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5

REALLOCATION OF LABOUR DURING TRANSITION. DISEQUILIBRIUM AND POLICY ISSUES
THE CASE OF ESTONIA

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Introduction

Motivation

This PhD thesis analyses the labour market adjustment issues and labour market policies during the transition period with particular reference to Estonia. While we apply some secondary data from the ten Central and Eastern European (CEE) countries, our main emphasis is on the Estonian labour market. Estonia was invited to take part in the first round of the EU enlargement negotiations in 1998, it also makes a particularly interesting case in that it has opted a for far more liberal free market policies than other newly independent states of the former Soviet Union. From the standpoint of general economic policies, we can state that Estonia has introduced liberal foreign trade, an annually balanced state budget, flat personal and corporate income taxes, subsidy-free agriculture and a currency board system. The above mentioned features are not common in today's economies and thus we can observe Estonian economic development as a unique economic experiment.

In the following chapters we concentrate on the period from 1990-1997, when data is available. We want to compare Estonian developments with those in other CEE countries and it is difficult to find comparable data from more recent years. In the unemployment chapter we also have information from the period 1998-2000. This is when unemployment started to increase and we analyse the consequences of external shocks on the Estonian labour market.

An economy in transition is meant to be an economy "on the move". In the case of the Estonian labour market, this involves a reallocation of workers from "old" industries such as agriculture and manufacturing oriented to the Soviet market, and the absorption of these workers (or many of them) into the service sector.

Analysing theories about the transition in the first chapter we reached the conclusion that the transition specific equilibrium (optimal speed of transformation) model developed by Aghion Blanchard was not appropriate to describe changes in the Estonian labour market. However this model is the milestone to follow up theoretical approaches and, recently, there have been several empirical papers as well on this topic. Therefore we treat this model in detailed way.

Estonia empirically did not fit this model in our opinion. This is the main reason why later, in our empirical chapters, the elementary, basic neoclassical approach (labour supply and demand) is used in order to present changes that took place in the Estonian economy. We reach via supply and demand, equilibrium (in our case disequilibrium) and analyse unemployment and related policy issues.

The issue of transition has been attractive for economists. According to Boeri (1999) three main predictions were made about the labour markets in transition[1]:

- Removal of state subsidies and hardening budget constraints will force many state firms to close down, inducing large scale of shedding of labour.
- Large inflows into unemployment of redundant workers were expected.
- Unemployment would gradually be absorbed by the growth of emerging sectors, like private firms in trade, transportation and other service sector industries

[1] In 2 and 3 chapter we analyse general changes in labour supply and demand in greater details.

If we read early 90s literature about the transition we can conclude, that transition calls for an adaptation in our traditional research strategies. Traditionally the purpose of economic research was to develop a theory and then to test it on the basis of data. In the context of transition, this process could be reversed sometimes. If data are inconsistent (e.g. methodical problems in data collection) with theory, we may need to question the data before revising the theory. Only when an entire pattern of findings is consistent with our basic understanding of economic behaviour we can accept that the data is reasonably accurate. And it might also be true that such theoretical models do not describe, with enough accuracy, rapid economic changes. In our opinion transition is only a temporary state in the process of moving towards a model of well-known and theorised economy. This seems to be a reason why most researchers turn directly to empirical analyses and skip the theory part. This is also a reason why current analyses are empirically oriented.

Labour market issues are crucial for the transition process. During transition excess demand for labour or in many cases labour hoarding was replaced with unemployment. There has been a change from an excess job demand[2] economy to an excess job supply economy with unemployment. Mobility of labour became an extremely important issue for transition economies' labour markets. Not only movement from employment to unemployment and vice versa, but also flows between other labour market states (e.g. non-participation), are crucial to explain changes in the general labour supply. We see from our later flow analyses that also the job-to-job movements played a crucial role in restructuring and labour reallocation.

It is often argued that "transitional unemployment has all the characteristics of a stagnant pool (Boeri (1994), Blanchard (1997)). Boeri (1994) argue that "labour market adjustment in transition countries is happening without necessarily involving transition from employment to unemployment and *vice versa*. Most employment reduction in the state sector is accommodated by pushing workers out of the labour force rather than into unemployment. Moreover, the rapid expansion of private sector employment does not necessarily involve large outflows from unemployment, but direct job-to-job shifts and hiring of new entrants into the labour force." (Boeri, pp.1, 1994). From this it can be concluded that the rise of unemployment is rather a result of low turnover of the unemployment pool, than by large flows from employment to unemployment.

In the case of Estonia, on the one hand, we observe rigid fiscal policy, where tools for fiscal policy are limited (annually balanced state budget), and on the other, a rigid monetary policy is implemented. The last means, that money supply is directly determined by the currency board arrangements. On the one hand, we have financially limited social policy and on the other a flexible labour market with insufficient institutional development.

Estonia has opted for very low levels of unemployment benefits, pensions and minimum wages. The minimum wage is so low that it does not serve as a barrier to new hires: prevailing wages are higher than the minimum wage. Wages are predominantly set by the employers, with a few wage controls put into effect by the government in the public sector. There is no effective trade union movement increasing wages, and there is no policy for subsiding firms to avoid bankruptcy or job loss.

There has not been an explosive growth in unemployment in Estonia during transition (before 1999). In comparison with other Eastern Europe countries unemployment growth in Estonia has

[2] In the former Soviet Union a person had an obligation to work.

been rather moderate. One possible explanation is that flows between labour market states[3] have been relatively high. This leads us to the following tentative conclusion: massive unemployment has been avoided by rapid changes in the economy, which has generated a high labour turnover. Later we show that both job creation and labour transition has been very high in Estonia. We can compare Estonian job destruction and creation rates with those in the UK and USA, they are higher than average in European Union and much higher than in other CEE countries. Also we found that unemployment inflow and especially outflow rates are very high. This enables us to argue later, that high flows in Estonian labour market accelerated the job reallocation and provided a secure foundation for economic recovery and moderate unemployment rate.

Objectives

The main research purpose of this thesis is to prove the flexibility of the Estonian labour market and to find the reasons to the relatively low unemployment rate in the beginning of the transition period. The main emphasis is on micro-flexibility aspects of the labour market, namely the jobs and workers flow analysis. Using Estonian Labour Force Survey data we analyse how labour mobility (flows between different states) have influenced labour reallocation and the unemployment rate, and what categories of people were affected by the transition shock in early years of transition.

Labour allocation, changes in labour supply and demand, are treated with emphasis on the Estonian labour market and policy issues. Our interest is also to find how much labour market developments in Estonia differ from those in other CEE countries and why it is so. Also we try to group the countries and focus on the different labour market and policy problems of all 10 countries in our sample.

The main research hypothesis is that labour market flexibility is high in Estonia compared with other CEE countries. Flexibility is a key factor of relatively fast labour reallocation in Estonia. Labour reallocation and restructuring of the labour market have supported generally successful macroeconomic developments with rigid fiscal and monetary policy.

Other main research questions concerning this research are as follows:
To what extent theories about optimal speed of transformation are able to describe changes in labour markets of a transition economy?
How labour market flexibility issues are treated in literature and how flexible is the Estonian labour market?
How structural adjustments in the labour demand took place in CEE countries and in Estonia?
What are the main developments in labour supply in CEE countries and in Estonia?
How external macroeconomic shocks influence the Estonian labour market and particularly unemployment?
Why Estonian unemployment rate was one of the lowest in CEE countries in the mid 90s?
To what extent labour market flows in Estonia are influenced by individual characteristics like age, gender, ethnicity and education?
What are the main tendencies of labour policy development in CEE countries?
How Estonian labour policy corresponds to EU employment policy strategies?

[3] Here we mean unemployment, employment and non-participation

Data

Most data used in this research is based on Estonian Labour Force survey database. The Statistical Office of Estonia conducted the first labour force survey at the beginning of 1995 (ELFS 95). From 1997–1999 the survey was conducted in the 2nd quarter. Until the 2nd quarter of 2000 the questionnaire of ELFS consisted of two parts: the reference week and the retrospective part in which the data was collected on employment changes in the years preceding the survey.

The advantage of retrospective data was the fact that the data was collected for a longer period. From 1995–1999, four surveys were conducted, but the data was available for a 10 year period.

In some chapters the registered unemployment data of the Estonian Labour Market Board are used. Registered unemployment numbers enable us to draw conclusions about the regional differences of unemployment and give us chance to compare registered vacancies with registered unemployment.

For comparative studies between transition countries we used statistics from Country reports prepared for the EU Commission. The aim of these reports were to provide a background analysis of the current situation in the labour markets, in terms of employment status, the employment policy institutions, employment policy delivery mechanisms and the connection between vocational education and the labour market. Reports were written for 10 candidate countries: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

And finally comparison labour market data from ILO website and Eurostat were also used.

Structure of thesis

This thesis are organised in the following way. The first chapter gives a brief overview of the theoretical background of transition issues. First, two main strategies are observed: shock versus gradualist reforms. This debate is centred on different opinions regarding the speed and sequencing of reforms. Next the model of optimal speed of transformation developed by Aghion and Blanchard is analysed. We treat issues like reallocation, restructuring and equilibrium according to their model. We assume that one of their main conclusions that fast restructuring may lead to a rapid increase in unemployment is not substantial in the case of Estonia. Despite of the fact that we concluded that this model is not very relevant in the case of Estonian economy, it has great influence on later literature concerning optimal speed of transformation.

At the end of the chapter we pay attention to different viewpoints to labour market flexibility. Three aspects of flexibility are analysed: flows, trade unions and labour regulations. We assume that flexibility is the key concept in the understanding of the labour market development in transition. This issue is widely discussed in literature and there are a very few papers dealing with job reallocation and the flow analysis of Estonian labour market. The fifth chapter will deal with these issues in greater detail.

In the second chapter the labour demand issues are scrutinised. We start with a general description of macroeconomic developments in Estonia during the 90s. Then we observe changes in labour demand and the dynamics of labour allocation. Next the different aspects of

employment are analysed like employment in the private sector, self-employment, gender aspects in employment changes and wages. Using country reports of employment and labour policy from 10 candidate countries we compare and group various transition economies according the level of transition and labour market characteristics.

The purpose of this chapter is to define the initial conditions of the Estonian economy for the later labour market analysis. If we look at labour statistics and literature concerning Estonia (see for example Haltiwanger and Vodopivec, 1998 or Faggio and Konings, 1999) then we can see that Estonian developments have been unlike those of other CEECs. We assume that reason for this is that there was a different starting position of Estonian economy in the early nineties. Only the two other Baltic States had a similar economic background to Estonia. A similar background means full integration with the former Soviet Union economy and a very steep output decline in early nineties. But in spite of that the further development of all three Baltic States has been somewhat different. Therefore we try later in our analysis to identify these aspects, which make Estonian labour market developments different from those in other CEE countries. We can even speak about the Estonian labour market being a special case. This means relatively low unemployment at the beginning of transition and a rapid change in labour reallocation.

We assume that the labour allocation rate has been very high in Estonia. One explanation to moderate unemployment increase could be high wage flexibility and high job creation and destructions. Unfortunately we can use only the labour survey data and this is the reason why this chapter is titled as some aspects of labour demand. To support our hypothesis about job creation and wage flexibility we make conclusions from previous research papers[4].

Following the demand and supply approach the next chapter will deal with labour supply issues. The aim of this chapter is to describe general changes in labour supply using descriptive statistics of Estonian labour force surveys. We start with a description of Estonian Labour Force Survey. This is one of the best labour market datasets for transition economies, with large retrospective sections.

One explanation for moderate unemployment rate was, in our opinion, a general decline of population. Also we examine differences in participation rates using different education, gender and age groups.

Although average unemployment rate in Estonia was not very high we still see big regional disparities in labour market. These regional differences are connected with low mobility of people and language problems. Unfortunately the non-Estonian population is in largely concentrated in one area – the Northeast of Estonia, which has suffered most in the course of restructuring of the economy. Also there are language and cultural barriers for non-Estonians and therefore it is difficult for them to move to other locations.

In the third chapter we briefly examine education issues as well, and one of the biggest problem for the Estonian labour market is definitely the skills mismatch. The share of the persons with vocational education is relatively high but at the same time unemployment is also high among graduates from vocational schools. Here we see one of the major problems for our labour and education policy - low credibility of vocational education and low level of teaching.

[4] General macroeconomic developments support indirectly our conclusions about labour demand

The fourth chapter examines unemployment issues. Different aspects of unemployment are observed in this chapter, like unemployment dynamics in CEE countries; long term unemployment issues; unemployment by age groups and gender and by educational attainment; regional differences of unemployment in CEE countries; unemployment of national minorities and structural unemployment. Briefly the problems of hidden unemployment are analysed also. In the last part of the chapter study influence of macroeconomic shocks on the labour market and we present some empirical evidence from Russian financial crises to Estonian unemployment.

The main objective of this chapter is to analyse unemployment in Estonia and other transition countries. We compare different sources of labour statistics and unemployment dynamics in other CEE countries. Here we can see again that Estonia is characterised by some extreme cases, like increasing long-term unemployment, declining regional disparities and has the lowest registered/ILO unemployment ratio among other CEECs.

Also we analyse labour turnover and we assume that this might be high because of our general assumption about high labour mobility.

Analysing different aspect of unemployment we examine ethnic, educational and age structure of the unemployed. One of our hypotheses for moderate unemployment growth in early transition is connected with Russian minorities in the labour market. Analysing unemployment and labour policy data we assume that Non-Estonians were suffering more in terms of unemployment.

In this chapter we briefly examine hidden unemployment issues in Estonia referring recently published paper. We assume that hidden unemployment will increase in the course of transition, and that two different sub-groups of hidden unemployment (discourages and underemployed) have different factors influencing them.

In 1998 the Estonian economy was affected by the Russian financial collapse. From the second part of 1999 the economy had already started to recover and the recovery continued during 2000. The expected real GDP growth rate for 2000 is around 6.5%. At the same time labour market indicators did not showed any improvement at the beginning of 2000. We believe that one reason for this is on account of technological changes that took place during the restructuring of enterprises affected by the Russian crisis. Unfortunately we can use only labour supply side data. This means we can only indirectly test our assumption. In the last section of this paper we analyse the effect of macroeconomic shocks on unemployment. We use Estonian data and try to define which groups are most affected by general economic decline caused by external shocks. We assume that people with lower education and lower job position (blue collar workers) suffered more when we consider the rise in inflows to unemployment. This could be interpreted as evidence that employers substitute less productive workers with more productive technologies and fire the less productive workers. In unemployment terms this assumption means that part of cyclical unemployment can become structural.

The fifth chapter presents the results of flow analysis in the Estonian labour market. In conjunction with the analysis of stock data on unemployment and employment, gross flow analysis gives some important insights into the nature of the structural changes in the Estonian labour market. In order to analyse the flow probabilities the individual probabilities of transition between different labour market states as a function of personal characteristics and firm specific characteristics using multinomial logit regression were calculated. The main purpose was to analyse how individual characteristics and some firm's size and industry related characteristics

influence the transition probabilities from one labour market state to another. First, we present data description and methodology how gross flows are calculated and the last second part presents the empirical results.

The absolute number of unemployed persons or the unemployment rate is only indicators of the stock of unemployment. The dynamics of unemployment are captured by inflows and outflows to and from the various labour market states. In order to clarify the importance of duration of unemployment the stock of unemployment can be thought as the difference between the inflows into unemployment and the outflows out of it. It follows that the same unemployment rate in one country means that there are high inflow and outflow rates indicating the high turnover of the unemployment pool. In the other countries the inflow and outflow rates can be low indicating that the probability of becoming unemployed is not high, but once it happens, it is very difficult to get out of unemployment. Low outflow rates from unemployment and the high duration of unemployment as a consequence are seen as the main explanation of the high unemployment rate in Europe by many authors (see for instance Adnett (1997), Smith (1994), Boeri et al (1995)). Although the recent rise in European Union unemployment is also explained by the rise in the flows from employment to unemployment (EU) and vice versa (Schmidt, 1999).

According to Estonian Labour Force Survey data, ILO unemployment was 7.6 % in 1994. Why has Estonian unemployment growth been relatively moderate at the early years of transition? One possible explanation investigated in this chapter is that flows between labour market states have been relatively high. Workers flows in Estonia were relatively high also compared with other CEE countries (except the Czech Republic) at the beginning of transition and this has minimised the high incidence of long term unemployment and kept the general unemployment rate growth at a moderate level. Later, during the transition period, with labour market institutional developments and declining flexibility the labour mobility between labour states decreased.

One hypothesis tested in this paper is also the fact that in the case of job losses females move mostly to non-participation and males to unemployment.

Also we think that work experience (measured by age) has less influence on the labour market mobility than human capital during the early years of transition.

These hypothesis should be tested using different statistical methods. In order to analyse the flow probabilities the individual probabilities of transition between different labour market states as a function of personal characteristics and firm-specific characteristics using multinomial logit regression were calculated. We chose three points in time, 1989, pre-reform, 1994, the early period of transition and 1998, as later transition year. At the beginning we calculated regressions for all three years but the regression results for 1989 were in most cases statistically insignificant, so we left these results out. Finally we compare the results of 1994 and 1998.

The last chapter deals with labour policy issues. Prior to the start of economic transition, only two transition countries had a system of income support for the unemployed. In 1989-1991, most countries in the CEE adopted comprehensive regulations encompassing not only the provision of income support for the unemployed, but also the implementation by a decentralised state administrations of a series of active labour programmes, ranging from training for the unemployed to subsidised employment schemes and public work programmes. These changes are analysed in the first part of chapter 6. Next we examine the labour policy of the CEE

countries in the framework of four "pillars" of the European Union (EU) labour policy and deal with EU enlargement and its implications on CEEC's labour markets.

While most of the CEE countries introduced earning related unemployment benefit system, Estonia introduced a flat unemployment benefit. This and other policy measures that Estonia introduced at the beginning of transition lead us to the hypothesis that the main reason for relatively low unemployment increases could be a limited labour policy. This assumption is based the fact that the Czech Republic has very similar unemployment pattern in the nineties and Czech labour policy has been very limited as well measured in GDP expenditure.

Estonia has followed a right wing economic policy since gaining independence. Labour policy issues were not so important compared with monetary and fiscal policy issues. We demonstrate in the second chapter that fiscal and monetary policy was very tight in Estonia. This situation is balanced with very flexible labour policy. Why did unemployed people not vote for new more left wing government? One explanation could be that a relatively large part of the unemployed (non-Estonian citizens) had no right to vote in parliament elections.

Finally, we examine labour policy development in the CEECs in the framework of EU labour policy options and potential problems connected with EU enlargement. We assume that Estonia is not quite ready to join EU at this stage of development. In average European understandings about the role and importance of the social policy, and particularly about labour policy in conflict with Estonian Government policy. Therefore we probably need a longer transition time in some social policy issues. At the end of the chapter we make conclusions and offer recommendations.

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1. Economics of Transition: labour market equilibrium and flexibility issues

1.1. Introduction: Shock *versus* Gradualism

The transition process in Central and Eastern Europe has been closely scrutinised by western Economists for over 10 years. Transition from a command economy to a market economy is a unique process and economic theory has little to say about how this process of institutional change should take place. Standard economics has been limited to study of allocation equilibrium within a given system. Whatever systems were studied, they always assumed stability. Furthermore, standard economics has been limited to static systems. Consequently, the process of transformation from one system to another has been explored (Pelikan, 1993, p.67)

There is in existence a growing literature trying to explain structural changes in a transition economy. In particular, the debate between the Big Bang (shock therapy) approach versus gradualism has dominated discussion over strategies in the initial phase of transformation. The recommendations for "big bang" come from the literature on macroeconomic stabilisation and credibility. It is now generally agreed that stabilisation is best achieved through shock therapy (Sargent, 1986). Radicalism in stabilisation policy is an important way for genuine reformers to signal their commitment in order to become credible.[5] Introducing partial reforms would eliminate their positive effects and disorganise the economy. Therefore all elements relevant to the market economy should be introduced simultaneously in a comprehensive way. Lipton and Sachs (1990) argued that new governments should use their *état de grâce* to implement painful reforms in one stroke. Aslund, Boone and Johnson (1996) also pointed out that rapid reformers have done relatively well. They found that the empirical evidence based upon macro statistics like output growth, inflation and unemployment does not support the view that gradual reformers have performed better.

Gradualism has been labelled by its opponents as the slow pace of reform. But this is not necessarily the case. Advocates of gradualism have focused on the possible advantages of an appropriate sequencing of reforms and have pointed to the costs arising from reforms carried out in the wrong order (Roland, 1997).

Dewatripont and Roland (1995) argued in their paper that gradualist reform packages have generally higher *ex ante* feasibility and can thus start earlier. Sequencing of reforms may create constituencies for continuing reforms and increase *ex post* irreversibility of enacted reforms. They present a model of transition that has uncertain outcomes and in which the government chooses the speed and sequencing of reforms. The model allows for two possible interpretations of government behaviour. First, the government may be a social planner facing an optimal decision making problem where the outcome is uncertain. Second, it may be a reform-minded government committed to reform for ideological or other reasons that faces constraints of political acceptability at each period in time. The authors conclude that, in the presence of large-scale reforms; gradualism increases the political acceptability of reforms. …"Moreover it allows constituencies to be built favouring further reforms: correct sequencing of reforms uses the "sweet bill" of promising results in early reforms to gain acceptance of the "bitter bill" of later reforms, taking strategic advantage of the complementarity of reforms push entire reform package through the political process…" (Dewatripont and Roland, 1995, p.1218).

[5] See also Vickers, 1986, Rodrik, 1989, Murfy et al, 1992.

Later Katz and Owen (2000), using Dewatripont and Roland's model showed that their case for gradualism was overstated and sometimes incorrect. Katz and Owen claimed that their model might be viewed as lending strong support to the big bang strategy. Their approach confirms the result of other models, that the particulars of the country are important, and that the speed and order in which reforms are introduced must be chosen on a case-by-case basis (Katz and Owen, 2000).

Nevertheless, if one wants to make a distinction between the key elements of transformation, the distinction between two different strategies (Big bang *versus* gradualism) make sense. This debate is centred on different opinions regarding the speed and sequencing of reforms. Some were of the opinion that the speed of the transformation process was the single most important indicator of success of governmental policies in relation to their economies in transition. Other riposted that market reform of these economies was not objectives themselves, and that economic growth should be the goal of the transformation process (Dorenbos, 1999).

In general, both approaches aim at a broad category of policy actions. Namely, macroeconomic stabilisation, price liberalisation, privatisation and institutional reform. Due to different economic and political situations every post-socialist country requires specific package of policy measures. For example, in Estonia this package included currency reform what established a national currency, Eesti kroon, based on a Currency Board system, rapid price liberalisation, tight wage controls and a severe cuts in subsidies (no subsidies for agriculture). Estonia also introduced liberal trade policy (no tariffs) and a flat personal income tax rate.

In contrast, Hungary took a much more conservative (gradual) path, seeking to maintain the purchasing power of the population, in order to avoid rapid decline in aggregate demand. For Hungary significant steps had already been taken in the 1980s, which partly explains why Hungary opted for a gradual approach (Köves, 1992)

Some authors believe that "shock therapy versus gradualism" is a false dichotomy and an unhelpful way of presenting the issues. Some things can and should be done quickly, other takes longer. Building new institutions and economic restructuring are time- and resource-intensive processes. If a process takes time it is important to start it quickly. Where political and administrative structures have broken down, then gradualism may simply be a euphemism for the prolongation of uncertainty and stress. Therefore most important for reforms is the starting point (Stern, 1996).

In the next section we present an overview of one of the most comprehensive models developed initially by Aghion and Blanchard (1994) and later modified by Blanchard (1997). In their model the general equilibrium model and the speed of transition is presented. The model was chosen because the key factor in their model is the labour market.

1.2. Aghion-Blanchard model

The backbone of the literature on optimal speed of transition is the paper by Aghion and Blanchard (1994). Aghion and Blanchard (AB) found that countries, which had a large initial shock and thus a large increase in unemployment, are likely to restructure more slowly. From

their model we can conclude that gradualism in implementing reforms is the better policy choice. According to AB the transition was shaped by two main mechanisms. One he called reallocation and the other restructuring.

The main questions they addressed in the reallocation case were as follows: Why was there such a collapse of state firms in most of the transition countries and why private sector growth was not fast enough?

Restructuring played also an important role in the recovery process. Is it true that the reasons why output growth since the start of the recovery has been associated primarily with an increase in productivity rather than with the decrease of in unemployment. According to Aghion and Blanchard there was an important interaction between growth and unemployment. Faster restructuring can lead to higher unemployment. Higher unemployment can in turn slow down restructuring.

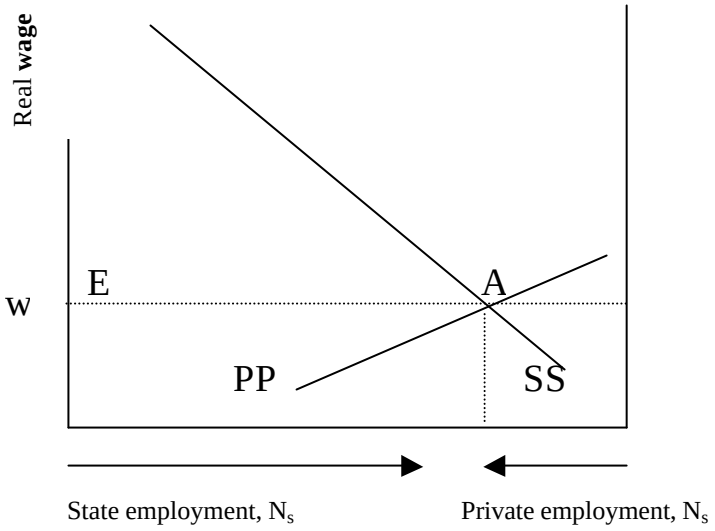
Let us suppose that we have two sectors, the state sector producing mediocre goods and the private sector producing better goods. During transition the share of private producers will increase. Under what circumstances will reallocation of resources, labour and capital lead to a period of output decline and higher unemployment?

AB use the two sector model, which is closely related two similar two sectors model describing trade liberalisation effects (Neary, 1982).
Several assumptions are made:

- two sector goods are produces according to identical constant returns production function
- the two goods to be perfect substitutes, up to the quality differentials
- during the pre-transition period, most goods were state goods.

For simplicity it was also assumed that reallocation of resources was sustained through a combination of subsidies to state firms and taxes on private firms. Equilibrium of pre-transition period is characterised in the figure 1.1.

Figure 1.1. ***Production in the state and the private sector pre-transition***

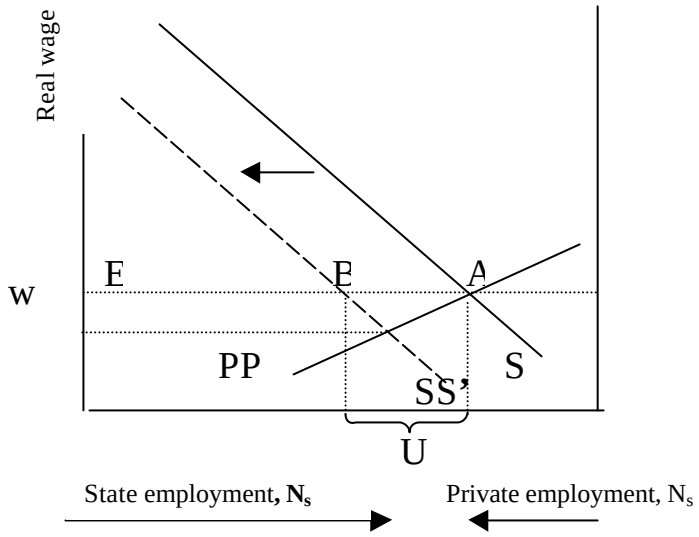


Source: Blanchard, 1997

The demand to labour in the state sector is SS and the demand to labour in the private sector is PP. We assume that initial equilibrium is at point A where there is no unemployment.

Next AB assume that subsidies are removed. The equilibrium after removal of subsidies is characterised in Figure 1.2. The elimination of subsidies shifts the labour demand from SS to SS'. Labour demand in the private sector is not affected, so PP remains unchanged. Unemployment will increase from 0 to U and if real wages do not decline unemployment will increase. As far as output in the state sector will decline and in private sector output is unchanged, the total output will decline as well. According to AB the removal of subsidies leads to a decrease in the after subsidy marginal product of capital in the state sector and thus to capital decrease over time. Given that factor prices determine the capital-labour ratio and that factor prices are fixed by assumption here, capital decumulation implies a proportional decrease in state employment over time. Since there is no change in the marginal product of capital in the private sector, there is no change in capital accumulation and thus no change in private employment over time. In this extreme case, total employment keeps decreasing until the state sector has disappeared, and the unemployment rate is equal to state employment pre-transition.

Figure 1.2. ***Effects of removing subsidies***



Source: Blanchard, 1997

Aghion and Blanchard also show that there are two weak arguments in their model.
Real wages do not decline. In order to prove this, AB compares product wages (nominal wages divided by GDP deflator) and consumption wages (nominal wages divided by CPI). As empirical data of five selected CEECs show the product wages have increased in four out of five countries under observation[6].

[6] In the case of Estonia we can observe similar trends both for consumption wages and product wages (See the figure in appendix).

The second point was, that the transition is considered here as removal of subsidies only, rather than removal of taxes and other restrictions from private firms. It may be true that the PP curve can shift to right as well. Aghion and Blanchard argue that the transition was associated with the elimination of restrictions on private firms but net effect on employment was still negative.

The literature concerning the optimal speed of transformation did not predict a great decline in output as happened in the CEE countries. According to Boeri (2000), there was no reason to believe, that the transition from a less efficient to a more efficient production system should have caused a dramatic decline in output. Also from an empirical standpoint, labour and capital reallocation costs involved by structural change could not be expected to generate output losses. The most ingenious interpretation was provided by Blanchard and Kremer (1997). This was connected with a term they called *disorganization*. The transition destroyed the centrally organised planned economy and that caused some output decline. During the planned economy the production in the state sector was organised around bilateral relations between state firms. Typically firms had or knew of only one supplier for each input and one of buyer for each output. Such a structure can easily lead to large disruptions in production: if for any reasons, this supplier does not deliver, the production may come to a halt. During the pre-transition period a central planning administrative body co-ordinated these relations and with the disappearance of the planned economy this co-ordination disappeared as well. The result was a set of disruptions in production and trade, or what AB called "disorganisation". There are theorists who stress reorganisation more that disorganisation. The main idea of these theories is, that the systematic changes make much of the existing stock of information obsolete. Rebuilding a new, appropriate stock, will take time, and during that time, output will decline (Atkeson, Kehoe, 1997). Disorganisation could be one explanation of fast trade reorientation in most CEEC countries.

Another explanation of disorganisation was presented by Roland and Verdier (1999). They focus on the role of search frictions created from the desire to find new partners in the chain production. The outside option is endogenous in a model of two sided search and matching. In the long run more efficient opportunities are available to all. Suppliers and buyers will maintain existing links until one of them finds a better match. Search by many "failed" buyers creates congestion and reduces the quality of matches in the short run. The fall in output is not generated by a breakdown of suppliers buyers relationships that existed in the planning system but are due to the assumption that investments will not start undertake production until a long term partner is found. No investments take place during the search.

Aggregate output in the years after liberalisation contracts due to a fall in investment demand and the failure to replace obsolete physical capital. In this model output contraction is followed by output expansion reaching higher levels of output compared with the pre-transition period.

However, disorganisation arguments were reviewed by Boeri (2000). He claimed that the disorientation argument was valid only for the initial stages of transition. Also he argued that two basic assumptions of the BA arguments have not found enough empirical evidence. These two assumptions are: the presence of Leontief-type technology and market specificity of inputs required by the firms inherited from the previous regime. According to Boeri, the last assumption sounds especially unrealistic for firms which were frequently subject, under the previous system, to input shortages and in a context where production was still largely concerned homogeneous goods with inputs which were much less specific or specialised than in market economies. (Boeri, 2000)

Some recent surveys have shown that new firms, producing new products, have problems in securing domestically an adequate provision of intermediate goods and often have used imported inputs. (Koenings and Walsh, 1999)

Koenings and Walsh used enterprise level data from Ukraine. They used the proxy for complexity in production, the number of products a firm produces, for measuring increasing inefficiencies in the existing production links or disorganisation of the nature in Blanchard and Kremer (1997). Also they measured disorganisation as a lack of investment in new equipment, which is an empirical proxy for capturing matching inefficiencies between suppliers and buyers in production, as outlined in Roland and Verdier. Their evidence show that disorganisation on the supply side has constrained the ability of traditional firms to reach first best outcomes in employment and productivity during the transition process. In contrast, they found, that disorganisation plays no role in the determination of productivity and employment growth in *de novo*[7] firms. This may result from the presence of left censoring in their *de novo* sample. Disorganisation may have acted as a barrier to entry in some firms in certain sectors but actual entrants are likely to make efficient supply matches. In addition, *de novo* firms by their nature have limited restructuring and reallocation cost and hence disorganisation does not appear to affect their ex-post performance. (Koenings and Walsh, 1997)

One, more general problem with privatisation and a two sector model is presented by Jackmann and Pauna. They argue that it is misleading to identify labour market reallocation with development of private ownership. Employment in the private sector can grow simply because enterprises are privatised with no change in any worker's place of employment. Such privatisation may raise the efficiency but, in general, will not remove the needs to shed labour from the formerly state-owned manufacturing enterprises. In the context of the labour market, restructuring is more fundamentally an issue of industrial structure. A shift out of agriculture, for example, is needed in most transitional economies whether or not agriculture was initially in state or private ownership. So they conclude that it is more sectoral rather than the ownership shift which necessitates labour reallocation (Jackmann and Pauna, 1997).

Several empirical papers have found that the ownership of a firm did not discriminate between job creation and destruction. Enterprises being in the course of privatisation did not behave very differently from enterprises still in state ownership, in terms of both employment and output (Koenings, Lehmann and Shaffer, 1996; Richter and Shaffer, 1996) and employment-output elasticities in large private firms were comparable with those observed in the units still in state hands (Estrin and Svejnar, 1998).

Next we provide a few comments about restructuring in the AB model. Restructuring here means not only changes in the structure of ownership, but also changes in the structure and the organisation of their production. Firms must redefine their product line, close some plants which are no longer needed and lay off workers in those plants. They must also reduce labour hoarding. Also they must replace most of their equipment and train/replace the managers.

AB arrived at the conclusion that fast restructuring may lead to a fast increase in unemployment. High unemployment, in turn, may lead to a strong opposition to restructuring. If managers and workers are not compensated they may work against restructuring. The higher the unemployment

[7] Newly established private firms

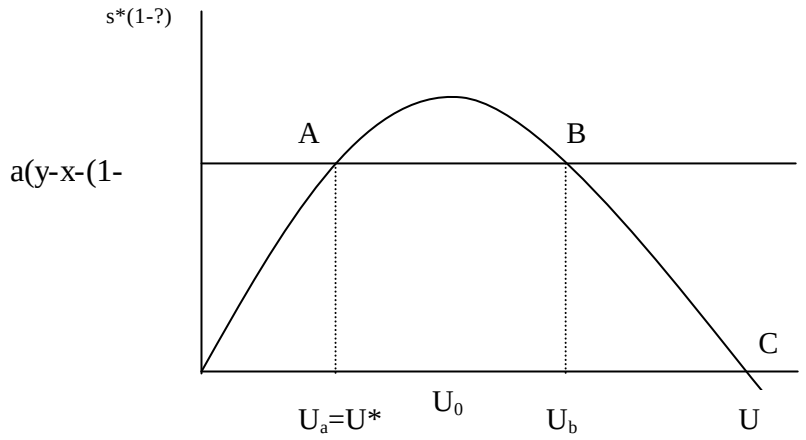
rate the stronger will be the opposition to restructuring. They also found that countries, which had a large initial shock and thus a large increase in unemployment, are likely to restructure more slowly. This may limit a further increase in unemployment, but it will also slow down recovery. Bulgaria is an example of a country, which had the largest initial output decline in central Europe and later the slowest recovery.

This idea was not supported by Haltiwanger and Vodopivec's study (1999) of Estonian data. They found that intense restructuring follows the rapid opening up of the production and labour markets but also shows that this can be accommodated without massive increases in unemployment.

Equilibrium unemployment and optimal speed of restructuring in AB model could be better understood if we analyse them graphically (Figure 1.3.). Private job creation *f(U)* is first upward and then downward sloping. There are two equilibrium points in this figure: low unemployment equilibrium and high unemployment equilibrium. High unemployment equilibrium inclined to be unstable. When unemployment is zero, the wage is equal to the average product y, preventing job creation. As unemployment increases, the effect that initially dominates is the direct effect on wage, so jobs in the private sector increase. As unemployment increases, the effect on taxes will take effect, and private job creation declines.

Starting from low unemployment, private job creation is initially positive and increasing. But it remains smaller than the flows into unemployment coming from restructuring; unemployment becomes so large that adverse fiscal effects predominate. Private job creation declines, leading to a faster increase in unemployment. Eventually, at point C in the figure, the fiscal burden becomes so large that eventually both the new and privatised sectors become unprofitable and close down.

Figure 1.3. ***Dynamics of unemployment under restructuring***



Source: Blanchard, 1997

Empirically it is more relevant case that U_0 is larger than U_a. In that case, high unemployment makes restructuring and privatisation unattractive to workers in state firms and no restructuring will take place until private job creation has reduced unemployment to U_a. from then on economy transits at $U^*=U_a$ at the speed $s^*=f(U_a)$.

The main conclusion from the AB model is that the flow into unemployment from restructuring is absorbed by the rate of private job creation. It also implies that initial adjustment can lead to an initial unemployment rate that exceeds the equilibrium rate. In this case, restructuring does not take place until job creation has reduced unemployment to low levels. If unemployment is high, and private creation slow, this adjustment will take time. Aghion and Blanchard argue that this statement fits well with the empirical evidence from CEE countries. (Aghion and Blanchard, 1994, p. 317)

A number of articles has emanated from this model. For instance Castanheira and Roland (2000) have recently developed a dynamic general equilibrium model where again the effect of an excessive speed of closure slows down the growth of the new sector, however their feedback mechanism works via the depression of output and savings when the unemployment rate is high.

However, there are several weak points in the AB model. The main arguments which point out the weak sides of some assumptions made by Aghion and Blanchard are as follows:

- The presence of Leontief-type technology.

- The assumption that removing subsidies from state enterprises, will only lead to destruction of public sector and therefore an increase in unemployment. Demand in private sector does not change.

- Labour supply is treated as fixed. The fixed supply argument was strongly criticised by Boeri (1999) and if we later analyse the general trend in labour supply we will see that empirical data from CEE countries shows a strong decline in labour supply.

The last argument is very common in the literature of transition labour markets. For instance Mickiewicz and Bell (1999) claimed that it was mostly labour demand shock that disturbed CEEC labour markets. This may be confirmed by the fact that changes in the in employment and real wage ran parallel in the initial phase of transformation. This corresponds to the results of the demand shock on the basic supply and demand diagram, where the labour demand curve shifts along the relatively stable labour supply curve, producing the changes in wages and employment and wages, which are going in the same direction. According to the same authors, similar results may be obtained via a more sophisticated bargaining model (see for instance Layard and Richter, 1995; Layard et al, 1991).

From the previous analysis one can draw the conclusion that theories about optimal speed of transition do not explain very well the changes that took place in transition economies, at least not in the Estonian case. We agree with the statement made by Katz and Owen (2000), that the particulars of the country are important, and that the speed and order in which reforms are introduced must be selected on a case-by-case basis. Haltiwanger and Vodopivec, analysing Estonian labour force survey data also found that job creation and destruction were high among new small private firms. They concluded that it is not simply a matter of reallocation of jobs away from one type of employer to another that is critical for success. But, using Estonian labour market evidence, they found that labour market flexibility plays a vital role in successful transformation – particularly for rapid reforms as in Estonia (Haltiwanger and Vodopivec, 1999).

However, the AB model is widely discussed in literature and the number of empirical studies calculating optimal speed of transformation is also growing. This is the main reason why we analysed this approach in such detail.

Our main assumption is that labour market flexibility is the key concept to speed of employment restructuring and economic recovery. In the next section we take a closer look at labour market flexibility issues.

1.3. Labour Market flexibility

1.3.1. Flows and flexibility

The labour market is characterised by various flows and transitions to and from employment, unemployment and non-participation, as well as flows of job creation and job destruction. The standard measures used to analyse labour market dynamics – i.e. net changes in employment and unemployment – conceal an important dimension of the functioning of the labour market: job turnover (job creation and job destruction at the level of individual firms) and labour turnover (movement of individuals into jobs, i.e. hirings, and out of jobs, i.e. leaves, over a particular period of time). Consequently, analyses that focus on the labour market flows may yield more information about the state of the labour market than do analysis of the levels of employment and unemployment.

High labour market flexibility, in the terms of high job creation and destruction allows firms to reallocate resources to the most efficient uses and thus it may be vital for economic growth. For example, some studies indicate that about half of the productivity growth in US manufacturing during the 1980s is accounted for by reallocation of resources from less productive to more productive firms (Foster, Haltiwanger and Krizan, 1998) As suggested by Aghion and Howitt (1994), we might expect a relationship between gross job creation, destruction and productivity growth. Sectors that engage in restructuring destroy low productivity jobs and create high productivity ones. This leads to a high job turnover and an increase in labour productivity. Therefore, a positive correlation between productivity growth and job turnover might be expected. However, the high degree of job reallocation may have, in the short term, a negative effect in terms of worker displacements and earnings losses[8].

Reallocation of resources, job creation and destruction issues are very important for transition economies, because they show the flexibility of the labour market in the transition from a planned economy to a market economy. We can also assume that as high labour market flexibility leads to higher economic growth, it will leads also to a faster transition.

Burda and Wyplosz (1994) analysed, in their paper, gross worker and job flows in Europe. They found that number of workers finding new jobs (from either unemployment or non-participation) greatly exceeds the number of job creation. Similarly, the number of employment outflows greatly exceeds job destruction. As Burda and Wyplosz note, accounting for these two phenomena in a coherent model requires that we admit either firm heterogeneity[9] (different firms

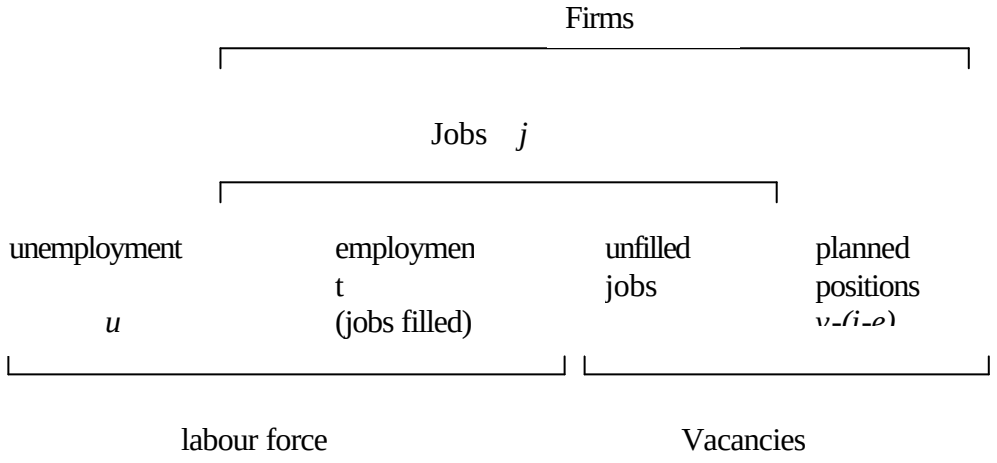
[8] See also study of Jacobson, Lalonde and Sullivan (1993).

[9] This idea is supported by Davis and Haltiwanger (1990) who found in their empirical paper that there is tremendous heterogeneity in establishment-level employment changes.

are creating and destroying jobs at the same time throughout the cycle) or worker heterogeneity (the same firms are hiring and dismissing different workers throughout the cycle). Once we have either or both of these sources of heterogeneity in the model, turnover within existing jobs and worker mobility without spells of unemployment permit the worker flows to deviate substantially from the job flows. This is essentially the core of the Burda's Wyplosz's model (Abowd, 1994).

The model draws a clear distinction between job creation and worker reallocation, which is related to the two types of vacancies in the model. Employment (e) is the total number of workers in employment relationship. Jobs ($j \geq e$) equal employment plus unfilled jobs. Vacancies (v) can be either unfilled jobs (j-e) or planned positions (v-(j-e)). Planned positions are simply the plans of an entrepreneur which, when matched with an appropriate worker and the capital outlay K, can lead to job creation The lower half of figure 1.4. illustrates the distinction between unemployment, employment and vacancies.

Figure 1.4. ***States for workers and firms in the model***



Source: Burda and Wyplosz, 1994, p. 1305

We conclude that the relations between the Burda Wyplosz model and more conventional models of workers and job flows, if one restates the basis equilibrium dynamics, as the set of two Markov transition matrices – one for the firms, showing the dynamics of job flows, and the other for the workers, showing the dynamics of employment flows.

Table 1.1. ***Dynamics of job flows***

origin	Destination e (filled jobs)	$j - e$ (unfilled jobs)	$v - (j - e)$ (planned jobs)
e(filled jobs)	$(1 - s)(1 - d)$	$s\ (1 - d)$	d
$j - e$ (unfilled jobs)	$h(q)(1 - d)$	$(1 - h(q))(1 - d)$	d
$v - (j - e)$ (planned jobs)	$h(q)$	0	$1 - h(q)$

Source: Abowd, 1994

The rows indicate the origin states: filled jobs, *e*, unfilled jobs, *j* - *e*, and planned jobs, *v-(j-e)*, while the columns indicate the destination states. Each row of the transition matrix shows the conditional probability of movement to the destination states as the function of the basic exogenous separation rates (*s* and *d*) and the matching function *h(q)*, which depends upon the equilibrium value of the vacancy to unemployment ratio, *q*. Table 1.2. shows the transition matrix for workers.

Table 1.2. ***Dynamics of workers flows***

	destination	
Origin	*e*(employed)	*j* – *e*(unfilled jobs)
e(employed)	*(1 – s)(1 – d)*	*s (1 – d) + d*
u(unemployed)	*qh(q)*	*(1 – qh(q))*

Source: Abowd, 1994

The rows indicate the origin states (employed, *e*, and unemployed, *u*), while the columns show the destination states.

Equations in tables 1.1 and 1.2. represent the steady state dynamics of the BW model. Burda and Wyplosz present values of *e* and *j* in two following equations:

$$\bar{e} = \frac{qh(q)}{d + (1-d)s + qh(q)'} \tag{1}$$

$$\bar{j} = \left[1 + \frac{(1-d)s}{d + h(q)}\right]\bar{e} \tag{2}$$

where j denotes both filled and unfilled jobs and e denotes employment, so $\bar{e} < \bar{j}$ always. Also note that $\frac{\bar{j}}{\bar{e}}$ is a positive function of q ; that means the tighter labour markets are, the greater the stock of jobs that are not filled at any instant relative to those that are.

According to Abowd (1994) BW jobs (*j*) include both the rows and the columns corresponding to *e* and *j – e*, even though in all most empirical analyses of job destruction only the row and the column labelled *e* is considered jobs. In the steady state dynamics, both workers and firms are heterogeneous because, regardless of the state of the economy, (embodied in equilibrium value of *q*), workers engage in both *e* to *u* and *u* to *e* flows and firms simultaneously create (*v* (*j – e*) to *e*) and destroy (*e* or *j – e* to *v* – (*j – e*)) jobs.

As far as heterogeneity is the main topic of this model, according to Franz (1994), the authors miss some important aspects regarding the heterogeneity issue. The authors do not fulfil their promise in the introduction namely to dismiss the "representative agent" approach. More specifically, all transition rates are constant in the model they are presenting (Franz, 1994).

A wide range of studies of labour mobility in transition economies which focus either on labour flows from in and out of unemployment or of jobs point to the restructuring process in transition process. For instance Svejnar et al (1994), in their analysis, unemployment flows, in the Czech Republic and Slovakia, find that outflows from unemployment are explained by labour demand factors, while inflows depend strongly on the structural characteristics of regions. This supports the hypothesis that labour was shifting from unproductive to more productive uses in this time period (Huber, 1999).

Konings et al (1996), looking at job creation and job destruction processes in Poland in the period 1988-1991, find that most of the job creation activity took place in private and small firms in the time period centred on small and private firms. Bilsen and Koenings (1997) find that *de novo* firms have been the most important in job creation in Hungary in the time period from 1991 to 1993. In more detail we observe the flow analysis in chapter 5

1.3.2.Trade unions and flexibility

Another possible approach to labour market flexibility is the level of labour market regulations and the influence of trade unions. In literature the positive and negative effects of trade unions are analysed.

Positive effect

Some analysis indicate that (a) unions' power over wages may, to some extent, hinder an economy in recovering from a recession and (b) the greater the union's power[10], the bleaker the economy's recovery prospects may become. In this light, the more widespread and intensive influence of unions in Europe than in the United States may help explain the drastically different product wage trajectories in these two parts of the world and Europe's comparative lack of success in reducing its unemployment after the recession of early 1980's (Lindbeck and Snowers , 1986, p 124).

Negative effect

In the eighties, the number of researchers (McCallum, 1983 and Bruno and Sachs, 1985) have focused especially on the effect of corporatism on macroeconomic performance. Corporatism is identified as a mode of social organisation in which groups, rather than individuals, wield power and transact affairs. In the context of the labour markets, several structural characteristics have been used as indicators of corporatism. These are: Whether negotiations take place at a national or local level; the power of national *vis-à-vis* local labour organisations; the extent of employer co-ordination ; and the power of local union stewards. Nations are deemed to be corporatist if wage bargaining is highly centralised, wage agreements do not have to be ratified at a local level, employers are organised, and local union officials have limited influence. (Bean, C., Layard, R., Nickell, S.J.; 1986)

Based on these definitions, different indices of corporatism were calculated. Using Bruno and Sachs indices of corporatism in their calculations, Bean et al (1986) found that the functioning of the labour market is related to the degree of corporatism. They reported that wages in the more corporatist economies display a greater response to unemployment in both the long run and the short run. Even more pronounced is the association with the response to changes in the wedge between consumer and product wage, and hence on unemployment levels, being significantly

[10] As reflected in their bargaining strength and the magnitude of the labour turnover cost.

smaller in corporatist economies. Finally, adjustment, not only of wages but especially on the labour market as a whole, is faster in corporatist environments. In comparison, the association with the average level of unemployment since the start of the 1980-s, and more with the rise of in unemployment since the 1950-s and 1960-s, is rather weak. Thus, more corporatist economies may possess labour markets that function more efficiently in the face of shocks, but this does not imply that their unemployment experience has necessarily been less unpleasant. (Bean et al., 1986)

Jackmann et al (1996) found that union coverage and power cause unemployment to rise. But if wage bargaining is decentralised, trade unionists have an incentive to settle for more than the "going rate " and only higher unemployment can prevent them leap-frogging. Although decentralisation makes it easier to vary relative wages, this advantage is more than offset by the extra upward pressure on the general level of wages. Thus, where union coverage is high, co-ordinated wage bargaining leads to lower unemployment.

1.3.3. Employment regulations and flexibility

The question of whether and to what extent job security regulations adversely affect labour market flexibility remains a matter of continuing controversy. Critics have claimed that strong job rights prevent employers from adjusting to economic fluctuation and secular changes in demand. It also has been alleged that, by inhibiting layoffs during downturns, strong job security provisions reduce employers' willingness to hire during upturns and thereby contribute to unemployment. (OECD, 1986).

Several empirical studies have tried to measure the effect of job security legislation on labour market outcomes. Bentonila's and Saint Paul's (1992) use a "before and after" approach to analyse the Spanish case. They show that labour demand fluctuated more in response to output shocks after flexible employment rules were adopted. Houseman (1991) uses data from Western Europe steel plants and offers evidence that more restrictive policy on severance payments slowed down job creation.

If we consider the tightness of the country's employment protection legislation as a proxy for labour market flexibility, we can see that Western European countries have relatively inflexible labour markets (Bertola, 1990; Wells, Grubb, 1993). Differences in policy towards employment protection legislation and the generosity of the welfare state might be important factors explaining differences in worker and job flows between countries as suggested by Garibaldi (1998) Burgess (1999) and Mortensen and Pissarides (1999). When employment protection legislation is tough, the firing cost is increased which leads to lower job destruction rates and hence lower job creation rates in equilibrium. Hence, countries which have tough employment protection legislation should also be characterised by lower gross job reallocation (Faggio and Konings, 1999). This suggested pattern is confirmed by the figures on excess job reallocation.

Abraham and Houseman (1993) argue that the fact that job security regulations would be expected to slow the adjustment employment to an unexpected shock, the magnitude of this effect is debatable. Moreover, strong job security regulations typically have been accompanied by measures intended to facilitate alternatives to layoff such as working sharing. They analyse whether and to what extend variation in working hours offers employers a viable substitute to adjustment through layoff. They compared adjustments of employment to changing level of

demand in West Germany, France and Belgium, all countries with strong job security regulations, with that in US. They found that seemingly important changes in job regulations have not led to measurably different adjustment in these three European countries. One possible explanation for this is that, in spite of the important constraints imposed upon their behaviour by existing job security regulations, employers in these countries have developed alternative strategies that have given them adequate flexibility to adjust their labour input to changes in output (Abraham and Houseman, 1993).

Jackmann et al (1996) found also, that lower employment protection has two effects. It increases hiring and thus increases long-term unemployment. But it also increases firing and thus increases short term unemployment. The first effect (positive) is almost offset by the second (negative) effect. An active policy, which aims to raise the skills level of less able workers, is an important component of any labour policy. Pure wage flexibility may not be sufficient because it leads to growing inequality which, in turn, discourages the labour supply of unskilled workers. (Jackmann et al, 1996)

1.4. Summary

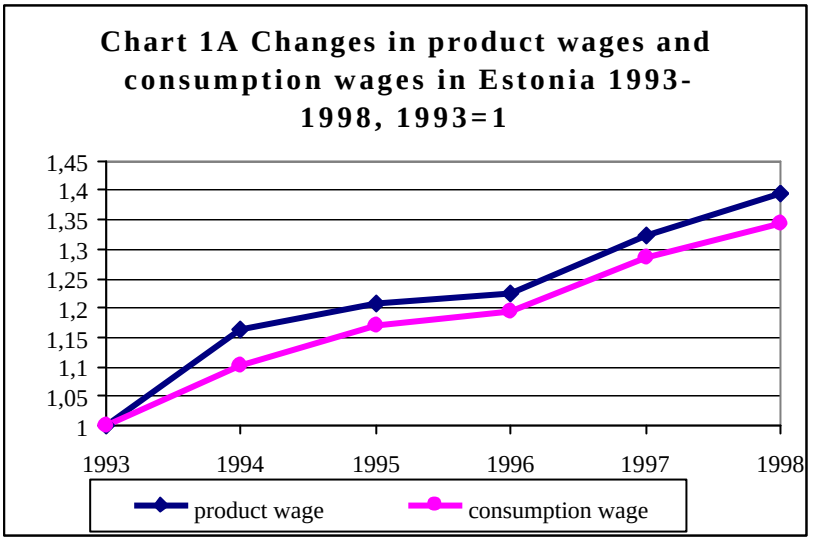
We see from previous discussions that many authors have tried to model transition economies from the labour market point of view. We analysed in great detail the Aghion Blanchard (AB) model, which is an excellent example of the gradualist approach to transformation. At the same time we found that many essential assumptions made by AB were very restrictive and made the model unrealistic, particularly for Estonia.

Some economists claimed that the controversy between the advocates of both strategies reflects the lack of well accepted conceptual economic models, since the standpoints are either misleading or inappropriate (Hoen, 1995). Probably the main argument against the neo-classical framework is that it leaves no room (or very little room) for the analysis of the role of institutions. But it is clear that institutional changes play a crucial role in transition. From a Keynesian point of view it is also difficult to explain transformation (Hoen, 1995; Hoen, 1997). The Keynesian school does not focus on a market economic system, which has to move to equilibrium. The post-Keynesians believe that constructing a market economy is unfeasible and not fully desirable (Hoen, 1995, p. 74).

We arrive at a conclusion that the transition specific equilibrium model was not appropriate to describe changes in the Estonian labour market. This is the main reason why later in our empirical chapters the elementary, basic market equilibrium theory (labour supply and demand) is used in order to present changes that took place in the Estonian economy. We arrive via supply and demand at an equilibrium (in our case disequilibrium) and analyse unemployment and related policy issues.

We use a labour flow analysis to explain one of the key issues of the thesis: moderate unemployment growth in Estonia. Flow analyses also are a widely used concept in modern labour economics.

APPENDIX



Source: Statistical Office of Estonia, author's calculations

2. Estonian labour market and labour market changes in CEE countries: Some aspects of labour demand

2.1. Changes in Estonian macroeconomic environment and labour market

The Estonian economy in 1989 was part of the economy of the Soviet Union and was closely bound up with the raw material and product markets of the former Soviet Union. Thus at the beginning of the transition period the employment structure in Estonia was not a result of natural (market-oriented) development but rather an artificially shaped structure proceeding from the economic needs of the former Soviet Union. The years since 1989 have been of decisive importance to the Estonian economy. This period covers the years when Estonia constituted a part of the Soviet Union economy (1989-1991), the year Estonia regained its political independence (1991), the year when economic reforms were launched in Estonia (1992) and the initial post-reform years (1993-1998). Drastic changes in the Estonian economy took place in 1992. In June Estonia introduced its own currency, the Estonian kroon, which is pegged to the German mark (1 DEM = 8 EEK)[11]. This created a completely new environment for business activities and is considered to be the start of serious economic reforms in Estonia.

The following sections give a brief overview about the most important macroeconomic changes in Estonia[12]

Output decline

Poor starting conditions led Estonia and the other two Baltic states to greater falls in output than in most CEE states (Figure 2.1.). The deepest annual decline of GDP was in Latvia (-34.9%), followed by Lithuania (-21.3%) and Estonia (-14.2%) in 1992. In comparison Poland's GDP decline, after one year of reforms (in 1990), was -11.6%. By OECD estimates, all three of the Baltic States had restored growth in 1996, with the higher Estonian rate partly reflecting the fact that it turned around faster.

A fall in economic output is typical of an early transition period. According to Allen (1992) the main sources of output decline, common to transition economies, are as follows:

1) The implementation of structural changes. The experience of the IMF has shown that deep structural adjustment is almost invariably accompanied by a certain retrenchment in production.

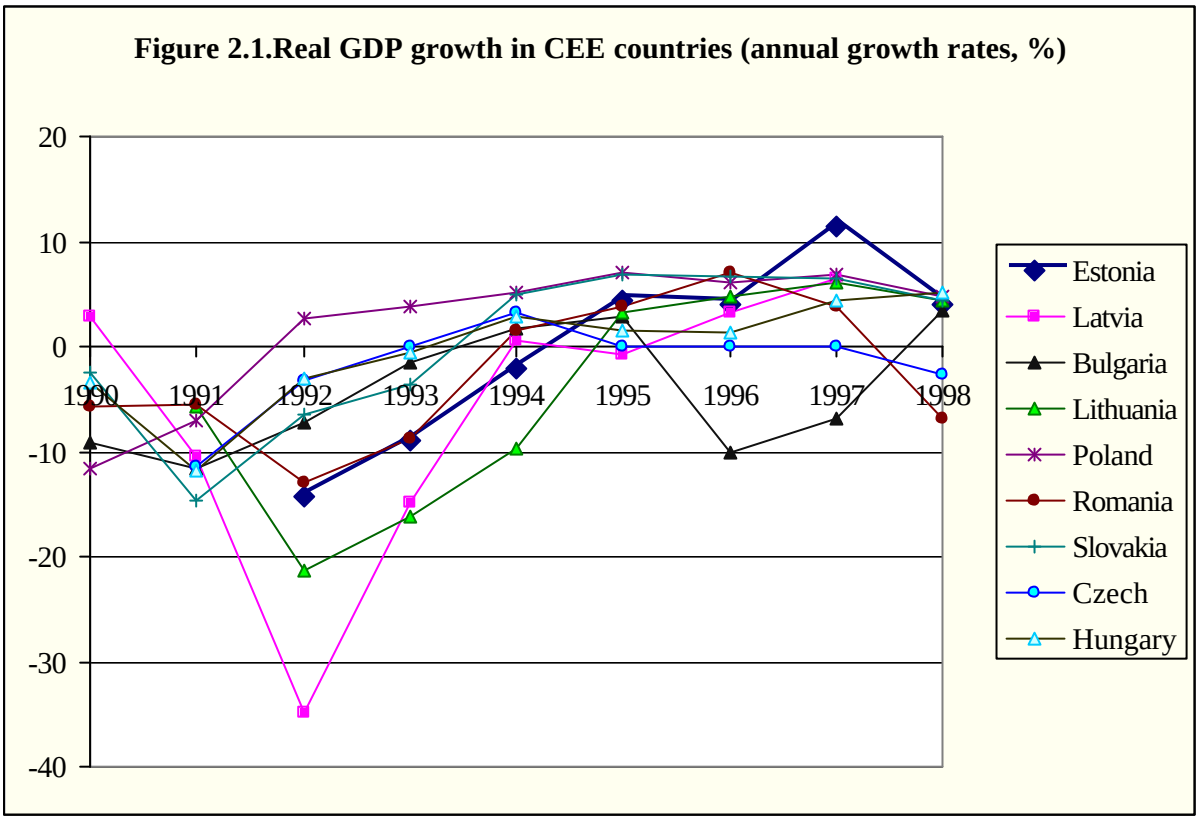
2) The shift from the pattern of holding stocks of input as a precaution against disruptions in supply to holding stocks of output so that customer demand may be met. This is a fundamental part of the process of transition from a supply-constrained to a demand-constrained economy. When it occurs, it inevitably causes output losses as firms run up against the demand barrier for their production.

