurostat

Figure 3.5: Evolution of the export share of the 20 most exported commodities



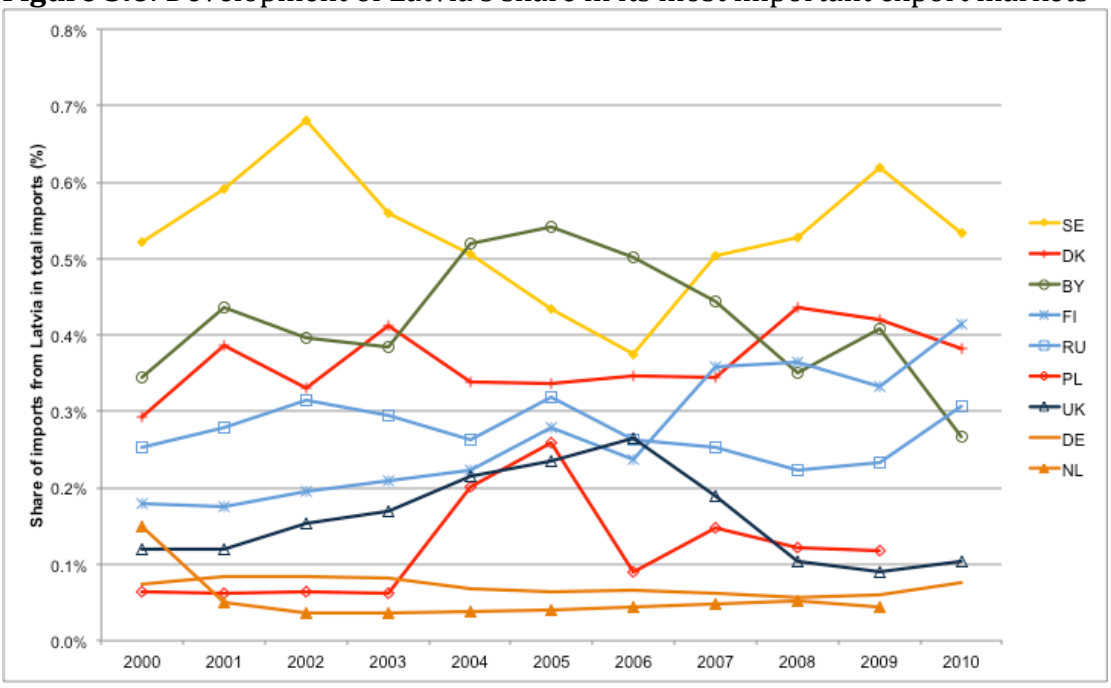
Source: Eurostat

Figure 3.6 shows the 2000-2009 development of Latvia's market share in what were its main export markets in 2010. For the sake of viewability, we do not include Estonia and Lithuania in the graph, because there was a disproportionately large increase of Latvia's market share in these two countries (4.76 percentage points, or nearly 400%, in Lithuania, and 2.91 percentage points, or about 250%, in Estonia). It can be seen that apart from the remarkable increase in market share in neighbouring countries, few definite trends can be discerned, as market shares have been very volatile.

[31] Here and in Figure 4, the 3-digit SITC classification is used for the sake of viewability.

At the same time looking at the Latvian share of its top 20 export commodities in total EU trade (intra plus extra) shows that over 2009-2010 this indicator increased in 16 cases out of the 20, suggesting that the export surge observed in 2010 is more than just a cyclical effect.

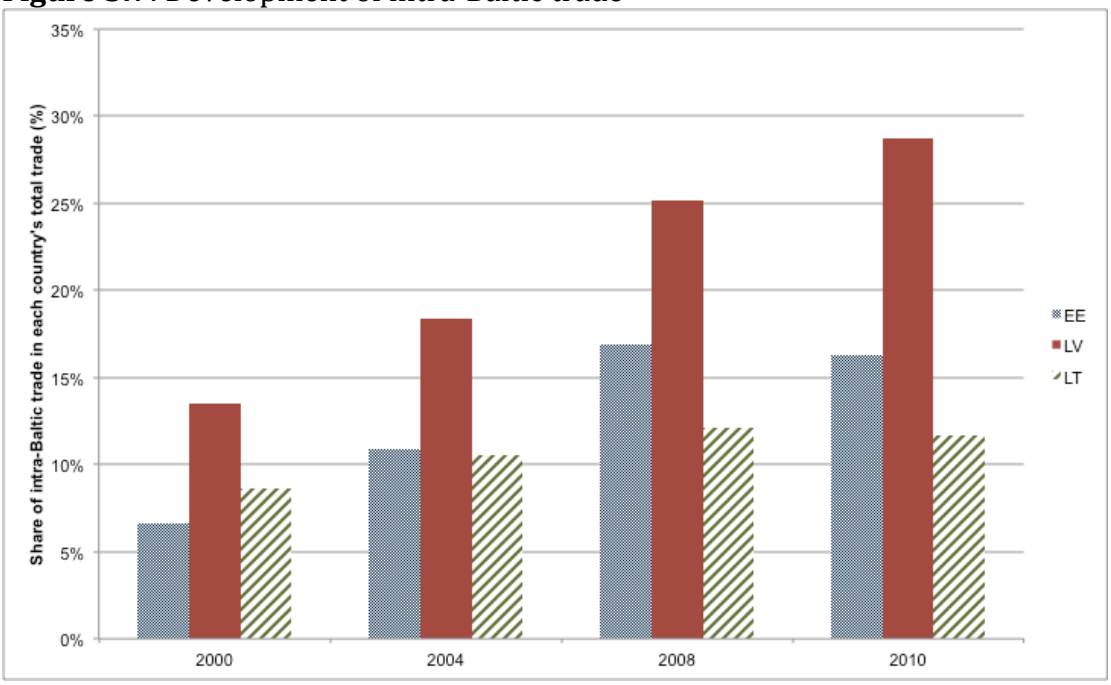
Figure 3.6: Development of Latvia's share in its most important export markets



Source: UN Comtrade

The growth of intra-Baltic trade has been one of the achievements of both the process and reality of EU accession. Figure 3.7 shows that Latvia has the largest share of this trade, and while this intra-Baltic share decreased in Estonia and Lithuania in 2010, it continued to grow in Latvia, even as the total value of intra-Baltic trade fell. This suggests that the Latvian economy may be particularly vulnerable to shocks in the Baltic economies. Although the growth of intra Baltic trade is a post 2004 success story geographical diversification of exports could reduce Latvia's exposure to this risk.

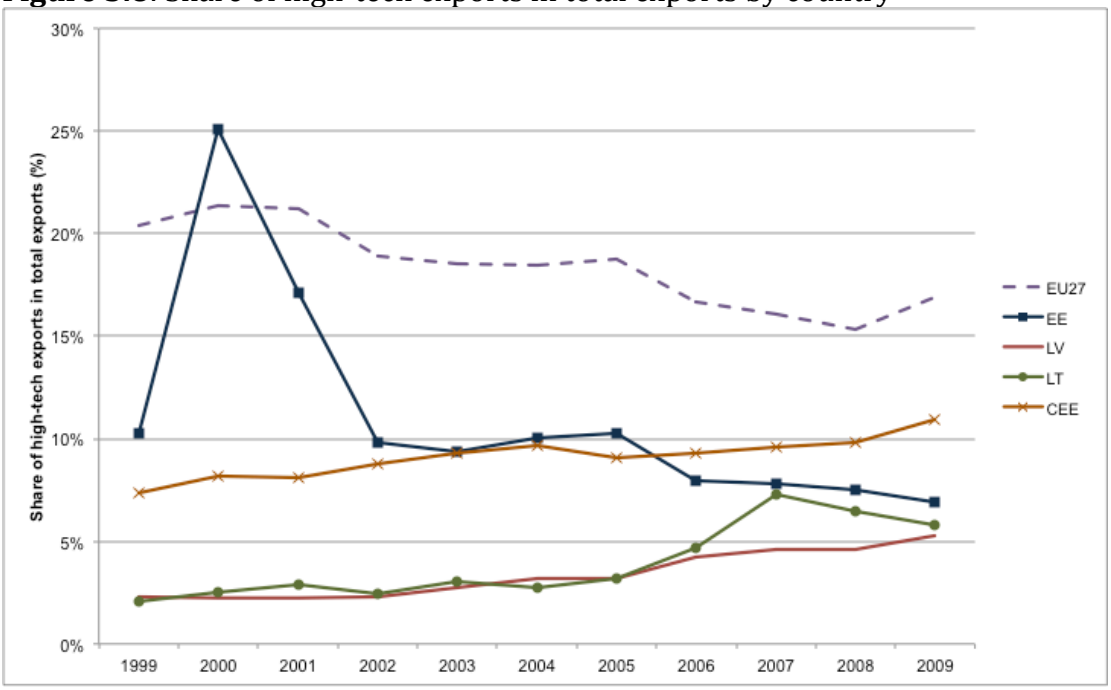
Figure 3.7: Development of intra-Baltic trade



Source: Eurostat; authors' calculations.

The policy debate in Latvia has featured much talk of transforming Latvia into a "high value-added" or "knowledge-based" economy, with an export structure to match. To the extent that meaning can be attached to these ambitions one indicator of is the technological sophistication of exports. Figure 3.8 shows that the share of high technology products in exports has been consistently lower for Latvia than for the EU27, CEE countries, and Estonia but over time has been at about the same level as for Lithuania. At the same time, Latvia's high tech exports share has grown steadily over the 1999-2009 period, reaching more than 5% in 2009 (still less than a third of the EU27 average and only about half of the CEE average).

Figure 3.8: Share of high-tech exports in total exports by country



Source: Eurostat

Services trade has also seen considerable growth in recent years. Latvia's service exports nearly doubled over the 2004-2009 period and they suffered less than goods exports during the crisis, declining only by about 12% in 2009. There has been no discernible concentration trend with rather stable shares over time for most categories.

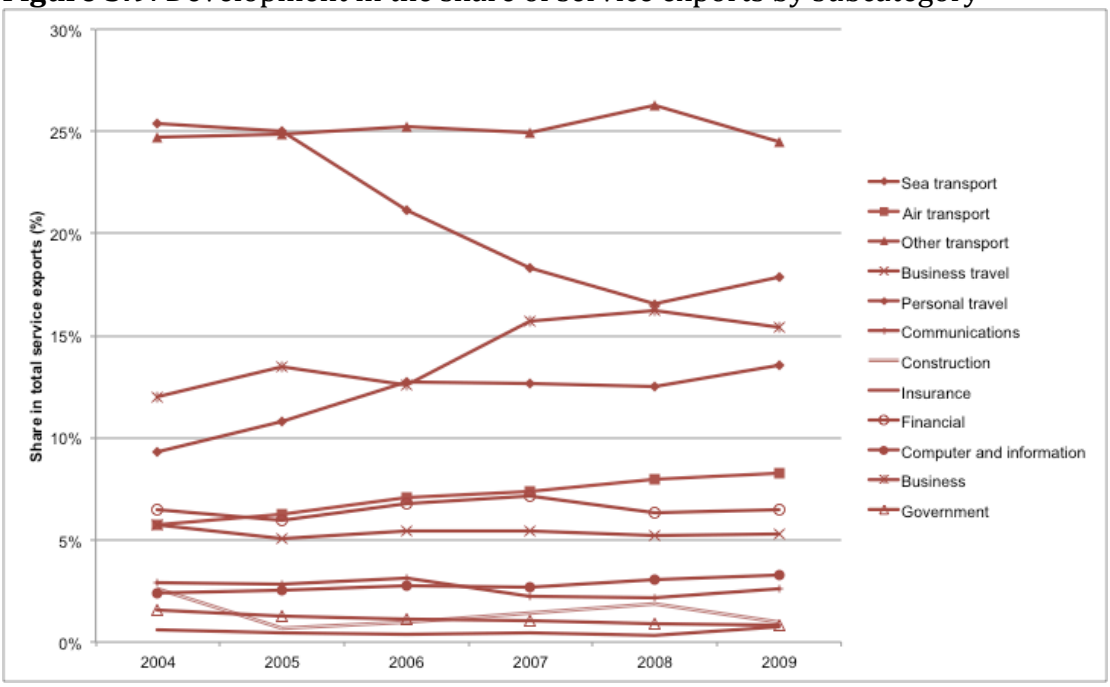
The exception to this has been a 30% decline in the share of sea transport services over 2004 and 2009 – the Latvian export of sea transport grew 30% by value over the 2004-2009 period which is substantially less than the 100% growth for service exports overall. Supporting and auxiliary sea transport services (e.g., those physically provided in ports for incoming and outgoing cargo) have performed better; these have grown by 50% during the period[32]. This is consistent with the relatively good ranking of Latvian transport and logistics infrastructure: Latvia is ranked 37th out of 155 countries in the Logistics Performance Index in 2010, with particularly strong performance in the ease of arranging international shipments (21st place). The overall index places Latvia ahead of Lithuania (45th place) and Estonia (43rd place), and it shows that Latvia has climbed by 5 places since 2007[33].

The moderate performance in sea transport is largely due to the poor performance of the Latvian Shipping Company (LSC), whose turnover dominates this category of service exports (LSC revenues fell by about 17% over 2004-2009 [12]). This can in part be attributed to the unfavourable global conditions for shipping companies: global shipping volumes increased by only 15% during the period (having suffered a setback of 5% in the recessionary year of 2009 [9]), while freight rates dropped by 40-60% [10]. Relative to Estonia and Lithuania, where sea freight transport exports decreased by about 3-4% over 2004-2009 Latvia's sea freight transport service sector has performed quite well.

[32] Much of this increase appears to have come from higher prices as the gross weight of goods handled in Latvian ports increased only by10% between 2004 and 2009, even though it grew by about 15% worldwide [9] and by about 34% in Lithuania [11].

[33] The World Bank's Logistics Performance Index measures the overall quality and readiness of trade logistics infrastructure in a particular country, based on a survey of logistics professionals in both the country itself and its trade partners. The index measures six key areas of performance: customs; infrastructure; international shipments; logistics competence; tracking & tracing; and timeliness.

Figure 3.9: Development in the share of service exports by subcategory



Source: Eurostat

Box 5: Transforming Latvia's economic structure: evidence from a product space analysis

For Latvia, an open economy with little in the way of natural resources, the key to permanent and sustainable income and welfare improvement is in its ability to produce and export goods that are in high demand in the outside world. Better performance can be achieved, at least for some time, through efficiency gains within a given industrial structure. However, evidence suggests that long term convergence to the income levels of high income countries requires that Latvia upgrades the type of products it produces and exports. This requires the transformation of Latvia's production structure, a process that is sometimes called "climbing up the technology ladder".

Basic evidence on Latvia's export structure suggests that structural changes have indeed taken place: exports have become more diversified over the last 10 years and the share of 'high-tech' exports in total exports has steadily increased over the same period. However, in order to investigate more deeply Latvia's potential for structural transformation a more sophisticated approach is needed and for this an in-depth study[1] using the product-space methodology developed by Hausmann and Klinger (2006)[2], and Hausmann, Hwang and Rodrik (2005)[3] was commissioned for the Latvian Competitiveness Report.

The methodology assumes that the success and the speed at which each country can change its production structure depends on its relative position in the product space. The product space analysis for Latvia over the period1995-2009 yields mixed results. On the positive side, we observe positive transformation trends in the Latvian product space after 2000. In particular, the number of products with positive future income generating capacity has increased steadily over the last years, as has the probability that over time Latvia could establish a comparative advantage in the production of at least some of these products.

The most recent trends in the chemical industry are especially encouraging. Already now the Latvian chemical industry in Latvia is producing products that are, on average, more sophisticated than most of its peers in Central and Eastern Europe. In particular, the production structure of pharmaceutical products in Latvia is more favourable for future growth and has higher income generating capacity than in the other Baltic countries. However, in order for these implicit advantages to be fully exploited, it is crucial that this advantageous position in the product space for pharmaceutical products be maintained.

However, the overall degree of sophistication of Latvian exports lags behind not only the most advanced Central European countries, but also Estonia. Moreover, it is a concern that good development prospects, as suggested by improvements in the product space, have not always been transformed into gains in market shares e.g. pharmaceuticals and other chemical products).

Nevertheless the product space analysis confirms that overall export sophistication in Latvia is markedly different from the level observed as recently as ten years ago. The quality content of the Latvian exports has improved with the most notable improvements occurring during the period of 2006-2009 when cost-based competitiveness was severely eroded. Arguably, rising labour costs forced Latvian producers to focus more on the quality aspect of competitiveness, as well as entering new product markets and segments. Overall, during the evidence suggests that in the most recent period, the improvements in the Latvian export structure have been much more pronounced than the models that factor in the country's existing product space would lead to expect. This suggests that economic policies may have contributed to promoting a positive transformation.

[1] Beņkovskis, K., Bitāns, M. and Krasnopjorovs, O. "Product Space Analysis and the Scope for Structural Transformation: The Case of Latvia"
[2] Hausmann R., Klinger B. (2006) "Structural Transformation and Patterns of Comparative Advantage in the Product Space", Harvard University, Center for International Development Working Paper No. 128, August 2006.

[3] Hausmann R., Hwang J., Rodrik D. (2005) "What You Export Matters", Harvard University, Center for International Development Working Paper No. 123, December 2005.

Assessment

- A record export performance has been a notable feature of Latvia's recovery from the recession
- A positive medium term feature of Latvian export performance has been the increased diversification of Latvian exports with a shift away from traditional exports into other areas. Latvia's export structure is now more diversified than that of Estonia and Lithuania and comparable with Denmark's.

- Latvia's relatively low level of total level of trade as compared with its Baltic neighbours and CEE countries in general suggests less success in attracting companies to use Latvia as a link in their global manufacturing and supply chains.

- The technological sophistication of Latvian goods exports, although improving over time, remains low as compared with the EU-27 and as compared with Estonia and the CEE countries as a whole.

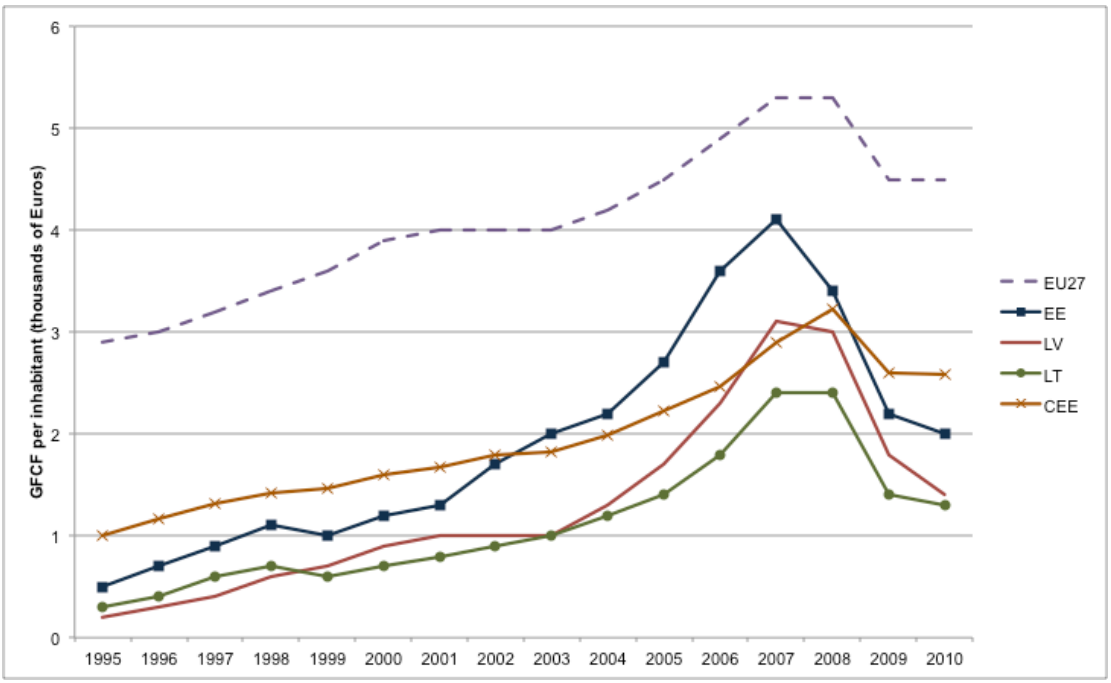
- Latvian service exports have continued to perform well despite adverse world conditions, supported by the highest ranked transport and logistic infrastructure in the Baltic states.

- The growth of regional (Baltic) trade has been a positive outcome of the EU accession process.

3.1.2 Gross fixed capital formation

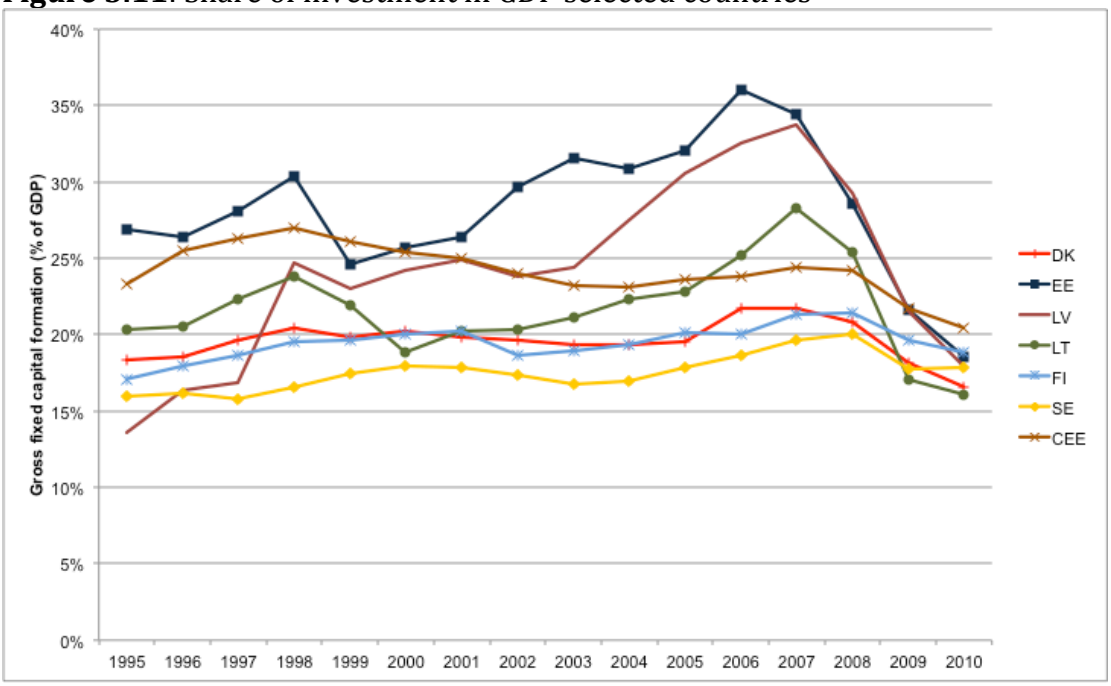
Gross fixed capital formation (GFCF) is the standard measure of a country's investment in physical capital. Thus the level of GFCF provides a forward looking measure of Latvia's productive capacity. It also is an indicator of investor confidence about the future. Thus a high investment levels signals both high future productive capacity and strong confidence about the future of the economy. Figure 3.10 and Figure 3.11 illustrate two indictors of Latvian investment performance in terms of GFCF.

Figure 3.10: Investment (GFCF) per capita selected countries



Source: Eurostat

Figure 3.11: Share of investment in GDP selected countries



Source: Eurostat

It can be seen that in per capita terms Latvia has over the years invested about as much per capita as Lithuania, but less than the CEE countries in general and less than Estonia in particular and much less per capita than the EU27 as a whole. In terms of investment as a share of GDP after lagging behind Estonia in the 1990s, from 2003 until the onset of the crisis, Latvia experienced an investment boom second only to Estonia with investment rates in excess of 30% of GDP.

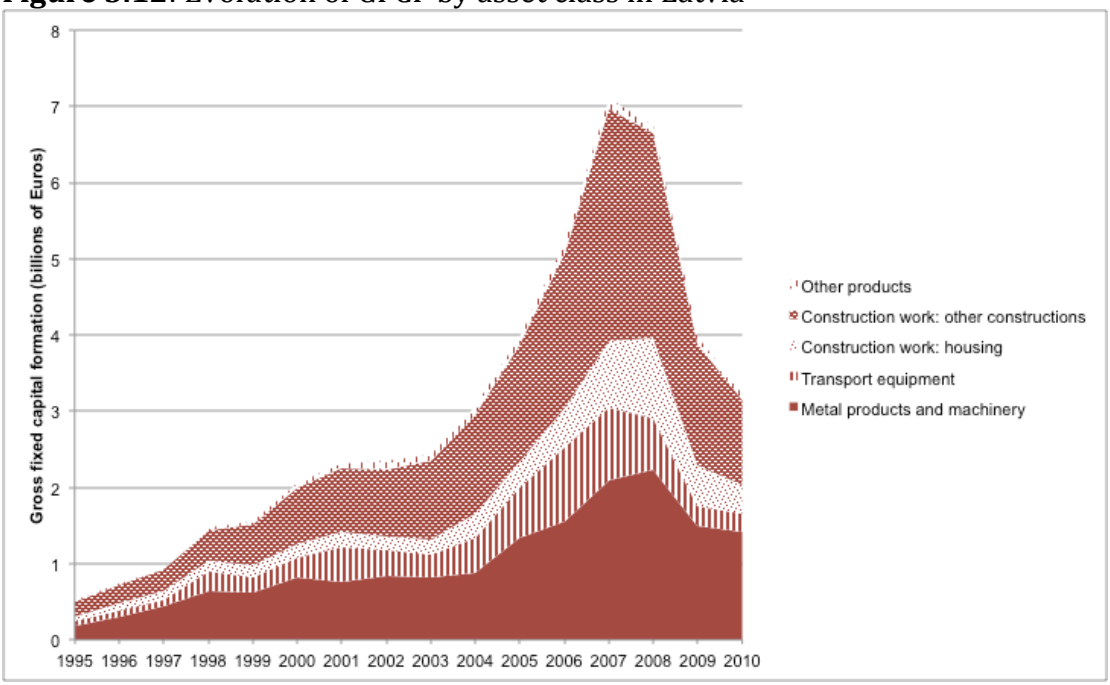
Table 3.1 shows the sectoral shares of gross fixed capital formation where it can be seen that during the boom real estate, renting and business activities accounted for about 45% of all investment. Presumably, the high share of the public sector is partly the consequence of structural funds financed infrastructure investment. Manufacturing has experienced a roughly constant

share of gross fixed capital formation at about 14% but with a dip in 2006-8 when other sectors appeared more attractive. Thus in the boom years investment in real estate and other business activities 'crowded out' investment in manufacturing and therefore helps to explain the particularly low share of manufacturing in GDP in those years (see section 3.5.1 on the sectoral composition of the Latvian economy).

After 2007 investment as a share of GDP decreased rapidly to less than 20% in all three Baltic countries to below that of the CEE countries as a whole but at levels similar to Finland and Sweden. For a country at Latvia's level of development it would be desirable to have investment levels that are higher than in the Scandinavian countries and at least as high as in other CEE countries. So in Latvia not only did the recession reduce current levels of output but has had a negative impact on future productive capacity.

Figure 3.12 shows in a different way the importance of housing and construction in Latvia's investment boom.

Figure 3.12: Evolution of GFCF by asset class in Latvia



Source: Eurostat

Table 3.1: Share of gross fixed capital formation by sector

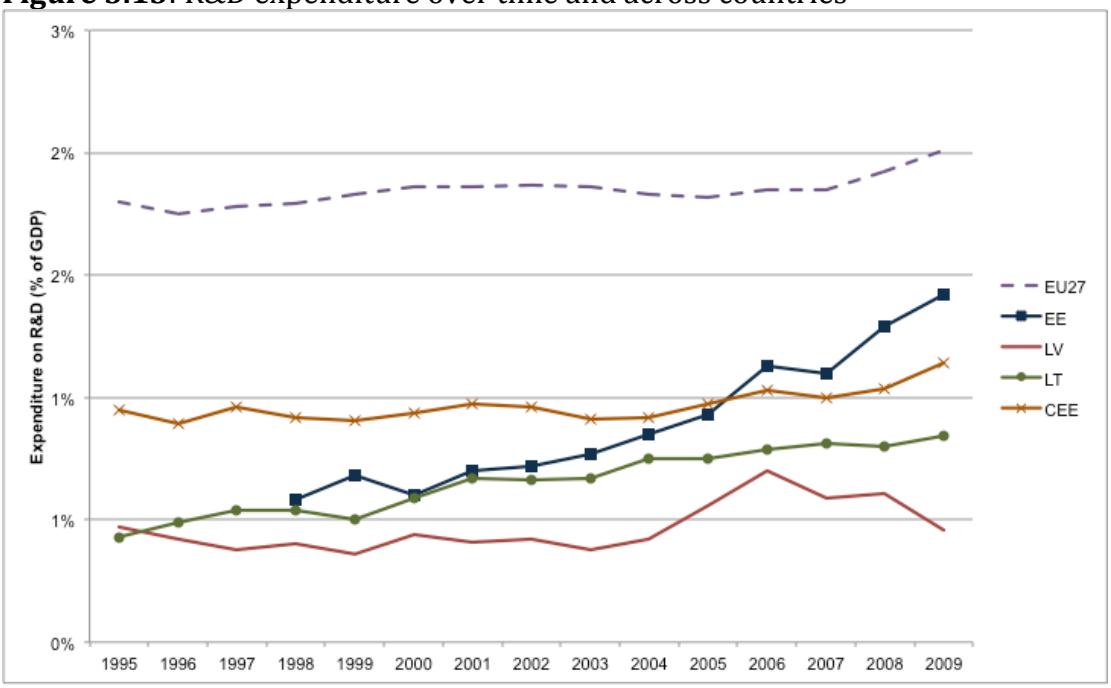
	2004	2005	2006	2007	2008	2009
Agriculture, hunting, forestry, and fishing (A and B)	6.1%	9.2%	6.7%	5.8%	6.5%	7.5%
Mining and quarrying (C)	0.2%	0.3%	0.3%	0.4%	0.5%	0.5%
Manufacturing (D)	14.1%	14.3%	13.7%	12.7%	13.1%	14.8%
Electricity, gas and water supply (E)	9.7%	8.2%	5.7%	5.5%	6.2%	6.4%

Construction (F)	3.3%	3.9%	4.4%	6.8%	3.4%	3.1%
Trade and repairs (G)	12.1%	10.1%	10.8%	9.0%	7.6%	6.4%
Hotels and restaurants (H)	1.6%	2.6%	2.3%	2.1%	2.1%	1.9%
Transport, storage and communication (I)	14.2%	12.5%	12.6%	9.2%	11.4%	10.8%
Financial intermediation (J)	3.4%	2.6%	2.6%	0.1%	1.8%	1.9%
Real estate, renting and business activities (K)	20.0%	22.4%	21.6%	28.4%	27.5%	24.0%
Public sector (L-Q)	15.2%	13.9%	19.5%	19.9%	19.8%	22.8%

Source: Eurostat

A particular form of investment relevant for developing the ambition of a 'knowledge-based' economy is investment in R&D. Although not always counted towards assets on companies' balance sheets, R&D expenditure does represent investments in intangible assets (knowledge and ideas) that are hard to value but may lead, for example, to exportable innovative products and technologies. Figure 3.13 tells the story.

Figure 3.13: R&D expenditure over time and across countries



Source: Eurostat

While the Baltic States all had a similar share of R&D expenditure to GDP in the 1990s, the gap between Latvia and its two neighbours has been widening in every year since then, and has remained well below the average level in the EU27 and in Central and Eastern European countries. Latvia also appears to be unique in that its expenditure on R&D as a proportion of GDP decreased during the crisis. R&D expenditure is more generally relevant to Latvia's innovation performance, which is considered in more detail in section 3.2.2.

Assessment

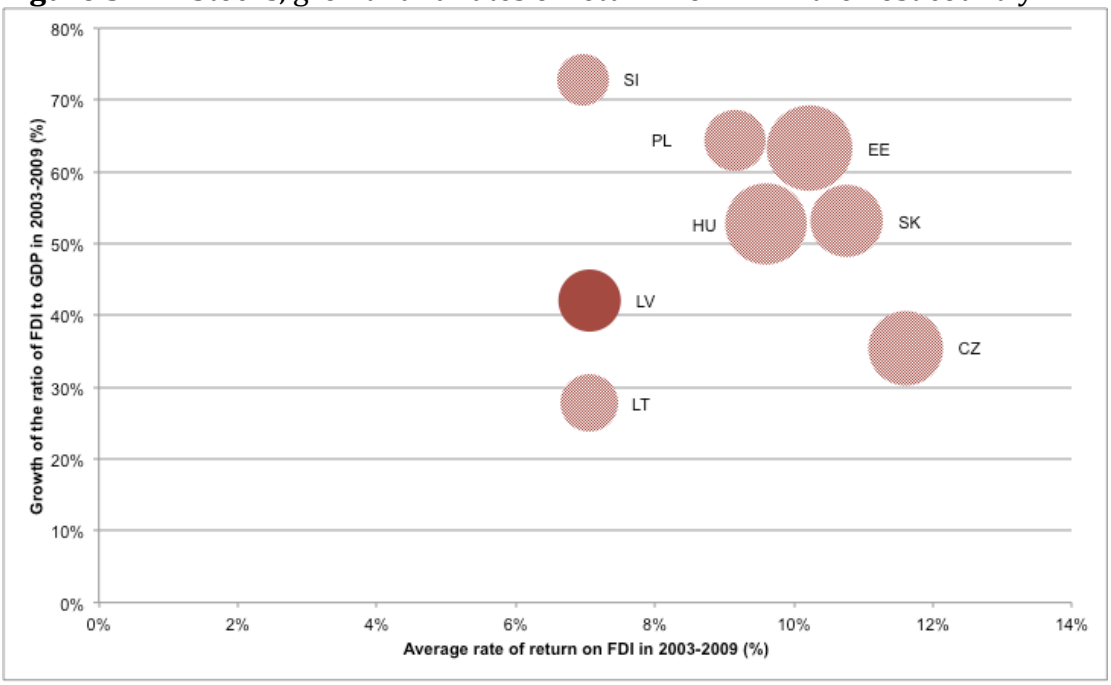
- Except during the boom when investment as a share of GDP exceeded 30% investment has been low for a country at Latvia's stage of development
- In the run-up to the crisis the distribution of investment has been skewed towards sectors such as real estate, which have proved to be low significance for both prosperity and competitiveness.
- The level of R&D investment has been low in relation to all comparators and has even been falling in recent years.

3.1.3 Foreign Direct Investment

The size and growth of inward foreign direct investment is an indicator of a country's growth prospects as well as its ability to attract international financing for development and cover shortfalls in domestic saving. Apart from capital inflows, FDI has shown to be an important conduit to access new technologies and management practices, as well as a way to connect the local economy to global markets.

Latvia is somewhat in the middle of the range in terms of the ratio of FDI to GDP (Figure 3.14).

Figure 3.14: Stocks, growth and rates of return[34] of FDI in the host country



Note: Bubble size proportional to the stock of FDI in 2009 (as a percentage of GDP).
Source: Eurostat; authors' calculations.

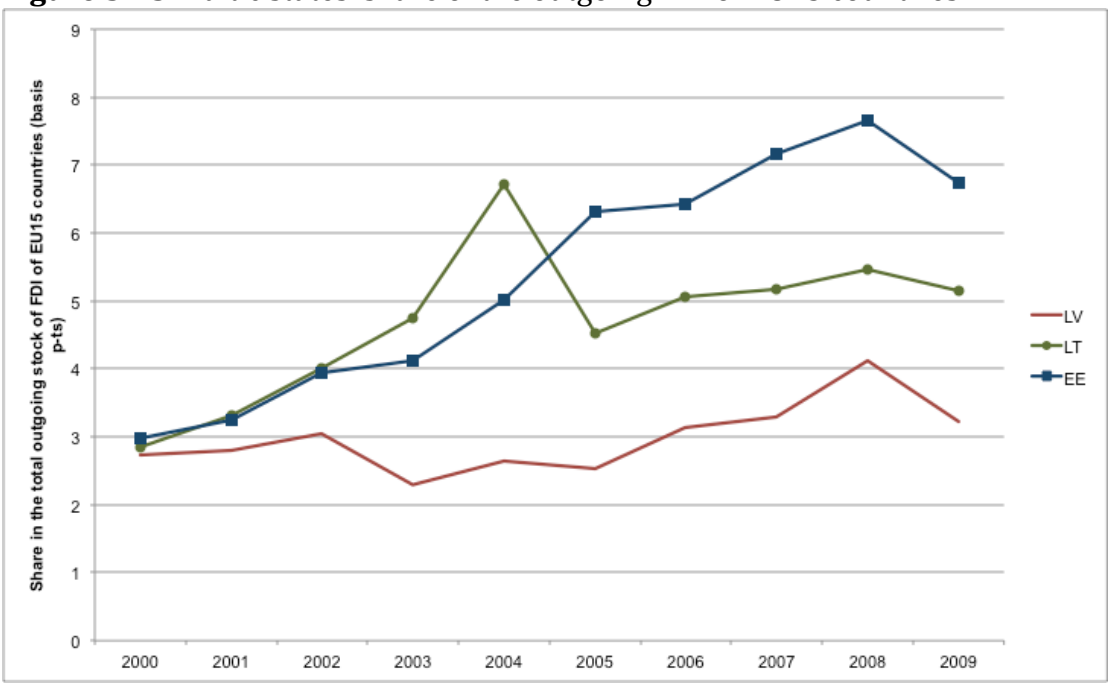
With an FDI stock of about 43% of GDP in 2009, Latvia was ahead of Lithuania (37% of GDP) and marginally ahead of Poland (42%), but behind Estonia, which, with an FDI stock of 81% of GDP is the leader among the comparator countries. However, in terms of the growth of the share of FDI, Latvia is only ahead of Lithuania and the Czech Republic. Overall, Latvia's performance in attracting FDI could be considered passable, particularly bearing in mind the fact that the

[34] Defined here as the ratio of the yearly income from FDI to the year-end stock of total FDI.

estimated returns on direct investment appear to be modest in comparison to those found elsewhere in the region.

One indicator of Latvia's revealed attractiveness as a destination for FDI is its share overall FDI. Figure 3.15 indicates that Latvia's share of the total outgoing FDI of the EU15 countries increased slightly in the 2000-2009 period (from about 0.027% to 0.032%). However, both Lithuania and Estonia have experienced much larger increases in this indicator from a roughly similar starting point in 2000. While one could argue that Lithuania should naturally receive a higher share of FDI because of its larger size, no such argument can be made for Estonia.

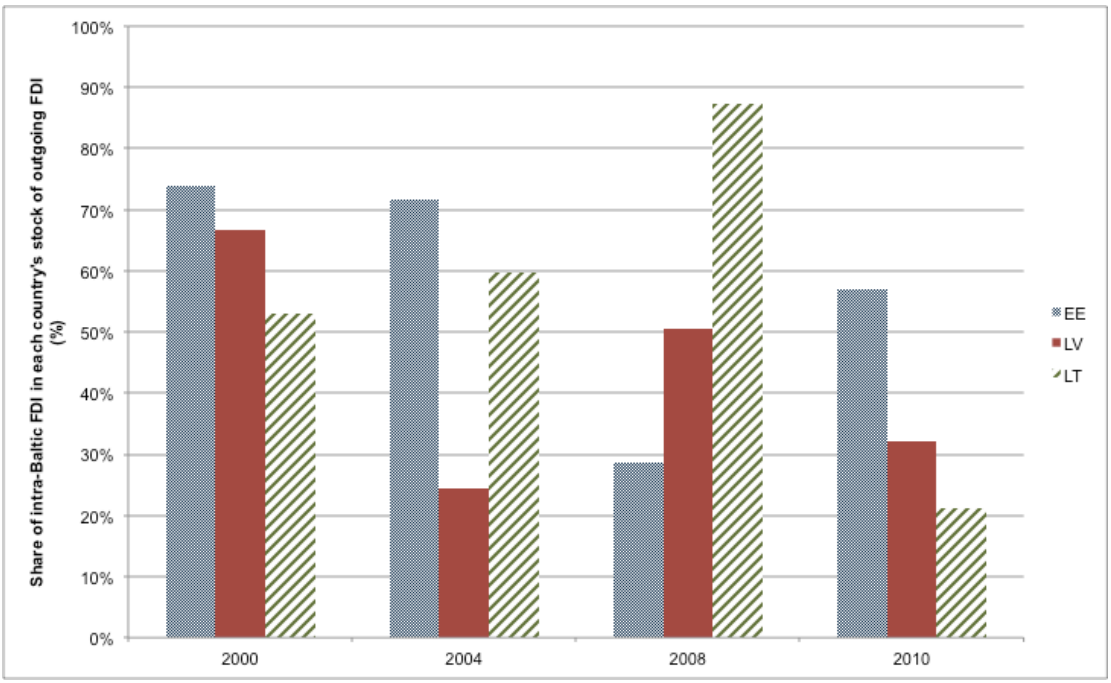
Figure 3.15: Baltic states' share of the outgoing FDI of EU15 countries



Source: Eurostat; authors' calculations.

The three Baltic states invest actively in one another, see Figure 3.16.

Figure 3.16: Share of FDI going to other Baltic states



Source: Eurostat; authors' calculations.

It can be seen that a very large proportion of each country's outgoing FDI goes to the other Baltic states, with Estonia currently the most active intra-Baltic investor in relative terms.

Observed FDI developments have been much influenced by the activities of the mostly foreign-owned financial sector. Between 2004 and 2008, this sector experienced a boom period more pronounced than in many other countries. Table 3.2 shows clearly that the bulk of the expansion in FDI in the 2003-2009 period was in financial, trade, and real estate services, while manufacturing experienced a rather modest increase in the FDI stock.

Table 3.2: Share of foreign direct investment by sector (out of total foreign direct investment)

	2004	2005	2006	2007	2008	2009
Agriculture and fishing	1.7%	1.5%	1.3%	1.7%	2.1%	2.6%
Mining and quarrying	0.5%	0.5%	0.5%	0.5%	0.4%	0.6%
Manufacturing	11.8%	12.9%	9.9%	9.9%	10.7%	11.5%
Electricity, gas and water	7.0%	11.2%	8.7%	5.2%	3.6%	3.4%
Construction	1.6%	1.7%	1.7%	1.6%	1.9%	2.2%
Trade and repairs	15.7%	14.0%	13.1%	11.9%	14.0%	13.4%
Hotels and restaurants	1.2%	1.0%	0.9%	1.0%	1.1%	1.1%
Transport, storage and communication	14.2%	11.5%	8.7%	7.5%	8.2%	7.6%
Financial intermediation	16.1%	21.4%	24.1%	28.3%	28.8%	29.2%
Real estate and business activities	17.8%	16.5%	18.6%	22.0%	20.3%	21.7%
Other services	12.4%	7.8%	12.6%	10.5%	8.9%	6.8%

Source: Eurostat

Table 3.3: Net flows of foreign direct investment by sector and year (millions of EUR).

	2004	2005	2006	2007	2008	2009
Agriculture and fishing	14	7	12	51	43	35
Mining and quarrying	-2	6	5	9	-1	10
Manufacturing	-18	145	27	175	122	59
Electricity, gas and water	144	235	28	-110	-100	-21
Construction	23	19	26	25	28	25
Trade and repairs	54	62	164	146	230	-58
Hotels and restaurants	5	1	13	19	16	-1
Transport, storage and communication	148	6	15	65	95	-49
Financial intermediation	140	359	486	750	191	7
Real estate and business activities	-30	98	373	593	-27	104
Other services	232	-88	399	62	-69	-173

Source: Eurostat

Trade and investment policy developments

Government policy in the area of exports and foreign direct investment is based on the Guidelines for the Promotion of Exports of Goods, Services, and FDI for 2010-2016. These specify three broad policy directions: increasing export competitiveness; [implementing] support measures; [improving the] legal and contractual basis.

Below is a selection of the most important activities and policy changes undertaken in the past few years. This selection is not comprehensive but contains those policies and activities which are significant in monetary terms and which are likely to have a tangible effect on export and FDI and growth[35].

- Export credit guarantees that safeguard exporters against the risks inherent in export agreements with partners in new foreign markets became available in June, 2009. As of April 30, 2011, 63 guarantees had been approved for a total amount of 3.55 million LVL. Applications for guarantees for exports to EU and OECD countries ended in 2010, but applications for guarantees for exports to other countries will continue up until the end of 2013.

- Support for carrying out marketing activities in foreign countries, such as participation in trade events and organising conferences and seminars. A total of about 27 million LVL is available for this activity, and project applications are open until December 2011. The maximum available financing for each applicant is about 140,000 LVL over three years.

- The opening of four new external economic missions in foreign countries in 2011. These representatives and LIAA will operate according to the one-stop-agency principle, which helps avoid a situation where foreign investors have to navigate a network of various governmental agencies in order to gain information or to obtain support for an investment project.

[35] Omitted are activities such as organising training, seminars, consultations, and conferences for the local business community with goals such as "increasing motivation to export" or "increasing the ability to manage exports."

- LIAA's 2011 implementation of an integrated methodology for attracting foreign investment. This methodology coordinates the work of ministries, municipalities, infrastructure providers, government institutions, universities, and research agencies when implementing strategically important investment projects.

- The creation of the Coordination Council for Large and Strategically Important Investments in 2010; the council is headed by the prime minister.

Assessment

- The overall level of FDI is modest

- The focus of FDI has been on activities serving the local market, especially financial services, in the run-up to the crisis

- Intra-Baltic FDI is quite important but is partly driven by investors from outside the region organizing their Baltic activities through a regional HQ in one of the Baltic countries

3.2 Entrepreneurship and innovation

Entrepreneurship plays a crucial role in the development of a nation's competitiveness. From the theory of economic growth follows that knowledge in the hands of entrepreneurs, through formation of firms, is turned into innovations.[36] Innovation is an important sources for productivity growth and future wealth generation. It has become increasingly important as the increasing level of global competition has reduced the opportunities to compete on low cost alone. Innovation covers the introduction of new products, new services, and new ways of serving consumers. It is not only a matter of generating new scientific ideas, but of the ability to create value in new ways.

3.2.1 Entrepreneurship

We distinguish between two basic types of entrepreneurship – *opportunity driven* (when individuals are pulled into entrepreneurial activity to pursue a business opportunity in order to earn higher income or with a desire to be independent) and *necessity driven* (when individuals are pushed into entrepreneurial activity because of no alternative options to earn an income). Opportunity driven entrepreneurship is more likely to contribute to the long term development of a nation's competiveness than necessity driven entrepreneurship.[37] Furthermore, there is a clear link between innovations (see the section on innovations) and opportunity driven entrepreneurship.

Data generated through Latvia's participation in the Global Entrepreneurship Monitor (GEM) allows us to compare Latvia's performance with other GEM

[36] See P. Romer, (1994), The origins of endogenous growth, *Journal of Economic Perspectives*, 8, 3-22. For a discussion of economic growth and entrepreneurship see: P. Reynolds, (1999), Creative Destruction, in Z. Acs, B. Carlsson and C. Karlsson (editors), *Entrepreneurship, Small and Medium-sized Enterprises and the Macroeconomy*, Cambridge: Cambridge University Press.

[37] See Z.J. Acs and A. Varga, (2005), Entrepreneurship, Agglomeration and Technological Change, *Small Business Economics*, 24(3), 323-334.

countries.[38] Comparison with Estonia nor Lithuania is not possible since neither was among the 59 countries participating in the 2010 GEM. Data collected within the GEM initiative is, in addition to the GEM report as such, also published and analysed in the Global Entrepreneurship Development Index (GEDI). The difference between GEM and GEDI is that GEM mainly focuses on a quantitative description entrepreneurial activity whereas GEDI mainly focuses on qualitative aspects.

We start by addressing the overall level of entrepreneurship in Latvia. This will be followed by a discussion geared towards quality of entrepreneurship and the role of entrepreneurial attitudes and aspirations.

Total early-stage entrepreneurial activity (TEA) [39] is the indicator used in the GEM framework to characterise entrepreneurial activity. Figure 3.17 presents TEA data for Latvia and a number of selected comparator countries over the period 2005-2010 and reveals that in recent years Latvia has had a rather high TEA .

Figure 3.17: Total early-stage entrepreneurial activity 2005-2010

Source: GEM Dataset.

The level of early-stage entrepreneurship decreased during the Latvian boom but has increased during the recession. Over 2005-6 TEA was rather stable at around 6.5%, and then dropped to 4.4% in 2007. It seems plausible to interpret this mainly as the consequence of the favourable conditions in the Latvian labour market and people found it advantageous to move from entrepreneurship into

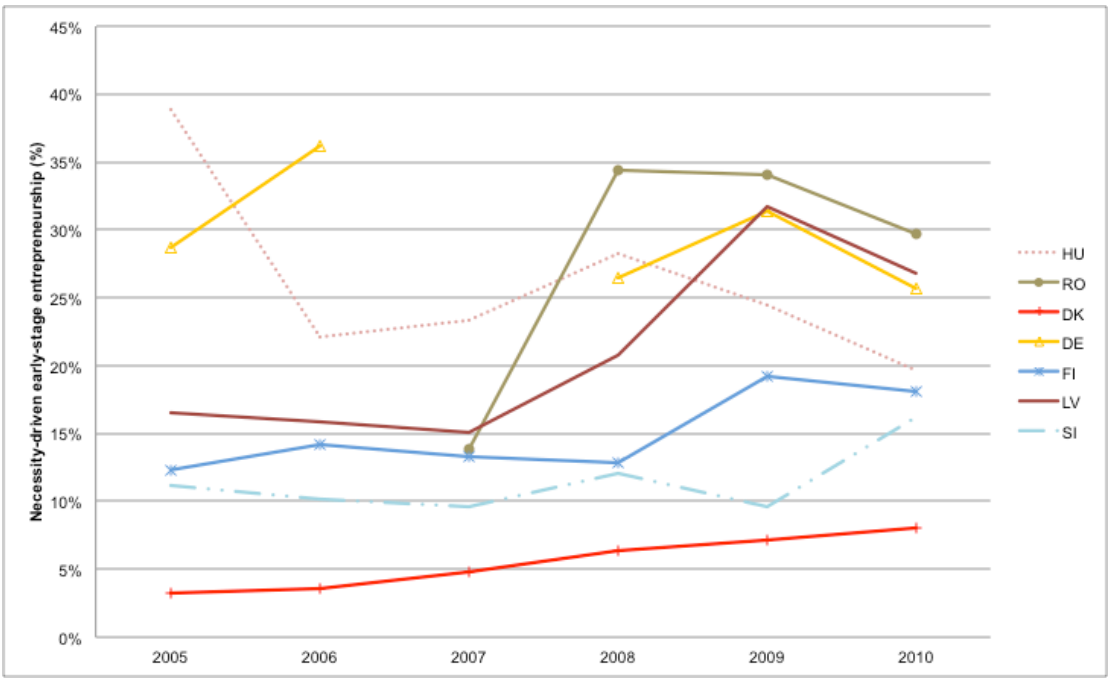
[38] The Global Entrepreneurship Monitor for Latvia is published annually by the TeliaSonera Institute at the Stockholm School of Economics in Riga. See O. Rastrigina *et al.*, (2011), *Global Entrepreneurship Monitor 2010 Latvia Report*, Riga: the TeliaSonera Institute at the Stockholm School of Economics in Riga.

