When analysing the changes that have taken place in the Estonian labour market since the early 1990s, we have to keep in mind that this period was characterised by extensive structural rearrangements related to the process of economic transition. So far, no uniform and definite views have been worked out to describe unemployment dynamics in transition economies. Particularly in the early stages of transition, higher unemployment indicators are usually considered to be an inseparable part of the restructuring process, often even an indication of its scope. The increase of unemployment is the result of a reduction of production and is usually associated with cutbacks of workforce in state-owned companies.

However, the adjustment of the labour market to changed economic circumstances in transition countries does not necessarily lead to a sharp increase in the number of jobless and growing unemployment need not be an indication of an adjustment process. The decrease of employment in the state sector turned part of former workers non-active (they exited the labour force) and part of the workers unemployed. The increase of employment in the private sector did not necessarily cause a decrease in the number of jobless, since employment could also increase through new entrants to the labour market (previously non-active working age persons and young people reaching the working age). The transition process that brought along major changes in the economy created structural unemployment. Unemployment was not growing fast, but at the same time a large part of those who had lost their jobs had difficulties finding a new one.

The present article discusses changes in the Estonian labour market during the transition process (1990–2002). We analyse the main indicators characterising the structure and dynamics of unemployment. The aim is to provide an overview of the characteristic features of the Estonian labour market and describe the main trends of the recent past. The Figures provided are mostly based on the data of the Statistical Office of Estonia (SOE).

General Trends of Unemployment and Employment

Figure 1 gives an overview of the developments of the unemployment rate in Estonia in 1990–2002. The 1990s were characterised by a steady growth of the unemployment rate.

---

1 Structural unemployment denotes a situation where there is a gap between the actual knowledge and skill of the workers and requirements set on jobs.
From less than one per cent in 1991 unemployment rose to 13.7% in 2000. Since 2000, unemployment has been falling. Across economic sectors, employment increased the most in manufacturing (textile and garment industry, production of metal products) and retail sales in 2001. In the first three quarters of 2002, employment increased by 1.5% year-on-year. Over this period, the fastest increase in employment took place in financial intermediation (24.3%) and real estate, leasing and mediation (17.1%). In 2002, employment decreased the most in fisheries (-30.5%)

In the transition economy context, the increase of unemployment has mostly been explained by the sharp drop in production in the early years of economic reforms. It has also been claimed that actual unemployment in the early 1990s was considerably higher than reflected in statistical data, since there was hidden unemployment in the socialist system. In the analysis of unemployment growth in transition countries the so-called inverted U-curve theory has been widely accepted. According to this theory, a sharp decrease of employment takes place in the state sector during the transition process. Simultaneously, new jobs are being created in the private sector, but this is a time-consuming process and requires extensive retraining and reorientation of labour. Therefore, at the beginning of the transition period fewer jobs are created than lost and unemployment rises. Later, the private sector will hire more and more people who lost their jobs in the state sector; and, at some point, the level of unemployment will begin to fall. Thus, the structural unemployment trend in transition countries resembles an inverted U-curve and hence the name of the theory. Analysing changes in the Estonian unemployment rate over the past decade according to this theory, we can assume that unemployment caused by the structural changes in the course of the transition process peaked in 2000 and began to decrease from 2001.

2 The home page of the Statistical Office of Estonia (SOE) can be found at www.stat.ee
By now, Estonia has reached the final stage of the transition process and, therefore, the extent of structural changes in the economy is considerably smaller than in the 1990s.

Thus, it can be assumed that in the future the rise and fall of unemployment would be more correlated to the cyclical changes of economic growth. As a result of economic restructuring, production activity became more efficient in Estonia and preference was given to capital-intensive fields (mainly via the replacement of outdated capital stock). Due to these two factors, the increase of output in restructured companies was mostly achieved through higher productivity and labour demand did not increase. This is why the GDP growth in the 1990s did not reduce unemployment. The increase of labour productivity in Estonia exceeded GDP growth in all years of the past decade (see Figure 2). In the last two years, the situation has changed – in 2001 and the first three quarters of 2002 GDP increased faster than productivity. At the same time, unemployment decreased and the employment rate increased.

![Figure 2. Relation of labour productivity and GDP](image)

Despite the rapid decrease of employment (see Figure 3), unemployment did not increase very sharply in the second half of the 1990s. The relatively moderate increase can be attributed to the decrease of labour supply in the early years of the transition process, mostly due to the emigration of the Russian-speaking population and, to a lesser extent, early retirement of some potential unemployed who thus became inactive in the labour market. The relatively low level of unemployment in Estonia as compared to other transition countries until the third quarter of the 1990s can also be explained by greater flexibility of the Estonian labour market at that time.

The unemployment rate of men has been higher than that of women in the past eight years (see Figure 1), although the decrease of women’s employment has exceeded that of men throughout the period under study (see Figure 3). Estonia, as well as other former socialist countries had a high labour force participation rate of women and the above trends
reflect the reduction of this rate in the course of the transition process. Higher unemployment among men is partly also caused by their higher reservation wages. While in 2000, 43% of unemployed women would have accepted the gross monthly wage of 2000 kroons and 30% would have accepted 3000 kroons a month, such wages would have been acceptable for 24.8% and 36% of men, respectively. Nearly one fifth of men (18.3%) wanted at least 5000 kroons a month, while only 7.2% of women had similar requirements.