3) The decline in output has been partly explained as the result of a breakdown of plan discipline. While the planned economy did not work well, its elimination has made the co-ordination of economic activities more difficult. This is a temporary phenomenon.

[11] From January 1999 EEK is pegged to EUR (1EUR=15.646EEK). At the beginning the Estonian kroon was undervalued. This explains the combination of unchanged fixed exchange rate and relatively high inflation in 90s.
[12] For more detail overview see (Eamets, 1999).

There are many other possible explanations for economic decline in the transition phase. Some have argued that the magnitude of the decline has been overstated by official statistics, either because their coverage excludes all or part of the growing private sector (Berg and Sachs, 1991) or simply because, beginning from an initial situation of widespread shortages, standard price and quantity indices generally overstate the drop in output and the increase in the price level associated with price liberalisation (Osband, 1992). Such explanations do not, however, claim that the decline in output is entirely an artifact of official statistics.

Figure 2.1.Real GDP growth in CEE countries (annual growth rates, %)



Source: Eamets, Arro, 2000

Some economists have viewed the output decline as being related to the price shock that followed economic liberalisation. This demand-side view would argue that the decline in real wages, money, and credit is associated with the inflation depressed domestic absorbation and thereby contributed to the decline in output. (Borensztein, Ostry; 1995)

Other demand-side effect might include a high real interest rate and a change in foreign trade (collapse of trade relations with CIS countries as in Estonia's case).

A supply-side view would characterise the output decline as a result of the increased input prices (energy, oil). After the price shock Estonia was faced with a new relative price structure and one would expect that, over a period of time, resources would flow towards sectors where relative output prices had risen and away from other sectors. A comparative advantage would imply that, if the country faced world market prices for its inputs and outputs, resources would move towards those sectors where comparative costs were lowest, thereby increasing the value of goods and services. During the transition period, when production factors will be reallocated, structural change might be associated with output decline.

A very high growth rate in 1997 indicates that the Estonian economy has almost fully recovered from previous supply shocks and high growth rates even caused discussion in the local media about the overheating of the Estonian economy.

According to the data of economic performance in 1998 the growth of GDP slows down. The main reasons were the financial recession caused by the stock market crash in October 1997 and the crises in the world financial markets. The Russian economic collapse of summer 1998 has also contributed to the slow down of the Estonian economy, this continues throughout 1999. Preliminary data of statistical office reported about 1,4% of decline of GDP in 1999. This recession caused external macro shocks and showed clearly how vulnerable is the small-scale Estonian open economy to world market influences.

From the labour market point of view one can expect drastic increase of unemployment accompanied with output decline in the early years of transition. If we look at labour and unemployment data we can see the opposite picture. During the sharp decline of GDP unemployment growth remain moderate. This is an important fact and one objective of that thesis is to analyse the factors influencing moderate unemployment growth and rapid changes in employment.

Inflation

The Estonian Government and Bank of Estonia closely co-operate with the IMF and the framework of economic reform has been worked out with advisors from the IMF and EBRD. Most open sector prices were liberalised in Estonia in 1991-1992 and the monthly inflation rate declined from 20 per cent in the summer of 1992 to 6.6 per cent in September 1992 and to 1.7 per cent in May 1993.

Annual inflation has been brought down from near-hyperinflation in 1992 (annual rates of 1076% in Estonia) to 11% in 1997. This is in contrast to the CIS, where inflation remains much higher[13]. In 1998 Estonia reached with its inflation rate to single digit number (8.2%) and according to the Statistical Office of Estonia the annual inflation rate in 1999 was only 3.4%

Table 2.1. ***Annual inflation in selected transition countries (%)***

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Bulgaria	**23.9**	**338.5**	**79.4**	**56.1**	**87.1**	**62.1**	**123**	**1087**	**22.3**
Czech Republic	**0.8**	**56.6**	**11.1**	**20.8**	**10**	**9.1**	**8.8**	**8.5**	**10.7**
Estonia	**na**	**na**	**1076**	**90**	**48**	**29**	**23.1**	**11.2**	**8.2**
Hungary	**28.9**	**35**	**23**	**22.5**	**18.8**	**28.2**	**23.6**	**18.3**	**14.3**
Latvia	**na**	**172.2**	**951.2**	**109.2**	**35.9**	**25**	**17.6**	**8.4**	**6.5**
Lithuania	**na**	**216.4**	**1012**	**410.2**	**72.2**	**39.6**	**24.6**	**8.9**	**3.3**
Poland	**480.1**	**55.3**	**38.5**	**30.5**	**28.4**	**27.9**	**18.7**	**14**	**na**
Romania	**5.1**	**170.2**	**210.4**	**256.1**	**136.7**	**32.3**	**38.8**	**151.4**	**na**
Slovakia	**na**	**61.2**	**10.1**	**23.2**	**13.4**	**9.9**	**5.8**	**6.1**	**6.7**

Source: Eamets and Arro, 2000

The persistence of relatively high inflation during most of time of transition can be traced to several causes:

[13] According to EBRD estimates average inflation rates in CIS was 33% (Transition,1997).

a) Money supply is related to the increase of foreign reserves in the Estonian Central Bank. Due to the Currency Board system the money supply will increase automatically when foreign investments, foreign loans etc. increase.

b) Because the Estonian kroon exchange rate is fixed with DEM the PPP (Purchasing Power Parity) principle influences the price level. In situations where we don't have trade barriers the price level of imported goods (mostly from Finland, Sweden and other Western countries) pushes up our domestic price level.

c) Prices in non-tradable goods are not completely liberalised while the tradable sectors are opened to foreign competition since the start of currency reform. If we analyse different components of inflation we can see that it is mostly price increases in the non-tradable sectors (electricity, public transportation, housing etc.) that leads to high inflation in Estonia.

Relatively high inflation had not much influence on the labour market in the first year of transition, because the currency board system helped to stop hyperinflation rather quickly in 1992. During the currency reform the Estonian currency (Eesti kroon) was undervalued. This gave enough space for price increases in the conditions of fixed exchange rate. The undervaluation of the kroon made Estonian goods competitive in international markets and helped firms to find new markets.

Changes in labour market

The period 1989–1997 is of major importance in the labour market situation in Estonia. It becomes clear from table 2.2 that the emergence and growth of unemployment and decrease in employment fall into this period. While in 1989–1990 unemployment practically did not exist, in 1991 it became a reality. A proof to that fact are the statistics of registered unemployment, since the first receivers of unemployment benefit were registered in the summer of 1991.[14]

However, the fall in GDP has not led to high unemployment. Unemployment in Estonia has increased gradually, and there has been no explosion of unemployment, including social disturbances, massive unemployment etc In the March of 1999, the registered unemployment rate was 6.7%, and ILO unemployment rate was 11.7%.

The main reason for moderate unemployment growth is a sharp drop in labour force participation. Other factors include initial exchange rate undervaluation (which helped to maintain average enterprise profit rates), relatively flexible labour markets, low unemployment benefits, and net emigration to the Former Soviet Union (FSU). We can discuss these issues later in greater detail.

In the beginning of 1999, Estonia suffered from a rapid increase in the unemployment rate. It was clear to the beginning of the year 2000, that there was the evidence of increasing structural unemployment. We can assume that part of the cyclical unemployment, caused by external shocks (Russian crises) also was responsible for structural unemployment

.

[14] The first laws regulating unemployment were adopted and the Estonian Labour Market Board was formed in 1990.

Table 2.2. ***Population aged 15–69 by economic status, 1989–1997***
(annual average, thousands)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total population (15-69)	**1096.4**	**1102.3**	**1104.0**	**1101.2**	**1079.9**	**1069.4**	**1061.6**	**1054.1**	**1047.0**	**1044.2**
Labour force	**842.6**	**831.7**	**819.8**	**794.8**	**757.8**	**749.4**	**726.9**	**717.6**	**713.5**	**706.4**
Employed	**837.9**	**826.4**	**807.8**	**765.7**	**708.1**	**692.6**	**656.1**	**645.6**	**644.1**	**636.2**
Participation rate, %	**76.9**	**75.5**	**74.3**	**72.2**	**70.2**	**70.1**	**68.5**	**68.1**	**68.1**	**67.7**
Employment by sectors										
Primary	**177.3**	**173.9**	**164.7**	**145.8**	**117.6**	**101.0**	**69.0**	**64.6**	**60.5**	**57.8**
Secondary	**310.8**	**304.4**	**294.1**	**271.7**	**233.4**	**223.7**	**223.4**	**216.4**	**216.2**	**212.4**
Tertiary	**349.8**	**348.1**	**349.0**	**348.1**	**357.1**	**367.9**	**363.7**	**364.6**	**367.4**	**366.1**
Unemployed	**(4.7)**	**5.3**	**12.0**	**29.1**	**49.6**	**56.7**	**70.9**	**71.9**	**69.4**	**70.2**
Inactive	**253.8**	**270.5**	**284.2**	**306.4**	**322.1**	**320.1**	**334.6**	**336.5**	**333.6**	**337.8**
Unemployment rate, %	**(0.6)**	**0.6**	**1.5**	**3.7**	**6.5**	**7.6**	**9.7**	**10.0**	**9.7**	**9.9**

Notes ( ) data is based on 20-39 persons of the sample
Source: ELFS data

Fiscal policy

The budget deficit of the Estonian government has been both positive and negative in the 1990's, according to different international measurement standards. Even though the size of the deficit has been conservative, it was still larger than the 1% of GDP. In addition, the fact that misleading terminology ignores international standards and can damage foreign investors' confidence, especially if the government proclaims that the budget is balanced when actually the overall deficit has been growing rapidly over the period from 1994-1996. (Saarniit, 1997)

Since 1995, the deteriorating current account deficit became the main concern of the fiscal policy and the government started to target fiscal deficits. By setting low ceilings on the fiscal deficit the Government aimed at dampening domestic demand and keeping the domestic economy from "overheating".

The role of fiscal policy became crucial in 1997-1998. By the spring of 1997, current account deficit exceeded 14% of GDP, and the domestic credit growth was over 70%. Under these circumstances the government made a decisions to raise the public savings as much as possible. This brought along a drastic change: in the first quarter of 1997 the general Government budget was practically balanced, reaching a surplus of 5% of GDP in the third quarter and more that 2% of GDP in the fourth quarter. The overall annual surplus of over 2% GDP was generated in the second half of 1the year (Estonian Bank, 1999). During the period of surplus generating fiscal policy the Stabilisation Reserve Fund abroad served the aim of reducing domestic demand and sustaining foreign investor confidence in economic policy

The 1999 budget was based on far too optimistic assumptions, including 6% GDP growth, while actually GDP declined 1.4 %. As the result the government budget deficit as the share of GDP was 4.7% in 1999 (Estonian Bank, 2000B).

Annually balanced budgets have both positive and negative influence to overall macroeconomic environment. From the positive side we see that balanced budget helps to keep state expenditure under control and Estonia already fulfils Maastricht criteria for those who want to join Economic and Monetary Union (EMU). This gives a lot of credibility to Estonia in the course of accession negotiations.

From the other point of view such restrictive fiscal policy does not enable to government to implement long-run policy planning. This is especially important if we consider long-term planning of social policy issues, such as pension reform for example.

Foreign trade

One of the characteristic features of the U.S.S.R. republics were their very open economies. Of course, most of the trade took place within the USSR and with other socialist countries. At the end of 1980's, average weighted share of total trade as a per cent of GDP was 29% in the USSR, compared to the average 23% in EC countries. However, excluding Russia from the statistics, the average share reached 47% of GDP, including 64% in Estonia and 55% in Latvia and Lithuania. (Kuddo; 1997)

Estonia's share of foreign trade with OECD countries, which was negligible in the beginning of 1990's, increased to nearly 50 per cent of total trade by the third quarter of 1992.

In 1992 radical changes in the structure of Estonian foreign trade took place. The following table 2.3. demonstrates that in 1991, the main trade partner of Estonia was Russia. Its share of total imports and of total exports was 45.9 per cent and 56.5 per cent respectively.

Table 2.3. ***Estonian import and export by main trade partners***

Country	1991	1992	1993	1994	1995	1996	1997	1998	1999
Export									
Finland	**2.3**	**21.2**	**20.7**	**17.9**	**21.5**	**18.3**	**15.7**	**18.7**	**19.4**
Sweden	**0.5**	**7.7**	**9.5**	**10.8**	**10.9**	**11.6**	**13.5**	**16.7**	**18.8**
Russia	**56.5**	**20.8**	**22.6**	**23.1**	**17.7**	**16.5**	**18.8**	**13.4**	**9.2**
Latvia	**7.7**	**10.6**	**8.6**	**8.2**	**7.5**	**8.3**	**8.6**	**9.4**	**8.7**
Import									
Finland	**2.0**	**22.6**	**27.9**	**29.9**	**32.6**	**29.1**	**23.4**	**22.6**	**22.8**
Russia	**45.9**	**28.4**	**17.2**	**16.7**	**16.1**	**13.6**	**14.4**	**11.1**	**13.5**
Germany	**0.8**	**8.3**	**10.8**	**10**	**9.6**	**10**	**10**	**10.8**	**9.3**
Sweden	**0.8**	**5.9**	**8.9**	**8.9**	**8.5**	**8.2**	**9.1**	**9**	**9.3**

Source: Statistical Office of Estonia, Statistical Yearbook of Estonia 2000

Dramatic changes in foreign trade took place in the second half of 1992 after the introduction of the Estonian national currency. One important reason why trade with the former Soviet Union has decreased is the financial difficulties at CIS countries. The Estonian national currency was domestically convertible but Russian roubles were not. This generated additional problems in financial transactions and most deals with the former Soviet republics are made in hard currency. Secondly, money transfers were carried out very slowly and the inefficient banking system caused a lot of payment problems.

All this led to a very rapid reorientation of Estonian foreign trade. In 1999 the biggest trade partners were Finland, Sweden, Russia, Latvia and Germany.

Rapid reorientation of trade assisted Estonian firms relatively quickly to restructure their production. Therefore the period of implementation of forced vacation was relatively short in Estonia (Eamets, 1994). Mostly such kinds of "labour hoarding" were used only in 1992 and 1993.

Balance of payments

At the end of 1997 the overall Balance of Payments situation was positive. That meant the reserves of the central bank increased. The financial account was in surplus while the Current Account was negative. A more negative trade balance was balanced by an increase in the service balance. The nominal increase in the trade deficit was more than 65%. The trade deficit constitutes 14% from GDP and this ratio is enormously high even for a developing country. One-fourth from the current account deficit was caused by an income balance deficit (- 2 046.7 mill EEK). While income earned by Estonian residents abroad was roughly the same as in 1996, the income of non-residents earned in Estonia tripled. Fortunately one-third of this income was reinvested into the Estonian economy through foreign direct investments (FDI).

If in 1996 the amount of FDI in the balance of payments constituted 1 329.9 mill EEK, then in 1997, the total amount of direct investments was 1 812.9 mill EEK. At the same time the amount of portfolio investments increased from 1 784.4 mill EEK to 3 663.3 mill EEK. This means that a decrease in FDI was transferred to an increase in portfolio investment. The cause of the switch from direct to indirect investments may originate from the exhaustion of one-time prospective FDI-projects in combination with attractive rates of return on portfolio investments. From a long-run economic perspective, the increase in portfolio investments, as opposed to foreign direct investment, may impede the transition process, because the transfer of know-how through FDI is diminished.

From the other point of view the picture changed completely in 1998 when direct investments increased drastically. The main reason for such increase was intervention of Swedish banks in the Estonian banking sector. Two bigger commercial banks were taken over by two Swedish banks: Hansabank by Swedbank (59% of shares) and Ühispank by Skandinaviska Enskilda Banken (32% of shares). This definitely increased the credibility of the Estonian banking sector and gave to foreign investors positive signals about Estonian economy.

Table 2.4. ***Balance of Payments in Estonia in 1996-1999 (million EEK)***

Item	1996	1997	1998	1999
Current Account	**-5 108.5**	**-8 452.1**	**-6 752.0**	**-4 636.7**
Trade Balance	**-12 589.8**	**-16 470.8**	**-15 718.4**	**-12 938.7**
Services: net	**6 245.0**	**8 465.9**	**8 049.2**	**8 643.1**
Income: net	**-26.2**	**-2 046.7**	**-1 164.0**	**-1 783.2**
Transfers: net	**1 210.1**	**1 599.5**	**2 081.2**	**1 442.1**
Capital and Financial Account	**6 596.4**	**11 477.0**	**6 872.5**	**7 114.6**
Capital Account	**-7.8**	**-2.0**	**25.2**	**16.5**
Financial Account	**6 604.2**	**11 479.0**	**6 847.3**	**7 098.1**
Direct Investment	**1 329.9**	**1 812.9**	**7 992.4**	**3 360.7**
Portfolio Investment	**1 784.4**	**3 663.3**	**-23.4**	**177.2**
Other investment	**3 489.9**	**6 002.8**	**-1 121.7**	**3 560.2**
Errors and omissions	**- 259.5**	**-368.8**	**5.9**	**-296.7**
Overall Balance	**1 228.4**	**2 771.3**	**126.4**	**2 181.2**
Reserve Assets	**-1 228.4**	**-2 771.3**	**-126.4**	**-2 181.2**

Source: Bank of Estonia: http://www.ee/epbe/et/bilanss.html

Finally there is an automatic stabilisation process which will help to balance the overall balance of payments. Because of the currency board system, the Estonian Bank does not have the right to

increase money supply without increasing central bank reserves. In the Estonian case, we can see that the crises in financial markets in 1997 caused sharp increases in interest rates. Increase of interest rates has caused a decline of aggregate demand (because both consumption and investments have declined) and also it means that the inflow of foreign capital has slowed down. Money supply has declined as well. Attractiveness of the Estonian economy has decreased. All these factors together have caused a decline in imports, which may balance the trade deficit.

The balance of payments for 1999 shows the improvement of the international balance of the Estonian economy and its openness. Due to the decrease in domestic demand the current account deficit decreased to 4.6 billion kroons and formed 6.3% of the expected gross domestic product (GDP). It was smaller by nearly one third than in 1998 (6.8 billion kroons, i.e. 9.2% of the GDP). Net capital inflow was considerably bigger than the current account deficit and the overall balance of the balance of payments was positive.

In 1999 direct investments into Estonia were nearly 4.5 billion kroons. Three quarters of them were investments into equity capital and reinvested profit. This shows the increasing credibility of Estonian economy among foreign investors, in spite of the general economic recession in 1999. Half of the investments were made into industry as well as transport, storage and the communication sector. Significant also were investments into finance. As usual, two thirds of foreign investors were from Finland and Sweden. (Estonian Bank, 2000B)

In the case of other investments, net outflow was replaced by 3.6-billion kroon net inflow. This was mostly connected with the increased loan burden of all sectors of the economy. Three quarters of loans were long-term. Deposits of non-residents in the Estonian banks grew by nearly 1.5 billion kroons. Other capital outflow was mostly influenced by the increase in government and banking sector deposits abroad in the first quarter. In the second half of the year both the government and banks brought back home more money than they transferred abroad.

FDI have played a great role in the development of the Estonian economy. According to the author's viewpoint high FDI inflow has been one of the major factors in the recovery of the Estonian economy after the initial transformation shock. FDI can influence employment in different ways. Mickiewicz et al have listed several factors characterising FDI influence on employment in transition economies. They found that FDI is operating as a buffer either generating new or maintaining existing employment. Also they support the idea that FDI can contribute to domestically generating employment and recovery rather than the view that FDI can lead to growth or generate the bulk of manufacturing employment. Thirdly, they showed in their paper that the increasing differences in sectoral distribution of FDI employment across countries are closely related to the relative order of FDI inflows per capita. That means that the more countries receive FDI inflows it is more likely that various types of FDI will emerge (Mickiewicz et al, 2000).

Monetary policy and currency reform

Estonia was the first country of the FSU to leave the rouble zone. Currency reform based on the currency board system was introduced in mid 1992[15]. The Estonian kroon is fully (100%) guaranteed by the Bank of Estonian's foreign reserves and the Estonian kroon is pegged to the German mark at a rate 1DEM=8EEK. From January 1999 EEK is pegged to EUR

[15] For more details about currency board system see Schuler (1998).

(1EUR=15.646EEK). Because EEK was undervaluated at the moment of creation, Estonia has managed to keep the exchange rate unchanged during whole transition, despite relatively high inflation.

In Estonia, The Bank of Estonia is responsible for maintaining the Currency Board system. Due to limits on the use of monetary policy instruments the main tools are regulations for commercial banks and the supervision of commercial banks.

Estonia's economy is characterised by the convertibility of their national currencies. Estonia has abolished all restrictions on capital movements and foreign exchange accounts.

The Estonian kroon has undergone a significant real appreciation since the start of monetary reforms in June 1992. Measured in US dollars, the level of the CPI had by June 1995 grown 4.5 times and his translates into average annual increases in dollar prices of 65% in Estonia. Yet, in spite of massive real appreciation, exports have expanded rapidly.

The Estonian banking system was in crisis at the end of 1992. Banks failed to carry out their creditors' orders. At the end of 1992 the three biggest commercial banks were placed under moratorium by the Bank of Estonia. Later the biggest commercial bank - Tartu Commercial Bank was liquidated. After the banking crisis The Bank of Estonia strengthened is supervisory activities and tightened regulations concerning the capital adequacy ratio, banks' minimum capital requirement etc. As a result, these measures, together with general economic developments, helped to rationalise the banking sector. In 1991, there were more than 40 commercial banks, however the number declined to 7 by the end of 1999.

Crises in the banking sector have finally strengthened and increased the credibility of the Estonian economy. Firms and households have much more guarantees in financial transactions compared with some other CEE countries, because number of banks have declined to 7 and a majority of them consists of commercial banks which are owned by large Scandinavian banks. A stable financial situation enables households and firms to make more long-term plans and the labour market becomes more stable.

Here we can see again that one important policy tool- monetary policy is restricted. The Bank of Estonian does not have most of the "ordinary tools", like issuing bonds, market interventions, printing extra money etc. The Currency Board works as an automatic stabiliser. Money supply is restricted, depending only on inflow of foreign currency, so we can talk about a rigid monetary policy as well.

Privatisation

In 1991, Estonia passed the Law on the Privatisation of State-Owned Trade and Service Enterprises. This legislation was amended in early 1991 to permit the sale of all small enterprises, and by the end of 1993 less than 20% of all service establishments were state owned. In 1994 the rules of small-scale privatisation were relaxed further, permitting enterprises to be sold on a best-price basis.

The privatisation of large enterprises has been more complex. Various methods have been applied, such as auctions, employee buy-outs and direct sales of shares. Use of the bankruptcy law to transfer assets into private hands has also become increasingly common.

Advice and consultation on privatisation was requested from the German Treuhandanstalt, which had established a Treuhand-East European Consultancy branch in early 1992. This institution was established for offering its experience to Eastern countries of the former Soviet bloc in their endeavours to transform their economies to Western market policies, with the centrepiece of this transformation process being the privatisation of enterprises, land, buildings and other nationalised assets.

According to the estimations of experts of the Ministry of Finance most of the manufacturing firms are in private hands and banking was also almost completely privatised by 1998. Privatisation of the infrastructure started in 1997 and, therefore, the share of the private sector was not yet very high (10-25%) in 1998. Land reform is a bottleneck in Estonian ownership reform. Only 5-8% of total state owned land had been privatised in 1998. According to ownership reform, 55-60% of total land was returned to former owners (restitution) and 85% of which is compensated by vouchers.

Summary of macroeconomic developments

The Estonian economy started to recover from economic recession in 1995, when GDP showed a positive trend for the first time. Since than this trend has continued. The highest GDP growth rate was achieved in 1997.

A rapid output decline in the early years of transition was not accompanied with a drastic increase in unemployment. There were other factors, which influenced a moderate increase in unemployment.

- Relatively high inflation had not much influence on the labour market in the first year of transition, because the Currency Board system helped stop hyperinflation quickly in 1992.

- The Currency Board-type monetary system gives credibility to the Estonian economy and helps to prevent speculation in the Estonian currency. Undervaluation of the kroon made Estonian goods competitive in the international market and helped firms to find new markets.

- The trade deficit is a permanent problem in the Estonian economy, its worst year was 1997. Then it constituted 14% of GDP. This ratio is enormously high even for a developing country. Fortunately later years have showed the declining trends in the trade deficit. The high trade deficit is balanced with a positive capital account (high inflow of investments).

- FDI have played a great role in the development of Estonian economy. According to the author's viewpoint high FDI inflow has been one of the major factors in the Estonian economy's recovery after the initial transformation shock.

- The number of commercial banks has declined to 7 and the majority of the market are occupied by 2 bigger commercial banks owned by large Scandinavian banks. Stable financial situation enables households and firms make more long-run plans and labour market becomes more stable.

- The main reason for the moderate unemployment growth was a sharp drop in labour force participation. Other factors include initial exchange rate undervaluation (which helped to maintain average enterprise profit rates), relatively flexible labour markets, low unemployment

benefits, and net emigration to the FSU.

- Most of the business sector is privately owned in Estonia. The bottleneck of Estonian privatisation has been the privatisation of land, due to a very slow and complicated legal procedure of registration.

Monetary policy and fiscal policy are rigid, so this explains why social policy and particularly labour policy should be very flexible. By flexibility we mean that labour policy has been (financially) limited, therefore low unemployment benefit worked as a strong disincentive for long job search period. We can see in our later chapter that such a flexible labour policy has been one of the reasons why the increase in unemployment level in the early years of transition has been relatively moderate.

The most important changes in Estonian economy are presented chronologically at the table 2.5.

Table 2.5. Chronology of economic developments in Estonia

year(s)	Economic changes	General macroeconomic changes	Labour market and unemployment (ILO)
1989-1991	Pre-reform period	Estonia was part of the Soviet market. First independent private commercial banks were established. Hyperinflation in 1991 (Moscow started to sell oil and other inputs to Estonian using world price level).	More than 20% of the labour force was employed in agriculture and 42 % in the service sector. Unemployment is very low.
1992	Beginning of economic reforms	Monetary reform – a Currency Board type monetary system was established. Reorientation of foreign trade from the Russian market to western markets. Monthly inflation slowed down to single digit numbers.	Unemployment started to increase, but is still relatively low: 3.7% according to ILO standards.
1993-1994	Recession	Booming banking sector had its first crises. The Estonian Bank introduced new regulations for commercial banks, the number of banks declined by half. As a result of liberal foreign trade and high competition in non-tradable goods sector, Estonian firms had difficulties adjusting themselves for a completely changing market situation. Yearly inflation still relatively high (40% in 1994).	Unemployment started to increase, in 1994 unemployment reached to 7.7%. Highest yearly employment decline in 1993 (-6.8%).
1995-1996	Recovery	GDP growth around 4-5% per year. Inflation is still around 20-30% per year. Rising incomes and economic growth caused a rapid increase in	Unemployment stabilised (on average around 10%).

		imports. Increasing trade deficit is balanced by capital inflow.	
1997	Economic boom and Stock Exchange collapse	GDP grew by 11.4% in 1997. Stock Exchange boom caused index TALSE to increase more than 800% in 1997. In September 1997, the stock market collapsed. Crises in financial markets lead to several banks going bankrupt. Imports increase fast. Trade deficit is 14% from GDP in 1997.	Unemployment rate is 10%.
1998-1999	Recession	Economic recession caused by banking sector crises in 1997 and Russian financial crises. GDP declined in 1999 by 1.3% Declining income reduced imports, and caused a total trade deficit. In spite of the recession Estonia is still very attractive for foreign capital. Estonian firms are successfully looking for new markets in neighbouring countries (Latvia and Lithuania), especially in banking, real estate businesses and IT. Estonia is one of the leading countries by internet connection among CEECs. Yearly inflation slowed down to single figures (3.4% in 1999).	Unemployment started to increase in 1999. Less than 9% of labour force are employed in agriculture, in service sector more than 60%.
2000	Recovery	The first half of the year shows that the economy started to increase again. Preliminary prognoses predict GDP growth of around 5-6%	Rapid increase in the unemployment at the beginning of 2000. According to ELFS data the ILO unemployment reached 14.8% by the first quarter of 2000

Source: Author's views

2.2. Changes in employment: Estonia and other CEE countries

Political, economic and social reforms have completely reshaped the labour markets of all the transition countries. The immediate reaction to economic uncertainty was a sharp decline in demand for labour. External shocks such as the break-up of the USSR and the collapse of the common market of the former Eastern bloc occurred during the same period as internal shocks caused by economic reform and stabilisation programmes. This combination resulted in sharp production losses and pulled the national economies of these countries into a dragging transition crisis. There was a certain delay before the effects on employment were felt, as enterprises were at first reluctant to dismiss redundant workers, assuming that the economic recession would be a

short-term crisis. As economic pressures intensified, the effect on employment in the different countries was determined by a number of factors, such as the scale of initial imbalances, the speed of reform, the type of privatisation and the progress made, proximity to Western countries, and entrepreneurial tradition.

The transition process brought fundamental changes to the composition of employment by sector and by branches. Serious employment losses were experienced by the industrial sector (Latvia, Romania and Lithuania) and in the most countries in agriculture. Most dramatic decline of agricultural employment took place in Estonia where index dropped to 35 % compared with 1992 level[16]. As a result, there was long term unemployment in many rural areas. Agricultural employment declined in other countries as well, except Romania and Lithuania. This is a rather interesting phenomenon, because both countries are characterised by agriculture with small and medium-sized private farmers. These farmers are the owners of small plots of land, which they cultivate with extremely modest technical means. In general, they have been able to earn only small incomes from sales of their products on the local market. The same is true also for countries like Estonia, where we can also observe a drastic drop in employment.

Table 2.6. ***Index of employment changes by sectors, registered data, 1997 compared with 1992*** *(1992=100)*

	Agriculture	Industry	Service
Romania	**98**	**74**	**87**
Estonia*	**35**	**78**	**104**
Slovakia	**71**	**89**	**105**
Lithuania	**100**	**64**	**108**
Hungary	**62**	**84**	**98**
Poland	**82**	**104**	**110**

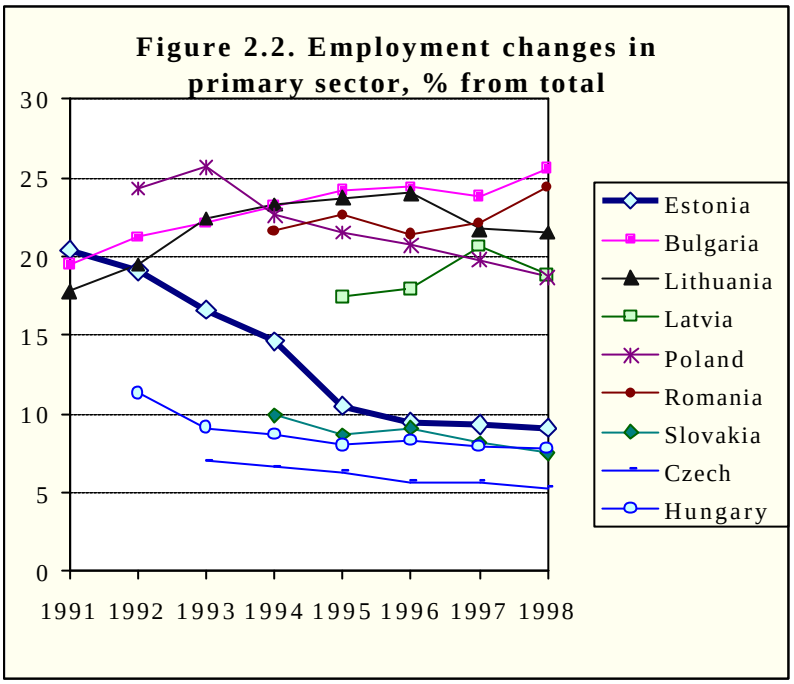
Notes: *data from LFS

Source: Eamets and Arro, 2000

Lithuania especially suffered from a decline in the industrial sector, only 64% of industrial employment was left in 1997, compared with the level of 1992. Hungary and Romania were the only countries where no sectors have reached the employment level of 1992. Poland is the only country in the observation group where the economy reached its pre-reform period GDP level. This is due to a relatively fast increase of employment in the service sector and a somewhat more moderate increase in the industrial employment. Poland is the only country where total employment in 1997 was higher than it was in 1993 (See figure A2 in appendix).

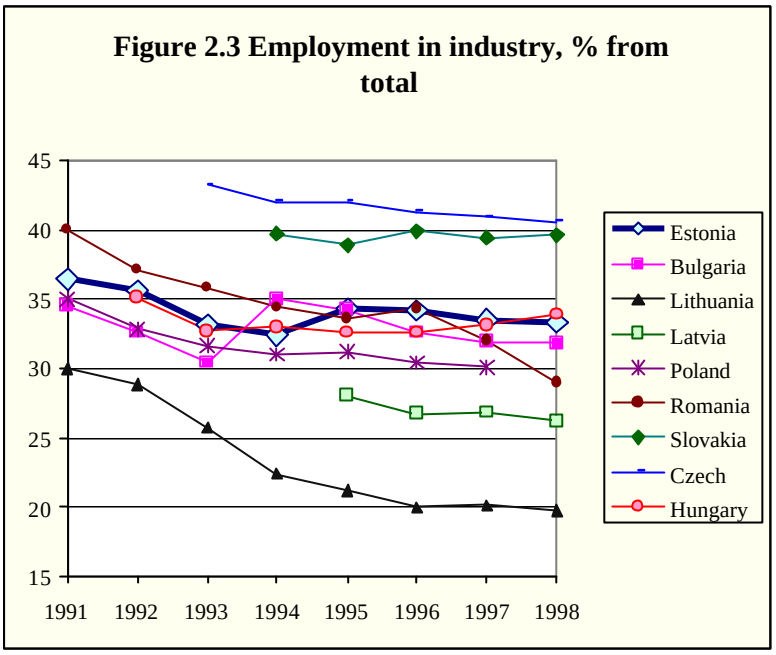
[16] 1992 was the year of starting year of economic reforms for Baltic countries, but not for the other Central European countries. Unfortunately the data from pre-reform time were not available from background studies, and therefore this year (1992) reflects different stages of development of observed countries.

What are the results of these sectoral shifts in employment shares? We analyse these changes in Figure A1 in the appendix. If we look at the distribution of labour between three main sectors we get following results. The share of employment in the service sector is largest in Hungary, next come Estonia and Latvia. Also we see clearly "industrialised" countries, like the Czech Republic, Slovakia and Slovenia in our sample, where around 40 % of people are employed in industry. Finally we have "agricultural" countries like Bulgaria and Romania.

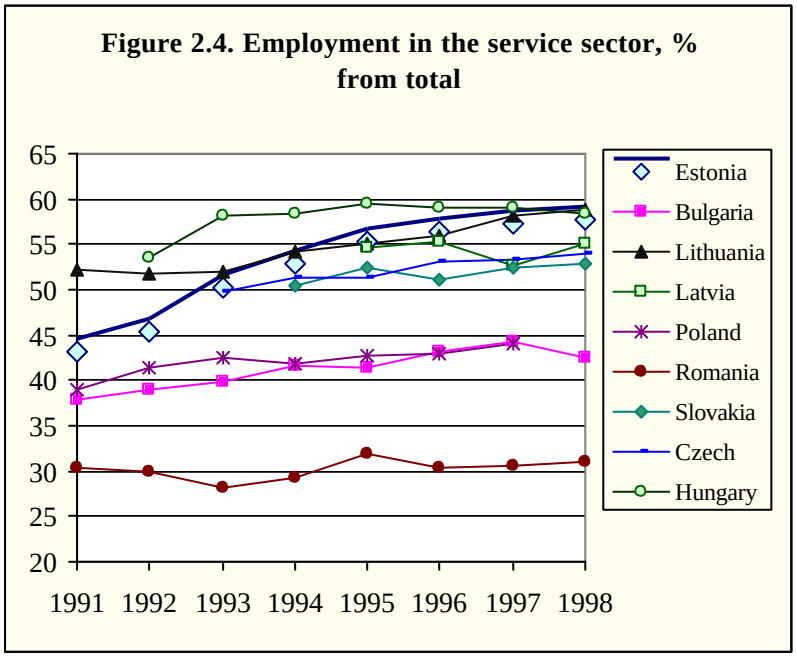


Source: Eamets and Arro, 2000

If to look at the dynamics of shares of different sectors and analyse how this distribution was achieved, we see that in agriculture we have clearly two groups of countries (See figure 2.2.). One group represents countries where the employment share of those who work in agriculture is around 20 % or higher and another group where the same share is 10 % or less. Low employment in agriculture in developed countries is based on high efficiency, while in most of the CEE countries we are simply dealing with decreases in production. We should also keep in mind that we are dealing here with the overall de-collectivisation of agriculture and the re-establishment of small and medium-sized private farmers. The only exception was Poland where agriculture was based on small farms before economic reforms.



Source: Eamets and Arro, 2000



Source: Eamets and Arro, 2000

The unique case is Estonia who has shifted from one group to another during 7 years. This is

explained by the absolute decline in agricultural employment. Lithuania has shown a dramatic decline in the share of employment in industry. It has dropped from 30% to 20%, a similar decline took place in Romania (from 40% to 32%). Only Slovakia managed to keep its industrial employment share stable. Estonia made the biggest employment increase, in relative terms, in the service sector. The share of those who worked in the service sector increased from 43% to 58%. We can conclude that in relative terms the biggest changes took place in Estonia (decline in agriculture and increase in the service sector) followed by Lithuania with a drastic decline in industry and an increase in service sector employment.

However, these figures relate only to formal employment while many services are performed as an informal activity for tax reasons. In addition, certain services are still provided by enterprises and these are included in the industry figures relating to the main activity of the enterprise, thus reducing statistically the share of services. As a result of declining real incomes, the population can no longer afford to buy many consumer services, and this has a negative impact on the further development of the sector. The extent of the statistical distortion is not known.

Some findings concerning above mentioned changes in CEE countries (including Estonia) are summarised in table 2.7.

Table 2.7. ***Changes in employment and self-employment***

	EE	CZ	RO	HU	SK	PO	LA	LI	BU
Total employment	⇩	⇩	⇩	⇩	⇙	⇧	⇩	⇩	⇙
Employment in agriculture	⇩	⇩	⇧	⇩	⇩	⇩	⇗	⇧	⇧
Employment in manufacturing	⇙	⇙	⇩	⇙	⇔	⇩	⇙	⇩	⇙
Employment in services	⇧	⇧	⇔	⇧	⇗	⇧	⇗	⇧	⇧
Self-employment	⇧	⇧	⇗	⇧	⇗	⇙	⇗	⇗	-

Notes: ⇧ increase, ⇗ modest increase (less than 3% points), ⇔stable, ⇙modest decline, ⇩decline; EE(Estonia), CZ(Czech republic), RO(Romania), HU(Hungary), SK(Slovakia), PO(Poland), LA(Latvia), LI(Lithuania), Shadow area indicates biggest change (increase or decline)

Shadow areas in table 2.7. indicate the biggest changes (increase or decline)[17]. Most drastic changes in employment were as follows:

- Total decline of employment was highest in Latvia and Estonia, in 1993-1998. As we see from our decomposition analysis of employment decline, in most cases the dramatic declines in employment were achieved via an increase in the number of inactive population rather than unemployment.

- Employment decline in agriculture was highest in Estonia, compared with other transition economies.

- The steepest decline of the employment share in manufacturing took place in Lithuania and Romania.

- In relative terms the increase in employment in the service sector has been most rapid in

[17] These changes are not 100% comparable because available time series were of different length. But we tried to point out the main tendencies.

Estonia, compared with other CEE countries.

2.3. Structural adjustments in Estonian labour market

In previous section we divided economic activities into three sectors. Next we took a close look at employment changes in Estonia by industries using ISCI classification of economic activities. Data are presented in tables in the appendixes.

As we can see from the figure 2.5. only five sectors have achieved in absolute terms the employment level of 1989, for 1998.

Changes in employment can be grouped as follows:

(i) The first group includes agriculture, fishing, mining and manufacturing, or, in other words industries which have faced the constant decrease of employment. The given processes can be considered natural and the reason for the decrease was an unreasonably high employment rate in the industries in the Estonian economy. But even in the relatively highly industrialised transition economies like the Czech Republic the same tendencies took place (Gottvald *et al*.,1994)

Employment in agriculture and fishing has constantly decreased during the entire period under examination. By 1998, absolute employment in agriculture compared with 1989 had decreased –65.1%, in fishing –80.4%, in mining –33.3% and in manufacturing –35.8%.

(ii) The second group involves industries in which the decrease of employment could be observed from 1989 to 1991-1992, but which, during the oncoming years, faced a rise in employment. The group includes real estate and business activities, public administration, education and other personal services. Also we can see from tables in the annexes that these are industries where employment rose in relative terms between 1993-1998.

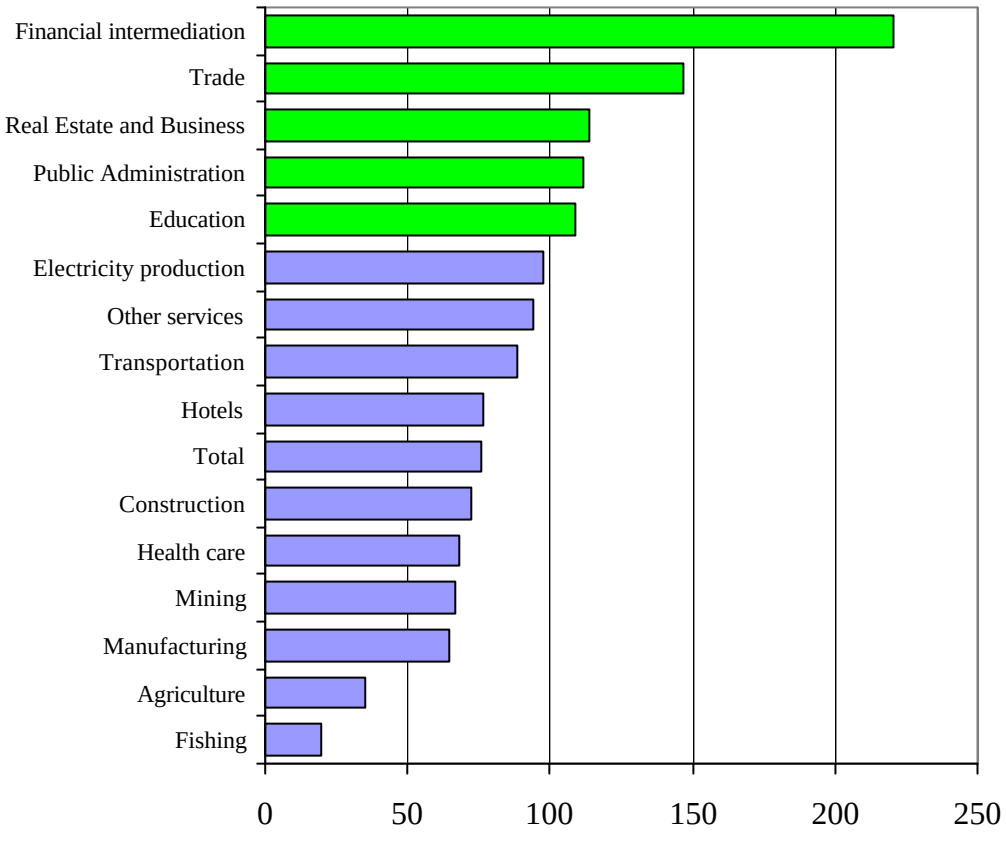
The above-mentioned change in employment can be explained by general changes in the whole economic situation. For instance, real estate and business activities lacked practically corresponding institutions before 1992. In a command economy the real estate market was almost non-existent, thus there was no need for corresponding institutions offering their services (real estate and various advisory companies). There were only certain state institutions like local housing authorities that bore a certain responsibility for that sphere of life.

Real estate and business activities were characterised by a constant and rapid decrease in employment up to 1992. In 1992 compared to 1989 employment had decreased -14.3%. Since 1993 employment has increased exceeding the level of 1989 by 14%, in 1998.

In public administration the decrease of employment could be observed up to 1991. Since 1992 employment has grown rapidly: in 1992 exceeding the 1989 level and in 1993 the growth was 7.5% per year. The total increase of employment in public administration was 11.7%.

In case of business and real estate services the increase of employment was primarily due to economic reasons. In the conditions of the market economy the above-mentioned areas saw a rapid growth since they were a lot more open to private entrepreneurship and required less financial assets. In the case of public administration changes in employment were due to political reasons.

Figure 2.5. Changes in employment levels by industries in 1989-1998 (1989=100)



Source: Statistical Office of Estonia

After Estonia had regained its independence several national structures, required in a politically independent state, had to be (re)established. Estonia lacked its own army, border-guard and customs. Moreover, the police, prisons and rescue services had to be reformed. The completion of administrative reform required significant financial and manpower.

Employment in education compared with 1989 had increased 8.7% by 1998. The increase in the education sector is connected with the creation of new, mostly private education institutions in Estonia.

(iii) The third group includes industries which have witnessed a constant increase in employment. It includes finances and trade.

The financial sector was characterised by an intensive growth of employment. In 1989, finance made up only 0.5% of the employment structure. By 1994 it had increased to 1.4% dragging still behind as an industry of the lowest employment. By 1998, employment in finance compared with 1989 increased 120.7%. During the Soviet period the financial sector was one of the most

centralised industries. In their essence the banks locating in Estonia were branch offices of the big national banks and they lacked any economic independence. The banks did not function as profit-earning organisations but rather as institutions of redistribution of financial resources. Redistribution of resources was conducted in accordance with the schedule established by the Central Planning Committee. Management and documentation within the bank was carried out in Russia.

The transition to a market economy created favourable conditions for commercial banking which brought with it the need to find and train appropriate staff. The first commercial bank in the Soviet Union was established in Estonia in Tartu in 1988 (Sõrg, 1995).

Commercial banking thrived in the early 1990-s. It was followed by a crisis in 1992-1993 in the course of which several commercial banks found themselves bankrupt which, in turn, brought along certain purification and reorganisation in the banking market. Subsequently there was further clarification in the banking market and quality replaced quantity.

Centralisation and management in Soviet times were the underlying reasons which determined thorough staff changes in the banks which stemmed from the former Soviet banking system. The increase in employment in the financial sector after 1993 was much due to the innovation of the staff, development of the network of branch offices and the development of other financial institutions.

Employment has also rapidly increased in trade. During the period examined employment increased by 46.5%. As a result of economic reforms the increase in trade has been most remarkable. Actually changes in the Estonian economy initially appeared in trade since after the collapse of the command economy in the late 1980-s, there was a vast wave of development. In the beginning trade developed through co-operatives which were the first free enterprise types in Estonia. As a result of the command economy there was a shortage of most commodities but which, in its turn, favoured the rapid development of trade. Today, Estonia has reached a properly working system of retail and wholesale businesses which can be characterised by specialisation accompanied by corresponding retail and wholesale chains.

(iv) The fourth group includes construction, transport and communication, health care, hotels and electricity production. This group has gone through fluctuating changes in employment during different periods of time. Also we can observe here very clearly the problem of data comparability. In 1997 the sample for LFS was relatively small and therefore in some industries like construction, electricity production etc., we can observe sharp decline in the terms of employment changes. Looking at development during 1997-1998, we can see that employment is increasing in electricity production, while other sectors are declining. In relative terms, as the share of total employment, employment has increased in the hotel and transportation sectors.

2.4. Speed and efficiency of labour reallocation in Estonia

2.4.1. The Jackman Pauna approach

In this section we use the methodology of Jackman and Pauna where they compared CEE labour allocation with similar changes in European countries. The reason was that their approach to the

labour allocation issue helps, according to the author's opinion, to explain the changes in Estonia's employment structure.

As they noticed the estimates of the comparative advantage of individual countries in particular sectors (e.g. Hare and Huges, 1992) typically built in features of the economy, such as the inherited capital stock, which will themselves change during the process of transition. Additionally, these estimates are more appropriate for traded goods sectors, than for services, though the bulk of employment as an efficient allocation is likely to be in the service sector. We agree with the idea that, for a first approximation, the structure of employment in transition economies should in the long term became more or less the same as in European market economies. The differences in the inherited employment structure of the CEE countries, as compared to a neighbouring market economy, can be attributed to the distortions of the planned economy, reflecting the material bias of production, obsolete technology and inappropriate relative factor prices (e.g. level of average income). As these features are removed, the employment structure of CEE countries should come to resemble that of Western European market economies. (Jackman and Pauna, 1997)

Jackman and Pauna (1997) were using in their analysis OECD data, which allowed comparison with the broad industrial sector. For purpose of comparison the western European countries were divided into two groups, Northern group and Southern group[18].

Using the shares of employment by industry the authors calculated an index of restructuring. An index of restructuring measures the proportion of workforce in each country which would need to change sector so as to enable the country to attain the same structure of employment as that of comparable Western economy. We calculated similar indexes for the Estonian economy and the result was that Estonia was at the same level with Hungary. The Estonian index was 15.2 compared with the Southern group and 18.7 compared with the Northern group (see table A.9. in the appendixes). The Hungarian index was 19.6 and 16.5 respectively. (Jackman and Pauna,1997).

Table 2.8. ***Excess employment: Estonia versus Nordic countries****.(%)*

	Estonia	**Nordic**	**Estonia**	**Nordic**	**Excess employment**	
	(1)	**(2)**	**(3)**	**(4)**	**(1)-(2)**	**(3)-(4)**
	1989	**1989**	**1998**	**1998**	**1989**	**1998**
Agriculture	**18.0**	**5.7**	**8.3**	**4.0**	**12.3**	**4.3**
Mining	**1.5**	**0.4**	**1.3**	**0.5**	**1.1**	**0.8**
Manufacturing	**25.7**	**19.9**	**21.9**	**18.3**	**5.7**	**3.5**
Electricity	**2.2**	**0.9**	**2.9**	**0.8**	**1.3**	**2.0**
Construction	**7.7**	**7.2**	**7.4**	**6.1**	**0.6**	**1.3**
Trade	**9.6**	**15.6**	**16.5**	**16.1**		**0.3**
Transportation	**7.8**	**7.3**	**9.1**	**7.1**	**0.5**	**2.0**
Finance	**4.5**	**8.6**	**7.4**	**11.5**		
Community services	**19.9**	**34.2**	**24.6**	**35.5**		
Total	**100**	**100**	**100**	**100**		
Index of restructuring					**21.6**	**14.2**

Source: ILO database and author's calculations

[18] Northern group was Denmark, (West) Germany, Netherlands and UK) and Southern group consists of France, Greece, Italy and Spain. It was done in order to allow considerable differences in employment in agriculture.

Estonia belongs geographically to the Baltic Sea area and we found that it is more reasonable to take Nordic countries as the comparison group (instead of large Nordic group that Jackmann and Pauna used). Nordic countries are in this context Finland, Sweden, Norway and Denmark. Also the longer time period was used.

1989 was considered to be a starting year and 1998 was the most recent year for which we had the data. In order to have comparable data we used the ILO database (See http://www.ilo.org/public/english/support/lib/dblist.htm.) The problem is that the codification of industries changed during this period, but we used broad categories of industries, so we believe that this would not influence the results. From the other point of view by accident some Nordic countries, like Sweden and Finland had economic recessions in the beginning of the 90s, caused by internal and external factors[19], as did Estonia.

First the index of restructuring was calculated based on the above mentioned methods. The results are presented in the table 2.8.

We can see from the table that index of restructuring was declined from 21.6% to 14.2%. These percentages show actually how much Estonia's employment structure differs from one of the comparable group. It shows that some positive shifts have taken place in employment reallocation. But do these shifts move in a same direction as Nordic countries? In order to analyse this we constructed some efficiency and speed measurements.

Table 2.9. ***Convergent and non-convergent changes of employment*** *(%)*

	1989	1998	Comparator country	Change in employment (2)-(1)	Employment differential (3)-(2)	Convergent	Non-convergent
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Total	837.9	636.2	636.2				
Agriculture	177.3	57.8	25.5	-119.6	-151.9	-119.6	
Mining	12.3	8.2	3.0	-4.1	-9.4	-4.1	
Manufacturing	214.9	139.1	116.6	-75.8	-98.3	-75.8	
Electricity	18.6	18.1	5.4	-0.5	-13.3	-0.5	
Construction	64.9	46.9	38.9	-18.0	-26.0	-18.0	
Trade	80.4	104.7	102.7	24.3	22.3	22.3	2.0
Transportation	65.6	57.9	45.1	-7.7	-20.4	-7.7	
Finance	37.5	46.8	73.0	9.4	35.5	9.4	
Community services	166.4	156.7	225.6	-9.6	59.3		-9.6
				|269.0|	|436.2|	|257.3|	

Source: ILO database and author's calculations

The first column (in table 2.9.) shows the employment structure in Estonia in 1989 (in thousands) and the second column the employment structure in 1998. The third column shows the hypothetical distribution of Estonia's labour force in the case if we would have had similar job percentage distribution as in comparable group (Nordic countries). This column is calculated using the employment shares presented in the previous table and the number of employed people in Estonia in 1998. This means that these changes should have been happen (ideally) if Estonia could have followed exactly the same changes in the labour structure as Nordic countries. The next two columns (4 and 5) contrast the changes in employment which have occurred with those

[19] For more details see Hankapohja, Koskela (1999)

which would have been required to replicate the employment structure of the comparable economy.

Two measures are constructed using the Jackman and Pauna approach. These are measures, which take account not only of the totality of sectoral employment changes, but also the direction of such changes. The "warranted" and "convergent" change in employment (column 5) can then be compared with actual change in employment between 1989 and 1998 (column 4). Where the two figures have the same sign, either positive or negative, we can measure the amount of restructuring achieved by the smaller of the two. Where the actual and convergent changes have opposite signs, no restructuring is deemed to have taken place (Jackmann and Pauna, 1997). Hence we can calculate the total extent of labour reallocation in the convergent direction, that is restructuring achieved (column 6), as compared with labour reallocation going in the "wrong" direction or overshooting the adjustment required (column 7).

First we ask how much reallocation "required" has taken place during these years. In order to compute it we divide the absolute sum of the values in column 6 by the absolute sum of those in column 5. This gives us measure of *speed of restructuring*. It is also possible to measure the "efficiency" of the labour market reallocation, that is the proportion of the total employment change that has been convergent towards the warranted structure. This is measured by absolute sum of values in column 6 as a proportion of absolute sum of those in column 4. The speed of restructuring was 59% and efficiency 96%. These are relatively good results, especially as the efficiency measurement shows that most of reallocation has shifted in the "right" direction.

In order to compare Estonian results with result of country inside of the group we took Denmark as an example. The results show that the speed of restructuring was 81% and efficiency 84% in Denmark for the same time period (calculations are presented in the appendixes table A10).

Jackman and Pauna found that for period 1989-1994, the best results in speed of restructuring were in Hungary (60%) next was Slovakia with 49% and for efficiency the highest rate was in Slovakia (92%) (Jackman and Pauna, 1997).

We can conclude that labour reallocation has been relatively fast in Estonia and the majority of changes have moved toward similar direction as in Nordic countries. We can say that this is a "right" direction if we agree with the assumption that Estonian economy moves towards similar employment structure as our neighbours in the North and West.

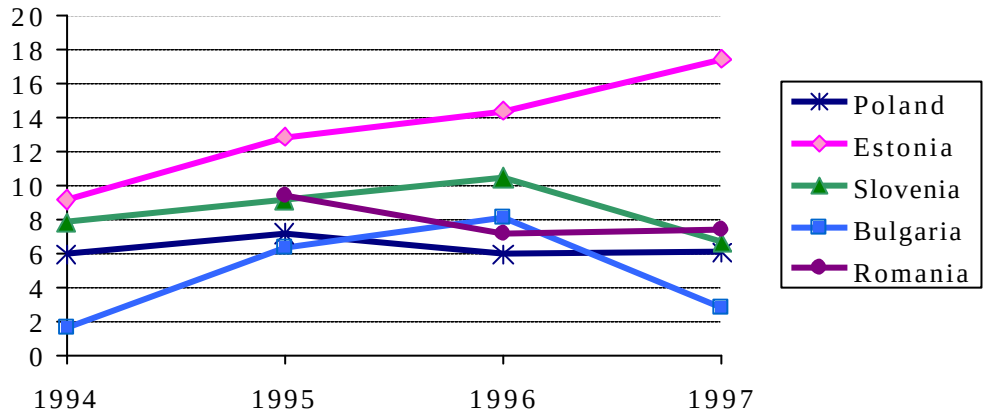
2.4.2. Job destruction and job creation

An alternative index of restructuring was calculated by Faggio and Konings using job creation and destruction data (Faggio and Konings, 1999). They used a wide data set of comparable firm level data for the five countries over the years, 1993-1997. Data covered five transition countries: Poland, Estonia, Slovenia, Bulgaria and Romania. They calculated gross job reallocation rates and excess job reallocation rates. Gross job reallocation is the sum of gross job creation and cross job destruction[20]. The difference of two measures leads to the net employment growth rate.

[20] First they computed gross job creation as the sum of all employment gains in expanding firms in a given year divided by the total employment at the beginning of the year. Likewise they computed gross job destruction as the

An alternative measure what Faggio and Konings use was called *excess job reallocation rate* and is defined as the gross job reallocation rate minus the absolute value of the net employment growth rate. This term was first introduced by Davis and Haltiwanger (Davis and Haltiwanger, 1992). This measure indicates the amount of job reallocation that results after taking into account the gross job reallocation needed to accommodate a given net employment growth. As the gross job creation rate and the gross job destruction rate measures the flexibility of the market, gross job reallocation and in particular, excess job reallocation can be interpreted as an index of restructuring. We can see from the figures that Estonia stands out as being characterised by a lot of turbulence in a labour market. As it is reported by other researchers as well, flows in Estonia are similar to those reported in the most dynamic Western economies (see also Haltiwanger and Vodopivec, 1999).

Figure 2.6. Excess job reallocation rates in selected countries



Source: Faggio, G., Konings, J. Gross Job Flows and Firm Growth in Transition Countries: Evidence Using Firm Level Data on Five Countries, *CEPR Discussion Paper No*. 2261, Oct. 1999, p. 14

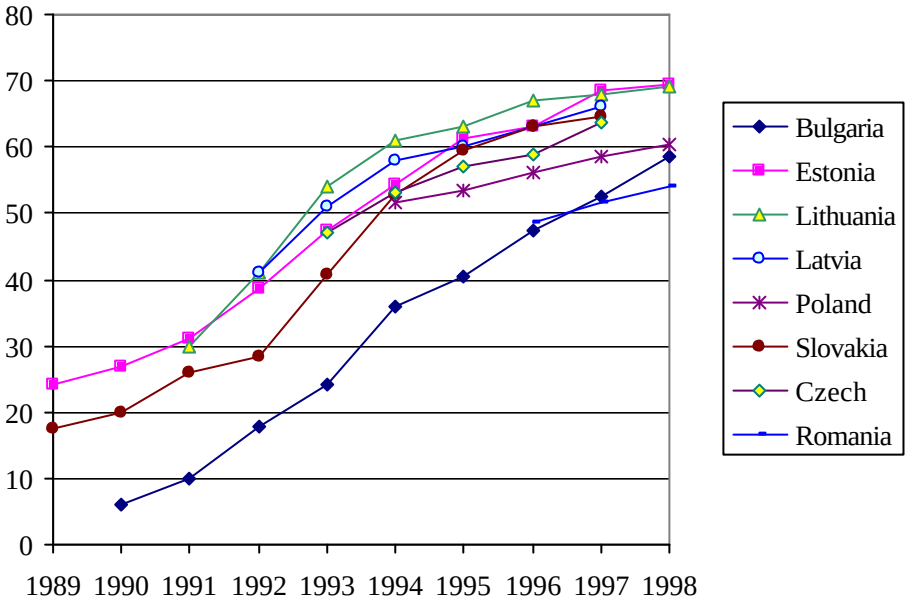
2.5. Employment in the private sector

Employment in the private sector grew considerably during the transition period. Privatisation of the economy in transition countries was carried out in two ways: on the one hand, the ownership of public sector entities was changed into private ownership (privatisation emanating from Government). On the other hand new private firms were being established or individuals left their jobs in the private sector and started own-account activity. The major part of the first privatisation was carried out in three ways: restitution (return of nationalised property), small scale privatisation and large-scale privatisation. Privatisation in general resulted in the emergence of the "really" private sector. Activity of private companies – whether privatised or established as private firms – is not much different. Companies of the first type still have burdens resulting from privatisation contracts in many countries. Such burdens concern investments and sometimes employment protection. However, a comparison with the private sector in different

sum of all employment losses in contracting firms in a given year divided by total employment at the beginning of the year.

countries is difficult because of different definitions of public sector across the countries. In 1997-1998, in most countries the share of private sector employment reached 60-70% of total employment. In most countries private employment is concentrated on small and medium size firms. Also we see, that agriculture accounts for the highest share of private employment in most countries. Exceptions are Estonia, Lithuania and the Czech Republic (CEC employment and labour market review 1999).