[39] Total early-stage entrepreneurial activity (TEA) is defined as the percentage of adult population (18-64 years old) who are either a *nascent entrepreneur* (i.e. is actively involved in setting up a business they will own or co-own but this business has not paid salaries, wages or any other payments to the owners for more than three months) or is an *owner manager of a new business* (i.e. is owning and managing a running business that has paid salaries, wages and/or any other payments to the owners for more than three months, but for not more than 42 months).

paid employment. As the economy worsened this was sharply in 2008 and continued in 2009 when TEA rose above 10 per cent but fell slightly in 2010. This pattern suggests that the increase in TEA to a large extent is driven by necessity-driven entrepreneurship as employment prospects collapsed. Furthermore, in 2009, necessity-driven entrepreneurship as a proportion of all early-stage entrepreneurship in the wealthiest countries increased by about twenty-five percent in comparison to 2008. In the U.S., that rate jumped from an estimated 12 percent to 23 percent in 2009. Iceland, which like Latvia was severely hit by the recession, saw a similar increase in the necessity driven entrepreneurship

Figure 3.18 supports this hypothesis, where, after Romania, Latvia had the highest share of necessity driven entrepreneurship in 2009 and 2010. It can also bee seen that Latvian necessity driven entrepreneurship is clearly countercyclical, i.e. it increased both in relative and absolute terms, during the recession. Hence, it is doubtful whether the observed recent increase in overall early stage entrepreneurship will contribute as much to development as if the entrepreneurial activity had been the result of perceived opportunities. Many of these attempts to start a business started in 2009 and 2010 will probably result in small-scale business activities with low chances of survival – being either transitory or unsuccessful[40].

Figure 3.18: Proportion of early-stage entrepreneurs driven by necessity-motive selected countries

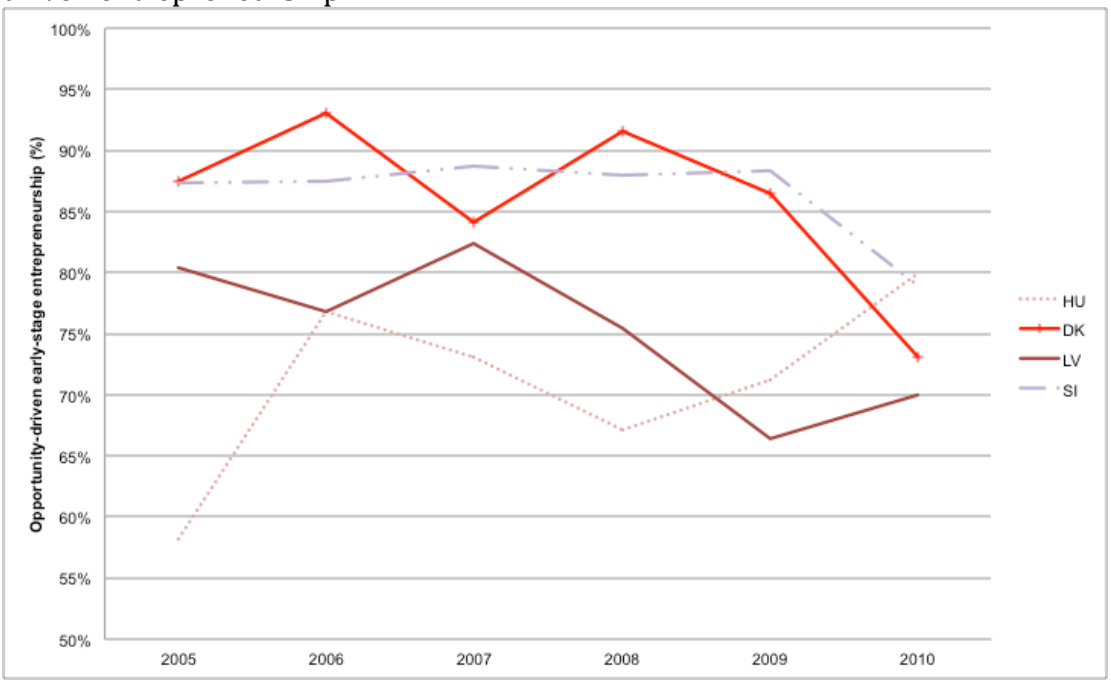


Source: GEM 2010 master data and own calculations.

[40] The underlying argument behind this observation is that necessity driven entrepreneurs are not entrepreneurs because they have a big idea or are passionate about what they are doing – they are just trying to survive as there is no institutional way for them to do so, e.g. workers who are forced to pursue entrepreneurship when they are excluded from the traditional wage labour market. Hence, they will most likely go back to the wage labour market when given an opportunity. Furthermore, as discussed in Glinkina (2003), since the primary role of the business venture is survival, necessity driven entrepreneurship is unlikely to initiate dynamic growth.

Being the mirror image of necessity-driven entrepreneurship, Latvian opportunity-driven entrepreneurship is, as seen from figure 3, pro-cyclical (at least in relative terms), i.e. a high proportion of the early-stage entrepreneurs are involved in opportunity-driven activities during good times. Latvia's share of opportunity driven entrepreneurship has varied quite considerably relative to the comparator countries – being among the top 3-4 during the boom years at the lower end during the economic downturn.

Figure 3.19: Proportion of early-stage entrepreneurs involved in opportunity-driven entrepreneurship

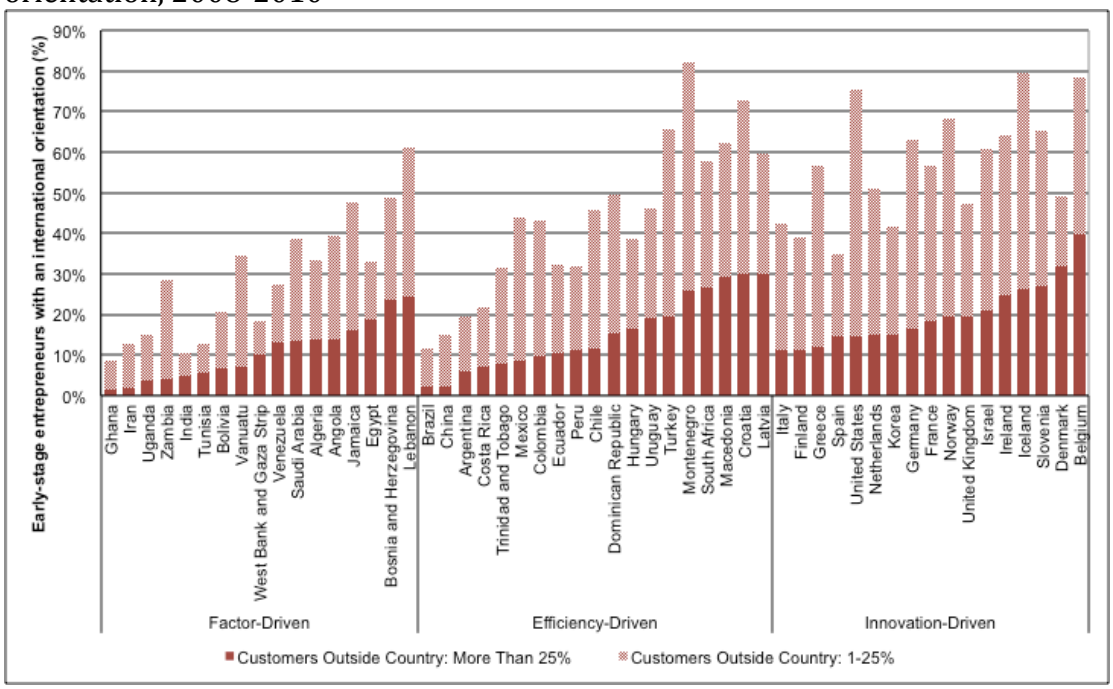


Source: GEM 2010 master data and own calculations

Aspirations represent another characteristic of entrepreneurship. One indicator that captures aspirations is the international orientation of early-stage entrepreneurs. This indicator is based on the proportion of sales to customers outside local economies, i.e. exports, international customers buying online, or international tourists or business travellers.

Figure 3.20 shows the percentage of entrepreneurs stating that they have at least some customers, or more than 25% customers, outside their economies in years 2008-2010. Countries are grouped in the three phases of development and sorted within each phase by having more than 25% customers from outside. A general observation is that larger countries have lower international orientation and this is true for each phase of economic development. This is the case in e.g. Iran, India, Brazil, Argentina, and China. The United States also has a low share of early-stage entrepreneurs with a significant international orientation, although three fifths have at least some international orientation. Latvia has the highest international orientation in the group of Efficiency-Driven countries. This can be explained by the fact that Latvia is a relatively small country size with a small internal market.

Figure 3.20: Percentage of early-stage entrepreneurs with international orientation, 2008-2010

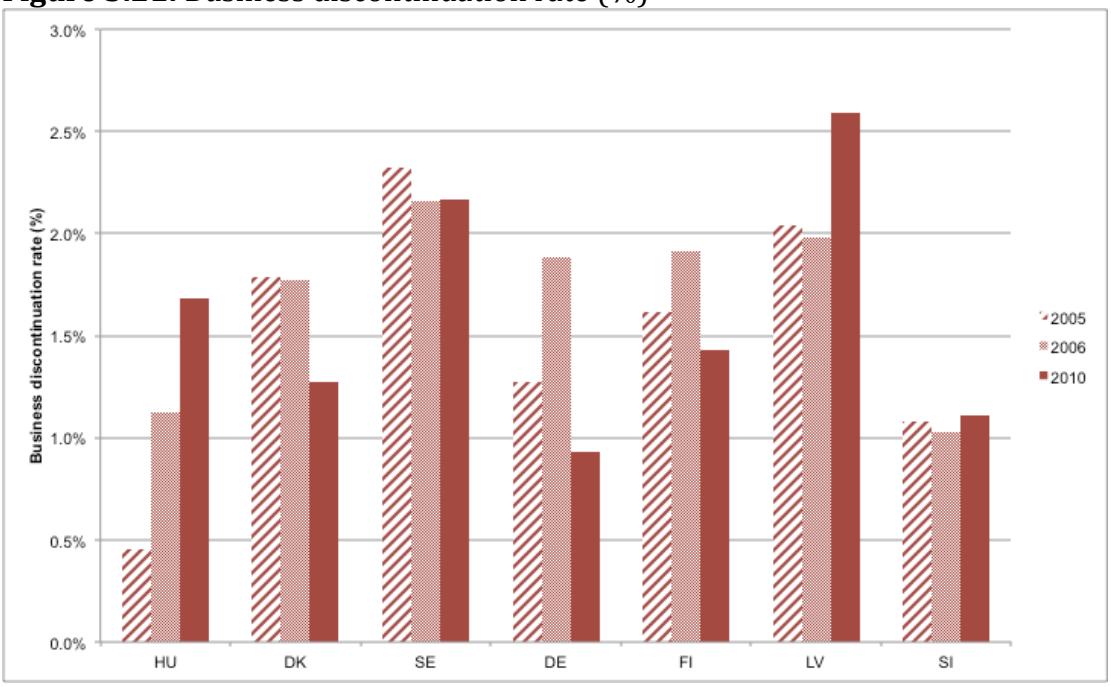


Source: Own calculations based on GEM 2007-2010 master data

The GEM dataset also provides information on the business discontinuation rate and on reasons for quitting.[41] The findings are presented in Figure 3.21. Again Latvia's relative performance varies with the business cycle. The high business discontinuation rate during in 2010 strengthens the argument that many of the new businesses resulting from the increase in TEA in 2009 did not survive long. Business non-profitability and problems in getting finance are the main reasons quoted for business exit in Latvia in recent years. Again, there is variation in detail over the business cycle. The reasons given for quitting support the interpretation that entrepreneurial activity declined in the boom because of the particularly good employment opportunities available then. Thus in 2007 23% of those discontinuing did so because of 'another job or business opportunity' but by 2010 this reason was given by only 6%. However, unsurprisingly, non-profitability of business an problems in getting finance were the most frequently quoted reasons over the period as a whole.

[41] The business discontinuation rate is defined as the percentage of the 18-64 age group who have in the past 12 months discontinued a business.

Figure 3.21: Business discontinuation rate (%)



Source: GEM 2010 master data

The Global Entrepreneurship Development Index (GEDI)[42] provides a deeper understanding of the quality of Latvian entrepreneurship and how it is linked to individual as well as institutional factors. The GEDI captures three different dimensions of entrepreneurship – each of them defining a sub-index:

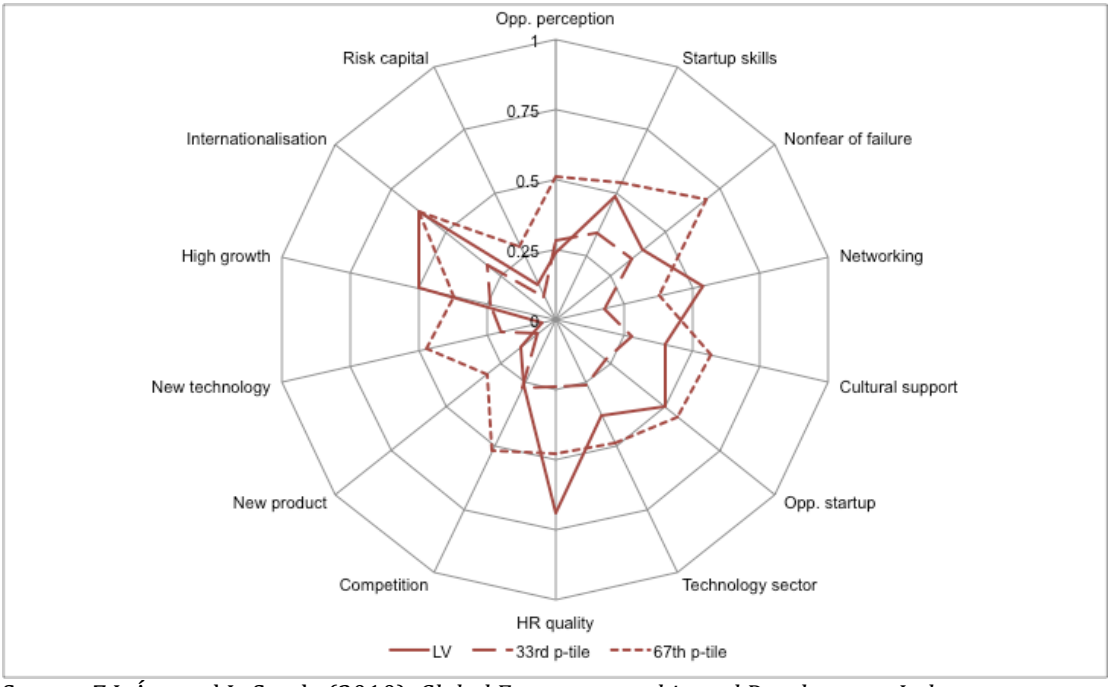
- The entrepreneurial attitude sub-index (ATT) reflects the attitudes of a nation's population as it relates to entrepreneurship. Aspects covered include attitudes towards recognition of business opportunities and towards failure and fear of failure.
- The entrepreneurial activity sub-index (ACT) focuses on measuring entrepreneurial activity with high growth potential (by contrast GEM indicators predominantly look at all types of entrepreneurial activity irrespective of growth potential). High growth potential is defined by various qualitative measures.
- The entrepreneurial aspiration sub-index (ASP) identifies the distinctive, qualitative and strategic nature of entrepreneurship such as newness of a product or technology, growth ambitions and internationalisation.

Each sub-index comprises several dimensions and the findings for Latvia with respect to these dimensions are presented in Figure 3.22, which benchmarks Latvia against GEDI countries at the same level of economic development – efficiency driven economies.[43]

[42] The Global Entrepreneurship and Development Index for 2011 is presented in Z.J. Ács and L. Szerb, (2010), *Global Entrepreneurship and Development Index*, Edward Elgar Publishing Ltd. The data for Latvia comes from *op. cit.* pp 206-209. For a discussion of the GEDI see Z.J. Ács and L. Szerb, (2009), The Global Entrepreneurship Index, *Jena Economic Research Papers*, 2009-028.

[43] The GEDI countries are grouped according to three levels of economic development – factor driven, efficiency driven and innovation driven. These stages of economic development are suggested by M. Porter (2002).

Figure 3.22: The relative position of Latvia in qualitative entrepreneurship dimensions



Source: Z.J. Ács and L. Szerb, (2010), *Global Entrepreneurship and Development Index*

Latvia overall scores particularly poorly in several dimensions of "aspiration" including risk capital, high growth, new technology, new products, and competition. The only aspirational dimension where Latvia scores well is internationalisation. On the other Latvia scores very well in terms of quality of human capital and fairly well in terms of tech sector – dimensions that usually are positively correlated with new technologies, high growth etc.

Latvia scores better in the other sub-indices, in particular in terms of attitudes, networking and start-up skills with opportunity perception being an exception.

SME/Entrepreneurship policy developments

Measures that relate to micro enterprises are largely based on the government's Policy paper (Conception) on Support Activities for Micro Enterprises, which was adopted on October 30, 2009 and is rooted both in Latvia's EU 2020 Strategy and in its Strategic Development Plan for 2010-2013.

Many policy changes (those that fall under the government's Plan for the Improvement of the Business Environment) are looked at in the section on administrative efficiency. Policies looked at under the exports/FDI or innovation sections could also easily be interpreted as supporting entrepreneurship. The most significant direct measures in terms of financing or the probable effect on entrepreneurial activity are as follows.

- Risk capital and seed/starting capital funds. The risk capital and seed/starting capital funds have been established as private companies with capital from the European Investment Fund and from local institutional investors. The funds invest in early-stage local innovative businesses, and total public financing amounts to around 24 million LVL. Applications for financing are expected to be open until the end of 2013.

- Mezzanine loans are higher-risk loans that are provided by the Latvian Guarantee Agency and are subordinated to bank loans (the mezzanine loans are only given in combination with bank financing). The size of loans ranges from 100,000 LVL to 7 million LVL, and the total available financing is 17 million LVL. Applications for these support activities are expected to be open until the end of 2013.

- Business incubators, which is an EU funds initiative that is set to last until end 2014. The aim of the project is to create and sustain incubators that support new and small entrepreneurs across the country by providing them with infrastructure, consultations, and services that are the basis of business development. A total of 10 such incubators are now in existence, providing services to 323 small, micro and medium-sized enterprises. The total financing for this activity was around 20 million LVL.

- The Enterprise Competitiveness Improvement Programme, which provides financing to small, medium, and large enterprises that have economically sound long-term growth plans but which are not able to obtain financing because of currently perceived higher risks. The programme provides investment loans (up to 5 million LVL in size) and loans for financing current assets (up to 2.5 million LVL in size). The loans are mostly geared towards manufacturing companies and companies that use EU fund financing. In total, the Mortgage Land Bank plans to issue loans amounting to 210 million LVL by the end of 2013. Loans amounting to 150 million LVL have already been approved.

- ESF programme „Support for Self-employment and Entrepreneurship". This programme provides a set of complex support measures for people who are just starting their business, including consultations, training, loans, and grants. Total available financing is 23 million LVL, of which about 7 million LVL has already been used up. Within the framework of this initiative, start-up financing is available for up to 600 new business start-ups, while free consultations, training and advice is available for up to 1200 start-ups. Applications for support within the framework of these measures closed in May 2010, but the activity is still on-going.

- Small and Medium Enterprise Micro Crediting programme, which provides loans of up to 3000 LVL for the self-employed and for enterprises of up to 10 people. Total available financing is around 5 million LVL, and the programme lasts until July 2015.

- Support for entrepreneurship in particularly supportable regions. This measure was enacted with the goal of promoting commercial activity in less developed parts of the country. With in the framework of the measure, financing was available to small, micro, and medium-sized enterprises for investments in fixed capital, including intangible assets. The second stage of applications finished in December 2009, and a total of 22 million LVL was available.

- Support for employee training either for businesses individually or in partnerships of businesses. Applications for these two programmes have already closed, and total available financing was around 25 million LVL.

- Micro-enterprise tax, which was enacted in September 2010 and provides the option for companies with small turnover and a small number of workers to pay a micro enterprise tax, which is an all-in tax of 9% of the turnover. The tax encompasses personal income tax and social security contributions for employees, as well as corporate income tax.

- The significant lowering of the administrative fees for registering a business.

- Introduction of the option to establish limited liability companies with as little as 1 LVL of starting capital.

Assessment

- Overall early stage entrepreneurial activity is quite high in Latvia.

- The recent growth of early stage activity has been largely the result of necessity-driven entrepreneurship induced by the collapse of employment opportunities in the recession

- Latvia seems to do fairly well in terms of quantitative aspects of entrepreneurship whereas it scores poorly in terms of qualitative aspects especially in dimensions relating to new technology and innovation.

- The international orientation of Latvian entrepreneurs is quite high

3.2.2 Innovation performance

The previous section identified Latvia's relatively weak performance in innovation based entrepreneurship. This section follows up with a discussion of Latvia's overall innovation performance.

Innovation, either in producing new or improved products and services, or in finding more efficient ways of producing and delivering existing products to the customers, is at the core of competitiveness. Innovations can be viewed as coming in two broad categories. One type of innovation is introduction of new products, services, or production processes that are totally new to the world. These innovations push out the world's technological frontier and are crucial for creating competitive advantages in advanced economies. However, firms can also learn to produce products that are new to them, but not to the world. This type of innovation is more relevant to developing countries where competitive advantages are achieved by climbing up the product ladder.

There are three common approaches to measuring innovations: (i) using number of patents; (ii) business investment in research and development (R&D); and (iii) self-reported product or process innovations from survey data. Each method has its advantages and disadvantages.[44] The first approach looks solely on what is considered to be entirely new innovations, whereas the other two approaches could capture both types of innovations discussed above.

[44] Patents are criticized for being an overly narrow measure of innovations. Innovations that are new to the firm but not the market cannot be patented, for example. R&D investment may or may not result in introduction of a new product and is, therefore, an imperfect indicator.

The *Summary Innovation Index* (SII) developed by UNU-MERIT at the Maastricht University for the European Commission's Innovation Union Scoreboard represents the standard approach to measuring and comparing innovation in Europe. The SII is based on 25 indicators of innovativeness, including patent count, R&D expenditure, and firm-level product or process innovations.[45] Here we complement the SII data by patent registrations in the U.S. and EU, which provide better insights at innovative activity at the top rungs of the product ladder. [46]

According to the 2010 Innovation Union Scoreboard, Latvia was European Union's worst performer in innovative activity, followed by Bulgaria. Figure 3.23 compares Latvia's SII in 2006-2010 to selected countries, as well as for averages for EU-15 ('old' member states') and EU-12 ('new' member states).[47] A number of conclusions are apparent from this figure. First, Estonia's innovation performance vastly exceeds that of the other two Baltic states. Estonia's 2010 SII is more than twice that of Latvia. Second, Estonia's lead in innovations appeared well before 2006, the first year for which SII data are available. Third, Latvia's innovation performance over the last three years has been stagnant.

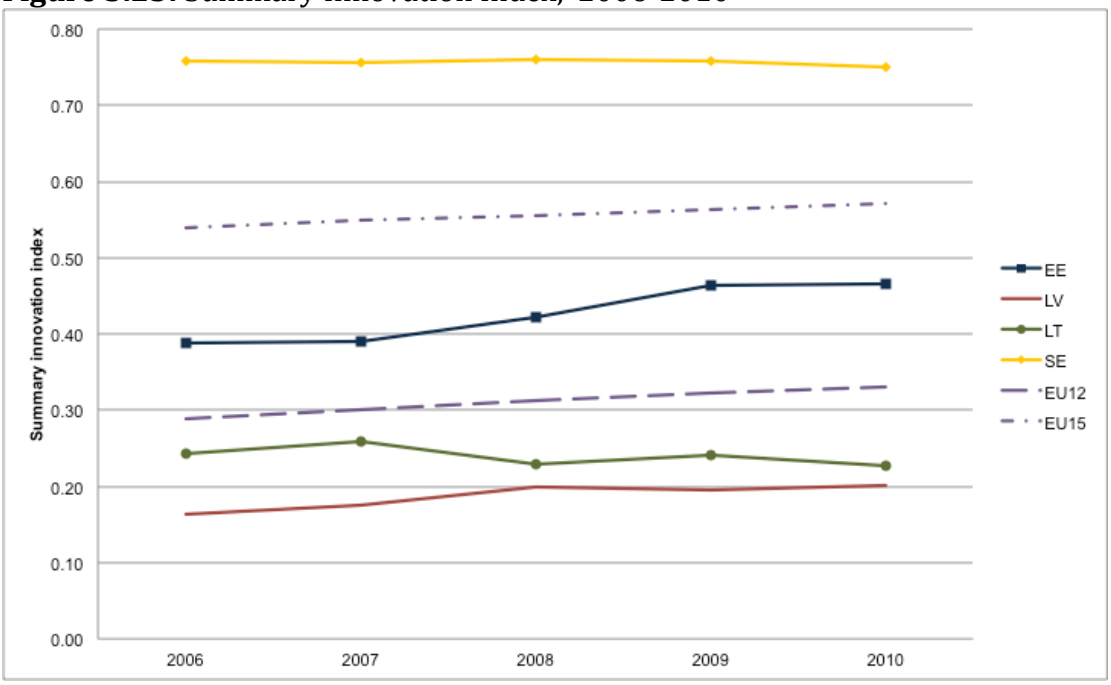
[45] This relates to the 2010 SII. Somewhat different indicators were used for 2009 and for previous years.

[46] The data sources used are: Innovation Union Scoreboard, 2010, [accessed July 20, 2011] http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010; European Patent Office, [accessed July 20, 2011] http://www.epo.org/about-us/statistics/granted-patents.html; ISI Web of Science [accessed July 20, 2011]

US Patent and Trademark Office [accessed July 20, 2011] http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_allh.htm

[47] Our choice of countries for comparison is guided by three considerations. The first is to compare to both a representative developed European country and to a representative new member states. Thus, we compare to the average for the EU-15 and EU-12. Second, we compare to both Estonia and Lithuania, due to the many similarities with these countries. Third, we compare to Sweden – because of its geographic proximity and also its leadership in the area of innovations.

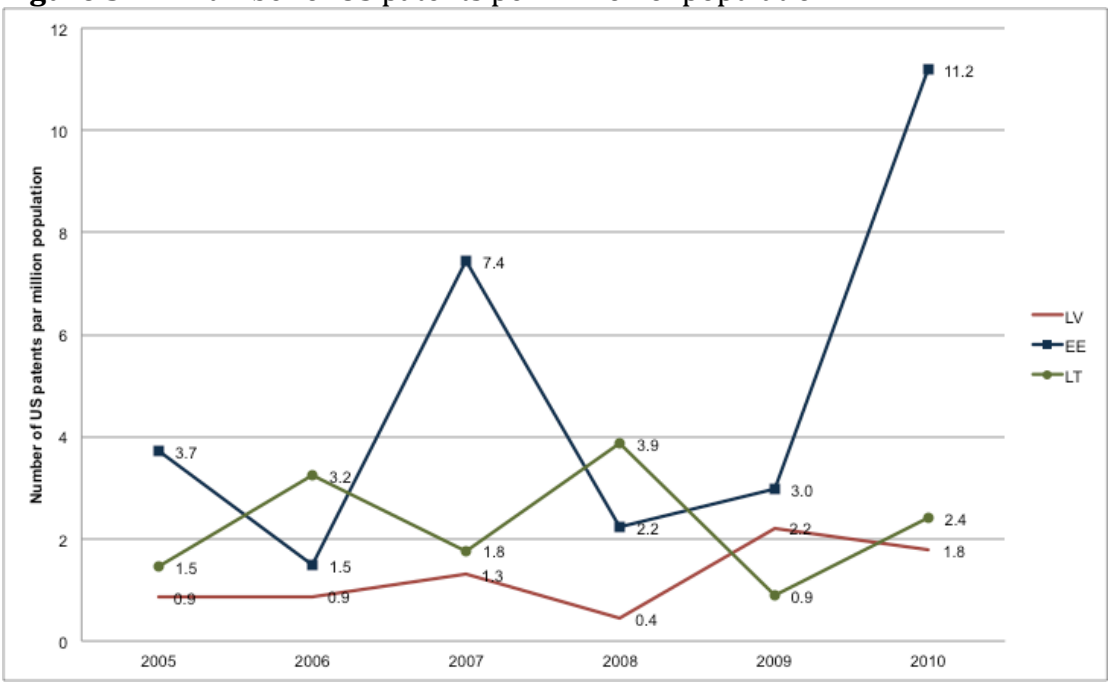
Figure 3.23: Summary Innovation Index, 2006-2010



Source: Innovation Union Scoreboard, 2010

The picture of Latvia's weak innovation performance painted by the EU Innovation Union Scoreboard data is confirmed by data on patent registrations – in particular when compared to Estonia by looking at the number of registered patents in two of the world's most important and technologically advanced markets – the US and the EU. Figure 3.24 and Figure 3.25 show the dynamics of patent registrations per million of population in the US and EU originating with residents of the Baltic states over 2005 to 2010.[48]

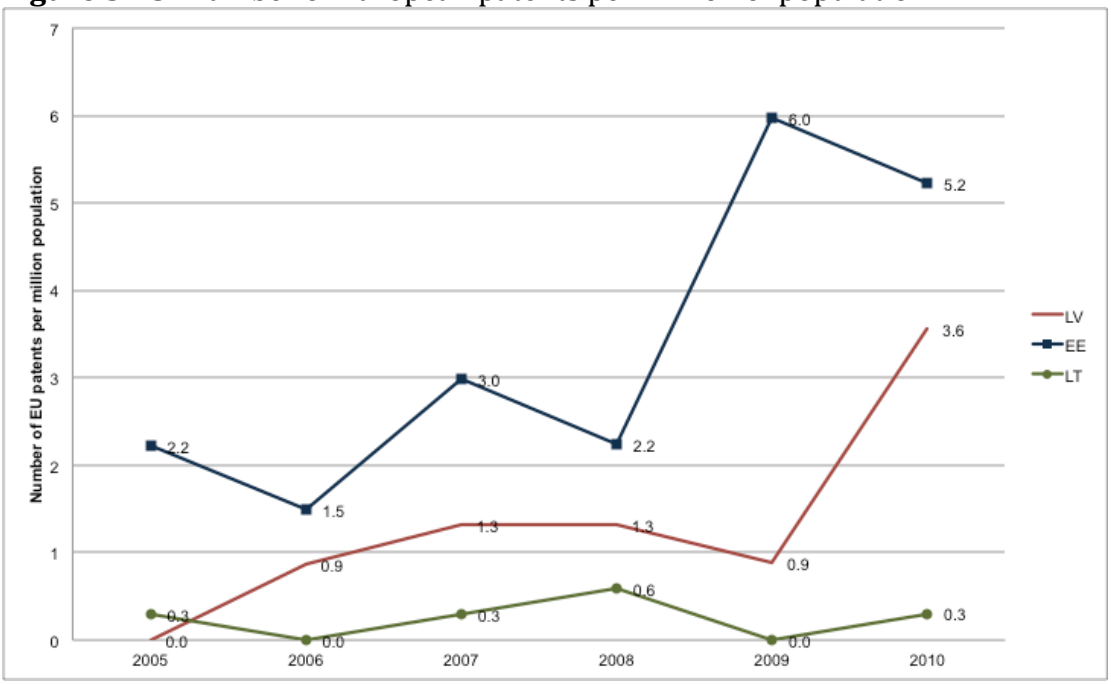
Figure 3.24: Number of US patents per million of population



Source: US Patent and Trademark Office, own calculations

[48] In the case of US, the origin of a patent is determined by residence of the first-named inventor.

Figure 3.25: Number of European patents per million of population



Source: European Patent Office, own calculations

Further, Table 3.4 compares numbers of patent registrations in these two major markets in 2010 also with Sweden, and the averages for EU-15 and EU-12. Clearly, Latvia's competitive advantages in the upper rungs of the product ladder vis-à-vis developed countries are tiny. For example, the number of patent registrations in US originating to EU-15 countries, per million population in 2010, were about 45 times those of Latvia. The difference with Sweden is even more staggering – almost hundred-fold. Furthermore, Latvia's performance in this area lags behind Estonia's significantly and roughly on par with Lithuania's. All in all Latvia's weal innovation performance is likely to impair its long run competitiveness

Table 3.4: Number of patents registered in 2010 per million population

	US Patent Office	European Patent Office
Estonia	11.2	5.2
Latvia	1.8	3.6
Lithuania	2.4	0.3
Sweden	170.7	157.1
EU-12	3.8	2.4
EU-15	81.2	69.5

Source: US Patent and Trademark Office, European Patent Office, own calculations

Box 6: Innovations, exports and financing of small firms in manufacturing and knowledge intensive industries in Latvia.

The main body of the report extensively documents the well-known weaknesses of Latvian innovation performance. The in depth study commissioned for the Latvian Competitiveness Report goes behind the descriptive statistics and shows that part of the explanation for poor innovation outcomes lies in the financial constraints faced by small firms in Latvia. This clearly links up with the broader issue of the competitiveness. Innovativeness of small firms is a key aspect of what makes them competitive both domestically and in the international markets. Similarly, ability to break into the international markets (i.e. exporting) is a sign of competitiveness. Hence, understanding the set of factors that causally determine both innovations and exports should be of great interest to policy-makers, and can help to devise policies that would improve the competitiveness of Latvian firms.

Using a unique micro data on small businesses, the Survey of Innovative Businesses in Latvia (SIBiL), the in depth study builds on the work of Gorodnichenko and Schnitzer (2010)* to examine how far underdeveloped financial markets and difficulty in accessing external financing act prevent firms in Latvia from exploiting potential complementarities between innovation and export activities.

Thus the study sheds light on two particular questions of practical interest to policy makers. Firstly, how far is observed underutilization of external financing by small firms in Latvia a result of supply-side imperfections (e.g. reluctance to lend to small firms), or of demand-side imperfections (e.g. poor quality of business plans)? Secondly, what is interplay between financial frictions, exports, and innovations of small firms in Latvia?

The identification and estimation of causal effects in this context proves to be extremely challenging. This study goes to considerable lengths to establish the direction of causal effect between innovations, exports, and financial constraints. Although conventional wisdom seems to suggest that such a link exists, there are other, competing explanations. For example, financial constraints could be the result of poor investment ideas, or in the inability of small business owners to sell their ideas to potential financiers.

Using a bivariate probit framework, as well as instrumental variables models, which seek to take fuller account of interaction between various factors it is found that financial constraints have a strong negative effect on innovations in Latvia. Quantitatively, the estimated effects are very large. The estimated elasticities of innovating and exporting with respect to financial constraints are -1.46 and -1.91, respectively. The latter, for instance, implies that a reduction in the share of firms that experience financial constraints by 1% is associated with an increase in the share of exporting firms by 1.91% after controlling for other factors.

Thus this in depth study provides further independent evidence that policy aimed at removing the financial constraints facing small businesses in Latvia is likely to pay off in terms of more exporting and more innovative businesses and hence of a more competitive Latvian economy.

* Gorodnichenko, Y. and Schnitzer, M. (2010). "Financial Constraints and Innovation: Why Poor Countries Don't Catch Up," NBER Working Papers 15792

Assessment

- Latvia's innovation performance is poor in all dimensions of measurement
- Latvia's weak innovation performance as indicated by Innovation Scoreboard data is confirmed by data on patent registrations.

3.3 Macroeconomic imbalances

Temporary macroeconomic imbalances, like trade or current account deficits, wages growing ahead of productivity, or fast growth of domestic credit, are normal features of economic activity that do not need to reduce prosperity. If these imbalances become structural or unsustainable, however, their eventual adjustment occurs in painful crises. The Latvian economy has just experienced such a crisis. Data on imbalances is partly a warning mechanism on unsustainable trends that policy needs to react to. It also provides information on weaknesses in the competitiveness fundamentals that enable the emergence of imbalances.

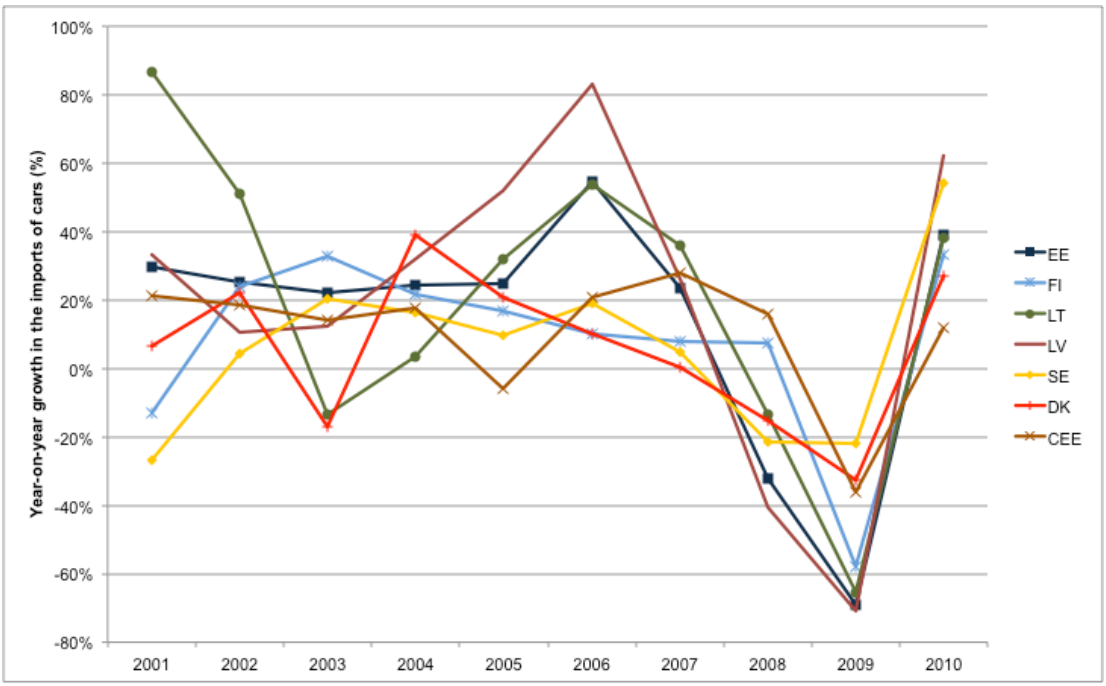
In this section we shall examine Latvia's experience from the perspective of imbalances using the following indicators:

- Trade and the current account
- Wages and labour costs
- Private credit and real estate

3.3.1 Trade and the current account

At Latvia's stage of development investment needs in excess of domestic saving can be expected to be associated with a current account deficit and has indeed been the experience for most of the last 20 years. However, following EU accession in 2004 large inflows of capital fuelled a lending and consumption boom that not only inflated wages and prices but also led to a surge in imports of many consumer goods that were not produced at home. Cars, whose imports surged by as much as 80%, are a good example (see Figure 3.26).

Figure 3.26: Growth rates in the imports of cars selected countries



Source: Eurostat

The result of this was record current account deficits observed in the years after the then alarming 10% of GDP figure was first breached in 2004. Figure 3.27 shows the 20% plus of GDP current account deficits are explained by the even larger negative balance in goods trade. The improvement in the current account since the onset of the recession also originates in an improved trade balance together with a surge in transfers in 2009. The current account deficit between 2000 and 2008 was financed through the extensive lending activities of foreign-owned banks and by FDI.

Figure 3.27: Development of the Current Account balance in Latvia

Source: Bank of Latvia

A combination of import collapse and strong export performance meant that in 2010 a historically record low balance of trade on goods services of about minus 0.8% of GDP was observed. It remains to be seen how the balance will develop as internal demand recovers and opportunities for swift expansion of exports diminish.

3.3.2 Wages and labour costs

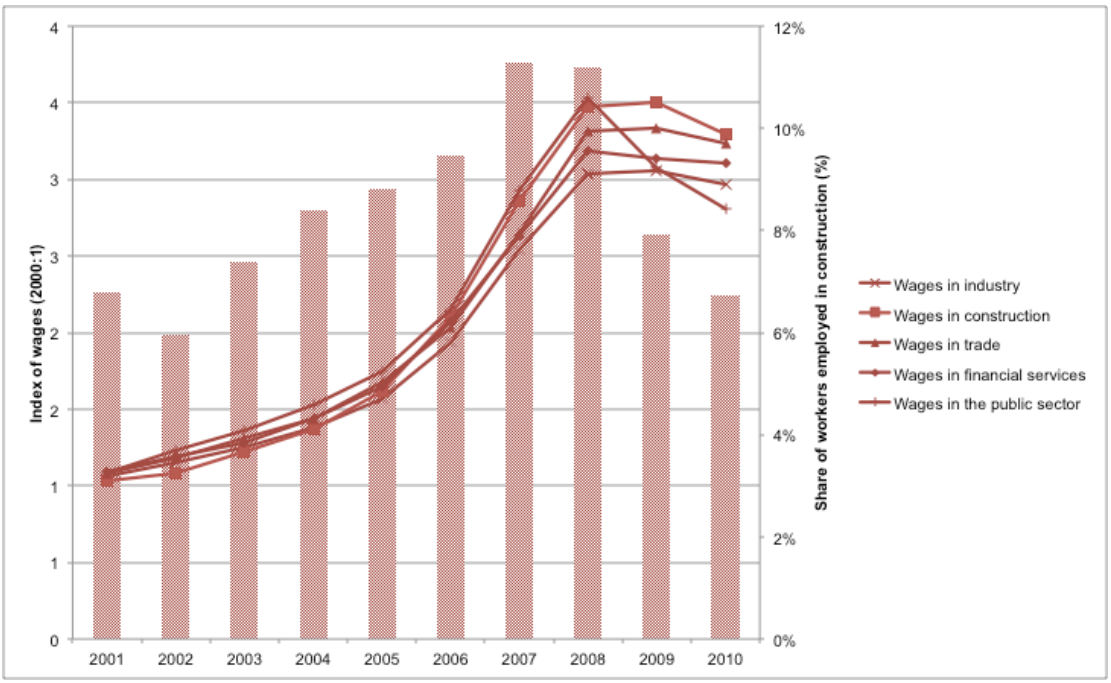
The recent development of wages in Latvia can be divided into three distinct periods. Firstly, during 2001-2004 Latvia experienced what appeared to be a period of normal catching-up growth associated with the prospects and process of EU accession. Over this period real wages and productivity evolved more or less in line with each other — productivity growth varied between 5.5% and 9% a year, and real wages grew at between 5% and 8% a year. This was followed by a wage explosion that started after EU accession in 2004. The third phase corresponds to the so-called 'internal devaluation' of 2009-2010.

EU accession in 2004 and the peg to the euro in the same year led to large capital inflows that fuelled a boom in the domestic real estate and construction sectors. As seen in Figure 3.28, this inflated output, employment and wages in these sectors. At the same time rapidly growing tax revenues prompted a government spending binge, which led to wages in the public sector growing even faster than those in the construction sector. These wage developments, combined with large-scale emigration[49] of working-age people to EU countries with open labour markets, created pressure for employers elsewhere in the economy to raise wages in order to retain their workforce.

Overall productivity growth in this period continued at much the same rate as before 2005, but nominal wage growth (hourly) was 15% in 2005 and surged to 30% in 2007 and even in 2008 was as high as 22%. During the whole 2001-2008 period, Latvia experienced a 228% increase in nominal wages, or a 77% increase in real terms. This is well-reflected in the evolution of nominal total labour cost per hour, which saw an increase of 221%. At the same time, labour productivity, measured as real GDP per hour worked, rose only by a cumulative 61% in 2001-2008, implying a fairly large cumulative wage-productivity gap, which is well illustrated in Figure 3.29.

Figure 3.28: Development of total labour costs by sector

[49] Recent census figures suggest that the number of emigrants might be somewhere around 0.3 million, or around 13% of the population.

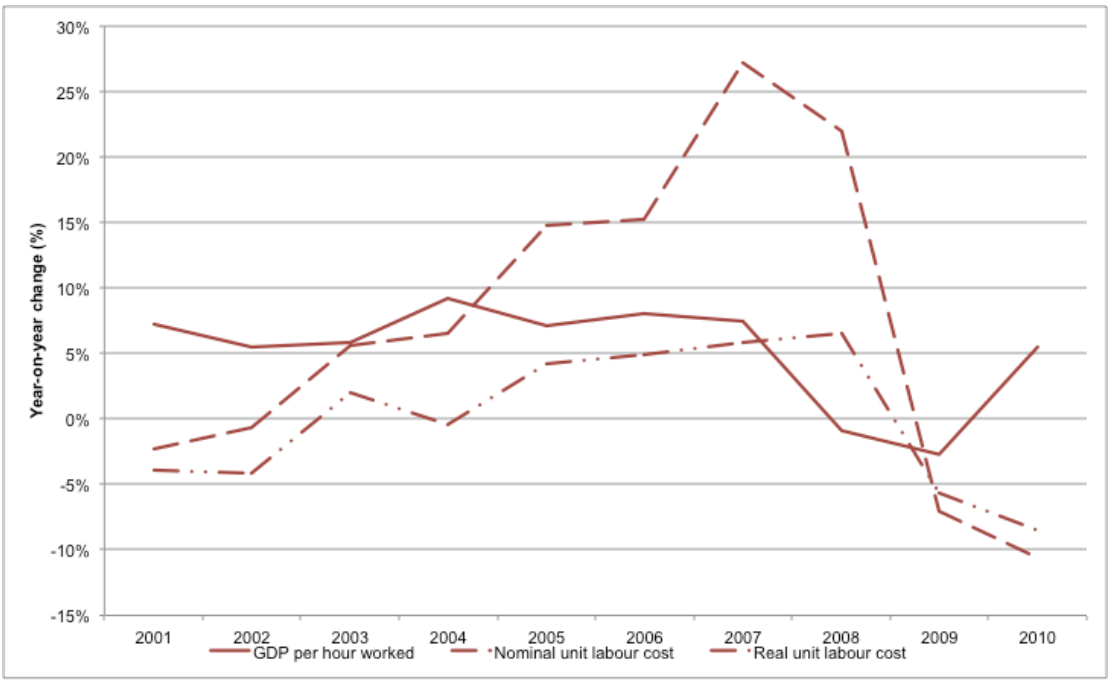


Source: Eurostat; European Commission.

Over 2009 and 2010 both real and nominal wages fell. The international financial crisis and the burst of Latvia's property bubble in 2007-2008 brought an end to the period of economic expansion and wage growth. In 2008-2010, real GDP experienced a cumulative fall of more than 20%, and LFS unemployment[50] rose to slightly more than 20%. Faced with falling profitability and demand, employers reduced their workforce and lowered wages and salaries. In this, the public sector was clearly the leader, as loss of tax revenues and the need to bail out one of the country's biggest banks widened the budget deficit and necessitated drastic spending cuts. A major target of the cuts was public sector wages as a result of which the average before-tax wage in the public sector declined by 17% over 2008-2010 and nominal total labour costs per hour fell by about 21%.

Figure 3.29: Development of economy-wide wages and productivity

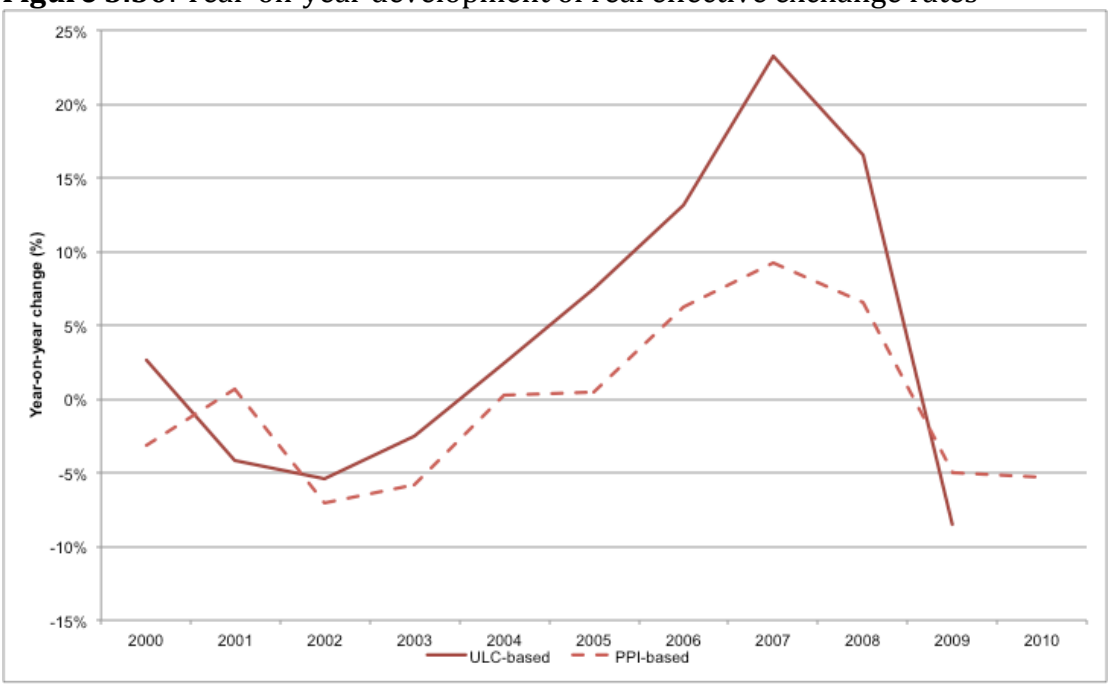
[50] 'LFS unemployment' means the unemployment rate calculated according to the Labour Force Survey, sometimes also called the 'job-seekers rate'.



Source: European Commission.

Latvia's fixed nominal exchange rate meant that the growth of labour costs in excess of productivity was translated directly into a loss of price competitiveness in world markets. This is illustrated in real exchange rate developments.

Figure 3.30: Year-on-year development of real effective exchange rates



Source: European Commission; Bank of Latvia.

Figure 3.30 shows that the unit labour cost (ULC)-based real effective exchange rate (REER)[51], as calculated by the European Commission, appreciated by about

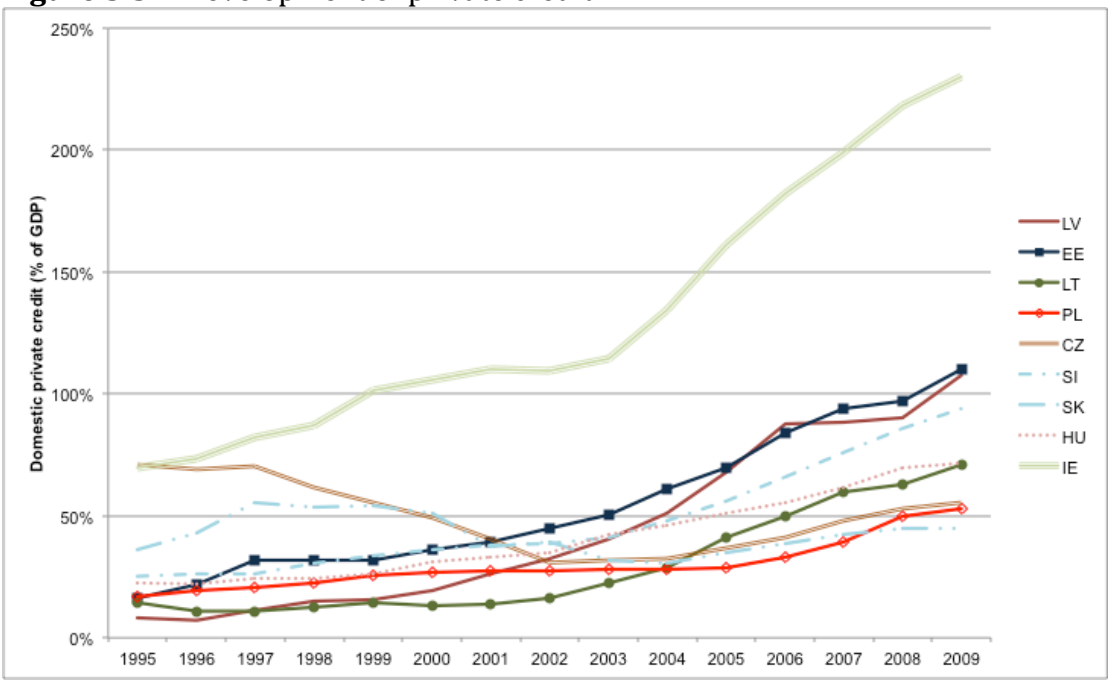
[51] The real effective exchange rate (REER)is a trade-weighted index of bilateral exchange rates which takes into account movements in prices as well in nominal exchange rates. The ULC-based REER uses unit labour costs as the relevant price/cost index. This ULC-based REER is often

75% over the period 2005-2008. In peak recessionary year of 2009 the ULC-based REER did fall by 8.5% in the, but this was insufficient to regain all of the previously lost competitiveness. Similarly, the PPI-based REER[52], calculated by the Bank of Latvia, shows appreciation of about 24% in 2005-2008 but a cumulative depreciation of about 10% in 2009 and 2010[53].