---

**Long-term Unemployment**

Figure 4 illustrates the duration of unemployment. The share of the unemployed in their total number is given according to whether the period of unemployment has been short (up to six months), medium (6–12 months) or long (a year or more). The share of the long-term jobless increased sharply at the beginning of the transition period (1991–1996). While in 1991, the share of the long-term jobless was approximately 20%, then by the end of 1996 it had reached over 55%. Due to rapid economic growth, the share of the long-term unemployed fell in 1997 and stood at around 45% for several years. Since 2000, the share of the long-term unemployed has been on the rise.

Currently, more than half of the unemployed (53%) in Estonia have been out of work for a long time. This is a relatively high indicator, which points to the fact that unemployment in Estonia is still structural, i.e. the skills of the unemployed do not match the requirements of available jobs. The steady decrease of employment until 2001 allows us to believe that until then a large part of the long-term unemployed became

---

3 The reservation wage is the lowest wage an unemployed person would accept.
inactive in the labour market rather than found work. The increase of the share of the long-
term jobless among the unemployed over the past two years does not mean that their
number has increased. More likely, the increase of this ratio reflects the fact that the total
number of the unemployed has dropped over the last two years, while the number of the
long-term jobless has remained more or less unchanged. The number of job seekers who
have been looking for a job for more than a year started to decrease relatively recently from
the second quarter of 2002.

Unemployment by Age

The above-average unemployment among young people is typical of most countries. However, a big difference between the unemployment levels of young and middle-aged people points to the structural nature of Estonia’s unemployment. Several studies have pointed out that one of the main reasons of high structural unemployment in Estonia is the fact that Estonian vocational training system does not correspond to the needs of companies, which leaves the majority of the vocational school graduates without a job. The relatively low unemployment rate in the oldest age group (50–70 year-olds) is partly caused by the high level of hidden unemployment among the older population. After losing a job they probably prefer to retire instead of looking actively for a new job.

Since 2000, the increase in the demand for labour, originating from economic growth, has affected the employment among the young people; and, as a result, the gap between the unemployment of the young (ages 15–24) and the middle-aged (ages 25–49) has narrowed considerably. While in 2000, unemployment in these age groups differed by nearly two times (23.8 and 12.9%, respectively), then by now the difference has dropped to below 7 percentage points (see Figure 5).
The sharp fall of unemployment in the youngest age group has not only been caused by higher demand for their labour, but partly also by the considerable increase in the number of people being outside the labour force due to studies. According to SOE, the number of people in schools increased by more than 20,000 year-on-year: in 2001 the average number of students amounted to 104,000, in the first three quarters of 2002 the respective number was 127,000.

Unemployment by Ethnic Groups

Throughout the transition period, unemployment among Estonians has been lower than among non-Estonians (see Figure 6). Unemployment has increased rapidly among
non-Estonians, despite the fact that part of them emigrated to Russia and other countries in the first half of the 1990s, thus reducing the labour supply. Poor command of Estonian has been named as one of the main reasons for the lower employment level of other nationalities. But higher unemployment among other nationalities can also be explained by the fact that their jobs were concentrated in the regions where major pre-reform employers were large industrial enterprises (North-Eastern Estonia). In Estonia, as well as in other transition countries, the initial drop of employment was the sharpest in large enterprises. Therefore, the unemployment rate is higher in North-Eastern Estonia than in other regions of the country.

Since 2000, unemployment has decreased more or less equally among both Estonians and Russian-speakers. Unemployment among other nationalities fell from 18% in 2000 to 14.3% at the end of the third quarter of 2002. The respective rates for Estonians were 11.1 and 7.7%. In the same period regional unemployment in North-Eastern Estonia decreased as well (see Figure 7).

Unemployment and Level of Education

Figure 8 illustrates unemployment across population groups with different levels of education. The Statistical Office has been publishing unemployment data by educational level since 1997; therefore, the time series is shorter than in other Figures. In 2000, nearly 25% of the labour force with basic education was unemployed; in 2001 this indicator decreased by nearly three percentage points. Unemployment was over 17% among people with general secondary education and those who had also acquired some vocational training. Among secondary school graduates unemployment has fluctuated between 13.5 and 15% in 2000–2002. Unemployment is the lowest among people with university education and an academic
degree: in 2000 unemployment in this category was higher than in previous years – 6.6% (below 5% in 1997–1999) but it decreased to 5.6% in 2001.

As we can see from the Figure, there is a negative correlation between unemployment and the level of education – the higher the level of education, the smaller the probability of becoming unemployed. However, in the population group with just basic education the level of unemployment is not only higher than in other groups, but also more volatile. The unemployment rates of people with basic and higher education differed more than three times in 1997, and unemployment among people with secondary and higher education differed more than two times. During the economic recession in the late 1990s, these differences deepened even further and only in 2002 unemployment began to decrease across educational levels.