Figure 2.7. Private sector employment (% of total employment)



Source: Eamets and Arro, 2000

From the point of view the private employment by economic sectors we found data only on 4 countries (Bulgaria, Estonia, Lithuania and Romania). Polish data is from the OECD database (OECD, 1996). Results are presented in table 2.10.

Table 2.10. ***Private employment by sectors, selected countries*** *(%)*

	Agriculture	Industry	Service
Bulgaria 1998	**41.2**	**28.2**	**30.6**
Estonia 1998	**12.9**	**42.6**	**44.5**
Lithuania 1997	**30.9**	**32.1**	**37**
Romania 1998 II q	**68.5**	**14.0**	**17.5**
Poland 1996	**36.6**	**30.4**	**33**

Source: Eamets and Arro, 2000

Now, if we turn to the Estonian data, we can see that employment in the public sector has decreased drastically during the transition. The fastest decreases came from manufacturing, but also from the service sector. From the point of view of general economic competitiveness, the relatively large share of the private sector in the economy is positive. As a result of quick privatisation, most profit-oriented enterprises are in private ownership. As in the case of general

employment, we can state that the largest share of persons employed in the private sector is involved in the service sector.

The share of the private sector in Estonia's total employment will probably increase in the near future due to the decision to privatise several major infrastructure firms, such as power stations and the railways.

If we take a closer look at industries, in 1998 the share of the private sector in employment in Estonia was largest in the following fields:

- fishing 99.5%;
- trade 99.2%;
- manufacturing 97.8%.
- hotels, restaurants 97.2%;
- agriculture 93.7%;
- construction 93.6%;
- financial sector 92.8%.

The share of the public sector was largest in:

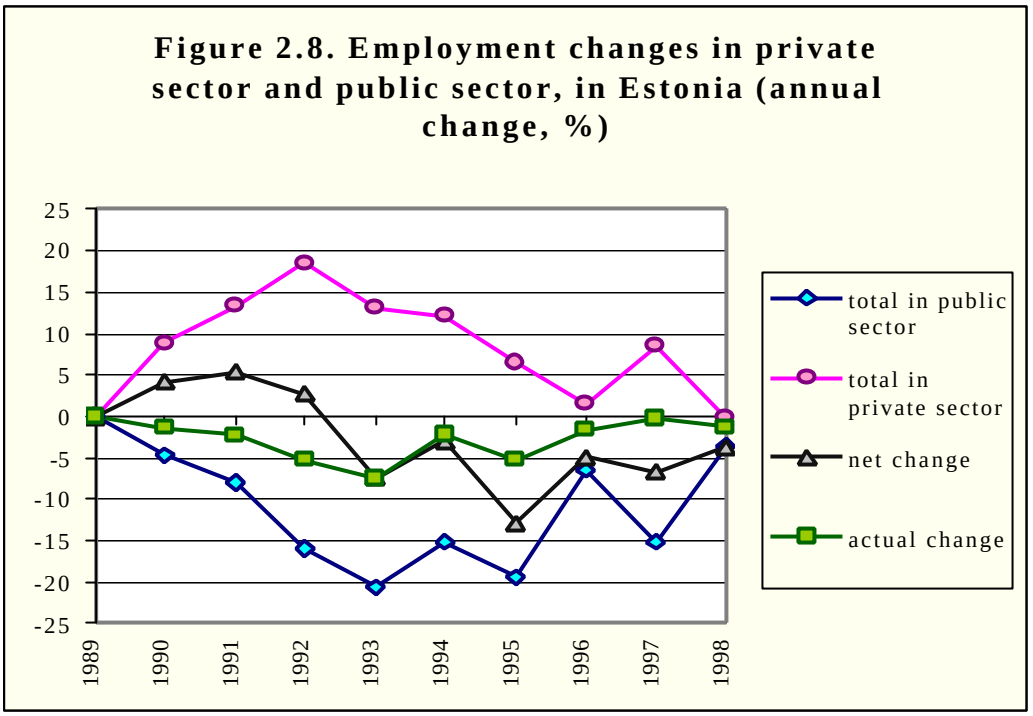
- public administration 100%;
- education 94.0%;
- health care 84.8%;
- mining and quarrying 78.7%;
- electricity production 77.4%.

Private firms increase jobs in small enterprises. According to the Estonian Enterprises Register data, employment in small firms (less than 5 people) increased almost 40% during 1994-1998. The general increase of employment in the private sector was 25.3% (Table A.11 in appendix).

Figure 2.8. presented above allows us to analyse to what extend private sector was able to absorb those workers who were laid off from public sector. These changes reflect also simple changes of firm status, when it was privatised. In order to see in what extent absorbation took place, we use annual changes in employment in two sectors and also we calculate net changes[21] based on these rates and actual employment changes, based on total employment changes.

If these two rates are identical we can say that all workers who were laid off from public sector found work in the private sector and alternatively it could mean that inflow and outflow from employment were equal.

[21] Net change is difference of two growth rates $DL=|DL_{pr}| - |DL_{pu}|$ where DL_{pr} denotes private sector employment changes and DL_{pu} denotes public sector employment changes



Source: Labour Force Survey data, author's calculations

We can see an interesting fact that before 1993, the net change was positive. This means we would expect public sector workers to be absorbed into the private sector. But at the same time total employment changes show a declining tendency. That means outflow from employment was higher than inflow. After 1994, the tendency changed and we see that actual decline in employment was smaller than expected (net changes). We can conclude that inflow rates were higher than outflow rates after 1994.

2.6. Self-employment and entrepreneurship

Self-employment and the level of entrepreneurship are important factors of general economic development and labour demand. In many cases, while the labour demand declines and the economy is in recession, self-employment could help to keep the activity rates and reduce the unemployment. Some countries experienced a relatively high share of entrepreneurship also during pre-transition countries. These are former Yugoslavia republics and Poland. In most countries (and especially in the former Soviet Union republics) free entrepreneurship is a very new and a fast developing feature of market economy.

In the following statistics the ILO data was used. We used the definitions of the United National Statistical Commission approved in 1958. According to these definitions:

(a) An employer is a person who operates his/her own economic enterprise, or engages independently in a profession or trade, and hires one or more employees.

(b) An own-account worker is a person who operates his or her own economic enterprise, or engages independently in a profession or trade, and hires no employees.

According to the labour market status there are 6 groups defined by the ICSE-93:
1. Employees; among whom countries may need and be able to distinguish "employees with stable contracts" (including "regular employees");
2. Employers;
3. Own-account workers;
4. Members of producers' cooperatives;
5. Contributing family workers;
6. Workers not classifiable by status.

We did not observe, under self-employment category, co-operative members and family members. Only categories 2 and 3 were considered. At the same time it is important to notice that these numbers consist of agricultural employment as well. This last fact has a great influence on the results. The main problem is that in countries with a relatively high share of agriculture farmers make up the majority of own-account workers. Unfortunately, data presented by the ILO do not allow us to analyse own–account workers without farmers. This is a serious shortcoming of the database and we should keep in mind a general employment structure of the countries under observation if we want to get a true picture about entrepreneurship.

As we can see from table 2.11. and figure 2.9., countries could be divided into two groups. In one group where self-employment is relatively high (because of a high number of individual farmers), more that 20 % are from total employment, as like in Romania and Poland. Lithuania is moving away from this group, which is interesting, because in general, agricultural employment has increased in Lithuania.

Table 2.11. Share of self-employment in total employment, 1998 (%)

	Employers		Own-account worker	
	1994	1998	1994	1998
Estonia	2.7	2.7	2.7	5.3
Hungary	1.8	2.7	7.0	7.3
Latvia	-	3.3	-	8.4
Lithuania	-	3.6	-	12.6
Poland	3.6	4.1	21.3	18.3
Romania*	1.3	1.3	18.6	20.1
Slovakia	1.9	2.5	4.3	4.2
Czech*	2.7	4.0	5.8	7.8
Slovenia	3.4	3.5	8.8	8.9

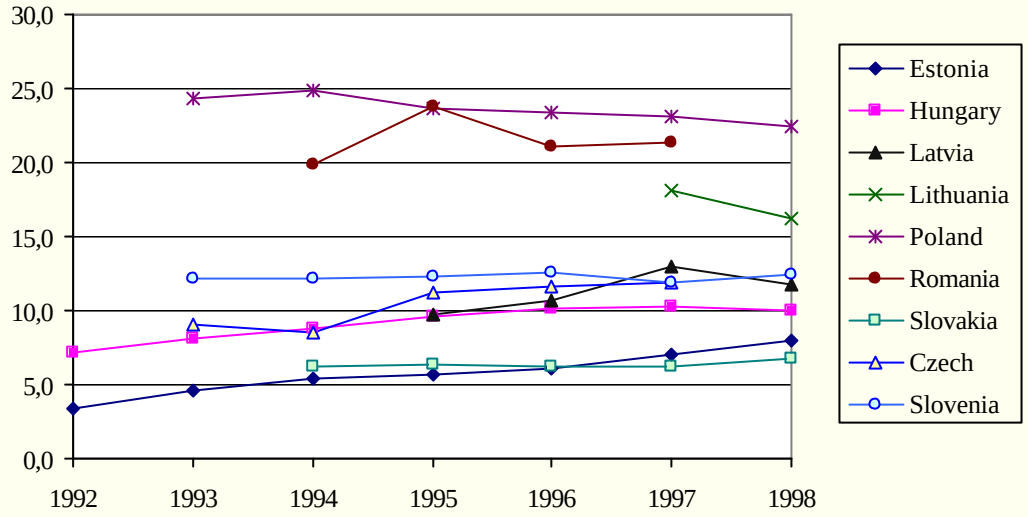
Note:*1997
Source: Eamets, Arro, 2000

The second group has self-employment rates around 10% from total employment. Obviously, because of the decline in agricultural employment in the first group, we can observe the decline of the shares, while in the second group self-employment is increasing.

In order to judge, whether entrepreneurship in a particular country is low or high, we must compare these trends with some other industrialised countries. The following table 2.12. presents some data about 7 European countries and the US. We are using the same ILO databases. We can see that there are Nordic countries with relatively high level of employers and a relatively low level of own-account workers. Germany is in the middle of the two groups, and then we have less developed or South European countries where the share of own-account workers is much higher than the share of employers. In future we will probably be able to observe similar

tendencies in the CEE countries. Countries like Romania, Bulgaria, Hungary will have a similar structure of entrepreneurs like Greece and Spain. Most likely Poland and Lithuania will follow the German pattern and Latvia and Estonia more the Nordic structure of entrepreneurship. The last statement is author's subjective opinion based on the fact that these two Baltic countries are culturally and economically closely related to the Nordic countries.

Figure 2.9. Self-employed as the share in total employment



Source: ILO database and author's calculations

Table 2.12. ***Self-employment in selected industrialised countries, 1998*** (%)

	Employers	Own-account worker
Denmark	**8.2**	**1.0**
Sweden	**10.2**	**-**
Finland	**13.4**	**0.7**
Germany	**5.0**	**5.0**
US	**7.8**	**-**
Ireland	**3.8**	**15.1**
Spain	**5.2**	**14.2**
Greece*	**7.1**	**26.1**

Note: *1997
Source: ILO database

2.7. Gender changes in employment in the Estonian labour market

In 1997, 9.1% of people were employed in agriculture, 33.3% in industry and 57.7% in the service sector in Estonia, while the corresponding figures for the EU were 5%, 29.5% and 65.6% respectively. Future increases in the overall employment rate will depend on an expansion of the service sector.

From the point of view of gender, females are employed more in the service sector and males in the primary sector. At the same time the employment of males in services has increased faster

during the observed period (table A.6 in appendix).

If we take a look at the employment structure, there are some changes in the structure of the general employment of men as far as major industries are concerned. In 1989, the economic activity with the highest employment was manufacturing. This was followed by agriculture, construction, transport and communications, and, with a relatively high share also, fishing. In 1998, the two largest industries were similar, but their share of total employment had dropped; the third position was occupied by trade and the fourth by agriculture. In comparison, the industries with the largest shares in the total employment of women in 1989 were health care, finance, education, trade and hotels. We can even say that these are "female" industries. In most industries we can observe a decline in the female share during transition. The only exceptions are hotels and restaurants, education and other personal services. The decline in employment was more significant, more profound and more rapid among women. The male population has been more successful in maintaining its former level of employment, while females have become more inactive during the transition period.

Employment rates for young people (15-24 years old) declined from 49.6 % to 37.4%. This is a natural development, because young people stay longer in initial education and training. In the EU, the average employment rate for young people was 36% in 1997.

The employment of males declined over the observed period from 83.4% to 69.2% (see table A.7 in appendix). In the EU the corresponding employment rate for males was very close to that in Estonia (70.5%) in 1997. At the same time the female employment rate was considerably higher in Estonia than the EU average: 60.4% for Estonia and 50.5% for the EU.

If we analyse total employment changes in smaller age groups (5-years interval) (see table A.8 in appendix), we can observe some interesting patterns. We observe changes in employment over seven years. We can see that for many age groups 1993 was the year when the general trend changed (e.g. for people aged 45-49 and 55-59). Employment declines constantly for persons between 50-54; while in 1989, 90 000 people in this age group were employed. In 1996, the corresponding number was 61 600. The same tendency occurs surprisingly in age groups between 25 and 39. The last fact is a little surprising, since the impression given by the mass media suggests that it should be the 25–35 age group who have the best chances of a decent job and career.

2.8. Sources of declining employment rates

Reduction in employment rates can be accommodated either by pushing people into non-participation or by increasing the size of the unemployment pool. Demographic developments, e.g. inflow of large cohorts of jobless youngsters into the working age population, may also contribute to the decline in employment population ratios. We use here the approach worked out by Boeri, et al, (1998), where they used following equation:

$$-\Delta\left(\frac{E}{WAPOP}\right) \approx \frac{\Delta U}{WAPOP} + \frac{\Delta OLF}{WAPOP} - \frac{\Delta WAPOP}{WAPOP}(1-e)$$

$$\approx \Delta u + \Delta olf + \Delta wapop(1-e)$$

where E denotes employment, WAPOP the working age population (15-69), U the stock of unemployment, and the OLF the stock of people of working age out of the labour force. Small letters denote fractions of the total working age population. In other words, the decomposition isolates the amount of non-employment, which has resulted in unemployment as opposed to changes in participation (second term), as well as the role played by demographic developments (third term). Demographic factors here simply show the increase/decline in population.

Table 2.13 displays the results. We used some date computed and published by Boeri et al (1998) and we added calculations for Estonia. For other CEE countries the working age was 15-54 for women and 15-60 to men. In most cases the dramatic declines in employment were achieved via a rise of inactive population rather than unemployment. The increase in the inactive population in working age are accounted in Bulgaria, Czech Republic, Estonia and Hungary for more than 50% of the decline in employment population ratios. We can say that demographic factors played a marginal role in employment decline. The only exception in our example was Poland where the increase in unemployment played an important role in employment decline.

Table 2.13. ***Decomposition of the decline in employment rates*** *(1989-1996)*

Country	?(e/wap)	?u/wap	?olf/wap	Demographic
Bulgaria	**-22.2**	**9.9**	**10.5**	**1.8**
Czech Republic	**-9.6**	**2.6**	**8.0**	**-1.0**
Hungary	**-22.9**	**6.9**	**16.7**	**-0.7**
Poland	**-13.1**	**9.4**	**4.6**	**-1.0**
Estonia	**-15.2**	**6.2**	**7.8**	**1.2**

Source: Boeri, T. , Burda, M., Köllö J. Mediating the Transition: Labour Market in Central and Eastern Europe. Forum Report of the Economic Policy Initiative no. 4, CEPR, 1998, p.15, for Estonia author's estimations

2.9. Wages in Estonia

Wages greatly influence the mobility and location of labour, its efficiency and human capital expenditure. Indirectly wages tell us about demand for one or another product (service), and about the level of competition in different industries. The potential of transition economies at the beginning of the reforms was in the low costs of labour that attracts foreign capital. Since the currency reform in 1992, wages in Estonia have undergone big changes. The transition modified the hierarchy of wages by industries and wage differentials have increased rapidly during the years of reforms, etc. The rapid changes took place in 1993-1994, afterwards the speed of changes has slowed down (Philips, 1999)

Comparison of wages and income during the transition period with the pre-transition level in a quantitative sense is very hard to make for several reasons (Eamets, et al., 1999):

- the currency reform in 1992
- hyperinflation in 1991, and
- the Statistical Office publishes adjusted data since 1993 and does not publish earlier data as it is very much unreliable and not comparable with previous data.

In table 2.14 and in figure 2.10 we present data since 1993.

The computation of the aggregate average wage in Estonia is complicated since the increase is mainly due to high and fast rising wages in a few industries of the economy or for a few persons hired in high-wage positions. For a majority of the population wage increases have not been as large. If we look at variation coefficients of nominal wages by industries then we can see that this coefficient has been fairly stable. The increase in 1999 means that these wages are not fully comparable with previous ones, because they indicate only wages in the last quarter, while others are yearly averages.

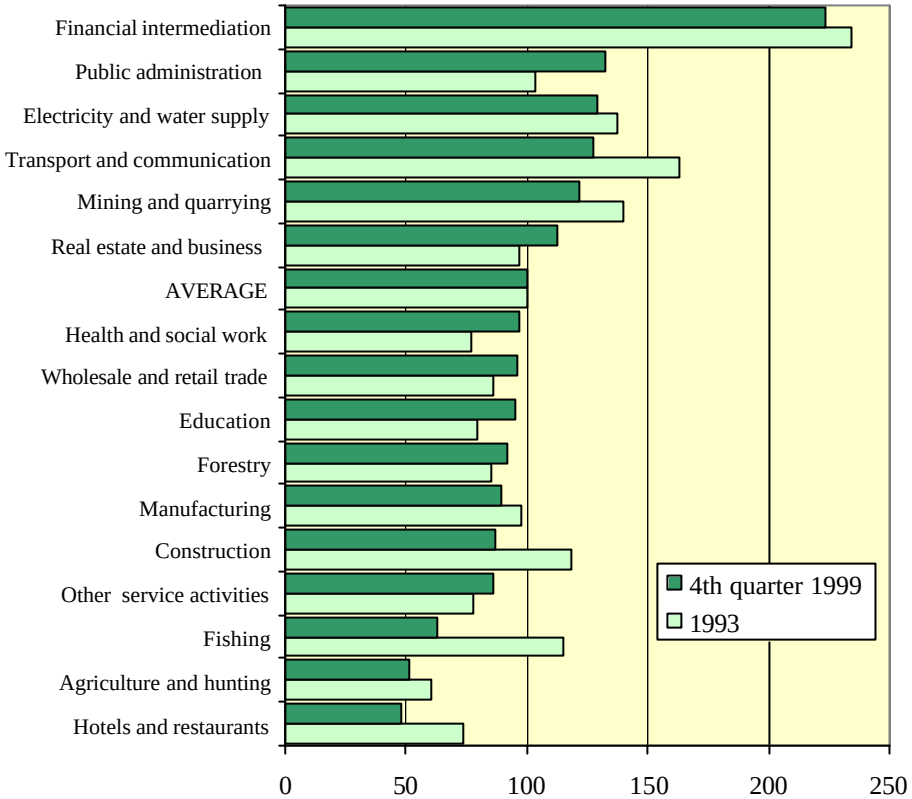
Table 2.14. ***Average wages in 1993-1998, EEK and %***

	1993	1994	1995	1996	1997	1998	1999 IV quarter
Average gross nominal wages per month, EEK	**1066**	**1734**	**2375**	**2985**	**3573**	**4125**	**4799**
Indices of average gross nominal wages *	**194.1**	**315.8**	**432.6**	**543.7**	**650.8**	**751.4**	**874.1**
Standard deviation of wages by industry	**449.4**	**620.3**	**822.6**	**979.6**	**1249.4**	**1443.3**	**1914.7**
Variation coefficient of wages by industries	**0.39**	**0.34**	**0.33**	**0.31**	**0.33**	**0.33**	**0.39**
Average gross real wages per month, EEK	**561.3**	**618.2**	**656.4**	**670.2**	**721.4**	**769.7**	**n.a.**
Minimum wage	**300**	**300**	**450**	**680**	**845**	**1100**	**1250**

Note: 1 EUR = 15.6 EEK. *Indices: 1992=100.
Sources: Statistical Office of Estonia, EMOR

The wage growth has been faster mostly in the tertiary sector when, at the same time, the low wages in the primary sector compared with the country's average gross wages have been continually diminishing. Throughout the observed period the average gross wages were the highest compared with the national average in financial intermediation (2.0-2.3 times). At the same time, wages were exceptionally low compared with the national average in agriculture (0.6-0.7 times), but also in the hotel and restaurants sector and fishing (Table A.12. in appendixes). These differences are explained by a relatively high share of low qualified jobs in these sectors, but also by relatively high share of tax evasion in these sectors. Some surveys have found that on average almost 20% of firms paid "envelope wages" in 1998, in Estonia. We assume that most of these firms are involved in the supply of different services in small and medium size firms or working in agriculture or in fishing.

Figure 2. 10. Average montly wage indexes by industries (national average wage=100)



Source: Statistical Office of Estonia

A recent study launched by the Bank of Estonia analysed the productivity, employment and real wage changes in Estonia, in 1996-1999 (Vesilind and Rell, 2000). This is an interesting period because it covers the two macroeconomic shocks in Estonia. In 1997, Estonia had a stock exchange crisis and in 1998, the Russian financial collapse influenced Estonian export sectors. The authors used quarterly data of employment and added value of GDP by industries. Productivity was calculated as added value per employed person. Their purpose was to find out how real wages react to external and internal shocks and changes in productivity. They found that wages were very flexible in sectors of tradable goods and not so flexible in non-tradable sectors. Flexibility means that real wages declined when productivity declined. Dividing the sectors by ownership form, the authors found that private sector wages are more rigid and that employment was affected by shocks with time lag (one quarter).

We believe that these were very interesting results and are probably a first attempt to analyse such kind of changes in the labour market. However we think that some findings are misleading because the authors did not included in their calculations institutional changes (like changes in minimum wages). There are data problems, which were not recognised. Wages in some sector are so much influenced by "envelope wages" that real wage estimations, without taking into account changes in minimum wages will lead to biased results. For instance, in the hotel and restaurant sector the average wage is only 50% of the national average wage. This shows directly

that very many people in this sector earn the official minimum wage.

2.10. Summary

Estonia has had two recessions, one caused by general transition shock and economy restructuring after currency reform (1991-1994) and the other by the local financial market crisis followed by an external shock caused by the Russian financial crisis (1998-1999). As the result of the first shock, unemployment reached almost 8% and as a result of the second shock, unemployment rose to 15% in the beginning of 2000.

Economic decline in the early period of recession in Estonia was deeper than in most of other CEE countries, but lower than in the other two Baltic states.

From the labour market point of view the transition process meant for post-socialist countries three major changes:

- reallocation of labour between economic sectors;
- private sector employment increase;
- increase of entrepreneurship.

Most drastic changes in employment were as follows:

- Total decline of employment was highest in Latvia and Estonia, in 1993-1998. As we see from our decomposition analysis of employment decline, in most cases the dramatic declines in employment were achieved through a rise of inactive population rather than through unemployment.
- Employment decline in agriculture was highest in Estonia, compared with other transition economies. The deepest decline of the employment share in manufacturing was observed in Lithuania and Romania.
- The share of self-employed people from total employment is relative low in Estonia, although the share of self employment has increased most, compared with other CEE countries.

Relative employment in agriculture is declining in Estonia. Estonia has shifted from the group with a relative high agricultural employment (20%) to low employment group (less than 10% from total employment). The service sector was the only sector where Estonia maintained the same level of employment in 1998 as in 1990, also in absolute terms. Female employment has declined in agriculture and manufacturing and is increasing in the service sector, in Estonia, while male employment has increased in the service sector, in manufacturing it has remained constant and declined in agriculture.

Poland is the only country in the observation group whose economy reached its pre-reform period GDP level. This is due to relatively fast increase of employment in service sector and somewhat more moderate increase in industrial employment. Poland is only country where total employment in 1997 was higher than it was in 1993.

If we analyse structural adjustments of labour between different sectors, then we can see, using Jackman and Pauna's methods, that the speed of restructuring has been relatively high in Estonia and that the efficiency of labour reallocation has been very high.

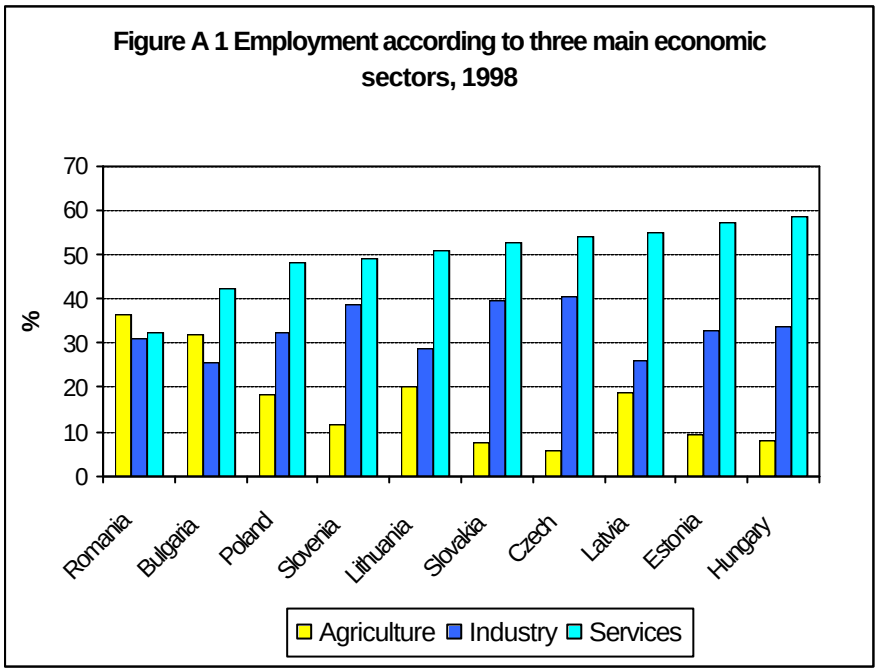
Alternative index of restructuring was calculated by Faggio and Konings using job creation and destruction data. They found that job destruction and creation flows in Estonia are much higher that in other CEECs, which means they are more similar to those reported by the most dynamic Western economies. These findings strongly support our general hypothesis about high mobility of labour in Estonia.

The public sector has decreased drastically during the transition period. The fastest decreases came from manufacturing and from the service sector. If we look at employment changes in the private sector *versus* the public sector, then we can see that before 1993, the net change was positive. We would expect that the public sector workers would be absorbed to the private sector. But at the same time total employment changes show a declining tendency. That means that the outflow from employment was higher than the inflow. After 1994, the tendency changed and we see that actual employment decline rates were smaller than expected (net changes). We can conclude that inflow rates were higher than outflow rates after 1994.

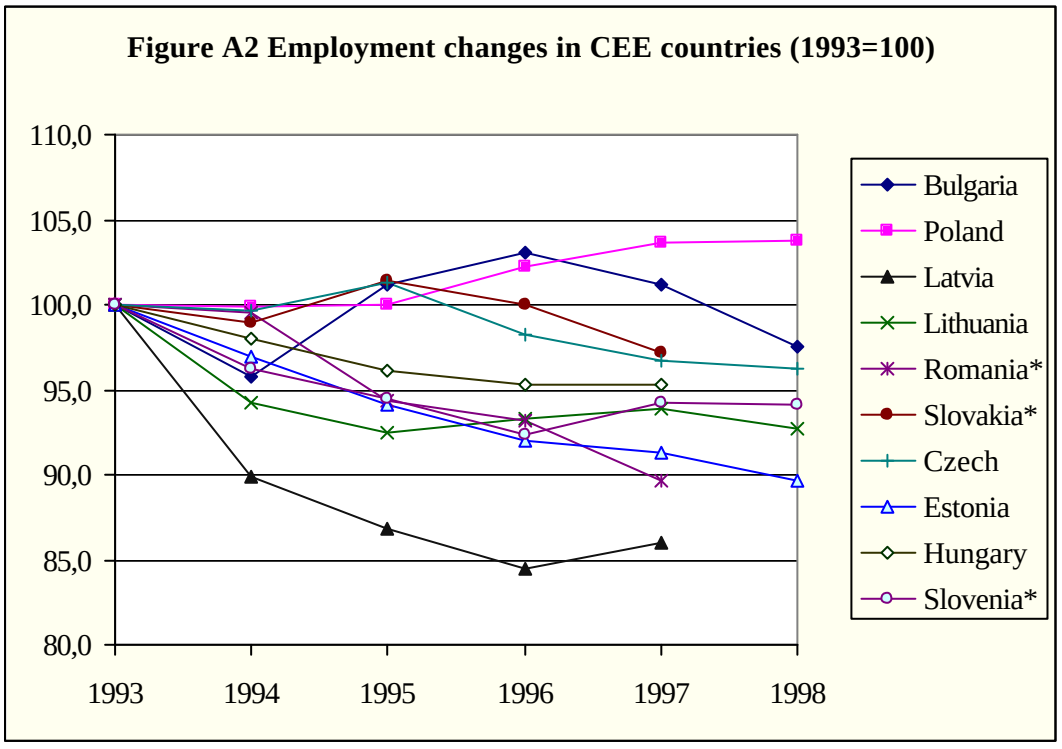
We can see from our entrepreneurship data that EU countries could be divided into two broad groups. There are Nordic countries with a relatively high level of employers and a relatively low level of own-account workers; Germany is in the middle of the two groups, and then we have South European countries where the share of own-account workers is much higher than the share of employers. In the future we can probably observe similar tendencies in CEE countries. Countries like Romania, Bulgaria, Hungary will have a similar structure of entrepreneurs like Greece and Spain. Most likely Poland and Lithuania will follow the German pattern and Latvia and Estonia will follow more a Nordic structure of entrepreneurship.

Wages have undergone very big changes during transition. The wage growth has been faster in the tertiary sector. At the same time, low wages in the primary sector compared to the country's average gross wages have been continually diminishing. During the observed period the average gross wages were the highest compared with the national average in the financial sector. At the same time, wages were exceptionally low in agriculture, but also in the hotel and restaurants sector and fishing. These differences are explained from one side by a relatively high share of low qualified jobs in these sectors, but also by a relatively high share of tax evasion in these sectors.

As regards the downward flexibility of wages, some researches have found that wages were very flexible in sectors of tradable goods and not so flexible in non-tradable sectors.
All these findings basically support our contention that the initial conditions for Estonian economy were different compared with other CEE countries and that, as a result the Estonian labour market development is remarkable. Estonia represents in many cases most extreme changes, whether it is in the decline in agriculture or the increase in the service sector. It is important to keep in mind if we continue our comparative studies and try to find reasons and explanations for different aspects in labour market developments in Estonia.



Source: Background Studies



Source: Background Studies

Table A.1. ***Employment by sectors in 1989-1996*** (in the age of 16-69 yr., %)

Industry	year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture	18.0	18.0	17.4	16.3	14.3	12.6	9.6	9.2	8.3	8.3
Fishing	3.2	3.1	3.0	2.8	2.3	2.0	(0.9)	(0.8)	1.1	0.8
Mining	1.5	1.5	1.5	1.6	1.6	1.6	1.4	(1.4)	1.2	1.3
Manufacturing	25.7	25.1	24.6	23.6	21.4	20.7	24.8	23.9	22.3	21.9
Electricity production	2.2	2.2	2.3	2.3	2.6	2.8	2.4	2.5	2.7	2.9
Construction	7.7	8.0	8.1	7.9	7.4	7.2	5.4	5.7	7.4	7.4
Trade	7.4	7.6	8.1	9.4	11.4	12.7	12.6	13.3	14.0	14.2
Hotels, restaurants	2.2	2.1	2.3	2.3	2.4	2.7	2.7	2.7	2.3	2.3
Transport, communication	7.8	8.1	8.3	8.0	8.3	8.4	10.0	10.0	9.2	9.1
Finances	(0.5)	(0.5)	(0.6)	0.8	0.9	1.1	(1.1)	(1.0)	1.2	1.4
Real estate, business activities	4.0	4.0	3.8	3.7	3.9	4.3	4.9	5.0	5.4	6.0
Public administration	3.9	3.8	3.9	4.2	4.9	5.3	5.4	5.4	5.3	5.8
Education	6.1	6.0	6.0	6.4	7.0	7.0	8.5	8.7	9.0	8.7
Health care	6.0	6.0	6.2	6.3	6.7	6.8	5.6	5.6	5.6	5.4
Other personal services	3.8	4.0	4.1	4.3	4.8	4.8	4.6	4.7	5.2	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: … data is based on less than 20 persons of the sample
( ) data is based on 20-39 persons of the sample
Sources: Estonian labour force surveys

Table A.2. ***Changes in employment by industries*** (thousands)

Industry	year									
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture	150.8	148.5	140.5	124.7	101.5	87.5	63.0	59.7	53.3	52.6
Fishing	26.5	25.3	24.1	21.1	16.1	13.5	(6.0)	(5.0)	7.2	5.2
Mining	12.3	12.0	11.8	12.2	11.2	11.2	9.1	(8.9)	7.6	8.2
Manufacturing	214.9	207.8	198.4	180.9	151.5	143.2	162.9	154.4	143.6	139.1
Electricity production	18.6	18.6	18.3	17.9	18.3	19.5	15.8	16.4	17.6	18.1
Construction	64.9	66.0	65.5	60.7	52.4	49.9	35.6	36.8	47.4	46.9
Trade	61.6	63.1	65.5	72.1	81.0	88.1	82.7	85.8	90.4	90.3
Hotels. Restaurants	18.8	17.5	18.6	17.6	17.0	18.7	18.0	17.8	14.6	14.4
Transport. communication	65.6	67.0	66.9	61.4	58.9	58.2	65.8	64.7	59.1	57.9
Finances	(3.9)	(4.2)	(4.8)	5.9	6.6	7.9	(7.1)	(6.6)	7.5	8.6
Real estate. business activities	33.6	32.7	30.5	28.0	27.7	29.9	32.2	32.3	34.6	38.3
Public administration	32.8	31.5	31.2	32.4	34.9	36.4	35.7	35.0	34.0	36.6
Education	51.0	49.6	48.5	49.2	49.7	48.2	55.8	56.3	57.9	55.5
Health care	50.5	49.5	50.2	48.3	47.3	47.0	36.5	35.9	36.2	34.6
Other personal services	32.0	33.0	32.9	33.2	34.0	33.4	29.9	30.2	33.2	30.0
Total	837.9	826.4	807.8	765.7	708.1	692.6	656.1	645.6	644.1	636.2

Notes: … data is based on less than 20 persons of the sample
( ) data is based on 20-39 persons of the sample
Sources: Estonian labour force surveys

Table A.3. ***Changes in employment compared with 1989, by industries*** (%)

Industry	Year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agriculture	-1.5	-6.8	-17.3	-32.7	-42.0	-58.2	-60.4	-64.7	-65.1
Fishing	-4.6	-9.0	-20.4	-39.5	-49.0	-77.4	-81.3	-72.8	-80.4
Mining	-2.6	-4.1	-1.2	-8.9	-9.5	-26.2	-28.1	-38.3	-33.3
Manufacturing	-3.3	-7.7	-15.8	-29.5	-33.4	-24.2	-28.2	-33.2	-35.3
Electricity production	-0.3	-1.8	-3.7	-2.1	4.6	-15.3	-12.2	-5.7	-2.7
Construction	1.8	1.0	-6.5	-19.2	-23.1	-45.2	-43.2	-27.0	-27.7
Trade	2.3	6.3	16.9	31.5	42.9	34.1	39.2	46.7	46.5
Hotels, restaurants	-6.6	-1.1	-6.1	-9.7	-0.7	-4.1	-5.5	-22.5	-23.4
Transport, communication	2.2	2.0	-6.3	-10.2	-11.1	0.4	-1.4	-9.9	-11.7
Finances	8.9	24.5	51.2	69.5	102.8	82.5	69.3	91.3	120.7
Real estate, business activities	-2.7	-9.1	-16.6	-17.4	-10.9	-4.0	-3.7	3.1	14.0
Public administration	-4.1	-4.8	-1.1	6.3	11.0	8.7	6.6	3.6	11.7
Education	-2.8	-5.0	-3.5	-2.5	-5.5	9.4	10.4	13.5	8.7
Health care	-2.0	-0.7	-4.5	-6.3	-7.0	-27.7	-28.9	-28.3	-31.6
Other personal services	3.1	2.7	3.6	6.1	4.4	-6.7	-5.6	3.8	-6.2
Total	-1.4	-3.6	-8.6	-15.5	-17.3	-21.7	-22.9	-23.1	-24.1

Notes: … data is based on less than 20 persons of the sample
( ) data is based on 20-39 persons of the sample
Sources: Estonian labour force surveys

Table A.4. ***Female population aged 15–64 by economic status in 1989–1998****(annual average, thousands and %).*

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total population (15-64)	538.2	537.9	536.3	533.0	521.6	515.4	511.1	507.0	503.5	501.8
Labour force	400.1	389.7	379.9	363.3	350.3	347.3	339	336.8	335.5	333.2
Employed	397.9	386.9	373.9	350.5	326.7	319.6	309.2	305.5	304	303.2
% of total employment	48.8	48.1	47.5	46.9	47.1	47.1	47.8	48.1	47.9	48.4
Yearly change in employment, %		-2.8	-3.4	-6.3	-6.8	-2.2	-3.3	-1.2	-0.5	-0.3
Unemployed	...	(2.8)	6.0	12.8	23.6	27.7	29.8	31.3	31.5	30.0
Inactive	138.1	148.3	156.4	169.7	171.3	168.1	172.1	170.2	168.0	168.6
Labour force participation rate,%	74.3	72.4	70.8	68.2	67.2	67.4	66.3	66.4	66.6	66.4
Employment rate, %	73.9	71.9	69.7	65.8	62.6	62.0	60.5	60.2	60.4	60.4
Unemployment rate, %	...	(0.7)	1.6	3.5	6.7	8.0	8.8	9.3	9.4	9.0

Notes: … data is based on less than 20 persons of the sample
( ) data is based on 20-39 persons of the sample
Sources: Estonian Labour Force Surveys

Table A.5. ***Sectoral employment of total population (15-69) by gender*** (%)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total										
Primary	21.2	21.1	20.4	19.1	16.6	14.6	10.5	9.5	9.3	9.1
Secondary	37.1	36.9	36.4	35.6	33.1	32.4	34.3	34.2	33.5	33.3
Tertiary	41.7	42.1	43.1	45.3	50.3	52.9	55.2	56.3	57.2	57.7
Males										
Primary	27.3	26.5	25.5	23.8	20.8	18.2	13.0	11.5	12.0	11.4
Secondary	42.2	42.0	41.6	41.0	38.6	38.3	41.4	42.6	41.9	41.9
Tertiary	30.5	31.5	32.9	35.2	40.6	43.4	45.6	45.9	46.1	46.8
Females										
Primary	14.9	15.3	14.9	13.9	12.0	10.6	7.8	7.4	6.3	6.6
Secondary	31.8	31.4	30.8	29.5	26.9	25.8	26.6	25.3	24.1	24.1
Tertiary	53.3	53.3	54.3	56.7	61.1	63.5	65.7	67.3	69.6	69.3

Sources: Estonian Labour Force Surveys

Table A.6. ***The share of female and male labour force by industries***

	Males				Females			
	1989		1998		1989		1998	
Sector of economy	thousands	%	thousands	%	thousands	%	thousands	%
Total	426.7	48.7	330.7	51.7	411.3	51.3	309.5	48.3
Agriculture	95.9	63.8	33.1	62.6	54.9	36.2	19.8	37.4
Fishing	20.3	74.6	4.5	86.5	6.3	25.4	…	…
Mining	9.2	72.8	7	85.4	(3.1)	(27.2)	…	…
Manufacturing	104.9	46.6	76.2	54.6	110.1	53.4	63.3	45.4
Electricity production	12.7	65.9	13.2	72.5	5.9	34.1	5	27.5
Construction	53.1	80.5	42	89.4	11.8	19.5	5	10.6
Trade	16.2	24.4	40.1	44.3	45.5	75.6	50.5	55.7
Hotels. Restaurants	4.9	24.5	(2.5)	(17.4)	13.9	75.5	11.9	82.6
Transport. Communication	46.4	69.0	41.8	71.7	19.1	31.0	16.5	28.3
Financial intermediation	…	…	(2.7)	(31.4)	(3.3)	(87.4)	5.9	68.6
Real estate. Business activities	15.7	44.3	21.6	55.5	17.9	55.7	17.3	44.5
Public administration	15.6	45.0	19	51.9	17.2	55.0	17.6	48.1
Education	13.2	23.8	11.9	21.1	37.8	76.2	44.6	78.9
Health care	6.0	11.0	4.8	13.7	44.5	89.0	30.3	86.3
Other personal services	12.1	35.2	10.3	34.1	19.9	64.8	19.9	65.9

Note: 1989 data about population at the age of 15-69 and 1998 data for population in 15-74

… data is based on less than 20 persons of the sample

( ) data is based on 20-39 persons of the sample

Sources: Estonian Labour Force Surveys

Table A.7. ***Employment rates by gender and age groups*** *(%)*

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total										
15-24	**49.6**	**48**	**47.9**	**46.7**	**44.4**	**46.1**	**41**	**38.6**	**38.9**	**37.4**
25-49	**93.5**	**92.1**	**90.8**	**88.2**	**85**	**83.6**	**81.2**	**80.4**	**80.4**	**79.3**
50-69	**65.9**	**64.8**	**61.3**	**55.1**	**49.5**	**47.8**	**44.7**	**45.2**	**45.7**	**-**
16 until pension age	**84.4**	**82.8**	**81.6**	**78.8**	**76**	**75**	**72**	**71.1**	**70.8**	**70.1**
15-64	**78.5**	**77.4**	**75.8**	**72.3**	**68.7**	**68.1**	**65.5**	**64.9**	**65.4**	**64.7**
Males										
15-24	**51.3**	**52.3**	**54.3**	**55.9**	**52.1**	**53.2**	**48.4**	**44.9**	**43.8**	**41.6**
25-49	**97.5**	**96.8**	**95.6**	**92.5**	**89.0**	**88.0**	**83.6**	**83.2**	**84.5**	**82.6**
50-69	**77.5**	**76.1**	**72.9**	**66.7**	**60.9**	**59.1**	**54.3**	**54.0**	**54.8**	**-**
16 until pension age	**87.0**	**86.5**	**86.0**	**83.2**	**80.1**	**79.2**	**75.0**	**74.1**	**73.8**	**72.7**
15-64	**83.4**	**83.2**	**82.3**	**79.3**	**75.2**	**74.7**	**70.9**	**69.8**	**70.7**	**69.2**
Females										
15-24	**47.8**	**43.3**	**41.1**	**36.8**	**36.1**	**38.6**	**33.2**	**32.1**	**33.9**	**33.2**
25-49	**89.6**	**87.5**	**86.1**	**84.1**	**81.1**	**79.4**	**78.8**	**77.7**	**76.5**	**76.0**
50-69	**57.6**	**56.5**	**52.8**	**46.5**	**41.1**	**39.4**	**37.6**	**38.7**	**39.0**	**-**
16 until pension age	**81.6**	**78.9**	**76.9**	**74.1**	**71.6**	**70.6**	**68.8**	**68.0**	**67.5**	**67.6**
15-64	**73.9**	**71.9**	**69.7**	**65.8**	**62.6**	**62.0**	**60.5**	**60.2**	**60.4**	**60.4**

Sources: Estonian Labour Force Surveys

Table A.8. ***Employed persons by sex and age group, 1989–1996*** (*annual average, thousands*)

Sex, age group	1989	1990	1991	1992	1993	1994	1995	1996
Males and females								
15-19	**30.9**	**30.5**	**32.3**	**31.4**	**28.1**	**27.5**	**17.0**	**17.4**
20-24	**76.1**	**72.9**	**71.4**	**70.1**	**67.7**	**71.4**	**69.7**	**63.5**
25-29	**103.7**	**99.0**	**95.3**	**88.5**	**78.6**	**74.9**	**76.5**	**75.2**
30-34	**112.8**	**110.5**	**107.0**	**102.0**	**95.3**	**92.2**	**87.1**	**83.4**
35-39	**109.1**	**109.0**	**108.1**	**105.2**	**98.9**	**95.7**	**89.8**	**88.2**
40-44	**90.8**	**97.5**	**101.1**	**100.8**	**95.2**	**92.3**	**86.9**	**89.2**
45-49	**93.6**	**85.6**	**80.8**	**75.5**	**73.6**	**77.1**	**81.3**	**81.8**
50-54	**90.0**	**92.3**	**90.0**	**88.0**	**80.3**	**72.8**	**65.3**	**61.6**
55-59	**63.5**	**62.2**	**58.9**	**52.3**	**48.9**	**50.3**	**50.7**	**51.6**
60-64	**44.2**	**45.0**	**41.7**	**32.8**	**26.5**	**24.7**	**22.8**	**23.0**
65-69	**23.2**	**21.9**	**21.1**	**19.1**	**14.9**	**13.7**	**9.1**	**10.7**
TOTAL	**837.9**	**826.4**	**807.8**	**765.7**	**708.1**	**692.6**	**656.1**	**645.6**
15-24	**107.0**	**103.4**	**103.6**	**101.5**	**95.8**	**98.9**	**86.6**	**80.9**
25-49	**510.0**	**501.6**	**492.4**	**472.0**	**441.7**	**432.2**	**421.5**	**417.9**
50-69	**220.9**	**221.4**	**211.8**	**192.1**	**170.7**	**161.5**	**147.9**	**146.9**
16 until pension age	**740.2**	**728.8**	**716.5**	**689.6**	**646.1**	**632.4**	**611.4**	**599.1**
Males								
15-19	**14.2**	**15.7**	**17.9**	**18.6**	**16.1**	**15.8**	**(8.4)**	**9.1**
20-24	**43.2**	**42.8**	**42.8**	**44.3**	**42.0**	**42.9**	**43.8**	**38.6**
25-29	**58.7**	**57.4**	**55.2**	**50.9**	**45.2**	**43.5**	**44.9**	**44.9**
30-34	**58.6**	**58.4**	**57.1**	**54.2**	**50.2**	**49.1**	**46.1**	**43.5**
35-39	**54.9**	**54.6**	**54.6**	**52.9**	**50.0**	**48.7**	**43.4**	**43.7**
40-44	**43.9**	**47.6**	**49.3**	**48.9**	**46.1**	**44.2**	**41.6**	**42.2**
45-49	**44.4**	**40.7**	**38.3**	**36.0**	**34.8**	**37.1**	**37.5**	**38.6**
50-54	**42.6**	**43.7**	**43.3**	**42.5**	**38.0**	**34.3**	**30.6**	**28.6**
55-59	**35.4**	**34.1**	**32.4**	**29.7**	**29.1**	**29.5**	**29.2**	**28.5**
60-64	**20.8**	**22.5**	**21.9**	**18.3**	**14.9**	**14.1**	**12.3**	**11.8**
65-69	**9.9**	**9.1**	**8.8**	**8.3**	**7.4**	**7.2**	**(4.6)**	**(5.9)**
TOTAL	**426.7**	**426.7**	**421.5**	**404.4**	**373.9**	**366.6**	**342.3**	**335.4**
15-24	**57.4**	**58.5**	**60.8**	**62.8**	**58.2**	**58.7**	**52.2**	**47.8**
25-49	**260.5**	**258.8**	**254.4**	**242.8**	**226.4**	**222.7**	**213.4**	**212.8**
50-69	**108.7**	**109.5**	**106.3**	**98.7**	**89.4**	**85.2**	**76.7**	**74.8**
16 until pension age	**394.6**	**393.2**	**389.9**	**377.0**	**351.1**	**344.6**	**328.2**	**321.9**
Females								
15-19	**16.6**	**14.9**	**14.3**	**12.9**	**12.0**	**11.7**	**(8.5)**	**(8.3)**
20-24	**32.9**	**30.1**	**28.5**	**25.8**	**25.6**	**28.5**	**25.9**	**24.8**
25-29	**45.1**	**41.6**	**40.2**	**37.6**	**33.4**	**31.4**	**31.6**	**30.4**
30-34	**54.2**	**52.2**	**49.9**	**47.9**	**45.1**	**43.1**	**41.0**	**40.0**
35-39	**54.2**	**54.3**	**53.5**	**52.3**	**48.9**	**47.0**	**46.4**	**44.5**
40-44	**46.9**	**49.9**	**51.9**	**51.9**	**49.0**	**48.1**	**45.3**	**47.0**
45-49	**49.1**	**44.9**	**42.5**	**39.5**	**38.8**	**39.9**	**43.8**	**43.2**
50-54	**47.4**	**48.6**	**46.7**	**45.4**	**42.3**	**38.6**	**34.7**	**33.0**
55-59	**28.1**	**28.1**	**26.5**	**22.7**	**19.9**	**20.8**	**21.5**	**23.1**
60-64	**23.4**	**22.5**	**19.8**	**14.5**	**11.6**	**10.6**	**10.5**	**11.2**
65-69	**13.4**	**12.8**	**12.4**	**10.8**	**7.5**	**6.4**	**(4.5)**	**(4.8)**
TOTAL	**411.3**	**399.7**	**386.3**	**361.3**	**334.2**	**326.0**	**313.8**	**310.2**
15-24	**49.6**	**44.9**	**42.9**	**38.7**	**37.6**	**40.1**	**34.4**	**33.1**
25-49	**249.4**	**242.8**	**238.0**	**229.2**	**215.2**	**209.5**	**208.1**	**205.1**
50-69	**112.3**	**111.9**	**105.4**	**93.4**	**81.3**	**76.4**	**71.3**	**72.1**
16 until pension age	**345.6**	**335.6**	**326.6**	**312.5**	**295.0**	**287.8**	**283.1**	**277.3**

Sources: Estonian Labour Force Surveys

Table A.9. ***Index of restructuring based of Jackman and Pauna data***

	Employment structure			Excessive employment	
	Estonia	EU South	EU North	EU south (1)-(2)	EU North (1)-(3)
	(1)	(2)	(3)	(4)	(5)
Agriculture	18.0	10.7	4.1	7.3	13.9
Mining	1.5	0.4	1	1.1	0.5
Manufacturing	25.7	22	26.3	3.7	
Electricity	2.2	0.9	1.1	1.3	1.1
Construction	7.7	8.1	6.4		1.3
Trade	9.6	19.3	17.4		
Transportation	7.8	6	6	1.8	1.8
Finance	4.5	6.1	8.6		
Community services	19.9	26.5	28.7		
Total	100.0				
Restructuring Index				15.2	18.7

Source: Jackmann, R., Pauna C. Labour Market Policy and the Reallocation of Labour Across the Sectors, CEPR Discussion Paper No. 338, March 1997 and own calculations

Table A.10. ***Restructuring speed and efficiency in Denmark***

	1989	1998	Comparator country	Change in employment	Employment differential	Convergent	Non-convergent
Total	2645.3	2692.4	2692.4				
Agriculture	148.4	96.7	107.8	-51.7	-40.6	-40.6	
Mining	2.4	3.2	12.6	0.8	10.2	0.8	
Manufacturing	505.1	516.0	493.6	10.9	-11.5		10.931
Electricity	19.7	20.5	22.8	0.8	3.1	0.8	
Construction	186.8	177.5	164.4	-9.3	-22.4	-9.3	
Trade	369.7	438.9	434.5	69.2	64.8	64.8	
Transportation	195.1	181.9	191.0	-13.2	-4.1	-4.1	
Finance	255.4	306.7	308.7	51.3	53.3	51.3	
Community services	939.5	950.7	954.8	11.2	15.3	11.2	
				218.5	225.2	182.8	
Speed		0.81					
Efficiency		0.84					

Table A.11. ***Estonia – private sector employment by size of firm, 1994-98***

No. of employees as share of total (%)	1994	1995	1996	1997	1998	Change 94-98 (%)
TOTALS	100	100	100	100	100	+25.3
Less than 5	9.0	10.0	9.8	10.2	10.1	+39.8
6-10	9.2	9.8	9.3	9.6	9.4	+27.9
11-25	16.4	16.9	16.4	16.9	17.6	+34.0
26-100	29.3	28.3	27.4	28.7	29.2	+24.9
101+	36.0	35.0	37.1	34.6	33.8	+17.4

Sources: Estonian Enterprises Register, Estonian Register of Social Security

Table A.12. Average nominal gross monthly wages 1992 - 1998

Industry	Gross wages (EEK)							Wage index, 1992 = 100					
	1992	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Agriculture and hunting	388	641	1010	1405	1811	2131	2535	1.65	2.60	3.62	4.67	5.49	6.53
Forestry	473	908	1601	2419	2590	3657	4059	1.92	3.38	5.11	5.48	7.73	8.58
Fishing	540	1229	1705	1987	2708	3640	3674	2.28	3.16	3.68	5.01	6.74	6.80
Mining and quarrying	737	1487	2362	2968	3944	4412	4894	2.02	3.20	4.03	5.35	5.99	6.64
Manufacturing	536	1036	1784	2421	2991	3578	4081	1.93	3.33	4.52	5.58	6.68	7.61
Electricity and water supply	835	1467	2432	3262	3872	4835	5561	1.76	2.91	3.91	4.64	5.79	6.66
Construction	647	1264	2047	2568	3195	3709	4196	1.95	3.16	3.97	4.94	5.73	6.49
Wholesale and retail trade	516	917	1510	2051	2720	3112	3627	1.78	2.93	3.97	5.27	6.03	7.03
Hotels and restaurants	403	786	1196	1570	2128	2340	2624	1.95	2.97	3.90	5.28	5.81	6.51
Transport and communication	867	1741	2421	3101	3748	4425	5122	2.01	2.79	3.58	4.32	5.10	5.91
Financial intermediation	1078	2496	3571	4951	6109	7684	8914	2.32	3.31	4.59	5.67	7.13	8.27
Real estate and business	488	1031	1748	2562	3213	4078	4566	2.11	3.58	5.25	6.58	8.36	9.36
Public administration	533	1103	2030	2825	3546	4226	4942	2.07	3.81	5.30	6.65	7.93	9.27
Education	459	850	1259	1900	2326	2794	3370	1.85	2.74	4.14	5.07	6.09	7.34
Health and social work	415	818	1402	1975	2689	3089	3690	1.97	3.38	4.76	6.48	7.44	8.89
Other service activities	437	825	1300	1894	2453	2913	3390	1.89	2.97	4.33	5.61	6.67	7.76
AVERAGE	549	1066	1734	2375	2985	3573	4125	1.94	3.16	4.33	5.44	6.51	7.51

Source: Statistical Office of Estonia

3. Estonian labour market and labour market changes in CEE countries: Labour Supply approach

3.1. Data sources

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3.1.1. Description of Estonian Labour Force Surveys

The main inputs for labour market analysis in Estonia are labour force surveys. Four annual surveys have been conducted: in 1995, 1997, 1998 and 1999. Since 2000, the surveys have been carried out quarterly. The first survey was organised in 1995. The data collection programme of the Estonian Labour Force Survey (ELFS 95) was extended in two directions, compared to an ordinary labour force survey. Firstly, a retrospective section was added in which information was gathered concerning employment changes between 1989-1995. Secondly, it included sections concerning studies, changes of residence, family background, and economic status, which are not treated extensively in an ordinary survey[22].

The retrospective part of the ELFS 95 recorded first the respondent’s situation (employed, unemployed, or non-active) at the beginning of 1989 and the subsequent changes of his/her situation between 1989–1995. The changes (job changes, loss of job, finding a new job, starting and giving up job seeking, etc.) divided the given period into 3 types of sub-periods:

1) periods of employment;

2) periods of unemployment, during which the respondent did not have a job, but was trying to find one and would have started a job immediately if possible;

3) periods of non-activity, during which the respondent neither worked nor sought a job.

The minimum length of the periods fixed in the ELFS 95 was one month. If, for instance, there was a period of less than a month between leaving one job and starting a new one, this period was not reflected in the questionnaire as a separate period of unemployment. For each period, its start and end time (month) and the features characterising the period were fixed.

For periods of employment, these features were the name of the place of work (enterprise/ organisation), location, method used in finding the job, size of the enterprise/organisation, type of ownership and profit-orientation, existence of foreign capital, change of the type of ownership, the respondent’s social status, occupation, salary, average length of the working week, the existence of second jobs and interruptions of work, and the reason for leaving the job.

For periods of unemployment, the features were the steps taken to find a job, the duration of job seeking, contacts with the State Labour Market Board, unemployment benefit, participation in public works and training courses, main sources of subsistence, second jobs, and the respondent’s evaluation of how he or she managed during the period of unemployment.

For periods of non-participation, the features were the reason for being inactive, the main sources of subsistence, second jobs, and the respondent’s evaluation of how he or she managed

[22] For more details see Pettai Ü., Eamets R., Piliste T., Servinski M. *Estonian Labour Force Survey 1995. Methodological Report*. Statistical Office of Estonia. Tallinn - Viljandi 1997.

during the period of non-activity.

Thus, the whole period of 1989-1995, was covered with periods of employment, unemployment, and non-participation (there were no moments about which we do not know the respondent's situation), and there is no overlapping between the periods of employment, unemployment, and non-participation, since these periods are mutually exclusive. Here we must note that since the labour force survey was carried out in the spring of 1995, many people, who had returned to the territory of the CIS and spoke Russian as their first language, were left out of the sample. The fact that in 1994, the employment of Estonian-speaking people had increased by only 1.5% serves as a proof to this. Thus, the comparison of 1989 and 1994 does not show the changes in the ratio of Estonians and non-Estonians to the full extent.

The target population of the ELFS 95 were the residents of Estonia aged between 16 and 75 in 1995, i.e. those born between 1920–1979. The sample basis of the ELFS 95 was the database of the 1989 population census. Due to its use of the population census database, the survey did not include people who came to live in Estonia after the population census. Since the migration balance (the difference between the number of those who come to Estonia and those who leave Estonia) has been negative during the recent years, this fact is considered to have a relatively small influence on the results.

Together with the replacement sample, there were in total 10,955 people interviewed in 1995.

The second Estonian Labour Force Survey (ELFS 97) aimed to continue to collect data on the labour force, started by the ELFS 95. In order to ensure the continuity of time series of the data on the labour force, the questionnaire for the ELFS 97 was, in comparison with the one for the ELFS 95, supplemented with a retrospective section for the years 1995–1997.

The retrospective part of the ELFS 97 recorded the respondent's situation (employed, unemployed or non-active) at the beginning of 1995 and then the changes of the situation in 1995–1997.

Besides the retrospective part, as a classical part of a labour force survey the ELFS 97 included questions concerning the respondents' activities in the week preceding the interview.

In general, the questions were similar to those in ELFS 95. Finally, 2 882 households with 5 555 working-aged persons were chosen for interviews. The questions (more than 200) allow us to draw conclusions about changes in the economy in general.

Similar surveys were conducted in 1998 (the retrospective part covered 1997, full year) and 1999 (the retrospective part covered 1998, full year). The sample size was 12 900 in 1998 and 12 700 in 1999.