3.3.3 Private credit and real estate

The years leading up to the economic crisis were associated with a rapid expansion of credit both to businesses and to households, which fuelled the real estate and consumption bubble, as well as contributing to- and financing the current account deficit. Figure 3.31 illustrates the exponential increase in the leverage of the private sector in the 1995-2009 period, during which the ratio of private credit to GDP increased nearly 14 times. While the resulting ratio of 108% of GDP is not excessive by the standards of *developed* countries (e.g., Ireland had a ratio of over 200% of GDP in 2009), this is the second-highest private sector leverage among the *CEE* countries, which is all the more impressive when one takes into consideration that Latvia in 1995 had the least private credit relative to GDP.

Figure 3.31: Development of private credit



Source: World Bank.

regarded as the best indicator of developments in a country's international price/cost competitiveness.

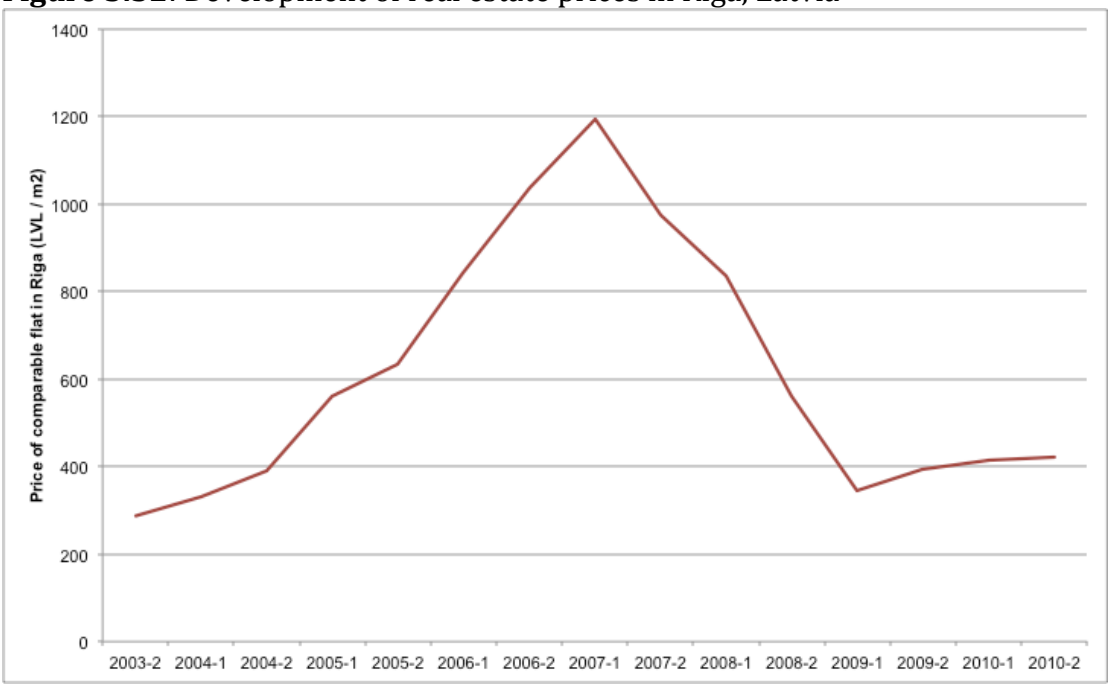
[52] The producer price index (PPI) is the best measure of locally produced goods, as opposed to the Consumer Price Index which includes the prices of imported goods. Thus the PPI is probably the best measure of 'price competitiveness'.

[53] Judgements about whether a particular real exchange rate is 'appropriate' cannot be made on a simple before and after analysis but need to be based on a concept of an equilibrium real exchange rate. Estimating a medium run equilibrium real exchange rate is a complicated task involving estimates of medium term sustainable capital flows. Needless to say we do not have such an estimate for Latvia. However given the imbalances observed in the run up to the crisis it is difficult to get away from the judgement that the real exchange rate developments at that time were unsustainable. Whether we now (2012) observe an equilibrium real exchange rate remains an open question.

A major problem with the credit expansion is the loans were largely used in ways that did not increase the productive capacity of the economy e.g. construction work and transport equipment constituted the majority of gross fixed capital formation up until 2007, and real estate, renting, and business activities, rather than manufacturing, was the sector that had the greatest share of investment.

Figure 3.32 shows the sheer ferocity of the credit-fuelled real estate bubble: prices of flats in Riga more than quadrupled in the span of less than four years. The fact that the borrowed money was largely "consumed" means that the repaying the loans will have a negative net effect on disposable income in the future, as the loans themselves cannot be expected to give rise to much additional output and income.

Figure 3.32: Development of real estate prices in Riga, Latvia



Source: Latio

Assessment

- After EU accession the Latvian economy was characterised by the emergence of major imbalances both internal and external.
- As a result of the recession and of policy action imbalances are presently not an issue.
- It is an open question whether there structural reforms have been made that will reduce the probability that imbalances will re-emerge as the economy recovers.

3.4 Structural composition

The structural composition of an economy is affected by many factors, including the historical evolution of its competitiveness fundamentals, the particular endowments of the location, and the legacy effects of past structures. It provides

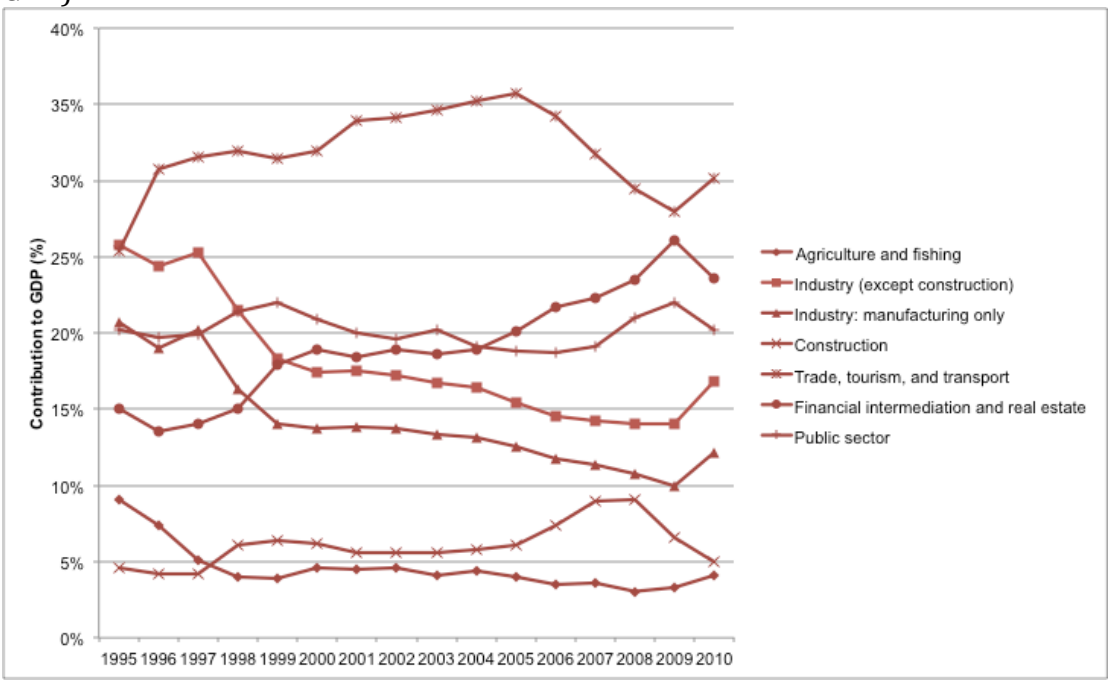
both rich insights into the context in which prosperity is currently created, and into the competitiveness profile that has traditionally been in place.

3.4.1 Sectoral Composition

The economy of Latvia has experienced three major episodes since 1991 that have left a mark on the structure of the economy: i) the break-up of the Soviet economic system in Latvia in the early 1990s and the transformation into a market economy; ii) EU accession in 2004 and the subsequent real estate and consumption bubble; iii) the economic crisis of 2008- 2009 and the on-going recovery.

The most significant structural trend that started already in 1991 is the decline in the share of manufacturing in GDP. Figure 3.33 shows, the GDP share of industry in Latvia decreased from 26% in 1995 to 17% in 2010, and the share of manufacturing fell from 21% to less than 10% in 2009. Interestingly, the share of manufacturing increased in 2010 in line with the strong export performance observed in that year. Table 3.6 shows that in 2010 Latvian industrial performance is about 5 to 6 percentage points below that of its Baltic neighbours and about 2 percentage points below the European Union level.

Figure 3.33: Development of the sectoral composition of Latvia's economy (% of GDP)



Source: Eurostat

The other notable structural development is the near-doubling of the share of the financial intermediation and real estate sectors in the economy (from 12% in 1995 to 21% in 2010). This comes as a result of the rapid expansion of credit, which was nearly non-existent in 1995, and of the real estate and construction boom in the 2004-2008 period, during which the sector's share of GDP exploded. Still, real estate and financial intermediation take up a smaller share of GDP in Latvia than in the EU, and it can be expected that the sector will expand as the economy and lending pick up again.

Table 3.6: Comparison of the sectoral composition of the economy in 2010

	EU27	EU15	Latvia	Estonia	Lithuania
Agriculture and fishing	1.7%	1.5%	4.1%	3.5%	3.4%
Industry (except construction)	18.8%	18.2%	16.8%	22.7%	22.3%
Of which manufacturing	*15.4%*	*14.9%*	*12.2%*	*16.8%*	*n/a*
Construction	6.0%	5.9%	5.0%	5.7%	5.7%
Trade, tourism, and transport	20.8%	20.5%	30.2%	25.2%	33.5%
Financial intermediation and real estate	29.0%	29.8%	23.6%	23.8%	16.1%
Public sector	23.8%	24.2%	20.2%	19.1%	19.1%

Source: Eurostat

3.4.2 Economic geography

Figure 3.34 shows that Latvia is less urbanised than many of the more developed European nations, such as Sweden and Finland, but its degree of urbanisation is roughly in line with that of other post-Communist countries. Roughly 67% of the population lives in cities, compared to over 80% in Denmark, Finland, and Sweden. However, this indicator is heavily influenced by the large number of people that live in the capital city of Riga; excluding the influence of Riga in the calculations, the degree of urbanisation drops to 52%.

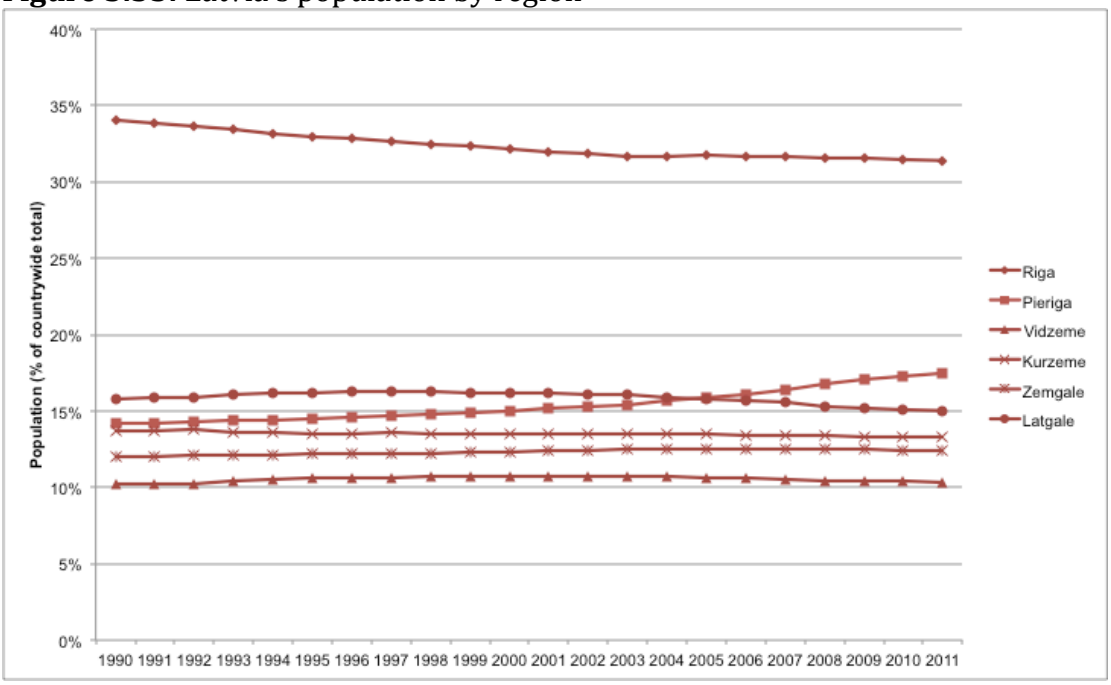
Figure 3.34: Degree of urbanisation in 2010 by country

Source: United Nations Population Division

Nearly half of the country's total population is in Riga or the near Riga region. The combined share has experienced a slight increase on account of the rising

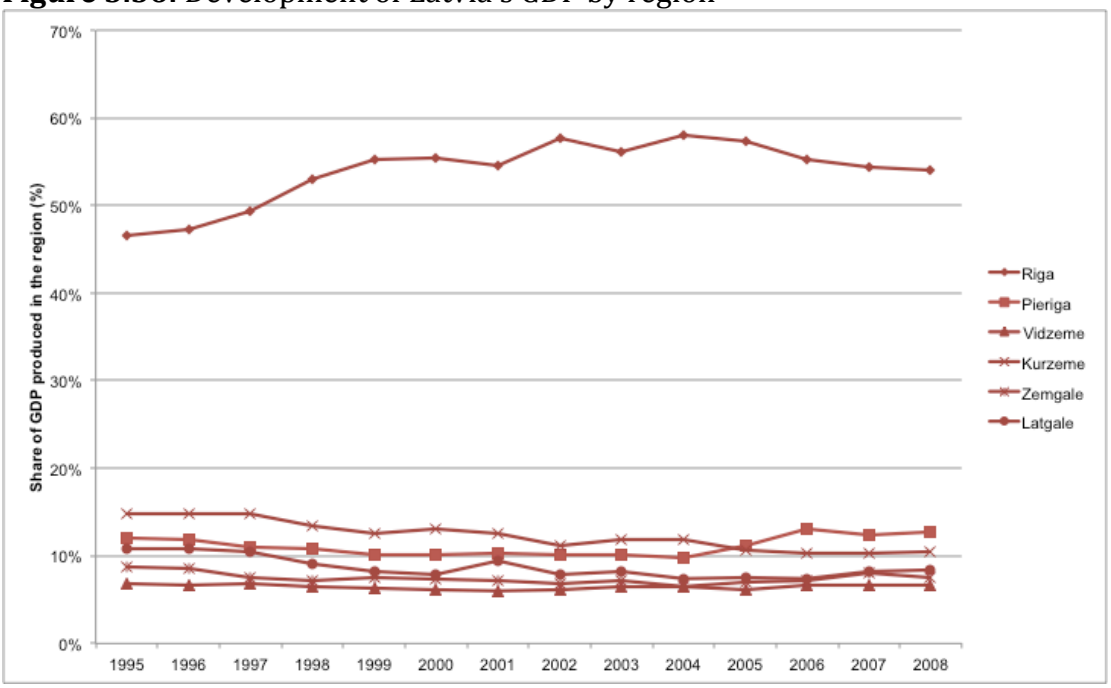
share of the population in the near-Riga region, even while the share of the population in Riga itself has decreased. These trends reflect the desire of increasing numbers of people to work in the capital, but not live amid the hustle and bustle of the city itself.

Figure 3.35: Latvia's population by region



Source: Eurostat

Figure 3.36: Development of Latvia's GDP by region



Source: Eurostat

The dominance of Riga represents a self-sustaining cycle whereby significantly better job, recreational, and educational opportunities attract people to the capital, prompting major companies and institutions to locate their main facilities there and in turn further widening the gap between Riga and other parts of the country. Hence part of the explanation for the inequalities observed

in Latvia and discussed in Section 2.1 can be found in the geographical imbalance between Riga and its surrounding area and the rest of the country.

Figure 3.36 illustrates this: the combined GDP share of Riga and Pieriga has increased from 60% to a remarkable 66% over the 1995-2008 period. This has negative implications for labour market flexibility and demographics, as people are unwilling to move from Riga to take up vacancies in the regions, while young unemployed people in the regions often choose to leave the country altogether.

Assessment

- The share of manufacturing in GDP fell to a historical low of less than 10% in 2009, crowded out by the financial and real estate sectors.
- The export boom of 2010 was associated with a recovery in manufacturing
- The overall degree of urbanisation is similar to that of other European post-communist countries, but this is heavily influenced by the dominance of Riga.

4. Determinants of competitiveness

This chapter is organized in two parts. Part I addresses the two dimensions of macroeconomic competitiveness namely: institutional quality and macroeconomic policy. Part II addresses the broad field of microeconomic competitiveness and includes analysis of the following underlying structural and institutional factors:

- Factor markets: labour and capital markets
- Skills and the education system
- Innovation infrastructure
- Government: the tax system, administrative efficiency and the role of government in the economy
- Population: Latvia's demographic challenge
- Product markets: demand conditions and cluster development
- Physical infrastructure and energy

Latvia's natural endowments are discussed in the Annex. Endowments cannot be changed by policy but they do have an impact on prosperity and they affect the impact that competitiveness factors have, for example when geographical location increases the value of efficient logistical infrastructure.

Part I: Macroeconomic competitiveness

4.1 Institutional Quality

The quality of institutions has in the literature been shown to have a strong long-term effect on economic outcomes. Some of the effect works directly on the behaviour of business through the impact of, for example the legal system. Some of it is through the policy decisions that are driven by the institutional setting, for example of fiscal policy. In general, institutional quality initially defines a particular set of values, behaviour, and attitudes that influence both political and business practices and decisions. The extent of the shadow or informal economy and the openness of business leaders to operate outside of the law is one indicator that is important. The general level if trust in society is another.

Table 4.1 illustrates selected GCI 2010 indicators for Latvia and the other Baltic states on institutional quality. Russia provides another comparator. In terms of Rule of Law Latvia's ranking is somewhat below Estonia, similar to Lithuania and better than Russia. However, Latvia performs dismally in the perceived quality if political institutions.

Table 4.1: Rankings in selected indicators of institutional quality, 2010

	Latvia	Lithuania	Estonia	Russia
Social Infrastructure and Political Institutions (SIPI)	**57**	**48**	**27**	**86**
Political institutions	**87**	**61**	**24**	**91**
Public trust of politicians	99	92	37	57
Wastefulness of government spending	97	88	33	65
Favouritism in decisions of officials	72	44	26	79

Rule of law	**54**	**47**	**27**	**100**
Ethical behaviour of firms	78	61	30	94
Control of Corruption (WB)	43	46	29	108

Source: WEF, Global Competitiveness Index, 2010

These findings are to a large extent confirmed in the 2011 EBRD Life in Transition Indicators (based on individual perceptions rather than those of businesses as in the New GCI) which clearly indicate that the trust in government (the presidency, the Saeima and the political parties) have, from a an already low level in 2006, fallen even further. Corruption, on the other hand, seems at the individual level to be perceived as less of a problem and this too is in line with the GCI scores.

The perception of weak political institutions is also confirmed directly by experience: Latvian governments are typically uneasy coalitions of three to four parties with an average lifetime of 1.25 years. The power of the prime minister is limited by the need to maintain the coalition and also by the relative strength of individual ministries.

In terms of the institutional quality we examine in more detail the following two areas:

- Ethical behaviour of firms (in particular the shadow economy);
- The Latvian legal framework

4.1.1 Ethical behaviour of firms and the Latvian shadow economy

As table 4.1 shows the ethical behaviour of firms in Latvia is widely perceived as poor. An important aspect of this is the involvement of firms in activities that could be considered belonging to the shadow economy. In addition to reducing tax revenue, shadow economy activities affect competitiveness in several ways including the creation of an uneven playing field between companies playing according to the rules and those that do not. This generates distortions which result in a misallocation of the economy's resources.

A recent study undertaking a compilation of data on the size of the shadow economy in Europe covers data for the period 1999-2007 and reveals that in 2007 the shadow economy expressed as percentage of official GDP in Latvia amounted to 44.3 per cent, in Estonia to 42.3 percent, and in Lithuania to 34.0 per cent. The averages for the period 1999-2007 were 41.7, 40.3 and 31.9, respectively.[54]

These findings should be contrasted with the findings of a 2011 research report showing that, although the Baltic countries still stand out in a European framework when it comes to the share of the shadow economy, the relative size of the is smaller. The report presenting the size and development of the shadow economy for 31 European and five OECD countries from 2003 to 2011 shows that the size of the Latvian shadow economy is estimated to be 26.5 per cent, the

[54] Other European countries with a high share of the shadow economy relative to official GDP include Bulgaria with 41.2 per cent and Romania with 38.9 per cent. The 2007 estimates for the other new member states are around 30 per cent of the official GDP, i.e. close to the Lithuanian share. The data referred to is presented and analyzed in Schneider (2010).

Estonian 28.6 per cent and the Lithuanian 29.0 per cent with the overall sample average being 19.3 of official GDP.[55]

Overall, this clearly demonstrates the weaknesses of the method[56] employed in the studies referred to above when it comes to estimating the size of the shadow economy – the results are extremely sensitive to the assumptions made by the individual researcher[57] and they have to use secondary data to estimate the size of the shadow economy. This observation has the implication that , since assumptions could differ substantially from study to study, comparisons of different studies are difficult. Furthermore, since the data employed as well as hence the estimation might differ from country to country within a study, international comparisons within a study are also troublesome.[58] Hence, the estimated size of the shadow economies as well as the country rankings could differ from study to study – and in general they do.[59] However, in almost all studies covering the European Union the three Baltic countries stand out in terms of a high relative share of the informal economy to GDP.[60]

A totally different approach is adopted in a recent study by Putniņš and Sauka (2011) who use survey-based primary data to estimate the size of the shadow economy in the three Baltic countries – hence, their approach escapes the criticism of the studies referred to above. Their findings suggest that in Latvia the shadow economy is considerably larger than in Estonia and Lithuania. Before proceeding to a discussion of these findings it is worth emphasizing one virtue of this study – it applies exactly the same methodology in terms of data collection and estimation for all countries involved.[61]

The main findings from the Putniņš and Sauka study are presented in Table 4.2 below. The Latvian shadow economy is estimated as roughly twice the size of the ones in the neighbouring Baltic states – 38 per cent of GDP for Latvia in 2010,

[55] See Schneider (2011). The countries with higher share of the informal economy according to the study are for 2011: Bulgaria (32.3 per cent), Romania (29.6 per cent), Croatia 29.5 per cent) and Turkey in between the Baltic countries (27.7 per cent).

[56] The estimation method is called MIMIC (multiple indicator multiple cause). The underlying approach is to view the shadow economy as an index which has causes and effects but cannot be observed or measure as such. By observing the variables connected to the unobservable index (i.e. the size of the shadow economy) one can estimate the shadow economy index and create a 'time series' over time. Needless to say the result is highly sensitive to the assumptions being made by the individual researcher.

[57] One author claims that the methodology (MIMIC) is: "…subjective and pliable in practice" and that "the MIMIC method is unfit for the purpose)", (Breusch, 2005, Abstract).

[58] See Helberger and Knepel (1988) and Breusch (2005) for a critical assessment of the MIMIC method. See Schneider (2005) for an application of the method.

[59] Within the EU countries there is also a regional aspect to the size of the shadow economy. Recent research on EU regions, presented in Tafenau et al. (2010), shows that there are substantial regional differences. The within a country findings show that the least wealthy regions with a country exhibit an above average shadow economy activity. For a country, like Latvia, with large regional disparities (see section 3.5.2 on Latvia's economic geography) these findings could be highly relevant.

[60] When discussion the findings for Latvia in terms of the size of the shadow economy, Kaže et al. (2011) puts it in the following way: "Latvia is frequently referred as one of the countries which has the highest level of the grey economy measured as % of GDP" (p. 420). Furthermore, when discussing the findings of a number of various studies the authors conclude: "…these indications clearly reflect the scale of the issue: the level of grey economy in Latvia is among highest in Eastern Europe" (p. 421).

[61] As discussed above this is very rarely the case. It should, everything else equal, provide more reliable estimates in terms of making comparisons across countries.

and roughly 19 per cent of GDP for both Estonia and Lithuania. In terms of sectors, shadow economy activities were in Latvia most prevalent in the construction sector with 54 per cent of the companies surveyed involved in shadow economy activities, followed by services and retail with 42 and 41 per cent, respectively. The Latvian pattern differs radically from the Estonian and Lithuanian ones where the wholesale and retail sectors appear to have the highest proportion of shadow economy (around 27 per cent). Finally, the survey shows that in Latvia in particular small and, somewhat surprisingly, also large firms (more than 200 employees) are the ones with the highest involvement in shadow economy activities.

Table 4.2: Size of the shadow economy relative to GDP in the three Baltic countries.

	2009	2010	Change
Estonia	20.2%	19.4%	-0.8%
Lithuania	17.7%	18.8%	0.8%
Latvia	36.6%	38.1%	1.5%

Source: "Shadow Economy Index for the Baltic Countries".

When asked for the reasons why they were involved in shadow economy activities, Latvian companies claim that they are dissatisfied with the tax system and/or government spending. Latvian companies are the most dissatisfied with taxes and government spending as compared with Estonia and Lithuania. Latvian companies are also highly dissatisfied with the government's support to businesses (or lack thereof). Even though dissatisfied with the tax system, Latvian companies seem to be fairly satisfied with the Latvian State Revenue Service (VID) itself – two thirds of the companies surveyed were either "very satisfied" or "satisfied" with the tax administration. Even though satisfied with the tax administration, poor legal enforcement was stated as one of the reasons for being engaged in shadow economy activities.

In terms of competitiveness at the firm level, the findings suggest that many companies seem to see shadow economy activities as a necessity in order to survive both in terms of the absolute level of costs and in terms of competing with other companies.

The findings of the Shadow Economy Index for the Baltic Countries confirm and also deepen the understanding of the findings in the New GCI.

Box 7: On the reliability of the Shadow Economy Index estimates and their comparability with other estimates

There are three main groups of methods for estimating the size of a shadow economy, each with different strengths and drawbacks. The first group, so called "macro methods", attempt to measure the shadow economy using indicators of macroeconomic activity such as electricity consumption or stocks/flows of money. The second group, "latent variable methods", produce estimates on the basis of observed variables that are assumed to determine the size and growth of the shadow economy and observed variables that are assumed to be affected by the size of the shadow economy. The comprehensive and widely recognised OECD handbook "Measuring the Non-observed Economy" dismisses the first two groups of methods as inadequate for measuring the size of a shadow economy due to limitations such as: (i) it is unclear what parts of observed and unobserved production are captured by the methods; (ii) the assumptions underlying the models are overly simplistic; and (iii) the results of the models are not stable in the sense that changes in the model assumptions or sample can produce substantially different estimates. These problems make the two groups of methods somewhat subjective and pliable in practice. The advantage of these methods, however, is that they are relatively quick and inexpensive to apply to a large number of countries.

The shadow economy estimates in the SSE Riga report "Shadow economy index for the Baltic countries" are derived from surveys of a representative sample of entrepreneurs in the three countries. Survey-based approaches fall into the third category, "direct methods", for estimating the size of shadow economies. While they are more costly and time-consuming, they do not suffer from the previously mentioned limitations of the first two groups and are therefore recommended (e.g. by the OECD) for applications in which both precision in defining what is measured and stability of estimates are important. The rationale for directly surveying entrepreneurs, as in the SSE Riga study, is that those most likely to know how much production or income goes unreported are the entrepreneurs that themselves engage in the misreporting and shadow production.

The main limitation of survey-based approaches is the risk of underestimating the total size of the shadow economy due to non-response and untruthful response given the sensitive nature of the topic. The SSE Riga study minimises this risk by employing a number of surveying and data collection techniques shown in previous studies to be effective in eliciting more truthful responses (e.g., Gerxhani, 2007; Kazemier and van Eck, 1992; Hanousek and Palda, 2004). These include framing the survey as a study of satisfaction with government policy rather than a study of the shadow economy, gradually introducing the most sensitive questions after less sensitive questions, phrasing misreporting questions indirectly (asking about other firms in the industry rather than the entrepreneurs' firms) and, in the analysis, controlling for factors that correlate with potential untruthful response such as intolerance towards tax evasion and corruption. In order for the results to be comparable across countries, care is taken to apply the methods consistently to each of the three Baltic countries.

Indirect labour market evidence provides additional indirect support for the prevalence of what in Latvia is called "envelope wages". Two relevant measures are the share of labour force employed on temporary contract basis or without a legal contract (country averages 2001-2007); and the share of the labour force (adjusted for unemployment) not contributing to the pension system (2007 data). For Latvia these percentages are 7.1 and 9.8; for Estonia 2.4 and 5.6; and for Lithuania 4.9 (data on the contribution to the pension system is not available for Lithuania). Furthermore, in comparison to Estonia and Lithuania, Latvia has a considerably higher share of the labour force either working in small firms or being self-employed – arrangements that are supposed to facilitate informal economy activities such as envelope payments. For Latvia the 2007 share is 41 per cent, for Estonia and Lithuania 26 and 27 per cent, respectively. To conclude based on the three indicators stemming from labour market data there is reason to believe that the prevalence of envelope wages is higher in Latvia than in its two Baltic neighbours.*

* The labour market data referred to is obtained from Fialová (2010) who uses data from Eurostat, Labour force surveys and own calculations to analyze relations between the labour market and the shadow economies of the European Union countries. It is worth noting that the share of the labour force employed on temporary contract basis and without legal contracts varies over the business cycle, the average for the period is therefore used.

Policy developments

- The Corruption Prevention and Combating Bureau (KNAB) is an agency with the specific task of fighting and preventing corruption in Latvia. Established in October 2002 and it is an independent government agency under the supervision of the Prime Minister. From 2012 KNAB will also be in charge of checking the asset declarations of public officials; currently this is responsibility of the State Revenue Service.

- Criminal liability for private sector bribery has been expanded, the acceptance of an offer of undue advantage has been criminalized, and public sector bribery in favour of third persons has been criminalized.

- In 2011 the government adopted amendments to the Criminal Law relating to the criminalization of large scale illegal financing of political parties.

- The shadow economy has been a concern of government for many years. In 2010 the Latvian government adopted the Plan of Measures for Combating the Grey Economy and Ensuring Fair Competition for 2010–2013. The plan consists of 61 measures aimed at gradually reducing the shadow economy and promoting fair competition by measures such as: reducing the administrative burden, introducing a new electronic declaration system, introducing a sanction system to limit the participation of companies active in the shadow economy in public procurement, efforts to promote the transition of entrepreneurship from the unregistered to the registered economy, and introducing a more efficient control system.

Assessment

- The overall perception of Latvian social and political institutions is poor.

- Latvian governments have typically been short lived and until the intervention of the IMF and the European Commission policy making has been dominated by short-termism.

- The evidence points to an informal economy in Latvia that represents about 40% of GDP. Envelope wages are the prevalent form of informality

- Shadow economy activities are not only about lost government revenue or about unfair competition. By distorting the allocation of resources the informal economy directly harms the competitiveness of domestic and foreign companies alike, and makes Latvia a less attractive country for foreign investors – in particular for those that have strict codes of conduct in terms of business ethics.

- Institutions are hard to change incrementally. Latvia appears to be stuck in a 'bad institutional equilibrium' especially with respect to the informal economy.

4.1.2 The Latvian legal framework

A country's legal system (legislation, its implementation and enforcement) plays an integral role in defining a nation's competitiveness. Accordingly, being one of the most important institutions of a society, rule of law is explicitly addressed in the New GCI. Table 4.3 presents the overall New GCI indicator on rule of law for the Baltic countries as well as a selection of some of the sub-indicators that make up the overall index.

Table 4.3: The New GCI for Rule of law, selected components

	LV	LT	EE
Rule of law (2010)	54	47	27
Judicial independence	64	68	26
Efficiency of legal framework	102	67	32
Property rights	63	54	30
Rule of law (World Bank)	35	37	26

Source: New GCI

In terms of the overall rule of law, Latvia's ranking is more or less on par with Lithuania's whereas Estonia, on the other hand, is ranked considerably higher. As for the sub-indicators displayed, the pattern is almost similar – Latvia and Lithuania close in rankings with Estonia ahead of the other two. However, from Table 4.3, Latvia stands out in one important aspect – the efficiency of its legal framework, where it is ranked as low as 102.

To understand the impact of the low ranking of the efficiency of the legal framework, we have to briefly analyse the role of the legal framework and how it affects a nation's competitiveness. An effective, low-cost legal framework governing business transactions is crucial to the smooth and efficient functioning of the economy and hence to competitiveness as such. A well-functioning legal framework also increases the opportunities for all sectors of the society and accordingly has a positive impact on competitiveness.

A predictable legal system reduces the costs of doing business as well as the business risk stemming from the legal system and its implementation. An unpredictable system, on the other hand, increases the business risk as well as the cost of doing business. There are several ways a legal system can be perceived as unpredictable. The legislation as such could be unclear and difficult to interpret. An unclear legal system might also provide the implementing institution, e.g. the regulator, with too much discretion. Furthermore, there are also aspects related to the implementation of the legislation. Examples of the latter include the time it takes to get an approval of e.g. a merger and the time and cost it takes to have a business dispute settled.

In other words, the less predictable and the longer the time period when an issue is open, the higher the business risk stemming from the nation's legal framework. Furthermore, an inefficient legal system has a tendency to create an uneven legal playing field tilted in favour of the institutions implementing the legislation at the expense of the businesses, while at the same time creating a basis for corruption.

Taken together, all these aspects create 'unnecessary' distortions which have a negative impact on the allocation of the economy's resources and hence on its competitiveness. Hence, countries having efficient legal frameworks have an

advantage in terms of encouraging investments, both local and foreign, over countries were the legal system is opaque, slow and costly.

To provide a full-fledged analysis of Latvia's performance in terms of rule of law in general and legal efficiency in particular is beyond the scope of this Report.[62] In addition, to undertake an analysis that goes beyond the rankings and indices reported in the New GCI and World Bank Doing Business Index is further complicated by the fact that there is more or less lack of any useful data – be it qualitative and quantitative. To circumvent this problem, we undertake what could be considered a 'circumstantial evidence' approach. In doing so, we investigate areas within the legal sphere that, in terms of the overall quality of the business environment and hence for competitiveness as such, play an important role:[63]

- The regulatory framework;
- Corporate governance;
- Efficiency of the judicial system;
- Arbitration and business disputes.

The regulatory framework

To address the regulatory framework two Latvian regulatory agencies are considered: The Latvian Financial and Capital Market Commission and the Competition Council – both of them regulating areas that are essential to a well-functioning market economy and hence to competitiveness. However, it is important to keep in mind that the purpose is not to evaluate the performance of these agencies as such, but to analyse how well the overall legal framework does in terms of ensuring fair and predictable processes while at the same time balancing the interests of the regulator and the market participants. The underlying reasoning is that the ability of an authority to duly adopt decisions and constructively and effectively cooperate with market participants could be considered as one of the factors affecting the decision of a market participant (be it domestic or international) on commencement of activities or further investment in Latvia.

The Latvian Financial and Capital Market Commission regulates and supervises all banking, insurance, securities and asset management business with responsibility for both prudential regulation and business conduct. To get an indication of the overall efficiency of the legal framework we look at part of the licencing Commission's licencing activities.[64] The findings seem to reveal that it in several cases applications have needed a longer period to be reviewed than stipulated by legislation. In other cases, there are difficulties with the legislation as such, since it does not provide for a maximum term of reviewing the matter concerning the issuance of a license. Furthermore, there is no limit on when and to what extent the authority has the right to ask for additional information. Needless to say all three findings contribute both to unpredictability about the process as such as well as uncertainty about the length of the process.

[62] However, the rule of law and/or the efficiency of the Latvian legal system could (and probably should) be addressed in one or several future in-depth studies.

[63] The material underlying the discussion in this section has been compiled for the LCR 2011 by legal experts. The interpretation is however the sole responsibility of the authors of this Report.

[64] In particular the licencing for the start of activities by financial market participants, approval of acquisition of qualifying holdings and approval of members of executive bodies.

Uncertainty that could be attributed to the work of the Commission as such, but also through legislation that provides the Commission with some more or less discretionary power in terms of timing.

The second case looks at the Latvian Competition Law and its implementation. The link between competitiveness and competition is immediate. As the European Union Directorate General for Competition puts it in its mission: "Competition is not an end in itself. It is an indispensable element of a functioning Single Market guaranteeing a level playing field. … Therefore, competition contributes to the wider objectives of boosting strong and sustainable growth, competitiveness, …".

The Competition Law is the principal legislative act on competition and defines the following five primary objectives:

(i) Regulation of restricted agreements and practices;
(ii) Prohibition of the abuse of a dominant position;
(iii) Prohibition of the abuse of a dominant position in retail sector;
(iv) Control of mergers and acquisitions; and
(v) Prohibition of unfair competition.

Four out of the five primary objectives could be considered fairly 'standard'. However, the third one stands out in an overall European Union context by explicitly targeting the retail sector.[65]

The approach to start with is the same as above when looking at the Financial and Capital Markets Commission, i.e. we look at the time frame it takes for the Competition Council to adopt a decision, what the legislation says and the discretionary power given to the Council by legislation.

The Competition Law prescribes time periods within which the Competition Council has to adopt a decision. In most cases the Council is obliged to adopt a decision within six months of the day the case is initiated. If due to objective reasons, it is not possible to observe the six month time period, the Competition Council may extend it for a period of up to one year counting the time period from the day of the initiation of a case. If prolonged fact-establishing is required in the case, the Competition Council with a justified decision may extend the time period for taking a decision to a period not exceeding two years from the day of the initiation of a case. Decisions on extension of the time period for adopting a decision in an investigation case cannot be appealed in court. In practice this has meant that the Competition Council extends the time period for adopting a decision in an investigation case on regular basis with no justification. This is also seen in the statistics covering the period January 1 2007 – August 31 2011, revealing that the Competition Council case investigations on average exceed the basic 6 months term but are below the one year term. Hence, indicating that Council exercises its discretionary power and leaving market participants

[65] It is worth commenting upon the third primary objective of the Competition Law – dominant position in retailing. The provision of the Law and the way it has been implemented by the Competition Council has been to protect the interests of local suppliers. This this part of the Law does not mention the interests of consumers. Hence, this special feature of the Latvian Competition Law neither contributes to an enhancement of competition nor to the promotion of a Single Market. It thereby creates a potential misallocation of the economy's resources and accordingly reduces the competitiveness of the Latvian economy.

against whom an infringement case has been initiated to live in uncertainty as to the outcome of the case for a period which is difficult to predict.

Another important time period in cases investigated by the Competition Council is the term for the parties subject to an infringement case to provide their defence in a case. According to the Competition Law, once the Competition Council has established the facts necessary for taking a decision in a case, it sends to the participants in the process a written letter stating its argumentation based on the facts collected in the case. The participants are given a short period of time to respond and in many instances without having access to the case file since the Council by decision can limit the access. This coupled with the fact that the Council does not have to formulate its position in relation to the case investigation prior to sending the letter means that companies against which an infringement case has been initiated have a severely limited possibility to exercise their rights to defence.

To conclude, the current Competition Law and the way the Competition Council has implemented it has, in turn, created an uneven playing field heavily tilted towards the Council providing it with a substantial amount of discretionary power – a power that it seemed to have used. Relating back to the quote from the Directorate for Competition, it seems like the Latvian Competition Law fails to deliver the desired outcomes. The latter being problematic since well-functioning competition rules are necessary for the functioning of the European internal market and hence for national as well as European competitiveness as such[66].

Corporate governance

The practice of good corporate governance is an important factor in terms of creating an overall good business environment. In general investors will be attracted to companies (and hence countries) with strong corporate governance regimes which may provide them comfort that the companies are well managed and transparent while at the same time providing a stable and predictable business environment. Hence, companies with a good corporate governance structure will find it easier to access capital and have lower capital costs. In other words, a country with a good corporate governance structure is attractive for domestic as well as international investors.[67]

As discussed in subsection 4.3.2 below on the development of Latvian capital markets, there is ample evidence of Latvia's dismal performance in terms of corporate governance. Furthermore, since, everything else equal, good corporate governance reduces the level of corruption as well as the size of the informal economy, the values of these two indicators further support the conclusion of a weak corporate governance structure in Latvia.

Efficiency of the judicial system

An efficient low-cost judicial system contributes to smooth and efficient functioning of the business sector and hence to competitiveness. Countries in which the judicial system functions effectively have a distinct advantage in terms of encouraging local and foreign investment over those where the legal system is opaque, slow and costly.

[66] See European Commission (2011), page 257, for a discussion.
[67] See Shleifer and Vishny (1997) and Zingales (1998) for a discussion.

Available indicators support the perception 68that the court system in Latvia is weak. The efficiency of court administration in terms of hearing cases is poor and there are severe backlogs which in turn results in delays, thereby reducing the effectiveness of legal recourse. In a recent study69 by the European Commission for Efficiency of Justice the disposition times70 using 2008 for the total of civil, commercial and administrative law cases were, for Latvia, 158, 285 and 172 days for first, second, and highest courts, respectively. The corresponding numbers for Estonia were: 133, 142 and 125 days; and for Lithuania: 45, 210 and 57 days. In terms of dynamics, Latvia ranks third from the bottom when it comes to the clearance rate trend71 with just Croatia and Romania scoring lower. Thus the disposition and clearance data thus provide concrete support for the poor GCI ranking reported in table 4.3

In the next section it is noted that in Latvia we observe a high number of arbitration courts and arbitration cases and a possible interpretation of this is that it reflects the inefficiency of the Latvian judicial system.

Factors contributing to the weak and in particular slow performance of the Latvian judicial system include:

- Frequently changing legislation combined with weakly drafted or non-existent laws.
- Regional imbalances in terms of staffing – e.g. one referral judge at the appellate instance of the Riga Regional Court receives two to three times more cases per month than judges in other regional courts.
- The training of judges – many of them received their training during the Soviet era and are hence trained to work in a different legal system.
- A system that grants the individual almost every possible leniency in terms of, for example, the obligation to attend at court hearing. This can considerably slow down the legal process.

Several of these observations could at least partly be explained by the fact that unlike Estonia, Latvia (as well as Lithuania) has not undertaken a comprehensive reform of its legal system but instead has tried to change it gradually.

Arbitration and business disputes

To understand the overall Latvian business climate it would be ideal could one have the number of legal business disputes as an indicator. However, this is not

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[68] For example the "Eurobarometer: Public Opinion in the European Union" published by the European Commission finds that roughly one third of the Latvians trust the national legal system. This is better than in Lithuania where approximately just one quarter of the population trust the legal system, but worse than Estonia.

[69] The European Commission for Efficiency of Justice (2011).

[70] The disposition time compares the number of resolved cases during the observed period and the number of unresolved cases at the end of the period. It is calculated by dividing the 365 days of a year by the case turnover ratio (where the case turnover ratio is the ratio between the number of resolved cases and the number of unresolved cases at the end of the period). The disposition time estimated the number of days necessary for a pending case to be solved in court. See the European Commission for Efficiency of Justice (2011) for a discussion.

[71] The clearance rate is the ratio between resolved cases and incoming cases in a given time period.

possible. There are many reasons for this, one being the fact that many business disputes are settled outside the judiciary system through arbitration. Arbitration has several advantages over judicial dispute resolution – it allows the parties to control the process, it is faster and in general perceived as more efficient – it is therefore in many cases the preferred way of handling business disputes. Hence, an estimate of arbitration activity can be seen as an indicator of the amount of business disputes and hence the efficiency of the legal system and business culture. Unfortunately, we do not have the number of cases subject to arbitration but we have information on the number of arbitration institutions in Latvia – a number that provides us with an indication of the number of business disputes. Latvia has around 120 arbitration institutions[72] to be compared with Lithuania's three registered arbitration institutions[73]. Firstly this tells us that there are a large number of business disputes (since the demand for arbitration apparently can support the more than one hundred arbitration institutions) – hence, signalling that the overall Latvian business climate is far from good and thereby supports the findings of the New GCI. Furthermore, most likely part of the explanation can be found in a weak legal system. Secondly, the number of arbitration institutes indicates a potential quality problem – there are simply not enough qualified experts in a small country like Latvia to staff them. This in turn suggests that the quality and standard of the arbitration rulings might be improved were the number of arbitration courts reduced.

Assessment

To summarize, an overall assessment of the Latvian legal framework provides us with the following conclusions:

- Overall, the legal system is perceived as inefficient – in particular the legislation and its implementation.
- The legal system seems to give the implementing institutions too much discretionary power – a power that seems to be exercised, and that has come at the expense of market participants.
- Overall the playing field seems to be tilted in favour of the implementing institutions at the expense of the market participants.
- In terms of competitiveness the Competition Law and its implementation should be reviewed and probably revised.
- Latvia's weak corporate governance structure increases the cost of capital and discourages investment.

To conclude, the current inefficiencies of the legal system discourage investment, generate a high number of business disputes and contribute to a misallocation of the resources of the Latvian economy and thereby reducing its competitiveness.

4.2 Macroeconomic policy

Macroeconomic policy has a significant short-term impact on economic activity, sometimes even beyond the impact of other fundamental competitiveness factors. However, the long-term impact of, for example, short-term expansionary fiscal policy is often limited. More important are structural imbalances that

[72] In "Ancient and Modern: Arbitration in Northern Europe" (2008), it is put in the following way: "One of the most remarkable features of arbitration in Latvia, however, is the country's record number of arbitration institutions. There are currently 122 arbitration institutions registered by the Ministry of Justice of the Republic of Latvia".

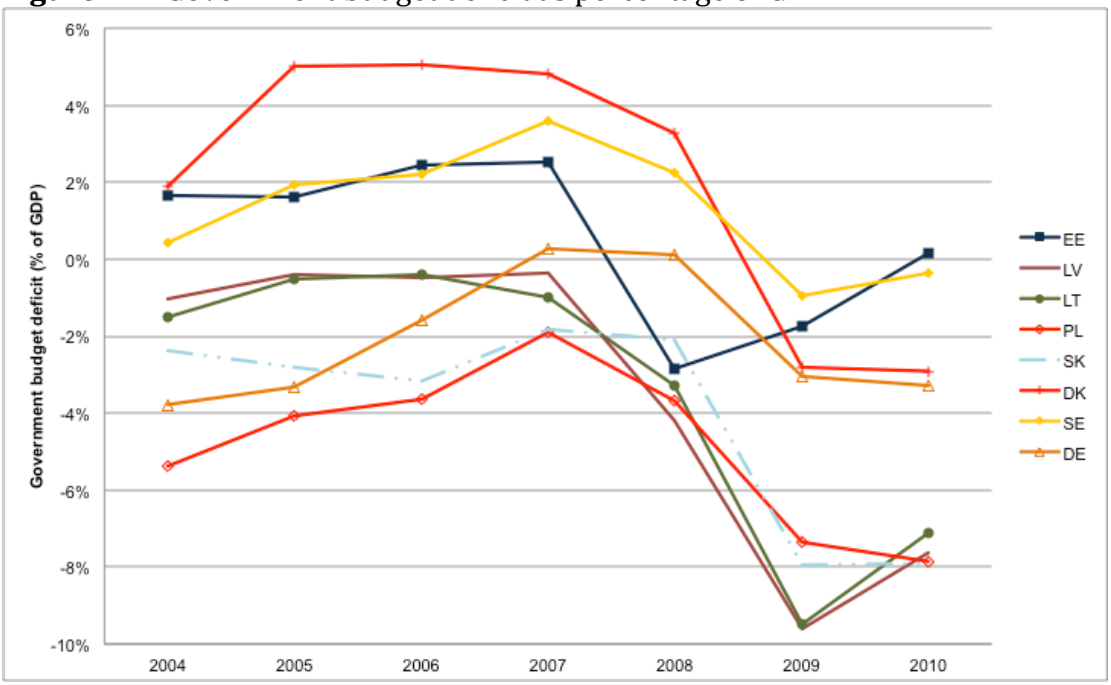
[73] Source: "Arbitration in the Baltics" (2009). .

macroeconomic policy might allow to develop, like entrenched high inflation or unsustainable public deficits.

According to the New GCI for 2010, Latvia's macroeconomic policy was ranked at 94 - below that of Russia, which was ranked 82, and much below Estonia which was ranked 31. Since the Latvian currency is pegged to the euro the burden of macroeconomic policy falls almost entirely on fiscal policy. The logic of this requires that in periods of high inflation fiscal policy should be tight and thereby dampening demand and inflationary pressure. In the Latvian setting this means that during the boom years, the government should have run a surplus, partly as part of balancing the budget over the business cycle, partly as part of the policy to keep the inflation down.

In practice, as seen from Figure 4.1, the Latvian Government did not manage to balance the budget during any year in the period 2004-2010 despite periods of double digit economic growth and strongly growing tax revenues up to 2007. Lithuania exhibits a pattern similar to that of Latvia. Estonia's fiscal policy is by contrast countercyclical, running surpluses in good times and deficits in bad. From this point of view Latvia's as well as Lithuania's fiscal policymaking has been a failure as is reflected in the GCI rankings.