The data for 1989-1994 are the data of the Estonian Labour Force Survey 1995 (ELFS 95), for 1995-1996 the data of the ELFS 97, for 1997 the data of the ELFS 98 and for 1998 the ELFS 99, respectively. Therefore, analysing the time series presented, one should consider the fact that this data originates from four sources and their comparability is reduced by some circumstances which influenced the way the surveys were conducted. The circumstances to be considered when analysing the results of the surveys are as follows:

1) The sample size was different for different ELFS-s.
2) The sample frames for the surveys were different. For ELFS 95, the sample frame was the database of the 1989 population census, which in the view of the population changes in the meantime, was outdated and was thus one source of errors. Many persons had e.g. left Estonia or died. As the sample frame for ELFS 97, ELFS 98 and ELFS 99, the Population Register was used. Although it is more up-to-date than the database of the population census, it still contains some errors and lacks some of the necessary information (persons who have left, incomplete data about place of residence etc.).
3) The sample designs of the two surveys are different. Stratified simple random sampling was used in the ELFS 95, cluster sample in the ELFS 97-99. With reference to sample, the results could be affected only by the errors of the sample frame described in previous paragraph because, regardless of the difference in sampling procedures, the inclusion probability for all persons was eventually the same.

Despite the fact that there are some comparability problems with the time series, these datasets are most useful because they reflect many different aspects of the labour market. A few examples: more than 200 questions allow us to analyse hidden unemployment (discouragement and underemployment); we can observe flows between labour markets states during the year (avoiding round-tripping); also we have data for displacement and so on. These analysis are not usually possible to obtain from an ordinary labour force survey.

For comparative studies of the transition countries, we used Country reports prepared for the EU. Within the framework of the Phare Horizontal Special Preparatory Programme to prepare for ESF actions in candidate countries ("SPP-ESF"), the European Training Foundation had been asked by the European Commission to assist candidate countries in preparing the Background Studies to Employment Policy Reviews. Background Studies are available from Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. All these studies are based on local labour force surveys, which use comparable ILO definitions. Although the Background Studies followed a similar structure, we often faced the problem of data comparability. It was not always clear whether the same methodology was behind similar data collection or not. Sometimes different countries use different sources of information (survey or registration) and data were presented for different periods. We tried to use the LFS data as much as possible, because we know that at least definitions for different labour market categories are similar.

3.1.2. Main terms and definitions used in ELFS[23]

The ELFS 95 and ELFS 97-99 are based on the main terms devised by the International Labour Office, which enables us to compare the collected data with other countries.

The part of the population which is used as the basis when examining the economic activity of the population, or in other words, the population of the age that is the object of a labour force survey, is called the working age/labour age population. The object of the ELFS is the population aged between 16 and 75, i.e. the population at that age is considered the working age population. The data from the survey week in the beginning of 1995 and second quarter of 1997 is based on the population between the ages of 16 and 75. The retrospective data concerns the same persons

[23] The author of the thesis participated in the work of the working group that developed the main definitions and the methodology of all the labour force surveys.

who, in the earlier years were at a different age (e.g. between the ages of 10 and 69 in 1989, for example, in the case of ELFS 95).

Generally, the working age population falls into three groups. First, those who wish to work, or the economically active population, and those who do not wish or are not able to work, or the inactive population. The economically active population is called the labour force, and it is divided into the employed (those who wish to work and have found work) and the unemployed (those who wish to work but have not found any). The economically inactive population includes e.g. homemakers, students, disabled persons, mothers on maternity leave, etc.

According to hours of work, the employed can be divided into full- and part-time workers. In the ELFS, part-time workers are employed persons whose overall working time per week was less than 35 hours. An exception is made for occupations where a shortened working time is prescribed by the law. A sub-category for the employed is the underemployed. A person is underemployed if he or she works less than full-time and less than required, seeks for additional work, and is currently available for it.

A person is considered unemployed if he or she simultaneously fulfils the following conditions:

- he or she is without work (does not work anywhere at the moment and is not temporarily absent from work);
- he or she is currently (in the course of two weeks) available for work if there should be work;
- he or she is actively seeking work.

Seeking work includes all steps actually taken in order to find work or start entrepreneurship, such as registration at employment exchanges, placing or answering newspaper advertisements, seeking assistance of friends and relatives, arranging for financial resources, etc.

Another term is the so-called hidden unemployment. Hidden unemployment comprises those unemployed persons who seek work without using the labour services – their quest to find work is thus hidden from (state) institutions.

In order to assess the economic activity of the population, labour force participation rate (activity rate) is used which is the share of the labour force (total number of the employed and unemployed) from the working age population.

Labour force participation rate = labour force / working age population

(activity rate)

The employment rate, which is the share of the employed in the working age population, is used to describe and analyse changes in employment.

Employment rate = employed persons / working age population

The unemployment rate, which is the share of the unemployed in the labour force (the total number of the employed and unemployed), is used for the assessment of the extent of unemployment and for analysing its changes.

Unemployment rate = the unemployed / labour force

3.2. General changes in participation rates in CEE countries

Two characteristics of the central planning period insured full employment and high participation rate: the wages set below the market clearing wage and the stigma associated with those not working. The stigma effect associated with the not working status raised the opportunity cost of work and lead many to choose working even though they would rather not work for the given wage. At a fixed wage, demand for labour exceeded supply and was constrained by the actual supply. During the transition period, the stigma effect quickly evaporated and the participation decision was left to the usual wage-opportunity cost trade-off. Since the lower level of the opportunity cost for not choosing work lowered, all else being constant, one would expect the labour participation to fall (Kallai, Traistaru, 1999).

How do the trends of labour supply in transition economies fit in to the overall labour force participation trends, namely the tremendous increase in the proportion of women in employment and the decrease in length of careers for males? The most striking effect of transition one can observe is the overall decline in the labour supply for both men and women.

The highest participation rates were in 1998 in Estonia and Romania, the lowest in Hungary[24]. Traditionally, the participation rate was also high in Latvia, but unfortunately we did not have comparable data for Latvia. In the observed periods, the participation rate increased only in Romania, while in most of other countries it declined, except in Poland where it was stable. The increasing participation rate in Romania could be the result of both income and added worker effect; men losing jobs do not drop out of the labour force and the young, the elderly at retirement age and women, who had previously been inactive due to income constraints, enter the labour force (Kallai, Traistaru, 1999).

Table 3.1. ***Participation rates in CEE countries*** *(%)*

	1993	1994	1995	1996	1997	1998
Estonia	**73.6**	**73.8**	**72.6**	**72.1**	**72.5**	**71.9**
Romania	**-**	**69.7**	**71.1**	**70.6**	**70.5**	**71.1**
Slovakia	**-**	**70.8**	**70.9**	**70.7**	**67.6**	**66.8**
Poland	**-**	**66.4**	**67.7**	**66.9**	**66.4**	**66.2**
Bulgaria	**66.4**	**63.6**	**62.4**	**63**	**63.2**	**61.6**
Czech*	**61.4**	**61.6**	**61.5**	**61.2**	**61.1**	**61**
Lithuania	**65.3**	**61.1**	**61.4**	**62.3**	**61.7**	**60.9**
Hungary*	**56**	**54**	**52.4**	**51.8**	**51.2**	**51.7**

Note: *Registration data
Source: Eamets and Arro, 2000

3.3. Demographic trends in Estonia

In order to have a closer look at the labour supply in Estonia, we should start from demographic changes. In the period 1989-1998, the dynamics of vital events have changed. The continuous population growth of the previous years culminated by the beginning of the nineties. Starting

[24] Despite the fact that there are no data for 15-64 age group in Hungary available before 1998, for 1998 LFS preliminary results show that the participation rate of the age group 15-64 is still below 60 %.

from 1990, the resident population of Estonia decreased steadily and by 1998 reached the same level as at the end of the seventies – below one and a half million. The reason was the negative value of both components of population change: net immigration has been negative since 1990 and birth rate has been decreasing since 1991.

The main reason for the population change has been the decreasing number of arrivals simultaneously with the large number of departures from Estonia. The Immigration Act, which came into force in 1990, and the Aliens Act (1993) played an important role in the decrease in arrivals. By these laws, immigration may not exceed 0.1% of the resident population at the beginning of the year.

Table 3.2. ***Estonia - population trends 1991-98*** *(thousands)*

	1989	1990	1991	1993	1995	1997	1998	Change 91-98	
Thousands								**No.**	**%**
Male	**731.4**	**735.1**	**734.9**	**713.3**	**695.9**	**680.7**	**676.6**	**-54.8**	**-7.5%**
Female	**834.3**	**836.6**	**835.5**	**813.2**	**795.7**	**781.4**	**777.2**	**-57.1**	**-6.8%**
TOTALS	**1565.7**	**1571.7**	**1570.4**	**1526.5**	**1491.6**	**1462.8**	**1453.8**	**-111.9**	**-7.1%**
Percentage split									
Male	**46.7%**	**46.8%**	**46.8**	**46.7**	**46.7**	**46.6**	**46.5**	**-**	**-**
Female	**53.3%**	**53.2%**	**53.2**	**53.3**	**53.3**	**53.4**	**53.5**	**-**	**-**

Source: Statistical Office of Estonia (in 1989 population census data)

The difference between the number of deaths and births has increased; since 1991, the number of deaths has exceeded the number of live births. From the end of the eighties onwards, when live births numbered over 25 000 per year, the number of births has decreased very quickly, and in 1998 reached only 50% of the number in 1987, which was the year with the largest number of births. To some extent the decrease in the number of births can be linked to the large emigration.

As the economic conditions have changed, many young families have postponed the birth of the first child. They prefer to establish an adequate economic environment for family life first. Adjustment problems and economic instability have also resulted in unstable family relations, with an increasing number of divorces and a falling birth rate. Health care statistics reveal that the number of unnatural deaths (alcohol poisoning, suicides, homicides, traffic accidents) increased nearly twofold in the 1990s as compared to the 1980s. This has primarily reduced the number of people of working age, especially the younger male age groups.

According to the preliminary data of Census of population in 2000, the population has declined even more than the Statistical Office expected. According to the census, there were about 1.35 million people in Estonia in March 2000. We can see that the total number has declined more than 200 000 compared with last census in 1989.

3.4. Participation rates of the population by age groups

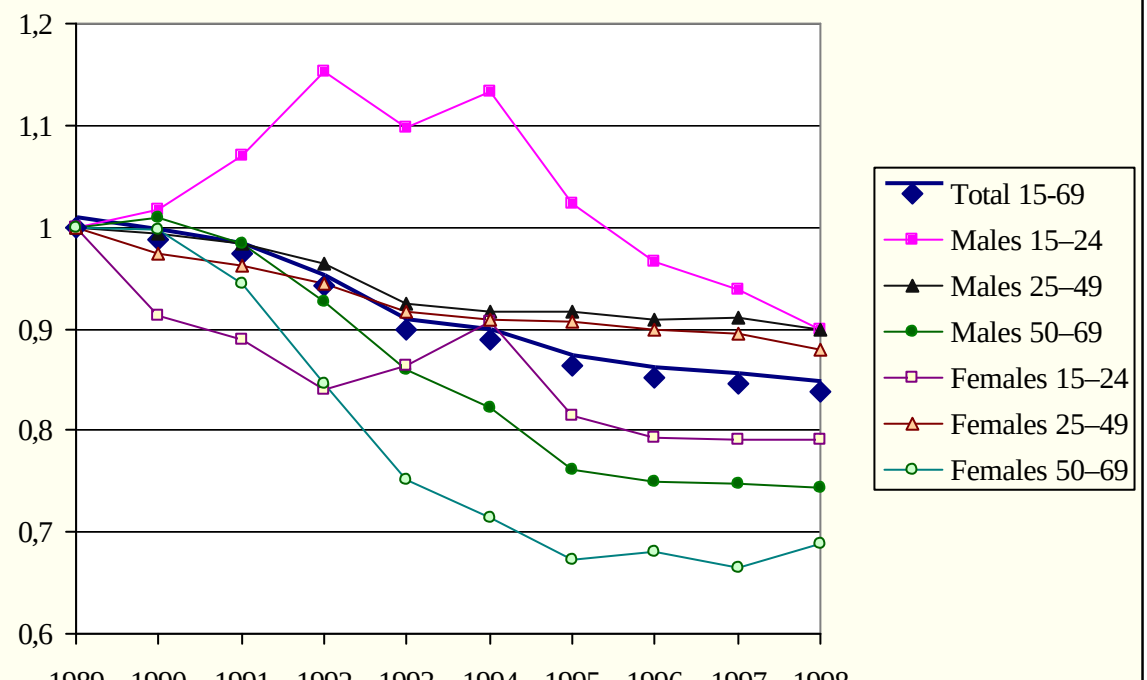
The market economy reforms of the 1990s in Estonia led nearly half of those employed to have to change their jobs.

This did not always happen voluntarily, but was frequently a result of being made redundant or

of the employing enterprise being reorganised or closed down. It was a tremendous shock for the people of working age when the guaranteed employment of the Soviet era was suddenly replaced by competition for the rapidly dwindling number of jobs, for which the applicants were required to have good skills and knowledge.

Participation rates dropped for all age groups during the transition. As we can see from Table A3 (in the Appendix), the lowest participation rate was for young females (only 38.7% in 1998) and the highest for males in the age group 25-49 (92.3%). Old people left the labour market during the transition in both gender groups. It was their participation rates that declined the most. The biggest gender difference between age groups is among older people as well. While for males the participation rate was 59.4% in the 50-69 age group, for females the corresponding rate was 42.4%. If we look at the dynamics of participation rates, we can observe that the increased difference between male and female participation rates is caused by the widening gap between the participation rates of young females and males. In 1989, the participation rate of young males was around 52% and it remained almost the same after 8 years of transition. The female participation rate declined from 48% to 38%.

Figure 3.1. Participation Indexes of different age groups (1989=1)



Source: Labour Force. 1999. Statistical Office of Estonia, Tallinn 2000

If we analyse absolute changes of the labour force by age groups, we can see that the most interesting are the two extreme cases, younger males (15-24) and elder females (50-69).

Young males' (15-24) participation trend is very different from the average one. There could be

a data comparability problem. After 1995, this sector in the labour force started to decline as well, but still, it seems to be quite obvious that this age group did relatively well in the first years of transition, because they were more flexible in adapting themselves to the changing labour market conditions.

The group at the other extreme is women at the age of 50-69. As this age group consists of people of pension age[25] as well, it indicates that many pension-aged women quit in the first year of transition. Also, there are some surveys conducted during the beginning of transition which show that first dismissals affected mostly women in pre-retirement age (Eamets, 1993).

3.5. Educational dimension of the Estonian labour market

In Estonia, the share of employed persons with higher education was relatively high in 1995. Between 1989 and 1995, the share increased from 15.7% to 18.0% (see Table 3.3). In the future, the share of employed persons with higher education will continue to increase in Estonia, mainly due to the increasing number of institutions of higher education and to the various educational opportunities. The share of people with vocational education is also relatively high. Regardless of the very large share of employed persons with vocational education, it must be conceded that in a society where changes in the economy are swift, changes in the educational system cannot keep up with the needs of the economy. Structural unemployment is characterised by the mismatch of people's skills and the actual needs of the economy. Since most of the unemployment in Estonia is structural, the only possible conclusion is that vocational secondary education and job training have not been flexible enough to satisfy the needs of the labour market.

Table 3.3. ***Estonian population aged 15–69 by economic status and education*** *(%)*

Education category	Unemployed		Employed		Inactive	
	1989	1995	1989	1995	1989	1995
Total	100	100	100	100	100	100
Basic education	10.1	25.1	18.9	13.2	44.6	39.3
Upper secondary general ISCED level cat.3	37.7	33.1	27.8	27.8	25.9	29.5
Upper vocational education ISCED level cat.3	29.0	16.0	13.2	15.4	10.6	10.8
Post secondary technical ISCED level cat.5	20.3	21.6	23.9	25.1	12.8	14.5
Higher education ISCED level cat.6	2.9	4.2	15.7	18.0	6.1	5.8

Note: 1976 ISCED classification is used
Sources: Estonian Labour Force Surveys

A reform is underway in Estonia in the field of vocational training. The problems of over-capacity and obsolete curricula are felt strongly, especially in the field of agricultural schools. Currently, the network of vocational training schools is spread quite evenly over the country, but it is unclear whether the closure of schools (most likely in rural areas) can be prevented. The greatest problem in vocational training is the general attitude towards educational issues in Estonia. Today it is common for young primary school leavers to choose secondary education instead of vocational education. Most secondary school students hope to continue their education at universities, but of course the number of places available at universities is limited.

[25] For more information about pension age see chapter 6 appendixes.

Table 3.4. ***Estonian population aged 15–74 by economic status, sex and education, 2nd quarter 1998*** (%)

ISCED 97 educational	Labour force			Inactive persons	Total	Labour force participation rate, %	Employment rate %	Unemployment rate %
Level (code)*	Total	Employed	Unemployed					
Males and females								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**64.5**	**58.3**	**9.6**
Below upper secondary education	**12.9**	**12.0**	**21.8**	**51.7**	**26.7**	**31.2**	**26.2**	**16.1**
Upper secondary education	**57.1**	**56.5**	**62.6**	**36.3**	**49.7**	**74.1**	**66.3**	**10.5**
Tertiary education	**30.0**	**31.5**	**15.6**	**12.0**	**23.6**	**81.9**	**77.8**	**5.0**
Males								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**69.6**	**64.6**	**10.4**
Below upper secondary education	**15.5**	**14.3**	**25.3**	**57.2**	**27.1**	**41.1**	**34.1**	**17.0**
Upper secondary education	**61.4**	**61.0**	**64.9**	**35.3**	**54.1**	**81.8**	**72.8**	**11.0**
Tertiary education	**23.2**	**24.7**	**(9.8)**	**7.5**	**18.8**	**88.9**	**84.9**	**(4.5)**
Females								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**57.7**	**52.8**	**8.6**
Below upper secondary education	**10.1**	**9.5**	**17.1**	**48.4**	**26.3**	**22.2**	**19.0**	**14.5**
Upper secondary education	**52.4**	**51.7**	**59.6**	**36.9**	**45.9**	**66.0**	**59.5**	**9.8**
Tertiary education	**37.4**	**38.8**	**22.9**	**14.7**	**27.8**	**77.7**	**73.6**	**5.3**

ISCED 97 Educational level: below upper secondary — primary and basic education; upper secondary — secondary education, vocational education, post-secondary technical after basic education; tertiary — post-secondary technical after secondary education, university-level education, master's and doctor's degree.
Sources: Estonian Labour Force Surveys

Industrial data shows that Estonian firms acting as sub-contractors account for a relatively large part of employment in manufacturing, which is an indication of the relatively high qualifications of the Estonian labour force, since the production is intended for the EU market. Another important factor is the current low cost of labour compared with Scandinavian countries (Eamets et al, 1999))

Unfortunately, data from 1998 represents a different classification system (ISCED 97). These two tables (Tables 3.3 and 3.4) are therefore not fully comparable; however, we can see that educated people tend more to be in employment and uneducated people in non-participation. Also the employment rates and unemployment rates depend on education level. Unemployment rates are higher in lower education groups, both for males and females. One interesting fact is that for females with tertiary education, the unemployment rate is above average. This is a result of the relatively high unemployment rate (7.0%) of females with post-secondary technical education. Later in the flow chapter we show using econometric techniques that education levels affect significantly different labour market flows.

3.6. Minorities in the transition economies' labour markets - stylised facts

When speaking of the situation in the labour market the ethnical issues must not be disregarded. The literature describing discrimination of minorities is huge[26]. Mostly topics like wage discrimination of different ethnic groups, discrimination by gender, discrimination and unemployment are well covered in this literature. Therefore it is important to look what is the situation of national minorities in transition economies, because soon or later we are facing the same problems widely covered in Western economic literature

Most CEE countries are ethnically relatively homogeneous. The exceptions are two of the Baltic states, Estonia and Latvia, where the Russian minority consists of 28% and 32% respectively. The share of non-Latvians and non-Estonians is even higher (45% and 35% respectively). Most of them are Russian-speaking and in the case of Estonia, their knowledge of the Estonian language is poor. The result is that they have less opportunities in the labour market and their unemployment rate is higher than average.

According to information of the Background studies, Poland, Lithuania and Bulgaria had no problems/information on the ethnic minorities in the labour market. The lack of sufficient statistical information seems to be the major problem in most countries (see Beleva et al, 1999; Sztanderska and Piotrowski; 1999; Gruzevskis and Beleckiene, 1999).

We see that Hungarians are one of the biggest minorities in Slovakia and Romania. At the same time their performance in the labour market is relatively similar to the behaviour of the majority. In Romania their employment and participation rates are somewhat lower than that of Romanians, but unemployment rates are significally lower as well (Ciobanu and Parciog, 1999).

If we analyse the similar Estonian data, we can see that while the participation rates are relatively similar, there is a big difference in unemployment and employment rates between Estonians and non-Estonians. We do not have similar data about Latvia except the information on general unemployment. The unemployment rate of non-Latvians is 70% higher than the unemployment rate of Latvians (Trapenciere, 1999).

Table 3.5. ***Ethnic composition of population in selected CEE countries*** (% from total population)

Country , year	Nationality	%
Slovakia 98	**Slovak**	**85.6**
	Hungarian	**10.6**
	Romany	**1.7**
Romania 97	**Romanians**	**89.7**
	Hungarian	**6.9**
	Romany	**1.8**
Estonia 98	**Estonians**	**65.1**
	Non-Estonians total	**34.9**
	Russians	**28.1**
Latvia 98	**Latvians**	**54.8**
	Non-Latvians total	**45.2**
	Russians	**32.4**

[26] See Reimers, 1983; Gottfries and McCormick, 1995; Naylor, 1994; LeBlanc, 1995 among others.

Source: Eamets and Arro, 2000

In Estonia, the Russian speaking population (mostly Russian, Ukrainian and Byelorussian inhabitants), whose massive immigration took place during the Soviet period, live in towns where in some cases they form an absolute majority. This is mainly the case in Tallinn (capital of Estonia) and in the North-Eastern industrial cities Narva, Kohtla-Järve and Sillamäe. The migration has resulted in a linguistic and cultural russification of the historically Estonian region of Ida-Virumaa over the course of one or two generations.

The share of Estonians in Estonia's population decreased steadily from 1950 to 1989. The regulation of immigration after the approval of the Immigration Act in 1990 and several other factors (primarily the restoration of Estonia's independence in 1991 and the sharp decrease of illegal immigration to Estonia after the closure of the borders) have resulted in an approximately three percent increase of the share of ethnic Estonians in the population from 1989 to 1994. Also, approximately 80 500 persons have left Estonia in these years, including approximately 5000 Jews, Germans, and Ingrian Finns emigrating to the West and at least 45500 persons to Russia (including 40000 ethnic Russians).

3.7. Regional disparities in Estonia

In Estonia we have 15 counties and 220 local municipalities. The distances from the centre of Estonia to the borders are at most 200-250 km. Thus, the geographical distances are not long. Two counties - Hiiu and Saare - are located in the islands, witch results in some mobility problems because of the deficiencies of travel related infrastructure. The main way to reach the mainland is by sea.

Despite the fact that distances in Estonia are relatively short, we can observe an increase in regional differences throughout the transition period. Due to this, the potential of the less advantaged areas deteriorates further, mainly because of emigration, leading to the disappearance of independent development potential in wide areas, social degradation and an increase in welfare expenses. We can say that a remarkably better socio-economic situation obtains in the cities, and that the hinterlands of large cities are also clearly doing very well, while at the same time, rural areas are in a very bad shape. Regional development in Estonia is primarily taking place in Tallinn (Harju county), followed by the other cities. These are the centres that have the critical mass of residents, significant service resources or successfully operating export enterprises. Strong centres also have strong hinterlands. In the larger cities like Tallinn, Tartu, and Pärnu the demographic, income and even labour situation of the hinterland municipalities is better than the average. This is primarily due to the suburban family-home settlements.

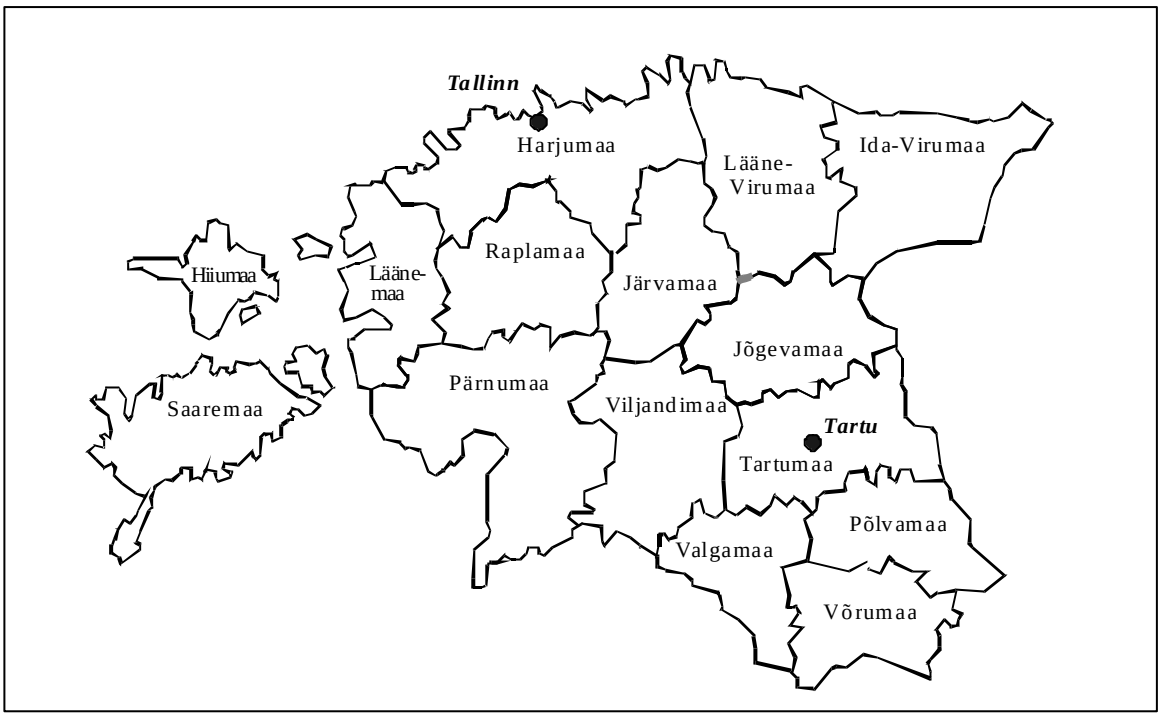


Figure 3.2. The map of Estonia by counties.

The population and entrepreneurship concentrated in South-Eastern (Valga, Võru and Põlva counties), central (Järva, Jõgeva, Rapla counties) and Western towns (Lääne, Saare counties) is insufficient to exert an integrated, positive influence on the hinterlands. This is the result of the failure to achieve a critical mass of entrepreneurs and intellectuals, which in order is influenced by the lack of high-quality services (training, information, counselling, etc.) to attract them. The centres of these areas (primarily county or central towns) need some institutions that can take advantage of the existing local intellectual potential and can also meet the local deficit of services.

The potential of the population of North-eastern cities (in Ida-Viru county) is large enough. However, due to the restructuring difficulties and ethno-cultural problems, they are incapable of exerting a positive influence on the hinterlands. Rather, a negative influence is exerted. Thus, consideration should be given to using a variety of development strategies for the North-eastern agglomerations and the communities alongside Lake Peipsi, aimed at various market niches (e.g. industry and tourism).

In general, regional disparities in Estonia represent three different spatial and settlement levels (Raagmaa, 1996).

- The centre-periphery differences have been amplified, since the entrepreneurs of Tallinn and also many foreign companies (and to some extent of other major towns) have started to exploit Estonia's position between the East and the West. This has resulted in significantly larger flows of money and goods through Tallinn than would be required to service only the city itself and its hinterland. Tallinn has become the generator of development (and also inflation) in Estonia. The city is draining talented individuals and thus development potential from Estonia's peripheral regions, thanks to higher wages.
- The change in Estonia's geopolitical situation has provided new opportunities for the western coastal regions, such as the exploitation of ports, tourism and various joint ventures. The

eastern counties on the other hand, have had their existing ties to the St. Petersburg markets severed, which has caused serious problems for their primarily agricultural economy. The transport expenses and the dependence on the ports and mediating firms further compound these difficulties.

- As a result of the agrarian reforms and due to the slowing of the land reforms, most of Estonia's large agricultural enterprises have disintegrated and their property has been divided between private farms or co-operatives. The employment created in rural areas during the 1970's and 1980's has disappeared. The registered unemployment exceeds 10 percent (in some municipalities, half of the working age population is actually out of work) in areas far from the large urban markets, which depend primarily on the sale of milk to dairy plants. The situation in these areas is further complicated by the inadequate educational qualifications among inhabitants in the over 40 year age-brackets and their inability and unwillingness to retrain quickly. The incidence of alcoholism has gone up. Consequently, it is often impossible to use local labour in newly created enterprises.

3.7.1. Regional differences of participation and employment

The reforms of the 1990s have to some extent even aggravated the regional differences in the population's age structure, since a large share of the new jobs are created in Tallinn. The decline of agricultural activities – after the liquidation of the collective and state farms, the entry of subsidised imported food into the Estonian market, and the customs barriers on the Russian market – has also had an impact. The hardest hit areas have been those where the majority of the population formerly earned their income from agriculture (Estonian Human Development Report 1997).

Table 3.6. ***Participation and employment rates by counties***

		Participation rate			Employment rate		
Region	**County**	**1989**	**1993**	**1997**	**1989**	**1993**	**1997**
	TOTAL	**78.9**	**73.6**	**72.5**	**76.4**	**65.6**	**61.5**
Capital	**Tallinn**	**80.3**	**76.1**	**76.8**	**78.3**	**69.2**	**66.4**
Central Estonia	**Jõgeva**	**78.7**	**73.2**	**68.1**	**75.0**	**61.3**	**54.4**
	Järva	**78.6**	**75.3**	**72.4**	**76.4**	**66.2**	**59.8**
	Rapla	**79.5**	**75.0**	**71.5**	**76.3**	**69.4**	**61.0**
	Viljandi	**78.9**	**74.3**	**68.6**	**75.2**	**65.7**	**58.3**
	Ida-Viru	**80.9**	**74.6**	**73.7**	**78.1**	**64.0**	**58.7**
North-eastern Estonia	**Lääne-Viru**	**78.6**	**74.4**	**70.3**	**76.4**	**67.6**	**60.4**
	Hiiu	**86.4**	**77.4**	**72.3**	**84.8**	**73.8**	**66.3**
Western Estonia	**Lääne**	**77.0**	**74.3**	**71.7**	**73.2**	**64.3**	**61.7**
	Pärnu	**78.0**	**71.0**	**73.5**	**75.0**	**62.9**	**65.6**
	Saare	**78.2**	**71.3**	**70.3**	**76.6**	**64.4**	**57.7**
	Põlva	**75.2**	**61.9**	**65.0**	**73.9**	**52.8**	**53.3**
Southern Estonia	**Tartu**	**73.6**	**71.0**	**67.6**	**70.8**	**63.2**	**57.4**
	Valga	**76.8**	**66.2**	**69.7**	**71.4**	**56.8**	**58.7**
	Võru	**77.0**	**67.7**	**64.8**	**74.8**	**54.7**	**52.5**

Sources: Estonian Labour Force Surveys

It is primarily the regions with an economy concentrated in a single sector that face the problems with restructuring. For this reason, it is extremely important that the economy of a region diversifies. If a crisis should develop in one sector, the labour can obtain new skills and find

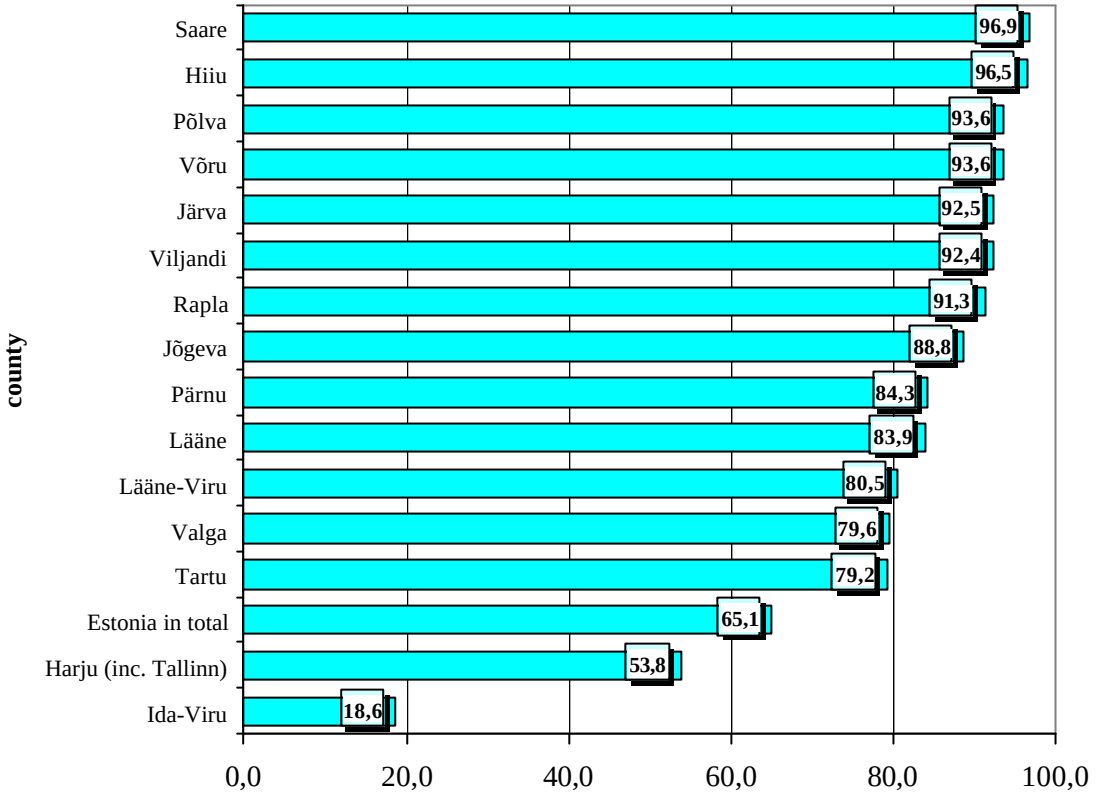
employment in the other. Unfortunately, there are a number of towns with a single enterprise (mono-functional towns) where the entire population is directly or indirectly dependent on the same employer. The workforce in these towns is in the most critical position. The largest number of mono-functional towns is in the Ida-Viru county, where the decline of the secondary sector (primarily manufacturing, mining, electricity production) has left many people unemployed. At the same time, job creation is very low in these regions. According to the enterprise survey data launched by Faggio and Konings (1999), the excess job creation rate[27] was 2.5 times lower than in the capital, Tallinn (on average 1994-1997).

The participation rates have declined most in the agricultural areas, such as Põlva, Jõgeva, Viljandi, Hiiu and Võru counties (table 3.6). The smallest decrease is observed in the capital and in Pärnu county.

Inequalities in regional and sectoral employment in terms of labour supply and demand have proved a source of aggravation. We may observe that unemployment has shown deep regional differentiation due to the uneven location of new jobs (evidence of structural unemployment). Unemployment is a serious problem in the mainly agricultural counties in southern Estonia and in north-eastern Estonia, with its large concentration of heavy industry. Unemployment, there, is mostly linked to the recession suffered by former all-Soviet enterprises in Narva, Sillamäe and Kohtla-Järve. The bankruptcy of major employers in small towns with only one or two sources of jobs has caused job losses for some people. Moreover, unemployment continues to be a major problem in rural areas. The poorly developed infrastructure there contributes to the lack of further investment.

[27] For definition see chapter 2.

Figure 3.3. Share of Estonians in the population by counties in 1998



Source: Statistical Office of Estonia

Regional differences in the age structure of the Estonian population have mainly been preserved. In Harju county, for example, at the beginning of 1997, there were 68 non-working-age residents per 100 working-age residents, and in Võru county 89. The employment burden on the residents in industrial North and North-eastern Estonia is lower than on the agricultural periphery, which has mainly retirement-age population.

From Figure 3.3, we can see that Russian minorities are unevenly distributed between counties. Ida-Viru and the capital area (Harju) have the lowest share of Estonians (and highest share of Russian speakers). In all other counties the share of Estonians is around 80% or more.

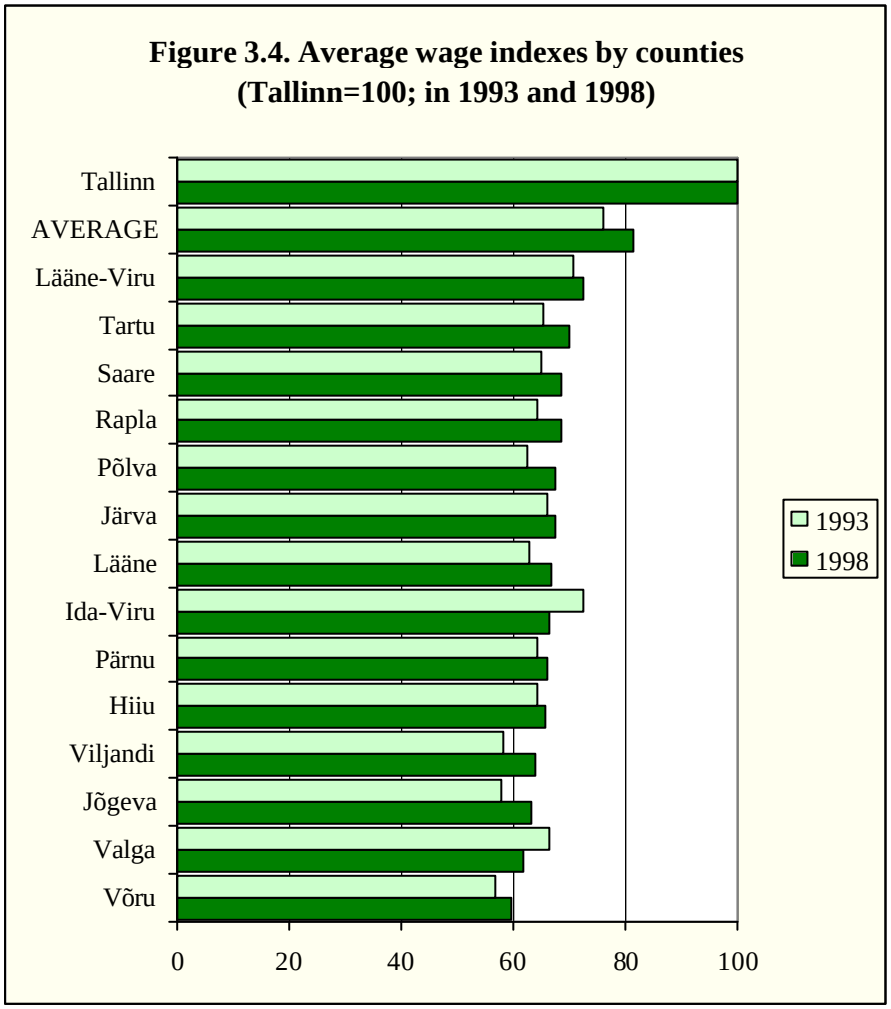
3.7.2 Regional wage differences

Wage changes have also varied by region. There were no significant regional differences in the respondents' wages in 1989. Wages increased in the period of transition, but the increase was by no means even in all regions. If we observe the period between 1993-1998, we can see that the lowest rise of the nominal wage has been in the Valga and Ida-Viru counties. The average wage of Harju county (including Tallinn) is the only one that exceeded the Estonian average wage.

Wages are also relatively high in Rapla, Lääne-Viru and Saare counties in 1998. But still, in 1998, the average wage in Võru county makes up only 59.7% of the average wage in Tallinn. For the "second best" average wage, Lääne-Viru county, the according number was only 72.3%

Lower wages are generally observed in the counties with a larger share of people occupied in agriculture and counties where the unemployment level is relatively high. The lower wages of the workers in the peripheral regions (Valga and Põlva counties) are also evident. To escape this situation, an increase in the number of educated, active people is needed. It can be predicted that the high unemployment in southern Estonia (primarily Võru, Valga and Põlva counties) will not significantly decrease if the number of entrepreneurs remains small and the low wage levels remain unattractive for the people outside. Low wages could attract investments from outside the county, but the labour force with a low education level, the limited purchasing power of the residents and the remoteness from major cities may have an opposite effect (Eamets, Philips; 1998).

Figure 3.4. Average wage indexes by counties (Tallinn=100; in 1993 and 1998)



Source: Statistical Office of Estonia

3.8. Summary

An important finding from this section is that the labour supply has drastically declined during the transition period. The main reason for the population decrease has been the declining number of arrivals simultaneously with the large number of departures from Estonia.

Also the birth rate is declining. Since 1991, the number of deaths has exceeded the number of live births. From the late eighties when live births numbered over 25 000 per year, the number of births has decreased very quickly. In 1998, the number of birth made only 50% of the same figure in 1987, which was the year with the largest number of births. To some extent the decrease in the number of births can be linked to the large emigration.

According to the preliminary data of Census of population in 2000, the population numbers have declined even more than the Statistical Office expected. According to the census, there were about 1.35 million people in Estonia in March 2000. We can see that the total number has declined by more than 200 000 compared with the last census in 1989. These demographic trends give us one possible explanation for the modest unemployment growth.

As we saw from previous chapters, the total labour force declined during 1989-1998 by 160 000. In this context, it is not so surprising that labour force participation rates in Estonia are among the highest in CEE countries. The decline has been relatively modest because of the total population decline.

If we look at the dynamics of participation rates by age groups, we can observe the increase in difference between male and female participation rates, which is caused by the widening gap between the participation rates of young females and males. In absolute terms, young males (especially in the first years of transition) at the age of 15-24 did relatively well. We assume that the reason behind this is their flexibility to adopt themselves to the changing labour market conditions faster than other age groups.

Estonia is a small country by area, but we can still observe big regional differences in participation rates, in employment rates and in wages. The most problematic areas are the regions with the economy concentrated in a single sector that faces problems with restructuring. Unfortunately, there are a number of towns with a single enterprise (mono-functional towns) where the entire population is directly or indirectly dependent on the same employer. The largest number of mono-functional towns are in Ida-Viru county (Ida-Virumaa), where the decline of the secondary sector (primarily manufacturing, but also energy production and mining) has left many people unemployed. At the same time, the job creation in these regions is the lowest in Estonia. Because the share of Russian population is more than 80% in this county, we are facing other problems as well in area: high and long term unemployment of the Russian minority. All this together with the wage differentials shows that the regional mobility of Estonian labour is low.

Regional differences are closely related to differences in average wage levels. This is mostly the problem of South Estonia, because in Ida Virumaa, the average wage level is relatively high (due to mining and energy sectors). Lower wages are generally observed in the counties with a larger share of people occupied in agriculture and in the counties where unemployment level is relatively high. It can be predicted that high unemployment in southern Estonia will not decrease significantly if the share of entrepreneurs remains small and the low wage levels remain unattractive for the people outside.

APPENDIX

Table A.1. ***Estonia - male population by age groups in 1991-98*** *(thousands)*

	1991	1993	1995	1997	1998	Change 91-98	
						No	%
TOTALS	**734.8**	**713.3**	**695.9**	**680.7**	**676.6**	**-58.3**	**-7.9**
15-19 years	**55.5**	**54.1**	**53.6**	**53.2**	**53.2**	**-2.3**	**-4.2**
20-25 years	**56.2**	**57.4**	**54.3**	**52.4**	**52.2**	**-4.0**	**-7.1**
26-44 years	**225.6**	**215.2**	**211.2**	**208.6**	**208.1**	**-17.6**	**-7.8**
45-65 years	**164.4**	**160.3**	**157.6**	**154.2**	**153.9**	**-10.5**	**-6.4**
65 +	**55.3**	**58.7**	**61.6**	**64.9**	**66.6**	**11.3**	**20.5**

Source: Statistical Office of Estonia

Table A.2. ***Estonia - female population by age groups 1991-98*** *(thousands)*

	1991	1993	1995	1997	1998	Change 91-98	
						No	%
TOTALS	**835.6**	**813.3**	**795.7**	**781.4**	**777.2**	**-58.3**	**-7.0**
15-19 years	**53.2**	**52.2**	**51.6**	**51.4**	**51.7**	**-1.5**	**-2.8**
20-25 years	**51.1**	**52.0**	**51.9**	**51.1**	**50.7**	**-0.3**	**-0.7**
26-44 years	**231.5**	**221.4**	**214.2**	**210.2**	**209.2**	**-22.3**	**-9.6**
45-65 years	**200.8**	**196.0**	**193.4**	**190.8**	**190.2**	**-10.6**	**-20.2**
65 +	**128.1**	**130.6**	**133.2**	**136.5**	**138.8**	**10.7**	**8.3**

Source: Statistical Office of Estonia

Table A.3. ***Estonian labour force participation rates*** *(%)*

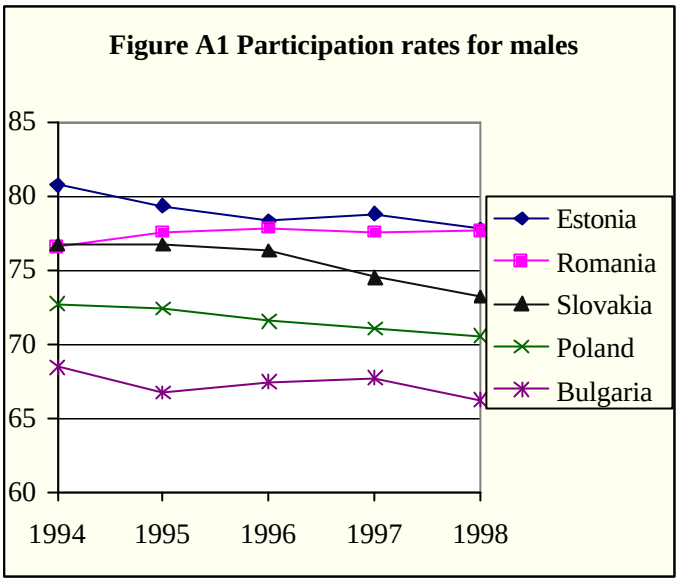
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total										
15-24	**50.4**	**48.8**	**49.6**	**50.4**	**49.9**	**52.2**	**47.7**	**45.9**	**45.4**	**44.4**
25-49	**93.9**	**92.5**	**91.9**	**91.4**	**90.8**	**90.4**	**90.0**	**89.1**	**89.4**	**88.1**
50-69	**66.2**	**65.1**	**61.9**	**56.3**	**51.7**	**50.3**	**48.0**	**48.8**	**48.7**	**49.6**
16 until pension age	**84.9**	**83.4**	**82.9**	**82.0**	**81.6**	**81.5**	**80.1**	**79.4**	**78.8**	**78.2**
15-64	**78.9**	**77.9**	**76.9**	**75.1**	**73.6**	**73.8**	**72.6**	**72.1**	**72.5**	**71.9**
Males										
15-24	**52.3**	**53.3**	**56.1**	**60.1**	**57.7**	**60.1**	**55.6**	**53.1**	**52.0**	**50.0**
25-49	**97.8**	**97.2**	**96.8**	**96.1**	**95.1**	**94.6**	**94.0**	**92.9**	**93.5**	**92.3**
50-69	**77.8**	**76.5**	**73.6**	**68.3**	**63.9**	**62.2**	**58.8**	**58.9**	**59.4**	**59.4**
16 until pension age	**87.4**	**87.0**	**87.3**	**86.7**	**85.9**	**85.8**	**84.0**	**83.1**	**82.4**	**81.5**
15-64	**83.8**	**83.7**	**83.5**	**82.5**	**80.5**	**80.7**	**79.3**	**78.3**	**78.8**	**77.8**
Females										
15-24	**48.3**	**44.0**	**42.7**	**40.0**	**41.5**	**43.8**	**39.5**	**38.5**	**38.6**	**38.7**
25-49	**90.1**	**88.0**	**87.3**	**86.9**	**86.7**	**86.4**	**86.1**	**85.4**	**85.4**	**84.1**
50-69	**57.8**	**56.8**	**53.3**	**47.5**	**42.7**	**41.5**	**40.0**	**41.2**	**40.7**	**42.4**
16 until pension age	**82.1**	**79.5**	**78.2**	**76.9**	**77.1**	**76.9**	**75.9**	**75.5**	**75.0**	**74.8**
15-64	**74.3**	**72.4**	**70.8**	**68.2**	**67.2**	**67.4**	**66.3**	**66.4**	**66.6**	**66.4**

Sources: Estonian Labour Force Surveys

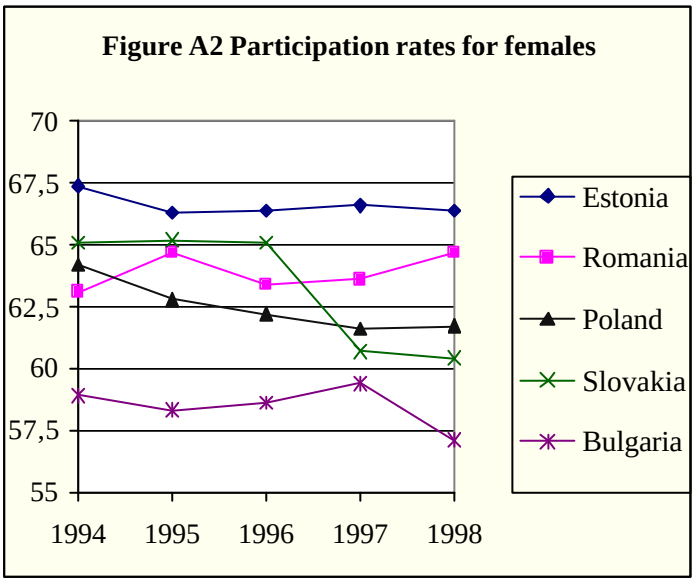
Table A.4. ***Average monthly nominal wages by counties as shares to the wage level in capital and the wage growth indexes (1993=1).***

County	Wage growth index (1993=1)					Tallinn =100%					
	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Harju	1.58	2.12	2.61	3.10	3.59	98.7	99.0	99.2	99.0	97.8	98.4
Tallinn	1.57	2.11	2.61	3.13	3.61	100.0	100.0	100.0	100.0	100.0	100.0
Hiiu	1.65	2.44	3.17	3.46	3.68	64.4	67.7	74.4	78.2	71.1	65.7
Ida-Viru	1.64	2.21	2.74	3.09	3.31	72.5	75.7	75.9	76.3	71.6	66.5
Jõgeva	1.51	2.24	2.86	3.37	3.96	57.7	55.3	61.2	63.2	62.0	63.2
Järva	1.48	2.15	2.69	3.14	3.68	65.9	62.1	67.3	68.1	66.2	67.3
Lääne	1.58	2.31	2.96	3.38	3.83	62.8	63.0	68.6	71.3	67.7	66.6
Lääne-Viru	1.59	2.22	2.68	3.02	3.68	70.8	71.5	74.4	72.8	68.2	72.3
Põlva	1.60	2.31	2.88	3.23	3.88	62.6	63.7	68.4	69.3	64.7	67.3
Pärnu	1.60	2.32	2.95	3.25	3.71	64.3	65.2	70.7	72.7	66.7	66.1
Rapla	1.64	2.33	2.87	3.46	3.85	64.2	67.1	71.0	70.6	70.9	68.5
Saare	1.57	2.25	2.79	3.16	3.81	65.1	64.8	69.3	69.7	65.7	68.7
Tartu	1.66	2.32	2.91	3.37	3.86	65.4	68.8	72.0	73.0	70.3	69.9
Valga	1.56	2.19	2.56	2.81	3.35	66.3	65.7	68.8	65.1	59.5	61.6
Viljandi	1.69	2.40	3.03	3.46	3.96	58.0	62.2	65.9	67.4	64.1	63.7
Võru	1.63	2.31	2.89	3.29	3.79	56.9	59.0	62.4	63.1	59.8	59.7
AVERAGE	1.63	2.23	2.80	3.35	3.87	76.0	78.6	80.2	81.6	81.4	81.5

Source: Author's calculations based on the data of Statistical Office of Estonia



Source: Background Studies



Source: Background Studies

4. Structural imbalances in the labour market: Unemployment

4.1. Unemployment data

The labour market - and unemployment as a part of it - is under close attention in most countries regardless of their stage of development, size, wealth, or location. All the more attention should be paid to this problem in transition countries where, in the course of economic restructuring, a lot of people are often made redundant. In order to analyse the situation in the labour market and to develop programmes that could influence the labour market, adequate information is needed about the processes in the labour market.

With the support of international organisations, labour force surveys, using ILO standards have now been implemented in almost all CEE countries. Labour economists agree, that the labour force survey (LFS) provides the best measurements of an effective labour supply, reflecting the self-reported activity of employable individuals who are fit and available for work (Burda, 1998). Registry unemployment, in contrast, is based on actual count data generated by local labour offices and is related to the advantages flowing from this status, including access to job information, counselling and training programmes. Registration is a necessary precondition for unemployment benefit, health insurance and housing subsidies etc.

There are two main sources for unemployment statistics in Estonia: Registered unemployment data provided by Estonian Labour Market Board, and unemployment data based on labour force surveys, provided by Statistical Office of Estonia.

The Labour Force Survey enables us to present an unemployment rate (the share of all the unemployed seeking work from the labour force) that is in accordance with international standards[28]. Data obtained by the Labour Force Surveys measures the self-reported activity of employable individuals and is suitable for cross-country comparisons as the terms and methods are the same. According to Boeri *et al* (1998) there is a general agreement among labour economists that this data provides the closest approximation to what is generally referred to as effective labour supply (Boeri *et al*, pp. 75, 1998).

The most comprehensive overview of the present situation of unemployment comes from the statistics of the national Labour Market Board, showing how many unemployed jobseekers have been registered[29] and how many people are seeking job through state employment offices. The statistics of the Estonian Labour Market Board are valuable mainly because they are comprehensive. They enable us to analyse regional aspects of unemployment as well[30].

The unemployment register is administrated by the Estonian Labour Market Board, established in April 1991. The Labour Market Board works under the administration of the Ministry of Social Affairs.

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[28] According to the standards of the ILO, a person is unemployed if he or she is not employed, but is capable of work and wishes to find a job. Ability to work implies that the person is mentally and physically capable of working. The will to find a job means that the person has been seeking a job during the period under observation. (For a more detailed description and definition, see Eamets, R. Piliste et al 1996.)

[29] A registered unemployed jobseeker is a person with no income who registers his or her wish to find a job at the local employment office, visits the employment office at least once a month and is ready to take up a full-time job as soon as there is a suitable one.

[30] Regions (counties) are included in the LFSs but the sample size is not always representative

In January 1995, some changes in the Unemployed Persons Social Protection Act took effect. According to this Act, an unemployed jobseeker is a person who is seeking a job, whether he or she receives unemployment benefit or not. A jobseeker starts receiving unemployment benefit 10 days after registration at the employment office. But if the jobseeker left his or her previous job by his or her own request or was dismissed because of his or her own actions, the unemployment benefit is payable only 2 months after registration.

Since the regulations of the registration of jobseekers were changed, the official unemployment statistics changed too. The number of those receiving unemployment benefit (*registered unemployed*) was between 13 000 and 18 000, while the number of registered unemployed jobseekers is about twice as large. (See Table 4.1)

Table 4.1. ***Registered unemployed, registered unemployed job-seekers and unemployed persons according to the LFS****, (thousands, %)*

Year	Number of ILO unemployed (thousands)	Number of registered unemployed job seekers (thousands)	Registered unemployed who receiving benefit (thousands)	Unemployment rate (ILO) (%)	Unemployment rate (registered) (%)
1993	**49.6**	**33.4**	**18.8**	**6.5**	**4.5**
1994	**56.7**	**37.3**	**17.3**	**7.6**	**5.1**
1995	**70.9**	**34.9**	**13.9**	**9.8**	**5.1**
1996	**71.9**	**37.9**	**17.2**	**10**	**5.5**
1997	**74.1**	**34**	**18.3**	**10.5**	**5.1**
1998	**70.2**	**32**	**18.0**	**9.9**	**4.7**

Sources: Statistical Office of Estonia, Estonian Labour Market Board

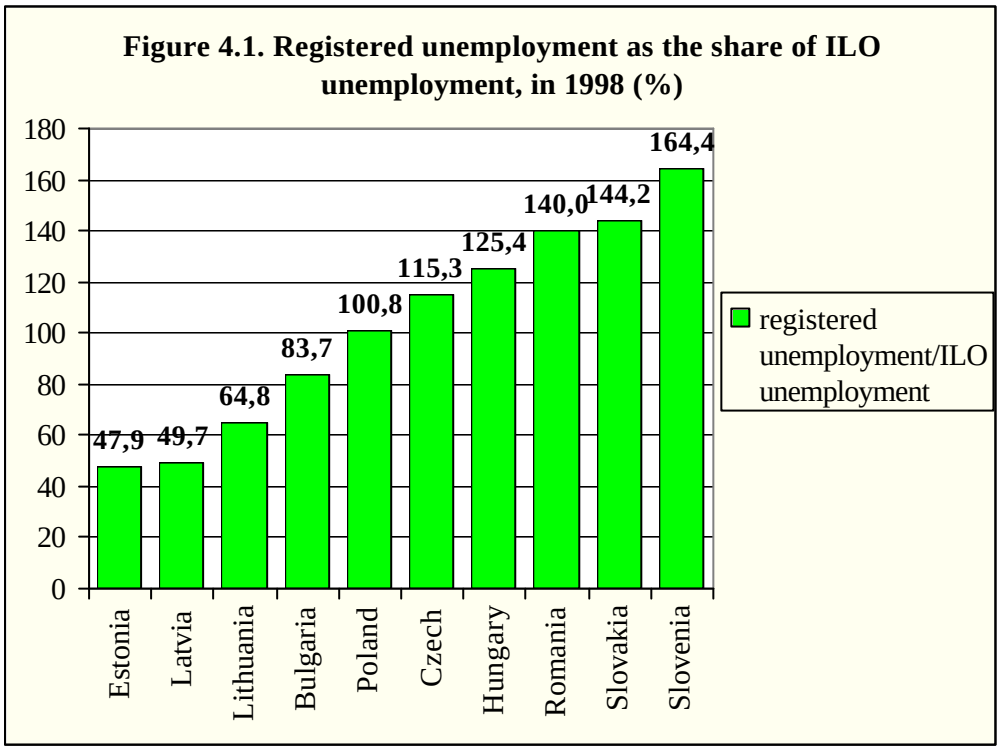
Unemployment rate in Estonia has been and is calculated as the ratio between the number of registered unemployed jobseekers and the working-age population. The reason is that monthly statistics for employment are not yet available. According to the Estonian LFS, 32.3% of the working-age population were inactive in 1998, and this is not reflected in the calculations of the unemployment rate in international statistics. Thus, a 5-5.5% unemployment rate is not comparable with unemployment indicators for other countries in the international context.

A more detailed picture of the situation in the labour market could be presented by the statistics of vacant jobs, but this is not possible since enterprises do not report that kind of data.

The relationship between registered and survey unemployment can be viewed as an indicator of the incentives offered by labour offices. In the three Baltic countries - Estonia, Latvia and Lithuania- the survey unemployment is almost twice as high as the registry one. In the Baltic countries the big difference can be explained by the tight eligibility conditions, short duration and low rate of unemployment benefits. In the Lithuanian case the unemployment benefit is 20.3% of the gross average wage but in Estonia it is only 7%. The duration of unemployment benefit is in both countries limited to 6 month. In the Estonian case the low rate of registered unemployment indicates also the low credibility of the local labour offices. This argument is also supported by the author's in earlier works (Eamets *et al*, 1999), where we pointed out that both employers and people with high qualifications believe, that jobs offered via the labour services are mostly blue-collar. As a result jobs requiring high qualifications are not on offer from the labour services (Eamets *et al*, pp. 50, 1999).

Another reason also mentioned by Huitfeldt (1996) in the case of the Czech Republic was the availability of a large number of short-term jobs. Thus, many workers do not report at the labour offices, but they are indeed unemployed according to the survey statistics.

In Poland, Hungary and the Czech Republic the registry and survey unemployment rates were similar in 1998 and the difference between the two numbers has never been big. In Romania and Slovenia the registry unemployment exceeds the survey one by 3.5 percentage points (1998) and 6.6 percentage points (1996) respectively (Eamets, Arro, 2000).



Source: Eamets, Arro, 2000

The differences between registered and survey unemployment are not accurate from a labour policy viewpoint. For instance in the case of external shock the increase of registered unemployment can lead us to draw wrong conclusions. One can expect that the efficiency of labour services to increase. Especially if the unemployment growth appears with time lag and the economy is recovering. This example illustrates the situation in Estonia, in the beginning of 1999. Labour force survey results showed us a year later that total unemployment increased in the beginning of 1999 and that the registered unemployment/survey unemployment ratio was constant.