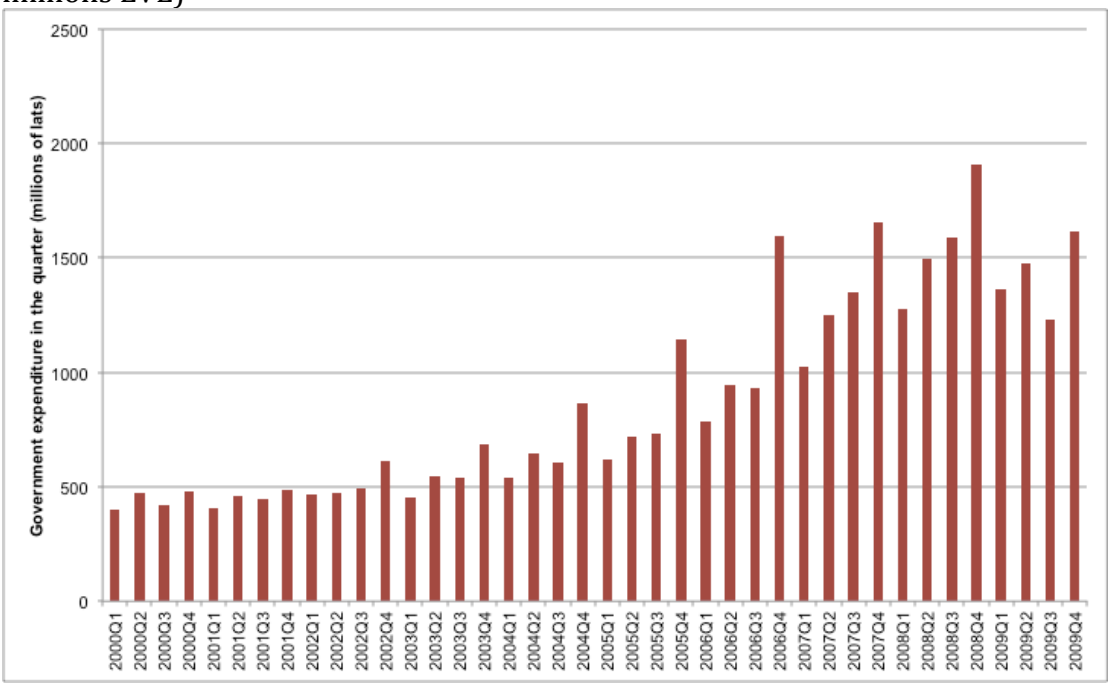
Figure 4.1: Government budget deficit as percentage of GDP



Source: Reuters

The unwillingness or inability in Latvia to run a tighter fiscal policy in the boom has been, arguably, a consequence of the short-termism of Latvia's coalition governments and the institutional weakness of the Prime Minister and the Ministry of Finance as compared with the line ministries in determining government expenditure. Figure 4.2 illustrates the quarterly pattern of Latvian government spending as the boom developed.

Figure 4.2: The quarterly dynamic of government expenditure 2000-2009 (in millions LVL)



Source: LR Ministry of Finance

What is revealed is a consistent pattern of higher spending in the fourth quarter of each year whereby the buoyant tax receipts were distributed among the partners of the various coalition governments. Thus what could have been a budget surplus was simply spent. It was not until Latvia was severely hit by the economic crisis that pressure from the foreign lenders forced the Latvian Government to address the expenditure side of the budget by implementing a range of measures including public sector wage and employment cuts and overall cuts in expenditures.

A further factor that inhibits effective fiscal policy is the fact that a number of the welfare systems/benefits appear to be regulated in the Latvian Constitution. For example an attempt to cut the pensions, which grew together with wages in the boom, has been thwarted by the decision of the Constitutional Court, which declared the government move as "unconstitutional". As a result the size of expenditure on public pensions has during the economic crisis increased from roughly 6 per cent of GDP to 9 per cent. Thus an important part of what is normally considered fiscal policy (as well as welfare policy) appears to be outside the scope of economic policy making.

In addition, the case for a strong fiscal policy is further strengthened by the fact that, given the peg to the euro, the Bank of Latvia has very limited number of monetary instruments at its disposal with which to fight inflation or otherwise manage the economy. In other words these tasks are left fiscal to instruments.

Taken together, the observations discussed above provide a strong case for the reform of the framework of fiscal policy making. A start has been made with a proposed Fiscal Discipline Law, which addresses some of the most obvious problems. Arguably, a Law as such may not be enough and the Fiscal Discipline Law should be part of the constitution to prevent its easy repeal.

Finally, the widespread cheating on taxes (as discussed in the section on the shadow economy above) combined with a general perception (according to the New GCI) of wasteful government spending severely constrains the potential and scope of fiscal policy. Had the size of the shadow economy been that of, for example, Lithuania, Latvia's fiscal performance would very likely have been considerably better and so would it's ranking in the New GCI.

Macroeconomic policy developments

Institutional developments include:

- Fiscal Discipline Law. This is a fiscal policy framework that defines countercyclical budget rules, including expenditure ceilings, a budget surplus requirement when the economy is growing faster than 2%, and a budget deficit limit of 3% of GDP as well as systematic mid-term budget planning and forecasting. The draft law is an element of Latvia's emergency loan agreements with the IMF and the EU but has yet to receive parliamentary approval.

- At the operational level, the Latvian government has amended the law on budgetary and financial management ten times between 2008 and 2011 to increase oversight and accountability in the budget formulation process. These changes, too, were part of Latvia's emergency loan agreements with the IMF and the EU. Among other things, these amendments give the Minister of Finance the discretion to temporarily limit outflows from the State Treasury if a budget shortfall of more than 0.5 per cent of GDP has developed.

Assessment

- Latvia's macroeconomic policy up to the intervention of the international lenders in late 2008 and early 2009 is universally recognised as poor. Since the euro peg implies that there is limited scope for active monetary policy this means that fiscal policy was poor.

- Given the commitments to the IMF and European Commission Latvia's fiscal policy is now also largely on auto pilot; fiscal policy targets are focused on repaying the debt and meeting the Maastricht criteria and do not address any broader measures of Latvian welfare.

- Fiscal policy needs to have a more rational planning and execution process driven by Latvia's economic development objectives.

Part II: Microeconomic competitiveness

4.3 Factor Conditions

4.3.1 Labour markets: institutions and policy

A well-functioning labour market is an important determinant of a country's competitiveness since it determines the effectiveness in allocating its major economic resource namely its labour force. The formal and informal market mechanisms that define the way a country's labour market functions may be thought of as its set of labour market institutions. Labour market institutions can be characterised in terms of the following elements:

- The system of wage bargaining
- Minimum wage legislation
- Employment protection legislation
- The tax burden on labour

These elements combined determine how the labour market functions and adjusts to shocks e.g. by determining persistence and level of unemployment and by affecting responsiveness of real wages and prices to the unemployment rate. For example, strict employment protection legislation increases the bargaining power of insider workers, which makes wages less responsive to the unemployment rate: it makes firing more costly, and hence, at an unchanged rate of unemployment, the risk of losing a job for an insider is lower and accordingly he/she can bargain for a higher wage. High minimum wages can also reduce the ability of employers to manoeuvre and can reduce their incentives to hire low qualified workers, thus increasing the bargaining power of insider workers at an unchanged rate of unemployment. A further dimension of institutional impact concerns the quality of matching between a worker and a job. Any institutional arrangement, which increases the quality of job matching, can be expected to reduce the degree of structural unemployment. Better matching will also contribute to a better allocation of the economy's resources and hence, as such, directly have an impact on productivity.

Wage bargaining system

In contrast to many Western European countries Latvia has no centralised wage bargaining system. Indeed, trade unions are almost non-existent in the Latvian private sector and where trade unions exist in the public sector, e.g. in health and education sectors, they are weak, and strikes or other types of industrial action are almost unheard of. Table 4.4 shows the most recent data from 'worker-participation.eu' on union density and coverage for the Baltic states and some comparator countries.

Table 4.4: Trade union density and coverage, selected countries, 2010

	LV	LT	EE	DK	SE	UK
Percentage of workers in trade unions	14%	9%	10%	67%	71%	27%
Collective bargaining coverage	34%	15%	33%	80%	90%	33%

Source: www.worker-participation.eu

Thus the role of collective bargaining in Latvia is very limited. Where it exists at all company or organisational level bargaining is most common, but in large parts of the Latvian private sector there are no negotiations at all. So for many workers wages are determined in individual negotiations. Additionally, it needs

to be understood that reported wages in the private sector do not tell the whole story, and the system of 'envelope wages' – that is, cash payments made to workers in addition to officially reported wages – is prevalent throughout much of the private sector. As discussed in the previous section there is substantial evidence that unreported salaries and wages play an important role in Latvian economy. An earlier study from 2009 suggests that 17% of those formally employed in Latvia (versus 5% in the EU-27, 11% in Lithuania and 8% in Estonia) receive envelope wages amounting on average to 46% of their total wage income[74]. The net result of formal and informal practice is a system of wage determination in the private sector that is regarded as particularly 'flexible' where wage setting is unconstrained by collective agreements and where envelope wages can be used as an informal adjustment mechanism.

Minimum wages

Analysis of the impact of a statutory minimum wage on employment and the overall functioning of the labour market is not straightforward. However both theory and empirical evidence suggest that a minimum wage, if binding, is likely to reduce employment especially among low-skilled and thus less productive workers.

Figure 4.3 offers a comparison of minimum wages across a number of EU countries[75]. The minimum wage level in euro at PPP in Latvia, as well as the other Baltic states, is among the lowest in the EU. However, if one compares the minimum wage ratio to average compensation of employees[76], in Latvia it is one of the highest among the new EU member states (31.6% in 2010), higher than in Estonia (24.7%) and Lithuania (29.3%), which suggests that the impact of the minimum wage on the labour market in Latvia is likely to be relatively strong[77].

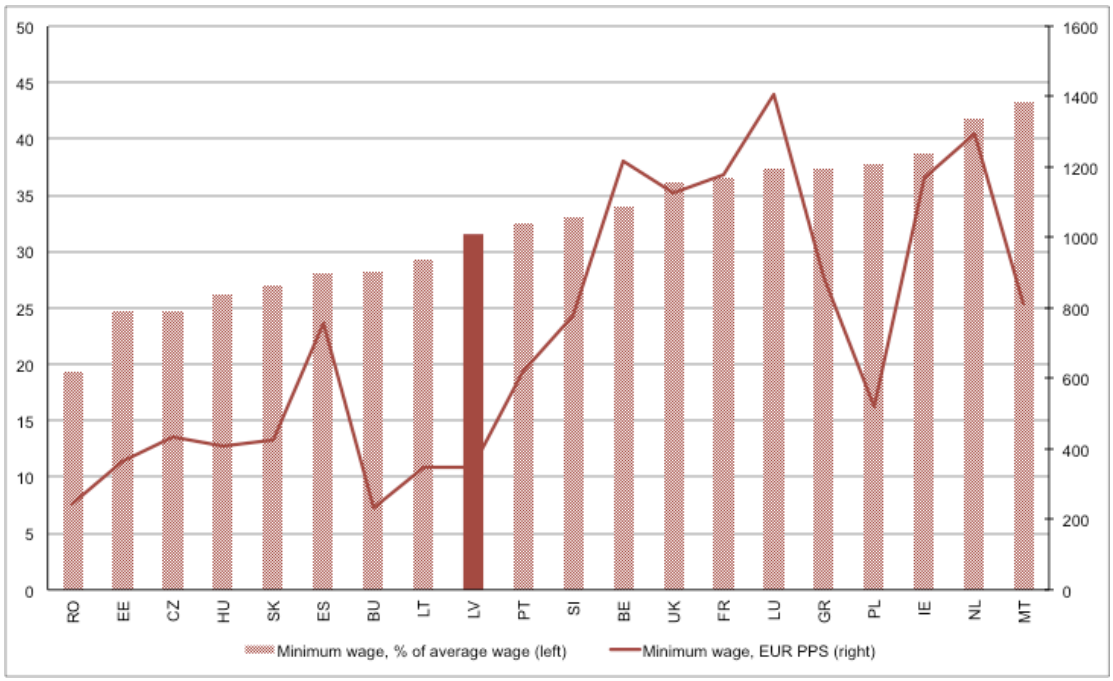
Figure 4.3: Minimum wage ratio to average compensation of employees (%) and minimum wage at PPP (euro) in EU countries in 2010

[74] See (Williams, 2009).

[75] A statutory minimum wage exists in 18 out of 27 EU countries. Minimum wages in Belgium and Greece are determined by collective bargaining, but since the minimum wage coverage in these countries is very broad, these countries are also included in the analysis here.

[76] Average compensation of employees from the national accounts is used as the basis for comparison rather than officially reported wages since national accounts data is adjusted for estimates of the shadow economy. Therefore, compensation of employees from the national accounts at least partially takes account of so-called "envelope wages".

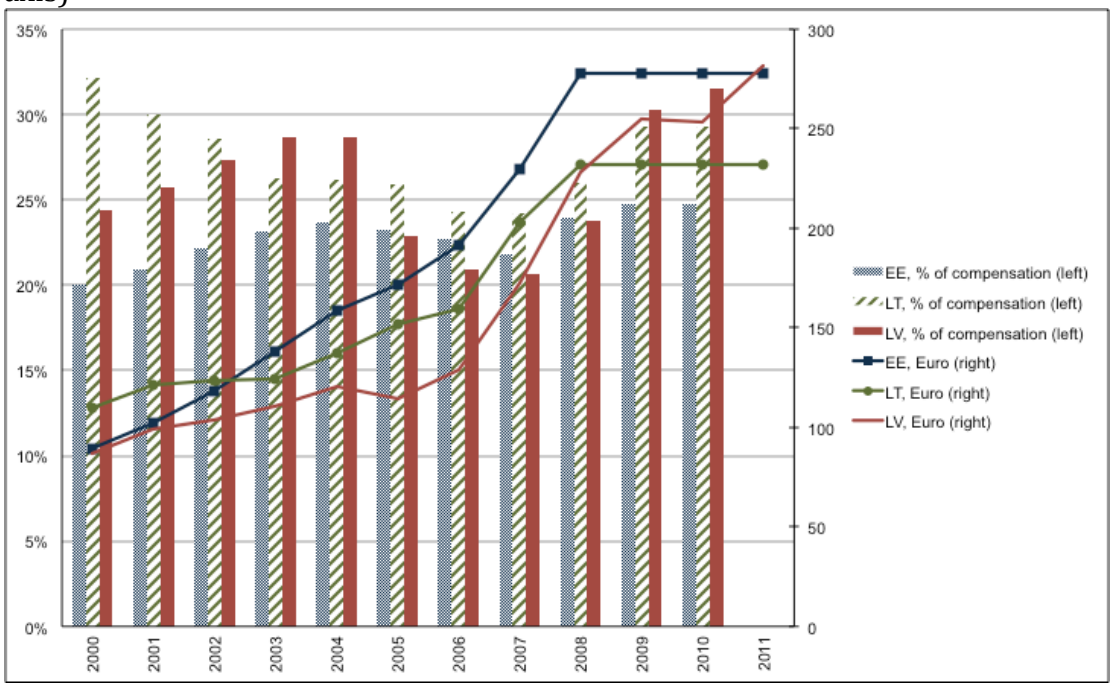
[77] The fact that the minimum wage *level* in Latvia is relatively low, but its *ratio* to average compensation of employees is high, can be explained by the fact that labour in Latvia is relatively less productive in Latvia than elsewhere in Europe and, hence, earns less



Source: Eurostat, author's calculations

Latvia is the only Baltic state to have raised its minimum wage in the post-crisis period (see Figure 4.4). Neither Estonia nor Lithuania have amended their minimum wage since 2008, whereas in Latvia the minimum wage has been raised twice – on 1 January 2009 (from 160 LVL (228 EUR) to 180 LVL (256 EUR) per month) and on 1 January 2011 (to 200 LVL (285 EUR) per month) and, as a result, the minimum wage in Latvia is higher than in the other Baltics both relative to average compensation of employees and after the last increase – in euro terms.

Figure 4.4: Minimum wage level in the Baltics in 2000-2011 (euro, left-hand axis) and its ratio to average compensation of employees (CE) (%, right-hand axis)



Source: Eurostat, authors' calculations

The raising of the minimum wage is in line with a policy first introduced in 2003 and recently amended, which aims by 2014 to raise the minimum wage to 47%-48% of the average gross monthly wage (currently it is 44.9% of the average wage in 2010). One aim of the policy is fairness: it is argued that in order for Latvia to be able to ratify the 4th article of the European Social Charter (which makes provision for fair labour remuneration (Council of Europe, 1961)), the ultimate goal should be to raise the minimum wage to 68% of the average wage. However, another factor is the belief that a higher minimum wage reduces the incentive for employers to pay 'envelope wages'.

However, the conjecture is that the Latvian minimum wage relative to labour earnings is already rather high as compared to other new member states, which means that a further increase of the minimum wage relative to average earnings is likely to increase relative distortions.

Employment protection legislation

Employment protection legislation (EPL) is typically used to characterise the flexibility or rigidity of labour markets. Commonly used alternative indicators of the strictness of EPL are[78]:

- The OECD EPL index (Venn, 2009)
- The World Economic Forum Hiring and Firing Practices index (World Economic Forum, 2010.).

The OECD EPL index is the most widely used index in employment protection analysis and it aggregates 21 norms, which characterise three dimensions of legislation: (1) individual dismissals of workers with regular contracts, (2) temporary employment and (3) additional regulations for collective dismissals. Each legislative norm is assigned a score ranging from 0 (fully flexible) to 6 (fully rigid), and the aggregate index is calculated as a weighted average of the scores. EPL indices are calculated for all OECD member states and selected candidate countries. For Latvia (which is neither a member state, nor a candidate country) data calculated by Muravyov (2010) may be used instead of the official OECD index[79].

The World Economic Forum Hiring and Firing Practices index forms part of the Global Competitiveness Report, where it is used to assess countries' labour market efficiency (for a detailed description of methodology see World Economic Forum (2010)). The Hiring and Firing Practices assessment is based on a survey of business executives, who are asked to characterize hiring and firing of workers on a scale ranging from 1 (impeded by regulations) to 7 (flexibly determined by employers).

Table 4.5 shows the values of the above indices for Latvia, Lithuania, Estonia, and the average values for the Baltic states[80] and the EU-15.

Table 4.5: Employment protection legislation strictness in Latvia, Lithuania, Estonia and EU-15

	LV	LT	EE	Baltics	EU15

[78] There is also World Bank *Doing Business* indicator but the Bank has for the present discontinued it use because of doubts about the conceptul validity of the measures.
[79] Muravyov (2010) assesses the evolution of employment protection legislation norms in the CIS and Baltic countries over the period from 1985 to 2009, using the OECD methodology.
[80] Simple average, calculated by the author.

OECD EPL index, 2008 (0 – fully flexible, 6 – fully rigid)	2.39	2.61	2.27	2.46	2.34
World Economic Forum Hiring and Firing Practices Index, 2009 (1 – fully rigid, 7 – fully flexible)	4.6	4.6	4.9	4.7	4.6

Source: Muravyov, (2010; World Economic Forum (2010); Venn (2009); own calculations

The OECD index suggests that EPL in Latvia and in the Baltics on average is more stringent than in the EU-15, whereas the World Economic Forum index implies that Baltic EPL is marginally more flexible than in the EU-15[81].

Taken together these observations could be interpreted as evidence of relatively weak law enforcement in this area in the EU-new member states, in particular in Latvia.

Tax burden on labour

The effect of labour taxation on the labour market operates through the wedge between the labour costs faced by employers and take-home pay received by employees. On the labour demand side higher labour costs will both directly and indirectly reduce the demand for labour. On the labour supply side, higher labour taxation depresses after tax wages and will tend to reduce the supply of labour. Thus, other thing equal a higher tax wedge would tend to reduce the level of employment. The impact of taxation on the labour market can also be affected by other labour market institutions. Examples include:

- Wage setting institutions, such as trade unions or the minimum wage, can affect the ability of employers to shift the tax burden to employees.
- Any labour market characteristic which increases non-employment income, e.g., unemployment or other social benefits, increases labour supply elasticity and, therefore, amplifies the negative impact of the tax burden on employment.
- The prevalence of informal economic activity means that an increase in the tax burden can reduce employment and participation rates if employees respond to the by leaving formal employment. Alternatively, if employees choose to leave formal employment and register as unemployed, the increase in the tax burden leads to lower employment and higher unemployment without affecting the participation rate.

The tax wedge offers one indicator of the burden of taxation on labour and the implicit tax rate provides an alternative. The tax wedge can be calculated for a variety of households of different composition with different levels of income. It reflects the difference between labour costs to employers and the net take-home

[81] While the differences between alternative indicators are not large they are suggestive when taking into account how the indices are constructed. The OECD index is based on a compilation of legislative norms and suggests a relatively more stringent formal EPL as compared with the EU-15. However, the World Economic Forum index is based on the subjective evaluations of employers, and indicates the opposite. Econometric testing across countries by Zasova (2011) suggests that in the EU-12 the OECD index is not a significant determinant of employers' perception of hiring and firing rigidity, whereas in the EU-15 the relationship is statistically significant. In short this indicates that in the new member states in general and Latvia in particular, formal EPL is not a good indicator of how businesses perceive the flexibility of the labour market.

pay of workers. The tax wedge is a theoretical indicator, based on tax laws, and does not include actual tax revenue data. By contrast the implicit tax rate is based on actual tax revenues and is calculated as a ratio of budget revenues from labour taxes (personal income tax and social security contributions in the case of Latvia) to total compensation of employees from the national accounts.

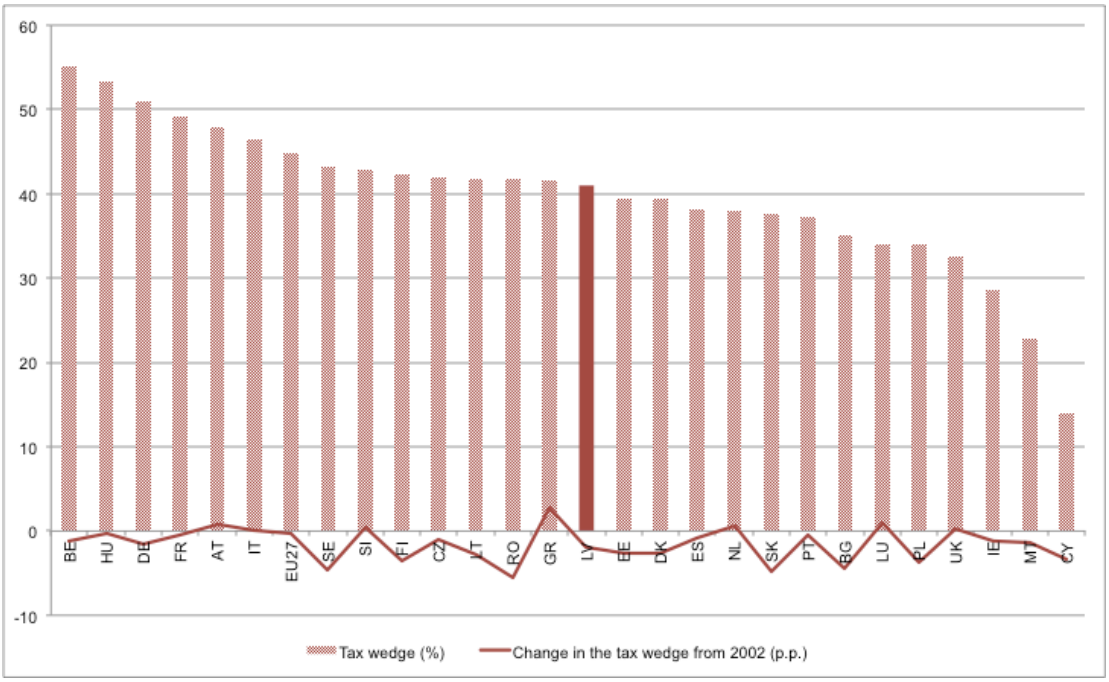
The difference between these two indicators can be substantial if the prevalence of so-called envelope wages is high. By definition, the tax wedge is not affected by unreported wages. On the other hand the implicit tax rate is influenced by observed tax revenues. Moreover, data in the denominator of the implicit tax rate formula, i.e., data on compensation of employees, come from national accounts, which means it is adjusted for the amount of unreported wages estimated by statistical offices. Therefore, if the prevalence of unreported wages is high, the implicit tax rate may show a lower tax burden on labour than the tax wedge.

The tax wedge on labour in the "old" and "new" EU member states in 2009 for two categories of household is presented in Figure 4.5.

The tax wedge in Latvia in 2009 for an individual earning the average wage was below the EU-27 average (41.0% and 44.8%, respectively), but for an individual earning two thirds of the average wage the tax wedge was roughly at the EU-27 average (39.8% and 40.6%). The tax wedge in Latvia was higher than in Estonia for both individual types and about the same as in Lithuania.

Figure 4.5: Tax wedge on labour in EU member states in 2009 (%) and tax wedge change compared with 2002 (percentage points change)

Single person without children, earning 100% of average wage



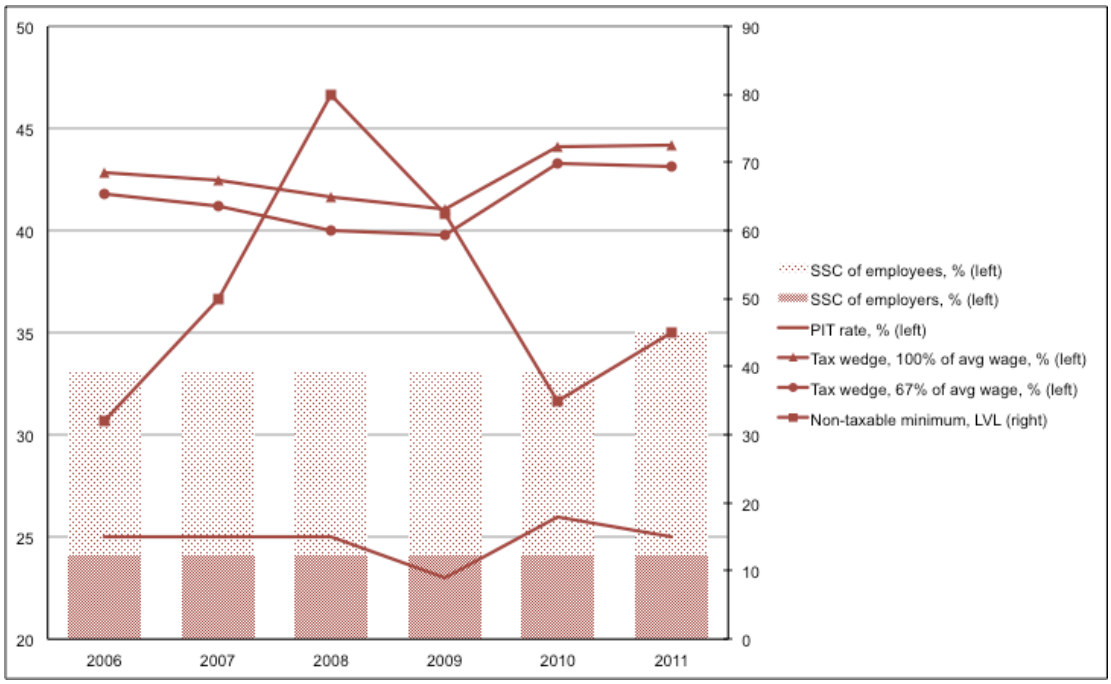
Single person without children, earning 67% of average wage

Source: European Commission, 2010, authors' calculations
Note: data on 2009 are provisional (European Commission, 2010), data on Latvia – authors' calculations

Although many EU-27 countries have reduced the tax wedge in recent years, it still remains high relative to developed countries outside the EU (e.g., the tax wedge for a single childless individual earning the average wage in 2009 in the USA was 29.4%, but for a single childless individual earning 67% of the average wage it was 26.9% and in Australia the figures were 26.7% and 20.7%, respectively (OECD, 2011)). In many EU-27 countries, despite the tough fiscal situation, taxes were significantly cut in 2008 and particularly in 2009, as many countries implemented measures aimed at reducing labour costs and stimulating their labour markets to alleviate the post-crisis adjustment. Thus, the personal income tax rate was significantly reduced in Denmark, Hungary, Finland and Sweden, while some other countries modified tax brackets or implemented other changes in their labour taxation system (Germany, Spain and Italy) (European Commission, 2010).

By contrast in Latvia the tax wedge was increased after 2008 (see Figure 4.6).

Figure 4.6: Rate of mandatory social security contributions (SSC) for employees and employers (%), personal income tax (PIT, %), tax exempt income (LVL, right-hand axis) and tax wedge for childless person earning 100% and 67% of the average wage (%) in Latvia in 2006-2011



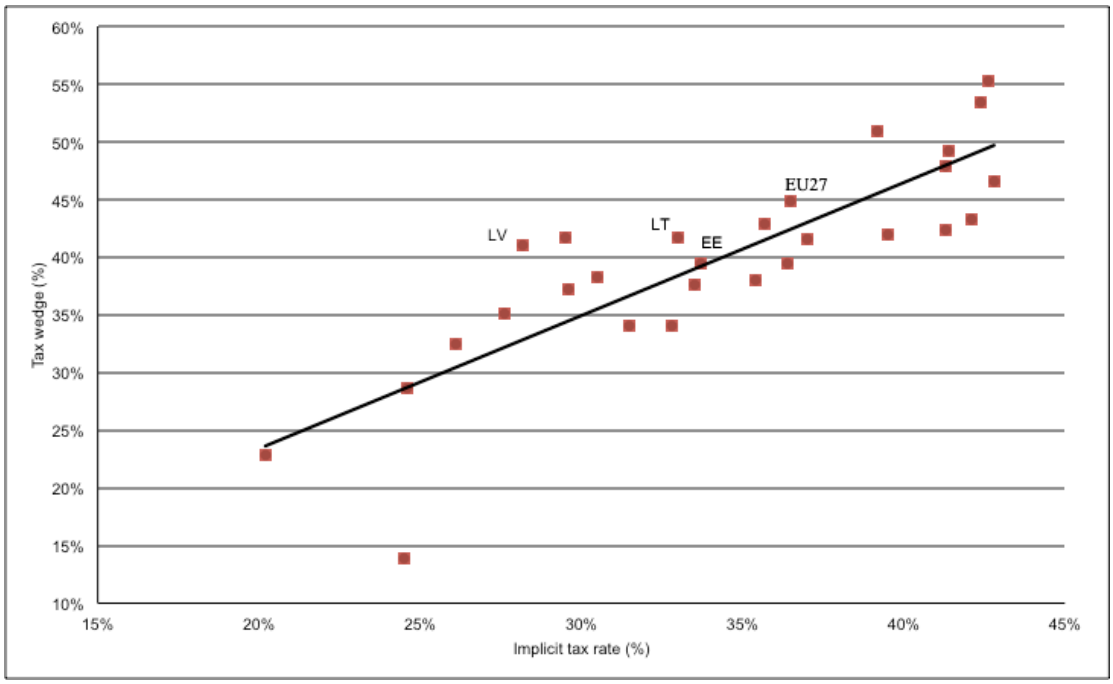
Source: Latvijas Vēstnesis (2011), authors' calculations

Initially, in mid-2009, the government attempted to shift the tax burden from labour to consumption, and reduced the personal income tax rate from 25% to 23%, but for self-employed (not shown on the graph) the rate was cut to 15%. The personal income tax allowance[82] was cut and as a result the tax wedge was reduced for both average-wage and low-wage earners (from 41.6% to 41.0% and from 40.0% to 39.8%, respectively). In 2010 and 2011, however, under pressure from the necessity to achieve major fiscal consolidation, the government the personal income tax rate was increased (to 26% in 2010 and then cut to 25% in 2011) and the rate of social security contributions paid by employees was increased in 2011 to 11% from 9%. Moreover, the personal income tax allowance was further reduced. As a result, the tax wedge on average wage earners increased to 44.2% in 2011 and on low wage earners it increased to 43.2%.

However, calculations of the implicit tax rate in Latvia suggest that the tax burden on labour is lower than in both Estonia and Lithuania and lower than the EU-27 average[83] (see Figure 4.7). There are certain limitations to comparing the implicit tax on labour with the tax wedge on labour, since the implicit tax rate does not allow accounting for progressivity of a tax system, and it can be affected by the demographic composition of the population. Nevertheless, it is noteworthy that the implicit tax rate on labour in Latvia is significantly below that in Lithuania and Estonia, while the tax wedge in Latvia is higher than in Estonia and only slightly below that in Lithuania. As already noted this result might be an indication of a relatively high incidence of unreported wages in Latvia.

Figure 4.7: Implicit tax rate on labour (2008, %) vs. tax wedge for a single childless person earning average wage (%, 2009*) in EU

[82] Untaxed income.
[83] Latest available data on implicit tax rate on labour income refers to 2008.



* Data on Bulgaria, Estonia, Lithuania, Malta, Romania and Slovenia refer to 2008, data on Cyprus and EU-27 refer to 2007
Source: Eurostat, European Commission, 2010, Latvijas Vēstnesis (2011), author's calculations

There is also evidence suggesting that tax payment procedures in Latvia are relatively complicated. According to World Bank data (World Bank et al, 2010), the average time that a Latvian entrepreneur spent on complying with labour tax obligations in 2009 was 165 hours This compares with entrepreneurs in Luxembourg who spent 14 hours, in Estonia – 34 hours and in Sweden – 36 hours. The average time across the EU-27 was 108 hours[84].

To conclude, formal tax legislation implies that the tax burden on labour in Latvia on average-wage and low-wage earners is approximately at the EU-27 level, it is higher than in Estonia and slightly lower than in Lithuania. Moreover, in the period after 2008 while most EU-15 countries implemented measures aimed at reducing labour costs, in Latvia the tax burden on labour was increased. Differences between the implicit tax rate on labour and the tax wedge on labour suggest that the prevalence of unreported wages in Latvia might be higher than in Estonia and Lithuania.

Labour markets policy developments

The recession and the growth of unemployment have led to a number of employment and social safety net measures. These include:

- In September 2009 the government launched the "Workplaces with Stipend Emergency Public Works Programme" to mitigate the social consequences of the crisis and to activate the unemployed. More than 113 thousand unemployed persons have participated in the programme; participants carry out community works in local municipalities for a period of up to 6 months and in return received a stipend of LVL 100 (EUR 140). The current programme will be terminated by the end of 2011.

[84] There were only 4 countries in the EU where entrepreneurs spent more time on paying taxes than in Latvia:Finland (200 hours), Italy (214 hours), the Czech Republic (262 hours) and Bulgaria (288 hours)).

- A training voucher system (i.e. "money follows the unemployed") to provide financial support to people out of work acquiring new qualifications. The "Lifelong learning activities for employed persons" promotes lifelong learning for at-risk-of-unemployment persons by providing vouchers that supplement their work knowledge and experience.

- A variety of measures to promote self-employment and entrepreneurship in Latvia by supporting start-ups and micro-enterprises.

Assessment

- The evidence on the nature and efficiency of the Latvian labour market is mixed: in particular the apparently the flexible adjustment of the labour market has to a large extent been achieved by employers circumventing the formal employment rules.
- The efficiency and competitiveness of the economy could be increased if resources spent on circumventing the regulations were spent in more productive ways.
- Widespread flouting of the rules undermines the credibility of labour market institutions.

4.3.2 Financial markets

Financial market development is an area in which Latvia lags behind comparable countries in the region. This pillar of competitiveness is particularly important at Latvia's current stage of economic development, i.e., transitioning from an efficiency driven economy to an innovation driven one (Global Competitiveness Report, 2010-11). Developed financial markets enhance the efficiency of resource allocation within the economy by channelling savings from households to their most productive investments by firms. Fostering a high level of innovation and investment requires sophisticated financial markets that can provide entrepreneurs with access to finance from a sound banking system, venture capitalists, a properly regulated equity market and other financial instruments.

This section draws on a broad range of financial market indicators and benchmarks Latvia against neighbouring Baltic countries (Estonia and Lithuania), comparable Central and Eastern European countries (Bulgaria, Romania, Poland, Slovakia, Slovenia and Hungary) and more developed Nordic countries (Denmark, Finland and Sweden.

Development and functionality

The Latvian stock market is considerably less developed than stock markets in comparable countries. Table 4.6 indicates that the relative size of the stock market in Latvia (market capitalization as a percentage of GDP) is, with the exception of Slovakia, the smallest in the group of benchmark countries: the stock markets in neighbouring Baltic countries are about 2 times larger, comparable Central and Eastern European countries 2 to 4 times larger and Nordic countries 5 to 15 times larger. The difference in stock market liquidity is even more pronounced: compared to Latvia, the median stock market turnover ratio in neighbouring Baltic countries is about 12 times larger, comparable Central and Eastern European countries 9 times larger and Nordic countries 93 times larger.

In contrast, the market for venture capital and private equity in Latvia is relatively active. This type of financing in Latvia during 2008 amounted to 0.27% of GDP, which from the Baltic, Central and Eastern European countries was surpassed only by Hungary (0.42%). There is, however, scope for further development as venture capital and private equity financing in the Nordic countries is roughly twice that of Latvia (0.40% to 0.67%).

Latvian debt markets, consisting of corporate bonds and bank loans, are somewhat less developed than those of other Baltic, Central and Eastern European countries. The market for corporate bonds as a percentage of GDP in Latvia is roughly half that of neighbouring Baltic countries. The depth and activity of depository institutions, including bank loan financing for businesses, is commonly measured by the ratio of broad money (or M3) to GDP. Using this measure, the depth and activity of depository institutions in Latvia (45% broad money to GDP) is 17% below the average of Estonia and Lithuania (54%), also 17% below the average of the comparable Central and Eastern European countries (54%), and 52% below the Nordic countries (93%). An alternative survey-based measure of the percentage of firms using banks to finance investment, leads to a similar conclusion, i.e., the market for bank debt financing in Latvia is moderately underdeveloped.

Overall, the indicators in Table 4.6 suggest that Latvian financial markets are underdeveloped relative to Baltic, Central and Eastern European countries, which themselves have significant scope for development to reach the levels of the Nordic countries. The Latvian stock market lags behind the furthest in development, the banking sector is moderately less developed than that of comparable countries, and in contrast venture capital and private equity investments in Latvia are relatively active.

Table 4.6: Capital market development

Financing Type	Indicator	BG	RO	SI	HU	SK	PL	LT	LV	EE	DK	FI	SE	Source	Year
Panel A: Equity markets															
Stock market	Market capitalization (% of GDP)	15	19	24	22	5	31	12	7	14	60	38	106	WB	2009
	Stock trades turnover ratio (%)	5	8	9	111	4	49	7	1	16	93	74	114	WB	2009
Venture capital	VC and private equity investment (% of GDP)	0.27	0.20	0.01	0.42	0.05	0.17	0.00	0.27	0.09	0.49	0.40	0.67	EVCA	2008
Panel B: Debt markets															
Bond market	Private sector bonds, value (% of GDP)			3.9	4.7		1.0	2.7	1.5	3.9				WFE/ SEB	2010
Banking system	Broad money (% of GDP)	68	37		61	53	52	48	45	60	90		96	WB	2009
	Firms using banks to finance investment (% of firms)	35	37	52	49	33	41	47	37	41				WB	2009

Sources: WB=World Bank; EVCA=European Venture Capital Association and PEREP Analytics; WFE/SEB=World Federation of Exchanges and SEB Bank.
Note: Data for SK and for 2008.

Reasons for the underdevelopment of Latvia's financial markets

Much of the disparity between Latvia and the benchmarked countries can be attributed to historical factors. For example, the difference between the Baltic and Nordic financial markets is largely a consequence of the Soviet occupation of the Baltic countries; the differences between the Baltic countries are partly the result of different methods of privatisation (Korhonen et al., 2000). However, this section focuses on factors that can be influenced by policy, such as securities legislation, disclosure requirements, enforcement, restrictions on capital flows, the informal sector and corruption. The discussion is based on indicators reported in the Appendix 1.

For a given price of financial capital, thin financial markets can be the result of inadequate supply, e.g., a shortage of willing investors, or a lack of demand, e.g., few firms actively seeking financial capital for investment. The supply ultimately originates from domestic and foreign household savings. Low restrictions on international capital flows in Latvia permit domestic saving to be supplemented with financial capital from abroad. Anecdotal evidence on the adequacy of the supply side, drawing on discussions with practitioners across all asset classes as well as the recent Foreign Investors' Council in Latvia working group on capital markets, also suggests that the supply of financial capital in Latvia is adequate and the most serious constraints are on the demand side.

On the supply side, there is also little doubt that if private Latvian companies were to conduct initial public offerings (IPOs) there would be demand for their shares. Recent IPOs in the Baltic countries have been oversubscribed and discussions with Latvian mutual and pension funds suggests that funds would be happy to invest in listed Latvian companies, but currently are forced to invest abroad due to a shortage of such companies. A similar story resonates from venture capital and private equity funds – financing is available, but few companies are both attractive to funds and willing to accept the equity investment (Vanags et al., 2010). The supply of debt financing from the banking sector prior to the 2008/2009 crisis was ample. Unlike equity financing, firms have been more willing and able to take loans from banks and consequently the banking sector is more developed in Latvia than is the stock market.

On the demand side, an important question is why are Latvian firms unwilling or unable to utilise more equity financing in particular, by listing on the stock exchange or accepting venture capital or private equity investment? There are a number of reasons for both the inability and unwillingness. Starting with inability, relatively widespread tax evasion, deliberate misreporting and bribery make it difficult for many firms to open their books for equity investor scrutiny. Eliminating such activities and remaining in business is, for many firms, not possible because they would cease to be competitive in a market in which such activity is prevalent. While this also affects firms' ability to obtain debt financing it is a stronger constraint on equity financing because, being the residual claimants, equityholders typically impose stronger monitoring and scrutiny on firms than do debtholders. Closely related and as discussed in section 4.1.2 is the relatively poor information disclosure and corporate governance of Latvian firms making them riskier and less attractive to potential investors. Again, this impedes both debt and equity financing by raising the cost of capital, but it is widely documented in empirical and theoretical studies that the impediment is much more severe in raising equity financing. Finally, low entrepreneurial spirit, weak business ideas and insufficient skills of entrepreneurs in countries such as Latvia can explain why fund seekers are not attractive to the suppliers of financing (Campbell and Kraeussl, 2007). Improvements in the quality of education would help improve the general level of entrepreneurial spirit and skills. The general lack of attractiveness of Latvian firms to venture capital or private equity funds is supported by evidence from an attractiveness index reported in the Appendix, which ranks Latvia last in the group of benchmark countries.

Turning to unwillingness to utilise equity financing, many business owners in Latvia are reluctant to sacrifice some amount of control to obtain equity financing. While private control is valued in all countries, anecdotal evidence suggests that this effect is particularly strong in Latvia due to cultural and historic reasons. The relative ease of obtaining bank financing prior to the 2008/2009 crisis is another contributor to the weak demand for equity financing by Latvian firms.

Why then is the banking sector in Latvia, although more developed than the stock market, shallower and less active compared to banking sectors in benchmark countries? Part of the reason is that some of the factors that constrain firms' ability to raise equity, such as informal activity and lack of transparency, also constrain their capacity to obtain debt financing although less severely. For example, if a profitable firm deliberately underreports its profits to reduce its tax liability, it limits its ability to obtain bank loans for further investment because it cannot demonstrate its profitability to the bank. However, a second reason is that the lack of equity leads to relatively high levels of leverage and subsequent reluctance by banks to continue lending unless firms can increase equity. This is consistent with the relatively high collateral requirements and spread between lending and borrowing rates. It is also supported by anecdotal evidence from bank managers and empirical evidence that Latvian firms are overleveraged relative to other European countries after controlling for determinants of capital structure (Putniņš, 2010).

Legislation protecting investors, both shareholders and creditors, in Latvia is strong. However, legislation alone is not sufficient to promote financial market development. Research suggests that to have a positive effect, legislation must

be accompanied by strict supervision and enforcement, and this is an area in which Latvia falls behind. Part of the problem lies with the court system. Due to insufficient resources or inefficiencies Latvian courts are slow in resolving corporate and investment disputes. Further, judges often lack the required expertise in corporate and securities law to competently handle cases. Potential solutions to these problems include establishing a pool of judges that specialise in financial market legislation by providing training and technical assistance, and in reforming the current courts of arbitration create a specialist court of arbitration that deals with financial market cases. In many jurisdictions courts of arbitration act as an effective alternative form of dispute resolution that is faster than the normal court system and can engage industry specialists as judges.

The second problem with enforcement is ineffective regulators. Survey evidence reported in the Appendix suggests that regulation and supervision of securities exchanges in Latvia is the least effective among the Baltic countries, on par with the least effective of the Central and Eastern European countries (Bulgaria and Romania) and well below the effectiveness in Nordic countries.

To sum up, financial market development in Latvia is limited by demand-side factors: (i) inability for firms to obtain financing due to their involvement in informal activity and tax evasion; (ii) unwillingness to dilute ownership and control to attract equity investment; and (iii) lack of attractiveness due to low transparency, poor corporate governance, and underdeveloped entrepreneurial spirit. These factors strongly impede firms from obtaining equity financing, which has a follow-on effect on firms' ability to obtain debt financing because of the high default risk that accompanies high levels of leverage. Some infrastructure-related factors such as weak enforcement or means of enforcing corporate and securities law also impede financial market development in Latvia.

Macroeconomic impact of financial market underdevelopment

The two main reasons why the development of capital markets affects the level of economic activity relate to the quantity of savings channelled from households to firms for investment, and quality of the investments to which funds are channelled. Specifically: (i) more developed capital markets allow better screening and monitoring of fund seekers, which increases the efficiency of resource allocation; and (ii) greater liquidity, enhanced ability for risk sharing and a larger choice of instruments encourages the mobilisation of savings and consequently increases the amount of investment.

Are Latvian firms constrained by the demand-side factors that limit their access to finance? Survey-based evidence (reported in the Appendix 1) suggests Latvian firms do feel financially constrained. For example, in the World Bank Enterprise Survey Latvia ranks second, after Romania, in the percentage of firms that identify access to finance as a major constraint. Consistent with this, Latvian firms and entrepreneurs make significant use of internal finance (retained earnings) and informal capital (friends and relatives) for investment. The breakdown by asset classes shows that both debt and equity financing are constrained. This suggests that financial market underdevelopment, driven by various factors, limits investment by Latvian firms and therefore also dampens economic growth.

To estimate by how much financial market development in Latvia would affect economic growth we extrapolate from the empirical study of Rousseau and Wachtel (2000), using data on the current level of development in the Baltic countries. We and obtain the following estimates. Increasing the development of Latvia's capital markets to the level of Estonia's is expected to add approximately 1.8 percentage points to the annual growth rate of real GDP per capita. The additional growth would close the income gap between the two countries (measured by GDP per capita) by one third in five years and generate an additional EUR 120 million in tax revenue per year.

Financial market policy developments

Developments include:

- In 2010 the government restructured the indebted Parex Banka and part of the company was transferred to a new bank – Citadele Banka. It is planned to sell Citadele Banka by the end of 2014, while Parex Banka will operate until 2017 and focus on repaying the public investments into the bank. On May, 2011 Parex Banka repaid its syndicated loan without resort to state budget funds.

- The current state joint stock company "Mortgage and Land Bank of Latvia" will be restructured into development financial institution. The aim of the reorganization is to create a development bank to implement of state support programs by the end of 2013.

- On 16 December 2010 state guaranteed compensation to the customers of Latvian banks and credit unions was increased to 100 000 euro (about LVL 70 000). The amendments took effect on 1 January 2011. The Basel III regulations will be gradually implemented from 2012 until 2018.

- The Financial and Capital Market Commission aims to strengthen the stability of the banking sector and ensure better resilience to potential market disruptions in the future by strengthening the capital base of banks and setting a stricter liquidity requirements. The Regulations on Calculation of the Minimum Capital Requirements will be amended by December 31, 2011.

Assessment

The underdevelopment of Latvian financial markets, especially the stock market, is a dampener to economic growth in Latvia. The main causes of the underdevelopment are: deep-rooted demand-side factors such as informal activity, corruption, reluctance to share control of companies, lack of entrepreneurial ability, poor corporate governance and a lack of transparency; as well as weaknesses in financial market infrastructure such as weak enforcement or means of enforcing corporate and securities laws.

The only serious long-term solution to the underdevelopment of Latvia's financial markets is to tackle these deep-rooted demand-side factors: fight tax evasion and corruption, change the general nature of corporate governance and attitudes to business ownership, and improve the quality of education. There are, however, a number of more immediate actions that would encourage capital market development:

- Further integration of the three Baltic stock exchanges into the Nordic exchanges.
- Switching trading, clearing and settlement of stock trades to Euro (as per neighbouring Baltic counties) to reduce an unnecessary hurdle for foreign investors.
- Simplification of securities tax administration procedures, particularly for retail investors.
- Partial privatisation and listing of state-owned enterprises.
- Subsidised initial public offerings, as listing on the stock exchange has liquidity externalities.
- Improved enforcement of corporate and securities laws, e.g., specialised courts of arbitration, additional training for specialised judges in corporate and securities law.
- Improved corporate governance and transparency of state-owned enterprises (via transparency policy, reformed ownership structure and independent supervisory boards), to set an example for private companies.

4.4 Education and skills

By many conventional indicators the Latvian population is well educated. Moreover, as indicated by enrolment and graduation rates, education attainment figures and the large number of higher education institutions the education level has been growing over time.

According to the Europe 2020 targets for education and training (see Table 4.7), Latvia is performing rather adequately – not among the forerunners, but also not falling behind except for adult participation in education and training activities, which is only 5.3% as compared with the EU27 average of 9.3, and the target of 15%. The main EU 2020 educational target is a benchmark of 40% of young people with university-level qualifications. Currently, the observed figure for 30-34 year-olds in Europe is 32.3%, with Ireland leading at a 45%, while in Latvia 26% but rising. Currently, Latvia has not reached any of the 2020 education targets, but regarding the indicators on: pre-school children in education, 15-year-olds with insufficient knowledge and the share of early school leavers Latvia performs better than the EU average.

Table 4.7: The benchmarks for Europe 2020 and Latvia and EU27 average performance, years 2000 and 2009

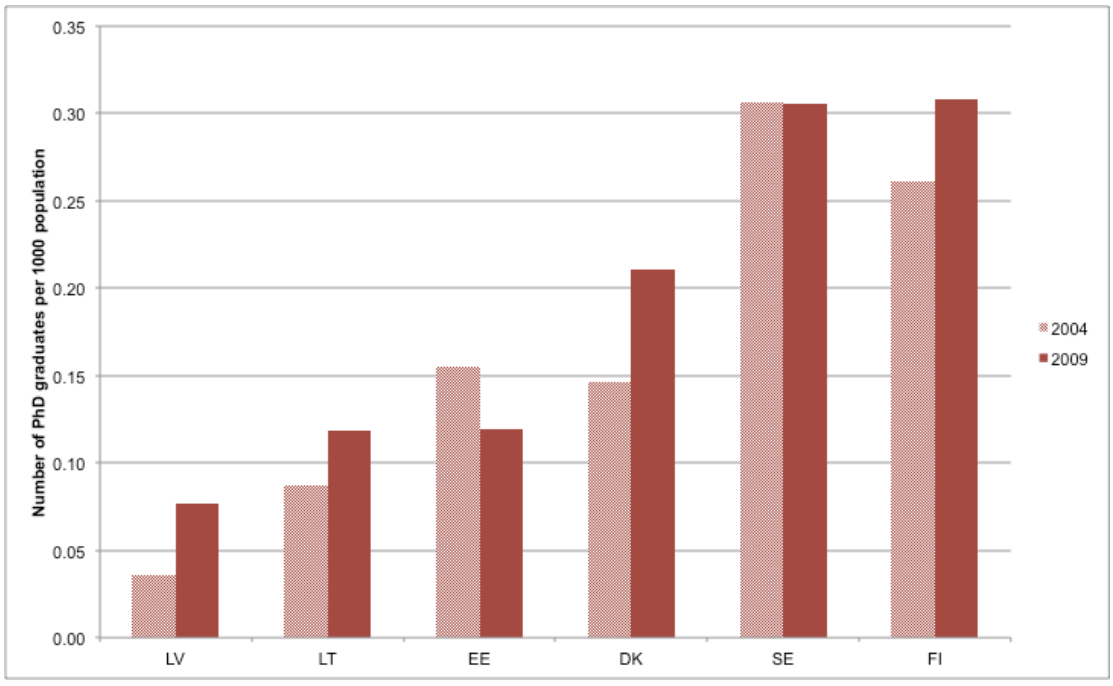
	EU 27		Latvia		EU target
	2000	2009	2000	2009	2020

Children between the age of four and the age for starting compulsory primary education participate in early childhood education	85.6	92.3	65.4	88.9	at least 95%
Share of 15-years olds with insufficient abilities in reading, mathematics and science	21.3	20.0	30.1	17.6	less than 15%;
Share of early leavers from education and training	17.6	14.4	16.9 (2002)	13.9	less than 10%
Share of 30-34 year olds with tertiary educational attainment	22.4	32.3	18.6	26.1	at least 40%
Adults (age group 25-64) participate in lifelong learning	9.8	9.3	7.9	5.3	at least 15 %

Source: EU education report: good progress, but more effort needed to achieve targets, IP/11/488, 19.04.2011

One indicator of innovation and research potential is the number of people participating in highest level studies and acquiring science degrees. Latvia has one of the lowest numbers of PhD graduates per capita in Europe. In the recent years the total number of PhD graduates has been gradually rising and reached just 174 people in 2009, still insufficiently fast to catch up even with neighbouring countries Estonia and Lithuania. The small number of people pursuing studies at the highest level threatens the future development of the higher education system, since the academic workforce in Latvia is ageing and there is no source of replacement. Also, a low level of PhD activity means that very little original research is taking place in Latvia.

Figure 4.8: PhD graduates per 1000 of population, selected EU countries, 2004 and 2009

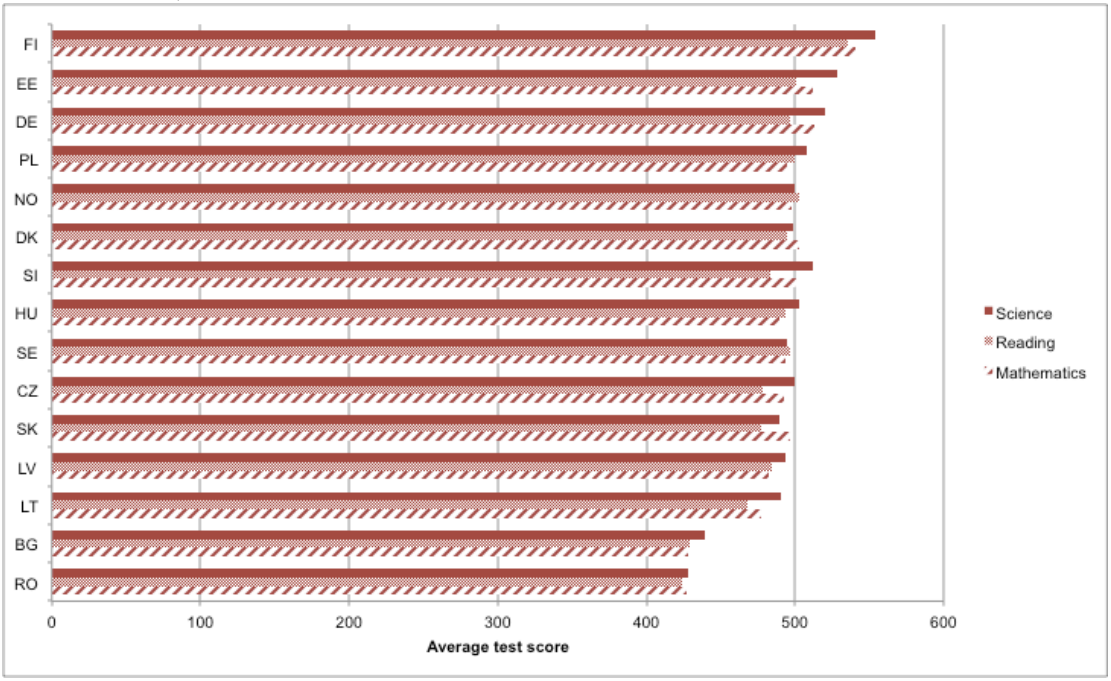


Source: Eurostat (online data code educ_grad4 and educ_igen)

While in terms of numbers the Latvian education system and the knowledge level of the population look rather acceptable in an EU and especially in a world context, the quality of education, especially higher education, is a different issue. Looking at the 15-year-olds' capabilities in reading, mathematics and science literacy from the PISA international assessment, the average scores in Latvia in 2009 were below 500 points from a maximum of 1000 in all fields – 482 in

mathematics, 484 in reading and 494 in science tests respectively (Figure 4.9), the OECD average was respectively 496, 493 and 501. Latvia is statistically significantly below the OECD average (PISA 2009 results). Individual countries in the region do much better than Latvia, Finland, for example, is second on the Science scale and third on the Reading scale[85]. Estonia was in the top 15 by all three indicators, statistically significantly above OECD average.

Figure 4.9: Average scale scores in mathematics, reading and science, selected EU countries, 2009



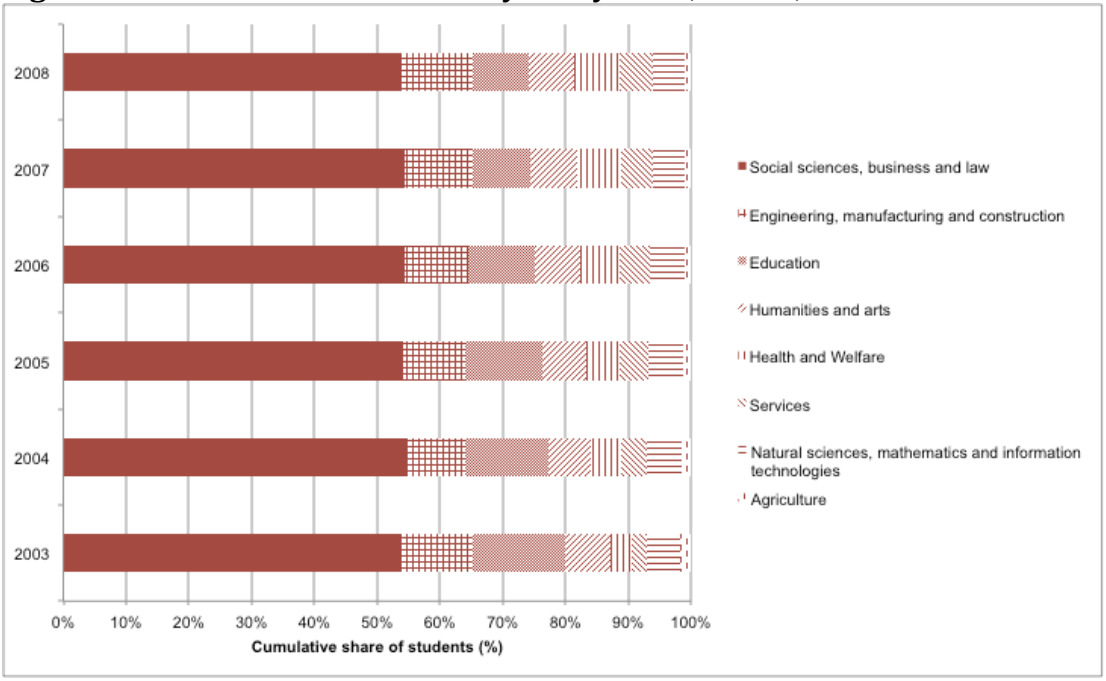
NOTE: The scale ranges from 0 to 1000. Detail may not sum to totals because of rounding. Some apparent differences between estimates may not be statistically significant.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2009.

The quality problem in higher education is more profound, but more difficult to measure. Researchers argue that there are numerous and persistent problems in the Latvian higher education system (Dombrovskis, 2009; Auers, Rostoks and Smith, 2007). First of all, it is very common for students in Latvia to combine work with studies, hence they are absent from classes, which has a statistically significant effect of lowering average grades, class attendance, and independent study time (Auers et al, 2007). Secondly, the Science Citation Index (SCI) statistics show that Latvian researchers are very unsuccessful in international publications, significantly outperformed by Estonia and Lithuania. The difference in Social Science Citation Index (SSCI) is even more dramatic – in the 1990- 2008 period, Latvian social scientists published only 112 SSCI articles (Sweden and Finland published 21,038 and 10,641 SSCI articles, respectively; see more in section 4.5). Thirdly, Dombrovskis (2009) finds that higher education received after 1990 is not as effective as Soviet education in promoting innovativeness, as measured by both product innovations and patent applications. Therefore it must be concluded that the quality of education has deteriorated and is underperforming, especially in social sciences.

[85] The scoring though is not done strictly by countries, but sometimes by separate administrative regions, for example, in China there are separate indicators for Shanghai, Hong Kong, Macau etc

The concentration of studies in social science fields (especially paired with findings about the poor quality in these fields) is another potential problem for Latvian competitiveness. The expansion of higher education after 1991 has happened primary in the social science subjects. A stable 54% of the students in higher education study social sciences, business and law, only 11% study engineering, manufacturing and construction, and 5% - natural sciences.

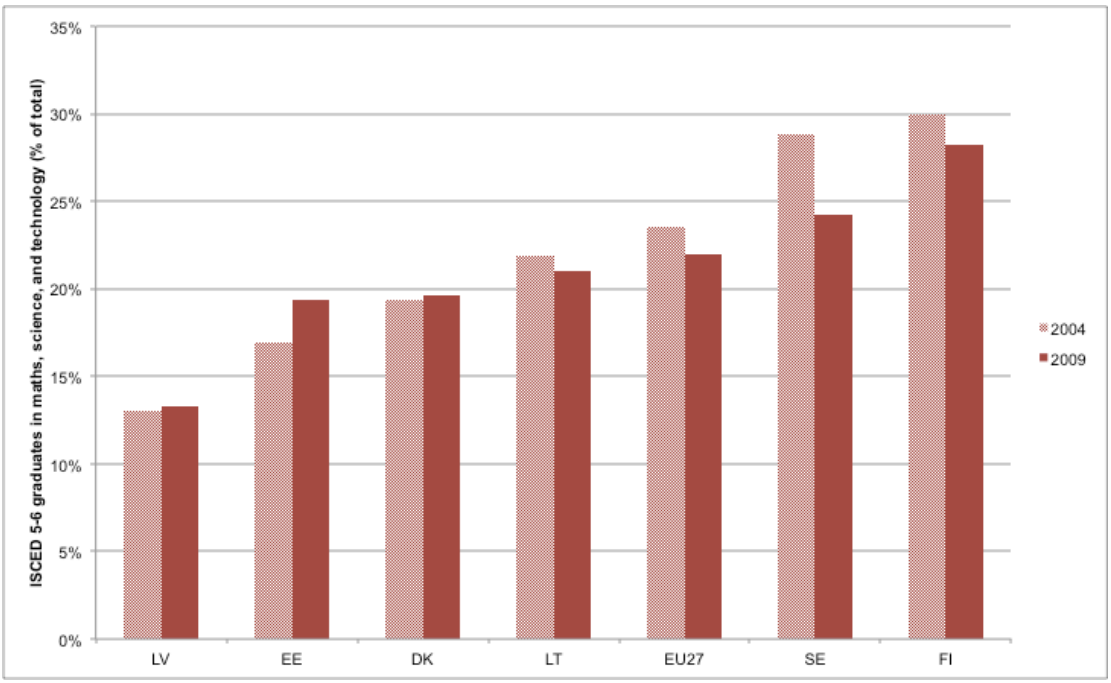
Figure 4.10: Number of Students by Study Field, Latvia, 2003-2008



Source: Ministry of Education and Science, Republic of Latvia

At 13%, the share of Latvian graduates in the fields of mathematics, science and technology is among the lowest in Europe (Figure 4.11). In most European comparator countries the share of such graduates is above 20 percent with the highest (in 2009) observed in Finland, Germany, Czech Republic and Sweden. In Estonia and Lithuania 19 and 21 percent respectively study the exact sciences. The Latvian embodied in human capital in these fields cannot adequately support development in technology fields.

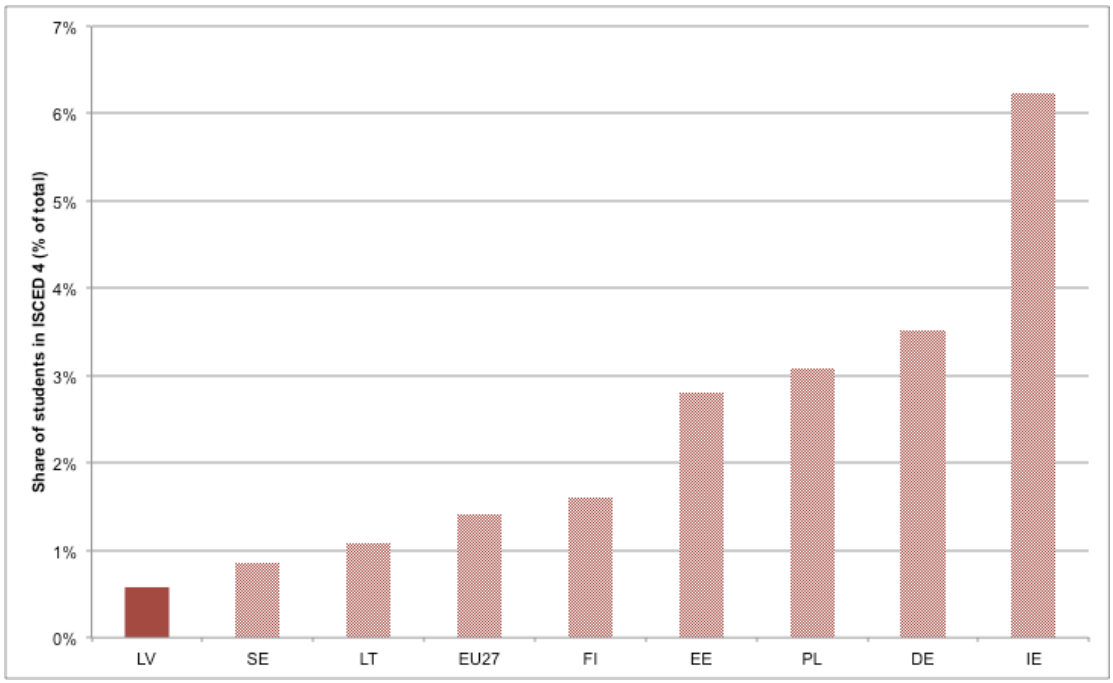
Figure 4.11: Graduates (ISCED 5-6) in Maths, Science and Technology Fields as percentage of graduates in all fields, selected EU countries, 2004 and 2009



Source: Eurostat (online data code educ_thflds)
Note: International Standard Classification of Education (ISCED) 5-6: tertiary education.

The Latvian system of professional and vocational education is inadequate in terms of its interaction with the labour market: survey evidence shows that employers believe that both professional education institutions, much like higher education institutions, fail to supply students with sufficient practical skills in their chosen profession, and that half of all students do not work in the field in which they obtained post-secondary education. Moreover, as illustrated in Figure 4.12, vocational education is rather unpopular among Latvian school leavers, as compared with those in other European countries. Moreover there is no meaningful apprenticeship system – employers are involved in vocational training mainly by their role in defining the curricula of vocational schools.

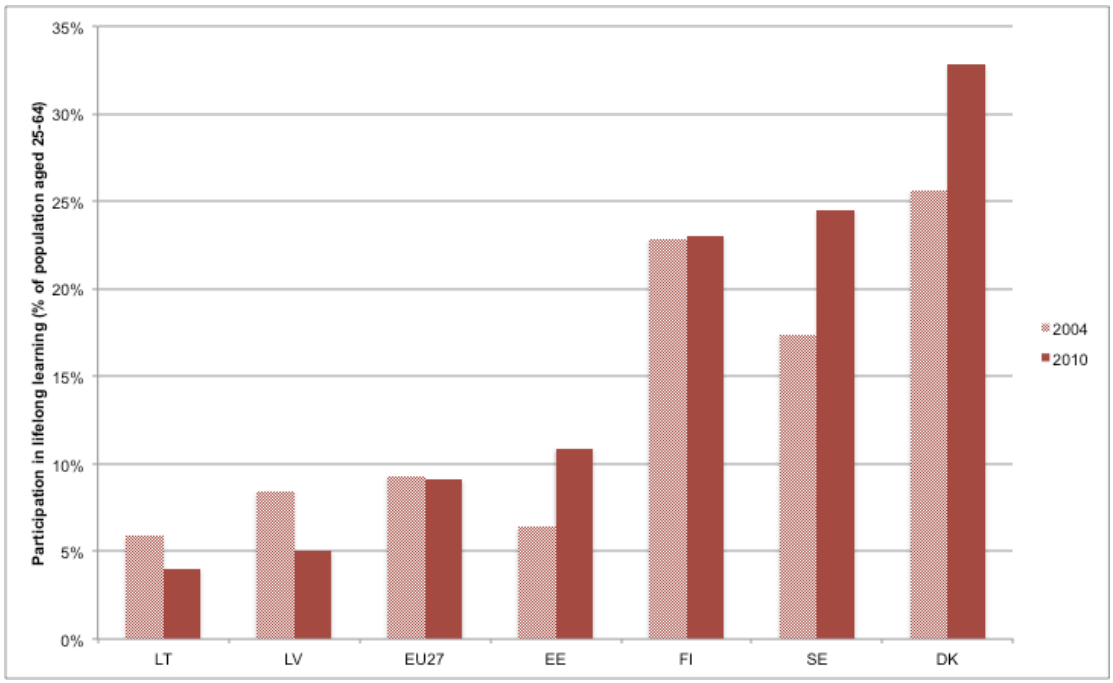
Figure 4.12: Fraction of students in post-secondary non-tertiary education in Latvia and selected countries (2008)



Source: Eurostat

The prevalence of continuing education indicates how active and responsive the a country's labour market is to changing labour market conditions and hence reflects one dimension of labour market flexibility. Scandinavian countries stand out with very high levels of participation in lifelong learning activities (33% in Denmark in 2010, for example), while the most recent EU member states Bulgaria and Romania have participation rates only slightly above 1 percent. Latvia along with other Eastern Europe countries stands in between. However, a particular characteristic of Latvian developments is that the proportion of adults participating in education and training activities has decreased over last 6 years, especially after the crisis period from 2009. This is explained firstly by the fact that the pool of adults searching for 'new style' education after their Soviet-time diploma (rather popular further education approach in the period after 1995) is largely exhausted. The second reason for the observed decrease in LLL participation in Latvia has been financial constraints, especially after 2008. In contrast to Scandinavian countries, very few active labour market policies in Latvia have been directed towards support of education and training of people in work – the focus of active labour market policies has been on the unemployed and on marginal social groups.

Figure 4.13: Participation in Life-Long Learning (as a % of 25-64 year-olds), selected EU countries, 2004 and 2010



Source: Eurostat, Labour Force Survey (online data code trng_lfse_01)

Education policy developments

- Latvia's EU 2020 National Reform Programme identifies reforms of the education sector as a critical priority.
- A key reform in in secondary education has been the introduction of a 'money follows the student' principle.
- In 2011 the requirements for the accreditation of higher education institutions have been increased. The accreditation process had been unified the previous year. It also gives such institutions more flexibility when offering courses outside of formal programmes and when offering programmes with partners from abroad.
- The physical infrastructure of 29 institutions of higher education will be modernized with a budget of LVL 65.3 million, including EU fund financing of LVL 51.3 million (2011–2013). A related programme provides financing for upgrading their communication infrastructure.
- A scholarship programme provides LVL 23 million, mostly from EU funds, for 700 master students and 200 doctoral students.
- The infrastructure of vocational training institutions will over the next few years be upgraded with a total budget of roughly LVL 80 million.
- In August, 2011, the Cabinet of Ministers selected the first six out of planned nine competence centres for additional funding. Competence centres are institutions of professional education that meet a number of quality criteria. A total of LVL 79 million of EU fund financing is available for the development of the professional education infrastructure.

Assessment

- Education participation and enrolment rates at all levels of education are high. Higher education is dominated by social sciences with a comparatively small share of students in sciences. This represents one of the main challenges of the education and skills infrastructure.
- The quality of education, especially at the tertiary level in social sciences, is a major concern.
- The network of schools and higher education institutions is too extensive for the current demographic situation. This results in high competition, low entrance requirements in higher education institutions and thinly distributed academic resources.
- Involvement in continued education activities is very low by international standards, and so is vocational training in workplaces.
- Vocational education has low prestige and low uptake.

4.5 Innovation infrastructure

Innovation performance is determined among other things by a country's innovation infrastructure. This covers various aspects of innovations and related fields such as education, science and commercialisation of scientific findings/innovations. The underlying rationale for the focus on innovations is that from (neo-classical) economic theory we know that in the long run the only sustainable source of prosperity growth is technological progress. Furthermore, the more advanced an economy becomes the more important is technological progress or innovation for the development of its competitiveness. For Latvia climbing the economic quality ladder requires an adequate and improving innovation structure.

The findings from the New CGI on innovation structure and its components are presented in Table 4.8 below. Inspection of the table reveals that out of the three Baltic states Latvia scores worst out with an overall ranking of 53, whereas Estonia and Lithuania are ranked 30 and 38, respectively. Furthermore, Latvia does consistently worse than the other two Baltic states in terms of all aspects except for enrolment in tertiary education. What seems to particularly troublesome in Latvia in comparison to the other two Baltic states are the following: University-industry research collaboration; Quality of Math Education; and the Availability of scientists and engineers.

Table 4.8: Innovation infrastructure 2010

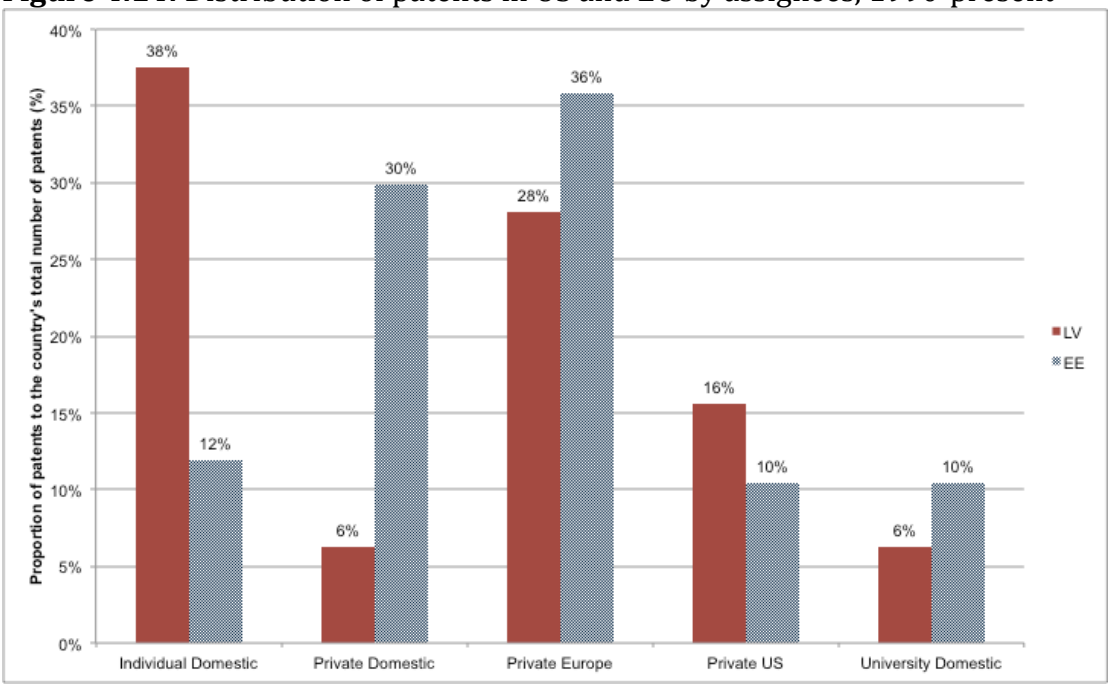
	LV	LT	EE
Innovation infrastructure 2010	53	38	30
Quality of scientific research institutions	53	38	25
University-industry research collaboration	62	32	35
Quality of math and science education	53	21	22
Quality of management schools	70	65	39
Availability of scientists and engineers	84	40	49
Tertiary enrolment	18	11	24
Utility patents per million population	39	52	37

Source: NEW GCI.

Patent registrations represent another indicator. In order to go deeper into patent activity we classify the assignees of all registered patents in the US Patents Office that originate to Latvia and Estonia. The number of such patents for the post 1995 period were 32 for Latvia and 67 for Estonia. We classify all

assignees into the following broad categories: (i) domestic individuals; (ii) domestic private firms; (iii) private firms registered in other European countries; (iv) private firms registered in US; and (v) domestic universities or research institutes. The results are presented in Figure 4.14. Several conclusions emerge. First, most Latvian assignees are either private individuals (38%), or private firms located in the US or Europe (28% and 16%, respectively). Only 12% of all assignees are Latvian domestic private firms. This signals that there are serious problems with commercialization of domestic inventions by Latvian firms. In contrast, 30% of all Estonian assignees are domestic Estonian firms. Second, as compared with Estonia, very few (6%) Latvian patent assignees are university institutions. This points to deficiencies in either the quality of the research system, or an incomplete contractual or legal framework, which fails to motivate universities to patent their inventions.

Figure 4.14: Distribution of patents in US and EU by assignees, 1990-present



Source: US Patent and Trademark Office, European Patent Office, own calculations

Comparison with innovation leaders such as Sweden and Estonia offers further understanding of the factors underlying Latvia's poor innovation performance. A deeper look at the indicators making up the Summary Innovation Index (SII) provides interesting insights as to what makes Sweden and Estonia such impressive innovation performers.

The SII spans three broad areas called: enablers of innovations; firm activities; and innovation outputs. An open research system, excellent cooperation between academic institutions and the industry, and heavy patenting abroad seem to be the main factors that make Sweden Europe's top innovation performer. Sweden is a powerhouse of academic scientific research, with new doctorate graduates per 1000 population aged 25-34 being more than twice the EU-27 average. Its research system is extremely open, with the number on international scientific co-publications (with at least one author based abroad, i.e. non-EU-27) per million population being nearly five times the EU-27 average. Further, it has more than three times EU-27 average public-private co-authored research publications, which points in the direction of good linkages between the science base and businesses. Finally, Sweden's license and patent revenues from

abroad are more than five times the EU-27 average, amounting to 1.18% of its GDP.

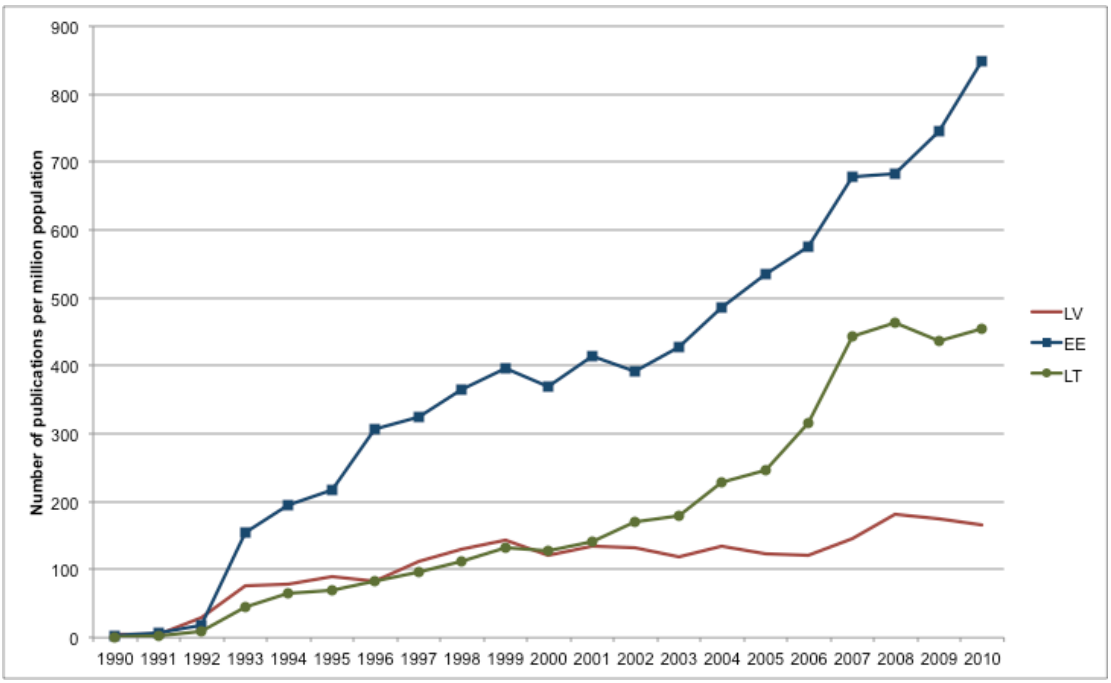
Estonia's model appears to be very similar to that of Sweden. It has a rather open research system, with the number of international scientific co-publications being nearly twice the EU average. It is also characterized by a substantial degree of collaboration among innovative SMEs and large number of SME with product or process innovations.

Latvia's weaknesses mirror Sweden's strengths. There are serious problems with innovation enablers. The number of new doctorate graduates per 1,000 population is very low – only half of what it is in Estonia. Further, Latvia's research system is neither "open", nor "excellent", nor "attractive". The number of international scientific co-publications per million population is 132, which is half of EU-27 average, and about one-third of what it is in Estonia The number of scientific publications among top 10% most cited publications is only one-fourth of what it is in Estonia. As a result, firm innovation activities are also meagre. Business R&D expenditure is less than one-third of Estonia's. The level of public-private co-publications in Estonia is almost ten times that in Latvia. The low level of revenue from patents and licenses (only about one-sixth of Estonia's) signals problems with the commercialization of research.

Thus, comparisons with better innovation performers point to the quality of Latvia's research system being one of the main factors impeding innovations. This impression is reinforced by the data on science publications in international peer reviewed journals. Figure 4.15 and Figure 4.16 show the number of English language articles in Thomson Reuters Science Citation Index per million of population.[86] There are several conclusions here. First, in spite of similar initial performance, Latvia's SCI publications began to lag behind Estonia's since about 1993. Since about 2002, Latvian began to lag behind Lithuania as well. Second, in 2010, there are substantial differences between Latvia, Estonia, and Lithuania. Third, over the last two years this indicator actually declined, in contrast to growth in Estonia.

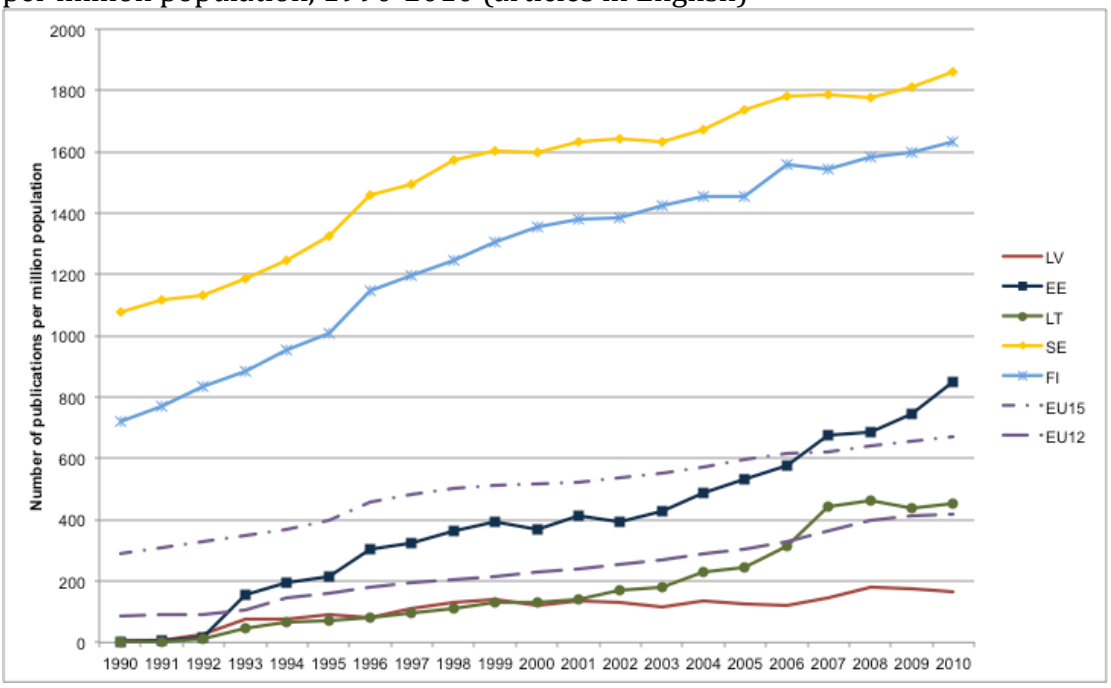
Figure 4.15: Number of publications with at least on author from the Baltic states in the Thomson Reuters Science Citation Index per million population, 1990-2010 (articles in English)

[86] The Thomson Reuters Science Citation Index covers over 3 700 of the world's leading scientific and technical journals across 100 disciplines.



Source: ISI Web of Science, own calculations.

Figure 4.16: Number of publications in Thomson Reuters Science Citation Index per million population, 1990-2010 (articles in English)



Source: ISI Web of Science, own calculations.

Legal aspects of innovation[87]

[87] This section draws on: Z. Kalnina-Lukasevica, K. Stonans, and A. Platonovs, 2010, *New Innovation Platform for Latvia*, mimeo, Riga; Verspagen, B., 2006, University research, intellectual property rights and European Innovation Systems, *Journal of Economic Surveys*, vol. 20, no. 4; and

To gain a further understanding of Latvia's performance in terms of innovation, it might be worth contrasting the current Latvian legislation on innovation with the one in other European countries and the United States – in particular when it comes to commercialisation of research undertaken at universities and research institutes. Until 2010 the Latvian legislation assigned the intellectual property rights to the institution whose employee had made the discovery. Furthermore, if the institution was financed by the state budget, the property rights were legally considered to be property of the Latvian state. In other words, the researcher had (unless stated in the employment agreement) no legal rights to use and hence no incentives to commercialise the invention and most likely less incentives overall to work on inventions. From the point of view of the (state-funded) institution where the discovery or innovation was made, there were also few incentives to commercialise the invention. Hence, the previous legal framework might at least partly explain Latvia's poor performance in terms of innovation.

In spring 2010 the Law on Scientific Activity was amended. The purpose of the amendment was to allow the institutions to use the intellectual property whose development has been funded by the state. However, they are not the owners of the intellectual property as such. Hence, the Latvian legislation is not really on par with what seems to be the most common approach in the European Union – to allow the scientific institutions to own the patents related to the research they conduct this is the case in e.g. Denmark, France, and Germany. Similarly, the United States has through the Bayh-Dole Act enacted 1980 transferred the ownership rights to innovations from the government agencies funding the research to the universities were the research was undertaken and it seems to have been effective in terms of stimulating universities to commercialize research.[88] Finland and Sweden, on the other hand, have chosen a different route by allowing university employees to privately hold patents from their work provided the research was funded by the state. Hence, providing the individual researcher with strong incentives to commercialise the invention. Furthermore, both Finland and Sweden have strong cooperation between academic institutions and the private sector through contract research financed by the private sector.

To conclude, it seems reasonable to assume that at least part of Sweden's strong performance in terms of innovations (discussed above) could be explained by its legal framework providing strong incentives for commercialisation.

Policy developments

Institutional and policy developments include:

- *Competence centres*: these aim to unify innovative enterprises and institutions in a particular sector in their efforts to undertake industrial

OECD, 2003, *Turning Science into Business, Patenting and Licensing at Public Research Organizations*, Paris: OECD

[88] See R.E. Litan and R. Cook-Deegan, "Universities and Economic Growth: The Importance of Academic Entrepreneurship" in *Roles for Growth: Promoting Innovation and Growth Through Legal Reform*, The Kaufmann Task Force on Law, Innovation, and Growth, 2011.

research and develop new products and technologies. State funding is available for undertaking new research activities in the framework of the competence centre or for expanding existing research activities. Competence centres are „open" institutions that own the results of the research that is produced and whose members own shares in the centre. The Investment and Development Agency of Latvia (LIAA) allocates financing to the centres. LIAA has signed contracts for support to six competence centres, and the available financing is 37.4 million LVL until the end of 2015. These six competence centres at present are set to provide a framework for cooperation for 72 enterprises and 17 research institutions. These centres began work in April, 2011.

- *Technology transfer contact points* are units within universities and research institutions, which are responsible for external communications (including with enterprises) and providing information on the research activities and experience of the institutions. 8 contact points are now in operation—all in public universities (the University of Latvia, Riga Technical University, the Latvian University of Agriculture, Riga Stradins University, Ventspils University College, Rezekne University College, Daugavpils University College and the Latvian Academy of Art). In total, 1.9 million LVL was allocated to this activity. LIIA was responsible for the implementation and monitoring of this activity.

- *Development of new products and technologies and support for the adoption of new products and technologies in manufacturing*: these are two European structural fund activities that provide entrepreneurs with direct state co-financing for the adoption or development of new products and technologies, for a maximum of 35% of total cost (or 1,000,000 million LVL). Activities that are eligible for co-financing include the purchase of technologically advanced production equipment or the purchase of licences and patents. 15.2 million LVL of projects already being implemented. The second stage of project applications closed in February 2011, and the total financing available in the second stage is 34 million LVL.

- *High value-added investments*: this is another European structural fund activity providing support for the development of large-scale production facilities (purchasing of equipment, construction and retrofitting of buildings, creation of jobs). Total available financing for the 29 approved projects is 65 million LVL, and 20.7 million LVL was paid out in 2010. It is planned that all construction and procurement will be finished by 2011, and project applications finished in 2009. LIAA manages and supervises this activity.

- A long-term cooperation platform for enterprises and scientists to improve research infrastructure in Latvia. The project entails support to competence centers (2010–2015), technology transfer contact points (2009–2013) and development of infrastructure that promotes commercialization of research results (2011–2015) and practice-oriented research. Public financing provided for the support in 2011–2013 is LVL 69.6 million, including the EU funds financing – LVL 68.1 million.

Assessment

- Many different indicators suggest that Latvian innovation infrastructure is poor
- Comparisons with better innovation performers point to the quality of Latvia's research system being one of the main factors impeding innovations
- University-industry research collaboration is perceived as poor
- Detailed data from patent registrations and legal aspects of innovation also point to problems with the commecialisation of research

4.6 Government: the tax system, the role of government in the economy administrative efficiency

4.6.1 The tax system

The tax system affects competitiveness in multifaceted ways: directly by affecting the costs of for example a firm's production factors. Indirectly, the tax system has an impact through the incentives it generates thereby affecting the behaviour of individuals and companies. The tax system can also create more or fewer distortions which in turn affects the allocation of resources and hence the efficiency of the economy. For example, high payroll taxes constitute a potential impediment to an efficient labour market while at the same time making labour more expensive relative to capital, which in turn leads to a substitution of capital for labour, thus creating a capital intensity that is too high. High payroll taxes also increase the incentives for tax evasion through 'envelope payments'. On the other hand, by generating revenue, taxes provide the government with the funds necessary to invest in activities that would promote a nation's competitiveness, e.g. infrastructure and primary education.

An analysis of a nation's competitiveness therefore has to take the taxes and the tax system into account. An interesting point of departure is to compare the Latvian tax system with that of Estonia and Lithuania.

In terms[89] of overall structure the tax systems of the three countries are quite similar. Although fairly similar in structure the various tax rates vary among the three Baltic countries.

Actual tax rates on labour, corporate income and consumption (value added tax) are as follows[90]:

- The top tax rate on labour income is 25 per cent in Latvia (for 2011) while it is 21 per cent in Estonia and 15 per cent in Lithuania.
- For corporate income the tax rates are: 15 per cent in Latvia as well as Lithuania, and 21 per cent in Estonia.
- The standard value added tax rate, it is 22 per cent for Latvia (for 2011) and Lithuania, and 20 per cent for Estonia.

[89] See Ahermaa, E. and L. Bernardi, 2005, Estonia and other Baltic states, in L. Bernardi, M.W.S. Chandler, and L. Candullia (eds.), *Tax systems and tax reforms in new EU member states*, Chapter 8, Routledge.

[90] Unless otherwise indicated, the date for this section comes from: Eurostat Newsrelease, DG Taxud, Stat/11/100, 1 July 2011, *Taxation trends in the European Union*

A deeper understanding of the actual tax burden is given by implicit tax rates, which measure the average tax burden on different types of economic income or activities, i.e.in our case on labour, capital, and consumption. The implicit tax rate expresses aggregate tax revenues as a percentage of the potential tax base. Firstly consider the implicit tax rate on labour[91] which is defined as the ratio of between taxes and social contributions paid on earned income and the cost of labour. In 2009, the implicit tax rate on labour was 28.7 per cent for Latvia, 35.0 per cent for Estonia, and 33.1 per cent for Lithuania. Thus Latvia had the lowest implicit tax rate even though social contributions are high in Latvia.

The implicit tax rate on capital[92] captures taxes levied on the income earned from savings and investments by households and companies. In 2009, the total implicit tax rate on capital was 10.3 per cent for Latvia, 14.0 per cent for Estonia, and 10.9 per cent for Lithuania. Although implicit taxes on capital are very low in all three countries again, Latvia has the lowest implicit rate.

The implicit tax rate on consumption is defined as the ratio between the revenue from consumption taxes and the final consumption expenditure of households in the country. For Latvia it is 16.9 per cent, for Estonia 27.6 per cent and for Lithuania 16.5 per cent.

Finally, consider the tax wedge on low-paid labour (tax wedge on labour costs)[93] in the European Union and some comparator countries illustrated in Figure 4.17 which shows that the tax wedge is slightly higher in Latvia than in Estonia and Lithuania.

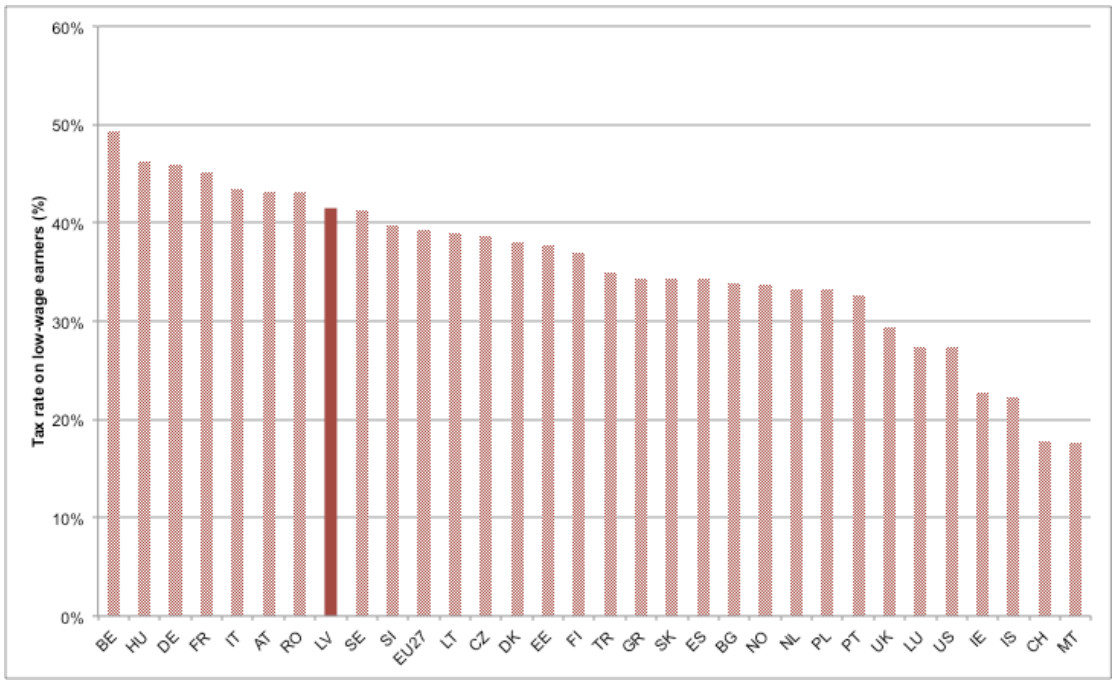
Figure 4.17: The tax wedge on low-paid labour[94] in the EU and some other comparator countries

[91] The numerator includes all direct and indirect taxes and social contributions levied on employed labour income, while the denominator amounts to the total compensation of employees working in the economic territory increased by taxes on wage bills and the payroll. It is calculated for employed labour only, i.e. excluding the tax burden on social transfers and pensions

[92] The implicit tax rate on capital is defined as the ratio between the taxes levied on the income earned from savings and investment by households and corporations and taxes related to stocks of capital stemming from savings and investment in previous periods to the proxy of the world-wide capital and business income of the nation's residents for domestic tax purposes.

[93] The tax wedge on labour costs is defined as income tax on gross wedge earnings plus employee and employer social security contributions, expressed as a percentage of total labour costs

[94]http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:Tax_rate_on_low_wage_earners_-_tax_wedge_on_labour_cost,_2009.png&filetimestamp=20110712142535



Source: Eurostat

To conclude, the Latvian taxes are quite similar to those of Estonia and Lithuania but Latvian implicit tax rates are generally lower.

With a flat rate of 15% and an implicit rate lower than in all CEE and Nordic countries, taxes on capital in Latvia are notably low, (Figure 4.18)[95]. However, data from the Global Competitiveness Index indicate that taxes and subsidies (the latter of which is a small category in Latvia and would mainly include agricultural and transport subsidies) are perceived as having a significant distortionary effect on competition (Table 4.9). According to this indicator, Latvia is not too far behind Lithuania and CEE countries in general but performs less well than Estonia and the Nordic countries. The GCI data is based on survey evidence, and it is likely that Latvia's ranking is influenced heavily by the large share of the shadow economy, as there is ample anecdotal evidence that 'honest' businessmen (who pay all taxes) are frustrated with the fact that they are unable to compete on an equal footing with their tax-shirking rivals.

Figure 4.18: Implicit tax rate on capital and business income of corporations in 2009 (%), selected countries 2009

[95] Here it should be noted that the introduction of taxes on dividends, capital gains and interest that came into force in 2010 will probably have some effect on the Latvian rate.

Source: Eurostat

Table 4.9: GCI rankings of the distortive competitive effect of taxes and subsidies

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
LV	36	38	43	46	47	48	45	43	57	77
LT	52	56	63	68	75	80	88	105	80	100
EE	10	10	11	12	13	13	12	14	23	32
PL	62	67	80	85	96	102	73	89	92	60
HU	31	33	37	40	41	42	115	126	118	117
SI	25	27	29	32	33	34	104	41	36	55
SK	29	31	34	37	38	39	107	110	112	131
CZ	47	51	58	63	69	72	106	94	63	79
DK	1	1	1	1	1	1	20	34	15	20
FI	9	9	10	11	12	12	38	42	20	21
SE	18	20	22	25	26	27	34	24	14	10

Source: Global Competitiveness Index

4.6.2 Role of government on domestic markets

The Latvian government maintains a considerable presence in the economy. According to the Review of State-Owned Assets published by the Cabinet of Ministers in 2009, there were 142 state-owned companies in Latvia, with the government's equity stake in these enterprises worth nearly 3 billion Euros, or approximately 17% of the country's GDP. The total assets of these companies amount to about 10 billion Euros, or more than a half of the country's GDP. These companies include health care institutions and laboratories, cultural establishments (theatres, orchestras), independent regulatory institutions, and, more notably, public utilities and operators of transport infrastructure.

The more important government holdings include: a 100% stake in the electricity company Latvenergo, which enjoys a monopoly position as the largest producer of electricity in the country and which has control over all public electricity distribution networks; a 100% stake in Latvian Railroads, which controls the public rail network and fully owns the only passenger rail transport

service and the dominant rail freight transport service; a 51% stake in Lattelecom, the dominant provider of fixed-line telephone services which has successfully branched out into cable TV and internet; and Latvian State Forests, which owns half of all the country's forest area.

4.6.3 Administrative efficiency

Bureaucracy and administrative efficiency problems have long plagued the Latvian economy. This issue has received considerable attention on the part of Latvian policy makers over the years and improving Latvia's ranking in the World Bank Doing Business index is an explicit goal of policy makers and indeed Latvia has been progressing steadily in this index over the years, moving up from 24th in 2010 to 21st in 2011. Thus according to the NRP, the goal is to reach 19th place by 2013. As suggested in the introduction to this report this kind of target is largely misplaced e.g. one can move up in the index because another country has worsened[96]. What matters is that the actual resources devoted by individuals enterprises and by officials dealing with and implementing public administration and bureaucracy should be commensurate with the aims and benefits of the system of regulation that is in place. Here many examples of inefficiencies stand out. For example, why is there a need for the 'Pieņemšanas –nodošanas akts' in contracts with public bodies? In most jurisdictions a contract is sufficient. Why does it take 293 hours for Latvian business to comply with tax administration requirements when it takes only 81 hours in Estonia[97]?

Policy developments

In terms of the tax system there is a general commitment to shift the burden of taxation away from labour and towards consumption and property. This ambition is included in the declaration of the new government which took office in October 2010. There is a specific aim to reduce taxation of labour by 9 percentage points.

Reform of the public administration has been a major policy aim since the introduction of IMF/EU structural reform programmes. Actions taken have included: reduction of the size of the central government administration by 25% since 2008, reduction in the number of agencies by 50% and the introduction of a unified system of public sector remuneration. Many other individual administrative reforms have been undertaken aimed at simplification and cost reduction e.g. on public procurement by local authorities or in the monitoring and supervision of EU structural funds projects.

The National Reform Programme (NRP) and the Strategic Development Plan for 2010-2013 outline a number of targets for higher administrative efficiency. In particular:

- The NRP calls for measures to speed up absorption of EU funds by improving the monitoring system and reducing the number of institutions involved in fund administration.

[96] Indeed this year's improvement in Latvia's ranking appears to have been partly the result of an error driving down Estonia's position.

[97] See *Paying taxes in 2011: the global picture* www.pwc.com/gx/en/paying-taxes

- The NRP states the need for increases in the capacity of municipalities to foster entrepreneurship, achieved by amending public procurement laws and rules and regulations that govern the municipalities' rights to lease out and rent their own property.

- In relation to the public sector and local governments, the NRP places great emphasis on the one-stop-agency principle, whereby all government services would be concentrated in a single agency in every area, improving accessibility and administrative efficiency and reducing cost.

- The Strategic Development Plan for 2010-2013 includes: the audit of all state functions; the development of guidelines for the optimal management of government-owned real estate; the creation of one-stop government agencies across the country; unified personnel management remuneration and personnel management procedures in the civil service; the improvement of procurement systems; the digitalisation of government services.

Other changes and reforms include:

- On July 2011, the government adopted changes in the commercial law, which require companies to reveal their offshore owners; the participant who holds share capital or shares, but for the benefit of another person (resulting in at least 25% of the capital shares) is required to inform the Register of Enterprises. The changes in the law were initiated by society using voting platform www.manabalss.lv and gathering more than 10 000 signatures.

- Introduction of a system of electronic registration of enterprises, to replace the current paper-based system and achieve cost savings of 25%, mainly by no longer publishing registration licences and announcements in paper form. The first fully-electronically registered enterprise was created in June 2010, and it is planned that the system will be fully operational by 2012. The Register of Enterprises is responsible for implementing the changes.

- In June 2011, the parliament approved the new Construction Law in the first instance, which substantially reduces the time needed to receive construction permits and coordinate projects with government institutions.

- In May 2011, the Cabinet of Ministers approved changes in the General Construction Guidelines, decreasing the time needed to coordinate planning and architectural processes and receive approval of technical specifications.