4.2. Unemployment dynamics in CEE countries

While all CEE countries have experienced the systematic changes of transformation, there has been a substantial role degree of heterogeneity in both the initial endowments and subsequent policy choices of individual countries. One of observable outcomes has been the considerable variation in both the speed with which unemployment appeared and the height which it has reached.

One can point out three factors influencing the dynamics and characteristics of unemployment in transition:

- eliminating labour hoarding, i.e. hidden unemployment being transformed into open unemployment;
- the aggregate macro shocks caused by stabilisation and CMEA breakdown;
- the medium/long term process of reallocation of labour from less productive to more productive activities, resulting from liberalisation and privatisation.

Comparing the unemployment rates (ILO) of the transition countries, different patterns of development can be seen (see figure 4.2). Unemployment has been rising continuously in the Czech Republic and Estonia (except in 1998) and it reached the level of 6.8% (1998) and 11.7% (1999) respectively.

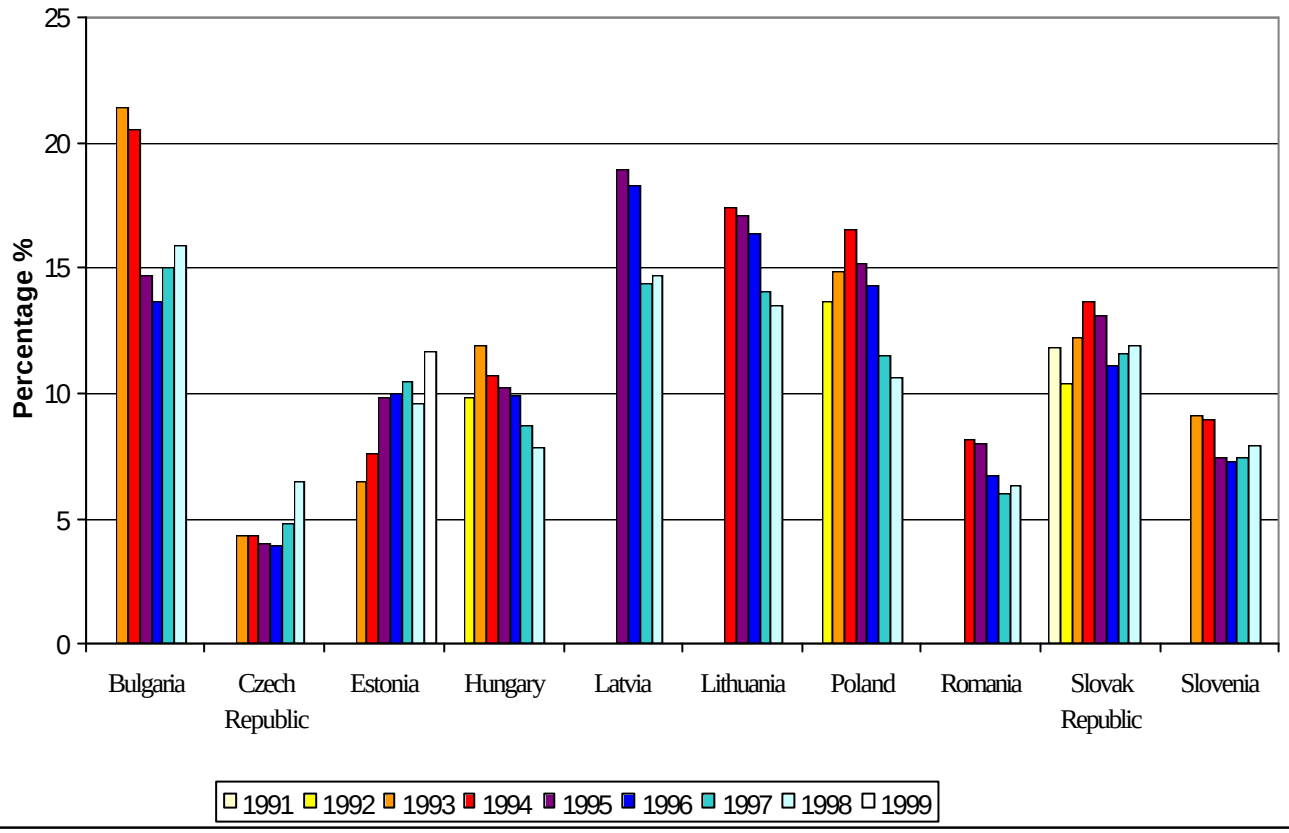
Hungary, Slovenia, Romania and also the Slovak Republic have experienced a decline in unemployment rates. It can be argued that the stable downward trend in Hungary, Slovenia and the Slovak Republic is a result of stable economic development as well as well-functioning labour market policies. But still the average unemployment rate remains high as a consequence of very low job creation (Lubyova, 1999). In Romania the relatively low level of unemployment can be explained by the high employment level in agricultural sector. The employment in this sector has been rising gradually and reached the level of 36.6% of total employment, which is more than the employment in industry and services. At the same time the productivity and the incomes of agricultural workers are very low and many of them live in poverty (Ciobanu *et al*, pp.63, 1999). Another reason for low unemployment in Romania could be the slow privatisation process, which, according to Ciobanu *et al* (1999), "was far from being finalized" in 1997. The state continued to subsidise the loss-making units especially in the industrial sector.

What are the reasons of very low unemployment rate in the Czech Republic in early 90-s? Many authors find the explanation in the exceptional dynamics of Czech unemployment in the labour market flow analysis. Inflow rates into unemployment have been persistently lower and outflow *rates* from unemployment have been much higher than in other transitional countries (see for example Boeri, 1994, Commander and Tolstopiatenko, 1997, Huitfeldt, 1996, Sorm and Terrell, 1999 and Svejnar et al, 1995 among others).

Until 1998, the inflow rate into unemployment has been at levels below one per cent in the Czech Republic. The inflow rates in other neighbouring transitional countries have been persistently higher, in the range of 1 - 1.8 per cent.[31] In explaining the low level of unemployment, we should, therefore, focus on what caused the unemployment outflows to be so high. One possible explanation supported by some studies, is that the service sector was relatively under-staffed in the Czech Republic during planned economy and was therefore able to absorb a larger proportion of workers (Munich et al, 1999)

[31] This indicates that the reallocation of labour through unemployment has been lower in the Czech lands. Labour reallocation has been accomplished through job-to-job transitions. Some experts claim that low inflow rates support the hypothesis of slow and delayed restructuring. This hypothesis, however, cannot be definitely confirmed since there are no internationally comparable statistics in the job-to-job labour market dynamics of early transition.

Figure 4.2. ILO unemployment rates in different CEE countries



Source: Eamets, Arro, 2000

Table 4.2. ***Unemployment monthly inflow*** [(a)] ***and outflow rates*** [(a)] *(Registered data)*

	1992	1993	1994	1995	1996	1997	1998
Monthly inflow rates							
Czech Republic	0.9	0.7	0.6	0.6	0.6	0.8	1.1
Slovakia	1.5	1.8	1.3	1.4	1.5	-	-
Poland	0.9	1.1	1.2	1.3	1.2	-	-
Hungary	-	1.3	1.1	1	1.2	-	-
Estonia EU/E [(b)]						0.68	0.70
Monthly outflow rates							
Czech Republic	24.8	20.1	19.7	19.7	18.8	15.7	13.9
Slovakia [(c)]	10.0	7.9	8.2	9.4	9.9	9.4-	7.7-
Poland	4.3	4.8	6.1	8	16.4	-	-
Hungary	-	7.6	9.1	7.8	9	-	-
Estonia (UE/U) [(b)]		3.2	3.5	3.6	3.5	3.3	4.0

Note: [(a)] Average monthly flows as a percentage of source of population

Source: Munich et al, 1999, [(b)] Estonian Labour Market Board, author's calculations [(c)] Lubyova, et al, 1999.

If we look at Estonian unemployment inflows and outflows, then first, one can mention that the Estonian statistics in table 4.2. are not fully comparable with those from other CEE countries. The reason is that registered unemployment represents only 50% of total unemployment.

Estonian monthly inflow rates were at the same level with those in Czech Republic.

An interesting phenomenon is the outflow rates. Estonian unemployment outflow rates are among the lowest compared with the countries presented in table 4.2. Again, the reason could be a low level of registration and an incomplete registration of vacancies.

Table 4.3. provides a flow data and other selected measures of Estonia's labour market performance based on survey data. For comparison purpose they have been calculated in exactly same way as the ones initially provided by Alogoskoufis *et al*. (1995) and later for Poland which were calculated by Gora (1997). The comparison of the Estonian results with the results for Poland and the selected OECD countries enables us to conclude that the Estonian labour market does not differ from the labour markets of developed western countries and Poland. In particular, the opinion of low unemployment outflow rates presented in the previous table proves to be incorrect. The share of long term unemployment is not particularly high, but at the same time the average unemployment spell is relatively high. Both pieces of information suggest that there are two groups of workers among the unemployed, first, a group leaving unemployment relatively quickly and second, a group of people who are unemployed for very long time. This also partly explains why inflow rates, which are based on monthly data, are very low in Estonia.

Table 4.3. ***Annual gross workers flows in Estonia, Poland and the selected OECD countries***

	Estonia				Poland		France	Germany	Spain	UK
	1994	1995	1996	1997	1994	1995	1987	1987	1987	1987
Unemployment inflow (EU+NU)/(E+N)	5.09	3.81	4.96	4.38	7.4	6.0	3.88	3.01	1.61	7.8
Unemployment outflow (UN+UE)/U	60.32	40.38	45.96	43.57	51.7	53.5	69.62	93.33	16.8	120.4
Employment inflows H=(NE+UE+EE)/E	27.56	15.82	20.78	17.74	17.9	16.3	28.86	22.33	19.8	6.55
Employment outflows S=(EU+EN+EE)/E	27.66	16.20	22.05	18.49	16.2	14.6	30.69	21.47	20.92	6.61
Gross worker turnover (H+S)/E	55.21	32.02	42.83	36.23	34.5	30.9	59.55	43.80	40.72	13.16
Duration of Unemployment (months)	13.0	12.8	17.4	19.2	14	15	8.02	8.04	6.12	10.67
Proportion of LTU	39.6	31.8	55.3	45.8	38.1	40.4	39.52	36.98	51.48	42.16

Note. E- employment, U-unemployment, N-Non-participation S-separations, H-hiring. EE- job-to-job flow; EU flow from employment to unemployment and so on, LTU - long-term unemployed

Sources: Statistical Office of Estonia and author's estimates, for Poland Gora, 1998 and for OECD countries Alogoskoufis et al., 1995

We can conclude that having regard to LFS flows in annual bases we can find similar inflow outflow rates as in western countries.

4.3. Estonian unemployment dynamics

Unemployment in Estonia has increased gradually. According to the data of the 2nd quarter

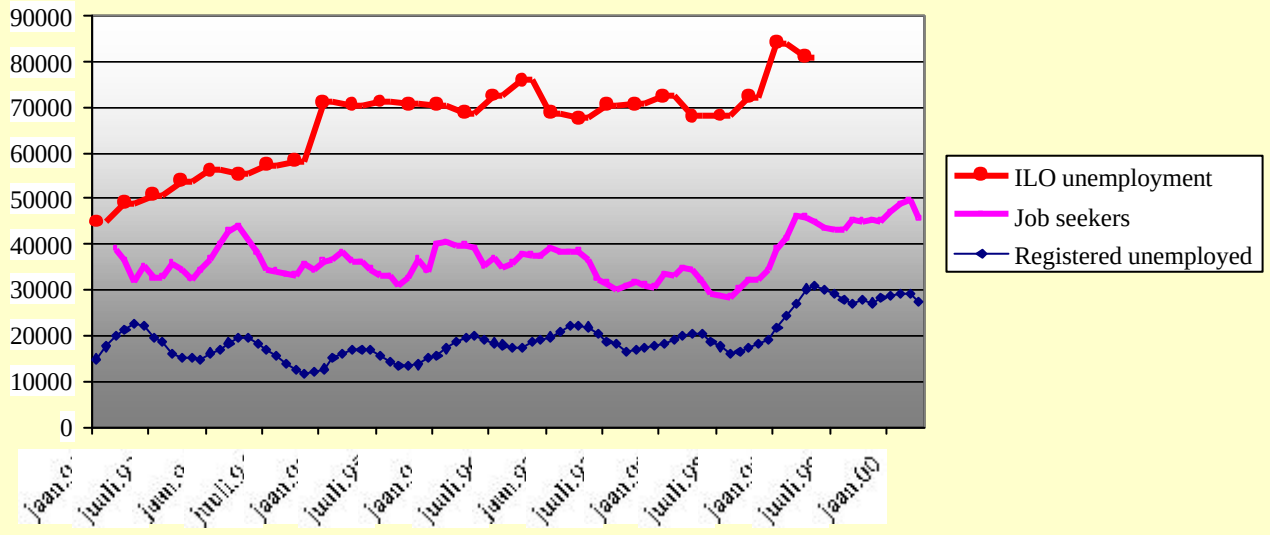
1999, (ELFS 99), the unemployment rate was 11.7%. As a comparison, unemployment in Finland in 1996, was 17%, the average for the European Union was about 10% (Central European…, 1999). In 1998, the unemployment rate declined compared with 1997, but this was caused by a very high GDP growth rate in 1997 (11.4%).

There has been a discussion in the literature concerning unemployment in Eastern Europe[32]. We can examine three main areas where the depth and pace of reforms have caused differences in the labour market:

1) demand management policies to produce the necessary macroeconomic environment for the resumption of sustained economic growth;
2) the supply response to microeconomics reforms, notably price liberalisation, privatisation and enterprise restructuring;
3) the role of labour market institutions and wage reform.

In general, these studies perceive unemployment as a gap between the speed at which the state sector is shedding labour and the speed at which the private sector is absorbing it (Chadha, B., Coricelli, F. et al, 1993, Blanchard, 1997). According to this approach, low unemployment rates may simply reflect continued labour hoarding in the state sector. Also, they may indicate a successful transformation where workers, laid off by state enterprises, have found new jobs in the private sector. Finally, they may mirror a decline in participation rates, resulting, for example, in a tightening of eligibility rules for unemployment benefits (Cornelius, 1995).

Figure 4.3. Unemployment dynamics in Estonia (registered and LFS unemployment)



Note: Registration data are monthly data and ILO unemployment data are quarterly data
Source: Data from Estonian Labour Market Board and Estonian Labour Force Surveys

In Estonia, unemployment grew in the period of transition from one economic system to another. Most Eastern European countries experienced similar phenomenon. The reasons for transition

[32] See e.g. Burda, 1993; Barr, 1994; Boeri, 1994 ; Commander and Coricelly, 1994; Boeri, 1997.

unemployment are economic, social, and psychological in their background. In addition to the macroeconomic shock[33] we can produce other examples: people's passive attitude towards retraining, low mobility of labour, and difficulties in psychologically adapting to the conditions of a market economy.

From Table 4.1. it is apparent that the labour force survey (ILO unemployment) figures for the number of unemployed job-seekers are about twice as high as those indicated by registered unemployment statistics during the same period. This kind of difference is due to several factors, the most influential of which are the inadequacy of the legislation and social guarantees for the unemployed (a strict set of rules for the certification of job-seekers as unemployed and for the payment of unemployment benefits), the poor reputation of state employment offices, the very limited willingness on the part of employers to co-operate with the state job-mediation system, but also different job-seeking scenarios.

Unemployment doubled in 1991 and 1992, at a time of very rapid economic reforms in Estonia. This fact sheds some light on the nature of Estonian unemployment. If we analyse registered unemployment data (figure 4.3) we see that the trend is slightly increasing. Especially sharp increases began in September 1998 due to the Russian finance crisis. Unfortunately we can see that cyclical unemployment became partly structural, because the unemployment rate stabilised at the new and higher level at the beginning of 2000. Also we can see from the figures that, starting from 1998, the LFS unemployment (ILO unemployment) follows the same pattern of fluctuations as registered unemployment. This probably tells us something about data quality and we may conclude that the 1998 and 1999 LFS, with a bigger sample more closely reflect the actual changes in the labour market.

The following factors have helped to prevent the explosion of unemployment in the early years of transition in Estonia (Eamets et al., 1999).

- A decrease in the labour supply. According to the ELFS 95 and ELFS 97, the number of employed persons decreased from 838 000 in 1989 to 636 000 in 1998. This means a decrease of 200 000 people. Over 100 000 persons have left the labour market in recent years. Of these, more than 75 000-80 000[34] have left Estonia, 40 000-45 000 have retired or left the labour market for other reasons. The remaining 70 000-75 000 people are unemployed.

- The fast development of the hidden economy. A considerable amount of the labour force is employed in the hidden labour market. A hidden labour force is used mainly in construction, agriculture, trade, and service activities. According to a survey launched in 1996 by the Estonian Institute of Social Analysis the tax authorities reported 499 490 employed persons, while according to the ELFS at the beginning of 1995, there were 617 764 employed persons in the country. This is a significant difference, more than 100 000 people. If we compare wage statistics and labour survey data, the social analysis survey found that in Ida-Virumaa number of employees (according ELFS) exceeded the number of reported wage earners (who paid social taxes) by 45%. In Tartu county the same number was 49% and in Tallinn

[33] Here we mean the hyperinflation of 1991, reorientation of foreign trade from the eastern market to the western one, monetary reform, and the banking crisis.
[34] According to Estonian migration data, during the period 1990–1994 alone, 67 293 more people left Estonia than came into Estonia.

25%. These percentages are indirect evidence that, in areas with relatively high unemployment, the share of hidden employment and tax evasion is also high.

- One possible explanation for the relatively slow increase in unemployment in Estonia compared to other Eastern European countries is the large share of the inactive population in the total working-age population. According to the ELFS, 32.3% of respondents were outside the labour force in 1998, i.e. they were not employed and did not wish to work.

Despite the reasons given above, the ILO unemployment rate has increased from almost zero to 11% (1998).

Large-scale structural changes in the Estonian economy were accompanied by a significant reallocation of production factors between economic sectors and different geographical regions. These changes can be viewed as a potential source of a subtype of unemployment known as structural unemployment. By structural unemployment we mean regional and skills' mismatches between the labour force and vacancies.

4.4. Long term unemployment

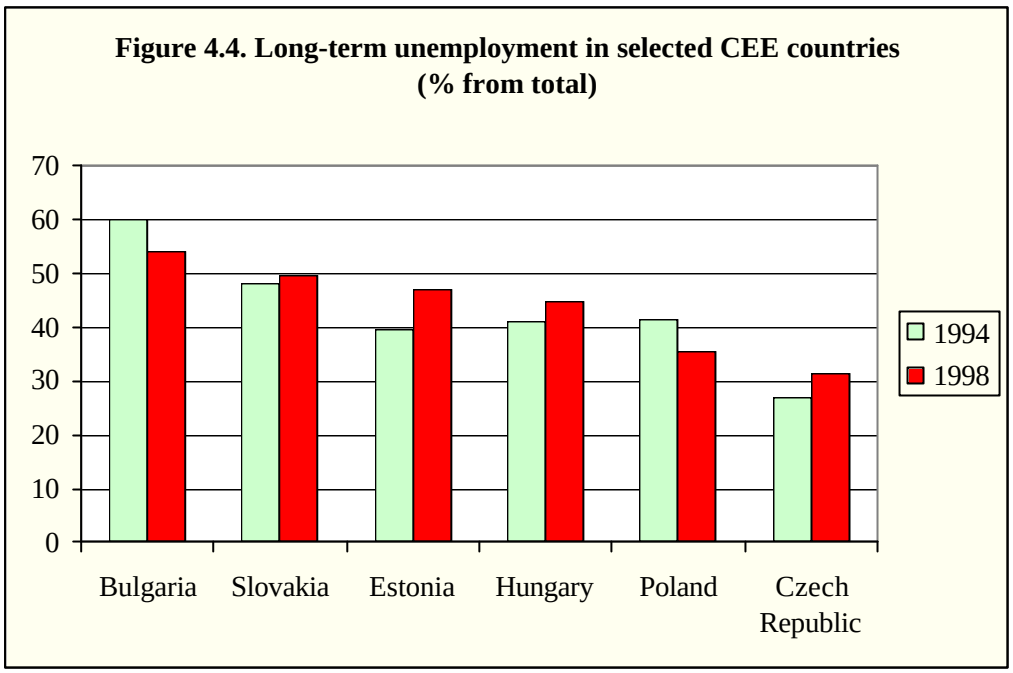
Long-term unemployment is an increasing problem in Estonia. In 1995 the share of those who had been seeking work for more than 12 months was around 30 %, while in 1998, their share had increased to 47%. This is a serious trend: already now we can observe, in many small communities (mostly in rural areas), that people who have been long-term unemployed have lost their human capital and ability to work. It is extremely difficult and costly to bring these people back into the labour market.

Table 4.4. ***Unemployed persons by duration of unemployment*** *(%)*

Duration	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Up to 6 months	**58.1**	**43.7**	**38.8**	**40.2**	**29.6**	**32.9**	**34.8**
7–12 months	**21.8**	**28.3**	**21.6**	**28.1**	**15.1**	**21.3**	**18.2**
More than 12 months	**20.1**	**28.1**	**39.6**	**31.8**	**55.3**	**45.8**	**47.0**
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Sources: Estonian Labour Force Surveys

The growth of long-time unemployment will become a serious problem in regions where unemployment has been persistently high in the last few years, primarily in the north-east and the south of the country and in other regions farther away from county centres.
In the context of CEE countries we can see (Figure 4.4.) that in most of the countries where the unemployment rate has been stable or decreasing during the last years - Bulgaria, Hungary, Latvia, Poland, Romania and Slovenia – the proportion of long-term unemployed has slightly decreased during the past years, but remains high: 63% (1996) in Latvia, 55% in Slovenia, 54% in Bulgaria, 52% in Romania, 45% in Hungary and 35% in Poland (See also table in appendix). In the Czech Republic and Estonia where the overall unemployment rate has been increasing during the last years, the share of long term unemployment has been rising as well and has reached 31.6% and 47% respectively.



Source: Eamets, Arro, 2000

4.5. Unemployment by age groups and gender

According to the Labour Force Survey data, there have been more unemployed men than women in recent years in Estonia. This is an interesting phenomenon, characteristic of Estonia, not typical of other European countries. However, the data also show that the number of women who are inactive has increased during the period of observation. The main policy objective should be to encourage women to enter the labour force, making them active in the labour market. A further interesting fact about Estonia is that the share of women is considerably higher than the share of men in registered unemployment. This difference is primarily due to Estonian legislation: men lose the right to register as unemployed after a certain set period of time, but women can register themselves as unemployed repeatedly under certain circumstances that do not apply to men (e.g., those who have children under 7 years old etc.).

In 1992-1994, the female unemployment rate was higher than the previous male unemployment rate. This is due to different sampling procedures in different labour force surveys, but in addition, the first waves of dismissals affected women more than men.

Table 4.5. ***Unemployment rate by age group and gender 1992-1998, selected years***

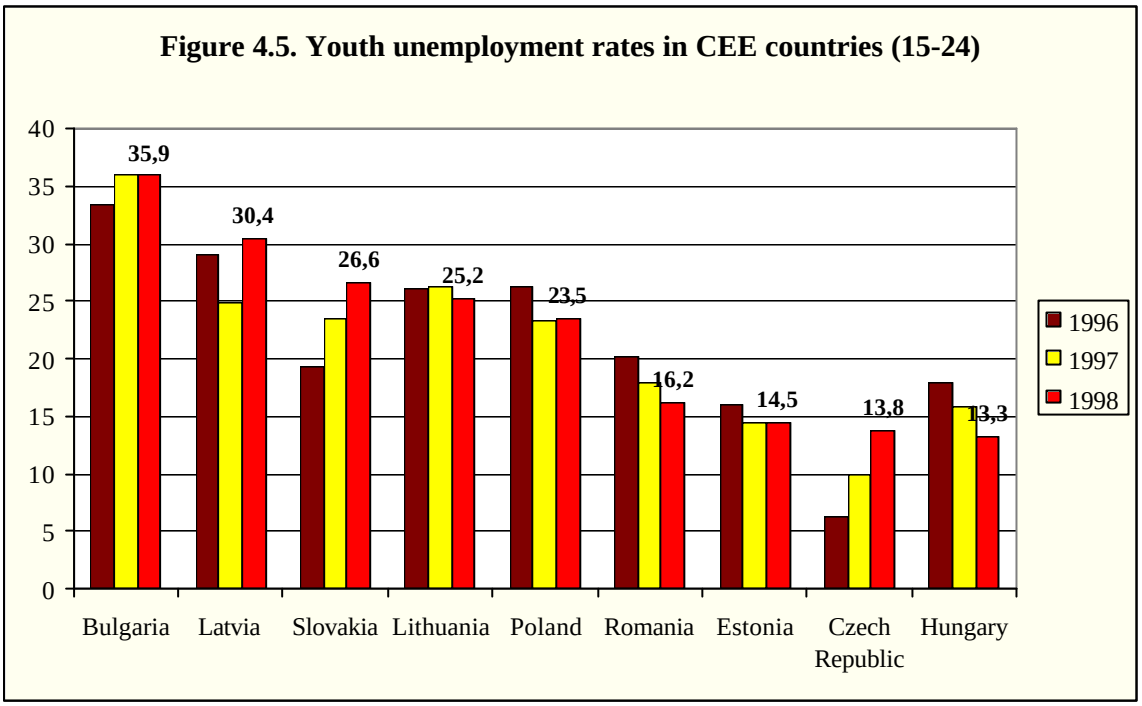
Age	1992			1994			1996			1997			1998		
	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F
15-64	3.7	3.9	3.5	7.7	7.4	8.0	10.1	10.8	9.3	9.8	10.3	9.4	9.7	10.6	8.7
15-24	7.4	(6.9)	(8.0	11.6	11.5	11.8	16.0	(15.5	(16.6	14.4	15.8	12.4	14.5	16.6	11.7
25-49	3.4	3.7	3.2	7.5	7.0	8.1	9.7	10.4	9.0	10.0	9.6	10.4	10.0	10.3	9.7
50-69	(2.2)	…	…	5.1	(5.0)	(5.1)	7.2	(8.4)	(6.0)	6.1	7.8	(4.2)	5.7	(7.2)	(4.7)
16-pens	3.8	4.0	3.6	7.9	7.6	8.3	10.4	10.9	9.9	10.2	10.4	10.0	10.1	10.8	9.2

Notes … data is based on less than 20 persons of the sample; ( ) data is based on 20-39 persons of the sample, second quarter for 1998. Pension age was as follows: 1992 for females (F) 55 and for males (M) 60; in 1994 for F 55.5 and for M 60.5; in 1996 for F 56.5 and for M 61.5, in 1997 for F 57 and for M 62; 1998 for F 57.5 and for M 62.5

Sources: Estonian Labour Force Surveys

If we look at unemployment according to duration and age group, we can draw conclusions only about two general age groups (people aged from 15 to 24 and major age group persons from 25 to 49). The long-term unemployed consist of the largest group (45.6%) among major age group. Persons, unemployed in the short-term (up to 6 months) account for 33%. Among young people, short-term unemployment flows prevail (see tables in annexes).

Figure 4.5. Youth unemployment rates in CEE countries (15-24)



Source: Eamets, Arro, 2000

If we compare the Estonian youth unemployment situation with other CEE countries, then we can see, that high unemployment among youth is a common problem for all countries. Figure 4.5. presents the unemployment rates among youth aged 15-24. It can be seen that youth unemployment is an acute problem in Bulgaria, Latvia, Slovakia and Lithuania, where the respective rates in 1998 were 36%, 30%, 27% and 25%. In the EU, the rate of unemployment among youth was 21.2 % in 1997. Youth unemployment was lowest in Hungary (13.3%), in the Czech Republic and Poland (13.8% in both of them) and in Estonia (14.5%).

Although youth unemployment is a problem for developed western European countries, we concluded that the situation in the CEE countries is even worse. Youth programmes are most difficult to create and the prevention of unemployment should already start early at school. The reason for high unemployment among youth lies also in the shortcomings of the education system, which has to be reformed according to the labour market needs. This process is very time consuming and has not been completed in most of the CEE countries yet (Eamets and Arro, 2000).

4.6. Unemployment by educational attainment

In Table 4.6, the incidence of unemployment declines steeply with higher educational

attainments. The unemployment rate is much higher among individuals with basic education. This group represents about 13% of employment, but its unemployment rate was 16.1% in 1998. The unemployment rate of workers with general secondary education is higher than the unemployment rate of workers with a technical education. The unemployment rate of males with vocational education after basic education is relatively high.

The largest differences between male and female unemployment rates appear in vocational education, whether after primary school or after secondary school. The vocational education system needs rapid reform in Estonia. Studying in the vocational education and training institutions is still the second-best choice for young people (70 % of the graduates from the basic school continue their studies in the gymnasium - to acquire upper secondary general education - and only about 28 % in the vocational education and training institutions). After the gymnasium the graduates wish to pursue an academic higher education. About 25 % of the graduates from the gymnasiums continue their studies in vocational education and training institutions. The decision to apply for the vocational education and training institution does not arise, in many cases, from a firm wish to study a certain speciality, but rather from a wish to simply continue their studies. It might be one explanation for the relatively high rate of the drop-out from the vocational education and training institutions (in 1997 10.4 %), and for the poor job placement rate of the graduates (an exact overview of the graduates' career profiles is not available). There is a generally held opinion, that the skills and knowledge of today's vocational education and training institutions graduates, does not meet the needs of the employers. (Eamets, et al, 1999)

Table 4.6. ***Unemployment rates by gender and education,*** *2nd quarter of 1998 and 1999*

	Females		Males		Total	
Education	**1998**	**1999**	**1998**	**1999**	**1998**	**1999**
Below upper secondary education	**14.5**	**18.1**	**17.0**	**21.6**	**16.1**	**20.3**
Upper secondary education	**9.8**	**11.3**	**11.0**	**13.7**	**10.5**	**12.6**
Vocational education after basic education (3C)	**(10.7)**	**(16.4)**	**15.1**	**17.0**	**13.9**	**16.9**
Secondary education (3A)	**11.6**	**11.3**	**11.5**	**14.9**	**11.6**	**13.0**
Vocational education with secondary education (3A)	**(9.6)**	**19.6**	**8.7**	**15.6**	**9.0**	**16.7**
Vocational education after secondary education (4B)	**(8.0)**	**(7.6)**	**(15.7)**	**…**	**11.3**	**8.1**
Post-secondary technical after basic education (3A)	**(6.7)**	**(8.0)**	**(7.1)**	**…**	**6.9**	**8.5**
Tertiary education	**5.3**	**6.4**	**(4.5)**	**5.2**	**5.0**	**6.0**
TOTAL 15–74	**8.6**	**10.2**	**10.4**	**13**	**9.6**	**11.7**

Note : ISCED 97 Educational level: below upper secondary — primary and basic education; upper secondary — secondary education, vocational education, post-secondary technical after basic education; tertiary — post-secondary technical after secondary education, university-level education, master's and doctor's degree.
… data is based on less than 20 persons of the sample.
( ) data is based on 20-39 persons of the sample.

Sources: Estonian Labour Force Surveys

Boeri (1999) has mentioned that the workforce was overly-specialised in the Soviet type vocational education system. According to him:" Needless to say, a highly specific human capital is not quite the most desirable feature to have in place when the task is to accommodate dramatic changes in the structure of an economy, involving significant workers' reallocation." (Boeri, 1999, p.3).

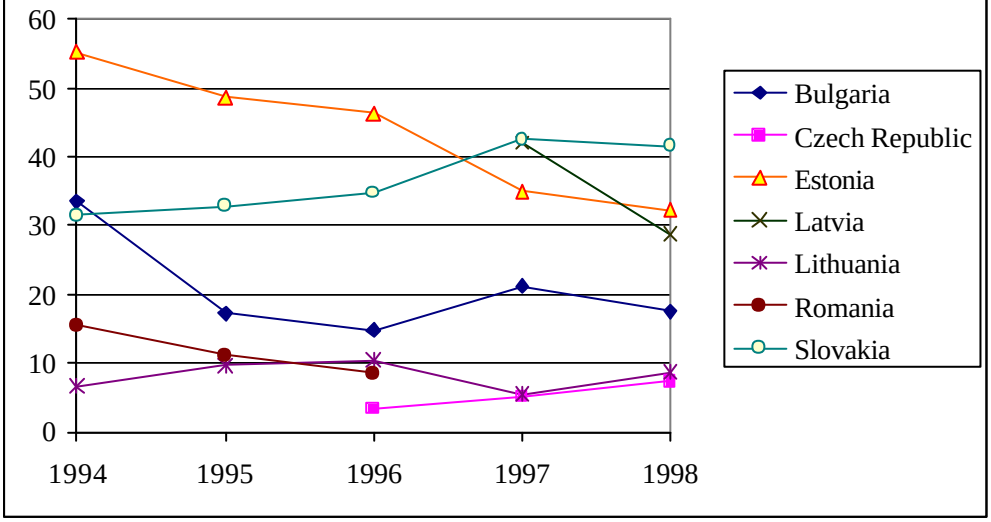
The low credibility of vocational education increases structural unemployment in Estonia. In some cases we already see that there is shortage of certain type of highly qualified labour, while vocational schools are producing low educated labour force whose chances in the labour market are very low. According to author's opinion the main solution here is the training of teachers in vocational schools.

4.7. Regional differences of unemployment in CEE countries

In most transition countries, regional disparities in unemployment are very high. The difference between the highest and the lowest rates of registered unemployment often exceeds 10 percentage points. In figure 4.6, the dynamics of regional differences are presented. We calculated the variation coefficients of regional unemployment rates. In most cases we used registered data (except Czech and Bulgaria) because the LFS data is often not representative at the regional level.

In two countries (the Czech Republic and Slovakia) the regional disparities are increased if we compare 1993 and 1998. In Lithuania, the differences fluctuate but finally reached the same level in 1998 as in 1993. In three countries (Estonia, Bulgaria and Romania) regional differences of unemployment have declined. (Eamets and Arro, 2000).

Figure 4.6. The dynamic of regional disparities of unemployment (variation coefficients of regional unemployment rates)



Source: Eamets and Arro, 2000

There are numerous communities in each country where unemployment is several times higher than the national average. Unemployment tends to be lowest in the big cities, the regions with a diversified industrial economy, regions offering good opportunities for tourism and leisure, and areas bordering on more developed countries, where people can commute to work or live by smuggling goods or providing cheaper services. In contrast, those hardest hit by unemployment tend to be in the rural or mono-structural regions where the main industry is suffering from

economic recession, and regions with little potential for economic development because of a poor infrastructure, low educational level of human resources, and a negative attitude to private enterprise. The problem of regional disparities in unemployment is aggravated by a very low territorial mobility due to lack of reasonably priced housing, shrinking public transport connections and increasing fares as many people cannot afford to use their car.

Estimations about Slovakia show that 44% of those who changed their living place, did it inside the local municipality, 33.8% within the region and only 23% moved between regions (Lubyova, 1999) In Estonia the change of jobs was analysed and results were similar. In 1995, 52% of those who changed their job did it inside their home county, 26% moved to a neighbouring county and 22% to non-neighbouring counties (mostly to the capital) (Eamets and Toomet, 1999)

4.8. Unemployment by regions in Estonia

One reason for the relatively large geographical differences is the low geographical mobility of the population[35]. According to the longitudinal study "The life paths of a generation", 43% of the respondents in Harjumaa were ready to move if they were unemployed. On the other hand, in regions with high unemployment levels (Võrumaa, Põlvamaa, Valgamaa), only 10% of the respondents felt the same way. In general, people with higher levels of education indicated a greater willingness to migrate. About 17% of the respondents with a high school education were ready to move if unemployed and about 33% of those with a university degree were prepared to do the same. (Estonian Human Development Report, 1996).

Present migration patterns improve the chances of finding work mostly for people living in regions that already offer a relatively better chance of finding employment, due to the regions' lower unemployment rates as well as the proximity of larger towns. At the same time, people living in the borderlands with high unemployment rates find themselves trapped: the chances of finding a job locally are much slimmer than in other regions, and the long distances from the major centres make it difficult to migrate, when it is highly unlikely that employment can be found. The main obstacle to working force mobility is undoubtedly the problem of finding a new place to live. People living in the borderlands find themselves dependent on their present homes as practically no housing market exists in these regions. Also, the prices of housing differ widely by region, being up to ten times higher in big towns and their neighbouring regions – precisely those places where the chances of finding a job are better.

For various reasons, the labour force is not sufficiently mobile to move to vacant jobs in other regions. Labour force mobility is hindered by purely economic factors (the insufficient development of the real estate market at the periphery, the great costs of moving), but also by social-psychological factors (family and relationship ties, the effect of a new environment, etc.). We can assert that low mobility is an inhibiting factor for economic development.

In order to obtain a picture of the regional differentials of unemployment, we must analyse the Estonian Labour Market Board data on registered unemployed job-seekers. The regional

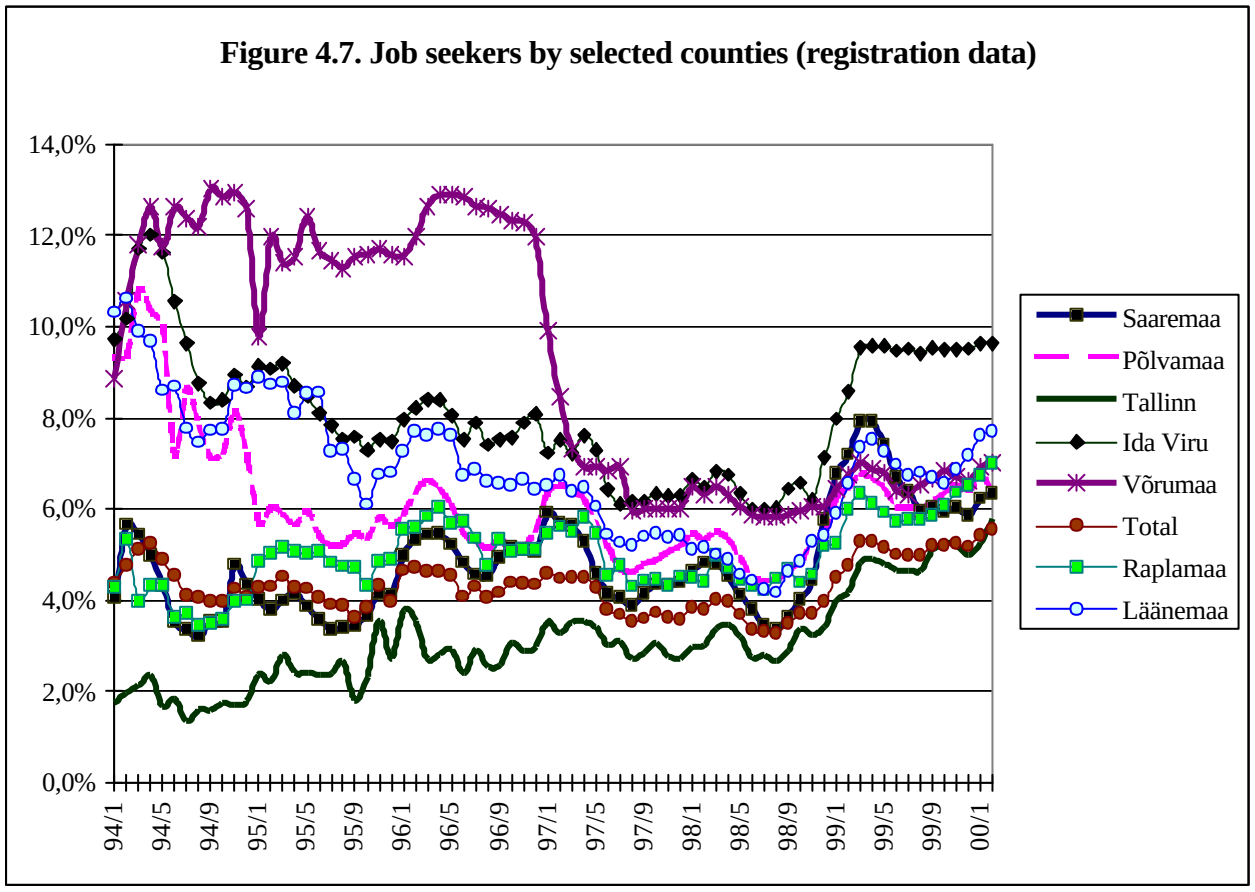
[35] In Estonia we have 15 counties and 220 local municipalities. The distances from the centre of Estonia to all borders are a maximum 200-250 km. So geographical distances are not long. Two counties Hiiu and Saare are located on two islands. This could result in some mobility problems because of the shortages of a travel related infrastructure. The main means of travel is by sea.

distribution of unemployment is quite varied. The following regions have relatively high registered unemployment:

- Southern Estonia (Valga, Võru, Põlva county),
- Ida-Viru county,
- Western Estonia (Saare county).

The geographical differentiation of unemployment has declined. In addition to the crisis regions of southern and North eastern Estonia, unemployment has increased rapidly in western Estonia, especially on the largest island, Saaremaa (Saare county). Unemployment remains high in the north-east. In Võru county, 6.4% of the working age population were unemployed and looking for work in 1998. A positive sign is that there was a sharp decline of registered unemployment in Võru county in 1997. But the real reason for this decline lies in local self-government regulations. In Võru county, social protection (subsidies for housing, child allowances, etc.) was connected with the requirement that people must be registered as unemployed. People who were categorised as inactive had no right to social protection administered by the local government. These regulations were changed in 1997. Valga county is a region where unemployment is increasing and this applies also to the capital of Estonia, Tallinn, and Harju county. Unemployment levels are traditionally high in Ida-Viru (north-eastern Estonia), with a 7.9% unemployment rate.

Figure 4.7. Job seekers by selected counties (registration data)



Source: Estonian Labour Market Board

It is characteristic of Estonia that in many counties there is a very substantial difference between registered unemployment and ILO unemployment (see table A.1.). We can see this, for example, in Jõgeva, Lääne-Viru, Tartu and Harju counties. This reflects the different labour market situations in different regions. First, in Tartu and Harju (which also includes Tallinn), there is a good chance of finding a job without registering. At the same time, in small counties like Jõgeva, but also in Rapla and Põlva counties, the chances of finding work through the labour services are very limited and people therefore seek jobs by means of newspaper advertisements, the assistance of family members and relatives, etc.

Unemployment in larger urban areas (e.g. Tallinn and Tartu) is not such a major social problem. On the contrary, it can be said that the small size of the Estonian labour force and the concentration of investment near the capital may result in problems in finding highly qualified specialists in this area.

A relatively complete picture of the situation in the labour market could be presented by the statistics on vacancies. Unfortunately, this particular field of information has its shortcomings, mainly because enterprises do not report this type of data. This is evident from Table A.1, which shows more that 53451 unemployed and 14553 vacancies reported to the labour services during1998. What is the main reason for firms not reporting vacancies?

The main reason is that firms assume that persons with high qualifications do not use labour force services in order to find jobs. This is true; most such workers seek jobs through newspaper advertisements, relatives and friends. According to the labour force survey data, around 50% of unemployed people seek jobs through labour services. At the same time, people with high qualifications[36] know that jobs offered to labour services mostly demand low qualifications, because they are usually poorly paid. The result is that jobs requiring high qualifications are not mediated by labour services. From the Estonian Market Board data we observe that, in January 1999, less than 20% of all reported vacancies are for white-collar workers.

Structural unemployment is a great problem in North-eastern Estonia (in connection with the economic problems of the former centrally controlled Soviet enterprises) and in the predominantly agricultural counties of southern Estonia. The ratio of employment seekers to new vacancies in Ida-Virumaa county was 2.5 times higher than the Estonian average. The unemployment to vacancies ratio in the southern Estonian counties is relatively similar to the Estonian average. This means that new vacancies are created, but they cannot always be filled due to the absence of labour with adequate qualifications. This is proven by the relatively high unemployment rate in these counties. In come counties, where the unemployment rate is not that high (for example, in Läänemaa), very few new jobs are created, resulting in a relatively high ratio of job seekers and vacancies.

Due to the Russian crises, many counties suffered a high increase in unemployment at the beginning of 1999. In Saare county, ILO unemployment increased from 9.5 to 16.2 and in Ida Virumaa from 14.7 to 19.8 (See table A.5. in the appendix). In some counties where unemployment has been traditionally high we can see that unemployment has stabilised or even declined (Võru, Valga and Viljandi). One possible explanation is presented in table 4.7. We calculated here the indexes which show how big was the share of non-participation change to

[36] In this context high qualification in most cases also means white-collar workers.

absolute change of all non-employment (sum of absolute values of unemployment and non-participation changes).

If in 1998 the non-participation also declined in five counties compared with 1997, then in 1999 it increased in all cases. So we can see that in some counties (Lääne- Viru, Jõgeva) the change in non-employment meant an almost 100% increase in non-participation. Almost in all cases we can see that changes of non-participation as the share of total change at least doubled in 1999, compared with changes 1997/1998.

Table 4.7. ***Changes in regional unemployment and non-participation before and after Russian crisis***

	1998/1997		1999/1998		1998/1997	1999/1998
	?U	?N	?U	?N	?N/(|?N|+|?U|)	?N/(|?N|+|?U|)
Harju	**1.056**	**-0.554**	**2.343**	**6.108**	**0.34**	**0.72**
Tallinn	**1.211**	**-1.031**	**1.129**	**5.298**	**0.46**	**0.82**
Hiiu	**0.089**	**-0.311**	**0.105**	**0.255**	**0.78**	**0.71**
Ida-Viru	**0.872**	**1.073**	**4.091**	**3.915**	**0.55**	**0.49**
Jõgeva	**-0.471**	**0.080**	**0.056**	**0.933**	**0.15**	**0.94**
Järva	**-0.044**	**0.058**	**0.368**	**0.712**	**0.57**	**0.66**
Lääne	**-0.113**	**0.006**	**0.483**	**0.291**	**0.05**	**0.38**
Lääne-Viru	**-0.593**	**0.314**	**-0.070**	**2.577**	**0.35**	**0.97**
Põlva	**-0.082**	**-0.002**	**0.672**	**0.658**	**0.02**	**0.49**
Pärnu	**0.961**	**0.618**	**1.157**	**2.263**	**0.39**	**0.66**
Rapla	**0.323**	**0.784**	**0.340**	**1.278**	**0.71**	**0.79**
Saare	**-0.252**	**0.536**	**1.061**	**1.351**	**0.68**	**0.56**
Tartu	**-0.749**	**1.251**	**0.613**	**3.124**	**0.63**	**0.84**
Valga	**-0.182**	**-0.170**	**-0.080**	**0.619**	**0.48**	**0.89**
Viljandi	**-0.107**	**0.137**	**-0.447**	**1.982**	**0.56**	**0.82**
Võru	**-0.267**	**0.411**	**-0.110**	**0.998**	**0.61**	**0.90**
Total	**0.700**	**4.200**	**10.564**	**27.093**	**0.86**	**0.72**

Source: Statistical Office of Estonia, author's calculations.

So we can conclude that in some counties the relatively stable unemployment was achieved by increasing number of inactive people. This is not very positive from the labour market perspectives, because of the increasing number of people in out of labour force will mean higher expenditures in the state budget, because of increasing number of transfer payments.

4.9. Unemployment of ethnic minorities

According to the Estonian Labour Force Survey data, the total unemployment (according to ILO definitions) of non-Estonians was 14.4% in 1998 (see Table 4.6.). This figure is almost twice as high as the unemployment rate of Estonians. What might be the conceivable explanations of this fact?

1) Language abilities. The language law of 1989 made Estonian the sole official language in Estonia[37]. According to this legislation, most officials working in the public sector are required

[37] During Soviet times, both Estonian and Russian were official languages.

to speak Estonian. That meant that most people already working for the state were required to pass tests showing specified levels of proficiency within stipulated deadlines in order to keep their jobs. Also, in the service sector, most employers demand knowledge of written and oral Estonian from employees. In many cases, knowledge of the English, Russian or even Finnish languages (especially in Tallinn where the number of Finnish tourists is large) is desirable in the service sector.

2) Russian speakers are employed more in such industries as mining, energy production, manufacturing of chemicals, machinery and metal production, water and railway transport, the manufacturing of construction materials, etc. These are so-called old industries, where most technology was old and the industries were oriented towards the former Soviet market. During economic restructuring, the Estonian economy was reoriented from eastern to western markets. These industries have therefore suffered from a lack of resources and declining former markets and are now declining industries; as a rule, both output and employment has declined. Many employees have become unemployed. Because these industries were more or less concentrated in north-eastern Estonia, where the largest Russian speaking minority in Estonia is located, unemployment in this region is obviously higher than average.

3) Russians are more mobile in the labour market. Some analyses have shown that movement between different labour market states is much higher among Russian speakers than among Estonians (Eamets 1998)[38].

Table 4.8. ***Unemployment rate by language criteria, selected years*** *(age 15-69; %)*

	1991			1992			1996			1997			1998		
Group	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**
Estonians	**1.3**	**-1.1**	**-1.6**	**3**	**3.4**	**2.5**	**7.8**	**8.5**	**7.1**	**7.9**	**8.6**	**7**	**7.8**	**8.3**	**7.2**
Non-Estonians	**-1.7**	**-2**	**…**	**5**	**4.9**	**5.1**	**14**	**14.9**	**13.1**	**13.3**	**13.2**	**13.4**	**14.4**	**15.8**	**12.9**

Notes … data is based on less than 20 persons of the sample; ( ) data is based on 20-39 persons of the sample, for 1998 second quarter data only, T-total, M-males, F-females.
Sources: Estonian Labour Force Surveys

Table 4.9. ***Unemployment by duration for different language groups in 1995 and 1998***

Duration	**Estonians**		**Non-Estonians**	
	1995	**1998**	**1995**	**1998**
Up to 6 months	**38.4**	**44.6**	**42.1**	**36.9**
7-12 months	**25.3**	**16.8**	**31.0**	**11.4**
More than 12 months	**36.3**	**45.0**	**26.9**	**51.8**

Sources: Estonian Labour Force Surveys

If we look at the data presented in Table 4.9, we can see that among non-Estonians (mostly Russian speakers) the share of long-term unemployment was almost 10% less than among Estonians in 1995. This is indirect evidence that non-Estonians were more active in the labour market and that their average unemployment duration is shorter than that of Estonians. The situation has changed in 1998, when long-term unemployment has increased drastically among both language groups. We can see that the share of short-term unemployment spells has increased among Estonian speakers and declined among Russian speakers. The ethnic differences concerning labour market transitions are presented in the chapter 5.

[38] See also the flow chapter.

4.10. Structural unemployment in Estonia and other CEE countries

In calculating the U/V ration registered unemployment rate is used. In some countries e.g. Estonia, Latvia, Lithuania the number of registered unemployed is significantly lower than the respective number calculated according to ILO methods (see also subsection.4.1.) This indicates that the number of unemployed can be underestimated for these countries and the U/V ratio can therefore be lower.

Another shortcoming of that sort of analysis is that due to the lack of data it is not possible to analyse all dimensions of structural unemployment. Therefore we start with analysing the mismatch using the general U/V ratios. Next we turn to examine the geographical mismatch comparing both the variation of regional unemployment rates and regional U/V ratios in countries where the data is presented. Due to the lack of data only brief comments are given on occupational and industrial mismatch.

From the following table we can see that U/V ratios[39] are indeed very high in most countries under observation.

Table 4.10. ***Structural imbalance of the labour market, U/V ratios***

	1991	1992	1993	1994	1995	1996	1997	1998
Romania	128	204	146	286	87	41	49	73
Bulgaria	42	80	84	44	30	46	51	49
Slovakia	37	16	48	28	22	23	18	39
Czech	4,6	1,7	3,4	2,2	1,7	2,2	4,3	10,3
Estonia	-	-	23,5	34,8	47,3	43,7	32,1	53,3

Source: Eamets and Arro, 2000

According to the data provided by the Ministry of Labour and Social Protection of Romania, only around 3/4 of vacancies were filled in Romania. Even more surprising was that less than half of the people filling the jobs were unemployed, despite the fact that the unemployment/vacancy ratio was consistently very high in the country (Ciobanu and Parciog, 1999).

The situation might be considered paradoxical at first sight, but is explainable (at least in part) on the one hand by the existing gap between the type and quality of professional background required by employers and that offered by the applicant. Some studies show a very high number of jobs that seem to stand no chance of being filled either at present or in the immediate future. On the other hand, it could be explained by the conditions imposed by employers, when some people in search of a new job either cannot meet requirements (age, experience, qualification) or do not accept employers conditions (wage, work conditions, working time etc).

The Slovak Research Institute of Labour Market, Social Affairs and Family organised a survey of the state of vacancy reporting and co-operation between employers and labour offices in several Slovak districts. The results show that co-operation depends on the size of enterprise. For example, in small firms employing up to 24 employees, the ratio of reported vacancies to the

[39] There are problems of data comparability in such analysis. It is not always clear from Background studies whether we are dealing with stock or flows of vacancies and unemployed.

total number of created jobs was between 50 and 75 per cent. The most effective reporting was achieved by large firms with more than 500 employees, where the ratio of reported to total created jobs was as high as 90 to 95 per cent. On average, firms, via channels other than labour offices (mediating agencies, advertisements, etc.) recruited 45 to 55 per cent of workers. (Lubyova, 1999) We believe that similar tendencies are evident in other CEE countries as well.

Structural imbalances between the labour demand and supply from the country point of view can be illustrated by a simple indicator of the mismatch between the total numbers of vacancies (V) and unemployed (U). The ratio (U - V) / U can be interpreted as the share of unemployed that cannot be placed in regular jobs by the labour offices. Values close to 1 indicate that whatever the absolute number of vacancies, it is negligible compared to the number of unemployed in the given group.

As we can see from data presented in table 4.11 in most countries the value of the index was higher than 0.9, which proves the shortages of the existing system of vacancies reporting.

Table 4.11. ***Mismatch index (registration data from December 1998)***

	V	U	(U-V)/U
Slovakia	**11106**	**428200**	**0.974**
Romania	**13998**	**1025056**	**0.986**
Czech	**37641**	**386900**	**0.903**
Poland	**7300**	**1831000**	**0.996**
Estonia	**965**	**45010**	**0.979**
Hungary*	**54774**	**392400**	**0.860**
Bulgaria	**9555**	**465202**	**0.979**

Note * November 1998
Source: Eamets, Arro; 2000

The creation of registered vacancies in Estonia declined steadily in 1996-1999. The unemployment-vacancies ratio, which reflects structural unemployment, increased from 19.9 to 30.3 in that period. The greatest increase in that ratio was observed among the agricultural and fishery specialists, where it increased from 42.4 to 91.0. In other words, there were 91 registered work seekers per every vacancy at the beginning of 1999. The actual ratio must certainly be even higher, because by no means all work seekers are registered at labour offices.

Table 4.12 ***Structural unemployment in Estonia , U/V ratio by occupation.***

	01.01.96	01.01.98	01.01.99
Legislators, senior officials and managers	**44.6**	**122.7**	**53.6**
Professionals	**6.1**	**11.1**	**10.8**
Technicians and associate professionals	**7.5**	**10.3**	**17.8**
Clerks	**22.8**	**24.9**	**28.0**
Service workers and shop and market sales workers	**10.1**	**12.2**	**13.8**
Skilled agricultural and fishery workers	**42.4**	**50.8**	**91.0**
Craft and related trade workers	**11.2**	**6.1**	**10.1**
Plant and machine operators and assemblers	**19.0**	**15.6**	**23.4**
Elementary occupations	**40.8**	**43.7**	**44.8**
TOTAL	**19.8**	**21.0**	**30.3**

Source: Estonian Labour Market Board database

There are not many papers dealing with structural unemployment in Estonia. Kulikov (1999) found in his empirical paper that strongest evidence of structural discrepancies for both unemployment duration and incidence was found for Estonians and non-Estonians. Gender was found not to affect either duration and incidence, while age was found to exert upward pressure on unemployment duration during early years of transition (1989-1994).

4.11. Hidden unemployment

Next we analyse the share of hidden unemployment in Estonia. We start from definitions.
In defining hidden unemployment different authors stress various aspects of unemployment. Some authors argue about the moment when individuals, who wish to work, give up searching for jobs. One instance is discouraged people. Clark and Summers stress in the definitions the aspects of behaviour. According them the term hidden unemployment covers those people who are out of the labour force but whose behaviour is similar to unemployed people (Clark and Summers, 1990). Most important is that a person without work is considered to be as a member of the hidden unemployment category if he or she is able and wishes to work.

Resulting from this very general notion the following categories are termed hidden unemployment:

- Persons, who are able and currently available for work and also seeking work but not using governmental labour services for this purpose. Those persons may be classified as hidden unemployed if there is no labour force survey data available (Eamets and Piliste; 1996). We can call this category as a active reserve of the labour force. In Estonia, the labour force survey (LFS) estimates the number of such persons and therefore this category is included in the open unemployment category.
- Persons who are able and currently available for work but not seeking work because of certain reasons: they do not believe that they could find work because of their age or other reasons or they have given up searching (**discouraged workers**).
- Persons are considered **underemployed** if:
    - They are working on a part time basis, but are willing and available to work more hours (Norwood; 1994) ,
    - Persons who are underqualified or overqualified for certain job.

Underemployment is divided into visible and invisible[40] parts - the first above-given category is considered as visible underemployment and second as invisible. Because of the difficulty in estimating the second, it is not generally statistically measured.

- **Labour hoarding**. There are labour resources which are not fully utilised in a company and therefore the phenomenon is counted as hidden unemployment.[41]

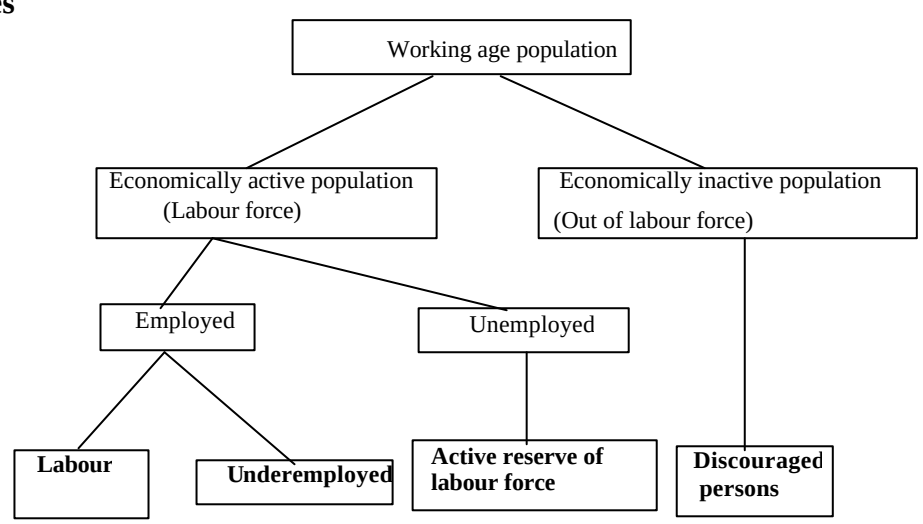
These different components belong to the different statistical categories of a labour market (see Figure 4.8). Underemployed persons and labour hoarding statistically belong to the category of

[40] Visible underemployment is primarily a statistical concept directly measurable by labour force and other surveys. Invisible underemployment is primarily a analytical concept reflecting a misallocation of labour resources or a fundamental imbalance as between labour and other factors of production. Characteristic symptoms might be low income, under-utilisation of skills or low productivity. Analytical studies of invisible underemployment should be directed to the examination and analysis of a wide variety of data, including income and skill levels (disguised underemployment) and productivity measures (potential underemployment) (ILO, 1982).

[41] For more details see for example Gora (1996), Brada (1989).

employed persons. Discouraged workers are classified as economically inactive. As it is mentioned before an active reserve of unemployed people is included already according to ILO definitions used in LFS in the category of unemployed in Estonia. In the following section two the categories of hidden unemployment are observed: underemployed and discouraged persons.

Figure 4.8 Different types of hidden unemployment in the framework of labour market categories



In the previous chapter we already analysed general tendencies in the Estonian labour market. One important feature was definitely the decline of participation and increase of non-participation.