- The government also plans to introduce the one-stop agency principle in the registration of real estate and real estate property rights. The plans involve linking together the database of the Cadastral Information System and the database of the Land Register so as to reduce the amount of information that landowners have to provide. No concrete deadlines have yet been set for this reform, however.

- In the area of the protection of property rights, the government plans to prepare amendments to the Commerce Law by September 2011. Among other things, these amendments will increase transparency requirements in dealings between related enterprises (to reduce conflict of interest). The government is also planning to introduce regulations that allow enterprises quoted on the stock market to confirm the transparency of insider trades in advance of the trades themselves.

- The new bankruptcy takes effect in November 2011. It ensures equal treatment of all enterprises irrespective of their legal status; it is also expected to cut the time required to close a business from 3 years to 1 year.

Assessment

- The structure of the Latvian tax system is rather similar to that of Estonia and Lithuania. Formal tax rates differ somewhat but implicit tax rates on labour, capital and consumption tend to be lowest in Latvia.
- Taxation of capital in particular is low.
- One result of the international lending programme has been to broaden te tax base e.g. interest, dividend and capital gains are now taxed for the first time
- The state remains an important direct player in the economy
- Latvia has made great efforts to rduce the administrative burden on business
- The target for improvements in administrative efficiency should be tangible efficiency gains rather than international rankings.

4.7 Population: the demographic challenge

Demographic profile and population dynamics represent important challenge in long term competitiveness. Over the last twenty years Latvia has demonstrated increasingly negative demographic trends – rapid ageing, low birth rates, depopulation, especially in the countryside and continuous outmigration. The size of population has diminished by more than 16 percent over the last 20 years and now officially stands at 2,217,969 [98].

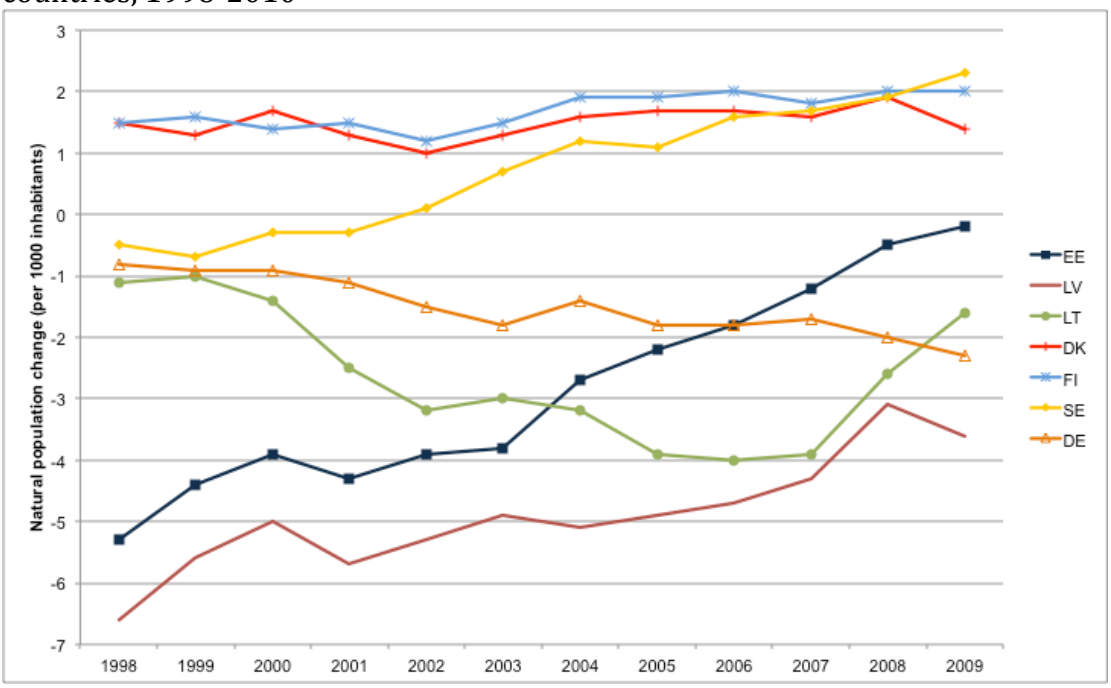
Currently in Latvia the population is relatively young with a median age of 40 years, but is expected to age more rapidly than the European average. Thus in 2040 the median age in Latvia is expected to be 50.2 years and in 2060, 51.9 years. By 2060 Latvia will have one of the oldest populations in Europe.

Since 1990s Latvia has experienced sub-replacement fertility rates, and even now, when fertility has somewhat increased, the total fertility rate in 2008 (the highest rate over 20 years) was as low as 1.45 children per woman (the theoretical replacement TFR is 2.1). Emigration, that by various estimates could be as much as 200 thousand, mostly working age population, also contributes to the negative trend.

[98] The official 2011 population census results due to be released February 2012 may show an even worse picture with just over 2 million residing in the country.

Only the Scandinavian countries have managed to reverse the generally negative population trends observed in much of Europe (Figure 4.19). In 1990 Sweden was the country with the oldest population in Europe, but as a result of both family and immigration, policies it is expected to have one of the youngest populations by 2060.

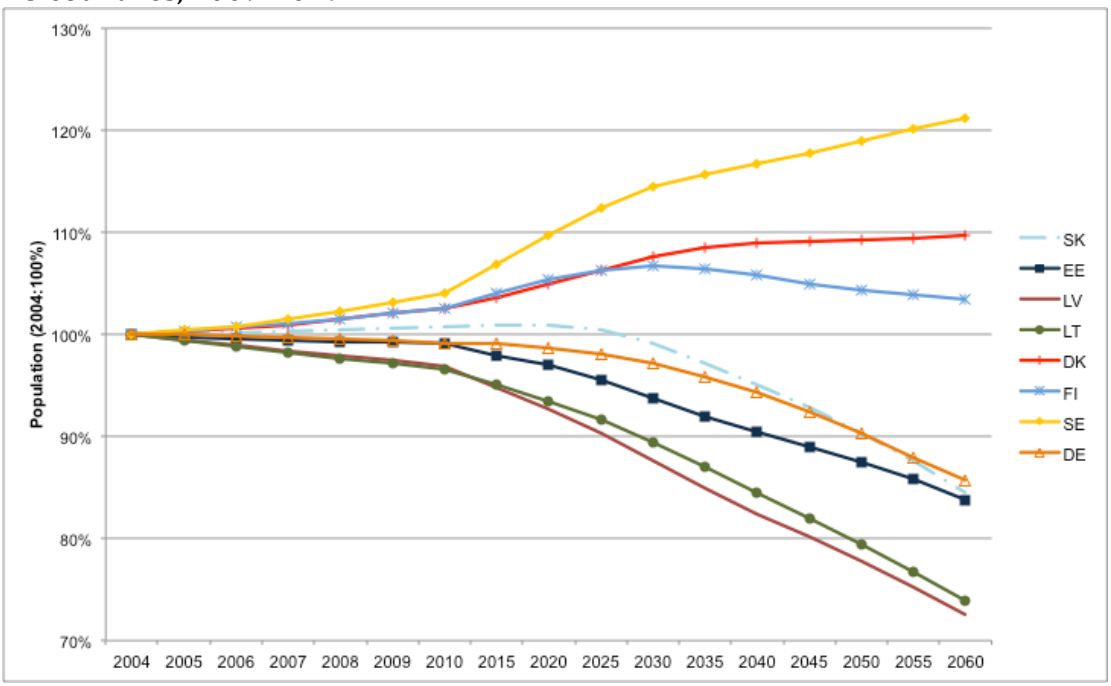
Figure 4.19: Natural population change (per 1000 inhabitants), selected EU countries, 1998-2010



Source: Eurostat, code: tps00007

Population projections that take into account both natural change and migration suggest that in Latvia the population will decrease from 2.23 million in 2011 (official statistics) to 2.03 million in 2030 and to 1.68 million in 2060. Population will continue to shrink in all of Europe with exception of the Scandinavian countries – Sweden, Finland and Denmark (Figure 4.20).

Figure 4.20: Population projections in percentage terms, 2004=100%, selected EU countries, 2009-2029

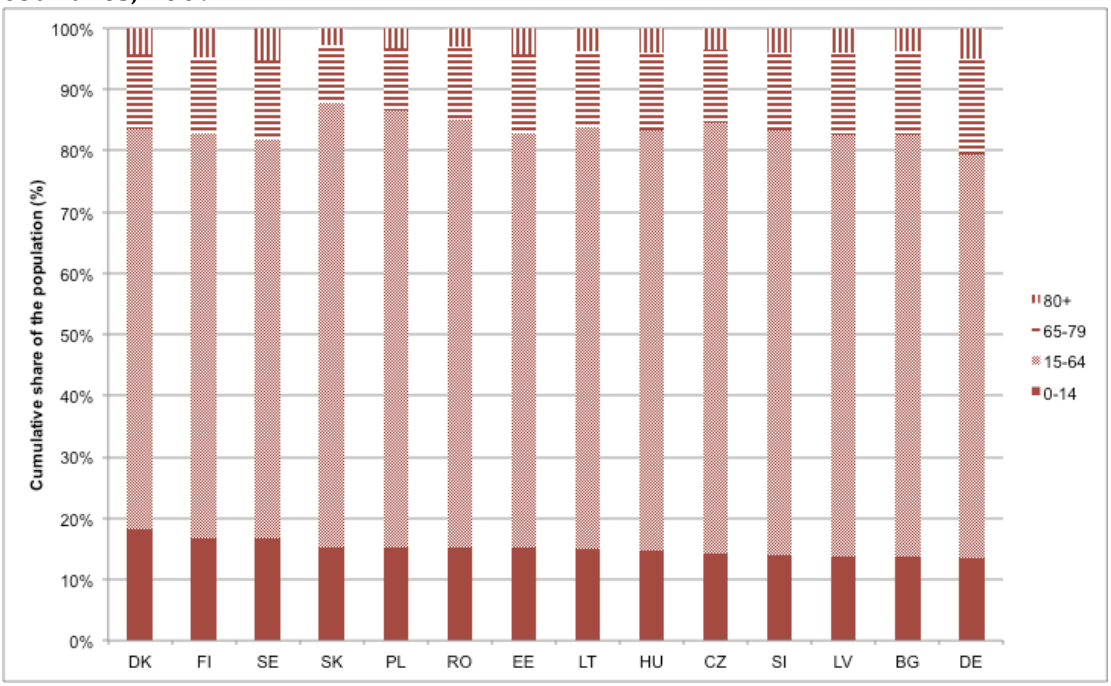


Source: Eurostat, code: tps00002

The life expectancy for the population is 72.4 years with a higher life expectancy for females compared to males. The average life expectancy in 2009 is almost the same as in 1970 - just above 70 years. The life expectancy of those aged 65 is 17.3 years for women and 12.7 years for men.

From the economic point of view the current population age structure in Latvia is rather favourable – comparatively high working age population share, and not too high a share of economically dependent population groups such as older people or children. Latvia has one of the lowest proportions of children in Europe (13.8%). However, this implies very small cohorts entering the working and reproductive age group in future years. Again, Scandinavian countries that currently have the oldest populations also have the highest proportion of children – 18.1% in Denmark, 16.6% both in Finland and Sweden.

Figure 4.21: Population age structure by main population groups, selected EU countries, 2009



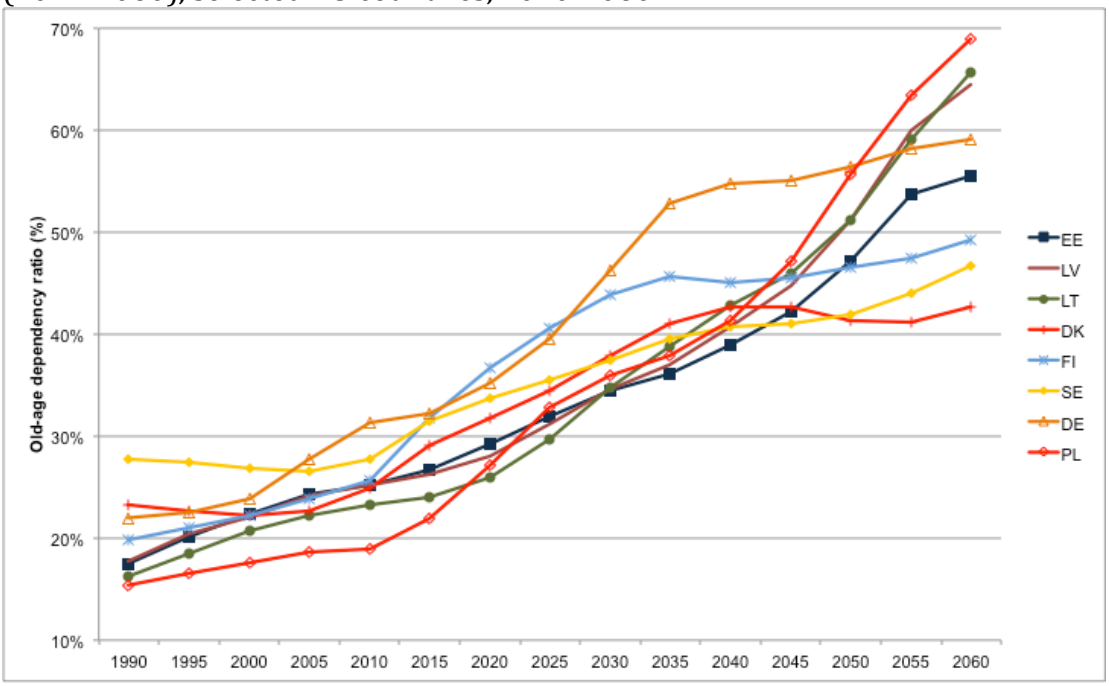
Note: Countries are ordered by highest proportion of children (aged 0-14) in the population.
Source: Eurostat, code: tps00010

Although Latvia, compared to its Western European counterparts is in a relatively early stage of its demographic transition, the elderly population is expected to increase considerably over the next decades. The share of the elderly is projected to increase to over 22 percent in 2030. At the same time, the working age group - aged 15 to 64 - is projected to continuously decrease. The demand for a sustainable pension system as well as long term care service to nothing but to increase considerably.

The old age dependency ratio is the ratio of the number of older people (i.e. aged 65 and over, when generally people are economically inactive) relative to the number of people of working age (i.e. 15-64 years old). This indicator captures changes in the age structure of societies from another angle and projections show that the dependency ratio is expected to grow strongly everywhere in Europe. Sweden, Finland and Denmark stand out as the countries with lowest dependency ratios (Figure 4.22), while in many countries the dependency ratio will exceed 55% by 2060. The changes in the ratios indicate the degree to which economies will have to adjust to sustain their aged population. The natural first steps are of course to increase the retirement age and to open the country for immigration.

Raising the retirement age is already under way in nearly all European countries. In most old EU member states - Sweden, Denmark, the Netherlands, Ireland, Finland, Portugal, Spain, the retirement age is already 65 years. Germany has gone even further and has set at 67 years from 2012. Eastern Europe countries generally have a lower retirement ages reflecting lower life expectancy and especially lower healthy life expectancy. The Lithuanian parliament has already accepted a retirement age of 65 years by 2026.

Figure 4.22: Old-age-dependency ratio, actual (1990-2010) and projected (2011-2060), selected EU countries, 2010-2060



Note: The old-age-dependency ratio is the ratio of the number of elderly people at an age when they are generally economically inactive (i.e. aged 65 and over), compared to the number of people of working age (i.e. 15-64 years old).
Source: Eurostat, code: tsdde510

The recent crisis has led to the migration of working age people, especially from the countryside, to more prosperous EU countries. The opening of the European higher education sector coupled with below the low quality of the Latvian higher education system has led to an increasing flow of secondary school graduates to universities in other EU countries. The challenge presented by the flight of working age population and students to Latvian economic development and sustainability of social system has been recognised at the highest political level.

Depopulation trends are rapidly escalating in the countryside. The most recent reports from the suggest that nearly 500 officially registered small settlements or villages (*ciemati*) have ceased to exist over the last two decades. The average age difference between the regions in Latvia is nearly four years. The number of schoolchildren and students is expected to decrease by up to 30% in the next decade or so.

In the future competition for working age population in Europe is likely to increase. Countries will soften and make more open their immigration policies from both from other EU and from third countries, welcoming not only skilled workers, but also workers in basic professions. Immigration may become a key factor in economic well-being in countries where the local population is incapable of reproducing itself. The economically less developed EU countries, Latvia among them, may be especially severely hit given their low reproduction levels their inability to compete for workers with richer countries.

Demography policy developments

The demographic policy in Latvia is passive.

- The debate about worsening demographic situation – characterized by ageing and depopulation – has become more active in 2010. The Saeima has established a Demographic policy sub-commission (Demogrāfiskās politikas apakškomisija), that in 10th Saeima worked under National Security Commission (Nacionālās drošības komisija), but in 11th Saeima is under Budget and Finance commission (Budžeta un finanšu komisija).
- Family State Policy conception 2011-2017 (Ģimenes valsts politikas pamatnostādnes 2011.-2017.gadam) was accepted on 18 February 2011 in Cabinet of Ministers. The document foresees fostering family formation, stability, welfare and childbirth. The action plan for implementation is to be prepared by December 1 2011.
- From November 2010 the maternity benefit was reduced from 100% to 80% of pre-maternity taxed salary. This decision was made in terms of budget consolidation activities.
- No active policy action is taken to address outmigration, regional depopulation, fertility or ageing.

Assessment

The demographic profile presents a number of serious challenges to Latvia's overall competitiveness:

- Adequate availability of working population in total and its distribution across the country, thus attract investment.
- The ability of government and municipalities ability to maintain quality services in a relatively sparsely populated country.
- There is mounting pressure on what is inprinciple a largely well designed pension system.
- The long term care system and policies combating negative aspects of ageing society remain largely underdeveloped. It seems reasonable to expect the increase of demands on public services and finance to cushion the demographic challenges.

4.8 Product markets: the context for strategy and rivalry

4.8.1 Openness

With trade policy set at the level of the European Union, Latvia's degree of market openness is largely a matter of administrative rules and regulations. In 2005, the Global Competitiveness Index ranked Latvia slightly below the CEE average in terms of the perceived burden of customs procedures (for imported and exported goods) and prevalence of trade barriers (for imported goods). Although Latvia was the first Baltic to join the World Trade Organisation it lagged substantially behind Estonia which dismantled trade barriers very quickly.

Table 4.10: Indicators of market openness, GCI ranking

	LV	LT	EE	PL	HU	SI	SK	CZ	FI	SE	DK
Panel A: 2005											
(Low) Burden of customs procedures	46	43	18	56	44	21	27	37	6	3	5
(Low) Prevalence of trade barriers	48	46	8	44	7	23	17	33	6	14	21
Panel B: 2010											
(Low) Burden of customs procedures	69	36	13	60	59	25	66	40	4	3	6
Prevalence of trade barriers	35	63	22	48	12	36	25	17	7	3	31

Source: World Economic Forum

By 2010, the perceived relative burden of customs procedures in Latvia had risen, increasing the distance between it and its neighbours; this could possibly be a result of the legislative changes that had to be implemented prior to joining the Schengen area, and because the Eastern border of Latvia became the Eastern border of the European Union, necessitating more stringent control procedures. At the same time, the perceived relative prevalence of trade barriers for imported goods declined substantially between 2005 and 2010, even while it increased for the other two Baltic States; since trade policy is set by the European Union, these changes most likely relate to non-tariff barriers to trade.

4.8.2 The degree of rivalry

Market concentration and the intensity of competition are closely related concepts, as a large measure of market concentration usually leads to a lack of competition. Competition, in turn, is necessary to encourage businesses and entrepreneurs to come up with new ideas and cut costs, and it is a mechanism through which capable companies are rewarded and weak ones punished. As such, local competition between businesses contributes to the international competitiveness of a country. The effectiveness and quality of antitrust regulations affect competition, as does the degree of foreign ownership, since foreign-owned companies can rely on technological and financial support from parent companies abroad and are thus formidable rivals to local companies.

As Table 4.11 and Table 4.12 show, it is perceived that local competition has become weaker between 2005 and 2010, and, again, a similar result is observed in other countries in the region; a probable reason for this is the bankruptcy of weaker businesses during the economic downturn, which left the stronger survivors with a larger market share. At the same time, it is perceived that antitrust policy has become less effective — a trend that is very much visible in Latvia and Lithuania, but not as much in Estonia; the perceived decrease in the effectiveness of antitrust policy could very well be due to the failure of regulators to rein in price increases of commodities and fuels (particularly natural gas, which Lithuania and Latvia are more dependent upon than Estonia).

The GCI rankings indicate that market dominance by business groups has increased between 2005 and 2010, and large (foreign-owned) retailers are a prime example of a business group whose market power attracted large regulatory and legislative attention during this period in Latvia. Perceived market disruption by state-owned enterprises has also increased slightly, which could be the survey respondents' reaction to the government's takeover of one of

the country's largest banks. On the whole, GCI data indicate that the prevalence of foreign ownership has decreased, like in most regional countries, which is rather surprising, because the popular belief is that foreign companies are constantly buying up potential Latvian rivals.

Table 4.11: The GCI rankings related to market concentration, 2005

	LV	LT	EE	PL	HU	SI	SK	CZ	FI	SE	DK
Prevalence of foreign ownership	40	49	17	52	10	89	6	20	5	16	22
Intensity of local competition	60	40	18	47	21	50	45	32	17	23	24
Effectiveness of antitrust policy	48	45	30	39	31	42	56	28	2	20	12
(Low) Extent of market dominance (by business groups)	50	66	52	28	37	29	49	39	4	25	11
Low market disruption from state-owned enterprises	88	33	21	62	87	83	39	42	5	1	8
Regulatory quality	34	30	22	41	27	38	28	33	4	10	7

Source: World Economic Forum

Table 4.12: The GCI rankings related to market concentration, 2010

	LV	LT	EE	PL	HU	SI	SK	CZ	FI	SE	DK
Prevalence of foreign ownership	70	94	39	99	14	125	4	53	30	6	50
Intensity of local competition	83	65	31	33	36	55	35	24	64	5	41
Effectiveness of antitrust policy	87	102	46	57	71	56	86	52	3	2	4
(Low) Extent of market dominance (by business groups)	82	108	34	41	57	67	52	23	27	18	13
Low market disruption from state-owned enterprises	98	57	34	39	41	111	105	93	2	1	12
Regulatory quality	33	34	17	36	29	39	28	23	6	8	3

Source: World Economic Forum

4.8.3 Demand conditions

The quantitative and qualitative characteristics of demand in a country influence the type of businesses that will develop there, either through foreign direct investment or through local entrepreneurship. For instance, large local demand for high technology products spurs the growth of businesses that create such products, more so than demand from abroad, which, compared with local demand, is associated with more uncertainty and is often inaccessible due to trade barriers or unfamiliarity with foreign markets.

At the same time, regulation (e.g., in the form of construction standards or specifications in public tenders) serves to limit demand and channel it to particular types of products, limiting competition and the number of companies that can profitably operate in particular sub-sectors of the economy, though laws can also work to level the playing field and thus increase competition.

Since Latvia has low GDP per capita, consumer demand is low in quantitative terms and unsophisticated in qualitative terms, as people end up spending much of their limited income on 'basic' goods. There is also nothing in particular to

distinguish the demand of Latvian corporations from the demand of corporations in neighbouring countries, and this is also largely due to income levels. Both of these aspects of demand are reflected in respondents' ranking of buyer sophistication in the Global Competitiveness Index, shown in Table 4.11; it can be seen that Latvia, along with CEE countries overall, is considerably behind Denmark, Finland, and Sweden in terms of buyer sophistication. It would thus seem that it falls to the government to create demand conditions conducive to the creation of technologically competitive businesses.

However, Table 4.13 also shows that Latvia lags behind all CEE and Nordic countries except Slovakia in terms of how actively the government procures high technology products, which is not surprising, given that by far the main criterion in public procurement is cost. The government has also been rather unsuccessful in promoting Information and Communications Technology. Thus far, the government's main means of promoting the use of ICT was the so-called electronic signature, which was supposed to offer a convenient way to electronically sign and handle documents but which until 2011 was so expensive and impractical that it failed to see widespread use. It is especially illustrative to compare Latvia with Estonia, which, *inter alia*, allows people to vote in elections on the internet and has set up free wireless internet in nearly all public locations throughout the country.

In terms of environmental regulations and regulatory standards overall, Latvia is ranked as the most regulated country in the sample of CEE and Nordic nations. It is interesting observe that environmental regulation is the least demanding Sweden, which is typically perceived as one of the most environmentally concerned countries in the world. Regulatory standards have the most direct impact in public procurement, where they may sometimes be used to limit the pool of contenders and secure private interests. Overall, the GCI data seem to confirm the old adage that poor countries share a tendency towards overregulation.

Table 4.13: Rankings of demand conditions in 2010

	LV	LT	EE	PL	HU	SI	SK	CZ	DK	FI	SE
Government procurement of advanced technology products	113	110	32	86	90	85	133	30	16	4	12
Government success in ICT promotion	84	30	10	85	79	49	100	59	20	26	1
Laws relating to ICT	82	37	4	85	55	27	72	45	9	3	1
Buyer sophistication	87	108	79	61	110	99	114	40	29	18	4
Presence of demanding regulatory standards	52	44	30	42	27	24	22	21	15	7	1
Stringency of environmental regulations	57	36	23	45	41	35	29	25	13	5	2

Source: Global Competitiveness Index

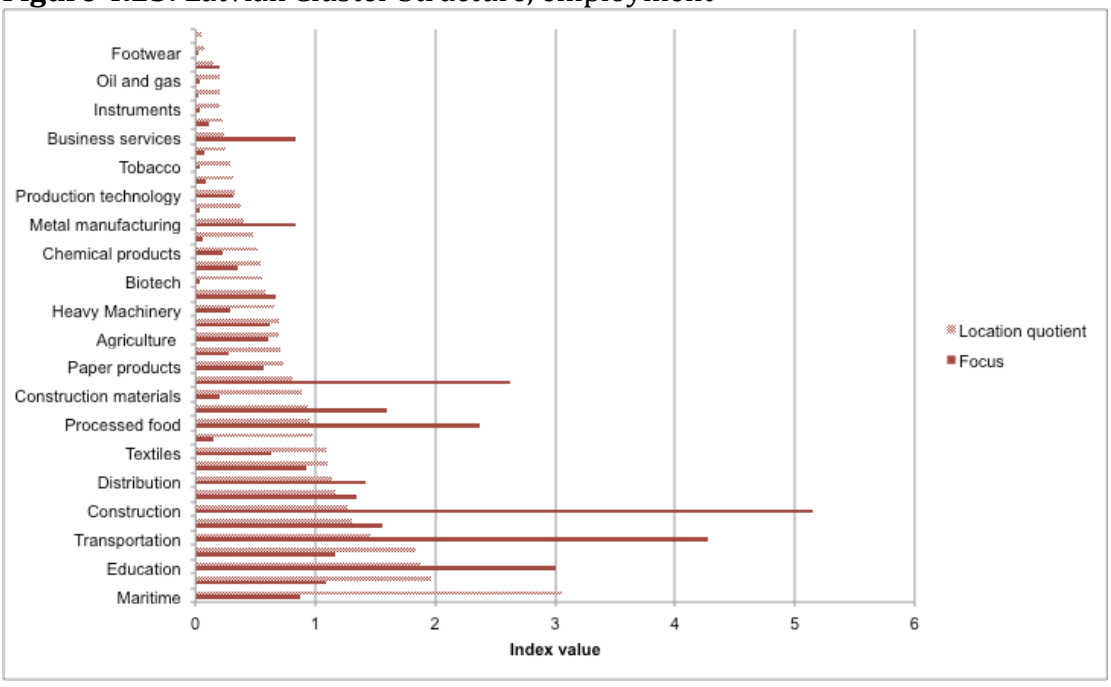
4.8.4 Cluster presence

The Latvian economy is at present not characterized by strong levels of cluster specialization in terms of its employment structure.

The available employment data (reflecting the situation in 2009) from the European Cluster Observatory reports only 34.7% of Latvian employment to be in industries that concentrate geographically and compete across regions (cluster sector). Only three other EU member countries (Greece, Netherlands, and the UK) have a smaller cluster sector. Even though the relationship between the size of the cluster sector and economic performance is complex, for a less advanced economy like Latvia such a small size merits further analysis.

The European Cluster Observatory also measures the profile of specialization within the cluster sector. Specialization, i.e. the relative share of employment in a cluster category as a percentage of the Latvian labour market in comparison to the same measure at the EU level, is highest for maritime, furniture, and education and knowledge creation. In these three categories Latvia accounts for more than 1% of total EU employment. Construction remained the largest cluster by employment in 2009 at 5.15% of total cluster sector employment, followed by transportation and logistics (4.28%), education and knowledge creation (3%), financial services (2.6%), and processed food (2.37%).

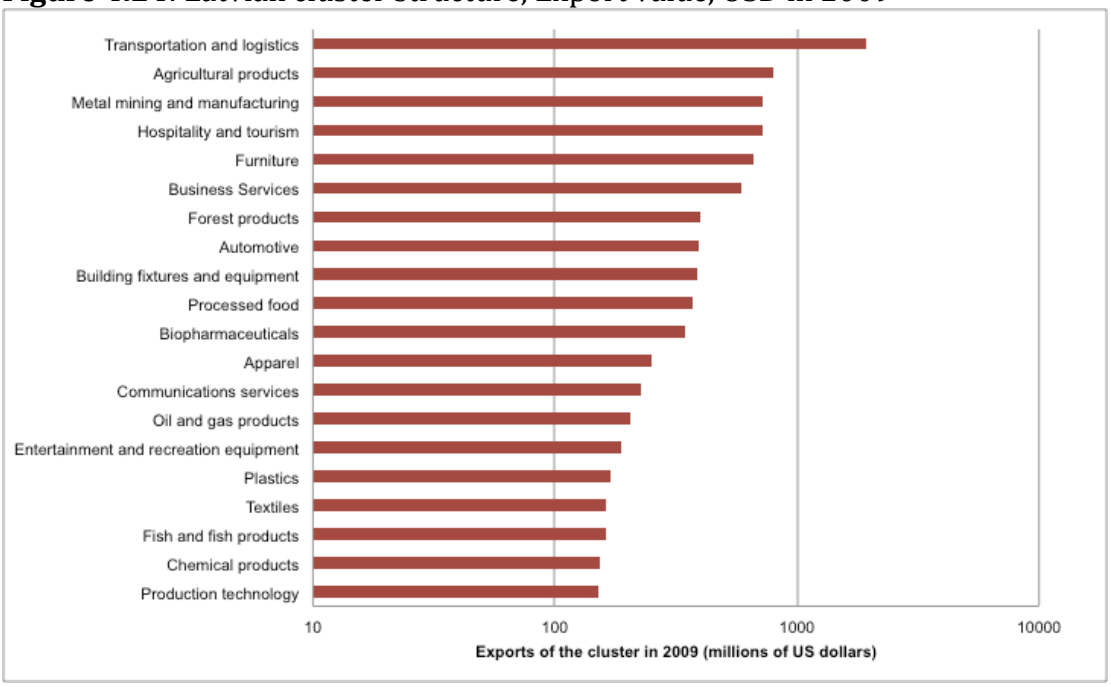
Figure 4.23: Latvian Cluster Structure, employment



Source: ECO (2011)

In terms of exports, six cluster categories account for about 50% of all export revenues. This share is broadly similar to Estonia and Lithuania as well as to Sweden. The dominance of the largest cluster, transportation and logistics, is more pronounced than in these peer countries.

Figure 4.24: Latvian cluster structure, Export value, USD in 2009



Source: ISC (2011)

Clusters generate benefits through the access to specialized suppliers, services providers, factor inputs, ideas, and other types of externalities. The perception reported in the WEF Global Executive Survey indicates that while clusters are present, the quality of the companies available is perceived to be low. There is also a sense of that there is little active collaboration among cluster participants. Overall, only Russia ranks below Latvia in terms of the cluster environment across countries around the Baltic Sea Region.

Table 4.14: Supporting and related industries and clusters

Indicator	EE	LV	LT	DK	FI	NO	SE	DE	PL	RU
Supporting and related industries and clusters	*61*	*87*	*69*	*15*	*6*	*18*	*5*	*2*	*58*	*90*
Availability of latest technologies	33	65	35	15	4	3	1	18	86	109
Local supplier quantity	96	127	36	52	83	54	22	3	18	94
Local supplier quality	43	53	40	15	19	11	5	4	45	107
Local availability of process machinery	55	76	77	23	6	37	8	1	30	58
Local availability of specialized research and training services	32	69	38	11	8	16	3	2	24	66
State of cluster development	94	97	110	21	7	18	9	10	105	81
Extent of collaboration in clusters	79	84	117	16	3	17	9	4	113	80

Source: Unpublished data from the Global Competitiveness Report (2011).

Product markets policy developments

Industrial Policy / Cluster Efforts: The Ministry of Economics identified in 2009 woodworking, food processing, metalworking, chemicals, and pharmaceuticals as priority sectors. State support and EU funding will be available to these sectors. In 2011, the Ministry of Economics awarded grants to seven clusters efforts in information technology, electronics, chemistry and pharmaceuticals, metalworking, light manufacturing, logistics, and space technologies. Financing of 25,000 LVL per cluster is available for preparing EU fund project applications, promoting international cooperation, training cluster coordinators and specialists, undertaking marketing activities, promoting cooperation with research institutions and other activities.

Assessment

- Openness: according to the GCI Latvia is ranked slightly below the CEE average in terms of the perceived burden of customs procedures and prevalence of trade barriers. Differences in this indicator reflect non-tariff barriers to trade for EU countries.
- Degree of rivalry: market dominance by business groups has increased between 2005 and 2010 (GCI data). Perceived market disruption by state-owned enterprises has also increased slightly. Local competition has become weaker between 2005 and 2010, but a similar result is observed in other countries in the region. At the same time, it is perceived that antitrust policy has become less effective.
- Clusters: Employment structure reveals relatively weak presence of clusters. Exports reflect clear specialization in some cluster categories. Environment for cluster dynamics perceived as poor
- Demand conditions: Given the low level of per capita income, there is little unique or sophisticated consumer demand in Latvia. Corporate buyers also not different from peers in other countries. Government purchasing practices not innovation-oriented.

4.9 Infrastructure and energy

4.9.1 Physical infrastructure

Roads

There are 70,000 km of roads and streets in Latvia (1204/km2), including 20,000 km of state roads (0.312/km2). From the point of view of trade and transit, the most important roads are the ones that connect Riga with St Petersburg and Moscow in Russia, Tallinn and Tartu in Estonia, and Kaunas and Klaipeda in Lithuania; of large importance is also the Warsaw-St Petersburg road that passes through Daugavpils and the roads that connect Riga with the other major port cities Liepaja and Ventspils.

Even though a large number of important roads cross Latvia, insufficient investments in maintenance and construction mean that the country's road infrastructure is generally in very poor condition. Data from the Global

Competitiveness Index (given in Table 4.15 and Table 4.16) suggest that roads in Latvia are considerably worse than those in neighbouring Estonia and Lithuania, and, in fact, the worst of all CEE countries except Poland. Moreover, the perceived quality of the country's roads has decreased considerably between 2005 and 2010, while it has increased in Lithuania and Estonia over the same period. Road infrastructure in Latvia is poor not only compared with its neighbours, but also in absolute terms: data from Latvian State Roads show that more than 50% of roads and bridges are in bad or very bad condition, and the same data show that there are almost no roads that are of high quality throughout their entire length.

Table 4.15: The GCI rankings of the quality of infrastructure, 2005

	LV	LT	EE	PL	HU	SI	SK	CZ	FI	SE	DK
Overall quality of logistics infrastructure	42	40	34	62	49	32	48	29	10	16	6
Quality of roads	63	29	52	66	59	39	53	50	18	19	6
Quality of railroad infrastructure	30	35	38	39	40	29	21	14	9	16	6
Quality of port infrastructure	46	48	20	62	73	26	59	64	13	17	4
Quality of air transport infrastructure	50	62	33	77	61	48	101	40	7	21	10

Source: World Economic Forum

Table 4.16: The GCI rankings of the quality of infrastructure, 2010

	LV	LT	EE	PL	HU	SI	SK	CZ	FI	SE	DK
Overall quality of logistics infrastructure	44	36	34	86	48	40	59	26	6	9	7
Quality of roads	88	27	37	107	53	39	61	72	15	22	8
Quality of railroad infrastructure	33	28	36	68	42	58	24	21	8	15	14
Quality of port infrastructure	41	45	19	96	61	29	71	42	8	9	11
Quality of air transport infrastructure	40	101	63	96	58	60	109	25	16	12	11

Source: World Economic Forum

Railroads

Railroads play a major role in the transportation market in Latvia, particularly the freight transportation market. The main railroads connect the ports of Liepaja, Ventspils, and Riga to each other and to markets in the East (Russia and Belarus) and North (Russia and Estonia). Passenger railway routes connect Riga and most other major cities: Daugavpils, Liepaja, Jelgava, Rezekne, Gulbene, and Valmiera; international passenger routes to Russia and Belarus are available. All public railroads belong to the state-owned Latvian Railroad Company, which allows licensed passenger and freight carriers to use the network for a fee.

According to the Global Competitiveness Index, Latvia in 2005 had the highest perceived quality of railroad infrastructure from among the Baltic States and the quality was roughly on par with that in most other CEE economies. Since then, however, the relative quality of railroads has declined, and Latvia has slipped behind its Baltic neighbours, while remaining above the CEE average. Unsurprisingly, Latvia's railroad infrastructure is perceived to be of considerably

lower quality than that of the Nordic countries. Still, investments have been made throughout this period to modernise the railroad network; among other things, these investments have led to the introduction of electronic and computerised network control systems and the replacement of wooden railway sleepers with ferroconcrete ones.

Ports

The main Latvian ports are in Riga, Ventspils, and Liepaja, with six other smaller ports scattered along the coastline. The majority of cargo loaded in Riga and Liepaja is bulk and container cargo, while Ventpils specialises in liquid bulk cargo. Riga and Ventspils mainly service transit shipments from Russia, Belarus, and other CIS countries, while Liepaja has a larger share of Latvian import and export traffic. The other, smaller ports are used for fishing and exporting raw materials, such as wood and peat. All ports are owned by the respective municipalities and governed jointly by delegated representatives of the municipalities and the central government.

Both in 2005 and in 2010, the quality of port infrastructure in Latvia was higher than in Lithuania and Poland, but considerably lower than in Estonia, according to the Global Competitiveness Index (Table4.13 and Table 4.14). Between 2005 and 2010, it would appear that Latvia has managed to lessen the gap in port quality between itself and Estonia, while increasing its lead over Lithuania and Poland; throughout the period, the perceived quality of port infrastructure in Latvia also remains considerably lower than that in the Nordic countries.

Airports

Air transport infrastructure is an area in which Latvian infrastructure is regarded as than in the other Baltic states and the one in which it has shown improvement since 2005. While there are several airfields scattered throughout the country, Riga International Airport is the only freight and passenger airport worth mentioning: it serviced more passengers in 2010 than the airports of Vilnius and Tallinn combined, and it received the Best Emerging Market Airport award in 2010. In 2009, the airport unveiled a new 3.2 km runway—the longest in the Baltic states —and expansion of the airport's terminal facilities is urgently required and is in the planning stages.

4.9.2 Energy

Latvia's energy position is characterised by: i) a high level of energy dependency and ii) a high share of renewables in energy. Energy dependency for the Baltic states and the EU-27 is shown in Table 4.17.

Table 4.17: Energy dependency in the Baltic states

	Energy dependency	EU-27 position
EU 27 Average	53.8%	-
Estonia	33.5%	23
Latvia	65.7%	11
Lithuania	64%	12

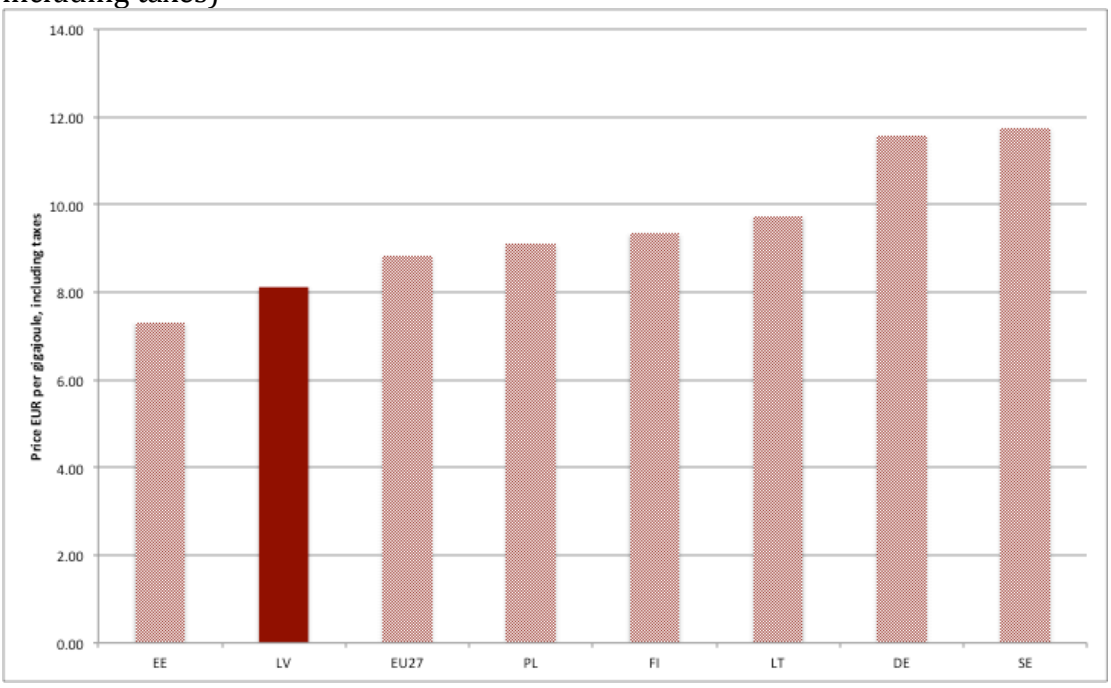
Source: www.energy.eu

Not only does Latvia have a high degree of energy dependency but it depends significantly on Russia for its energy supply – in 2009 Russia was the source of 32% of Latvian energy imports.

At the same time the share of renewable in primary energy consumption in 2009 was 35.8%, second only to Sweden in the EU.

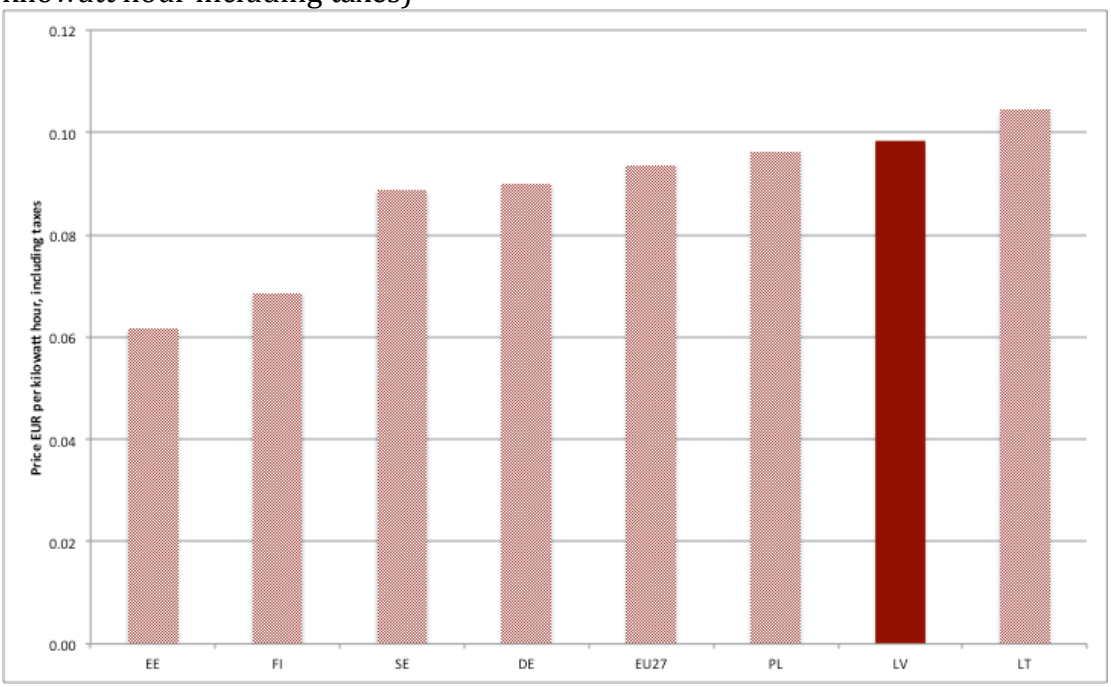
Energy prices represent a major cost item for industry. Figure 4.25 and Figure 4.26 show the prices of gas and electricity for industrial users in the first half of 2011.

Figure 4.25: Price of gas for industrial users first half of 2011 (EUR per gigajoule including taxes)



Source: Eurostat

Figure 4.26: Price of electricity for industrial users first half of 2011 (EUR per kilowatt hour including taxes)



Source: Eurostat

It can be seen that energy prices are in Latvia appear to be similar to the EU27 average and below the levels in many regional comparators with the exception of Estonia where both gas and electricity are noticeably low.

On the other hand energy efficiency in Latvia although improved since 2000 is very low relative to the EU27 average and about the same as in Poland, but much better that in Estonia.

Table 4.18: Energy intensity selected countries over time (Consumption divided by GDP, kilogram of oil equivalent per 1000 EUR at 1995 prices)

	2000	2004	2009
EU27	187.29	184.06	165.20
Germany	166.60	166.04	150.55
Estonia	805.99	685.76	607.04
Latvia	440.46	386.46	354.49
Lithuania	576.34	551.69	445.92
Poland	483.64	440.71	363.72
Finland	248.49	257.49	221.97
Sweden	177.67	177.70	147.88

Source: Eurostat

Thus competitiveness signals from the energy sector are mixed: high external dependency, about average price levels but rather poor levels of energy efficiency overall.

Infrastructure and energy policy developments

Improving both infrastructure and energy are major components of Latvia's Cohesion policy programmes in the 2007-13 programming period. This is very likely to continue in the post-2013 period.

Assessment

- The overall quality of Latvia's logistics is quite good relative to some CEE countries. However, road quality in particular needs to be improved.
- Latvia is highly dependent on imported energy and is especially on imports from russia
- Energy efficiency remains low but energy prices for industrial users do not deviate markedly from the EU27 average.

5. Competitiveness diagnostics: going beyond the indicators

As highlighted in chapter 1, one of the aims of the Latvian Competitiveness Report project is to develop a methodology of competitiveness assessment and monitoring that can be used in the future. With this in mind the present chapter takes the analysis beyond the traditional competitiveness analysis as performed comprehensively in chapters 2-4. The methodological innovation developed here builds to a large extent on what in the literature is called growth diagnostics and aims at identifying critical constraints or 'bottle necks' that restrain economic growth or competitiveness. Thus the diagnostic analysis moves beyond the identification of mere strengths and weaknesses, and explicitly addresses causal linkages between individual competitiveness factors and outcomes.

The diagnostics also feeds into the prioritisation and assessment that is developed in chapter 6. The competitiveness diagnostics approach enables a decomposition or disentanglement of the intricate relationships and linkages underlying key policy areas. This disentanglement then informs the prioritisation of the next chapter.

The areas covered by the indicators reported in chapters 2-4 offer many potential subjects for an economic/ competitiveness dignostics analysis. However, because the diagnostics approach is 'experimental' in the context of a competitiveness study just three areas have been chosen for analysis. Naturally, the areas chosen should be ones that are important and interesting from a competitiveness perspective. The three focus areas have been chosen by applying the following criteria:

- The chosen areas should be ones where Latvian outcomes noticeably deviate from the overall performance pattern of comparator countries at a similar stage of economic development.
- The chosen areas should be relevant for policy-making – in particular with respect to the European Union context and its strategies to promote European competitiveness.
- The choice of areas should be supported by economic theory and argumentation as being important for improving Latvian competitiveness.

The rationale behind the the first criterion is that if Latvian outcomes particularly deviate from those of countries at a similar stage of economic development this might signal specific underlying challenges faced by the Latvian economy that could, if unblocked, result in significant improvements in economic performance.

The second criterion concerns the EU policy context. Competitiveness is high on the European Union policy agenda. This is clear from many EU policy initiatives including Europe 2020 Strategy and in particular in its major flagship programme "An integrated industrial policy for the globalisation era. Putting

competitiveness at centre stage". These and related EU documents play an important role in terms of setting the agenda for Latvian domestic policy and policy formulation. Accordingly the policy documents can be used to define the key areas for improving Latvian competitiveness.

Finally, economic theory and reasoning underpin any discussion of competitiveness. Theory is of particular relevance when it comes to addressing the intricate relationships between the factors analyzed in the previous chapters and how they affect the allocation of resources and hence competitiveness.

Taken together these criteria discussed suggest the following three areas for a competitive diagnostics analysis:

- The high relative size of the informal/shadow economy in Latvia
- The low share of manufacturing in GDP
- The high income inequality

All three of the selected areas meet the first criterion. Thus while high levels of informality and high inequality are not unusual for a country at Latvia's stage of economic development, both are much more pronounced in Latvia than in European peer countries. Latvia seems to be held back by some deeply ingrained challenges that make progress to higher stages of development in these areas hard. The share of manufacturing outcome is more unusual: many countries at Latvia's stage of development compete heavily on export-oriented, often low labour cost-driven activities, with the result that *ceteris paribus* the observed share of manufacturing in GDP is higher than is the case for both more advanced economies and for less developed ones. Latvia does not appear to match this profile, which raises questions about its development path.

Both Latvian and EU policy documents identify manufacturing as an area that is crititical for productivity growth and competitiveness and economic theory also suggests manufacturing might be particularly important as a location for productivity growth.The Europe 2020 priority of 'inclusive growth' points to the policy relevance of inequality as does the Latvia 2030[99] goal of'reducing social and economic inequality'

The economic theory arguments for the competitiveness relevance of the selected areas will emerge in the diagnostics itself.

Here it should be noted that other areas could equally have been selected for diagnostics on the basis of the proposed criteria. Innovation and migration come to mind as candidates. Innovation performance was not selected on the grounds that it is covered by one of the in depth studies and it was felt that migration might also be a potential them for a future in-depth study.

The next three sections are devoted to a causal relations analysis of the informal economy, manufacturing performance and inequality in the spirit of the growth diagnostics-method discussed in the methodology section of Chapter 1. In each case the analysis starts with a theory-driven design of causal relations summed up in a causal relations tree that maps the connections between different types of factors that potentially could explain the observed outcomes. The empirical data

[99] Latvijas ilgtspējīgas attīstības stratēģiju līdz 2030. gadam

from the indicators discussed in Chapters 2-4, and other sources if needed, can then used to test which of the potential causes turn out to be most important in the current environment in Latvia.

5.1 Diagnostics of the informal economy in Latvia

The assessment of competitiveness fundamentals in chapter 4 has identified the large share of the shadow or informal economy as a distinct feature of the Latvian economy and to some extent also of the economies of the two other Baltic countries. As discussed in chapter 4 there are several methodological problems associated with the measurement of the size of the shadow economy, but what is, from a methodological point of view, considered to be the most reliable estimates of the relative size of the shadow economy in the three Baltic countries suggest that the size of the Latvian shadow economy is almost 40 per cent of GDP – almost twice as large as in Estonia and Lithuania[100]. As will be seen from the discussion below, the shadow economy creates a number of distortions, which in turn negatively affect the incentives to undertake investment and other measures that ultimately would increase Latvian competitiveness

A particular emphasis of the analysis presented below is that the main competitiveness 'cost' of a large informal economy is identified as the resource allocation distortion it generates. This is in contrast to many Latvian policy documents and discussions where the emphasis is typically on the budgetary aspects, i.e. the lost government revenue. Although lost government revenue and accordingly lost government spending (or reduced taxes) may have an impact on a nation's competitiveness, we regard that overwhelmingly the main impact from the informal economy as stemming from the distortions in resource allocation generated and not from lost government revenue.

To estimate this 'misallocational loss" stemming from the shadow economy is naturally a difficult task. However, there has at least been one attempt. Even though the country studied is not Latvia, but Mexico[101], the estimate for Mexico might provide an indicator of the magnitude of the misallocational loss. In Mexico with an estimated 31 per cent of the employees working in the formal sector a fall enforcement of the tax legislation would result in labour productivity and output being 17 per cent higher – in other words indicating that the misallocational losses are substantial.

We first analyse the channels through which a large informal economy affects competitiveness and hence why the size of the shadow economy represents a priority action area. Indeed, it is our opinion that it is very likely the number one priority area because it generates distortions in the effectiveness of policies and measures in all areas of the economy. This is followed by a discussion of the factors that may determine the size of the shadow economy in Latvia i.e. the causal relations tree.

The competitiveness impact of a large shadow economy

[100] See Putniņš and Sauka (2011).

[101] See Leal Ordóñez (2010) who uses a dynamic general equilibrium framework combined with survey data to estimate the size of the Mexican informal sector and its consequences on allocational efficiency.

To analyse the impact of the informal sector and its size on Latvian competitiveness we examine what economic theory can tell us about how the informal economy affects competitiveness.[102] This discussion results in a number of 'stylized facts', which will be matched with observations reported in earlier sections of the report.

Resource allocation and an uneven playing field

Irrespective of the reasons behind tax evasion, its prevalence directly affects competition between companies in the formal and informal sector in the sense that companies not paying full taxes enjoy a competitive advantage over those that do. This is the 'uneven playing field' property of the presence of a significant informal economy. However, tax evasion also distorts the allocation of the economy's resources in a number of concrete ways leading directly and indirectly to lower output and lower national competitiveness.

Tax evasion in the form of non-reported cash payments to employees (i.e. what in Latvia is considered to be the most prevalent form of evasion and usually referred to as "envelope" payments) reduces the cost of labour in the informal sector relative to the formal sector i.e. companies in the informal sector have lower labour costs than companies entirely active in the informal sector. As a result two allocative distortions occur. Firstly, for a given level of capital more labour is employed in the sector where labour cost is lower, i.e. the informal sector. Secondly, if capital can be adjusted, the relative cost of capital to labour implies that there is too little investment undertaken in the informal sector.[103] Both effects imply that the economy could have produced more with the same resources had not the allocation of its resources (labour and capital) been distorted through envelope wages. Hence the first findings can be summarized as follows:

> *Companies in the formal sector face a competitive disadvantage, which in turn discourages investment in businesses active in this sector.*

Secondly, the existence of an informal sector creates a distortion that results in an outcome where the informal sector employs too much labour and too little capital and where the productivity of labour is lower than had it been employed in the formal sector with its higher capital intensity. This means that:

> *The economy produces less than it potentially could, i.e. its GDP/capita is lower than it could have been.*

Cost of capital, investment and innovation

Involvement in informal sector activities, in addition to directly affecting the capital-labour ratio, also affects the firm's cost of external capital. Firms involved in illicit practices such as tax evasion are usually more likely to have difficulties in attracting external funding. Furthermore, if they manage to attract external funding is likely to come at a higher price.[104] Hence, the higher cost of capital further contributes to the informal sector's inferior capital intensity.

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[102] Throughout the discussion, a company referred to as belonging to the "informal sector" is a company that to some extent is involved in tax evasion or similar illicit practices.

[103] This assumes that the production function is such that the marginal product of labour is increasing in capital.

[104] From a lender's perspective a firm involved in illicit activities has a higher risk. If detected the firm might be forced to pay fines or close down. Furthermore, it is more difficult for an external

The higher cost of capital and the difficulty of accessing the capital market means that the informal sector will invest less in new technologies than companies in the formal sector (since the marginal cost of investment is higher, the marginal return on investment has to be higher as well). This implies that firms in the informal sector will work with less advanced technologies and will be less prone to adopt new technologies and innovate. This in turn, slows down the firm's as well as the overall economy's development or competitiveness.

The third finding can be summarized as follows:

> *Firms in the informal sector face a higher cost of external capital and will therefore invest less than companies operating in the formal sector. They will be 'slower' in terms of introducing new technologies and innovate less due to the higher cost of capital.*

Human capital accumulation

From the third finding follows that employees in the informal sector will work with less advanced technologies. This, in turn, will also affect the human capital accumulation which takes place through learning-by-doing at the work place. [105] Consequently, workers in the informal sector will, over time, relative to workers in the formal one, lose in human capital. The lower human capital accumulation through learning-by-doing at work among the employees of the informal sector will make them less attractive for employment in the formal sector and hence makes it more difficult for them to move from the informal to the formal sector. This will not only have an impact on the individual's human capital, but also on the stock of human capital in the overall economy. In particular we will tend to observe a skill-segmented labour market.

The fourth finding tells us that:

> *Human capital accumulation through learning-by-doing at work will be lower in the informal sector, which in turns affects not only the company but the overall economy and its competitiveness and reduces its long-term economic growth potential. At an individual level, the lower level of human capital accumulation in the informal sector will expand the skills gap between workers in the two sectors, which in turn will be reflected in wages*.

The size of the service sector

The fact that labour costs, through tax evasion, are lower in the informal economy makes labour intensive sectors more competitive and hence too many resources are allocated to them. This holds in particular for the tertiary or service sector, which in turn leads to an expansion of certain sub-sectors of the sector at the expense of other sectors of the economy – an expansion that had

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lender to monitor a firm which is involved in tax evasion. These additional risks are priced through, e.g., a higher interest rate, i.e. higher cost of capital.

[105] For a discussion of learning-by-doing and economic growth, see Lucas, R.,E., Jr., 1993, Making a Miracle, *Econometrica*, vol. 61, no. 2, 251-272. Lucas puts it the following way: "A fast growing economy or sector under this technology is one that succeeds in concentrating its workforce on goods that are near its own quality frontier, and thus in accumulating human capital rapidly through the high learning rates associated with new activities and through the spillovers of this experience to the production of still newer goods. These hypotheses are consistent with commonly known facts, and have testable implications for many more". (page 267). As discussed in Lucas, there is reason to believe that the effect from learning-by-doing on economic growth is substantial.

not taken place were not it for the distortions created by the informal economy. In other words the service sector will be too big in comparison to the case when the economy's resources are allocated optimally.

The fifth finding implies that:

> *Certain parts of the service sector (i.e.. sub-sectors where it is relatively 'easy' operate parallel systems – one official and the other informal) will benefit from the distortions created by the informal economy and that the share of advantaged sub-sectors of the service sector will be too large.*

Company size

Company size affects the probability of tax audits and hence of detection since the probability of detection is likely increase as the firm grows. Furthermore, even if shadow economy activities are detected it is easier for small businesses to close down the operations and establish a new company.

The sixth finding implies that:

> *Involvement in shadow economy activities creates incentives not to expand the business.*

Efficiency of policy making

The existence of a large informal sector affects all areas of the economy, both those sectors in which the informal sector is prevalent and those in which it is largely absent. The implication of this is that policies, such as tax policies, investment incentives, labour market policies, which might be highly desirable in themselves, are compromised because of the pervasive informal economy distortion. Hence, the distorted incentives created by the informal sector will reduce the effectiveness across the board of otherwise good policies or policy reforms. The implication for the sequencing of policy reform is that action has to be taken first on the informal economy.[106]

The seventh and final finding is therefore:

> *The existence of a large informal sector reduces the general effectiveness of economic policy making and has implications for the sequencing of policy and policy reforms.*

Designing the causal relations-tree

At the broadest level the emergence and persistence of a large shadow economy depends upon the set of incentives faced by economic and social agents: that is by firms, individuals and also by government. At the level of both the firm and the individual, actors must balance the benefits of successful tax evasion with the costs cost suffered if caught cheating. The benefits, especially for firms are generally thought to depend on the size of the tax wedge i.e. the difference between the gross and net wage generated by taxes on labour. The private costs depend on the efficiency of the tax enforcement regime i.e. the probability of

[106] The linkage between the institutional framework and the effectiveness of economic policy making is discussed in: Devarajan, S., V. Swaroop, and H. Zou, 1996, The composition of public expenditures and economic performance, *Journal of Monetary Economics*, vol. 37, no 2, 313-344.

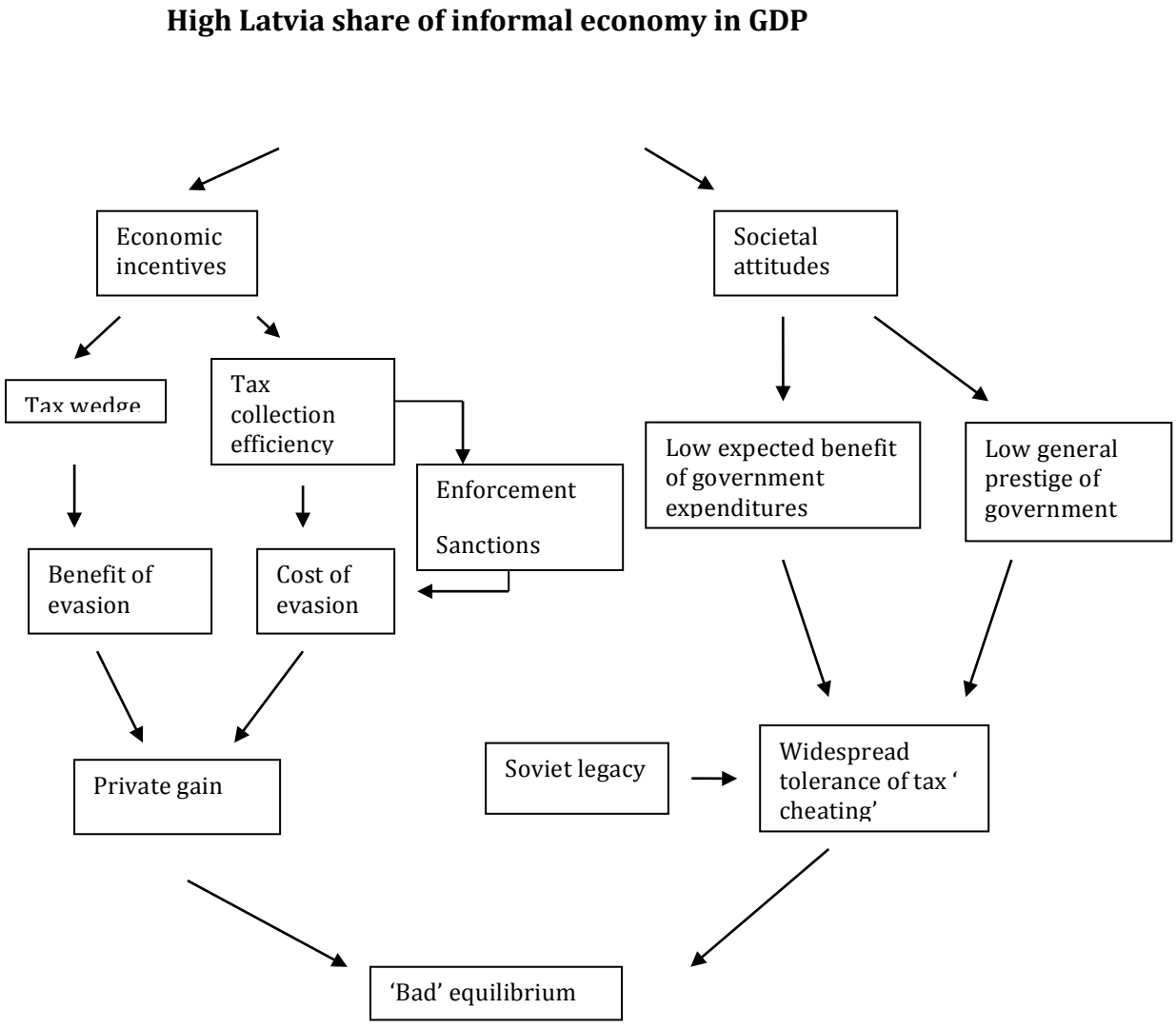
getting caught and the sanctions applied if caught. These mechanisms are summed up in the economic incentives branch of the causal relations tree.

However, in addition to the direct private expected gains from tax evasion there are societal factors that also matter. These include:

- The perception of the benefits expected from government expenditures
- The prestige of government

Here, it should be mentioned that the causal relations tree represents a 'top down approach'.[107]. Thus the direction of the arrows implies successively finer levels of explanation.

Figure 5.1: Causal relations tree: informal economy



[107] Hausman R, Klinger B and Wagner R (2008) "Doing growth diagnostics in practice: 'a mindbook'" CID Working Paper no 177

These collectively determine the social environment towards cheating. Where the public is confident about the benefits of government expenditures and the prestige of government is generally high, cheating is regarded as anti-social and effective enforcement is politically easy. The Scandinavian countries represent examples of this kind of socio-economic context. By contrast, if government expenditures are regarded as ineffective and wasteful, or even siphoned away by interest groups, cheating is widely tolerated by society. Survey evidence suggests this is the case in Latvia. This in turn has an impact on the political incentives to take effective action on the informal economy. These factors are summed up on the right hand side of the causal relations tree.

Assessing the critical causes

The central question is: why Latvia, in comparison with its two Baltic neighbours, is so different with respect to the relative size of the informal economy? The 'standard' answer when addressing the size and cause of the informal sector is to 'blame' the incentives induced by the tax system. However, the overall structure of the Latvian, tax system is rather similar to that of the other two Baltic countries. In particular as shown in the discussion of the tax burden on labour (chapter 4.3) Latvia's tax wedge on labour is not much different from the EU average, or in Estonia and Lithuania in particular. Accordingly, it seems improbable differences in the tax system can be decisive in explaining the differences in the level and the dynamics of informal sectors in the three countries.

Although the formal structure of the tax system as such in Latvia is by itself probably not the decisive factor in determining the scale of evasion, the efficiency and effectiveness of enforcement of the rules plays an important part in defining incentives for evasion. Sanctions for breaking the rules have historically been low and in any case have been applied only to employers and not to workers so a combination of a rather average tax wedge but rather weak enforcement mechanisms imply that the expected private gain from tax evasion is quite high in Latvia. The direct individual incentives for cheating are reinforced by a social climate in which cheating is tolerated and in which government enforcement mechanisms are not regarded as credible.

Economic theory suggests that under certain market conditions and demand specifications, an economy might generate a 'bad' equilibrium with a high share of informal economy activities (in comparison to a 'good' equilibrium with a relatively low share of informal economy activities). [108] We conclude that, given the overall structure of incentives and sanctions, what we observe in Latvia is an instance of a bad equilibrium.

5.2 Latvia's manufacturing performance

[108] This can be generated by a variety of mechanisms. For example under certain circumstances increased competition might result in increased tax evasion when firms use tax evasion to compensate for lack of market power. See: Goerke L., and M. Runkel, 2011, Tax evasion and competition, *Scottish Journal of Political Economy*, vol. 58, no. 5, 711-736. The role of market structure, tax evasion and enforcement is also discussed in Bayer, R., and F. Cowell, 2006, Tax Compliance and Firms' Strategic Interdependence, Research paper No. 2006-09, The University of Adelaide School of Economics. Goerke and Runkel also provide a short overview of the literature on the relationship between competition and tax evasion.

The assessment the structural composition of the Latvian economy in section 3.4 reveals that the share of manufacturing in GDP fell from 21% in 1995 to less than 10% in 2009. Although the share has recovered somewhat since then Table 5.1 shows that since 2000 Latvia's manufacturing share has been persistently below the average observed in the EU27 as well as below the share of the other two Baltic states.

Table 5.1: Share of manufacturing in gross value added

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU-27	19.4	18.8	18.2	17.7	17.4	17.2	17.1	17.1	16.4	14.9	15.4
Germany	23.1	23.0	22.5	22.6	22.8	22.9	23.5	23.8	22.7	19.3	20.9
Estonia	17.7	18.3	18.1	18.1	17.4	17.2	17.0	16.4	16.1	14.3	17.0
Latvia	13.8	14.0	13.9	13.3	13.2	12.7	11.8	11.4	10.8	9.9	12.2
Lithuania	19.3	19.9	18.7	19.3	20.9	20.8	20.1	18.6	18.1	16.4	:
Finland	26.5	26.0	25.1	24.4	23.7	23.4	24.1	24.2	22.2	17.9	18.8
Sweden	22.0	20.7	20.5	20.0	19.9	19.9	19.8	19.6	17.7	15.5	16.4

Source: Eurostat

This is an issue that has been highlighted in a number of studies and policy documents at both national and European levels:

- In Latvia's National Reform Programme 2011 (NRP) it is noted that[109]: "The economy of Latvia is characterized by a low share of the tradable sectors (manufacturing industry in 2009 – 9.9% of GDP, in 2010 – 12.2% of GDP)" and accordingly "Promoting rebalancing the economy towards the tradable sectors" is defined as one of Latvia's 'macro-structural bottlenecks'. This carries policy implications. For example in the NRP this has led to a policy aimed at attracting FDI in tradable sectors with the goal of improving competitiveness in these sectors.

- A recent report by Swedbank assessing Latvian manufacturing argues[110]: "the issue that should be considered is that growth is more sluggish than in Latvia's closest neighbours: Estonia and Lithuania can enjoy faster GDP growth owing to larger manufacturing sectors".

- At the EU level too, manufacturing is regarded as especially important: according to the recent EU Communication on industrial policy and competitiveness[111]: "European industry is of critical importance for the EU as a global economic leader. A competitive industry can lower costs and prices, create new products and improve quality, contributing thus decisively to wealth creation and productivity growth". In the same report Latvia is identified as a country with low labour productivity in manufacturing as well as a below average manufacturing share in GDP.

These observations raise a number of questions:

- Does the Latvian share of manufacturing in GDP signal a competitiveness problem?
- What explains Latvian manufacturing performance?

[109] Latvia's National Reform Programme 2011, page 15 and page 9, respectively.
[110] Swedbank (2011), page 13.
[111] European Commission (2011), page 3.

- Is there a sensible benchmark for this indicator, i.e. the share of manufacturing to GDP?

The channels through which the manufacturing sector affects competitiveness are addressed in the follwing theoretical analysis. The complexities of the second question are analyzed with the help of competitiveness diagnostics – the casual relations-tree and the third question is addressed in Box X.

The competitiveness impact of the manufacturing sector

Manufacturing has long been studied in the context of growth, productivity and innovation and both theory and evidence point ot a number of stylized facts that are relevant for interpreting the linkages between the size of the manufacturing sector and competitveness.

Manufacturing and productivity

Manufacturing is seen as driver of economic growth because the presence of economies of scale in many manufacturing sectors implies that as these sectors expand there will be disproportionate productivity gains and hence, given the productivity based definition of competitiveness, disproportionate gains in competitiveness. This line of argument is associated with what is known as Verdoorn's Law[112], which asserts the empirical regularity that productivity grows proportionally to the square root of output, with empirical estimates of the Verdoorn coefficient typically lying in the range 0.3 to 0.6[113]. Furthermore, in a European Union context manufacturing productivity is seen as the motor driving EU wealth creation[114]. Accordingly, the first stylized fact can be written as:

Manufacturing drives productivity which in turn drives competitiveness.

Manufacturing and economic growth

As illustrated in Box 8, countries in the process of economic development usually go through an investment-driven stage where manufacturing and exports are important growth drivers of growth. In the Latvian case, the country can surely take a different path but then it needs to identify and pursue such a path intentionally. This currently does not appear to be the case. The low manufacturing share also suggests that the more 'automatic' investment driven growth processes are not working either. In addition (and as seen from the previous discussion), manfacturing is regarded as vitally important for the EU economy as a whole with a share of GDP between 15 and 17 per cent during the last five years. However, by widening the perspective to include the share of services upon which manufacturing depends, and which in turn depend on industry, this "servo-industrial" part of the EU economy accounts for almost half of European Union GDP[115].

[112] For a theoretical discussion of Verdoorn's Law, see Verdoorn (1980).
[113] See for example Ofria and Millemaci (2010) for a recent study.
[114] European Commission (2010) , page 2.
[115] European Commission (2010), page 2.

The second finding can hence be summarized as:

> *A low share of manufacturing dampens economic growth and slows down economic development.*

Manufacturing as a location of innovation and technological change

Promoting manufacturing induustry constitutes an integral part of the EU competitiveness policy[116]. One of the underlying reasons for the EU focus on manufacturing is the observation that manufacturing as such is important for competitiveness because it is a location of innovation and technology. Furthermore, by exposing human resources devoted to research, the manufacturing or industrial sector contribute to the developmen of key enabling technology access – technologies enabling the development of new goods and services as well as contributing to the restructuring of industrial processes needed to modernise the industry structure.

These observations can be summarized as:

> *Manfacturing plays an important role in fostering innovation and technological change.*

Hence, part of the explanation for weak innovation performance (as discussed in 3.2.2) might be a result of Latvia's lagging manufacturing sector.

[116] See European Commission (2010), page 2 and 20.

Box 8: Is there a meaningful benchmark for the share of manufacturing in GDP?

Does theory or empirics identify a meaningful benchmark in the share of manufactures that could be applied to Latvia? A standard view of economic development suggests countries progress from a low income level which is typically associated with low levels of industrialisation through to a higher income/ higher industrialisation phase and then to an advanced post-industrial phase. Data from the World Resources Institute tend to confirm this picture. Thus in 2005 the highest share of manufacturing in GDP was observed in middle-income countries (23.7%) and the lowest was in low income countries (15.5%), while the share in high income countries was 16.7%. Moreover this is a pattern that persists over time. At the same for the world as a whole the share of manufacturing has been falling – from 21% in 1991 to 17.7% in 2005. Within these averages there is a considerable dispersion. Thus the highest shares of manufacturing can be observed in: Thailand (35%), China (33%), Singapore (29%) or Korea (28%), all of which might be thought of as representing an East Asian development model. On the other hand countries with rather low shares are very diverse: Norway (9.4%) and Saudi Arabia (9.5%) are resource rich but Mongolia (3.9%) and Guinea (3.7%) are just not very developed. Latvia's share (12.7% in 2005) is clearly an outlier with respect the middle-income group to which it otherwise belongs.

*http://earthtrends.wri.org/searchable_db/results.php?years=all&variable_ID=217&theme=5&country_ID=all&country_classification_ID=all

Designing the causal relations-tree

What explains Latvian manufacturing performance? Theory suggests many, often interrelated, factors. Conventionally, causal factors may be subdivided into *demand* factors and *supply* factors

Manufacturing also represents the main tradable sector (in Latvia manufacturing exports remain ahead of services exports) and hence manufacturing performance is closely bound up with export performance. Export performance in turn is determined by factors that appear on both demand and supply sides of the causal analysis tree.

Demand factors

The size of the home market is important since this determines a base demand and in products with economies of scale and significant transport costs the size of the home market can be critical in determining the location of production. This is sometimes known as the 'home market effect', i.e. a more-than-proportional relationship between a country's share of world production of a good and its share of world demand for the same good[117]

[117] See for example Krugman (1980)

Price competitiveness (including here the effect of the exchange rate) in both home and foreign markets is an important determinant of demand for a country's products.

Supply factors

A myriad of supply factors can affect manufacturing performance. These include various constraints such as:

- Labour force skills: it is often claimed that there is a shortage of skilled workers e.g. science, technology and engineering skills
- Resource constraints: a particular constraint here is wood products where logging volumes determine the availability of resources
- Product quality: are the right products produced? As a small trading country Latvian exports are not quantity constrained on the demand side. What matters that the right mix and quality of exports is supplied.
- The capacity to export. Exporting does not happen by itself – most enterprises everywhere do not export anything at all. So exporting requires special capacity.

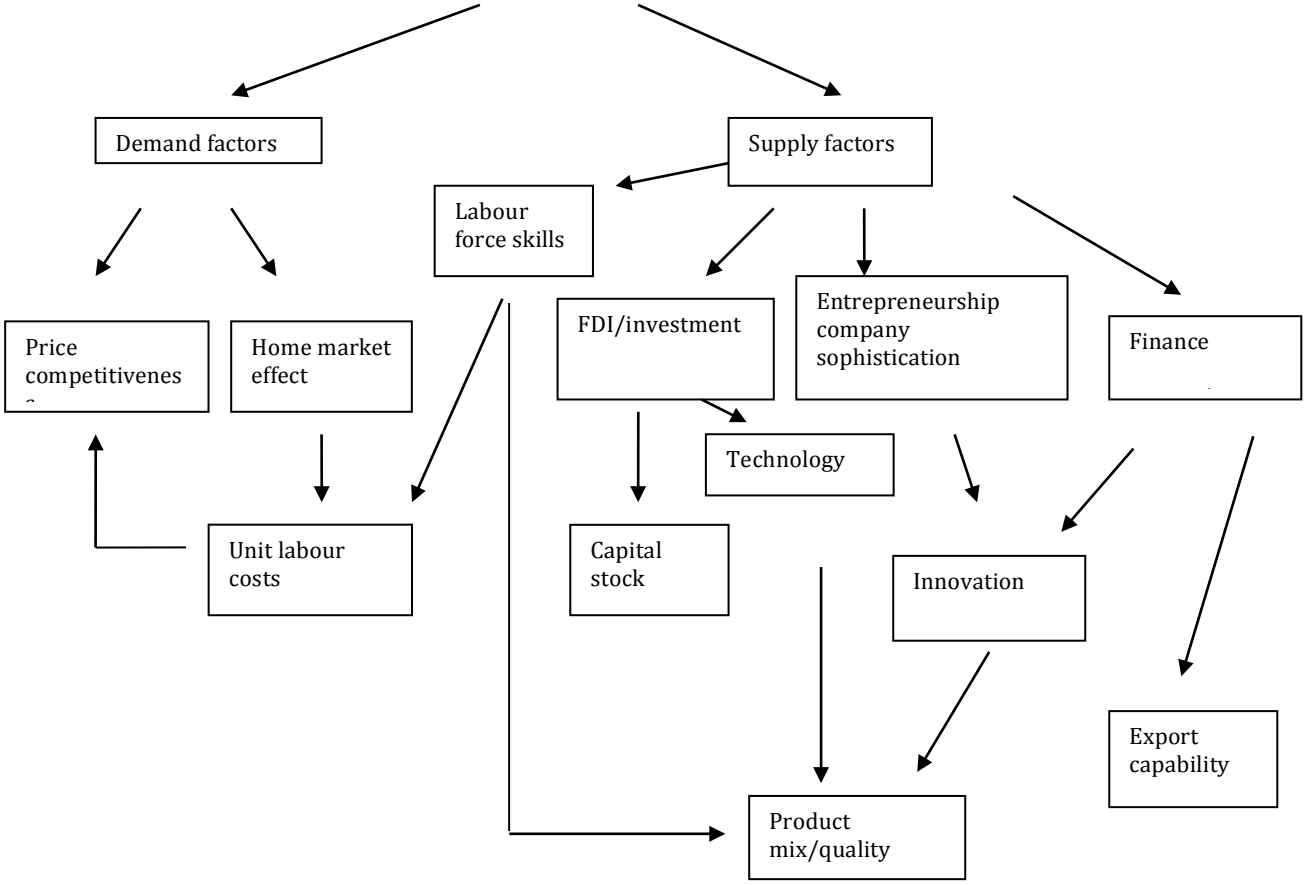
These factors are linked to:

- Investment in general and FDI in particular: investment determines capacity and FDI influences technology transfer
- Innovation and entrepreneurship: determine the products manufactured and exported.
- Financial constraints: determine capacity to innovate and export

These factors and interrelationships between them are summed up in the causal relations tree below.

Figure 5.1: Manufacturing performance in Latvia

Manufacturing performance



Assessing critical causes of manufacturing performance in Latvia

Manufacturing is of course rather heterogeneous. Attention here is focussed on the factors and causes that apply across sector boundaries. Of factors outlined in the causal relations tree which are the binding constraints? Which are the ones that link with other factors e.g. the informal economy? And which are the ones where action has the best pay-off?

The first (and immovable) constraint is the small home market. This limits the scope for locally generated economies of scale. Accordingly, export performance is a key factor in all sectors of manufacturing although to a differing degree: in recent years more than half of manufacturing turnover has been exported and this indicator has been on a rising trend since late 2008[118]. For individual manufacturing sectors the share of exports can be very high e.g. about 75% of wood products are exported or about 90% of computer, electronic and optical products. On the other hand some sectors such as food products, where about 25% of output is exported, depend much more on the home market. In either case expanding the share of manufacturing must look more to exports than to the home market.

Export performance (and good performance in the home market) in turn depends on:

[118] In 2008 just over 50% of manufacturing turnover was exported and by the first half of 2011 this share had risen to over 60%. This development has led to suggestions that "a structural change in the economy is slowly taking place – the shares of manufacturing and exports in GDP are rising … the economy is becoming more balanced" (Swedbank 2011 p11). Time will tell!

- Having the right products
- Price competitiveness
- Having the skills and resources to enter export markets

Identifying and producing the right products points to technology adoption, innovation and entrepreneurship as key factors. Virtually all of the intermediate and competitiveness fundamentals have pointed to deficiencies in these areas in particular as compared with our neighbours.

Innovation and export ability are both thought to be affected by the availability of finance[119]. The discussion of the shadow economy earlier suggests that access to finance may be more difficult for companies operating in the informal sector. This in turn may be associated with the result reported in European Commission (2011) that in terms of the share of innovative companies in manufacturing Latvia can be put in a member states bottom group whose share of innovative companies is less than 30%.

FDI is a key factor. It feeds into technology transfer and hence into product mix and quality. It is noticeable that Latvia has not managed to attract as much FDI geared directly to export as for example Estonia. FDI is also an area where other things equal the presence of an informal economy is likely to discourage investors.

Price competitiveness is always important and in the long run this depends on productivity. Here the European Commission (2011) reports that in 2010 Latvia was ahead of only Bulgaria in terms of labour productivity in manufacturing. Again the shadow economy is a factor: it results in lower capital intensity than would otherwise be the case; it discourages expansion of individual firms beyond a size that is likely to attract the attention of the tax authorities; both effects feed into low productivity and hence into price competitiveness.

Thus, effective action on the shadow economy would generate positive benefits across all manufacturing sub-sectors – encouraging investment, encouraging FDI and technology transfer, and encouraging exports.

Another factor in Latvian manufacturing has been its inability to transform what was a large industrial sector serving the Soviet Union into one, which could compete with Western manufactured products. Thus Latvia's second biggest manufacturing sector is wood products, which was of limited importance before 1991.

A 'case study' of two Latvian manufacturing enterprises that were very important in the Soviet Union but have failed to progress in the market economy illustrates what happened. One is VEF (State Electrotechnical Factory) and the other is RAF (Riga Autobus Factory). VEF was a leading producer of telephones, telephone exchanges and radios in the Soviet Union which in its heyday employed 20 000 workers. Basically, VEF was unable to attract the foreign investment to upgrade its products. RAF was one of only two producers of vans and minibuses in Soviet Union. Although attempts were made to restructure a

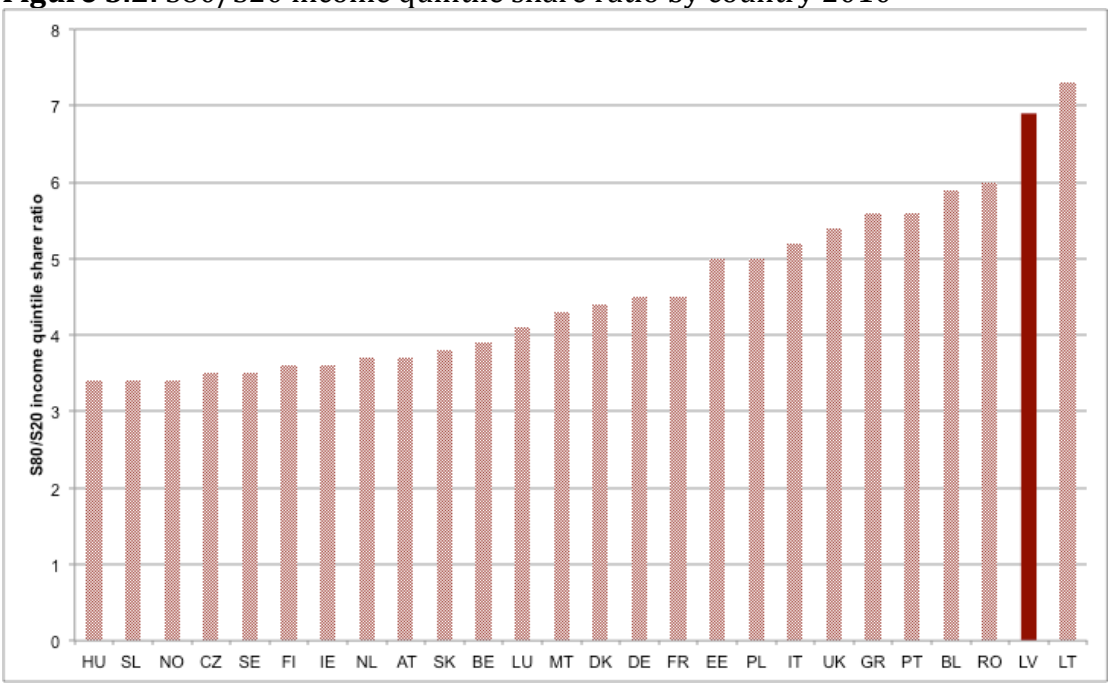
[119] This particular theme is the subject of one of the in-depth studies of this project. Preliminary results support the hypothesis of finance as a constraint on innovation.

strategic investor was never attracted. So, both enterprises failed to prosper in the market economy because of the failure to attract foreign investment.

5.3 Income inequality

The assessment of competitiveness outcomes in the first part of the Latvian Competitiveness Report 2011 has identified a high level if income inequality as another distinctive feature of the Latvian economy. As shown in chapter 2 Latvia's income distribution as measured by the Gini is the least equal among 29 European countries (the EU27+ Norway and Iceland). The so called S80/S20 ratio, which measures the ratio of total income received by the 20 % of the population with the highest income to that received by the 20 % of the population with the lowest income tells a similar story. At 7.3 Latvia's indicator for 2009 was the highest in the EU. In other words the income of the top quintile of Latvians was more than 7 times that received by the bottom quintile. The EU average was 4.9 while in Estonia it was 5.0 and for Lithuania 6.3. In 2010 (see Figure??) Latvia improved somewhat with a ratio of 6.9 and was overtaken by Lithuania where the S80/S20 indicator increased to 7.3 as a result of a pension cut that was implemented in 2010.

Figure 5.2: S80/S20 income quintile share ratio by country 2010



Source: Eurostat (online data code: ilc_di11)

Inequality tends to be higher in economies on a fast catch-up path, where the opportunities for high income are a key incentive for investors and entrepreneurs to achieve the necessary upgrading of the economy. However, Latvia's level of income inequality is high even by the standards of other countries at the same level of economic development. This suggests that more than just the process of catch-up is relevant in explaining this feature of the Latvian economy.

The competitiveness impact of inequality

This section addresses the question: Why is the high level of inequality relevant from a competitiveness perspective?"

Inequality and productivity

High inequality is often an indicator that highlights the presence of underlying competitiveness weaknesses that not only drive inequality but also negatively affect productivity. As far as this is the case, policies to reduce inequality are also policies to improve competitiveness. Such policies do not require a value-based judgment of the level of inequality in a society but a merely based on the overall orientation towards a high standard of living as a key policy goal. There is no evidence to suggest that Latvia's higher level of inequality is based on different social values compared to other European countries at a similar overall stage of development. While such differences in value might explain the differences between the US and Europe, for Latvia the higher level of inequality is much more likely to be driven by factors that also reduce productivity.To summarize:

> *High in equality negatively affects producitivy and hence competitiveness.*

Inequality and overall prosperity

Competitiveness is ultimately concerned with the standard of living that can be supported for the overall population in a given location. High inequality reduces the social value of GDP per capita as a measure of the standard of living: for most people actual outcomes are worse than what the average data suggests. Thus high inequality is an indication that the economic system fails to translate the overall value generated in the economy into a high standard of living for large segments of society. While each society will make different choices on the level of inequality that it deems appropriate or acceptable, lower levels of inequality *for any given level of average prosperity and productivity* are generally considered to be preferable. Latvia's higher inequality compared to other countries with similar levels of average prosperity suggests that the country could reduce inequality without a loss of overall prosperity. Hence:

> *The failure to translate the existing level of prosperity into lower levels of inequality – and thus higher standards of living for a broader share of society – is an indication of low competitiveness.*

Finally, as far as there is an alignment between the underlying competitiveness factors driving inequality and productivity, a disappointing outcome on either one of them could be taken as the starting point for the analysis. There are a number of reasons for inequality to be a fruitful point of departure: Latvia's performance on inequality is particularly striking, while its low productivity is not unusual given its performance on many other indicators. Productivity is driven by all the elements discussed in the competitiveness assessment of this Report, while inequality is driven in part by a different set of elements. The overlay of these two perspectives can thus provide important insights, and supports the identification of a smaller group of factors critical for both dimensions of standard of living across society – these issues will be analyzed using the causal relations-tree approach.

Designing the causal relations-tree

Much of the academic literature on inequality is focussed on explaining changes in income inequality, not levels. In particular, there is a debate as to whether the significant increase in inequality observed in many countries over the last years

has been the result of globalization or technological change. The data is more consistent with the view of technological change that biased towards higher skills as the dominant driver. Globalization is likely to also play a role, but more through inducing even faster technological change and not through factor price equalization (this would lower the wage gap between high and low skill employees in developing economies, a prediction that is contrary to the evidence).

For Latvia, however, the question is primarily why the level of inequality is high as compared with other countries, not whether and why it has changed.

At the highest level of analysis, inequality can be driven by either the presence of very unequal social returns of individuals' economic activities or by very unequal private returns that these activities generate, even if their social value is normally distributed.

Unequal social returns, or very high heterogeneity in individual productivity, can have a number of potential explanations:

- First, it can be the result of very different levels of skill. This in turn can be driven by an education system that provides highly unequal quality, does not provide enough capacity to train everyone, is too costly for many individuals to afford, or that discriminates certain groups. Or it could be affected by migration patterns that increase the heterogeneity of skills in the workforce, for example when many mid-level workers leave the country.

- Second, it can be the result of very different levels of capital intensity across sectors. Such differences are normal to some degree; what would explain higher inequality are differences in capital intensity that go beyond what other comparable economies report. There can be different reasons for this: government policy can aggressively subsidize investment in some sectors at the expense of others. Or a weak financial market structure could distort investment choices in ways that exacerbate capital intensity differences and thus the difference in productivity that workers can reach across sectors. A non-uniform prevalence of the shadow economy can also lead to a wider dispersion of capital intensity.

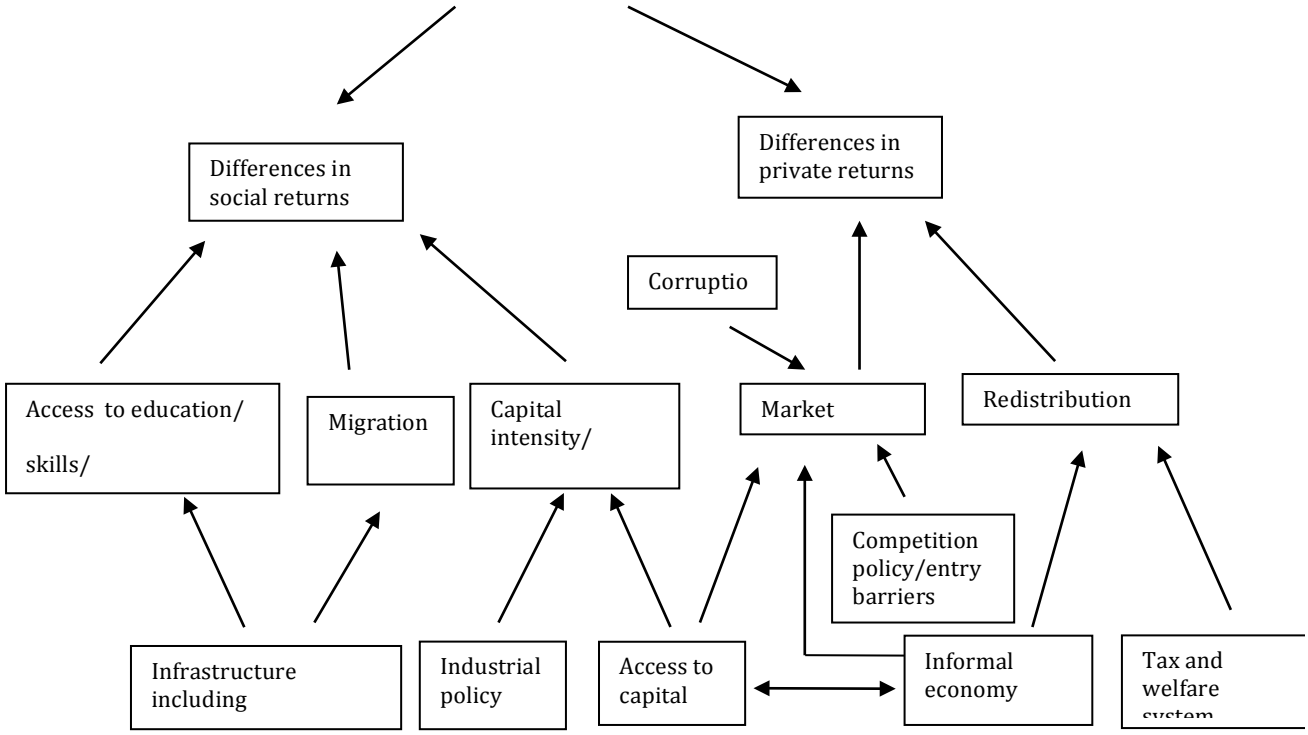
- Third, it can be the result of very different levels of technological capability across sectors. One potential reason could be a bias in the innovation system that provides access to advanced technology in some highly productive sectors but fails to do the same in other, less productive sectors. Another reason could be differences in market structure: More effective rivalry in advanced sectors would increase their incentives to adopt leading technologies and would flush out less productive firms from the industry.

- Fourth, it can be the result of an unusual composition of the economy, with a stronger presence of industries with very high or very low productivity but a weak medium-productivity sector in comparison to peer countries. Such a different industrial composition could be the result of endowments, including historical legacies, or biased policy choices.

Unequal private returns that are not reflective of the underlying value creation of economic activities has two major potential causes:

- First, the effect of transfer and redistribution can exacerbate inequality relative to peer countries. This could be the result of different tax systems or tax rates as well as of the particular features of the social security system, including its financing.
- Second, there could be dispersed private rents reflecting the presence of market power. This could be driven by weak competition policy, limitations in the financial system, regulatory barriers to entry, economic activity outside of the legal system (grey economy), discrimination, or corruption.

Figure 5.3: Causal relations tree for inequality[120]



Assessing critical causes of inequality in Latvia

The causal analysis for Latvia draws on the framework outlined above to identify which of the underlying drivers seems most likely to cause the high overall level of inequality.

[120] Here it should be noted that the arrows go in both directions. This reflects the complexity and the feedback elements in the causal relations involved in the observed inequality.

The analysis is severely constrained by data availability issues. Detailed data on the factors underlying the structure of inequality across different parts of society is not readily available. Where suitable data is unavailable we conduct a theory-driven analysis, based on the data that does exist.

A particular data-related challenge is the large informal economy, discussed in the previous section and in Chapter 4. Since a significant share of wages is not registered, the income distribution data could be seriously flawed. This would be the case if a large part of the grey economy reflects payments to lower income workers, while the activities of higher income groups are largely captured in government statistics. We think that while these factors are likely to play a role we regard it as improbable that they could explain all of the income inequality difference between Latvia and its peers. More primary research in this area would be highly valuable.

In the absence of detailed data on the distribution productivity across the workforce, we cannot differentiate between differences in social and private returns. To evaluate which of the two is likely to be of more importance, we need to evaluate the possible impact of the factors that drive them.

On skills, the existing evidence suggests that there are significant overall quality issues (ref. page). Whether this reflects low quality across the board, or is driven by high heterogeneity across the system is hard to assess. A significant issue here is: the skills differences in the stock of the labour force, for example, age groups that gained their education and experience before the 1990s are likely to have a significantly different skill profile than younger cohorts. This is, of course, a challenge that all former planned economies are facing but could be particularly prevalent in countries that were parts of the Soviet Union. General access barriers to education through lack of capacity, costs, or discrimination seem unlikely to be more prevalent than in peer economies. However, the funding of secondary education depends in part on the tax revenues received by local authorities and the evidence suggests disparities in revenues have resulted in significant differences in the regional per capita funding of education.

Migration is clearly an important force. While migration may not be systematically biased towards workers with medium levels of skills it clearly is biased towards working age people and to people who have initiative and who are employable. The most recent estimates suggest that between 50 and 100 thousand people may have left Latvia over 2009-2010[121].

On capital intensity, industrial policy in terms of directed credit has not been used. Access to capital is an issue discussed in the previous section on the informal economy and it is argued that low tech labour intensive sectors are favoured by the shadow economy. Thus there could be a polarising effect here.

On technology, industrial policy is again an unlikely source of exacerbated productivity differences. Market structure is also an unlikely candidate: While the degree of rivalry is somewhat lower than in peer countries, and especially

[121] See M. Hazans (2011) http://www.lu.lv/fileadmin/user_upload/lu_portal/zinas/Prof._M._Hazans__Kas_sodien_dzivo_Latvija_12.09.2011.pdf

government-linked companies are seen to dominate some markets, it is unlikely that this is biased to holds back productivity in lower productivity sectors.

On composition, Latvia does stand out as an economy with an unusually low manufacturing sector given its stage of development. We discuss this in the next section in more detail. A smaller manufacturing sector could be reflected in a lack of middle-income, industrial jobs.

On redistribution, the available data from the EU indicates that the change of income inequality achieved through taxes and welfare payments is indeed smaller than in most other European countries. But it also shows that quantitatively this is not enough to explain the overall difference in income inequality. The grey economy does play an important role in Latvia as was discussed in the previous section. A large grey economy reduces the ability of the government to redistribute income.

On market power, Latvia gets low marks in areas like competition policy, local market rivalry, and the dominance of state-owned companies in certain markets (see section 4.8). Administrative efficiency is also low, creating barriers for new, more productive companies to enter the market. The data on corruption is mixed, with normal levels of overall corruption but a more negative view of wasteful or 'biased' spending by government. Discrimination is less likely to be an important factor.

In summary, there is no clear, unique factor that drives the inequality observed in Latvia. Among the factors determining the distribution of social returns the balance of evidence suggests that most important are:

- Unequal regional access to educational resources
- Migration
- The distortive effects of the informal economy

The critical factors differences in private returns are:

- The private rents generated by corruption and the large grey economy
- The limited redistribution through the tax and welfare system
- The legacy effects on the skill profile of the labour force by age group

5.4 Concluding remarks

The previous sections have sought decompose Latvia's observed high informality, modest manufacturing performance and high inequality into causal factors in such a way as to identify which factors represent the binding constraint s on improving performance in these areas. This analysis is important for at least two reasons:

- Firstly, the the causal relations analysis helps to disentangle the complex interrelationships that lie behind the indicators of performance and hence points to policy actions that may improve performance.
- Secondly, the analysis identifies areas where in-depth research may be justified.

Thus on high informality the key conclusion is that Latvia is in a 'bad equilibrium' accordingly the action implication is that radical root and branch

intervention is needed to shift Latvian society out of such an equilibrium. Tinkering with marginal changes in incentives is unlikely to be enough. This is discussed more fully in the next chapter.

On manufacturing performance the analysis identifies the importance of export capability for manufacturing and this in turn depends on key factors such as innovation (producing the right product mix) and investment (generating the capacity to supply export markets). This in turn points to the importance of financing as a potential constraint in both innovation and export which is topic addressed by one of the in-depth studies carried out as part of this Report. The analysis also identifies the informal economy as generating insufficient incentives for firms to expand and for workers to acquire skills.

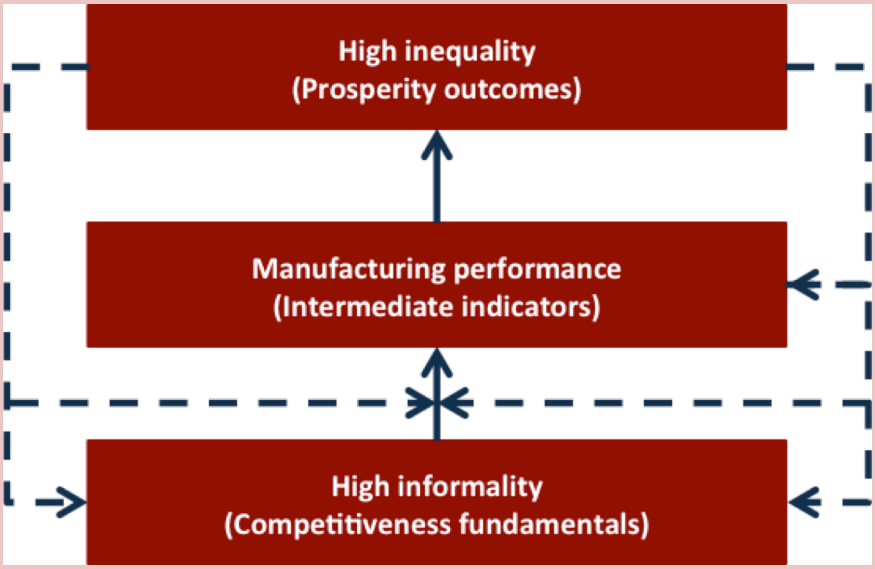
The analysis of inequality identifies many gaps in our knowledge. For example, what is the effect of the informal economy on both measured and actual or underlying inequality? Or what has been the impact of migration on inequality? These are areas for potential future in-depth studies.

Here it should be noted that although the diagnostics can inform policy choices detailed recommendations on specific programmes are beyond the scope of this chapter and of this report as a whole. The diagnostics gives insights into the needed direction and nature of the policy actions that set potentially different signals from the priorities set in existing policy documents such as the National Reform Programme

Thus, the application of diagnostics remains indicative – a full analysis of the issues identified is beyond the scope of this Report. A future Latvian Competitiveness Report could deepen the analysis of the specific issues raised in this first explorative use of the diagnostics approach.

Box 9: How the diagnostics areas relate to the competitiveness framework

The figure illustrates i) where in the competiteveness framework each of the areas selected for dignostics is located and ii) the potential interelationships between them.



Thus, informality is an important competitiveness fundamentals indicator, manufacturing performance is an intermediate indicator and inequality represents one of the prosperity indicators. However, the causal relationships between them are complex. Firstly, a chain of causality can be identified running from high informality to manufacturing performance through to prosperity outcomes, including inequality.