Table 4.13. ***Different components of hidden unemployment*** **(**annual average, thousands**)**

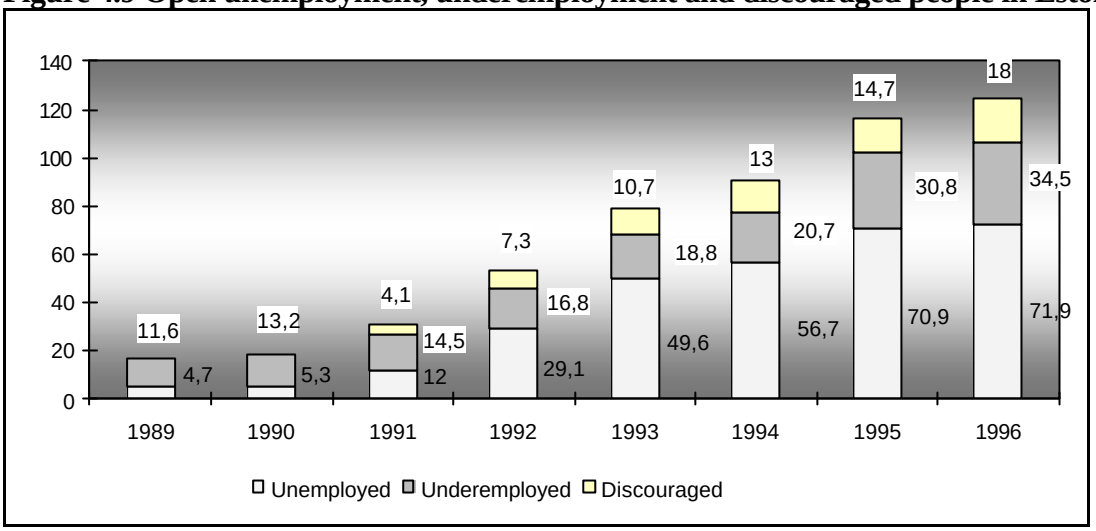
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Discouraged	**...**	**...**	**(4.1)**	**7.3**	**10.7**	**13.0**	**14.7**	**18.0**	**16.1**	**18.9**
Non-participation	**253.8**	**270.5**	**284.2**	**306.4**	**322.1**	**320.1**	**334.6**	**336.5**	**333.6**	**337.8**
Part-time workers	**25.3**	**28.4**	**29.0**	**31.5**	**35.7**	**40.6**	**51.0**	**59.8**	**45.9**	**52.2**
Underemployed	**11.6**	**13.2**	**14.5**	**16.8**	**18.8**	**20.7**	**30.8**	**34.5**	**30.1**	**28.3**
Share of underemployment from total part-time (%)	**45.8**	**46.6**	**49.9**	**53.1**	**52.6**	**51.0**	**60.4**	**57.6**	**65.5**	**54.2**

Source: Statistical Office of Estonia

In the increase of non-participation, the increase of discouragement has played an important role (see Figure 4.9). The absolute number of discouraged workers and their share in the inactive population has increased as well. In 1998, discouragement has been estimated at 5% of the total non-participation. Discouragement was largest among men and middle-aged people. This is contradictory to the conclusions derived from empirical models widely discussed in the economic literature[42]. This contradiction can be explained by shortages of empirical models presented and by the particular situation of Estonia in transition. Despite the relatively small number of discouraged workers (18 000) this category has influenced the growth of economic inactivity. The number of discouraged workers makes up one fifth of the unemployed, so the phenomenon is significant in the labour market.

[42] See for instance Dernburg, Strand 1966; Joll, Mckenna et al, 1983.

Figure 4.9 Open unemployment, underemployment and discouraged people in Estonia

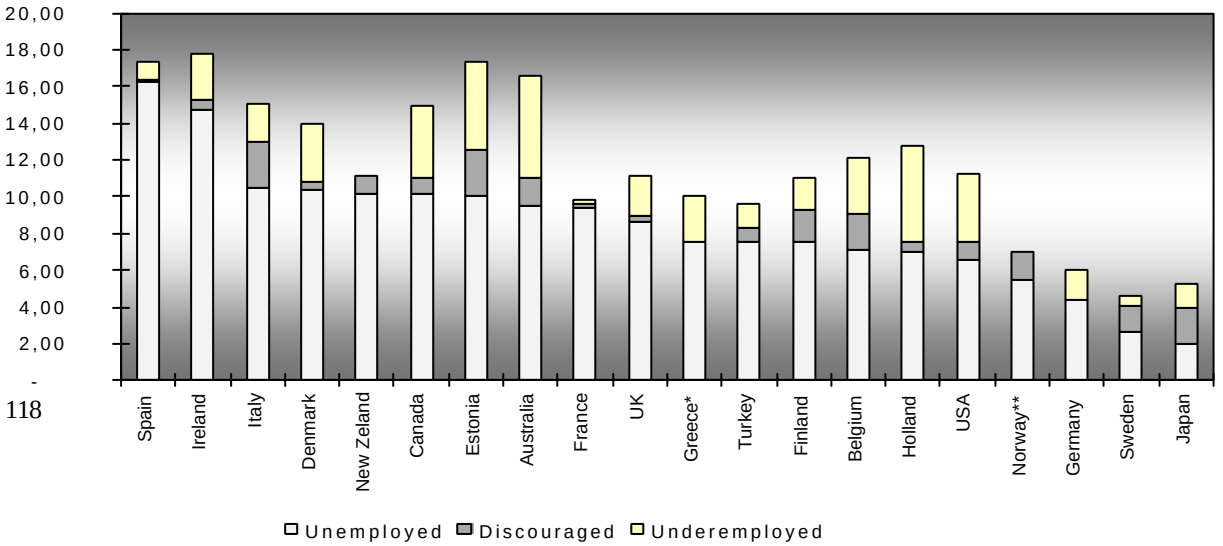


Source: Estonian Labour Force Survey

Underemployment was, at the beginning of the transition period, relatively low (see Figure 4.9). With the growth of the part-time work it tripled from its initial amount and the proportion from part-time employment has increased too. In Estonia there are more underemployed persons among the part-time workers compared with western countries (OECD, 1994). One reason for growing underemployment could be the decrease in labour hoarding.

The problem of hidden unemployment is quite important in developed countries. The general tendency shows that there are more underemployed than discouraged persons. There seems to be no relations between proportions of open and hidden unemployment (see Figure 4.10). Hidden unemployment seems to be higher in countries with a very high and a very low open unemployment. For example, together with underemployment, total unemployment in Denmark, Canada and Australia is almost at the same level (around 15 %) as countries with high unemployment like Spain and Ireland. If both open and hidden unemployment are considered, unemployment in different developed countries rises from 2-16% to 5-18% of the labour force (Eamets and Ukrainski; 1999).

Figure 4.10 Open and hidden unemployment in different OECD countries in 1991 (% from labour force)



*data about discouraged is missing.
**data about underemployment is missing.
Notes: Estonian data from 1996.

In the countries in transition there are great disparities between open and hidden unemployment as well. Open unemployment varies from 3.5-18%, and with hidden unemployment from 5-25%, of the labour force (OECD, 1997). These disparities are, in some cases, caused by different criteria used in estimations.

Hidden unemployment in Estonia has been analysed in empirical work based on ELFS data. Three logit models were created (for unemployed, underemployed and discouraged). The dependent variables of these models obtained values 1 or 0 with regard to the person's belonging to the category or not. In these models the factors that influence the probabilities of belonging to a given category were analysed (Eamets and Ukrainski, 1998).

From the empirical analyses we can draw two major conclusions

- There are no general factors found which could influence open and hidden unemployment at the same time.
- The factors influencing the components of hidden unemployment are not similar. Underemployment is influenced by more economic factors and discouragement is influenced more by psychological factors (These were not covered by LFS questions).

4.12. Macroeconomic shocks and unemployment: empirical evidence from the Russian financial crises on Estonian unemployment

As was already mentioned in the previous sections, the Russian crises had a big influence on the Estonian labour market, affecting mostly those sectors which were more dependent on trade with Russia. The sharp decline of GDP was caused by weak external demand due to the Asian and Russian crises. This was reinforced by the deceleration of growth in Western Europe, which hindered the restoration of quick general export growth to compensate for the gap resulting from the loss of the Russian export market for food products. These crises had a severe impact on general economic conditions in Estonia. Because of the automatic adjustment mechanism that is a feature of the currency board system, the external shocks were rapidly transmitted to the economy, severely testing the adjustment ability of the private sector. (Government…., 2000)

According to one of Government reports average nominal wages fell in a number of sectors in the fourth quarter of 1998, both on a quarterly and yearly basis, and unemployment increased. These developments were the reflection of liberal labour market policies with few restrictions and regulations, which, in turn, have enabled the emergence of a rather competitive and flexible wage and employment systems (Government…2000).

In the beginning of 1999, Estonia suffered from rapid increase in the unemployment rate. This was evident in increase of structural unemployment. By structural unemployment we mean regional and skills' mismatches between the labour force and vacancies. We can assume those who were in cyclical unemployment, caused by external shocks (Russian crises), become structurally unemployed.

The first results of the analysis of 1998, 1999 and 2000 labour force survey data showed us that rapidly increasing unemployment affected more people with low education[43]. We calculated odd ratios using logit model and the results are presented in the table 4.14. Dependent variable was the number of unemployed people and we tried to measure how different personal characteristics influence the risk to be in that group.

We assume, in our econometric analysis, that capital and unskilled labour are more likely to be substitutes in production than are skilled labour and capital, which some studies have identified as complements in production. Because factors of productions that are complementary must be gross complements, technological change is more likely to increase the demand for skilled than for unskilled labour (Krueger, A, 1993)

Data

Databases of three Estonian Labour Force Surveys 1998–2000, were used. ELFS 98, ELFS 99 were carried out in the 2nd quarter of survey year, the sample size was 13090 and 12703 working age persons respectively. Starting from January of 2000, the Estonian Labour Force Survey was carried out continuously. The data of the 1st and 2nd quarters with a total sample size 7505 working age persons were available for current work.
Only data of employed and unemployed persons were used. Data of persons employed or previously employed in the Armed Forces and persons who were seeking their first job were not included due to practical reasons.
The sample design of ELFS is complicated with stratification and clustering. All computation is made with the help of special statistical package SUDAAN that takes account of variation between and inside the clusters.

Model

The aim of the model was first to analyse how unemployment depends on the several explanatory variables that describe the respondent. Second the changes of the unemployment structure during the three successive years were under scrutiny. As the study variable was binary (1 – unemployed, 0 – otherwise) the logit link function was applied.
The model takes the form:

$$\ln\left(\frac{p_i}{1-p_i}\right) = b_0 + b_1 x_{i1} + b_2 x_{i2} + \ldots + b_s x_{is}\text{, where}$$

p_i – proportion of response variable,
b_k – model coefficients,
x_{ik} – indicator variables for the classes of predictors or continues variable of the respondent i.

In the process of model-fitting the following explanatory variables were tested: sex, age (continues), 5- and 10-years age groups, marital status, nationality, speaking Estonian, place of residence, level of education, occupation and main activity of current or last job. An appropriate model was arrived at by consecutively entering statistically significant terms beginning from null-model. The resulting model includes the seven statistically significant variables of which a detailed description is given below.
The vector b was then estimated for all three survey years. Procedure LOGISTIC in the package SUDAAN finds the vector b that maximises the weighted likelihood function:

[43] This is from the joint paper written by Kaja Sõstra from Statistical Office of Estonia and the author.

$$\hat{l}(b) = \ln \hat{L}(b) = \sum_{i \in s} w_i \left[y_i x_i b - \ln(1 - p_i) \right], \text{ where}$$

w_i – sampling weight of respondent i,
y_i – response variable.

For interpreting the model the odds ratio $p_i /(1 - p_i)$ is appropriate.

The estimated odds ratio for a coefficient is computed as

$$\text{Estimated Odds Ratio} = \exp(\hat{b}_k)$$

The lower and upper limits of a 95% confidence interval for the odds ratio for b_i are computed as

$$\text{Lower limit} = \exp\left[\hat{b}_k - t_{0,025} se(\hat{b}_k)\right]$$

$$\text{Upper limit} = \exp\left[\hat{b}_k + t_{0,025} se(\hat{b}_k)\right]$$

Where $se(\hat{b}_k)$ is the estimated standard error of $\hat{b}_k$ and $t_{0,025}$ is the tabled value of the Student's *t* distribution. The estimated odds ratio is statistically significant if a confidence interval does not include value 1.

Variables

Dependent variable:

UNEMPLOYED

1 - respondent was unemployed in the survey week (was without work, currently available for work and actively seeking work),

0 - otherwise.

Independent variables:

OCCUPATION – occupation groups (occupation of last job for unemployed persons).

1 - "blue-collar" workers (service workers and shop and market sales workers; skilled agricultural and fishery workers; craft and related trade workers; plant and machine operators and assemblers; elementary occupations);

2 - "white-collar" workers (legislators, senior officials and managers; professionals; technicians and associate professionals; clerks).

LANGUAGE – speaking Estonian: 1 - speaks or understands Estonian,
2 - does not speak Estonian.

EDUCATIONAL LEVEL: 1 - below upper secondary education,
2 - upper secondary education,
3 - non-university tertiary education,
4 - university degree.

MARITAL STATUS: 1 – single,
2 - married or cohabiting,
3 - widowed, divorced, separated.

SECTORS OF ECONOMY (main activity of the enterprise)
1 - primary sector (agriculture, hunting, forestry, fishing),
2 - secondary sector (mining, manufacturing, electricity, gas and water supply, construction),
3 - tertiary sector (trade, services etc.).

AGE – age of respondents in January, 1 of the survey year.

SEX: 1 – male,
2 – female.

Results

From the table 1.14. we can see that blue collar workers are under increasing pressure in the labour market and the risk of being unemployed is increasing for them if we compare the years 1998-2000. The same is true if we look education levels. Despite the fact that non-university tertiary education group is statistically not significant we can see that lower education groups have an increasing risk of being unemployed compared with people with university education. An interesting fact is that single and married persons have relatively similar odd ratios, because one can expect that when there is a of high level of unemployment single persons could have better chances to find jobs than married.

If we look at sectoral distribution of the unemployed then we can say that there is an increasing risk for those who are in the primary sector for the years 1998 and 1999. This fact fits with the general macroeconomic conclusions that agriculture and fishing sectors suffered most from Russian crises.

It is interesting that language discrimination is declining. The knowledge of the Estonian language is less important if we look at odd ratios in 2000 than in 1998. In the environment of high unemployment both language groups are under pressure and language does not matter in the labour market so much as in the early years of transition.

Changes in risk odd ratios of education groups and blue-collar workers explicitly shows that external shock has caused technology changes and firms continue production with less but with a better qualified labour force. Unemployment data for II quarter of 2000 also show that high unemployment has became persistent in Estonia. The unemployment rate was 14.5% at the second quarter of 2000, while the general economic production is increasing in 2000. Behind the increasing number of sales are better technology, better labour and also a weak euro, which helped Estonian firms to increase their export incomes.

Table 4.14 ***Estimation results***

	ETU98	ETU99	ETU00
Occupation			
1 blue collar	**1.5678***	**1.8905***	**2.1313***
2 white collar	**1**	**1**	**1**
Language			
1 Estonian speaking	**0.4894***	**0.5214***	**0.6292***
2 Non-Estonian speaking	**1**	**1**	**1**
Education			
1 Below upper secondary education (Basic)	**2.3143***	**2.3554***	**2.5412***
2 Upper secondary education (Secondary, vocational)	**1.5897***	**1.6164***	**1.6318***
3 Non-university tertiary education	**1.099**	**1.1809**	**1.4747**
4 University education	**1**	**1**	**1**
Marital status			
1 Single	**0.6426***	**0.5779***	**0.5184***
2 Married	**0.5899***	**0.4826***	**0.4315***
3 Divorced, widowed	**1**	**1**	**1**
Economic Sector			

1 Primary	**1.3597***	**1.6477***	**1.3141**
2 Secondary	**1.199**	**1.5327***	**1.1065**
3 Tertiary	**1**	**1**	**1**
Age	**0.985***	**0.9836***	**0.9839***
Sex			
1 male	**1.0146**	**1.2153***	**1.1677**
2 female	**1**	**1**	**1**

Notes: * - 5% level of significance
Source: Eamets, Sõstra, 2000

4.13. Summary

There are two main sources for unemployment in Estonia: Registered unemployment data provided by the Estonian Labour Market Board, and unemployment data based on labour force surveys, provided by Statistical Office of Estonia.

The relationship between registered and survey unemployment can be viewed as an indicator of the incentives offered by labour offices. In the three Baltic countries - Estonia, Latvia and Lithuania- the survey unemployment is almost twice as high as the registry one. In the Baltic countries the big difference can be explained by the tight eligibility conditions, short duration and low rate of unemployment benefits. In the Lithuanian case the unemployment benefit is 20.3% of the gross average wage and in Estonia the respective number is only 7%. The duration of unemployment benefit is in both countries limited to 6 months. In the Estonian case the low rate of registered unemployment indicates also the low credibility of the local labour offices. Both employers and people with high qualifications believe that jobs offered, via the labour services, are mostly for blue-collar workers. As a result jobs requiring high qualifications are not matched by labour services.

Analysing labour market flows and comparing Estonian results with the results for Poland and selected OECD countries enables us to conclude that Estonian labour market does not differ very strongly from the labour markets of developed western countries and Poland. In particular the opinion of low unemployment outflow rates proves to be incorrect. The share of long term unemployment is not particularly high, but at the same time the average unemployment spell is relatively high. This suggests that there are two groups of workers among the unemployed, namely a group flowing out from unemployment relatively quickly and another group of people who are unemployed for a very long time.

In order to summarise the main findings concerning unemployment dynamics we present results in a stylised way in the following table 4.15. We observe again that Estonia has three extreme cases out of six. First in Estonia the difference between registered and ILO unemployment is the highest, long-term unemployment is increasing most rapidly and the decline in regional disparities has been the quickest. The last fact is explained by standardisation in the work of local labour services.

Table 4.15. ***Unemployment dynamics in CEE countries.***

	EE	LI	LA	PO	HU	CZ	SK	RO	BU
ILO unemployment (last four years)	⇗	⇩	⇩	⇩	⇙	⇗	⇙	⇙	⇗
Registered unemployment/ ILO unemployment (%)	**47.9**	**49.7**	**64.8**	**100.8**	**125.4**	**115.3**	**144.2**	**140.0**	**83.7**
Long-term unemployment (1994-1998)	⇧	**n.a.**	**n.a.**	⇩	⇗	⇧	⇗	**n.a.**	⇩
Youth unemployment (1996-1998)	⇙	⇙	⇗	⇙	⇩	⇧	⇧	⇩	⇗
Regional disparities of unemployment	⇩	⇔	⇩	**n.a.**	**n.a.**	⇧	⇧	⇩	⇩
U/V ratio	⇧	**n.a.**	**n.a.**	**n.a.**	**n.a.**	⇧	⇙	⇩	⇩

Notes: ⇧ increase, ⇗ modest increase (less than 3% points), ⇔stable, ⇙modest decline, ⇩decline; EE(Estonia), CZ(Czech republic), RO(Romania), HU(Hungary), SK(Slovakia), PO(Poland), LA(Latvia), LI(Lithuania), Shadow area indicates biggest change (increase or decline)

Long-term unemployment is an increasing problem in Estonia. In 1995, the share of those who had been seeking work for more than 12 months was around 30 %, while in 1998, their share had increased to 47%. This is a serious tendency: already now we can observe in many small communities (mostly in rural areas) that people who have been long-term unemployed have lost their human capital and ability to work.

According to LFS data the male unemployment rate is higher than the female unemployment rate. This indicates that, in the case of layoff, females often leave the labour force, and do not look for a new job.

The largest differences between male and female unemployment rates appear in vocational education, whether after primary school or secondary school. The vocational education system needs rapid reform in Estonia. Studying in the vocational education and training institutions is still the second-best choice for young people After gymnasium, the graduates favour academic higher education. Only 25 % of the graduates from the gymnasiums continue their studies in vocational education and training institutions.

In 1999, the unemployment started to increase rapidly, mainly because of the Russian crisis in August and its consequences to the Estonian agriculture and fishing sectors (industries which exported their production to the Russian market). However, some agricultural counties where unemployment has been traditionally high, kept their unemployment rate relatively stable (Jõgeva) or even declined (Võru, Valga and Viljandi). Using some index calculations we found that, in these counties, relatively stable unemployment was achieved by increasing non-participation.

According to the Estonian Labour Force Survey data, the ILO unemployment of non-Estonians was 14.4% in 1998. This figure is almost twice as high as the unemployment rate of Estonians. We found that these differences are explained by three factors. First, language abilities. According to the legislation, most officials working in the public sector are required to speak Estonian. Also, at least in the service sector most employers demand the knowledge of written and oral Estonian from employees. Secondly, Russian speakers are employed more in such industries as mining, energy production and the manufacture of chemicals. These industries have suffered from a lack of resources and declining former markets and are now declining industries; as a rule, both output and employment has declined. Because these industries were more or less concentrated in north-eastern Estonia, where the largest Russian speaking minority in Estonia is located, unemployment in this region is obviously higher than average. Thirdly, some analyses have shown that movement between different labour market states is much higher among

Russian speakers than among Estonians.

Despite the rapid restructuring of employment, structural imbalances are still increasing. There is a substantial regional and occupational mismatch of vacancies and unemployed people. Regional disparities are growing in Estonia. Unemployment is a serious problem, for example, in the mainly agricultural counties of southern Estonia and in North-eastern Estonia, with its large concentration of heavy industry; unemployment here is mostly connected with the recession of the former all-Soviet enterprises in Narva, Sillamäe and Kohtla-Järve. The bankruptcy of major employers in small towns with only one or two sources of jobs has caused job losses for some people. Moreover, unemployment continues to be a major problem in rural areas. The poorly developed infrastructure there contributes to the lack of further economic investment.

The creation of registered vacancies in Estonia declined steadily in 1996-1999. The unemployment-vacancies ratio, which reflects structural unemployment, increased from 19.9 to 30.3 in that period.

In the increase of non-participation, the increase of discouragement has played an important role. In 1998, the discouragement has been estimated 5% of the total non-participation. The number of discouraged workers rose to one fifth of unemployed, so the phenomenon is quite important in the labour market.

Underemployment was, in the beginning of transition period, relatively low. With the growth of the part-time work it has tripled from its initial amount and the proportion from part-time employment has increased too. In Estonia there are more underemployed persons among the part-time workers compared with western countries. One reason for growing underemployment could be the decrease of labour hoarding.

Our econometric analysis showed that there are no general factors found which could influence open and hidden unemployment at the same time.

The factors influencing the components of hidden unemployment are not similar - underemployment is influenced more by economic factors and discouragement is influenced more by psychological factors.

The Russian financial crisis in 1998 has had a great influence on the Estonian labour market. In our econometric analysis years we found that mostly blue-collar workers are under increasing pressure in the labour market and the risk of unemployment is increasing for them if we compare the years 1998-2000. Also we found that lower education groups are at increasing risk of becoming unemployed compared with people who have university education. If we look at sectoral distribution of the unemployed, we can say that there is an increasing risk for those who are in primary sector for the years 1998 and 1999. This fact fits with general macroeconomic conclusions that the agriculture and fishing sectors suffered most from the Russian crisis.

These findings indirectly support our assumption about technological changes. Less qualified people lost their jobs more than skilled labour. Unemployment increased at the beginning of 2000, while the economy already was increasing. Part of that unemployment (cyclical unemployment) caused by external shock, become structural. People with less education could not find a job and unemployment is increasing. These conclusions should be tested by using firm level data. There are probably other explanations in the declining unemployment rate and

growing GDP as well. One possibility is of course the time lag approach and according to that, the labour market will adjust to the changing market situation with certain time lag. The problem is that we can test it only retrospectively.

It is interesting to note the fact that language discrimination is declining. The knowledge of the Estonian language is less important if we look odd ratios in 2000 compared with 1998. In the environment of high unemployment both language groups are under pressure and language does not matter in the labour market so much as in the early years of transition.

APPENDIX

Table A.1. ***Registered first time as job seekers and new vacancies registered during the year by counties in 1998***

County	Registered first time as job seekers	New vacancies registered during the year	Share of the no. of job seekers to vacancies (U/V ratio)	Registered unemployment % of LFS
Total	**53451**	**14553**	**3.7**	**47.0**
Harju	**17560**	**7314**	**2.4**	**36.3**
Hiiu	**524**	**71**	**7.4**	**…**
Ida-Viru	**18633**	**1931**	**9.6**	**54.5**
Jõgeva	**1508**	**231**	**6.5**	**41.1**
Järva	**1110**	**486**	**2.3**	**45.0**
Lääne	**1529**	**220**	**7.0**	**(100)**
Lääne-Viru	**1641**	**319**	**5.1**	**39.8**
Põlva	**2158**	**345**	**6.3**	**53.4**
Pärnu	**2395**	**558**	**4.3**	**(41.0)**
Rapla	**1306**	**237**	**5.5**	**59.3**
Saare	**2123**	**473**	**4.5**	**(76.9)**
Tartu	**4905**	**1122**	**4.4**	**34.5**
Valga	**1341**	**366**	**3.7**	**81.3**
Viljandi	**2213**	**495**	**4.5**	**62.4**
Võru	**1583**	**385**	**4.1**	**74.0**

*Note: II quarter. … LFS data is based on less than 20 persons of the sample. ( ) LFS data is based on 20-39 persons of the sample.

Source: Estonian Labour Market Board and Labour Force Surveys

Table A.2. ***Unemployed persons by duration of unemployment, 1994-1998***

(%, annual average)

	1993	1994	1995	1996	1997	1998
15–24 years old						
Up to 6 months	**44.1**	**53.6**	**(46.1)**	**(42.4)**	**45.9**	**43.3**
7–12 months	**(28.0)**	**(19.4)**	**...**	**...**	**(26.8)**	**(22.4)**
More than 12 months	**(27.8)**	**(27.0)**	**...**	**(41.6)**	**(27.3)**	**34.2**
Total	**100**	**100**	**100**	**100**	**100**	**100**
25–49 years old						
Up to 6 months	**44.3**	**35.7**	**40.7**	**25.9**	**29.8**	**32.4**
7–12 months	**27.8**	**22.1**	**29.2**	**(15.4)**	**20.7**	**17.8**
More than 12 months	**28.0**	**42.3**	**30.1**	**58.7**	**49.5**	**49.8**
Total	**100**	**100**	**100**	**100**	**100**	**100**

Note: … LFS data is based on less than 20 persons of the sample. ( ) LFS data is based on 20-39 persons of the sample.

Source: Labour Force Surveys

Table A.3.. ***Long-term unemployment in CEE countries*** *(% from total unemployment)*

	1994	1995	1996	1997	1998
Bulgaria	**60.1**	**65.6**	**59.9**	**57.7**	**54.3**
Czech Republic	**26.9**	**na**	**30.3**	**na**	**31.6**
Estonia	**39.6**	**31.8**	**55.3**	**45.8**	**47.0**
Hungary	**41.2**	**45.7**	**49.8**	**46.5**	**44.7**
Latvia	**na**	**62.1**	**62.9**	**60**	**na**
Lithuania	**na**	**na**	**11**	**13**	**12**
Poland	**41.6**	**39.9**	**40.8**	**34.3**	**35.3**
Romania	**49.1**	**51**	**55.7**	**51.8**	**na**
Slovakia	**48**	**53**	**53.1**	**52.6**	**49.7**
Slovenia	**59**	**58.3**	**53.8**	**54.9**	**na**

Source: Eamets, Arro, 2000

Table A.4. ***Population aged 15–74 by economic status, sex and education****, 2nd quarter 1998 (%)*

ISCED 97 educational	**Labour force**			**Inactive persons**	**Total**	**Labour force participation rate, %**	**Employment rate %**	**Unemployment rate %**
Level (code)*	**Total**	**Employed**	**Unemployed**					
Males and females								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**64.5**	**58.3**	**9.6**
Below upper secondary education	**12.9**	**12.0**	**21.8**	**51.7**	**26.7**	**31.2**	**26.2**	**16.1**
Upper secondary education	**57.1**	**56.5**	**62.6**	**36.3**	**49.7**	**74.1**	**66.3**	**10.5**
Tertiary education	**30.0**	**31.5**	**15.6**	**12.0**	**23.6**	**81.9**	**77.8**	**5.0**
Males								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**69.6**	**64.6**	**10.4**
Below upper secondary education	**15.5**	**14.3**	**25.3**	**57.2**	**27.1**	**41.1**	**34.1**	**17.0**
Upper secondary education	**61.4**	**61.0**	**64.9**	**35.3**	**54.1**	**81.8**	**72.8**	**11.0**
Tertiary education	**23.2**	**24.7**	**(9.8)**	**7.5**	**18.8**	**88.9**	**84.9**	**(4.5)**
Females								
TOTAL 15–74	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**57.7**	**52.8**	**8.6**
Below upper secondary education	**10.1**	**9.5**	**17.1**	**48.4**	**26.3**	**22.2**	**19.0**	**14.5**
Upper secondary education	**52.4**	**51.7**	**59.6**	**36.9**	**45.9**	**66.0**	**59.5**	**9.8**
Tertiary education	**37.4**	**38.8**	**22.9**	**14.7**	**27.8**	**77.7**	**73.6**	**5.3**

Note: ( ) LFS data is based on 20-39 persons of the sample.

ISCED 97 educational level: below upper secondary — primary and basic education; upper secondary — secondary education, vocational education, post-secondary technical after basic education; tertiary — post-secondary technical after secondary education, university-level education, master's and doctor's degree.

Sources: Estonian Labour Force Surveys

Table A.5. ***Registered unemployed job-seekers in counties of Estonia in 1994-1998 (% of population between 16 and retirement age, annual average) compared with ILO unemployment data***

Region	County	Registered unemployment						ILO unemployment	
		1994	1995	1996	1997	1998	1999	1998	1999*
	Average	4.1	4.1	4.4	4.0	4.5		9.9	11.7
Capital	Harju	1.9	2.4	2.9	3.0	3.6		9.2	10.2
Central Estonia	Jõgeva	4.0	4.3	4.2	4.4	4.8		(12.6)	13.4
	Järva	3.6	5.0	4.7	4.5	4.4		10	11.3
	Rapla	4.0	4.9	5.4	4.9	5.3		(10.8)	12.8
	Viljandi	6.1	6.1	6.9	5.0	4.9		(9.5)	(8.1)
North-eastern Estonia	Ida-Viru	8.7	8.2	7.9	6.7	7.9		14.7	19.8
	Lääne-Viru	2.3	2.4	2.6	2.2	2.6		(6.2)	(6.2)
Western Estonia	Hiiu	5.2	5.2	5.5	5.0	5.0		…	
	Lääne	8.6	7.7	7.0	5.8	5.9		(8.2)	(11.2)
	Pärnu	1.8	1.7	2.1	2.2	2.4		(7.5)	10.2
	Saare	4.4	3.8	5.1	4.7	6.8		(9.5)	16.2
Southern Estonia	Põlva	7.2	5.6	5.7	5.5	6.3		(12.3)	16.8
	Tartu	2.8	2.5	2.7	2.5	2.7		9.2	10.1
	Valga	5.5	6.2	6.6	7.9	6.9		(9.9)	(9.6)
	Võru	12.6	11.5	12.4	6.9	6.4		(10.7)	(10.6)

Note: … LFS data is based on less than 20 persons of the sample. ( ) LFS data is based on 20-39 persons of the sample.
* 1999 II quarter.

Sources: Estonian Labour Market Board, Statistical Office of Estonia

5. Gross flows in the Estonian labour market and transition probabilities across labour market states in the early years of transition

5.1. Introduction

Unemployment issues are under scrutiny in most countries regardless of their wealth, industrial development, population, or location. All the more attention should be paid to employment in transition countries where, in the course of economic restructuring, a lot of people are inevitably[44] made redundant. While in most reform orientated economies unemployment has markedly risen and become a low turnover pool with large regional differences, some countries have been able to control the rise in unemployment at relatively moderate levels[45]. There is a growing body of literature aimed at examining why the experience in Central and Eastern Europe has been quite heterogeneous[46]. These studies have focused in particular on 1) demand management policies to produce the necessary macroeconomic environment for the resumption of sustained economic growth; 2) the supply response to microeconomic reforms, notably price liberalisation, privatisation and enterprise restructuring; and 3) the role of labour market institutions and wage reform.

In general, these studies conceive of unemployment as the gap between the speed at which the state sector is shedding labour and the speed at which the private sector is absorbing the labour (Chadha, Coricelli *et al*, 1993). Following this approach, low unemployment rates may simply reflect continued labour hoarding in the state sector, or they may indicate successful transformation where workers laid off by the state sector find new jobs in the private sector. It may also reflect a decline in participation rates (Cornelius, 1995).

Clearly, the absolute number of unemployed persons or the unemployment rate is only indicators of the stock of unemployment. The dynamics of unemployment are captured by inflows and outflows to and from the various labour market states. In order to clarify the importance of the duration of unemployment, the stock of unemployment can be expressed as the difference between inflows into unemployment and outflows from it. Thus the same unemployment rate in one country could mean that there are high inflow and outflow rates indicating the high turnover of the unemployment pool. In another country, the inflow and outflow rates could be low, indicating that the probability of becoming unemployed is low, but once it happens, it is very difficult to find a job. Low outflow rates from unemployment and the consequential high duration of unemployment are seen by many authors as the main explanation for the high unemployment rate in Europe (see, for instance Adnett (1997), Smith (1994), Boeri *et al* (1995)). However, the recent rise of unemployment in the European Union is also explained by rise of flows from employment to unemployment (EU) and fall of flows from unemployment to employment (UE) (Schmidt, 1999)

[44] The decline of employment was a result of the economic recession caused by structural changes in the economy, a drop in the total output and a decline in the aggregate demand and supply, but also as a result of psychological and ideological reasons (e.g. 50 years of ideological pressure which destroyed peoples initiative and entrepreneurial spirit). In the early stage of transition it was difficult for them to adjust to the changing economic environment (see for instance Eamets, 1994).

[45] There is a possibility that the low unemployment rate is caused by low open unemployment rate while the rate of hidden unemployment is much higher. See, for example, Standing, 1996.

[46] See, for example Burda, 1993; Barr, 1994; Boeri, 1994; Commander and Coricelly, 1994; Boeri, 1997.

It is often argued by experts that transitional unemployment has all the characteristics of a stagnant pool (Boeri, 1994; Blanchard *et al*, 1997). Boeri (1994) argues that "labour market adjustment in transition countries is happening without necessarily involving transition from employment to unemployment and *vice versa*. Most falls in employment in the state sector is accompanied by pushing workers out of the labour force rather than into unemployment. Moreover, the rapid expansion of the private sector employment does not necessarily involve large outflows from unemployment, but direct job-to-job shifts and hiring of new entrants into the labour force." (Boeri, 1994, pp. 1). From this, it can be concluded that the rise in unemployment is rather a result of the low turnover of the unemployment pool than that of large flows from employment to unemployment.

The purpose of this chapter is to analyse the influence of different individual and company specific characteristics on the labour market transition probabilities. Some of our findings will also be compared with the results from other transition countries.

According to the Estonian Labour Force Survey data, ILO unemployment was 7.6 % in 1994 (See table A1). Compared with other Eastern European countries this figure is fairly low. Why has Estonian unemployment growth been relatively consistent in the early years of transition? One possible explanation supported in this paper is that flows between labour market states have been relatively high. Workers' flows in Estonia were relatively high also compared with other CEE countries (except the Czech Republic) in the beginning of transition and this has minimised the incidence of long term unemployment and kept the general unemployment rate growth moderate. Later, during the transition period, with labour market institutional developments and declining flexibility, the labour mobility between labour states slowed down.

An additional hypothesis tested in this paper is the fact that in the case of job losses females mostly move to non-participation and males to unemployment.

Also we assume that in the early years of transition, work experience (measured by age) has less influence on labour market mobility than on human capital.

These hypotheses should be tested using different statistical methods. In order to analyse the flow probabilities, we calculated the individual probabilities of transition between different labour market states as a function of personal characteristics and firm-specific characteristics using multinomial logit regression. We chose three points in time: 1989, prior to reform, 1994, as example of early period of transition and 1998, as the most recent year where we possess data. Initially, we calculated regressions for all three years, but regression results for 1989 were in most cases statistically insignificant, so these were eliminated. We compare the results of 1994 and 1998.

This analysis is structured as follows: Section 5.2 describes the methods used in our calculations and Section 5.3 describes the data used. The empirical results are presented in Section 5.4.

5.2. Method

Labour market flow analysis in the literature normally concentrates on six flows: flows between the three labour market states of employment, unemployment and non-participation. In addition, flows within employment can also be distinguished. This means that seven flows are of relevance in the Western economies (see for example Wan Ours, 1990). As shown in the figure

below, these flows are (1) flows from job to job, (2) flows from unemployment to employment and *vice versa* (4), flows from non-participation to unemployment (6) and *vice versa* (7) and from employment to non-participation (5) and *vice versa* (3). We place the greatest emphasis on flows (2) and (4).

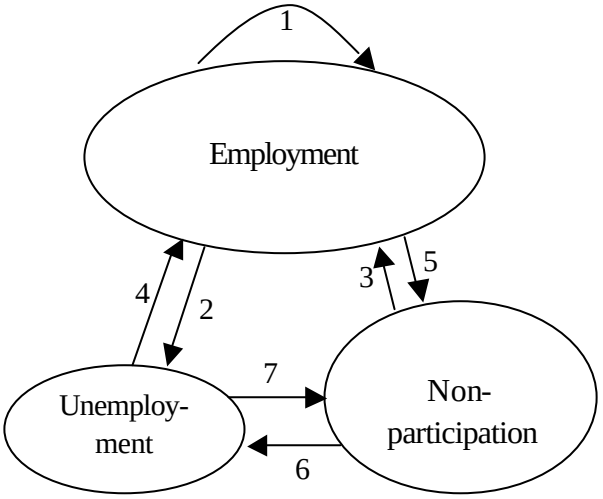


Figure 5.1. Flows between different labour market states

Unemployment is generally considered to be one of the most intractable problems in every economy. Labour flow analysis in transition economies has also concentrated on the flows into and out of unemployment, even though knowledge about the other flows helps to understand the dynamics of unemployment. However there was no data available about flows within employment and about flows from employment to outside the labour force and vice versa in the initial phase of transformation (see also Gora and Lehmann, 1992).

The following analytical approach follows Marston (1976), Clark and Summers (1982), Bellmann, Estrin, Lehmann and Wadsworth (1995) among others, in assuming that movements between states are governed by a Markov process. The main assumption underlying a Markov process is that the next state of the stochastic system depends only on the previous state. The application of the Markov process in labour market theory leads to the proposition that the probability of transition to another labour market state depends only on the state currently occupied. The labour market is divided into three states: employment (E), unemployment (U) and out of the labour force (O). We can construct the following transition matrix:

Labour force status in time t-1	**Labour force status in time t**		
	E_t	**U_t**	**O_t**
E_{t-1}	*EE*	*EU*	*EO*
U_{t-1}	*UE*	*UU*	*UO*
O_{t-1}	*OE*	*OU*	*OO*

The symbols in the cells stand for the number of individuals who are in one labour market state in time *t-1* and move to another state in time *t* or stay in the same state. The number of the

individuals changing state, divided by the number of persons in the origin state, can be interpreted as an estimate of transition probability between different states.

Modelling the labour market by a Markov process seems appropriate especially for an economy in transition and in a state of structural shock. This can be explained by the fact that deep structural changes during the transition process depreciate previous working skills of the largest portion of the population. This leads to a situation where once unemployed, the probability of being employed again does not depend on the previous workplace. So, individual work histories are of less importance during transition[47] than in a stable career based market economy.

In the first part of this study we concentrate on the calculation of the transition matrices for the Estonian economy during 1989 and 1994. The probability of transition from state x to state y is given by

$$P_{xy} = \frac{F_{xy}}{S_x} \qquad x,y = E,U,O \ , \qquad (1)$$

where F_{xy} is the number of flows in state x at time t which moved to state y at time $t+1$ and S_x is the total number of people at state x at time t (in the beginning of the selected year in our case).
The starting time ($t-1$) January 1989 was in the first case and the ending time (t) was January 1990. In this way, we calculated flow probabilities for 1989. The same method was used for calculation of probabilities for 1994 ($t-1$ being January 1994 and t January 1995).

In order to identify the factors that underlie the transition of the labour market participants between different labour market states, multinomial logit regressions are estimated. There are many factors that influence these transitions, but the present discussion is limited to only individual specific characteristics and some firm specific characteristics. It should be kept in mind that for an economy in transition such as Estonia in the observed period, the overall economic and institutional environment could have a great impact on labour market behaviour as well.

The probability of an individual moving from an initial state to another destination state during the period selected is given in the following equation (Greene, 1997):

$$\Pr[Y_i = j] = \frac{EXP(B'_j X_i)}{\sum_k EXP(B'_k X_i)} \qquad j,k = 1 \ldots \mathrm{m} \qquad (2)$$

where X_i is the vector of personal characteristics, and m choices, representing possible transitions between labour market states. As was stressed earlier, situations where the individual state is stable are ignored, except when the person is moving from one job to another without changing status in labour market.

The log likelihood function for the above equation is the following:

$$LnL = \sum_{i=1}^{n} \sum_{j=1}^{m} D_{ij} Ln \Pr[Y_i = j] \qquad (3)$$

[47] The same assumption was initially supported by Bellmann et al (1995), and also substantiated by our empirical findings which show that tenure (measured by age) is less important than human capital (education level).

where only one D_{ij} for every observation i equals one representing one of m[48] possible transitions in the labour market. The interpretation of the regression coefficients is rather complicated in this type of model. It is tempting to associate b_j with jth outcome, but this would be misleading (Greene, 1997). By differentiating (2), we find that the marginal effects of the attributes on the probabilities are:

$$d_j = \frac{\partial P_j}{\partial x_j} = P_j \left[b_j - \sum_{k=0}^{J} P_k b_k \right] = P_j \left[b_j - \overline{b} \right] \qquad (4)$$

Therefore , every subvector of b enters every marginal effect, both through the probabilities and through the weighted average that appears in dj . These can be computed from the parameter estimates. (Greene, 1997). For interpretation we present in our tables only marginal effect estimates, so we can observe the direction of influence of certain variables.

Six multinomial logit regressions were calculated for flows from each labour market stage (employment, unemployment and non-participation). The results are presented in table A7-A12.

5.3. Data

The data is based on two surveys: Estonian Labour Force Survey (ELFS) 1995 and ELFS 1999. The 1995 survey was a retrospective survey[49] of the Estonian labour force covering the period from 1989 (before transition) to the beginning of 1995. The sample basis of the ELFS 95 was the database of the 1989 population census. Altogether 10,000 people were interviewed.

The retrospective section aimed at reconstructing the major labour market flows over the years 1989-1995. Particularly, the retrospective section gathered information on three basic labour market flows: employment, unemployment, and out of the labour force. For each flow, the data include the starting and ending dates, modes of entry and exit, and third, the basic characteristics of the individuals who moved, taking into account age, education, sex, language etc.

The ELFS 1999 was organised using the same ILO definitions as the 1995 survey. The sample size was 13000 and the retrospective part of questionnaire covered the period from January 1998 to March 1999.

The minimum observed time period in ELFS was one month (since changes within the state have been fixed by months, not by days). That means that flows, where the duration was shorter than one month were not registered.

We should note that data of the two different surveys was not fully comparable, therefore it was not possible to calculate identical dummies and regressions. The biggest difference was in education categories, because two different education classifications were used. Also there were minor differences, such as size of firm (instead of group 1-10 (1998) we have 1-9 (1994) and instead of 10-49 in 1994, we had 11-49 in 1998) and in 1994, we had no dummy for white-collar workers.

[48] the value of m is in our case 2 or 3.
[49] More detail information is available in Survey description in chapter 2.

Table 5.1. ***Definitions of variables***

Dummy	Explanation
Age	**Years**
Agesq	**Age square years**
Education dummies for 1994	
Educ1_2	**Basic education (8 years),**
Educ3	**Secondary education (11 years)**
Educ4	**Specialised secondary education (basic education 8 years) plus vocational education (4 years)**
Educ5_7	**Higher education (three subgroups: secondary education (11 years) plus vocational education (4 years), university education (11 years plus 5 years bachelor studies in university) and people with academic degree (Masters' or PhD)**
Education dummies for 1998	
Educ1_2	**Below upper secondary education (no primary education, primary education and basic education)**
Educ3_4	**Upper secondary education (vocational education after basic education, secondary education, vocational education with secondary education, vocational education after secondary education , postsecondary technical after basic education)**
Educ5_6	**Tertiary education (postsecondary technical after secondary education, higher education , master's and doctor's degree)**
Ethnicity	**Estonian =1 , Non-Estonians=0**
Sex	**Males=1, Females=0**
Married	**Married=1 Single=0**
Children	**If person has children then children=1, otherwise 0**
Dummies for industries	**7 industry dummies**
Firm size	**5 types of firms by employment size (less than 10, 10-40, 50-199, 200-499, more than 500)**
White collar	**According ISCO 88 four first categories: legislators, senior officials, managers, technicians and clerks. White collar=1, otherwise 0**

Note: Dummies for education were different in 1994 and 1998. Education was divided into four groups according by ISCED 1978 in 1994 and three groups according other classification ISCED 97 in 1998. Therefore these two sets of education dummies are no exactly comparable.
Also we used combined dummies for children and gender, so we obtained males+children (in 1994) and females+children (1998).

5.4. Results

5.4.1. Transition probabilities

Table 5.2 summarises the probabilities of transitions between labour market states in 1989, 1994 and 1998. This gives an overview of the state transition matrices during the years of transition of the Estonian economy. Social and institutional changes during this period affected the labour market performance and this is reflected in the changes of the matrix.

As with other countries in transition, the pools of employed (E) or out of labour force (O) were fairly stagnant because of the relatively high probability of staying in them. At the same time,

there are signs that the movements between labour market states were increasing in the early years of transition. This follows from the fact that the probability of staying in either of these states was declining. The probability of staying employed from the beginning to the end of the year was very high during the years covered in the survey. In 1989, it was 0.95 and dropped to 0.89 in 1994 and then increased to 0.91 again in 1998. The same is true about staying out of the labour force. OO probability dropped from 0.92 to 0.85 and increased again to 0.91 in 1998.

Outflow rates from unemployment, which were relatively high in 1994 (0.41), dropped also to 0.31 in 1998. This supports the idea that at the beginning of the transition, the labour market was relatively flexible with high flow rates while later labour mobility between labour states decelerated.

Table 5.2. ***Gross flow probabilities (P_{xy}) in 1989, 1994 and 1998***

Status	1989	1994	1998
EE	0.95	0.89	0.91
inc. ee (job-to-job)	0.06	0.15	0.09
EU	0.00	0.05	0.05
EO	0.05	0.06	0.05
UE	0.44	0.41	0.31
UU	0.47	0.47	0.60
UO	0.09	0.12	0.09
OE	0.08	0.12	0.06
OU	0.02	0.03	0.03
OO	0.92	0.85	0.91

Source: Estonian Labour Force Surveys 1995 and 1998, author's calculations

5.4.2. Flow probabilities by individual characteristics in 1994

Next we analyse the flow probabilities of different population categories. First we use probabilities of different education, ethnicity, age and gender groups. These probabilities were calculated dividing the number of individuals in state *i* at time *t* which moved to state *j* at time *t+1* by stock of origin (equation (1)). Later we calculate marginal effects of the multinomial regression in order to find how significant these findings were if we use more advanced econometrics and compare our findings with the results from 1998.

We grouped people according to age, gender, ethnicity and education level. By ethnicity, the population is divided into two groups: Estonians and non-Estonians. As we can see from table A2 in the Appendix, Estonians constitute about 67 per cent of the total sample and Russians around 26 per cent. Other nationalities have marginal shares (Ukrainians 2.7% others even less). Therefore only two ethnic groups are defined.

Based on the ISCED 78 categories four educational groups are formed: basic, secondary, specialised secondary and higher education. We must note that in some cases the sample size is very small and therefore we should be careful when we interpret the results.

Starting from education, we see that non-Estonian males have the greatest likelihood of featuring in the employment to unemployment flow (EU) (see table A5). This is true in all education levels. In our earlier studies we have found that Russians are more mobile in the labour market

than Estonians (Eamets, 1998).

Secondly, we see that Estonian males also have a very high EU flow probability in all education levels. Women have higher inflow rates to non-participation compared with males at all education levels. This proves our hypothesis that if men lose their jobs they become in most cases unemployed, but females tend more to become inactive. This explains why male unemployment rates are higher compared with the female unemployment rate.

According to our estimates, non-Estonian females with the lowest education seem to have the biggest problems in the labour market, because their flow probabilities are the least favourable. Hence, their probability of staying in the non-participation group is the highest, job-to-job flow probability is the lowest and the probability of getting a job if they are in the unemployment or in the non-participation group is the lowest etc. However, we indicate that their sample size is relatively small in some groups.

The other extreme from the point of view of success are Estonian males with higher education who seem to be the most successful in the labour market. They have the lowest outflow rates from employment, the highest inflow rates from unemployment to employment and the lowest probability of remaining unemployed. Surprisingly worse off are non-Estonian males with specialised education, who have a higher probability of staying in unemployment and also the highest probability of losing their jobs.

Next we examine different age groups from the point of view of gender and ethnicity. Here, it is not so clear which of the age and ethnic groups is the most successful. Russian females from the oldest age group seem to have the lowest chances in the labour market.

The highest inflow to unemployment is among young Estonian females, but at the same time, they have the lowest probability of staying unemployed (see Table A6). Perhaps surprisingly, young non-Estonian males have the highest probability of moving from employment to non-participation and young non-Estonian females have the highest probability of changing their jobs. This last fact supports the idea that non-Estonians are more active in the labour market and they change jobs more often compared with Estonians (the probability of keeping the job (EE) is the lowest among young non-Estonians).

When examining the probabilities of moving from unemployment to nonparticipation, we can see that in the age group 15-24, it is twice as high among females compared with males. This again supports the idea that females leave the labour force rather than continue to search for another job. In this age group maternity leave is a very relevant factor.

5.4.3. Flows in 1994 and 1998: firms' specific characteristics and individual characteristics

Next we analyse the results from multinomial regressions. Our interpretations are based on marginal effects' statistics presented in Tables A7-A12.

Probably because of the higher aggregation of education variables, the biggest difference between the estimates of the two years concerned the influence of education. In 1994, we found that education has a considerable effect on most of the flow probabilities. In 1998, the influence was in most cases statistically insignificant (except ee flows). One reason for such results was the fact that in 1998, education categories were more aggregated and there were only three

education levels. Therefore we cannot differentiate between vocational education and secondary education in 1998. It was interesting that firm specific characteristics were not significant in 1994 while they were important in 1998. Maybe this is caused by data problems but one explanation is the fact that, in the early stage of transition, the outflow from employment did not depend on industry or firm size so much. Transitional macroeconomic shocks affected most industries more evenly.

If we take a close look at job-to-job flows, we can observe better chances for Estonians, males and for people with higher education level in 1994. Probability was higher for employers in small firms and in most industries (except energy production and transportation) compared with agriculture, which was the reference industry. In 1998, firm size mattered much more than in 1994. We can see that the job-to-job flow probability declines if employment is increasing. This probably means that the business environment has stabilised and people feel more safe if they work in large companies. It is also true that blue-collar workers have a higher probability of changing jobs than white-collar workers. This shows that their mobility in the labour market is higher.

If we examine EU flows, we can see that in 1994, only the personal characteristics are statistically significant, the firm specific variables are not. Age increases the probability of losing the job and males and non-Estonians had a greater probability of becoming unemployed. Married persons had less risk of becoming unemployed. Self evident is the education effect: persons with lower education have a higher probability of losing their jobs. It is interesting that experience (measured by age) has a negative influence, because the marginal effect of age has a positive sign. So we can conclude that tenure has less influence in the labour market than education in the early years of transition. Also, we know from our earlier studies that EU flow probabilities are higher at all education levels (except highest education group) for non-Estonians (Eamets, 1999).

In 1998, we can see that age has the same effect. The negative marginal effect was significant only for the highest education group. Estonians had less probability to loose the job compared with the results in 1994 and the size of the marginal effect has slightly declined. We can see that most of industry dummies are now significant. All industries have a positive marginal effect except public services (agriculture is comparison group). This could mean that employment in agriculture has already diminished to such a level that it is hard to find anybody to fire. The size of enterprises does not matter because in all cases the results were not significant.

If we study EO flows, we note that in both years females tend to leave employment more often, for family reasons. Females with children have a strong positive marginal effect to leave the labour force. In 1994, education had a relatively strong effect while in 1998, education was not significant. Two industries were important in 1998: manufacturing and construction, both had positive marginal effects, so the probability of becoming inactive was higher in these sectors compared with agriculture. Firms with the number of employees between 50-199 and 200-499 have negative marginal effects.

Next we examine flows from unemployment. We can see that the education effect was very important in 1994. Being in the highest education group increases the probability of moving from unemployment to employment by 36%. Higher education has also a strong positive effect in 1998. Estonians had in 1994, a positive marginal effect. In 1998, most results are, unfortunately, statistically insignificant. The marginal effects for EU are smaller than the marginal effects for UE from the ethnic point of view. If we look at the data presented in the

previous sections, we can see that among non-Estonians (mostly Russian speakers), the share of unemployment is almost twice as high than for Estonians. Therefore it is most likely that their exit rates should be higher than outflow probabilities for Estonians.

These findings provide evidence that there are strong language, education and some age profile effects in the determination of transition from employment to unemployment and *vice versa*.

To conclude with UO flows, we can say that people with lower education move more often to non-participation and this is also true of non-Estonians and females. It is interesting that age has a negative marginal effect in 1998. Also, our estimates show that in 1994 ethnicity had a negative marginal effect and in 1998 a positive marginal effect, which means that Estonians had, in 1998, a higher possibility of moving to non-participation than Non-Estonians.

The opposite flow, from non-participation to unemployment increases with age and males have a positive marginal effect, but for Estonians it has a negative marginal effect in 1994. In 1998, only marital status was negatively significant for this flow.

5.4.4. Flows in Estonia versus other CEE countries

Next, we compare Estonian results with those of other CEE countries. In order to have a comparable results, we used the 1994 data. First EE and OO flows are observed (See Figures A.1 and A.3.) A comparison of these flow probabilities with the gross probabilities in the literature for East Germany (Belmann, *et al*) 1995, the Czech Republic (Sorm *et al*, 1999), Bulgaria (Boeri, 1998), Poland (Gora *et al*, 1995), Russia (Foley, 1997) and Slovakia (Boeri, 1998), indicates that the probability of staying employed is almost at the same level (from 0.84 in East Germany to 0.95 in the Czech Republic in 1994-1995) and lower in case of staying out of the labour force. This last fact indicates that people who are out of the labour force pool in Estonia are more active in trying to move out of this pool compared with other CEE countries.

Additionally, the probability of changing jobs, without passing through unemployment (U) or out of the labour force (O), increased significantly in 1994 (0.15) compared to 1989 (0.06) in Estonia. This is also a relatively high probability, because as Sorm and Terell reported in relation to the Czech Republic it was 0.025 for 1994 (Sorm *et al* , 1999). A paper of Lehmann and Wadsworth (1999) indicated that in 1996 job-to-job flows were relatively high in Russia (0.112) and Britain (0,099) and low in Poland (0.054).

Obviously, it follows that the exit probabilities from employment and from the labour force were small. Low probabilities indicate that there is not much mobility out of these groups. Boeri and Scarpetta pointed out three possible explanations for a low frequency from employment to unemployment: (i) First, in the early stage of transition a substantial number of pensioners were pushed out of the labour market, using 'soft' disemployment measures (early retirement); (ii) secondly, direct job-to-job movement played an important role in the process of ownership change. In addition to the employees of privatised firms, many workers coming from state enterprises appear to have moved directly to a job in the private sector without any intervening unemployment spell.; (iii) the third factor reducing flows from employment to unemployment is the spread of informal activities that offer some sort of subsistence income for those losing their job in the restructuring process (Boeri *et al*, 1995). Most of these arguments also apply to Estonia. From our earlier analysis we know that job-to-job movements constitute more than 30% of all flows (Eamets *et al*, 1997).

There was a high turnover in the pool of unemployed people during the observed six years. The probability of movement from unemployment to employment was relatively high in 1989 - 0.44, then it declined until 1992 and from 1993 it started to rise again, amounting to 0.41 in 1994. These numbers are high in the light of results found in other transition economies. The same probability for East Germany was 0.32 in 1991 (Bellmann, *et al* 1995), for Poland 0.35 (Gora *et al*, 1995), for Slovakia 0.23 (Boeri, 1998). Estonian results are comparable with Czech data: 0.49 in 1994 (Sorm *et al*, 1999).

5. 5. Conclusions and discussion

Reallocation of resources, job creation and losses, as well as flows between labour market states are very important issues for transition economies, because it shows the flexibility of a labour market in transition from a planned economy to a market economy. We can also assume that as high labour market flexibility leads to higher economic growth, it will also lead to a more rapid transition.

There has not been an explosive growth in unemployment in Estonia during the first years of transition. In comparison with other Eastern Europe countries, unemployment growth in Estonia has been rather moderate. One possible explanation is that flows between labour market states have been relatively high compared with other CEE countries. This leads us to the following tentative conclusion: massive unemployment has been avoided by a relatively rapid reallocation of labour.

The analysis of flow probabilities provides evidence that there are strong language, education and some age profile effects in the determination of transition from employment to unemployment and *vice versa*. It is especially true for the year 1994.

Our analysis shows that people with higher education generally have higher probabilities of moving from job to job. People with basic education have the lowest probabilities to do that. This provides strong evidence that education level does affect moving from one labour market stage to another. If we look at ethnic differences then we can see that Estonians have higher flow probabilities at every educational level compared with a similar gender group of non-Estonians.

We found that women have higher inflow rates to non-participation compared with males at all education levels. This proves our hypothesis that if men lose their jobs they become in most cases unemployed, but females tend more to become inactive. This explains why male unemployment rates are higher compared with the female unemployment rate.

According to our estimates, non-Estonian females with the lowest education seem to have the biggest problems in the labour market, because their flow probabilities are the least favourable. Hence, their probability of staying in the non-participation group is the highest, job-to-job flow probability is the lowest and the probability of getting a job if they are in the unemployment or in the non-participation group is the lowest etc. However, we indicate that their sample size is relatively small in some groups.

The main conclusion is that non-Estonians seem to have more problems in the labour market than Estonians. They more often lose their jobs, stay for longer periods in unemployment and the UE flow probability for them is low if we look at education groups. Therefore, they must be

more active in seeking new jobs. The situation would be improved by differentiating labour market policies by regions, with different sets of regulations for unemployment benefits, active labour market policies and several measures to develop the system of adult training and retraining programmes for people who may face layoff due to enterprise reorganisation. The main aim must be to reduce the mismatch of skills and youth unemployment, improve territorial mobility of labour resources, reduce the duration of unemployment and stop the increase of poverty among the unemployed.

The transition probabilities from unemployment to employment were very high compared with other CEE countries. Estonia followed the same pattern as the Czech Republic whose transition probabilities were also exceptionally high, as was mentioned by many authors (see Sorm and Terrell, 1995, Boeri, 1994 among others). Czech unemployment was also relatively low in the middle of the 90s. So this supports our idea that unemployment increase was relatively low due to the high outflow rate from unemployment. One reason for the high outflow rates was of course the limited labour policy which forced people to move out of unemployment. This also explains why Estonia is similar to the Czech Republic where labour market policy was flexible as well. Both in Estonia and the Czech Republic the share of labour policy measures in GDP was very low. This issue is discussed more in our labour policy chapter.

APPENDIX

Table A.1. ***Aggregate figures for Estonian labour market 1989-1994*** **(**age group 16-69**).**

	males	females	total
Participation rate (%)			
1989	**83.4**	**72.2**	**77.5**
1990	**82.3**	**70.4**	**75.8**
1991	**81.5**	**68.5**	**74.5**
1992	**80.6**	**65.5**	**72.4**
1993	**78.1**	**64.0**	**70.5**
1994	**77.7**	**64.0**	**70.4**
Unemployment (%)			
1989	**0.6**	**0.6**	**0.6**
1990	**0.6**	**0.7**	**0.6**
1991	**1.4**	**1.5**	**1.5**
1992	**3.9**	**3.5**	**3.7**
1993	**6.6**	**6.7**	**6.6**
1994	**7.3**	**7.9**	**7.6**
Non-participation (%)			
1989	**16.6**	**27.3**	**22.5**
1990	**17.7**	**29.6**	**24.2**
1991	**18.5**	**31.5**	**25.5**
1992	**19.4**	**34.5**	**27.6**
1993	**21.9**	**36.0**	**29.5**
1994	**22.3**	**36.0**	**29.6**

Source: Statistical Office of Estonia

Table A.2. ***Descriptive statistic of education groups and ethnicity, 1994***

Ethnicity	Total	Males	Females
Estonians	**66.61**	**67.65**	**65.73**
Russians	**26.2**	**24.73**	**27.45**
Ukrainians	**2.66**	**3.12**	**2.27**
Belorussians	**1.71**	**1.72**	**1.7**
Finish	**0.9**	**0.63**	**1.12**
Polish	**0.23**	**0.29**	**0.17**
Latvians	**0.18**	**0.18**	**0.17**
Others	**1.51**	**1.68**	**1.39**
Total	**100**	**100**	**100**
Education			
1_2	**28.67**	**29.73**	**27.77**
3	**37.3**	**40.07**	**34.95**
4	**20.52**	**17.44**	**23.15**
5_7	**13.5**	**12.76**	**14.13**
Age			
15-24	**19.3**	**21.61**	**17.33**
25-49	**45.72**	**47.15**	**44.51**
50-	**34.98**	**31.24**	**38.16**

Source: Statistical Office of Estonia

Table A.3. ***Descriptive statistic of education groups and ethnicity, 1994***

Ethnicity	Total	Males	Females
Estonians	74.94	75.78	73.91
Non-Estonians	25.06	24.22	26.09
Education			
1_2	30.23	30.88	29.67
3_4	50.04	54.00	46.63
5_6	19.23	15.12	23.70
Age			
15-24	19.10	21.05	17.41
25-49	44.50	49.9	42.44
50-	35.37	31.37	38.82

Note: in 1999 questionnaire only two status were offered for ethnicity, Estonians and non-Estonians

Table A.4. ***Distribution of people at the age 50 and more by gender, education and nationality (%), 1994***

Nationality+gender	Education levels				Total
	1-2	3	4	5	
Estonian Males	44.78	24.45	15.07	15.70	100
Non-Estonian Males	40.28	27.08	18.98	13.66	100
Estonian Females	44.53	22.88	20.03	12.56	100
Non-Estonian Females	48.24	24.34	16.86	10.56	100

Source: ESLF 95

Table A.5. ***Flow probabilities by gender, ethnicity and education levels, 1994***

Education1_2								
	Est. Males	Standard Deviation	Est. Females	Standard Deviation	Non-Est. Males	Standard Deviation	Non-Est. Females	Standard Deviation
EE	0.713	0.4529	0.716	0.4524	0.795	0.4044	0.748	0.4364
ee	0.129	0.3353	0.115	0.3199	0.056	0.2301	0.047*	0.2121
EU	0.070	0.2550	0.074	0.2632	0.051	0.2208	0.019*	0.1361
EO	0.089	0.2844	0.095	0.2936	0.098	0.2976	0.187	0.3917
UE	0.346	0.4804	0.233*	0.4302	0.303	0.4667	0.143*	0.3631
UU	0.481	0.5045	0.567	0.5040	0.515	0.5075	0.643*	0.4972
UO	0.173*	0.3820	0.200*	0.4068	0.182*	0.3917	0.214*	0.4258
OE	0.052	0.2227	0.036*	0.1870	0.031	0.1723	0.014*	0.1183
OU	0.039	0.1930	0.041*	0.1994	0.017	0.1282	0.011*	0.1060
OO	0.909	0.2878	0.923	0.2678	0.953	0.2124	0.975	0.1578
Education 3								
EE	0.704	0.4567	0.716	0.4516	0.730	0.4445	0.748	0.4348
ee	0.188	0.3909	0.176	0.3813	0.162	0.3689	0.115	0.3198
EU	0.057	0.2319	0.079	0.2701	0.037	0.1878	0.070	0.2550
EO	0.051	0.2199	0.029	0.1690	0.072	0.2579	0.067	0.2504
UE	0.390	0.4909	0.443	0.5008	0.441	0.5007	0.422	0.4978
UU	0.546	0.5012	0.492	0.5041	0.458	0.5025	0.375	0.4880
UO	0.065*	0.2480	0.066*	0.2496	0.102*	0.3048	0.203	0.4055
OE	0.247	0.4322	0.245	0.4323	0.173	0.3789	0.149	0.3563
OU	0.058	0.2340	0.094	0.2937	0.031	0.1744	0.053	0.2238
OO	0.695	0.4613	0.660	0.4758	0.795	0.4038	0.799	0.4017
Education 4								
EE	0.691	0.4626	0.730	0.4449	0.766	0.4237	0.807	0.3952
ee	0.224	0.4177	0.163	0.3700	0.142	0.3497	0.073	0.2602
EU	0.048	0.2130	0.079	0.2705	0.027	0.1631	0.044	0.2047
EO	0.037	0.1889	0.028*	0.1651	0.064	0.2456	0.076	0.2661
UE	0.536	0.5079	0.200*	0.4140	0.556	0.5064	0.396	0.4942
UU	0.429	0.5040	0.733	0.4577	0.296*	0.4653	0.521	0.5049
UO	0.036*	0.1890	0.067*	0.2582	0.148*	0.3620	0.083*	0.2793
OE	0.360	0.4826	0.178*	0.3866	0.185	0.3892	0.117	0.3230
OU	0.045*	0.2084	0.000	0.0000	0.031*	0.1733	0.036*	0.1872
OO	0.596	0.4936	0.822	0.3866	0.784	0.4123	0.847	0.3618
Education 5_7								
EE	0.797	0.4028	0.793	0.4063	0.787	0.4100	0.803	0.3993
ee	0.168	0.3741	0.140	0.3481	0.145	0.3529	0.125	0.3318
EU	0.009*	0.0937	0.033*	0.1801	0.005*	0.0707	0.040*	0.1954
EO	0.027*	0.1608	0.033*	0.1801	0.063	0.2426	0.033*	0.1790
UE	0.667*	0.5000	0.500*	0.5345	0.556*	0.5270	0.667	0.4880
UU	0.111*	0.3333	0.500*	0.5345	0.444*	0.5270	0.267*	0.4577
UO	0.222*	0.4410	0	0.0000	0	0.0000	0.067*	0.2582
OE	0.143*	0.3542	0.133*	0.4714	0.327	0.3519	0.123*	0.3311
OU	0	0.0000	0	0.0000	0	0.0000	0.053*	0.2253
OO	0.857	0.3542	0.867	0.4714	0.673	0.3519	0.825	0.3837

Note: *indicates that sample is smaller than 10

Table A.6. ***Flow probabilities by gender, ethnicity and age groups, 1994***

	Est. Males	Standard Deviation	Est. Females	Standard Deviation	Non-Est. Males	Standard Deviation	Non-Est. Females	Standard Deviation
Age 15-24								
EE	0.622	0.4858	0.616	0.5016	0.503	0.4885	0.507	0.5035
Ee	0.215	0.4117	0.196	0.4061	0.206	0.3991	0.239	0.4298
EU	0.075	0.2633	0.143	0.2346	0.058	0.3515	0.070*	0.2577
EO	0.088	0.2835	0.045	0.4236	0.232	0.2074*	0.183	0.3895
UE	0.486	0.5067	0.476	0.5090	0.458	0.5118	0.409*	0.5032
UU	0.351	0.4840	0.238	0.5036	0.417	0.4364*	0.318*	0.4767
UO	0.162*	0.3737	0.285*	0.3378	0.125*	0.4629*	0.272*	0.4558
OE	0.187	0.3903	0.186	0.3806	0.175	0.3906	0.151	0.3591
OU	0.068	0.2520	0.103	0.1873	0.036	0.3056	0.076	0.2650
OO	0.745	0.4363	0.710	0.4088	0.788	0.4552	0.774	0.4198
Age 25-49								
EE	0.708	0.4549	0.779	0.4150	0.729	0.4449	0.814	0.3894
ee	0.211	0.4081	0.152	0.3595	0.180	0.3846	0.101	0.3018
EU	0.054	0.2253	0.029	0.1684	0.074	0.2626	0.046	0.2090
EO	0.028	0.1641	0.039	0.1942	0.017	0.1276	0.039	0.1941
UE	0.461	0.5013	0.464	0.5017	0.368	0.4856	0.461	0.5009
UU	0.505	0.5028	0.428	0.4978	0.592	0.4947	0.461	0.5009
UO	0.034*	0.1815	0.107*	0.3112	0.040*	0.1960	0.077*	0.2678
OE	0.330	0.4724	0.287	0.4535	0.333	0.4776	0.197	0.3992
OU	0.085	0.2797	0.053	0.2237	0.077*	0.2700	0.063*	0.2439
OO	0.585	0.4949	0.659	0.4747	0.589	0.4983	0.740	0.4403
Age 50-								
EE	0.787	0.4094	0.802	0.3989	0.791	0.4076	0.753	0.4320
ee	0.098	0.2972	0.091	0.2880	0.084	0.2775	0.036	0.1864*
EU	0.028	0.1657	0.018*	0.1324	0.029*	0.1690	0.058	0.2348
EO	0.087	0.2813	0.089	0.2852	0.096	0.2955	0.152	0.3603
UE	0.250	0.4385	0.300*	0.4702	0.176*	0.3930	0.068	0.2582*
UU	0.550	0.5038	0.500	0.5130	0.706	0.4697	0.467	0.5164*
UO	0.200	0.4051	0.200*	0.4104	0.117*	0.3321	0.467	0.5164*
OE	0.035	0.1827	0.021	0.1425	0.017*	0.1298	0.016*	0.1247*
OU	0.003*	0.0515	0.003*	0.0508	0.000	0.0000	0.005*	0.0670*
OO	0.963	0.1893	0.976	0.1509	0.983	0.1298	0.980	0.1411

Note: *indicates that sample is smaller than 10

Table A.7. ***Flows from employment Jan. 1994- Jan. 1995***

Marginal effects from multinomial logit regression estimates

	Coef.	Std.Err.	P>|z|
Job-to-job (ee) flow			
Age	**0.0005**	**0.0027**	**0.868**
Agesq	**-0.0001**	**0.0000**	**0.116**
Sex	**0.0340**	**0.0111**	**0.002**
Nation	**0.0265**	**0.0103**	**0.010**
educ3	**0.0332**	**0.0161**	**0.039**
educ4	**0.0455**	**0.0171**	**0.008**
educ5_7	**0.0516**	**0.0183**	**0.005**
Married	**-0.0066**	**0.0113**	**0.560**
Children	**-0.0347**	**0.0184**	**0.060**
Males+children	**0.0477**	**0.0220**	**0.030**
Manufacturing	**0.0329**	**0.0159**	**0.039**
Construction	**0.0278**	**0.0202**	**0.169**
Energy+tranportation	**-0.0277**	**0.0187**	**0.139**
Trade	**0.0580**	**0.0165**	**0.000**
Banking+business services	**0.0559**	**0.0213**	**0.009**
Public services	**-0.0233**	**0.0172**	**0.177**
Firm size 10-49	**-0.0283**	**0.0139**	**0.042**
Firm size 50-199	**-0.0656**	**0.0152**	**0.000**
Firm size 200-499	**-0.0044**	**0.0158**	**0.781**
Firm size 500_	**-0.0540**	**0.0155**	**0.001**
Constant	**-0.1319**	**0.0553**	**0.017**
From employment to unemployment (EU)			
Age	**0.0022**	**0.0014**	**0.133**
Agesq	**0.0000**	**0.0000**	**0.049**
Sex	**0.0135**	**0.0061**	**0.027**
Nation	**-0.0177**	**0.0052**	**0.001**
educ3	**-0.0122**	**0.0070**	**0.080**
educ4	**-0.0175**	**0.0079**	**0.026**
educ5_7	**-0.0558**	**0.0107**	**0.000**
Married	**-0.0185**	**0.0057**	**0.001**
Children	**-0.0034**	**0.0108**	**0.751**
Males+children	**0.0126**	**0.0125**	**0.314**
Manufacturing	**-0.0001**	**0.0086**	**0.990**
Construction	**0.0072**	**0.0106**	**0.496**
Energy+tranportation	**0.0072**	**0.0091**	**0.428**
Trade	**0.0121**	**0.0092**	**0.188**
Banking+business services	**0.0049**	**0.0130**	**0.707**
Public services	**-0.0028**	**0.0095**	**0.766**
Firm size 10-49	**0.0095**	**0.0085**	**0.260**
Firm size 50-199	**0.0070**	**0.0088**	**0.425**
Firm size 200-499	**0.0034**	**0.0098**	**0.725**
Firm size 500_	**0.0060**	**0.0090**	**0.505**
Constant	**-0.0944**	**0.0289**	**0.001**
From employment to non-participation (EO)			
Age	**-0.0146**	**0.0012**	**0.000**
Agesq	**0.0002**	**0.0000**	**0.000**
Sex	**-0.0309**	**0.0063**	**0.000**
Nation	**0.0002**	**0.0060**	**0.970**
educ3	**-0.0172**	**0.0075**	**0.022**
educ4	**-0.0195**	**0.0083**	**0.018**
educ5_7	**-0.0266**	**0.0096**	**0.005**

Married	**0.0077**	**0.0064**	**0.229**
Children	**-0.0169**	**0.0110**	**0.126**
Males+children	**0.0082**	**0.0152**	**0.591**
Manufacturing	**-0.0135**	**0.0094**	**0.149**
Construction	**-0.0068**	**0.0133**	**0.609**
Energy+tranportation	**-0.0150**	**0.0108**	**0.165**
Trade	**-0.0055**	**0.0102**	**0.592**
Banking+business services	**0.0065**	**0.0126**	**0.608**
Public services	**-0.0129**	**0.0096**	**0.181**
Firm size 10-49	**0.0083**	**0.0095**	**0.382**
Firm size 50-199	**0.0148**	**0.0094**	**0.115**
Firm size 200-499	**0.0137**	**0.0105**	**0.191**
Firm size 500_	**0.0152**	**0.0098**	**0.120**
Constant	**0.1996**	**0.0251**	**0.000**

Outcome EE, agriculture, firm size less than 10 employees and educ1_2 are the comparison groups
Number of obs = 5536
chi2(60) = 624.66
Prob > chi2 = 0.0000
Log Likelihood = -4216.8978
Pseudo R2 = 0.0659

Table A.8. ***Flows from unemployment Jan. 1994- Jan. 1995***
Marginal effects from multinomial logit regression estimates

	Coef.	Std. Err.	P>|z|
From unemployment to employment (UE)			
Age	**0.0125**	**0.0134**	**0.353**
Agesq	**-0.0003**	**0.0002**	**0.133**
Sex	**-0.0542**	**0.0516**	**0.294**
Nation	**0.0736**	**0.0446**	**0.099**
educ3	**0.1182**	**0.0587**	**0.044**
educ4	**0.1452**	**0.0687**	**0.034**
educ5_7	**0.3621**	**0.0942**	**0.000**
Married	**0.0479**	**0.0509**	**0.346**
Children	**-0.1510**	**0.0705**	**0.032**
Males+children	**0.1789**	**0.1003**	**0.074**
Constant	**-0.1749**	**0.2335**	**0.454**
From unemployment to non-participation (UO)			
Age	**-0.0188**	**0.0065**	**0.004**
Agesq	**0.0003**	**0.0001**	**0.002**
Sex	**-0.0492**	**0.0295**	**0.096**
Nation	**-0.0261**	**0.0266**	**0.327**
educ3	**-0.0527**	**0.0306**	**0.085**
educ4	**-0.0854**	**0.0400**	**0.033**
educ5_7	**-0.1069**	**0.0628**	**0.089**
Married	**0.0071**	**0.0310**	**0.818**
Children	**-0.0055**	**0.0417**	**0.896**
Males+children	**-0.0400**	**0.0727**	**0.582**
Constant	**0.2667**	**0.1152**	**0.021**

Outcome UU, educ1_2 are the comparison groups
Number of obs = 549
chi2(20) = 50.45
Prob > chi2 = 0.0002
Log Likelihood = -506.69634
Pseudo R2 = 0.0508

Table A.9. ***Flows from non-participation Jan. 1994 - Jan. 1995***

Marginal effects from multinomial logit regression estimates

	Coef.	St. Err	P>|z|
From Non-participation to employment (OE)			
Age	**0.0055**	**0.0013**	**0.000**
Agesq	**-0.0001**	**0.0000**	**0.000**
Sex	**0.0200**	**0.0064**	**0.002**
Nation	**0.0098**	**0.0059**	**0.098**
educ3	**0.0673**	**0.0085**	**0.000**
educ4	**0.0877**	**0.0107**	**0.000**
educ5_7	**0.0965**	**0.0129**	**0.000**
Married	**-0.0014**	**0.0075**	**0.853**
Children	**0.0018**	**0.0083**	**0.826**
Males+children	**0.0428**	**0.0154**	**0.005**
Constant	**-0.1931**	**0.0220**	**0.000**
From Non-participation to unemployment (OU)			
Age	**0.0021**	**0.0005**	**0.000**
Agesq	**0.0000**	**0.0000**	**0.000**
Sex	**0.0071**	**0.0030**	**0.018**
Nation	**-0.0039**	**0.0022**	**0.072**
educ3	**0.0030**	**0.0025**	**0.226**
educ4	**0.0028**	**0.0035**	**0.418**
educ5_7	**-0.0044**	**0.0060**	**0.467**
Married	**-0.0065**	**0.0034**	**0.056**
Children	**0.0063**	**0.0039**	**0.106**
Males+children	**-0.0096**	**0.0079**	**0.223**
Constant	**-0.0530**	**0.0131**	**0.000**

Outcome OO and educ1_2 are the comparison groups
Number of obs = 3523
chi2(20) = 320.25
Prob > chi2 = 0.0000
Log Likelihood = -1355.3666
Pseudo R2 = 0.2249

Table A.10. Flows from employment Jan. 1998- Jan. 1999
Marginal effects from multinomial logit regression estimates

	Coef.	Std. Err.	P>|z|
Job-to-job (ee) flow			
Age	**0.0022**	**0.0019**	**0.263**
Agesq	**0.0000**	**0.0000**	**0.039**
Sex	**0.0066**	**0.0074**	**0.371**
Nation	**0.0211**	**0.0080**	**0.008**
Educ3_4	**0.0032**	**0.0101**	**0.755**
Educ5_6	**0.0175**	**0.0124**	**0.158**
Married	**-0.0045**	**0.0075**	**0.552**
Children	**0.0209**	**0.0105**	**0.046**
Females+children	**-0.0324**	**0.0229**	**0.156**
Manufacturing	**0.0363**	**0.0122**	**0.003**
Construction	**0.0378**	**0.0150**	**0.012**
Energy+tranportation	**0.0335**	**0.0145**	**0.021**
Trade	**0.0488**	**0.0124**	**0.000**
Public services	**-0.0003**	**0.0135**	**0.983**
Banking+business services	**0.0719**	**0.0148**	**0.000**
Firm size 11-49	**-0.0048**	**0.0072**	**0.511**
Firm size 50-199	**-0.0186**	**0.0097**	**0.056**
Firm size 200-499	**-0.0341**	**0.0137**	**0.013**
Firm size 500_	**-0.0594**	**0.0174**	**0.001**
White collar	**-0.0292**	**0.0081**	**0.000**
Constant	**-0.1821**	**0.0386**	**0.000**
From employment to unemployment (EU)			
Age	**0.0030**	**0.0012**	**0.011**
Agesq	**0.0000**	**0.0000**	**0.002**
Sex	**0.0052**	**0.0046**	**0.249**
Nation	**-0.0105**	**0.0045**	**0.019**
Educ3_4	**-0.0054**	**0.0055**	**0.322**
Educ5_6	**-0.0245**	**0.0080**	**0.002**
Married	**-0.0170**	**0.0044**	**0.000**
Children	**-0.0025**	**0.0072**	**0.731**
Females+children	**-0.0106**	**0.0163**	**0.517**
Manufacturing	**0.0128**	**0.0071**	**0.074**
Construction	**0.0235**	**0.0083**	**0.005**
Energy+tranportation	**0.0030**	**0.0090**	**0.740**
Trade	**0.0167**	**0.0075**	**0.027**
Public services	**-0.0197**	**0.0091**	**0.030**
Banking+business services	**0.0038**	**0.0110**	**0.731**
Firm size 11-49	**0.0014**	**0.0047**	**0.765**
Firm size 50-199	**-0.0054**	**0.0063**	**0.396**
Firm size 200-499	**0.0097**	**0.0071**	**0.171**
Firm size 500_	**-0.0010**	**0.0083**	**0.907**
White collar	**-0.0200**	**0.0055**	**0.000**
Constant	**-0.1045**	**0.0240**	**0.000**
From employment to non-participation (EO)			
Age	**-0.0101**	**0.0009**	**0.000**
Agesq	**0.0001**	**0.0000**	**0.000**
Sex	**-0.0221**	**0.0044**	**0.000**
Nation	**-0.0022**	**0.0046**	**0.639**
Educ3_4	**-0.0069**	**0.0051**	**0.177**
Educ5_6	**-0.0109**	**0.0067**	**0.101**
Married	**0.0074**	**0.0042**	**0.080**

Children	**-0.0459**	**0.0140**	**0.001**
Females+children	**0.0764**	**0.0155**	**0.000**
Manufacturing	**0.0148**	**0.0071**	**0.037**
Construction	**0.0211**	**0.0093**	**0.023**
Energy+tranportation	**0.0074**	**0.0092**	**0.426**
Trade	**0.0090**	**0.0074**	**0.224**
Public services	**0.0007**	**0.0074**	**0.928**
Banking+business services	**-0.0009**	**0.0101**	**0.933**
Firm size 11-49	**-0.0022**	**0.0044**	**0.610**
Firm size 50-199	**-0.0170**	**0.0063**	**0.007**
Firm size 200-499	**-0.0183**	**0.0085**	**0.031**
Firm size 500_	**-0.0121**	**0.0085**	**0.154**
White collar	**-0.0099**	**0.0049**	**0.045**
Constant	**0.1224**	**0.0180**	**0.000**

Outcome EE, agriculture, firm size less than 10 employees and educ1_2 are the comparison groups
Number of obs = 6891
chi2(60) = 711.39
Prob > chi2 = 0.0000
Log Likelihood = -4241.243
Pseudo R2 = 0.0711

Table A.11. ***Flows from unemployment Jan. 1998- Jan. 1999***

Marginal effects from multinomial logit regression estimates

	Coef.	Std. Err.	P>|z|
From unemployment to employment (UE)			
Age	**-0.0127**	**0.0100**	**0.206**
Agesq	**0.0001**	**0.0001**	**0.368**
Nation	**0.0280**	**0.0367**	**0.445**
Sex	**-0.0373**	**0.0354**	**0.293**
Educ3_4	**0.0602**	**0.0447**	**0.178**
Educ5_6	**0.1347**	**0.0628**	**0.032**
Married	**0.1420**	**0.0377**	**0.000**
Children	**0.0548**	**0.0572**	**0.338**
Constant	**0.0543**	**0.1753**	**0.757**
From unemployment to non-participation (UO)			
Age	**-0.0107**	**0.0042**	**0.011**
Agesq	**0.0002**	**0.0001**	**0.002**
Nation	**0.0790**	**0.0201**	**0.000**
Sex	**-0.0407**	**0.0169**	**0.016**
Educ3_4	**0.0083**	**0.0186**	**0.656**
Educ5_6	**0.0052**	**0.0299**	**0.862**
Married	**-0.0010**	**0.0169**	**0.952**
Children	**-0.1168**	**0.0562**	**0.038**
Constant	**0.0122**	**0.0773**	**0.875**

Outcome UU and educ1_2 are the comparison groups
Number of obs = 773
chi2(16) = 82.85
Prob > chi2 = 0.0000
Log Likelihood = -646.63638
Pseudo R2 = 0.0559

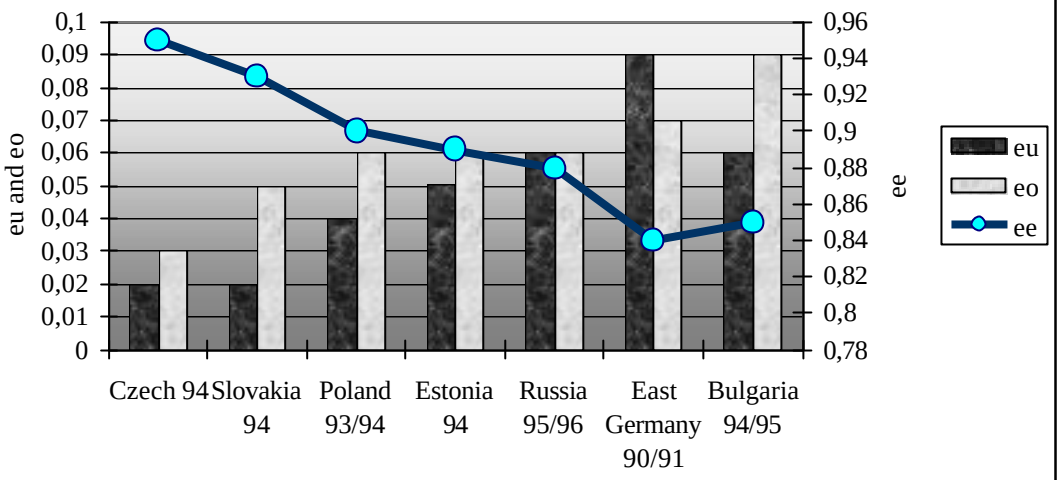
Table A.12. ***Flows from non-participation. Jan. 1998- Jan. 1999***

Marginal effects from multinomial logit regression estimates

	Coef.	Std. Err	P>|z|
From non-participation to employment (OE)			
Age	**-0.0017**	**0.0007**	**0.010**
Agesq	**0.0000**	**0.0000**	**0.389**
Nation	**0.0015**	**0.0023**	**0.522**
Sex	**0.0046**	**0.0023**	**0.048**
Educ3_4	**0.0108**	**0.0033**	**0.001**
Educ5_6	**0.0189**	**0.0047**	**0.000**
Married	**-0.0034**	**0.0023**	**0.143**
Children	**-0.0022**	**0.0034**	**0.515**
Constant	**0.0184**	**0.0096**	**0.056**
From non-participation to unemployment (OU)			
Age	**-0.0002**	**0.0003**	**0.479**
Agesq	**0.0000**	**0.0000**	**0.159**
Nation	**-0.0003**	**0.0013**	**0.784**
Sex	**-0.0003**	**0.0013**	**0.811**
Educ3_4	**0.0010**	**0.0014**	**0.488**
Educ5_6	**0.0010**	**0.0020**	**0.623**
Married	**-0.0024**	**0.0014**	**0.091**
Children	**-0.0002**	**0.0018**	**0.924**
Constant	**0.0009**	**0.0044**	**0.848**

Outcome OO , educ1_2 are the comparison groups
Number of obs = 3588
chi2(16) = 74.11
Prob > chi2 = 0.0000
Log Likelihood = -801.23644
Pseudo R2 = 0.3520

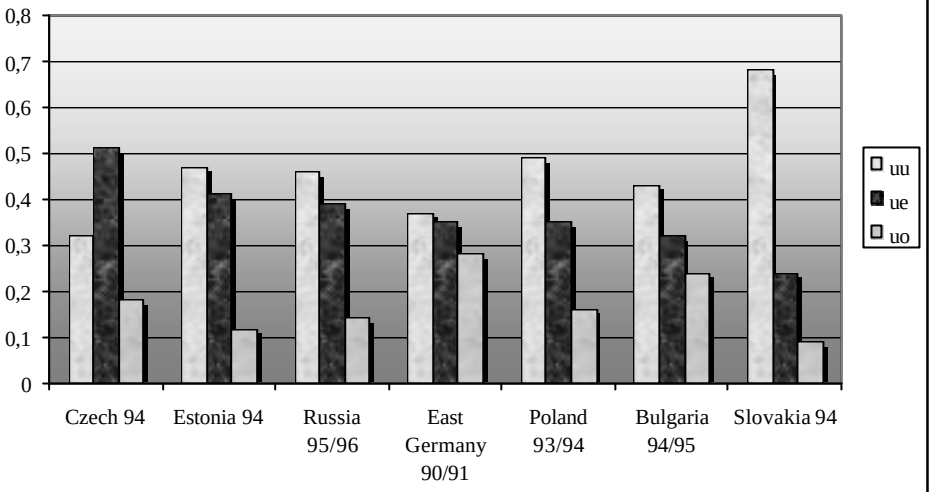
Figure A.1. Probabilities to stay in employment (ee) and to flow out (eu and eo)



Note: eu-flow from employment to unemployment
ee-stayed in employment(includes also job-to-job flows)
eo- flow from employment to out of labour force

Sources: Bulgaria (Boeri, 1998), the Czech Republic (Sorm and Terell, 1999), East Germany (Bellmann et al, 1995), Poland (Gora and Lehmann, 1995), Russia (Foley, 1997), for Estonia: author's calculations.

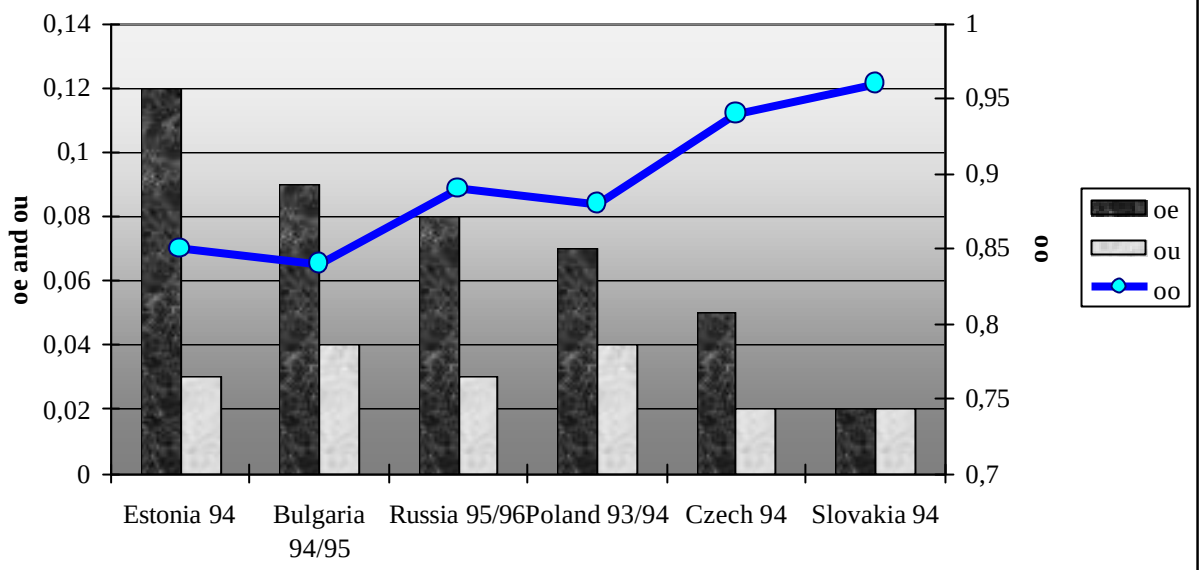
Figure A.2. Probability to stay in unemployment (uu) and flows out (ue and uo)



Note: ue-flow from unemployment to employment
uu-stayed in unemployment
uo- flow from unemployment to out of labour force

Sources: Bulgaria (Boeri, 1998), the Czech Republic (Sorm and Terell, 1999), East Germany (Bellmann et al, 1995), Poland (Gora and Lehmann, 1995), Russia (Foley, 1997), for Estonia: author's calculations.

Figure A.3. Probability to stay in non-participation (oo) and probabilities to flow out (oe an ou)



Note: oe-flow from non-participation to employment.
ou- flow from non-participation to unemployment
oo- stayed in non-participation

Sources: Bulgaria (Boeri, 1998), the Czech Republic (Som and Terell, 1999), East Germany (Bellmann et al, 1995), Poland (Gora and Lehmann, 1995), Russia (Foley, 1997) for Estonia: author's calculations.

6. Labour market policy in transition economies

6.1. Institution building

Labour markets in Central and Eastern Europe were not ready for the widespread unemployment when the transformation process began. While in the market economies the labour market plays a crucial role in assisting the movement of workers into jobs where they are most productive, in the absence of an appropriate economic infrastructure there was concern that a too rapid restructuring of enterprises would have resulted in an immediate congestion of labour markets. In all countries it was recognised that labour institutions needed to be established first, enabling them to manage labour relations efficiently and alleviate unemployment resulting from the transition process.

While at the beginning of the transition process, policies aimed at avoiding an excessive flow of workers into unemployment. Labour market reforms are now underway aiming primarily at facilitating the creation of new jobs. Although the private sector has so far been able to attract a sufficient number of workers through direct job-to-job movements, it is now increasingly recognised that postponing layoffs further may increase costs in the form of less job creation in the higher-productivity private sector (Cornelius, 1995).

Some have argued that unemployment is not just a by-product of the transformation process but rather a necessary precondition for successful transition (Burda, 1993). According to the matching or flow approach to labour markets, job creation is seen as a stable function of the stock of unemployed and open vacancies. Unemployment may be needed to allow further development of the private sector and to force workers to acquire new skills. More restructuring requires new job matches, which in turn may require more unemployment. This approach has found some support in empirical studies, although the coefficients of the matching function were considerably smaller for industrialised countries, suggesting that so far most job vacancies have been filled by those who are searching for jobs while still employed. (Boeri, 1994)

Before economic transition, only Hungary and Slovenia had a system of income support for the unemployed (Boeri, 1997B). In Hungary, earnings related benefits had been granted since 1989 but only to workers involved in collective redundancies, which were very rare before 1990. In Slovenia, as in other former Yugoslav republics, the self-management system allowed compensation to be paid to job losers. The subsidy was administered by local self-managed units and there were not always sufficient resources to pay all those eligible. In all the other countries of Central and Eastern Europe, unemployment was not even officially recognised.

Hence, a legal framework for labour-market policies and a network of labour services where the unemployed could register, collect benefits, and be assisted in their search for a job had to be created from scratch.

In 1989-1991, most countries in Central and Eastern Europe (CEE) adopted comprehensive regulations encompassing not only the provision of income support for the unemployed, but also the implementation by decentralised state administrations of a series of active labour programmes, ranging from training for the unemployed to subsidised employment schemes and public work programmes. Certainly the fear that unemployment would rise substantially in the aftermath of reforms played an important role in providing support and paving the way for reform.

The governing labour market institution in Estonia is the Ministry of Social Affairs. The Labour Market Board (established in April 1991) works under the jurisdiction of the Ministry of Social Affairs. Its main tasks are:

- to administer labour mediation services bringing together employees and employers;

- to administer vocational planning and counselling services which help the labour force adjust to the structural changes taking place in the national economy;
- to co-ordinate advanced training and retraining programmes designed to enhance and develop the labour potential of the population;
- to organise unemployment registration, regulate the payment of benefits to the unemployed and supervise the entire process.

In most Central and Eastern Europe countries (CEEC), similarly to Estonia, decentralised networks of labour offices were established, staffed and endowed with the means to operate. Although inadequate to cope with the massive inflows of registered job seekers in the early stages of reform, this network was sufficiently decentralised and, in some countries, as efficient as those in OECD countries.

Table 6.1 ***Labour market institution building. Indicators of the PES workload: 1993 unless otherwise specified.***

Country	No of local offices	Labour force per office	Labour force per staff member	Registered unemployed per staff member	UB recipients per staff member
Czech Republic	**141**	**35302**	**1133**	**30**	**17**
Hungary	**187**	**26100**	**1190**	**162**	**113**
Poland	**356**	**50596**	**1601**	**235**	**141**
Slovenia	**59**	**14688**	**1083**	**148**	**50**
Denmark	**97**	**29463**	**1270**	**183**	**155**
Norway	**168**	**12685**	**761**	**56**	**41**
Sweden	**380**	**11226**	**488**	**42**	**38**
UK	**1,216**	**23386**	**741**	**56**	**49**
Estonia (1997)	**46**	**15600**	**3028**	**144**	**81**
Estonia (1999)	**50**	**14220**	**3276**	**200**	**119**

Source: Boeri (1997B), Estonian Labour Market Board, author's calculations for Estonia .

Table 6.1 provides some basic information on the organisation work-load, and performance of the Public Employment Service (PES) networks in Central and Eastern Europe and in selected OECD countries.

As could be seen from column two of Table 6.1, the Public Employment Service organisation is fairly decentralised in these countries as the average number of members of labour force served by each labour service is broadly similar to that prevailing in OECD countries. Yet work-load indicators point to inadequate staffing in most CEECs. In particular, the average number of registered unemployed (if not the number of benefit claimants, given the current low coverage of benefits in these countries) per staff member can be up to 4 times higher than in the UK.

The number of labour services is relatively high in Estonia, while these offices are clearly understaffed. In other CEE countries, the average number of labour force per staff is almost three times less than in Estonia. This is definitely a bottleneck in Estonian labour policy. Estonia has not had enough resources to train social workers and prepare local authorities for their new tasks (to cope with the increasing number of unemployed persons)(Eamets, 1998)

6.2. Labour market policy options

One should keep in mind that the reasons for unemployment and therefore also the policy options are slightly different in transition economies. Generalising the situation in labour markets in the CEEC and analysing labour market policy strategies, the following strategies of coping with unemployment have been used in post-socialist countries in the early period of transition (Götting, 1995):

- tolerating continued labour hoarding, or even subsidising inefficient levels of employment, to avoid the breakdown of old state enterprises that otherwise would not have survived in a market economy, thus delaying the process of economic transition;
- reducing labour supply on the labour market, either by having women, pensioners, or school-leaves switch over to so-called "hidden labour supply", by promoting self-employment, or by furthering contractual work in foreign countries (or even encouraging migration);
- introducing income support schemes for the unemployed in order to alleviate the consequences of unemployment (the passive labour policy measure);
- developing and introducing active labour policies. Active labour market policies (ALMP) try to modify either the supply side (training and retraining programs) or the demand side (job creation and public works programs), and seek to balance supply and demand in the labour market.

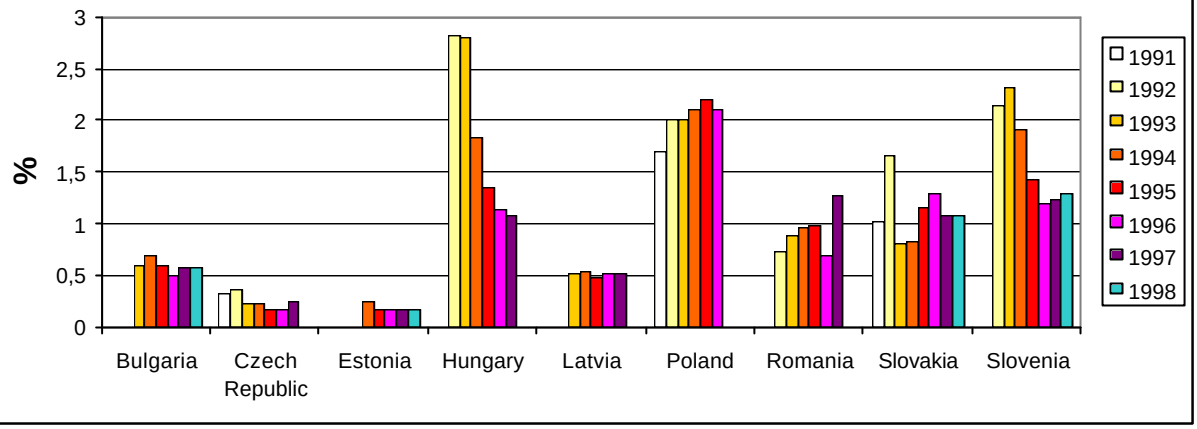
The implementation of ALMP measures has an increasing role in the stabilisation of the situation in the transitional labour market. For analysing the efficiency of the implementation of an active labour policy measures in post-socialist countries, different macro econometric and micro econometric approaches have been used. The analyses show that ALMP achieves limited results, as it contributes more to the increase in the number of welfare beneficiaries than to the reduction of unemployment. For example, it has been estimated that in Poland, 80 percent of the fall in unemployment in 1995 can be attributed to economic growth (Kabaj, 1996). The second possible explanation could be that the impact of different active labour policy measures probably has a lagged effect. Active labour policy measures are first of all oriented to stabilisation in the labour market situation in future (Paas, 1996).

6.3. How active or passive is the labour policy in CEE countries?

The experience of CEE countries with labour market policies is a very interesting case study. As unemployment was generally not recognised under the command economy, CEE countries had to create from the scratch the regulatory framework for labour market policies and the network of employment offices, where unemployed persons could register, receive labour market services and collect benefits. This process has involved trial and error and the systems launched at the beginning of transition have been changed in most of the countries. This section focuses on analysing the role of labour market policies in CEE countries. For simplicity, we use the term Public Employment Services (PES) in the following analyses to cover all the different expressions used in CEE countries.

Currently a wide range of labour market policies often comparable with those available in the EU and OECD countries are in place in Central and Eastern European countries. Figure 6.1 shows the expenditures of labour market policies as a percentage of GDP in CEE countries. It can be seen that CEE countries differ sharply in the amount of resources dedicated to labour market policies. Hungary, Poland, Slovenia, Slovakia and Romania are the countries where expenditures on labour market policies have been relatively high compared to the other countries. In 1997, Romania spent 1.28%, Slovenia 1.23%, Slovakia 1.08% and Hungary 1.07% of GDP on labour market policies. In Poland, the respective number in 1996 was 2.1%. In Estonia and the Czech Republic, expenditures on labour market policies are lowest among the selected countries (0.16% and 0.24% in 1997 respectively). Compared to the average level of the European Union where the expenditures on labour market policies accounted for 3.4% in 1997. These numbers are very low.

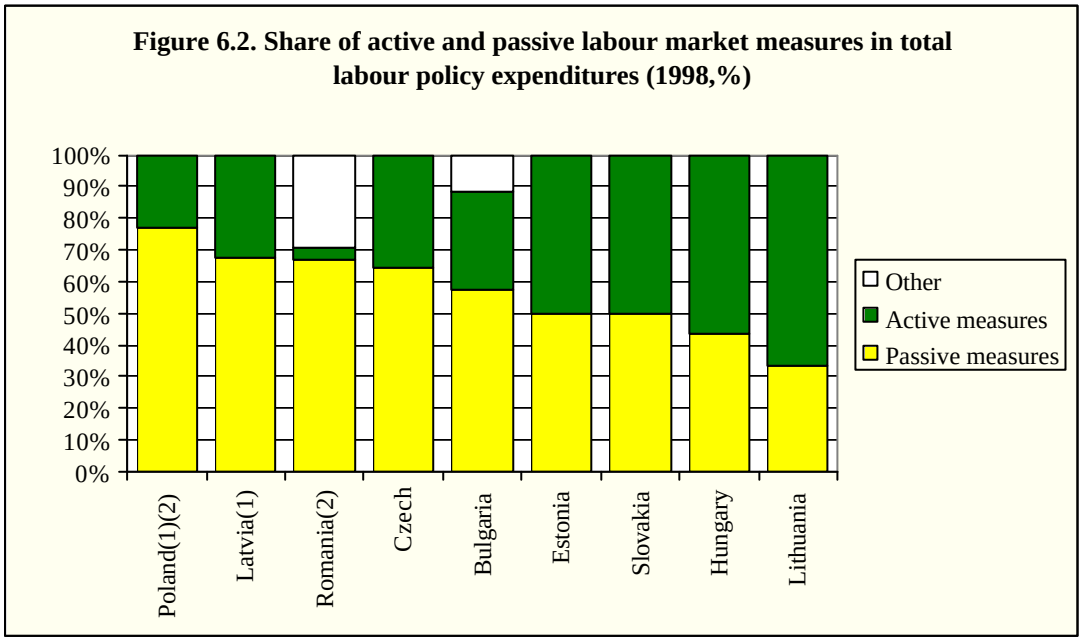
Figure 6.1 Expenditures to labour policies as a percentage of GDP (%)



Source: Eamets and Arro, 2000

Expenditure on labour market policies is one of the smallest among CEE countries in the Czech Republic comprising 0.24% of GDP in 1997. This can be explained by the low level of unemployment which has started to rise only recently (6.8% in 1997). Due to the tight fiscal situation only a moderate increase in the expenditures on labour market policies is foreseen. In 1997, 0.03% of the GDP was allocated to finance active measures and 0.21% for passive measures. Expenditure rises when unemployment increases since unemployment benefit is higher as those on benefit had higher wages (Munich, et al 1999).

Figure 6.2. Share of active and passive labour market measures in total labour policy expenditures (1998,%)



Source: Eamets and Arro, 2000

In Estonia, expenditure on labour market policies is the lowest among CEE countries comprising only 0.16%. During the last two years, expenditure on active and passive measures has been equal – 0.08%. The level of unemployment benefit is very low in Estonia compared to other CEE countries, which explains the moderate expenditures on passive measures. Another reason is that the employment policy has only recently become the priority of the Government. Furthermore, the tight fiscal situation forbids an increase of expenditure. (Eamets et al, 1999)

Recent analyses based on background studies carried out in 10 CEE countries allow us to conclude that, during the initial period of transition, CEE countries focused mainly on building up institutional networks and on paying unemployment benefits. With economic development, the focus has shifted towards active labour market policies. (See also Eamets, Arro, 2000).

6.3.1. Active labour policy in CEE countries

We can conclude from the above mentioned report prepared by Eamets and Arro (2000) that it is evident that in most countries, subsidised employment is the most widely used active labour market measure. The evaluation literature shows that subsidies to employment may have a number of objectives other than creating additional jobs. They may enhance effective labour supply by helping individuals to keep in contact with the world of work and thereby maintaining their motivation and skills. For equality reasons, they may also be intended to provide the long-term unemployed with jobs even if this happens at the expense of the short-term unemployed. These positive secondary effects may still hold if net employment gains of these programmes are very small (OECD, 1996).

Most evaluations show that subsidies to employment have large dead weight, substitution and displacement effects and hence small net employment gains, particularly in the short-term when aggregate demand and vacancies are fixed (for these effects see Calmfors, 1994; Burtless, 1985). Careful controls must be maintained on employment subsidies to minimise firms' incentives to use such schemes as a means of permanently subsidising their work-force. Martin (1998) finds that there is a difficult trade-off for policy makers: the evidence also suggests that the more the controls are multiplied in order to curb abuse and maximise the net employment gains from wage subsidies, the less willing are firms to participate in such programmes (Martin, 1998).

In Baltic countries, training programmes constitute the most widespread active labour market measure. The evaluation literature suggests that training programmes are successful if they are targeted at specific groups who follow courses providing skills relevant to employment in specific sectors. In most countries, an employer's willingness to employ the unemployed person after graduation from the training course is required for participation in the training course. This induces the so-called creaming off effects, where only the individuals with the highest probability of graduation and employment opportunities are selected to participate in training courses. The most disadvantaged groups may therefore face difficulties in getting access to training courses.

One common problem in all CEE countries seems to be the declining number of participants. In the case of Romania, the following reasons were pointed out: lack of information, opposition to change, reticence with respect to professional mobility, the reduced internal efficiency of the system and inefficiency of the programmes. One important reason is probably also the cost increase of such courses. State financing is not increasing as fast as the price of the training courses. It is especially the case in countries like Estonia where the majority of training courses are provided by the private sector.

There are several evaluation studies on the possible effects of active labour market policies in CEE countries (See for instance Lubyova and Van Ours, 1999; Van Ours, 2000; Boeri 1997A; Earle and Pauna, 1998). Terrell and Sorm (1999) found that ALMPs have lowered the unemployment duration of groups that tended to have longer unemployment spells, namely, women, Romanies, handicapped, less educated people and those who have been unemployed before. Also Puhani (1999) and Kluve et al. (1999) found some support to the view that public training programmes in Poland can be used to reduce unemployment. On the other hand, O'Leary (1998), researching self-employment in Hungary and Poland, found strong dead weight effects of self-employment assistance programmes. Many of those receiving self-employment assistance would probably have gained reemployment without government assistance.

6.3.2. Passive labour policy in CEE countries

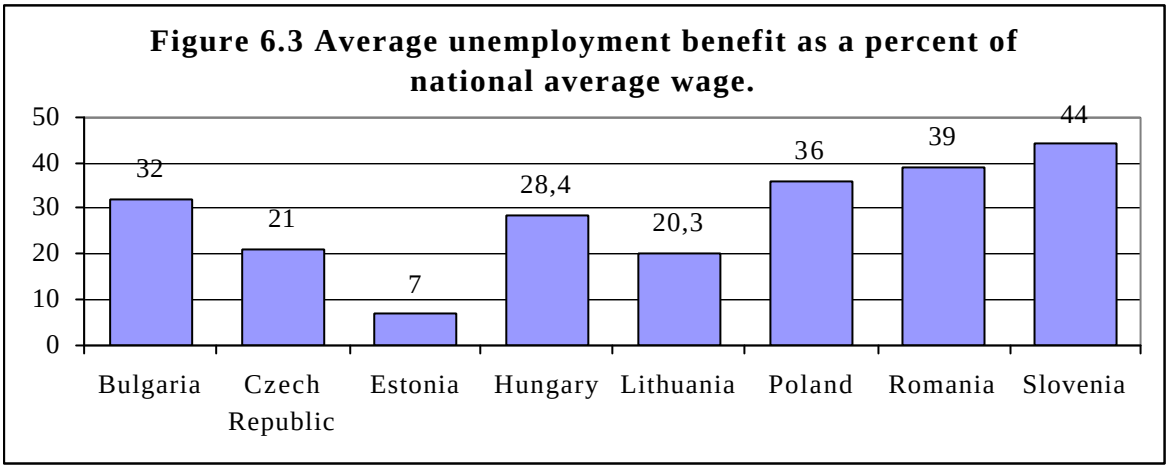
Economic theory suggests that the unemployment benefit (UB) may be a factor in increasing the duration of joblessness and UB systems, introduced in the CEECs have sometimes been challenged for being so generous as to create a disincentive to job search (Jackman and Layard, 1990; Layard, 1990; Burda ,1992)

Most CEECs have developed unemployment compensation systems that can be reconciled, for the most part, with the principles of unemployment insurance benefits (UI) and unemployment assistance (UA), where the latter concept involves general welfare to a greater or lesser extent, depending on the country.

The insurance-based systems in place in CEE countries share the characteristic that a benefit is offered on the basis of an entitlement built up during periods of previous employment. In most countries, benefits are financed to a great extent via wage based contributions. In Hungary, employers' contributions are earmarked to extra-budgetary funds. These funds, which may also be financed via the budget, are used to finance all labour market programmes, including UBs (Boeri and Scarpetta, 1995). Replacement rate usually declines with length of the unemployment spell and the maximum and minimum levels of benefit are fixed. In Hungary, the replacement rate to previous wage is between 75% (for the first free months) and 60% (for the rest of the period), in Slovakia and Bulgaria the respective number is 60% and in Czech Republic 50%. (Eamets and Arro, 2000). In Lithuania, the level of unemployment benefit does not depend on previous wage, but on the individual's state social insurance record and reasons for the loss of work. Authors of the Lithuanian Background Study point out that the system contradicts the social insurance principles and does not follow ILO recommendations and practice of European countries. (Gruzevskis and Beleckiene, 1999). Estonia and Poland use the flat rate unemployment benefit systems. In Estonia, the benefits are fixed to 400 kroons per month and are uniform for all. In Poland, the benefit rate is 36% of the average wage of the previous quarter and depends on the claimant's previous employment record.

Registered unemployed persons are entitled to unemployment benefits if they have been employed for 6 months during the previous year in Estonia, 9 months during the last 15 months in Bulgaria, 12 months during the longer period in Hungary, Czech Republic, Poland and Slovenia and for 24 months in Lithuania. In most countries, the length of the period depends on previous work record, age, regional employment situation and the reason for unemployment.

Figure 6.3. presents the replacement ratios of unemployment benefits in CEE countries. It can be observed that the average unemployment benefits range from 44% of the national average wage in Slovenia (1998) to only 7% in Estonia (1998). As was already mentioned before, the low level of unemployment benefit is one of the reasons for not registering in labour offices, especially in Estonia and Lithuania. Analysing the level of unemployment benefits, the relatively high level of inflation in CEE countries must be taken into account. Boeri and Scarpetta (1995) point out that once wage inflation is taken into account, the levels of benefits are all well below of the West European countries.



Source: Eamets, Arro, 2000

Looking at experiences of the other CEE countries, we observe that Estonia avoided, in the early stage of transformation, the generosity of UB systems. For instance, in Poland unemployment benefits were initially open-ended and this induced large inflows into unemployment-compensation rolls of persons coming from outside of the labour force (Lehmann, 1993). Ongoing budgetary consolidation efforts and the lessons learned from the effects of their policies soon induced public authorities in CEE countries to tighten eligibility for benefits and reduce their maximum duration. The maximum duration of unemployment benefit was halved in the Czech and Slovak Republics and in Hungary, and a maximum duration of 1 year was set in Poland (Boeri, 1997). At the same time some empirical analyses show that the tightening of unemployment benefits has not boosted outflows to jobs, (except in the Czech Republic), while it has been associated with greater flows to inactivity and to social assistance (Boeri and Edwards, 1998).

To conclude, we can say that in transition economies, unemployment benefits are often seen as a compensation payment for job loss (which is actually the function of severance pay), and the labour office as a state agency responsible for providing new employment. In a market economy, labour offices are just not able to create the jobs required for all job-seekers, and even if there are jobs, they cannot force enterprises to employ individual workers. Hence, the importance of job search, training, counselling, assembling of vacancies and provision of information to workers. For their part, the workers must learn to take responsibility for job search and their own future employment. Development of PES, in particular the matching and counselling function, orientation programmes, institutional links of unemployment benefit system to the local labour offices, seem to be the most important issues in assessment of progress made in CEE countries in establishing the labour market programmes.

6. 4. Labour market policy in Estonia

6.4.1 Active labour policy

The main current active labour market policy programmes introduced by the Estonian Labour Market Board are the following:

- public employment services and administration ;
- labour market training (training and training allowances) ;
- subsidised employment (subsidies to regular employment, support of unemployed persons starting enterprises, public works);
- training of unemployed people.

More detailed description of policies is presented in Appendix.
The first priority in an active labour policy should be given to different training activities.

From the labour supply side, transition countries are faced with a huge gap between labour qualification and labour market needs. We observed this in earlier chapters where we described structural unemployment problems in Estonia. And the mismatch of skills threatens to become worse because of the deficiency in the education systems. The combination of budget constraints of schools and training centres and growing income differentiation in society has resulted in increasing social stratification in education.

The system of adult training needs improvement. It is primarily in the interest of enterprises to train their employees, but where enterprises are unable to support training costs, the Government can provide extra funding. Public employment services take the main responsibility for the labour market in most countries. The problem is that in the case of Estonia, they are entitled to train only those who are registered as unemployed. Because the registered unemployed covers only 50 % of total unemployment, this means that many unemployed people have no access to training.

As we can see from Table 6.2, the number of people who can participate in training programmes organised by labour services has declined during the last years. This is explained by budget restrictions and the increasing cost of different training courses.

Table 6.2. ***Number of participants in different active labour market programmes***

Programme	1995	1996	1997	1998
Total number of participants	**16130**	**14228**	**13568**	**11575**
Participants in employment training (%)	**60.8**	**66.3**	**60.7**	**63.0**
Employed with subsidies to employer (%)	**0.8**	**1.8**	**1.6**	**1.2**
Employed with subsidies to start a business (%)	**2.8**	**3.2**	**3.3**	**3.3**
Participants in community placement (%)	**35.6**	**28.7**	**34.4**	**32.6**

Source: Estonian Labour Market Board

One reason is also the change in the direction of labour market training. During and prior to 1994, the main emphasis was placed on basic skills (languages, use of computers, etc.). Beginning in 1995 the focus shifted to refresher and advanced training courses and re-training programmes, which are more expensive. In 1994, 31% of the course graduates found employment and in 1998, the percentage rose to 69%. The problem is that on average, only 16% of registered job-seekers (7 200) participated in training courses in 1998. This means that around 10% of the total number of (ILO) unemployed people received some kind of labour market training. (Eamets, et al, 1999)

Active labour market policies in Estonia do not include any special measures to support young people entering the labour market for the first time (Paas; 1998).

Labour policies are connected with state *regional policies* such as promoting entrepreneurship in regions with high unemployment rates and in other ways stimulating job creation. This is particularly important for Estonia, because the regional differences (including unemployment) are very big.

The situation would be improved if labour market policies were differentiated by regions, with different sets of regulations for unemployment benefits, active labour market policies and various measures to develop the system of adult training and retraining programmes for people who may face layoffs due to enterprise reorganisation. The main aims are to reduce the mismatch of skills and youth unemployment, to improve the territorial mobility of labour resources, to reduce the duration of unemployment, and to stop the increase of poverty among the unemployed.

In addition, some changes should be introduced in the legislation in order to make training programmes more efficient. One problem is that according to current legislation, labour services can provide training programmes only for people who are registered as unemployed. A person who is still working but already knows that she/he will soon be dismissed has no possibility of participating in training programmes arranged by the labour services. In many regions and

industries, such preventive training is inevitable in order to change specialisation or qualification and provide a better match of labour supply and demand.

Although we can observe an increase of active policy measures in absolute terms till 1998, in relative terms they are declining. Especially we see shift towards passive labour policy in 1999 when unemployment increased rapidly due to the Russian crisis. We can therefore state that there is sizeable scope for the expansion of active policy programmes. However, further spending on active labour market measures is limited by fiscal considerations. There is also no comprehensive analytical evidence on the effect of the existing programmes[50].

6.4.2. Passive labour policy

Social protection of the unemployed in Estonian is provided by the state (i.e. financed from the state budget, which constitutes a part of the social protection system). It is mostly for the short term, usually for six months. There is no voluntary unemployment insurance, although preparations for that are under way. There are two reasons why some of the unemployed do not get unemployment benefit: if he/she has already received it or the length of previous employment is insufficient.

Regulations for recipients of unemployment benefits are very restrictive (For more details, see labour market regulation sub-chapter in Appendixes). Because of many legal restrictions, many people have no possibility of receiving unemployment benefits, and this could be a reason why only 50% register themselves as unemployed. As a result, we face a situation in which it would be rather difficult in the future to implement the EU guidelines about employability, where unemployed adults are offered new opportunities mostly in the form of individual vocational guidance.

Table 6.3 ***Unemployment benefit and replacement ratios in 1992-1998***

	Year	Max. Duration*	Benefit minima	Benefit maxima	Gross replacement rates (% of average wage)	Coverage rate** (%)
			(% of minimum wage)		1-6 months	
Estonia	**1993**	**6**	**60.0**	**60.0**	**16.9**	**56.4**
	1995	**6**	**40.0**	**40.0**	**7.6**	**39.9**
	1997	**6**	**28.4**	**28.4**	**6.7**	**53.6**
	1999	**6**	**32,0**	**32,0**	**9,1**	**58**
Bulgaria	**1995**	**12**	**90**	**140**	**60**	**33**
Czech Republic	**1995**	**6**	**none**	**150-180**	**60 first 3 month 50 next 3 month**	**48**
Hungary	**1995**	**12**	**70*****	**150*****	**58**	**40**
Poland	**1995**	**12**	**none**	**none**	**45**	**55**
Slovakia	**1995**	**12**	**none**	**150**	**50-60**	**27**

Notes: * In some cases duration can be prolonged by up to 3 months. If the employment office cannot send a job-seeker to employment training, the job-seeker may apply for unemployment benefits 3 times during the subsequent 180 calendar days but not for more than 30 days at a time.
** Unemployment benefit recipients as a percentage of registered unemployment.
*******In Hungary, benefit minima and maxima both are expressed as a percentage of the minimum wage, but fixed in levels; the figures reported in this Table refer to relations between benefit floors and ceilings and the minimum wage in 1995. Unemployed persons who were previously earning less than the benefit minima are entitled to 100 % of the previous earnings.
Sources: Boeri and Edwards, 1998, Statistical Office of Estonia, author's calculations.

Rigid preconditions for registration put graduates from schools, who have not worked before and who lack of experience, as well as people a few years from retirement and other groups, in a difficult situation. Following the exhaustion of unemployment benefits six months into

[50] Except one, done by Paas (1999), where different labour policy expenditures were analysed from regional point of view.

unemployment workers become eligible for Social Assistance Benefits[51]. These are subject to registration at the labour office but are not subject to expiration, and their level reflects total household income. Provision of unemployment benefits is currently the major task performed by district labour offices.

Table 6.3 shows that unemployment benefits in Estonia are very low compared with other Central European countries [52].

In 1999, unemployment benefit coverage rate was 58% in Estonia. Unemployment benefit coverage rates in EU countries are much higher, for instance in Denmark 85%, Sweden 90% and UK 87%. Estonian coverage ratio is relatively high, but we should not forget the fact that registered unemployment is less than half of total unemployment.

6.5 Labour policy of CEE countries in the framework of the four "pillars" of EU labour policy

The following section will concentrate on Estonian labour market policy issues in the framework of EU labour policy. On 20. and 21. November 1997, the Heads of State and Government of the 15 EU Member States and their Foreign Ministers held the Employment Job Summit in Luxembourg. The main outcome of the Luxembourg meeting were Employment Policy Guidelines which introduced employment targets and define four main strategic priorities ("pillars") to concentrate on. The guidelines were suggested by the European Commission. Four priorities (pillars) for the EU labour policy were the following:

- a new culture of entrepreneurship;
- a new culture of employability;
- a new culture of adaptability;
- a new culture of equal opportunity.