At the same time informality may be the result of both other dimensions of fundamental competitiveness, e.g. the efficiency of the tax system, and other categories of outcome e.g inequality. Similarly, poor manufacturing performance can be the result weaknesses in competitiveness fundamentals e.g. poor innovation or high informality. However, the causes of a low GDP share of manufacturing in by improving competitiveness fundamentals such as, say, innovation can therefore be expected improve overall productivity and prosperity, in addition to raising manufacturing activity as such.

Inequality is driven in a complex way by particular dimensions of fundamental competitiveness, but also has a feed-back impact that runs the opposite way. In other words, inequality both reduces the benefits the Latvian economy derives from its current levels of fundamental competitiveness but also creates significant barriers for needed competitiveness upgrading. Addressing the causes of inequality has thus not only a direct benefit in terms of higher prosperity but also reduces the negative impact that high inequality has on competitiveness more broadly.

6. Assessment and prioritisation

6.1 Introduction

This chapter brings together and assesses elements from the previous sections of the report in order to identify and prioritise the key action areas that need to be addressed to upgrade Latvian competitiveness.

The chapter is organized as follows. The next section provides a summary assessment of the findings of the first part of the Report, i.e. the findings of chapters 2-4. Section 6.3 discusses the policy implementation process and the political institutions supporting it, which both empirical and theoretical considerations indicate as the overarching obstacle to taking effective action to upgrade Latvian competitiveness. Section 6.4 elaborates on the criteria for prioritisation of policies and sections 6.5 to 6.7 discusses three identified action priority areas. Section 6.8 offers some concluding remarks.

It should be kept in mind that according to the Technical Specification of the Latvian Competitiveness Report project, the Report neither has the mandate nor the ambition to develop a detailed policy agenda for the Latvian Government. Thus, the following discussion (as well as the Report as a whole) is aimed at informing the policy debate and through this eventually also helping to shape policy decisions.

6.2 Assessment

Chapters 2-4 of this Report identify and analyse more than 100 indicators of Latvian competitiveness, ranging from prosperity outcomes to intermediate measures of economic activity, to indicators of fundamentals. The overall picture is of a society that is persistently failing to reach its potential: the level of prosperity reached so far is, on most indicators, among the worst in the European Union and the competitiveness fundamentals point to weaknesses that have persisted for many years. Indeed, almost all of the indicators analysed in the report point in the same direction and tell the same persistence story. There are success stories such as the recent strong export growth accompanied by the perhaps less well known diversification of exports but these are exceptions to the general picture.

While the current policy developments noted throughout the Report suggest that Latvia is addressing many of the competitiveness issues it faces, the same could have been said at many points of time over recent years. But evidence tells that the problems persist. The persistence of the same problems over time points to the presence of a systemic failure in policy making. That is, there exists failure at the level of political institutions and the implementation process of economic policy. There is in effect a classic time-inconsistency problem – policy makers can and do identify correct policies but the institutional mechanisms for commitment appear to be weak or missing. Addressing this issue is the overarching priority for improving Latvian competitiveness. This is discussed in more detail in section 6.3.

From the examination of the indicators presented in the report certain thematic areas stand out – mainly as problematic areas but in some cases there is positive experience to report. These problematic areas include:

- Inequality: Latvia is one of the least equal societies in Europe;
- Innovation: Latvia's innovation performance persists as one of the poorest in the EU;
- Manufacturing: The Latvian share of manufacturing to GDP and manufacturing productivity are the lowest in the European Union;
- Education: The evidence points to quality problems in parts of Latvia's education system;
- Financial markets: Latvian financial market development has persistently lagged behind that of other new market economies in Europe;
- The informal economy: The informal economy in Latvia persists as one of the largest in the EU;

Relative strengths include:

- Exports: Strong recent export performance; export diversification
- Latvia's transport and logistics infrastructure.

The discussion on methodology in chapter 1 (in particular as illustrated by figure 1.2 of section 1.2), the analysis of chapters 2-4, and the diagnostics of chapter 5 all suggest the presence of complex and multi-directional linkages and causal relationships between many of the areas listed above. Hence, there is a need to cut through some of the complexity and apply strong prioritisation in order to avoid what could be seen as a 'generic' problem of Latvian economic policy making where too many priorities result in a lack of focus and ineffective policy. Prioritisation should apply not just to weaknesses but also in the case where the policy aim is to build on a strength.

6.3 The institutional framework and policy implementation

The role of institutions

It is widely understood that the institutional framework in which policy is formulated and implemented plays a decisive role in determining the success of individual policies or measures. This observation covers the way economic policy is formulated, coordinated and implemented within the different layers of government and its various agencies as well as the institutional framework for monetary and fiscal policy. The rationale for addressing the policy process and the way it functions is based on evidence that measures which are considered productive in the abstract and hence perceived as increasing competitiveness might prove to be less productive or even unproductive in practice as a result of a weak institutional structure[122]. For example, the weakness of macroeconomic policy making and its impact on a nation's competitiveness can often be attributed to a weak institutional structure rather than to the policy mix itself[123].

For Latvia the development of an effective policy process and of creating the political institutions supporting has faced many challenges. Historical experience

[122] See Deverajan et al. (1996).
[123] See Deverajan et al. (1996), Acemoglu et al. (2003), and Acemoglu and Robinson (2010).

shows that the development of political and policy making institutions is a process that takes time and spans decades, if not centuries.[124] Furthermore, the process exhibits a substantial amount of path dependency. Latvia in the 20th century has experienced considerable turbulence in its political and social institutions with the Soviet occupation in particular leaving Latvia ill-prepared to act effectively as an independent democratic market economy. Apart from the obvious need to create market economy institutions as well as the institutions of an independent state, all of which of took time and involved a sometimes painful learning process, less well-known aspects of the 'Soviet legacy' that directly or indirectly continue to exercise an influence on Latvian competitiveness include[125]:

- The local authority structure inherited from the Soviet Union with more than 500 municipalities remained more or less intact until the territorial reform of 2009 which reduced this number to 119[126].
- A variety of Soviet era administrative laws have remained on the books for many years.
- In the Soviet Union explicit taxes such as income tax or value added tax were not part of the revenue raising mechanism of the state – revenues were collected directly from enterprises. Thus taxation was not visible and this has left an impact in the deep unwillingness to pay taxes at all levels of Latvian society. This is reinforced when citizens are also deeply sceptical about how the state spends tax revenues.

In other respects too the historical legacy has been problematic. For example, following independence from the Soviet Union in 1991 Latvia reverted to its 1922 constitution. This meant that the party list system has been used in parliamentary elections rather than a constituency based system. There have been some minor reforms e.g. the threshold for gaining party representation in parliament has been increased from 4% to 5% and the candidates are now restricted to be nominated in just one regional list. Nevertheless, overall the parliament remains one in which coalition government is almost inevitable and deputies have little in the way of individual accountability to the electorate.

The nature of policy failure in Latvia

Over the years, both in a European context and at the national level, there has been no lack of Latvian policy documents, action plans, or policy guidelines. This is also seen through the various 'policy developments' noted throughout the first part of the LCR 2011. These are all directly or indirectly aimed at improving competitiveness. But as the Report extensively documents and the assessment summarises, almost all the evidence points to the persistence of competitiveness shortcomings.

So where is the policy failure located? What appears to be lacking in Latvia is committed and effective implementation. Symptoms of low quality of implementation include the following:

[124] See North (1989, 1990) for a discussion of the role of institutions.

[125] This list is meant to be illustrative for the competitiveness context and not exhaustive. The Soviet legacy can be observed in many other aspects of Latvian society.

[126] Before the territorial reform of July 1st 2009 there were 522 local authorities of various kinds, including 422 municipalities. This structure was basically the one inherited from the Soviet Union and reform was fiercely resisted for many years. Today the local government structure consists of 110 amalgamated municipalities (novadi) and 9 republican cities.

- Unwillingness to acknowledge the seriousness of a problem. This was the case for several years with fiscal policy where the concerns of the EU, the IMF and many independent analysts were ignored until it was too late.
- Unwillingness to seriously prioritise. This can be seen in a policy document like the NRP where apart from the areas where the international lenders are most concerned or where action is required at the EU level there is a long list of proposed measures with implementation periods specified but where experience informs us that the same measures will reappear unimplemented in future implementation plans.
- Political fragmentation and short-termism. Political fragmentation has resulted from the relative strength of the line ministries in a political context of coalition governments where partners have little fundamental in common. Short termism is a result of the incentives generated by a system where governments have lasted on average for 1.25 years and individual ministers often for even less time.

In short, the institutional framework of policy-making represents a priority in its own right and should be seen more or less as a prerequisite for successfully addressing the concrete thematic policy priority areas that are identified and discussed in the following sections.

The route to institutional reform

The key institutional problems are thus: fragmentation and short-termism which then lead to both inadequate prioritisation and to time-inconsistency in policymaking. As already noted institutions take decades or even centuries to develop. Moreover, reform of institutions from within is particularly difficult since 'insiders' may find it difficult to identify and agree on the concrete directions of reform so as to extricate themselves from a collective policy failure.

A logical way out of the time-inconsistency problems arising from short-termism is to find mechanisms that tie the hands of policymakers. This has long been done with monetary policy in Latvia and elsewhere by locating it in the hands of an independent central bank. The experience of the 2004 EU accession process represents another example: candidate countries were required to commit to the Copenhagen criteria and to accept in totality the *acquis communautaire*. The scope for negotiating derogations was very limited.

The Latvian Fiscal Discipline Law (currently before parliament) is also a mechanism intended to pre-commit or tie the hands of budget policy-makers[127]. Over the last three years the same has effectively been the result of the commitments made by Latvia on a broader front to the European Commission and the IMF as a condition of the financial support the lenders have provided. It

[127] The crisis of the euro-zone countries shows that joining the euro area with its current institution in no way ensures a responsible and long-term sustainable fiscal policy. This strengthens the case for an independent reform of the fiscal framework in Latvia focussing on long-term sustainability while restricting short-term fiscal flexibility by limiting the discretionary use of government spending and taxation so as to avoid the fiscal neglect of the boom years. This has long been known but is well put in Weale (2004) who shows how the incentives for unsound fiscal policies can increase with the introduction of a monetary union

is interesting also that the Super Departmental Coordination Centre which operates directly under the Prime Minister and is an institutional innovation that addresses the imbalances of the hitherto fragmented system of policy development and implementation was developed under the auspices of the assistance programme

The principle of tying ones hands may be more difficult maintain now that the formal assistance programme is over (though the IMF and the European Commission will continue to monitor Latvian developments). So an important part of post-IMF policy making must surely involve a commitment to serious prioritisation – a policy agenda that is too broad runs the risk of continuing to have limited effectiveness. The idea of concentration on a limited set of priorities has wide support in policy analysis. For example, evidence from evaluations of EU Cohesion policy suggests quite clearly "Thematic concentration increases the effectiveness of public intervention by reaching a critical mass which has a real impact on the socio-economic situation of the country and its regions"[128].

Accordingly a crucial step in forming a credible and implementable competitiveness improvement agenda is to define a limited number of priorities and to create an irreversible commitment to pursuing the selected priorities.. Here, the Super Departmental Coordination Centre potentially can play a crucial role through its responsibility for the National Development Plan.

Other reforms that could be considered include:

- Electoral reform, especially to increase the accountability of parliamentary deputies
- A wider use of rule based mechanisms so as to avoid time-consistency problems
- More use of external (foreign) experts in the public administration.

Box 10: The Swedish Fiscal Policy council: model for the governance of policy

Sweden has fiscal governance framework that offers not merely a model of how to pursue fiscal policy but can also serve as a model for other policy areas where political commitment may be difficult. Following the crisis of 1992-1994 a budget surplus target was gradually introduced by the Swedish authorities. The target now states that the net surplus should be 1 per cent of GDP over a business cycle and is supplemented by a budget ceiling that is set for a minimum of three years. In these respects the Swedish framework is not unlike the Latvian Fiscal Discipline Law and similar rules constraining budgetary policy in other countries.

[128] See the "Background report on: Evidence based cohesion policy and its role in achieving Europe 2020 objectives" prepared for the conference on Evidence Based Cohesion Policy held in Gdansk July 11th 2011.
http://ec.europa.eu/regional_policy/consultation/5cr/pdf/answers/national/latvia_government_2011_01_28.pdf

The innovation of the Swedish governance model is a Fiscal Policy Council, introduced in 2007, which assesses the extent to which the fiscal policy objectives are met**. The Council provides a critical and independent analysis of the fiscal policy pursued and the assumptions upon which it rests. The findings of the Council are presented in an annual report***. Among the issues highlighted in the 2011 report were****: if the planned tax reductions are undertaken then the budget ceiling has to be adjusted downwards; the optimistic forecasts used by the Government when it comes to the labour market development are not realistic; the educational reform suggested by the Government is not sufficient when it comes to achieve the objectives outlined by the Government. Thus the Council has a fairly broad remit in terms of what issues it can address.

The Council consists of eight members who do not necessarily have to be Swedish – currently one Dane serves in the Council. The members of the Council are suggested by the Council itself but appointed by the Government in a transparent process where the suggestions by the Council are made public.

Such a Council has the merit that it takes much of the discretion of fiscal policy making – it ensures that the hands of policy makers are tied to the chosen policy. Such a Council could usefully supplement the Latvia Fiscal Discipline Law but perhaps could also serve as a governance model for other policy areas where policy makers are tempted into time inconsistency. Interestingly, the Swedish reforms were initiated in the wake of crisis – so crisis provides a political window of opportunity for implementing reform.

*The discussion in this Box draws on Boije *et al.* (2010).
** See Calmfors (2010) for a discussion of the Council and what it has achieved since it was launched in 2007.
*** Finanspolitiska rådets årsbok – see Finanspolitiska rådet (2011).
**** See Finanspolitiska rådet (2011).

6.4 Towards an action agenda for Latvian competitiveness: policy prioritization

The above discussion on the role of political institutions and policy implementation identifies weaknesses in prioritisation and time consistency as key factors in explaining Latvia's limited progress in improving competitiveness. Hence, a necessary but not sufficient condition for a potentially successful competitiveness agenda is that it identifies a limited number of priorities. This section develops criteria for selecting priority areas and then applies them in order to identify three policy action areas.

Prioritisation has at least two dimensions: one dimension concerns the choice of action areas and the second concerns the sequencing of actions. Sequencing is needed because a limited implementation capacity means that not everything can be done at once. Accordingly we propose two criteria for prioritisation of competitiveness action areas:

- Expected impact on competitiveness – where the expected impact of an action area takes into account how pervasive a particular constraint or bottleneck is. This can be seen as a proxy for the degree of impact.

- Implementation time lag. That is the length of time between starting action to address a constraint and the time when the effects on competitiveness begin to operate[129].

Thus, other things equal, an action are or bottleneck where the expected impact on competitiveness is bigger should be prioritised over one where the expected impact is lower and secondly action areas which are important and have a long implementation lag should be addressed first.

The logic of the overall methodology employed in this Report implies that it is in the sphere of competitiveness fundamentals where action needs to be taken in order to improve Latvian competitiveness. Action on fundamentals will both directly and indirectly improve Latvian productivity and hence prosperity. Chapter 4 identifies a long list of competitiveness fundamentals and application of the above criteria suggests the following priority action areas:

1. Action to radically reduce the scale of the informal economy
2. Action to improve the quality of the education system
3. Action to build on Latvia's strengths in transport and logistics infrastructure

The rationale and implications of adopting these priorities is elaborated further below. However, in general terms it should be stressed that action in these fundamentals areas will improve performance in other areas – both other fundamentals and intermediate and prosperity outcomes.. This follows from the diagnostics where the causal analysis shows that, for example, the quality of education or the scale of the informal economy feed into say manufacturing performance or the degree of observed inequality.

Prioritisation of these action areas does not exclude policy action in many other areas. On the contrary, successful action in the priority action areas will typically require complementary action elsewhere, especially in terms of developing concrete instruments. For example successful exploitation of an improved transport infrastructure will very likely need development of complementary logistics activities. Similarly, higher quality education will need that businesses and other agents can productively employ better qualified workers.

[129] The rationale behind this criterion is that there are factors crucial for a balanced or sustainable growth path of the Latvian economy, but where the adjustment of these factors to the desired levels takes time. One example is infrastructure investment where the lag from decision to the final outcome could be very long. Postponing measures of this type will prolong the period under which Latvia is underperforming relative to its potential. Hence, there is a trade-off between measures that will have a more or less immediate impact on competitiveness and those that will pay off in the longer run. Also, there might be areas which are not bottlenecks today, but might be in the future if not addressed already today. To address this trade-off one has to link the discussion to the first criterion (the expected impact on competitiveness), by essentially comparing the believed present values of the different measures under consideration. In this context, the present value should not be taken literally, since calculating the present value of the impact of, e.g., an infrastructure investment is beyond the scope of the LCR. Again economic reasoning and argumentation play an important role.

6.4.1 Action on the informal economy

Latvia's large informal economy is the most pervasive competitiveness challenge the country currently faces. The concern of the Latvian government over the shadow economy has typically focussed on the government revenue losses associated with the prevalence of informal activity and to some extent with the 'level playing field argument'. However, the diagnostics of Chapter 5 suggests that a much more important consequence of a large informal economy is that it seriously undermines the potential for investment and productivity upgrading in the Latvian economy and that this effect works in all areas of the economy and not just those in which informality is most directly prevalent. Thus informality means:

- Competition gets distorted which reduces the returns from higher productivity.
- Incentives are biased towards the exploitation of short-term opportunities, and against the investments into long-term productivity upgrading.
- Informality severely reduces the impact of many otherwise useful government policies to upgrade Latvia's business environment.

It is precisely because high informality affects competitiveness throughout the economy through the investment and policy distortions that it generates that it represents the number one challenge and that effective action will bring the greatest competitiveness gains.

At the same time, informality in Latvia is particularly hard to tackle because it has reached a relatively stable equilibrium: the more people are engaged in it, the lower the likelihood of detection and the stronger the benefits from adopting similar practices. Such an equilibrium requires an integrated forceful policy to break. The current policies announced (and partly already implemented) have many useful elements and in some details follow what OECD countries have successfully implemented over recent decades.[130] But in the Latvian context action needs to be both credible and comprehensive to be effective. Given that the Latvian economy is locked into a bad equilibrium when it comes to tax evasion the question is how to get out of such an equilibrium. Clearly, measures have to be taken to increase the expected cost of tax evasion through increased probability of detection and/or an increase in the penalties if detected. These incentives have to be introduced at the individual (i.e. the employee) as well as the company level. Moreover, measures have to be credible and on a scale that will tip the balance of advantages towards compliance for a sufficiently large number (critical mass) of participants in the labour market. Where successfully implemented the evidence suggests that such measures have in most cases been accompanied by a simplification of the tax code[131]. In this context it is also worth emphasizing that (as seen in chapter 4) that Latvian taxes are, in an international comparison, not very high and accordingly that the tax rates as such cannot be seen as the explanation for the observed high share of informal activities

[130] See: Oviedo, (2009)
[131] See Oviedo,(2009)

We believe that only a truly radical approach will shift the Latvian economy from the current bad equilibrium. A key agency in this is the State Revenue Service (VID) and a reform of the tax administration in Latvia is unlikely to succeed from within. Accordingly, our proposal here would be to seek major technical assistance from one of the Scandinavian tax administrations, e.g. Denmark, to overhaul and in practice run the Latvian VID for a period of time that is sufficient to eradicate the culture of tax evasion in Latvia. The task of the 'invited' administration would be to reshape and simplify the tax administration and tax system and to introduce a credible system of incentives and sanctions that would result in a shift of behaviour by both firms and individuals. These measures should be combined with an overview of the Latvian tax code aiming at simplification.

Finally, as was seen in chapter 5 on diagnostics, a large informal sector results in substantial misallocations of the economy's scarce resources – directing them to labour intensive, low productivity businesses in particular in the service sector. A policy that successfully reduces the share of the informal economy will accordingly reallocate resources to activities with higher productivity, to activities that have higher capital intensity and which are more likely to be innovative and to be active in the manufacturing sector. As noted in the diagnostics analysis, successful action on reducing the informal economy will directly increase Latvian prosperity and thereby contribute to reducing the inequalities and will very likely also improve manufacturing performance by removing or at least reducing the distortions to investment in capital intensive sectors.

6.4.2 Action to improve the quality of the education system

Education has been selected as a priority area on the one hand because it feeds into all sectors of the economy (in particular it is critical for key direct competitiveness areas such as innovation) and on the other hand because education has a long implementation lag. Section 4.4 where the performance of the Latvian education system is discussed has identified both the quality of Latvian higher education and the low prestige and take up of vocational education as critical areas where action is needed.

Although educational quality is hard to measure directly (especially higher education), several indicators presented in chapter 4 can be taken as evidence of a weak higher education system. These include the low number of scientific citations, the low level of innovation, and the low level of innovation-based entrepreneurship. Furthermore, as Latvia moves up the economic development ladder the shortcomings of the higher education system may constitute increasing bottlenecks thereby slowing down Latvia's development towards an innovation driven economy. Since educational reform affects the economy with considerable time lags, it is important to address these issues already at this stage.

In higher education the key to improve quality is to open the Latvian higher education system to competition at all levels. And here, competition means international competition. Latvian universities are currently protected from international competition by restrictions by language restrictions. Thus we believe that the rules on appointment of foreign professors should be removed. This would open the way for Latvian institutions to compete in the world market

in order to attract the best professors and researchers. Needless to say salaries would have to be commensurate. This would also open the way for teaching in EU languages and thus enable Latvian institutions to compete more effectively for overseas students.

The core element of vocational education reform should be the development of a genuine apprenticeship system perhaps on the lines of the German model. The direct involvement of employers in training is the most effective way of ensuring that the training matches the needs of employers, the lack of which is frequently regarded as a key labour market bottleneck in Latvia. Although up-to-date hard data is difficult to come by there appears to be reluctance on the part of Latvian employers to pay for education and training on the grounds that they believe they would lose trained workers to competing firms. Thus there is a prisoner's dilemma problem – an industry or sector can collectively benefit from a better trained and better matched workforce but individual employers have insufficient incentive to provide such training. A possible solution that is used in some EU countries is a training levy at some % of the wage bill which could be used to subsidise training activities. Here too we propose that international expertise is sought to design and implement a modern apprenticeship system for Latvia.

Policy aimed at the educational sector should, if successful, be inclusive in the sense that the policy involves the entire population and accordingly affects the entire stock of a Latvia's (potential) human capital irrespective of individual financial resources – this is of particular importance for an economy in a demographic position like the one of Latvia. From the discussion in section 5.3 on the diagnostics on income inequality, a successful educational policy will contribute to a reduction in income inequalities. Furthermore, in terms of inequality, effective reform of vocational training will provide a basis for a dual-pillar strategy that adds an additional policy focus to mobilize and upgrade the competitiveness of the lower-skill, lower-income parts of the economy.

An interesting approach in terms of developing and internationalising higher education can be found in Israel. The approach relies on the academic Diaspora coming to Israel as faculty for longer or shorter periods of time bringing in knowledge as well as contacts with leading universities worldwide[132]. An explicit policy attracting the Latvian academic Diaspora back to Latvia for longer or short periods might contribute to the strengthening of the Latvian higher education system.

The close link between education and innovation, through better graduates coming out of the universities as well as through improved research undertaken at the universities and their research institutes, further strengthens the case for education as a priority action area. As seen from the causal relation tree on manufacturing in chapter 5, improved education can be expected to have a positive impact in promoting manufacturing, e.g. through improving innovation performance or through supplying better managers and entrepreneurs.

6.4.3 Transport infrastructure

[132] See Troen (1992) for a discussion.

Transport is an area where, according to section 4.9.1, Latvia's international transport infrastructure i.e. rail, sea ports and air transport is comparable to or superior to both the other Baltic states or to other peers in central and eastern Europe. This is confirmed by the World Bank Logistic Index where Latvia is ranked above both Estonia and Lithuania (see section 3.1.1). In other words Latvia has managed to take advantage of its geographical location. At the same time Latvia lags in the quality of its roads[133] which has implications for international links but more importantly for mobility of both goods and people within Latvia.

Both inter-urban and intra-urban transport provision in Latvia leaves much to be desired. Overall transport infrastructure affects the productivity of all sectors of the economy and hence infrastructure investments are seen to have a high return in terms of increased competitiveness[134]. In a Latvian context research suggests that in the 2007-2013 programming period investment in the transport priority has the biggest impact on GDP[135]. Transport infrastructure also has a long implementation lag and so on both impact and time lag grounds qualifies as a priority. Moreover, the availability of Cohesion Policy funding means that prioritised infrastructure investments can actually be implemented.

Inspection of the causal relation trees on manufacturing and income equality in chapter 5 reveals that an improved transport infrastructure can have a positive impact on both manufacturing and on reducing inequalities. Further improvement in international transport links an open many new productive opportunities and improved regional transport links can reduce the negative impact of a disadvantageous geographical location/endowment, where regional disparities are an important factor in the overall level of inequality in Latvia.

Box 11: Competitiveness and Industrial Policy

Industrial policy is addressed in several EU documents as a key factor in terms of improving European competitiveness. The Treaty on the Functioning of the European establishes industrial policy as the main pillar of the European Union's competitiveness policy*, with an overall objective that "the Union and the Member States shall ensure that the conditions necessary for the competitiveness of the Union's industry exist". In 2010 the commission adopted "An Integrated Industrial Policy for the Globalisation Era – Putting Competitiveness and Sustainability at the Centre Stage". This is seen as one of the flagship initiatives under the Europe 2020 Strategy. It is emphasized that two key elements necessary for a successful implementation of the defined industrial policy:

[133] For example according to ''Latvijas Valsts Celi'' (Latvian State Roads) as of 2010 47% of state roads were reported as 'bad' or 'very bad' and only 17% as 'very good'. The reported quality of regional roads is even worse.
[134] See Nijkamp and Post (2004).
[135] Unpublished macroeconomic modelling undertaken at the Baltic International Centre of Economic Policy Studies (BICEPS),

- Industrial policy should be understood in a wider sense – focusing on all policies that have an impact on the cost, price and innovativeness of industry as well as individual sectors.
- Creation of a framework that accompanies firms through all phases of their life cycle and all stages of their activity. This framework should also provide the right incentives for them to increase their competitiveness.

When broken down into priorities, the EU industrial policy identifies the five key priorities:

1. To deliver the right framework conditions for industry;
2. The role of the quality of the energy, transport and communications infrastructure in terms of exploiting the potential of the Single Market and fostering competitiveness.
3. To improve the ability to commercialize ideas and the need for a new industrial innovation policy.
4. Take advantage of the new market that opens with globalisation.
5. Transition to a low carbon resource efficient economy.

Since a Latvian agenda addressing competitiveness should not** be seen in a vacuum, but in an overall EU setting, we have to position the three competitiveness fundamentals prioritised in chapter 6 of the LCR relative to the overall EU context.

The first priority (following the overall improvement of the institution/policy making) framework is the shadow economy. As seen from the discussion in chapters 4-6 of the LCR the implications of the shadow economy go far beyond the government revenue lost through tax evasion. It affects the allocation of resources through substantially distorting the overall framework conditions for the development of industry, i.e. one of the fundaments upon which the EU and hence Latvian industrial policy rests (or at least should rest). Putting the issue of the large Latvian shadow economy in an EU industrial policy context, strengthens the case for placing reduction in the size of the shadow economy as a key priority, and perhaps *the* key priority in terms of enhancing Latvian competitiveness.

The second competitiveness fundamental prioritised in chapter 6 of the LCR is infrastructure. This is in line with the EU Industrial Policy. It also has a bearing on the fourth of the priorities listed above – taking advantage of the opportunities that come with globalisation. In this context it is said: "The notion of European interest is used in EU transport or energy policy for establishing the right framework conditions and financial means to ensure the building or operating of efficient trans-border infrastructures*** ". For Latvia with its geographical location in the periphery of the Union this is of high relevance and suggests that Latvia in terms of industrial policy should aim at exploiting the advantages that comes with its geographical location.

The third prioritised fundamental is education which has a clear bearing on the EU innovation priority as well as on the fifth priority (low carbon economy). Furthermore, the manufacturing causal relations analysis in chapter 5 reveals that education, through labour force skills and innovation, also contributes to the first EU priority delivering the right framework conditions for industry.

The EU vision of industrial policy also fits with the so called 'new industrial policy' developed in a number of academic and policy oriented papers by in particular Dani Rodrik of Harvard University's Kennedy School of Government, who defines industrial policy as "policies that stimulate specific economic activities and promote structural change****" emphasizing the need for a good institutional framework characterized by transparency and accountability. A key feature of the new industrial policy is identifying "constraints that block structural change" *****, thereby relating it closely to the competitiveness diagnostics of chapter 5.

Were one to speculatively indicate a sector for industrial policy in the sense discussed above, then much points in the direction of transport and logistics: Latvia already an embryo of such a cluster; it has an advantageous geographical location; and such a development would be in line with the EU focus on trans-border infrastructures outlined above.

* The Treaty on the Functioning of the European Union, article 173.
** See the quote above from article 173.
*** European Commission (2011), page 263.
**** Rodrik (2008), page 3.
***** Rodrik (2008), page 37.

6.5 Concluding remarks

The assessment and prioritisation of this chapter aims to support action based policy that addresses the most binding constraints facing Latvia in terms of releasing its full economic potential. The overarching priority is to change the policy making institutional structure and policy implementation. This is a necessary but not sufficient condition for improving Latvian competitiveness. Policy should at the same time focus on addressing the three thematic priority areas: the size of the informal economy; the quality of the education system; and improvement of the transport infrastructure. Successfully addressing these issues should, in the medium term perspective, have considerable spill over effects on other key areas such as income inequality (intrapersonal as well as regional); innovation; productivity in manufacturing and manufacturing's share of GDP; and capital market development. These are all factors which, in turn, affect competitiveness fundamentals, productivity, and ultimately the prosperity of the Latvian people.

Finally, analysing Latvia's economic advantages and bringing in overseas experts to do this is not a recent pastime. This issue was addressed by the German Economics Ministry expert in the 1920s, Hermann-Felix Wolfgang-Crohn, who when elaborating on Latvia's geographical position and its role for Latvian prosperity (or what today is called competitiveness) put it in the following way[136]:

> *The advantages of Latvia … .were a product of nature which could not be changed by political events and will never change by these… Irrespective of the political changes in the East, one thing is certain, namely that the geographic area constituting European Russia even in the future will continue to use Riga as its main gateway, and here all human reason suggests that Riga's future as port is as that of Latvia as a transit region. Specifically, the country will continue to be the coastal transit zone for Russia and the bridge between Western Europe and Russia.*

Thus, while Latvia's geographical position was often its curse during the 20th century and although it might be perceived as controversial to suggest it, the

[136] Translated from German.

prophetic words of Crohn-Wolfgang can continue to serve as a lodestar for Latvian policy- makers today.

References

Chapter 1

De Grauwe, P. 2010, Introduction, in P. De Grauwe (ed.), Dimensions of Competitiveness, CESifo Seminar Series, Cambridge: MIT Press, ix-xvi.

Delgado, M., Ketels, C., Porter, M.E. and S. Stern, 2011, Explaining Prosperity Differences across Countries: The Determinants of National Competitiveness, Work in progress.

European Competitiveness Report, 2011, Commission staff working document: SEC(2011) 1188.

Grégoir, S. and F. Maurel, 2003, Les indices de compétitivité des pays: interprétation et limites, Compléments A. in Debonneuil M. and L. Fontagné, Compétitivité, Paris: La Documentation francaise, 97-132.

Hall, R.E. and C.I. Jones, 1999, Why do some countries produce so much more output per worker than others?, The Quarterly Journal of Economics, vol. 114, no. 1, 83-116.

Hausmann, R., B. Klinger, and R. Wagner, 2008, Doing Growth Diagnostics in Practice: A 'Mindbook', CID Working Paper No. 177, Cambridge: Center for International Development at Harvard University.

Hausmann, R., D. Rodrik, and A. Velasco, 2004, Growth Diagnostics, mimeo, Cambridge: Harvard University.

Krugman, P. 1994, Competitiveness: A Dangerous Obsession, Foreign Affairs, vol. 73, no. 2 (March/April), 28-44.

Kuznets, S. 1971, Economic Growth of Nations: Total Output and Production Structure, Cambridge: Harvard University Press.

Kuznets, S. 1973, Modern economic growth: findings and reflections, American Economic Review, vol. 63, no. 3, 247-58.

Porter, M.E. 1990, The Competitive Advantage of Nations, New York: The Free Press.

Porter, M.E., 2001, Enhancing the Microeconomic Foundations of Prosperity: The Current Competitiveness Index. In the Global Competitiveness Report 2001-2002, New York: Oxford University Press.

Porter, M.E., 2003, Building the Microeconomic Foundations of Prosperity: Findings from the Microeconomic Competitiveness Index, in The Global Competitiveness Report 2003-2004, New York: Oxford University Press.

Porter, M.E., 2004, Building the Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index. In the Global Competitiveness Report 2003-2004.

Porter, M.E., M. Delgado, C. Ketels, and S. Stern, 2008, Moving to a New Global Competitiveness Index, in: The Global Competitiveness Report 2008-2009, Geneva: World Economic Forum.

Rodrik, D., 2010, Diagnostics before Prescription, Journal of Economic Perspectives, vol. 24, no. 3 (summer), 33-44.

Sala-i-Martin, X. 2010, The Economics behind the World Economic Forum's Global Competitiveness Index, in P. De Grauwe (ed.), Dimensions of Competitiveness, CESifo Seminar Series, Cambridge: MIT Press, 1-18.

Solow, R. 1956, A Contribution to the Theory of Economic Growth, Quarterly Journal of Economics, vol. 70 (February), 65-94.

Chapter 2

Camarero et al. (2005). "Unemployment dynamics and NAIRU estimates for accession countries: A univariate approach", *Journal of Comparative Economics* 33(3), 584-603.

Commission, Brussels, European Economy, Economic Papers No. 420.

D'Auria, F., Denis, C., Havik, K., McMorrow, K., Planas, C., Raciborski, R., Roger, W., and Rossi, A. (2010), "The production function methodology for calculating potential growth rates and output gaps". European

Hazans, M. (2011). „Latvijas demogrāfiskā situācija šķērsgriezumā: kas šodien dzīvo Latvijā?" Presentation in University of Latvia, 12/09/2011.

Stiglitz, J.E., A. Sen, and J-P Fitoussi (2009), Report by the Commission on the Measurement of Economic Performance and Social Progress, September 14, 2009. Available at: http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf

United Nations (2004). *World Population Prospectus: The 2004 Revision*. Volume I, Comprehensive Tables. New York: United Nations

Yale University. *Environmental Performance Index.* Available at http://www.epi.yale.edu/, accessed September 21 2011.

Chapter 3

Ács, Z.J., Szerb, L. (2010). Global Entrepreneurship and Development Index, Edward Elgar Publishing Ltd.

Ács, Z.J., Szerb, L. (2009). The Global Entrepreneurship Index (GEINDEX), Jena Economic Research Papers 2009-028

Ács, Z. J., Varga, A. (2005). Entrepreneurship, Agglomeration and Technological Change, Small Business Economics, 24(3), 323-334

Baltic Exchange Indices. *Statistics*. Available at http://www.balticexchange.com/, accessed September XX 2011.

Beņkovskis, K., Bitāns, M. and Krasnopjorovs, O. "Product Space Analysis and the Scope for Structural Transformation: The Case of Latvia"

Bloomberg. *Wheat's Advance Revives Food Crisis Concerns*. Available at http://www.bloomberg.com/news/2010-08-06/wheat-price-jump-revives-concern-over-food-crisis-asia-s-top-buyer-says.html, accessed September XX 2011.

Bloombergs Financial Database. *Latvian Shipping Company Financials.* Available at http://www.bloomberg.com, accessed September XX 2011.

Delfi Business. *Asociācija 'Transports un Loģistika': Ir jāmaina Latvijas ostu pārvalžu darbības principi*. Available at http://bizness.delfi.lv/versijas/asociacija-transports-un-logistika-ir-jamaina-latvijas-ostu-parvalzu-darbibas-principi.d?id=39635697, accessed September XX 2011

Delfi. *Latvijas eksports: vai pieaugums uz reeksporta rēķina?*. Available at http://www.delfi.lv/news/national/politics/latvijas-eksports-vai-pieaugums-uz-reeksporta-rekina.d?id=29784153, accessed September XX 2011

Delfi. *Asociācija: Latvijas tranzīta virziens strauji zaudē konkurētspēju*. Available at http://www.delfi.lv/news/national/business/asociacija-latvijas-tranzita-virziens-strauji.d?id=27960257, accessed September XX 2011

European Patent Office. Granted Patents. Available at http://www.epo.org/about-us/statistics/granted-patents.html, accessed July 20 2011.

Eurostat Statistical Database, available at http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/, accessed September XX 2011

Fialová, K., (2010), Labor Institutions and their Impact on Shadow Economies in Europe, IES Working Paper: 29/2010, Institute of Economic Studies, Charles University, Prague.

Gerxhani, K. (2007) "'Did you pay your taxes?' How (not) to conduct tax evasion surveys in transition countries", *Social Indicators Research* 80, pp. 555-581.

Glinkina, S., (2003), "Small Business, Survival Strategies and the Shadow Economy", Chapter 4 in R.J. McIntyre and B. Dallago (eds), *Small and Medium Enterprises in Transitional Economies*, Palgrave Macmillan, Basingstoke, UK.

Hanousek, J., and F. Palda (2004) "Quality of government services and the civic duty to pay taxes in the Czech and Slovak Republics, and other transition countries", *Kyklos* 57(2), pp.237-252.

Hausmann R., Klinger B. (2006) "Structural Transformation and Patterns of Comparative Advantage in the Product Space", Harvard University, Center for International Development Working Paper No. 128, August 2006.

Hausmann R., Hwang J., Rodrik D. (2005) "What You Export Matters", Harvard University, Center for International Development Working Paper No. 123, December 2005.

Havrylyshyn, O., Mesquita, M., Richter, A., Sakr, K., Westin, M., Zytek, R. (1990). "Latvia: Selected Issues and Statistical Sppendix", IMF Staff Country Report No. 99/99.

International Monetary Fund. *Latvia Caught in Vicious Economic Downturn.* Available at http://www.imf.org/external/pubs/ft/survey/so/2009/car052809a.htm, accessed September 2011

Kaže, V., R. Škapars, and G. Bolinskis, (2011), Consumer social values behind the grey economy, *Intellectual Economics*, Vol. 5, No. 3, 416-433.

Kazemier, B., and R. van Eck (1992) "Survey investigations of the hidden economy", *Journal of Economic Psychology* 13, pp. 569-587.

Latvian Bank. *Kāpēc Latvijas tirdzniecības bilance turas līdzsvarā?* Available at http://www.bank.lv/presei/tautsaimniecibas-attistiba/kapec-latvijas-tirdzniecibas-bilance-turas-lidzsvara, accessed September XX 2011.

McArthur, & K. Schwab (Eds.), The global competitiveness report 2001–2002 (pp. 16–25). New York: Oxford University Pres

Porter, M., Sachs, J., & McArthur, J. (2002). Executive summary: Competitiveness and stages of economic development. In M. Porter, J. Sachs, P. K. Cornelius, J. W.

Pro Inno Europe. Innovation Unit Scoreboard. Available at http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010, accessed July 20 2011

Putniņš T., Sauka A. (2011) "Shadow Economy Index for the Baltic Countries: 2010-2011." Stockholm School of Economics in Riga www.sseriga.edu.lv/shadow-economy-index

Rastrigina, O., et al., (2011), Global Entrepreneurship Monitor 2010 Latvia Report, Riga: the TeliaSonera Institute at the Stockholm School of Economics in Riga.

Reynolds, P. (1999), 'Creative destruction'. In: Z. Acs, B. Carlsson, and C. Karlsson (eds.): Entrepreneurship, Small and Medium-sized Enterprises and the Macroeconomy. Cambridge: Cambridge University Press. (PAGES?)

Rommer, Paul M. (1994). "The origins of endogenous growth", Journal of Economic Perspectives, 8(1), 3-22

Schneider, F., Buehn, A., and C. E. Montenegro, (2010), New Estimates for the Shadow Economies all over the World, *International Economic Journal*, Vol. 24, No. 4, 443-461.

Tafenau, E., Herwartz, H., and F. Schneider, (2010), Regional Estimates of the Shadow Economy in Europe, *International Economic Journal*, Vol. 24, No. 4, 629-636.

United Nations. Conference on Trade and Development: Review of Maritime Transport. Available at http://www.unctad.org/en/docs/rmt2010_en.pdf, accessed September XX 2011

US Patent and Trademark Office. Patent by Country, State and Year. Available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst_allh.htm, accessed July 20 2011.

World Trade Organization. Protocols of accession for new members since 1995, including commitments in goods and services. Available at http://www.wto.org/english/thewto_e/acc_e/completeacc_e.htm, accessed September XX 2011.

Chapter 4

Auers, D., Rostoks, T., & Kenneth, S. (2007). "Flipping burgers or flipping pages? Student employment and academic attainment in post-Soviet Latvia." *Communist and Post-Communist Studies*, 40(4), 477-491.

Breusch, T. (2005) Estimating the Underground Economy using MIMIC Models, Working paper, Australian National University, November 2005.

Dombrovskis, V. (2009). "Is anything wrong with higher education in Latvia?" *Baltic Journal of Economics*, 9(2), 5-24.

Bassanini A., Nunziata L., Venn D., 2009. "Job protection legislation and productivity growth in OECD countries." *Economic Policy*, CEPR, CES, MSH, 24(04), 349-402.

BGR Hanover / UNESCO. *Groundwater Resources Map of of Europe*. Available at http://www.bgr.bund.de/DE/Home/homepage_node.html, accessed September XX 2011.

Campbell, R.A., and R. Kraeussl, 2007, A survey of the venture capital industry in Central and Eastern Europe, in Gregoriou, G.N., M. Kooli, and R. Kraeussl (eds) Venture capital in Europe *(Elsevier, Oxford).*

Council of Europe, *European Social Charter*, 18 October 1961, ETS 35, available at http://www.unhcr.org/refworld/docid/3ae6b3784.html, accessed 1 October 2011

Delfi Business. *'airBaltic': Rīgas lidostā jauns terminālis ir nepieciešams pēc iespējas ātrāk*. Available at http://bizness.delfi.lv/uznemumi/airbaltic-rigas-lidosta-jauns-terminalis-ir-nepieciesams-pec-iespejas-atrak.d?id=36126172, accessed September XX 2011.

European Commission (2010). "Labour Market and Wage Developments in 2009", European Economy 5/10, 2010

European Commission, (2011), Industrial Policy: Reinforcing competitiveness, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, SEC(2011)1187 final.

European Commission for the Efficiency of Justice, (2011), *Study on Council of Europe Member States Appeal and Supreme Courts' Lengths of Proceedings*, Steering Group of the SATURN Centre for judicial time management (CEPEJ-SATURN), Report prepared by Marco Velicogna.

European Soil Data Centre. *Statistics.* Available at http://eusoils.jrc.ec.europa.eu/, accessed September XX 2011.

European Soil Data Centre. *Statistics.* Available at http://eusoils.jrc.ec.europa.eu/, accessed September XX 2011.

Eurostat Statistical Database, available at http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/, accessed September XX 2011

Eurostat Statistical Database, available at http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/, accessed September XX 2011

Faculty of Biology of the University of Latvia. Available at http://latvijas.daba.lv/saturs.shtml, accessed September XX 2011.

Groh, A.P., H. von Liechtenstein, and K. Lieser, 2010, The European venture capital and private equity country attractiveness indices, Journal of Corporate Finance 16, 205-224.

Helberger, C. and H. Knepel (1988), How big is the shadow economy? A re-analysis of the unobserved-variable approach of B.S. Frey and H. Weck-Hannemann", *European Economic Review*, vol. 32, no. 4, 965-976.

Korhonen, I., T. Kuus, and V. Zirnask, 2000, Baltic securities markets, Bank of Finland Institute for Economies in Transition working paper.

Latvian Environment, Geology and Meteorology Centre. *Statistics*. Available at http://www.lvgma.gov.lv/public/, accessed September XX 2011.

Latvian Railroad Company. *Overview of the network*. Available at http://ldz.lv/texts_files/2012_Tikla_Parskats.pdf, accessed September XX 2011.

Latvian State Roads. *Latvian Road Network.* Available at http://www.lvceli.lv/en/?i=15, accessed September XX 2011.

Ministry of Transport. *Jomas Raksturojums*. Available at http://www.sam.gov.lv/satmin/content/?cat=112, accessed September XX 2011.

Muravyev, A. (2010). "Evolution of Employment Protection Legislation in the USSR, CIS and Baltic States, 1985-2009", IZA Discussion Papers 5365, Institute for the Study of Labor (IZA).

OECD (2011). OECD Statistical database. Available at http://stats.oecd.org/index.aspx?. , accessed September XX 2011

Organization for Economic Cooperation and Development. *Program for International Student Assessment 2009 Assessment Framework*. Available at http://www.oecd.org/document/53/0,3746,en_32252351_46584327_46584821_1_1_1_1,00.html, accessed September 20 2011.

Paalzow A., Stasevska J., Vanags A. (2010). "Venture Capital in Latvia Revisited" The Telia Sonera Institute at the Stockholm School of Economics in Riga Discussion Paper No. 9.

Port of Klaipeda. *Statistics*. Available at http://www.portofklaipeda.lt/uploads/brosiura_en_a4.pdf, accessed September XX 2011.

Port of Liepaja. Statistics. Available at http://www.portofliepaja.lv/en/?id=223, accessed September XX 2011.

Port of Riga. *Statistics*. Available at http://www.rop.lv/en/about-port/facts-a-figures.html, accessed September XX 2011.

Port of Tallinn. *Statistics*. Available at http://www.portoftallinn.com/technical-data-of-the-port, accessed September XX 2011.

Port of Ventspils. Statistics. Available at http://www.portofventspils.lv/files/394_ventspils_freeport_booklet_2010_en.pdf, accessed September XX 2011.

Putniņš, T.J., 2010, Capital structure across Europe, Stockholm School of Economics in Riga working paper.

Putniņš, T. and A. Sauka, 2011, Size and determinants of the shadow economies in the Baltic countries, *Baltic Journal of Economics*, vol. 11, no. 2.

Riga International Airport. *RIX Receives the Best Airport Award.* Available at http://www.riga-airport.com/en/main/about-company/facts-about-rix/awards-and-prizes/rix-receives-the-best-airport-award, accessed September XX 2011.

Riga International Airport. *Statistics*. Available at http://www.riga-airport.com/en/main/about-company/statistics, accessed September XX 2011.

Rousseau, P.L., and P. Wachtel, 2000, Equity markets and growth: Cross-country evidence on timing and outcomes, 1980-1995, *Journal of Banking and Finance* 24, 1933-1957.

Schneider, F. 2005, Shadow economies around the world: what do we really know?, *European Journal of Political Economy*, vol. 21, no. 3, 598-642.

Schneider, F., 2011, Size and Development of the Shadow Economy of 31 European and 5 other OECD Countries from 2003 to 2011, unpublished manuscript, Johannes Kepler University.

Shleifer, A., and R. Vishny, 1997, A Survey of Corporate Governance, *Journal of Finance*, vol. 52, June, 737-783.

Tallinn International Airport. *Statistics and Surveys.* Available at http://www.tallinn-airport.ee/eng/associates/GeneralInfo/statisticsandsurveys/?articleID=1355, accessed September XX 2011.

UN Department of Economic and Social Affairs. *World Population Prospects.* Available at http://esa.un.org/unpd/wpp/index.htm, accessed September XX 2011.

United Nations Food and Agriculture Organization. Available at http://www.fao.org/, accessed September XX 2011

United Nations Statistics Division. Available at http://unstats.un.org/unsd/default.htm , accessed September XX 2011.

Vanags, A., J. Stašekska, and A. Paalzow, 2010, Venture capital in Latvia revisited, TeliaSonera Institute Discussion Paper No 9.

Vilnius International Airport. *Facts and Figures*. Available at http://www.vilnius-airport.lt/en/airport/facts-figures/, accessed September XX 2011.

World Bank, International Finance Corporation and PricewaterhouseCoopers International Limited (2010). "Paying Taxes 2011. The Global Picture"

World Economic Forum (2010), "Global Competitiveness Report", 2010

Zasova, A. (2011). "Labour market institutions: an obstacle or support to Latvian labour market recovery?" *Baltic Journal of Economics*, 11(1), 5-24.

Zingales, L. 1998, Corporate Governance, in P. Newman (ed.), *The New Palgrave Dictionary of Economics and the Law*, New York: Macmillan.

Chapter 5

Krugman, P. (1980) "Scale Economies, Product Differentiation, and the Pattern of Trade" American Economic Review 70: 950-9.

Ofria, F. and Millemaci, E. (2010) "Kaldor-Verdoorn's law and increasing returns to scale: a comparison across developed countries" MPRA http://mpra.ub.uni-muenchen.de/30941/1/MPRA_paper_30941.pdf

Swedbank (2011) "Recent manufacturing trends in Latvia – are there reasons to worry?" Swedbank Analysis May 19 2011
http://www.swedbank.lv/lib/en/Swedbank%20Analysis%202011-05-18.pdf

Chapter 6

Acemoglou, D., S. Johnson, J. Robinson, and Y. Thaicharoen, 2003, Institutional causes, macroeconomic symptoms: volatility, crises and growth, *Journal of Monetary Economics*, vol. 50, 48-123.

Acemoglou, D. and J. Robinson, 2010, The Role of Institutions in Growth and Development, *Review of Economics and Institutions*, vol. 1, no. 2 (fall), 1-33.

Barro, R.J. 2002, Education as a Determinant of Economic Growth in E. Lazaer (ed.), *Education in the Twenty-first Century*, Stanford: Hoover Institution Press.

Crohn-Wolfgang, H.F., 1923, *Lettlands Bedeutung für die östlische Frage*, Berlin and Leipzig: Walter de Gruyter & Co.

Del Bo, C., 2011, Recent advances in public investment, fiscal policy and growth, in M. Florio (ed.), *Public Investment, Growth and Fiscal Constraints: Challenges for the new EU Member States*, Cheltenham: Edward Elgar, 25-48.

Devarajan, S. V. Swaroop, and H. Zou, 1996, The composition of public expenditures and economic performance, *Journal of Monetary Economics*, vol. 37, no. 2, 313-344.

European Commission, (2011), Industrial Policy: Reinforcing competitiveness, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, SEC(2011)1187 final.

Nijkamp, P. and J. Poot, 2004, Meta-analysis of the effect of fiscal policies on long-run growth, *European Journal of Political Economy*, vol. 20, no. 1, 91-124.

North, D.C., 1989, Institutions and Economic Growth: An Historical Introduction, *World Development*, vol. 17, no. 9, 1319-1332.

North, D.C., 1990, *Institutions, Institutional Change and Economic Performance: Political Economy of Institutions and Decisions*, Cambridge: Cambridge University Press.

Oveido, A-M, 2009, Economic Informality: Causes, Costs and Policies: A Literature Survey of International Experience; *Background Paper for Country Economic Memorandum (CEM) – Informality: Causes, consequences, Policies.*

Rodrik, D. (2008), Normalizing Industrial Policy, Working Paper No. 3, The Commission on Growth and Development.

Troen, S.I., (1992), Higher Education in Israel: an historical perspective, *Higher Education*, vol. 23, 45-63.

Weale M., 2004, National Saving and the Stability and Growth Pact, *Journal of Common Market Studies*, vol. 42, no. 5.