6.5.1. A new culture of entrepreneurship

The idea behind this pillar is to engender a new climate and spirit to stimulate the creation of more jobs and better jobs. EU Member States agree to make it easier to start-up and run businesses by providing a clear, stable and predictable set of rules. Member States should review and simplify administrative burdens on small and medium size enterprises.

- Reducing significantly the overhead costs for enterprises of hiring an additional worker.
- Adapting existing regulations to facilitate the transition to self-employment. Obstacles, especially those within existing social security regimes, for people moving from employment to self-employment and setting up micro-enterprises need to be tackled.

Member States should establish pan-European secondary markets for trading in less important stocks and shares, particularly designed for small and medium enterprises, by the year 2000. The taxation system must become employment friendly in order to encourage firms to create more new jobs.

The main problem for new entrepreneurs, starting their businesses, is financial issues, how to get the initial financial injection. The local banking system is not yet ready to support risky projects without state guarantees. We can also see from various studies that most of CEE countries have not yet achieved the pre-reform level of GDP (see for instance Stern, 1997; Campos, 1999). The only exception is Poland. In our opinion, the level of loans and risk capital investments for SME-s is

[51] Table about the social assistance forms and the size of subsidies are presented in appendix table A.1.
[52] In many NIS countries, the UB replacement ratio is very low as well (for example 6% of average wage in Azerbaijan, 10% in Belarus, 17% in Ukraine, 23-24% in Moldova and Armenia, in 1995. (Kuddo, 1997))

more connected with general macroeconomic development of these countries than local governments' wish to improve the situation. In our opinion, if these countries achieve sustainable economic growth, we will also see more governmental support, in financial terms, to new firms.

The macroeconomic policy in CEE countries should today therefore concentrate more to different infrastructure issues of supporting and consulting the SME-s. Of course, simplifying legal and other formal regulations for firm registering is a good policy choice moving towards implementing a new culture of employment.

The second important issue is taxation. Although the taxation systems vary between the countries, it seems that the existing tax systems (especially labour taxes) do not encourage entrepreneurship and labour demand. On the contrary, excessive taxation (especially given the level of economic development of the country) not only lowers labour demand, but also creates incentives for massive tax evasion on the part of both firms and workers. According some surveys dealing with shadow economy, non-reported wage payments or employment have become widespread in smaller firms.

In Estonia, according to the Commercial Code, to start own business as a sole proprietor is not a legally very complicated procedure. The main problem for small firms in Estonia is a lack of capital and due to relatively high interest rates it is rather difficult to get loans from commercial banks.

One labour market measure for starting businesses is entrepreneurship subsidy to the amount of 10,000 EEK (at the beginning of 1998) that could be paid to the unemployed. To apply, the unemployed person has to undergo business training or have some previous experience in business. If the business plan is successful, the labour services could pay off the debt.

6.5.2 A new culture of employability

The idea behind this pillar is to tackle the skills gap by modernising education and training systems, and by strengthening their links to the workplace, so that all workers, especially jobseekers, are equipped to take up new employment opportunities.
The Member States should address the problem of long-term unemployment and youth unemployment. On average, only 10% of those adults who are formally unemployed receive any training at all. The Member States took obligations to guarantee to every unemployed adult a new start - in the form of a job, training, retraining, work practice or other employment measure - before reaching twelve months of unemployment. Every unemployed young person is given such a new start before reaching the six months point.

Employment prospects are poor for the 10% of young people who drop out of the school system early and many of the 45% who do not complete upper secondary education. The EU Member States must seek to:

- reduce the number of those dropping out of the school system early by 50% within five years and progressively reduce the share of those who do not complete upper secondary level;
- improve the apprenticeship system and increase participation in apprenticeship training in line with the best performing Member States.

The main purpose is to move from passive to active labour policy measures. Benefit and training systems should ensure that they actively support employability and provide clear incentives for the unemployed to seek and take up work or training opportunities.

The labour policy in most CEE countries has been dominantly passive. Therefore the shift from passive to active measures is necessary if these countries are to join the EU.

Another problem is connected with the coverage of training programmes provided by the PES. Under coverage we mean the share of the total number of registered unemployed, who participated in training. We see from Table 6.4 that the share of those who participated in training programmes was extremely low. It is relatively high in the Baltic countries, but we need to bear in mind that registered unemployed made up only 50% in the case of Latvia and Estonia and 65% in the case of Lithuania of total ILO unemployment.

Table 6.4. ***Share of persons participated in training*** *(from total number of registered unemployed, 1998)*

Country	%
Estonia	**16.4**
Latvia	**14.9**
Lithuania	**8**
Hungary	**6.2**
Czech*	**5.2**
Romania*	**1.9**
Bulgaria	**1.31**
Slovakia	**0.2**

Note: *1997
Source: Eamets and Arro, 2000

Estonian labour policy has been mostly passive so far but whereas unemployment benefit is very low, the share of passive labour policy expenditure would be even higher, in the case of higher unemployment benefit (it was 65.6% in 1999) (See Table 6.5).

Programmes designed to reduce unemployment, e.g. retraining, identifying the need for new skills and occupations, job creation policies, etc. do not often meet society's needs yet. Therefore, Estonia needs a national description of professions and trades in order to train unemployed jobseekers more effectively.

The situation would be improved by differentiating labour market policies by regions, with different sets of regulations for unemployment benefits, active labour market policies and several measures to develop the system of adult training and retraining programmes for people who may face layoff due to enterprise reorganisation. The main aim is to reduce the mismatch of skills and youth unemployment, improve territorial mobility of labour resources, reduce the duration of unemployment, stop the increase of poverty among the unemployed.

Table 6.5. ***Labour Market Policy Programmes in Estonia, 1994-1999***
*(*share in total labour policy expenditure, %)

	1994	1995	1996	1997	1998	1999
Total expenditures (mil. EEK)	**71.76**	**71.35**	**89.94**	**105.87**	**114.56**	**184.4**
% of GDP	**0.24**	**0.17**	**0.17**	**0.16**	**0.16**	-
1. Passive Employment Policy	**45.2**	**38.4**	**43.7**	**47.3**	**49.9**	**65.6**
Unemployment benefits	**45.2**	**38.4**	**43.7**	**47.3**	**49.9**	**65.6**
2. Active Employment Policy	**54.9**	**61.6**	**56.4**	**52.8**	**50.0**	**34.4**
Public employment services and administration	**14.5**	**17.9**	**15.1**	**14.5**	**16.5**	**8.6**
Labour market training	**29.4**	**24.6**	**25.6**	**26.4**	**24.2**	**17.4**
Training allowances	**4.1**	**6.6**	**5.5**	**5.1**	**3.6**	**3.3**
Subsidy to employer	**0.3**	**0.5**	**0.9**	**0.9**	**0.9**	**1.0**
Subsidy to start a business	**2.5**	**5.1**	**4.2**	**3.7**	**3.2**	**2.3**
Community placement	**2.8**	**1.5**	**2.5**	**2.2**	**1.6**	**1.8**
Other costs	**1.3**	**5.4**	**2.6**	**0.0**	**0.0**	**0.0**

Source: Labour Market Board

In order to make active labour policy more effective, some concrete measures were recommended by employees of labour services in seminars and conferences held in Estonia to discuss labour market issues:

- Adjustment courses must become a priority of labour service's training programmes. These courses introduce people to demands and opportunities of the labour market and prepare people psychologically for competition in the labour market. Adjustment courses are meant to give general information about the labour market. As a result, in many cases, people do not find jobs immediately after completion of training. Therefore it is not correct to evaluate the effectiveness of training programme (at least in the case of adjustment courses) by calculating how many people obtained a job immediately after the courses.
- It would be useful to re-establish career guidance services in relation to the education system, to assist young people and adults in making career choices. Such systems could be located at the labour services or the vocational training institutions.

In the field of vocational training, reform is under way in Estonia. The problem of overcapacity and obsolete curricula is felt strongly, especially in the field of agricultural schools. Currently, the network of vocational training schools is quite evenly spread over the country, but it is unclear whether the closure of schools (most likely in rural areas) can be prevented. The biggest problem in vocational training is the general attitude of people to education issues in Estonia. Today, the common behaviour is that young primary school graduates choose secondary education instead of vocational education. As a result, the number of students in the vocational schools has declined drastically. Most secondary school students hope to continue their education in Universities but of course the number of available places in Universities is limited. Today we are faced with the fact that among school graduates who are registered as first time unemployed are 60% of those who have vocational education. This is a very alarming statistic relating to the quality of the vocational education system. (Eamets et al, 1999)

Also, some changes in legislation should be introduced in order to make training programmes more efficient. One problem is that according to the current legislation, labour services can provide training programmes only for the registered unemployed. If a person is still working, but she/he already knows that soon she/he will be dismissed, then there are no possibilities for the person to participate in training programmes arranged by the labour services. In many regions and industries, such preventive training is inevitable in order to change specialisation or qualification and better match labour supply and demand.

In the EU, one priority is to develop the partnership approach. Both enterprises and social partners should be involved in joint efforts to invest Europe's wealth in the future by offering the necessary work experience/training positions. The social partners are urged to decide on a framework agreement as soon as possible on how to open workplaces across Europe for training, work practice, traineeship and other forms of employability measures and agree on the terms and conditions.

Social partnership has a very different role and historical background in CEE countries. The role of social partnership for example in the Baltic countries differs from the Central European situation because of the low image of trade unions and a very low coverage rate. According to a survey launched by the Finnish Ministry of Labour in Estonia, around 12% of employees belonged to trade union in 1998 (Antila, Ylöstalo, 1999)[53]. There are neither strong employers' organisations nor employees' organisations at a local level. Local trade unions are very weak and passive. Employers (especially in the regions) are not well organised.

[53] The Latest Annual Meeting of Estonian Trade Union associations (Spring 2000) reported about 60 000 union members, this is about 10% of the total employment.

In the case of Poland, we are faced with a completely different situation. Political changes in this country were driven by trade unions. However, it should be stated that construction of legal infrastructure for social dialogue has made significant progress in Poland, while the combination of historical circumstances and the balance of power of social forces caused this structure to be not fully cohesive. As a consequence, despite the decentralisation of the system of negotiations, the existing system of industrial relations is quite commonly evaluated as favouring conflicts rather than co-operation. The non co-operative relations are very common for many CEE countries (Sztanderska and Piotrowski, 1999).

In some CEE countries where the public sector is still a powerful employer, the system of negotiations combines centrally determined wages on the part of the public sector that is fully subsidised by the state budget, and decentralised wage bargaining in the part of the public sector not subsidised by the state budget. It is also the case that in the private sector there is no or very little collective wage bargaining — wages are set by employers.

In such conditions it is difficult to implement the EU regulations concerning social dialogue. From another point of view, it is inevitable in future, collaborating with the European Structural Funds and implementing regional policy in the country, to activate participation of the social partnership in order to efficiently distribute financial resources and moderate conflicts between separate groups of the population.

Meanwhile, consulting and training of both labour parties could be seen as one possibility to help, social dialogue to develop. In some countries we can also see that the intensive inflow of FDI to the national economy also influences local trade unions, as the corporations' home country trade unions will contact and support their sister organisations in CEE countries.

In Estonia, the main problem is the decentralisation of negotiations. The main bodies in the form of Employers Associations and trade unions exist. Unfortunately, these organisations communicate mainly at the national level. A regional network of these associations simply does not exist. Therefore, one very important task is to create such network of regional representative bodies in each county. This will provide a possibility to start a social dialogue on a county level and improve the general situation of social partnership (Eamets, *et al* 1999).

6.5.3. A new culture of adaptability

The idea behind this pillar is to equip enterprises and the labour force to embrace new technologies and new market conditions. To promote and encourage adaptability the EU must modernise work organisation. It is suggested that:

- Social partners negotiate, at the appropriate level, agreements on work organisation and flexible working arrangements, including a reduction in working time
- Member states put in place a framework for more adaptable forms of contracts. Those in non-standard work should be given greater security and occupational status. Those who opt to work reduced hours should not be penalised in terms of maintaining social security protection.

We can see from earlier studies that the share of people who are working part time is very low in most CEE countries: e.g. Lithuania 9%, the Czech Republic 5% (Gruzevskis and Beleckiene,1999; Munich et al, 1999). In many cases, people in the private sector do not have collective agreements, and working time regulations are not followed. In Lithuania, for instance, in 1998, more than 28% of males worked more than 41 hours per week. This means that most of these countries should first introduce trade unions and labour legislation in the private sector, then the next step will be the reduction of working time and more flexible forms of work.

In some countries where information technology is well developed (Slovenia, Estonia), new forms of flexible working hours are relatively easy to introduce due to high density of internet connections. This basically allows people working in IT sphere to work at home.

In order to renew skill levels within enterprises EU Member States should:

- Remove fiscal and other obstacles to the promotion of investment in human resources and offer tax incentives for the development of in-service training. Incentives to workers to avail themselves of training opportunities should also be encouraged.
- Re-focus their State Aid policies on upgrading the labour force, the creation of sustainable jobs and efficiently functioning labour markets.

During the early years of transition, due to economic crisis, continuing vocational education in enterprises experienced a deep decline in most CEE countries. There were not sufficient means for training in most of the enterprises. The training and recreation facilities went through a mass privatisation, and enterprises started to utilise their capacities commercially. Institutions in education and healthcare suffered from restrictions in the state budget, and in the educational sector, their activities were reduced to a minimum. After the initial recession period, interest in continuing education started to rise again. This was reflected in establishment of new providers - non-state institutions, such as entrepreneurs, commercial companies, foundations and associations of citizens. However, at this stage in the economic transition process, there is a small number of stabilised enterprises and a small number of enterprises with an established programme of human resource development. For instance, half of the Slovak institutions have neither a department nor a person responsible for dealing with these issues (Lubyova, M. et al, 1999)

There is no detailed and composite data set which illustrates the continuing training in enterprises in most CEE countries. However, a few surveys have been launched in some countries. The extent of participation of employees in continuity training can be measured as the proportion of company employees who had participated in any form of continuity training during one year before the date on which the study was concluded. This indicator reached 23 per cent in 1996, in the Czech Republic. Some other investigations show that the younger employees spent more time on training than the older ones. Some studies have also analysed the costs of continuity training in Czech enterprises as a percentage of annual payrolls and estimate it at approximately 1 per cent. (Munich et al., 1999).

In general, the concept of lifelong learning is fairly new in transition economies. Firms care more about short-term economic prospects than long term investments to human capital. Also, it seems to be the case that the state does not play a very active role in continuing training or adult education in these countries.

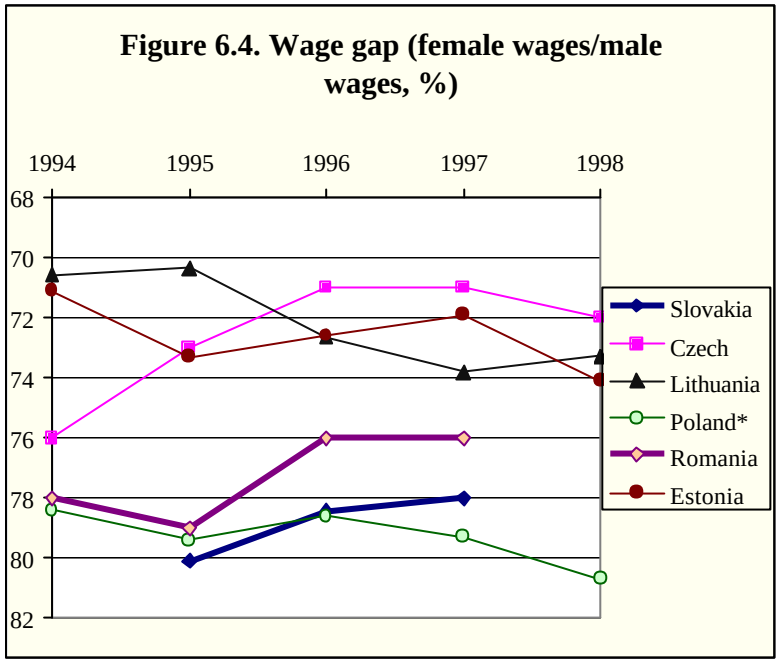
6.5.4. A new culture of equal opportunities

The idea behind this pillar is to modernise societies so that men and women can work on equal terms, with equal responsibilities, to develop the full growth capacity of economies. Member States should translate their commitment to equality of opportunity and break down the gender segregation, and make consistent efforts to reduce the gap in unemployment rates between women and men by actively supporting the increased employment of women. In order to better reconcile work and family life, a Member State should raise provisions of care like career breaks, parental leave and part-time work. Also, specific attention should be given to women considering a return to the paid workforce after an absence.

The only information available for us about equal opportunities in CEE countries was male and female wage differentials. Transition countries have a relatively high female-male wage gap. One

reason for that is the fact that sectors with high rates of female employment have salaries below the national average (for example, education and health and social assistance sectors) in most countries. But it is also clear that we are dealing with wage discrimination in transition economies.

Figure 6.4. Wage gap (female wages/male wages, %)



Note: *Poland without agricultural workers
Source: Eamets, Arro; 2000

Looking at Figure 6.4, we can see that in three countries (Poland, Estonia, Lithuania) the wage cap has declined during 1994-1998, while in some countries it has increased. The reason for the decreasing gender wage gap in Poland was the prolongation of women's hours of work. Transfer of women to the private sector was most often connected with the prolongation of average weekly hours of work. (Sztanderska, U., Piotrowski, B, 1999)

In Slovakia, for example, the gender differentials are most pronounced in the case of contract (bargained) wages and in lower wage grids. With increasing education and wages the differentials are gradually decreasing, however, they tend to pertain. (Lubyova et al, 1999)

One way to limit the wage gap is of course the wage policy directed to the public sector wage increase. In most countries the so-called female sectors are typically public sector branches like health care and education, were salaries are relatively low.

6.6. EU enlargement and its implications to CEEC's labour markets.

At first sight, the EU enlargement seems to have few official implications to candidate countries' labour market and labour policy.

One potential source of problems is the Social Charter of the EU, which was first ratified in Turin on October 18, 1961.The European Social Charter (ESC) is a convention which has been amended several times[54] and its provisions stress a number of rights for workers and the responsibilities of employees.

The "return to Europe"[55] necessitates, in this view, a common stance on what constitutes European

[54] Most importantly in October 1991.
[55] Term was used by Sachs (1993), who stressed the desire by CEE economies to regain as soon as possible their lost status in the European integration process.

labour market and social policy. The ESC is not a precondition for accession to the EU, although it is hard to believe that ratification is irrelevant.

One possible interpretation of the ESC is the attempt to preclude "wage and social dumping", meaning preventing poor EU member states who, because of low labour cost and lower standards of living, offer a cost-competitive production environment. This interpretation would imply that joining the EU implies loss of exports and competitiveness and of an opportunity to develop and raise standards of living rapidly (Burda, 1998).

On one hand, there are entry barriers for newcomers, be they Maastrich criteria, technical barriers for foreign trade or Social Charter. On the other hand, joining the "rich man's club", as the EU has been described by candidate countries, demands from these countries much more political attention and financial contribution to social policy and labour market issues. CEE countries are currently spending about one fourth of their GDP on social policies, compared with about one-third in the current EU member states (Boeri, 1999). In the case of Estonia, the share of social policy in GDP was lower. In 1994-1997 Estonia spent on average 15-17 % of GDP on social policy. Looking at absolute numbers, the picture becomes even more drastic: for example, on average in the EU, social expenditures constituted 4800 ECU per capita in 1995. At the same time, the corresponding number for Estonia was only 619 ECU (Püss, 1999).

Compliance with the *Acquis Communautaire* (notably its health and safety standards) involves a rise in public expenditure in most candidate countries – particularly due to ineffective policy delivery mechanism. Problems on the revenue side are serious, as the social security tax-base has been shrinking much more than employment, due to flourishing of the informal sector and the under-reporting of wages for tax purposes (See for example Nesporova, 1999). Burda (1998) shows in his paper clearly the negative association between statutory payroll tax and rates, on one hand, and employment ratios, on the other. According to him, it is difficult not to infer the existence of an unemployment /fiscal trap. Under such conditions, a given tax regime could be consistent with an equilibrium of high job creation, high employment rates, low taxes and low dependency ratios[56]; or with an equilibrium of low employment, with high dependency ratios and high labour taxes necessary to finance them.

The accession issue is related to the relatively high share of hidden economy in candidate countries (for one of the most recent studies see Lacko, 2000). While the underground economy increases welfare for its participants, it also results in a loss of tax revenues for the state, and therefore for the EU. It also represents the source of labour market flexibility, which may not be in the interests of the EU member states with more restrictive regulations. Raising wage costs, increasing the option value of hiring decision, and introducing more regulations and standards will vitiate the attractiveness for CEE countries for direct investment as well as diminish their ability to compete in the internal market (Boeri, et al, 1999).

From another point of view, some studies have found that social policy reforms in EU member states vary in speed and scope and there is no need to impose the same pattern of reforms on the different European social policy models. Social policy reforms need to be comprehensive, hence they should necessarily work country-specific institutional clusters (Boeri, 2000). The same is true about the candidate countries. We cannot rush changes in the candidate countries' social policy, or push the reforms too far. The contributions to social policy will increase together with the general increase in wealth in CEE countries.

These arguments conflict with general policy options of the national governments to join the EU as soon as possible. For instance Estonia would like to join the EU in 2003 in the most favourable case, according to current policy plans. We believe that from the point of view of social policy,

[56] Defined as the unemployed plus those out of labour force.

Estonia needs more time to increase the administrative capacity of those governmental institutions which are dealing with social policy and particularly with labour policy options.

6.7 Summary and policy recommendations

6.7.1. Summary

As can be concluded from the previous analysis of labour policy, during the initial period of transition, the CEE countries focused mainly on building up an institutional network and on paying unemployment benefits. With economic development, focus has shifted towards active labour market policies. The tight fiscal situation prevents the rise in expenditure for labour market policies.

Most of the CEE countries have launched earnings related benefit systems where the benefits depend on the claimants' previous work record and earnings. The replacement rate usually declines with the length of unemployment. The maximum and minimum levels of benefit are fixed. Average unemployment benefits range from 44% of the national average wage in Slovenia to only 7% in Estonia.

In most of the countries, subsidised employment is the most widely used active labour market measure. The evaluation literature shows that subsidies to employment may have a number of objectives other than creating additional jobs. They may enhance effective labour supply by helping individuals to keep in contact with the world of work and thereby maintaining their motivation and skills. However, several evaluations also show that subsidies to employment are largely "dead weight", substitution and displacement effects and hence small net employment gains, particularly in the short term when aggregate demand and vacancies are fixed. Careful controls must be maintained on employment subsidies to minimise firms' incentives to use such schemes as a means of permanently subsidising their workforce.

In the Baltic countries, training programmes constitute the most widespread active labour market measure. The evaluation literature suggests that training programs are successful if they are targeted to specific groups who follow courses providing skills relevant to employment in specific sectors.

If we compare CEE countries' employment policy developments with those in the EU, we observe the following:

- Due to recessions in the past and the still ongoing recovery process (only Poland has achieved its pre-reform level of GDP). Governments are not yet ready to offer sufficient direct financial support to new firms. Also, the slow privatisation of banking sector has been an obstacle to rapid economic recovery in some countries (e.g. the Czech Republic). But governments should guarantee a stable legal environment, consulting and training opportunities for newly created businesses.

- In the EU, one priority is to develop social partnership approach. Both enterprises and social partners should be involved in joint efforts to invest Europe's wealth in the future by offering the necessary work experience/training positions. Social partnership has a very different role and historical background in CEE countries. In some countries (e.g. Poland), unions have been a driving force in political and economic reforms, but in other countries where union coverage is very low (e.g. Estonia), trade unions play a marginal role in labour market. Even in the case of Poland, despite decentralisation of the system of negotiations, the existing system of industrial relations is quite commonly evaluated as favouring conflict rather than co-operation. Non co-operative relations are very common for many CEE countries.

One aim of the employment policy in the EU is to tackle the skills gap, by modernising education and training systems, and by strengthening their links to the workplace, so that all workers,

especially jobseekers, are equipped to take up new employment opportunities. The Member States took obligations to guarantee to every unemployed adult a new start — in form of a job, training, retraining — before reaching twelve months of unemployment. It is difficult to implement such a principle in CEE countries, when the job search period during which unemployed get benefits and are entitled to receive training are very limited (from 6 to 12 months, except in Lithuania where the duration is 24 months). Another problem is connected with the coverage of training programmes provided by PES. The general problem is that not all unemployed people have access to existing training programmes, due to limited financial resources and legal requirements. In most countries, labour services can provide training only for those who are registered.

6.7.2. What has to be done?

First of all, it is important to define national employment policies, with all priorities and connections to other state policies (regional, industrial, fiscal and income policy etc). Labour policy in a broader way covers all the different spheres of life starting from demographic, immigration issues, health care and education issues on the supply side and ending with tax policy, trade policy, R&D issues on the demand side. The national employment policy should therefore be considered as a comprehensive, multidisciplinary approach to employment related problems. Different goals should be addressed in employment policy plans, depending on time horizons.

The short term objectives are[57]:

- preventing unemployment,
- adult training issues,
- promoting job creation via labour market programmes,
- stable set of labour market rules and regulations.

In the long run, the most important objectives should be investment in human capital, to guarantee reasonable wages and income in society, eliminating poverty and providing equal opportunities to everybody in the labour market.

In order to increase employment and affect the demand side, Governments should implement economic policies which aim at stabilizing the economy. This means in most cases a strict control of budget expenditure, rigid monetary policy and export supporting trade policies.

It is most important to adjust government expenditure to actual revenues. The problem is that in most transition countries, the tax burden for firms is very high and tax collection is relatively poor. In order to encourage and promote entrepreneurship, the tax burden should be reduced for firms. Today we see that instead of getting more budget revenues, the high taxes have caused the increasing shadow economy in most CEE countries.

Aggregate supply is affected not only by general economic policies. On the supply side, economic growth depends on the overall business climate: whether the legal system guarantees safe investments, whether property rights guaranteed by the law, how free competition is guaranteed etc. This means that a stable and transparent legal system should be established. Even if the law is not always perfect and there are probably holes in any legal system, it is most important for firms that rules are stable, and that Governments will not change company law every other year.

In considering support for entrepreneurship, it is important to create the necessary infrastructure which will support business activities. This means not only training and consulting activities for new firms but also creating an improved infrastructure such as building roads, communication systems and railways. As we conclude from a previous analysis, rapid changes took place in

[57] According to Nesporova (1998).

different sectors. Many firms were not ready for such rapid restructuring, they needed some support, especially in sectors which have particular importance for the country as a whole or for a particular region. Especially if we look at the increasing regional disparities, the state should promote some regions that are in crisis. This means tax concessions, preferential credits, investment grants etc.

For firms who have management difficulties in transition, human capital investments are extremely important, the state could support human capital upgrading, business counselling, subsidised retraining, assistance in marketing and trade and so on. This could be done in co-operation with employers' organisations or by specialised institutions sponsored or co-sponsored by the state like information centres, industrial parks, investment agencies or chambers of commerce.

From the labour supply side, transition countries are faced with a huge gap between labour qualification and labour market needs. We saw it in the earlier chapters where we described structural unemployment problems. And the mismatch of skills threatens to become worse because of the deficiency of the national education system. The combination of budget constraints of schools and training centres and the growing income differentiation in society has resulted in increasing social stratification in education.

If we talk more specifically about Estonia, then we observed from our earlier analysis that Estonian labour policy is very restrictive compared with those in the CEECs and in the EU. This situation will hinder seriously Estonian integration into the EU. Estonia needs a more generous UB system. Both unemployment benefits and duration of benefits should be increased.

Labour market policies have so far concentrated on rather passive activities in Estonia, mainly registering jobseekers and unemployed persons and paying benefits to them. From total expenditures of labour market programmes 65% was spent on unemployment benefits.

One major task of labour policy will be the development of a labour service system, in order to make it more efficient and attractive for customers. The main objective should be to improve services to employers in order to:

- Create more vacancies and to be able to offer unemployed persons a job.
- Know what qualifications are needed in enterprises, so that the employment services can organise training sessions for unemployed persons which answer their requirements.

To achieve these goals, labour services need more training and generally the image of labour services should be improved. To improve the corporate image of the labour services, the following activities could be suggested:

- A National Public Relations Campaign in the national and local media.
- Uniform printed material introducing activities, plans, strategies of the National Labour Market Board.
- Improved standard of services.
- Monitoring clients' satisfaction.

As a result of training, the labour service employees should have a greater understanding of personnel issues and the problems of employers; know how to relate to employers; how to prepare for a visit to a company and how to make it successful; and how to feel confident when contacting employers.

Future labour market policy should have more distinctive goals. At present, there is a lack of long-term perspectives and strategies. A large share of the decisions seem to be made in reaction to the market situation at the moment. The responsible administrative agencies should pay more attention to developing the labour market.

When it comes to active measures in relation to labour policy, Estonia could apply the concepts of innovation centres and science parks. These are institutions where favourable conditions for growth and development are provided in special centres to budding entrepreneurs in order to start businesses and create new jobs at the same time. In addition, it must be recognised that in the near future, the issue of the long-term unemployed, who no longer receive unemployment benefits, will have to be addressed.

In the long term, there will be a need to prioritise special training programmes for the young as unemployment among this group is bound to increase. Support programmes will also have to be launched for other risk groups, such as people released from prisons, invalids, and those of pre-retirement age.

Appendix

A1. Labour Market Regulations

The social protection of the unemployed was defined in Estonia by government decrees until the end of 1994. The Law on Social Protection of the Unemployed came into effect on 1 January 1995. The aim of the Law on Social Protection of the Unemployed is to provide legal regulation of labour market services on behalf of the unemployed and to administer the payment of unemployment benefits, with the state employment offices acting as intermediaries. The law and the government decrees concerning the status of the unemployed define the relevant terms and regulate the procedures related to unemployment.

The major changes made by the 1995 laws are that the interval between going to the employment office and registration as unemployed is reduced from 30 days to 10 working days, and that labour market concepts were defined in concrete terms, taking into consideration suggestions by the ILO. The laws define a number of new terms, such as suitable job, job seeking, labour market service, labour mediation, etc.

The right to receive labour market services and state unemployment benefits is enjoyed, as a rule, by permanent residents of Estonia under conditions established by law (see section 2.2). According to the Law on Social Protection of the Unemployed, a person is registered as being unemployed within 10 working days after going to the state employment office if he/she satisfies the following conditions:

- he /she is between 16 years old and the retirement age;
- he/she has no working occupation or equivalent activity;
- he/she is looking for a job;
- he/she has been occupied in work or an equivalent activity for at least 180 days during the 12 months preceding appearance at the state employment office; no preceding employment is required of those who have been looking after a disabled child or a child under 7 years of age, persons undergoing hospital treatment, persons nursing a sick, disabled or elderly person, persons who are in a disability group, or who have been under arrest or serving a sentence at a penal institution;
- he/she has submitted all documents necessary for registration.

By way of exception, a 60-day waiting period precedes the awarding of unemployment benefits to persons who have:

- studied at an educational institution as a full-time student before registering as unemployed
- resigned from their last job of their own free will, and not because of illness or disability, or in order to nurse a sick or disabled person, or to enter the national defence forces;
- been dismissed due to violation of a labour contract, breach of trust or an undignified act.

Persons are considered to be engaged in activities equivalent to employment if they:

- work on the basis of labour, service or civil service contracts, or membership;
- are entrepreneurs;
- study at educational institutions full-time;
- serve in the national defence forces.

A job-seeker in Estonia is one who voluntarily registers at the state employment office and wants a full-time job immediately, is willing to undergo labour market training and appears at the employment office at least once every 10 working days.

A2. Active labour market policies in Estonia

Employment offices have been assigned the task (by a regulation dated 26 April 1993) of organising *temporary public works* (community placement) for job-seekers and the unemployed, which do not require special preparation and where the Employment Contract Law is not valid. A person receiving unemployment benefits who takes part in public works may be paid extra for this. Any person who receives unemployment benefits is obliged to participate in public works for at least ten days or eighty hours during any calendar month. The number of participants in such programmes has fallen drastically in the last four years. The explanation has to do with the wage conditions for public works. The hourly wage level for community placement remained unchanged from 1996 till January 1999. The wage rate was a constant 2.6 EEK per hour, while average hourly wages increased during this period from 4 EEK to 7.35 EEK per hour. This excessively low wage rate was the main reason why the number of participants declined.

The Community Placement programme is explicitly for work that requires no special training or skills. By implication, it is for those with no marketable skills or those without the motivation to search for other employment. A key question is whether, as it stands, the programme adds real value to either the individual participant or to the local community. There may be scope to develop the programme to combine:

- ***a training element*** — addressing both personal and vocational skills — to better equip participants for competition in the labour market;

- ***work experience*** — carrying out a range of activities that do more than keep people occupied but genuinely add to community amenity.

Unemployed people can also receive a *retraining allowance* (stipend). The amount of the allowance is a 1.5-fold unemployment benefit (600 EEK per month in 1999) and is paid at the maximum level for six months.

Wage subsidies have been provided for the following risk groups: disabled persons; pregnant females or women with children under 6 years of age; youngsters 14-20 years old; persons 5 years prior to retirement age; and persons released from prison. The wage subsidy for risk groups provides 100% of the minimum wage during the first 6 months and 50% of the minimum wage during the next 6 months of her/his employment period. Because of legislative shortcomings, the employer must pay the payroll tax on wage subsidies. The rate of social (payroll) taxes is 33% in Estonia and this bookkeeping problem has reduced the attractiveness of wage subsidies for employers.

The review of the programme raises a number of issues for consideration:

- a wage subsidy scheme is designed to make disadvantaged people more attractive to employers. Given that long-term unemployment is increasingly an issue for Estonia, consideration might be given to ***including the long-term unemployed*** within those eligible for the programme;
- it is not clear that this programme is actively marketed to employers. Operating a wage subsidy scheme ***pro-actively*** calls for ***close relationships with employers*** - especially with private sector employers, the main source of new employment opportunities. This is particularly so when employers are being asked to recruit from a disadvantaged group rather than recruit on the open market;
- as we understand it, the programme simply provides a wage subsidy. For the eligible groups, in one way or another, skills are likely to be a critical issue. Consideration might be given to ***including a training element*** within the programme; and

- in dealing with employers, ***bureaucracy should be kept to a minimum*** and we understand that

the amount of paperwork associated with the programme is perceived by employers as a deterrent.

One labour market measure for starting businesses is an *entrepreneurship subsidy* in the amount of 10 000 EEK (at the beginning of 1998) that can be paid to the unemployed. To apply, the unemployed person has to undergo business training or have some previous experience in business.

The low levels of programme take-up coupled with the changes taking place in the local economies suggest that there is ***potential to expand this scheme***. The issues around support for new start businesses are similar in any economy — information and advice, finance and accommodation. The 1998 National Labour Market Board (NLMB) annual Report identifies the need for action on:

- ***finance*** — a survey carried out for the NLMB indicated that the current grant levels are too low (and it can be assumed that average personal savings available to invest in a business venture will be negligible) and should be at least 20,000 EEK - twice the current level;
- ***training*** for entrepreneurs. Training needs to take account of:
  - personal qualities — the confidence, motivation and selling skills needed for business (and, increasingly, for employment in a modern economy);
  - skills around the business idea — competence in the service or product on which the business is based; and
  - business management capabilities.

  A crucial element here is the need for aftercare — to provide support once the business is up and running as well as in preparing for start-up.
- ***accommodation*** — in most counties in Estonia, there is good potential to increase the provision of Business Centres and other business space.

The NLMB and its local Employment Offices are not responsible for all these aspects of business support. There is a clear need for a ***partnership approach***, combining the priorities and resources of a range of organisations including donor agencies, Government Departments and local municipalities.

To tackle long-term unemployment, in the second half of 1998 the Ministry of Social Affairs started the pilot project "Activation centres for making less competitive persons more active in the labour market". In the framework of this project, activation centres for the long-term unemployed were established in eight counties. The tasks of the activation centres are:

- to help less competitive persons in the labour market find a job using the job-club method;
- to create possibilities for practising working at work organised by activation centres. The purpose of practising working is to provide the participants with training and experience of working to rely on in the future when looking for work;
- to cooperate with employers in order to find jobs for both work practice and employment of clients;
- to advise, inform and motivate employers.

In addition to their main tasks, centres may involve themselves in the following activities: organising work with a support person; providing clients with vocational consultation and information, as well as testing them if necessary; introducing possibilities for refresher courses, including employment training; co-operating with employment offices to find jobs for less competitive persons in the labour market and to employ them with the help of an employment subsidy paid to the employer. The target groups of the project are less competitive persons in the labour market, including: applicants for subsistence benefits, job-seekers whose term of unemployment registration has expired, young people aged 16-20, mothers of young children, persons about to reach the official retirement age, and persons released from prison.

Activation centres work in close co-operation with employment offices and local government social workers. Clients may apply to activation centres when sent by these or on their own initiative.

Most recent development in legislation

To fill this legislative gap, new acts of "Labour market services" and "Social protection of the unemployed" were developed and approved by the Parliament in June 2000. The former act regulates the provision of labour market services and the latter gives the relevant definitions and regulates the payment of unemployment benefit. The acts will enter into force in the beginning of year 2001.

The new "Social Protection of the Unemployed Act" redefines the definition of unemployed abolishing the requirement of previous employment. This requirement will apply only in case of unemployment benefits. Moreover, the persons who are being laid off will get the right to apply for labour market services. Therefore, more persons including long-term unemployed can register as unemployed and become eligible for labour market services.

Another important change is that the time limit for being registered as unemployed (currently 180 days) is abolished. Only the payment of an unemployment benefit will, in general, be limited by 270 days, which is an extension compared to the current situation (in general UB is currently paid up to 180 days). Moreover, to widen the range of labour market services, the "Labour Market Services Act" introduces vocational counselling as a new service. As a result of these amendments, the number of persons qualifying for labour market services can potentially double and the workload of employment services will rise significantly. Consequently, the financial resources allocated from the state budget for active labour market measures will have to be increased and the capacity of state employment offices must be raised.

A3. Social policy in Estonia: stylised facts[58]

Pensions

Pensions are paid in Estonia according to the temporary Law on State Allowances that was adopted in 1993. The law provides four types of pensions: old age pension, invalid pension, loss of provider pension and national pension[59]. Most of the pensioners (nearly 80%) are entitled to the old age pension. All pensions are paid out of social taxes through the state social insurance budget. Despite having an old population relative to other transition economies (pensioners made up 25.3% of the total population of Estonia in 1997), Estonia has a relatively low fraction of GDP allocated to pensions. At the beginning of the 1990s the average pension in Estonia was very low, both in absolute terms and in comparison with average wages. In the first quarter of 1993 the average pension was 229 kroons and made up 25.5% of the average gross wage. In the fourth quarter of 1997 it was 1052 kroons or 26% of the average wage.

The right to receive old-age pension has a person who has at least 15 years of pensionable service accumulation period in Estonia and who is according to his/her D.o.B. at the forthcoming age:

[58] From Eamets, R, Philips, K. Annus, T. (1999) Employment and Labour Market in Estonia, Background Study European Training Foundation, Working Document Turin/Tartu, 1999

[59] The rate of the old age pension is calculated as the sum of two components, one of which is the flat rate of basic pension while the other depends on the number of years worked. Other pensions depend on the rate of the basic pension only and are equal to all recipients.

	Females		Males	
Year	**Day of Birth**	**Age**	**Day of Birth**	**Age**
	1942	**57.5**	**1937**	**62.6**
2001	**1943**	**58**	**1938**	**63**
	1944	**58.5**		
2004	**1945**	**59**		
	1946	**59.5**		
2007	**1947**	**60**		
	1948	**60.5**		
2010	**1949**	**61**		
	1950	**61.5**		
2013	**1951**	**62**		
	1952	**62.5**		
2016	**1953**	**63**		

From the year 2016 men and women at the age of 63 will have the right to receive old-age pension. The old-age pension is adjudged as lifelong.

The right to receive early-retirement pension appears not sooner than 3 years before reaching the age of old-age pension (see Table). In 2000, the right to receive early-retirement pension appears no sooner than 2 years before reaching the age of old-age pension. Calculating the early-retirement pension, the amount of pension is lessened 0,4% on every month of earlier retirement. Early-retirement pension is adjudged as lifelong and it is not paid if working.

Old-age pension under favourable condition

An old-age pension can be applied for 5 years earlier:

- mother, father, warden or guardian who has been raising at least for 8 years a child-invalid, disabled person from childhood or under 18 year old child with a moderate, severe or profound disability and he/she has at least 15 years of pensionable service or accumulated period in Estonia;
- mother, father, warden or guardian who has raised 5 or more children at least for 8 years and he/she has at least 15 years of pensionable service or accumulated period in Estonia.
- a person who took part in the clean-up of the accident at the Chernobyl nuclear power station and he/she has at least 15 years of pensionable service or accumulated period in Estonia;
- rehabilitated person who has been unlawfully held in a penal institution at least for 5 fully years and he/she has at least 15 years of pensionable service or accumulated period in Estonia. If the rehabilitated person has been unlawfully held in a penal institution less than 5 fully years then the age that gives right for receiving the old-age pension is lessened one year on every full year stayed in the penal institution.

An old-age pension can be applied for three years earlier by mother, father, warden or guardian who has raised four children at least for eight years if he/she has at least 15 years of pensionable service or accumulated period in Estonia.

A year earlier an old-age pension can be applied for by mother, father, warden or guardian who has raised 3 children at least for 8 years and he/she has at least 15 years of pensionable service or accumulated period in Estonia.

Person suffering from pituitary dwarfism may receive old-age pension under favourable condition at the age of 45 if he/she has at least 15 years of pensionable service or accumulated period in Estonia.

On June 1998, the new Law on State Pension Insurance was adopted by the Estonian Parliament (Riigikogu) and comes into effect on 1 January 2000. According to the law, a three-pillar pension insurance system will be implemented in Estonia. The pillars are:

- state pension insurance, which will be implemented in the form of compulsory state pension insurance,
- compulsory individual savings insurance, which is based on private financing,
- voluntary savings insurance.

Child allowances

As of 1 October 1990, benefits to children, students and mothers on maternity leave were introduced as partial compensation for the rapid rise in prices due to inflation. This was the first step towards the system of child allowances in Estonia. The monthly child allowance rate depends on the number of children in the family. In recent years the differentiation of child allowances in favour of large families has grown[60]. When the system of child allowances was introduced, all children were entitled to flat-rate support. Since 1994, benefits paid to the third and each subsequent child have grown faster. At present, in 1999, the child allowance for the first child is 150 kroons, for the second child 225 kroons, and for each subsequent child 300 kroons a month.

[60] Household budget research done by the Statistical Office shows that a considerable proportion of large families belong to the lowest income group (first income decile). In such families, social insurance benefits yielded slightly less than half of the total income of the family while child allowances formed 50% of these benefits. Thus, child allowances, though rather small, are a major source of income for large families.

Table A.1. ***Pensions and social benefits 1993-1998***

	1993	1994	1995	1996	1997	1998
Average level of pension, EEK[61]	**250**	**359**	**586**	**879**	**1037**	**1152**
Old age pension	**254**	**373**	**612**	**930**	**1100**	**1247**
% of average wage	**23.4**	**20.7**	**24.7**	**29.4**	**29.0**	**29.8**
Benefits on social insurance basis[(a)]						
Birth benefit (average)	**894**	**947**	**1313**	**1545**	**1783**	**2625**
Maintenance benefit for child up to 1.5 years old (average)[(b)]	**145**	**175**	**212**	**241**	**287**	**600**
Maintenance benefit for child 1.5 to 3 years old (average)[(c)]	**88**	**92**	**107**	**125**	**143**	**300**
Child benefit for child up to 15 years old and older pupils of general schools	**89**	**na**	**na**	**na**	**na**	**na**
Child benefit for the 1st child		**93**	**110**	**130**	**150**	**150**
Child benefit for the 2nd child		**121**	**144**	**165**	**184**	**225**
Child benefit for the 3rd and subsequent children		**150**	**194**	**214**	**234**	**300**
Child benefit for single parents	**60**	**61**	**65**	**75**	**87**	**150**
Single parent child benefit for a handicapped person raising the child alone		**143**	**166**	**193**	**223**	**225**
Maintenance benefit for non-working parent raising a handicapped child 1.5 to 18 years old	**90**	**165**	**219**	**256**	**296**	**300**
School benefit		**90**	**115**	**130**	**299**	**300**
Guardianship benefit	**60**	**169**	**222**	**256**	**299**	**300**
The independent life benefit for orphanage children	**2966**	**2979**	**3423**	**3922**	**3985**	**5000**
Minimum subsistence level	**280**	**280**	**320**	**390**	**460**	**500**

Note: [(a)]Child allowances are divided into lump-sum and monthly benefits. Lump-sum benefits are: birth grant, allowance at the beginning of the school year, and start in life support for young people leaving orphanages. All children up to 16 years (students up to 19 years) are paid monthly allowances. The single parent benefit, serviceman support and child guardianship support are also paid on monthly basis.

[(b)]Since 1998 child up to two years old

[(c)]Since 1998 for child 2-3 years old

Notice: 1 EUR = 15.6 EEK

Sources: Ministry of Social Affairs, Statistical Office of Estonia

[61] Monthly average is the estimated average according to the Pension Act. The average pension that was actually paid was lower until September 1996, as working pensioners received a partial pension.

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Final conclusions.

The main focus of this thesis has been on the labour market adjustment and flexibility issues in a transition economy and we concentrated in our analysis mostly on Estonia. We found that changes in the Estonian labour market have been very fast compared with the other CEE countries and that many processes in the labour market took place during a much shorter period than in many other countries. Analysing micro-flexibility aspects of the labour market, namely the jobs and workers flows we found that the Estonian labour market was very flexible especially in the early years of transition. Flexibility is a key factor of relatively fast labour reallocation in Estonia in our opinion. Labour reallocation and restructuring of the labour market have supported generally successful macroeconomic developments with rigid fiscal and monetary policy.

We analysed Aghion-Blanchard's approach to macroeconomic equilibrium, but as we saw, the assumptions made it rather difficult to match it with the real economic situation. However we find it is important to describe it in great detail, because this is the approach most frequently used in the literature concerning restructuring of transition economies labour markets. Basically we believe that transition from a command economy to a market economy is a temporary process and all economic changes could and should be described using traditional methods of economics theory. There is no need to create new transition specific theories.

So we reached the conclusion that the transition specific equilibrium model was inappropriate to describe changes in a transition economy, at least in the case of the Estonian economy. This is the main reason why later in our empirical chapters a simple neoclassical labour supply and demand model is used in order to present changes that took place in the Estonian labour market.

Labour market flexibility and modest unemployment increase

Flexibility issues could be treated at two levels: micro level and macro level. If we talk about macro-flexibility then it means mostly the level of institutionalisation of labour markets and the role of trade unions. Institutionalisation in our context is labour market regulation. Micro-flexibility approach means that the labour market is characterised by various flows between different labour market states, as well as flows of jobs (job creation and job destruction).

A key question in our analysis was the issue why unemployment did not rise after the introduction of the 'Big Bang' strategy for economic reforms. Estonia and other Baltic states suffered much steeper economic decline compared with other CEE countries, but unemployment growth remained moderate.

One explanation to the modest unemployment rate in Estonia in the early transition period is that flows between labour market states have been relatively high compared with other CEE countries. This leads us to the following conclusion: massive unemployment has been avoided by a relatively rapid reallocation of labour. Transition probabilities from unemployment to employment were very high compared with other CEE countries. Estonia followed the same pattern as the Czech Republic whose transition probabilities are also high. This supports the idea that limited labour policy results in relatively low unemployment. Both in the Estonian and the Czech Republic the percentage share of labour policy measures of GDP was very low.

Analysis of flow probabilities provide evidence that there are strong language, education and some age profile effects in the determination of transition from employment to unemployment and *vice versa*. It was specially true for the year 1994.

If we compare monthly and yearly inflow and outflow rates of Estonia with the results of Poland and selected OECD countries, then this enables us to conclude that the Estonian labour market does

not differ very greatly from the labour markets of developed western countries. The share of long-term unemployment is not particularly high, but at the same time the average unemployment spell is relatively high. This allows us to conclude that there are two groups of workers among the unemployed, namely a group flowing out from unemployment relatively quickly and another group of people who are unemployed for a very long time.

Changes in labour demand

If we analyse the allocation issues we can see that the decline of employment was highest in Estonia, compared with other transition economies. As we saw from our decomposition analysis of employment that, in most cases, the dramatic declines in employment were achieved as a result of an increase in the inactive population rather than in unemployment.

If we calculate structural adjustments of labour between different sectors, using Jackman and Pauna's methods, then we can see, that the speed of restructuring has been relatively high in Estonia and that the efficiency of labour reallocation has been very high. A comparison to Estonia is the Nordic countries (Sweden, Norway, Denmark and Finland) against which we measured labour allocation changes between industries. These findings supported our arguments against the Aghion-Blanchard model. Structural changes took place in Estonia relatively fast and privatisation was completed earlier than in the most other CEE countries. Fast privatisation and restructuring did not caused high unemployment as predicted in the Aghion-Blanchard model.

The public sector has decreased drastically during transition in all countries under observation. The fastest decreases came from manufacturing, but also from the service sector. If we look at employment changes in the private sector *versus* the public sector in Estonia, then we can see that before1993 the net change was positive. We would therefore expect a high share of public sector workers move into private sector. But at the same time total employment changes show a declining tendency. That means that outflow from employment was higher than inflow. After 1994, the tendency changed and we see that actual employment decline rates were smaller than expected (net changes).

We can see from ILO entrepreneurship data that the EU countries could be divided into two broad groups. There are the Nordic countries with a relatively low level of self-employment and there are South European countries with a relatively high level of self-employment. Germany and some other EU countries are somewhere between. In the future we can probably observe similar tendencies in CEE countries. According to the author's opinion one could expect that countries like Romania, Bulgaria, and Hungary will a have similar structure of entrepreneurs as Greece and Spain. Most likely Poland and Lithuania will follow the German pattern and Latvia and Estonia more the Nordic structure of entrepreneurship.

Developments in labour supply

Analysing labour supply we found that the labour supply has drastically declined during the transition period. The main reason for the population decrease has been the declining number of immigrants simultaneously with the large number of emigrants from Estonia.

Also the birth rate is declining. Since 1991 the number of deaths has exceeded the number of live births.

As we saw from our analysis, the total labour force declined during 1989-1998 by 16%. The decline has been relatively small, because of the total population decline. These facts also support our hypothesis that modest unemployment increase was a result of the general decline of labour supply.

Estonia is a small country, but we can still observe big regional differences in participation rates, in employment rates and in wages. Most problematic areas are the regions with an economy

concentrated in a single sector that face problems with restructuring. Unfortunately, there are a number of towns with a single enterprise where the entire population is directly or indirectly dependent on the same employer. The largest number of the mono-functional towns is in Ida-Viru county (Ida Virumaa). The decline of the secondary sector (primarily manufacturing, but also energy production and mining) has left many people unemployed. At the same time job creation is the lowest in Estonia. Because the Russian population's share is more that 80% in this county we are facing other problems as well: the high and long term unemployment of the Russian minority.

From the labour supply side, transition countries are faced with a huge gap between labour qualification and labour market need. And the mismatch of skills threatens to become worse because of the deficiency in the national education system. The combination of budget constraints of schools and training centres and the growing income differentiation in society has resulted in increasing social stratification in education.

External shocks influence on the Estonian labour market

The Russian financial crisis in 1998 had great influence on the Estonian labour market. We found that mostly the blue-collar workers are under increasing pressure in the labour market and the risk of unemployment is increasing for them if we compare the years 1998-2000. Also, we found that lower education groups face on increasing risk of unemployment compared with the people with a university education. If we look at the sectoral distribution of unemployed then we can say that there is an increasing risk for those who are in the primary sector in the years 1998 and 1999. This fact fits with general macroeconomic conclusions that the agriculture and the fishing sectors suffered most from Russian crises.

An interesting fact is that language discrimination is declining. The knowledge of Estonian language was less important if we look at the odd ratios in 2000 rather than there of 1998. In the environment of high unemployment both language groups are under pressure and language does not matter in the labour market so much as it did in the early years of transition.

Gender and ethnic aspects of unemployment

According to LFS data, the male unemployment rate is higher than the female unemployment rate. This indicates that, in the case of layoff, females often leave the labour force, and do not look for a new job. The largest differences between male and female unemployment rates appear in vocational education, whether after primary school or after secondary school. The vocational education system needs fast reforms in Estonia. Studying in the vocational education and training institutions is still the second-best choice for young people. After gymnasium the school leavers prefer an academic higher education. Only 25 % of the graduates from the gymnasiums continue their studies in vocational education and training institutions

The ILO unemployment of non-Estonians was almost twice as high as the unemployment rate of Estonians. We found that these differences are explained by three factors. The first factor is language abilities. According to the legislation, most officials working in the public sector are required to speak Estonian. Also, at least in the service sector most employers demand the knowledge of written and oral Estonian from employees. Secondly, Russian speakers are employed more in such industries as mining, energy production, and manufacturing of chemicals. These industries have suffered from a lack of resources and declining former markets and are now declining industries; as a rule, both output and employment has declined. Because these industries were more or less concentrated in north-eastern Estonia, where the largest Russian speaking minority in Estonia is located, unemployment in this region is obviously higher than average. Thirdly, some analyses have shown that movement between different labour market states is much higher among Russian speakers than among Estonians.

Because a large majority of them have non-Estonian citizenship then we can conclude that modest unemployment growth was protected by relatively high unemployment of non-Estonians who had no right to vote in Parliament elections. This gave to policy makers the chance to introduce and maintain flexible labour policy with very limited support to unemployed people.

Labour market flows in Estonia by individual characteristics

Our analysis provides strong evidence that the education level does affect the movement from one labour market stage to another. If we look at ethnic differences then we can see that Estonians have higher flow probabilities in every level of education compared with similar gender group of non-Estonians. We found that women have higher inflow rates to non-participation compared with males at all education levels. This proves our hypothesis that if men lose their jobs they become in most cases unemployed, but females tend more to become inactive. This explains why male unemployment rates are higher compared with the female unemployment rate.

According to our estimates, non-Estonian females with the lowest education seem to have the biggest problems in the labour market, because their flow probabilities are the least favourable. Hence, their probability of staying in the non-participation group is the highest, job-to-job flow probability is the lowest and the probability of getting a job if they are unemployed or in the non-participation group is the lowest.

One important conclusion is that non-Estonians have more problems in the labour market than Estonians. They lose jobs more often, they stay in unemployment for longer periods (if we look at the education groups) and from the unemployment to employment flow the probability for them is low if we look at education groups. Therefore they must be more active in the seeking new jobs.

We found that experience (measured by age) has a negative influence on flows from employment to unemployment. So we can conclude that experience has less influence in the labour market than education in the early years of transition. This finding explains the situation when young and well-educated persons made rapid progress in their careers during the middle of 90-s.

Flow chapter also proves that Estonia was an exception among other CEE countries (together with the Czech Republic). Evidence from the earlier years of transition shows that the idea widely supported in literature about a stagnant pool of unemployment is not true in the case of Estonia.
Czech unemployment was also relatively low in the middle of the 90s. So this supports our idea that unemployment increase was relatively low due to the high outflow rate from unemployment. One reason for the high outflow rates was, of course, the limited labour policy which forced people to move out of unemployment. This also explains why Estonia is similar to the Czech Republic where labour market policy was flexible as well. Both in Estonia and the Czech Republic the share of labour policy measures in GDP was very low.

Labour policy development in CEE countries

Labour policy focused mostly on building up an institutional network and on paying unemployment benefits during the initial period of transition. With the economic development the focus has shifted towards active labour market policies. The tight fiscal situation hinders the rise in expenditure for labour market policies.

In most of the countries subsidised employment is most widely used as an active labour market measure. The evaluation literature shows that subsidies to the employment may have a number of objectives other than creating additional jobs. They may enhance effective labour supply by helping individuals to keep in contact with the world of work and thereby maintaining their motivation and skills. However several evaluations also show, that subsidies to employment are largely dead weight, substitution and displacement effects and hence have small net employment gains,

particularly in the short-term when aggregate demand and vacancies are fixed. Careful controls must be maintained on employment subsidies to minimise firms' incentives to use such schemes as a means of permanently subsidising their workforce.

Due to economic recession in the past and during the continuing process of recovery in most CEE countries', Governments are not yet ready in sufficient scale to support new firms directly, financially. Also the slow privatisation of the banking sector has been an obstacle to quick economic recovery in some countries (e.g. the Czech Republic). But Government should guarantee a stable legal environment, consulting and training opportunities for newly created businesses.

Estonian labour policy and EU employment policy strategies

Estonian labour policy is very limited compared with those in the CEECs[62] and in the EU. This situation will hinder seriously the Estonian integration in the EU. Estonia needs more a generous unemployment system. Both unemployment benefit and benefits duration should be increased. Accession to the EU, while providing great economic benefits, will also present challenges to the labour markets of Estonia and the other CEE countries. A number of changes will need to be implemented that can increase labour costs for enterprises.

Future labour market policy should have more distinctive goals. The situation would be improved by differentiating labour market policies by regions, with different sets of regulations for unemployment benefits, active labour market policies and several measures to develop the system of adult training and retraining programmes for people who may face layoff due to enterprise reorganization. The main aim is to reduce the mismatch of skills and youth unemployment, improve territorial mobility of labour resources, reduce the duration of unemployment, and stop the increase of poverty among the unemployed.

There will be a need to prioritise special training programmes for the young as unemployment among this group is bound to increase. Support programmes will also have to be launched for other groups at risk, such as people released from detention, invalids, and those of pre-retirement age.

Summary of final conclusions

- Despite the significant levels of unemployment in many CEE countries, the results suggest that the strongest and earliest reformers have had the best labour market performance as well. Thus, in contrast to the literature on optimal speed of transition, there does not appear to be any clear trade-off between speed of reform and unemployment costs except, perhaps, in the very short run.

- Estonia introduced several restrictive economic policy measures at the beginning of transition. Estonia completed its privatisation and imposed hard budget constraints throughout the economy and has experienced unemployment that has been consistently lower than its Baltic neighbours, while productivity gains have been relatively strong. The ability of the Estonian economy to move labour quickly out of less productive activities, especially agriculture, appears to have played a large role in the overall strong performance of its economy.

- Sectoral changes of employment took place very fast in Estonia. Changes in the employment structure that usually took 15-20 years in most of the Western countries happened two or three times faster in Estonia. Such a rapid reallocation of labour caused some social problems especially in rural areas. Society was not prepared for that fast change from a social protection system point of view.

[62] Except Czech Republic

- Labour market flexibility is very high in Estonia. Our analysis was more concentrated on two aspects of flexibility. These were institutional factors (mostly labour policy issues) and transitions between different labour market states (flow analysis). From an institutional point of view Estonia has introduced a flexible labour policy with low unemployment benefits and with very low general financial contribution to labour policy programmes. Transition probabilities from unemployment to employment were very high compared with other CEE countries. Estonia followed the same pattern as the Czech Republic whose transition probabilities of labour flows were also high and contributions to labour programmes low.

- Estonia has a small open economy with a very liberal economic policy. This makes Estonia very vulnerable to external macroeconomic shocks. A good example of such shocks was the Russian financial crisis. This caused a rapid increase in unemployment and a decline in GDP growth in Estonia. In this context it is important for the Estonia to join the EU in the near future in order to guarantee more stability for the whole economy. From the other point of view together with accession a number of changes will need to be implemented that can increase labour costs for enterprises, and adversely affect the competitiveness of the economy.

- Modest unemployment increase in Estonia at the beginning of transition was caused by several factors:

    - High labour market flexibility.

    - Decline in the labour supply.

    - Rapid reallocation of labour.

    - Extremely liberal macroeconomic policy

In this study very many different aspects of labour market were under observation. Therefore it serves as a framework and background information for the future research. Such aspects as labour supply and demand need both appropriate model based studies, which can go into more detail. The only problem in the case of modelling the demand is a lack of enterprise statistics. Also the flexibility issues need more analysis, especially if we talk about wage flexibility. We do not yet have any studies about labour policy efficiency and the potential influence of labour migration after accession to the EU. These are very important issues from the policy makers' point of view.

On the other hand this is the first comprehensive and systematic approach to labour market issues in Estonia. We show through our analysis that Estonia is a special case among other CEE countries and that labour market flexibility is a key factor in explaining fast labour market adjustments in Estonia.

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