Higher unemployment among the less-educated population has been caused by the growth of the share of capital in production over the past decade. In the so-called socialist economy, the share of labour in the production process was above the optimum level as compared to other production factors. This led to low labour productivity. The inflow of capital in the course of the transition process reduced the demand for less-educated workforce, which, as a rule, is a substitute for capital, while better-educated workforce is a complement of capital. Besides the changes resulting from the transition process, the overall development of science and technology also increases the share of capital and educated workforce in production.

In the future, the above-mentioned trend can be balanced by Estonia’s greater specialisation on labour-intensive areas in connection with our deepening economic integration with the EU countries. As the unit cost of labour is smaller in Estonia than in many Western European countries, we have a comparative advantage in labour-intensive production in the medium term. With the increase of incomes, the share of the services sector is also expected to increase in the economy and this should facilitate employment as well, since the production of services is usually labour-intensive.
Flexibility of the Labour Market

The ability of the labour market to adjust successfully to short-term economic fluctuations and long-term structural changes is important for maintaining competitiveness as well as guaranteeing sufficient employment of the population. While evaluating the flexibility of the labour market, one has to take into account the ability of the market to react to changes in the economic environment. There are several indicators to measure flexibility. Traditionally, most attention has been paid to evaluating efficiency in the short term. In that case the flexibility of wages is looked at. In order to evaluate the efficiency of the labour market in a longer run, the mobility of the labour force is analysed, both regional (geographical) mobility as well as the job turnover.

Intersectoral Mobility

In transition economies the movement of workers between sectors in the course of the economic transition process has been considered the key indicator of the labour market mobility. According to this indicator, the flexibility of Estonian labour market exceeded most of the Central and Eastern European countries in the first half of the 1990s. The speed of structural changes in the economy was characterised by the sharp decline of employment in the agriculture, forestry and fisheries and the rapid increase of employment in the services sector (see Figure 9). Since the second half of the 1990s, the intersectoral reallocation of workers has slowed down.

![Figure 9. Movement of labour force between economic sectors (%)](image)

Analysis of Job Flows

The most commonly used method of evaluating labour mobility is the analysis of job flows. This method calculates the probability of labour supplier moving from one labour market...
status into another (from the employed to the unemployed, from the unemployed to the non-active, etc). Figure 10 illustrates the hiring rate and the separation rate in Estonia in 1989–1994 and 1997–1999. The hiring rate measures the probability of an unemployed or non-active person becoming employed, i.e., getting a new job. The separation rate measures the probability of a person to give up a job for various reasons.

![Hiring and separation rate between 1989–1994 and 1997–1999](image)

**Figure 10. Hiring and separation rate between 1989–1994 and 1997–1999**

In 1992–1994, the Estonian labour market was very dynamic – both the hiring rate and the separation rate exceeded 20% during this period. Later on both rates dropped, which indicates that labour mobility decreased at the end of the 1990s. In the 1990s, the separation rate mostly exceeded the hiring rate. This is in accordance with the growth of unemployment.

**Interregional Mobility**

While the above indicates that the job-to-job mobility of workers is relatively high, the same cannot be said about interregional mobility. Across counties, the rate of unemployment differed nearly three times in 2001, ranging from 7.7% in Hiiumaa to 18.1% in Ida-Viru County and 20.6% in Jõgeva County. Although regional differences in unemployment are big (see Figure 7), movement of workers from one region to another is modest. According to the International Monetary Fund, 1.8–2.7% of the Estonian population per year moved into a new region in the second half of the 1990s.

---


7 As data on geographical mobility is based on domicile registration, the actual movement of population between regions is likely to be greater than reflected in the statistics.

8 Labor Markets in Hard-Peg Accession Countries: The Baltics and Bulgaria, prepared by the European I and European II Departments, approved by Peter Keller & Jerald Schiff, IMF, 2001.
One reason for the low regional mobility is the big difference in the housing costs (rent, communal services, etc) and prices of property. In economically more developed regions where incomes are higher (Tallinn), housing costs can be several times higher than housing costs in rural regions. This creates a barrier to potential movers, since for some time immediately after resettlement their expenses will be higher than their income.

**Wage Flexibility**

The often-analysed phenomenon of the labour market is the asymmetry of wage flexibility: the downward rigidity of wages is much higher than the upward rigidity, ie it is much easier for the employer to raise the (nominal) wage than to lower it. In countries with a low inflation level and/or rigid monetary system (eg, currency board) the downward flexibility of wages is one of the key issues that characterises the ability of the real sector to cope with economic shocks.

In Estonia, the downward flexibility of wages can be analysed in the context of the Russian crisis in 1998–1999, when the economy had to cope with several negative shocks (hike of interest rates, drop of external demand, etc). Table 1 illustrates changes in the average real wage in different economic sectors in 1998–1999. This data indicates that in sectors affected the most by the decline of east-bound external demand (agriculture, fisheries, construction) a considerable decrease of the real wage took place. The real wage also decreased in the tourism-related service sectors (hotels and restaurants), as well as in forestry and manufacturing. Besides the real wage also the nominal wage decreased in several sectors, if we take into account the low inflation level of the period (CPI grew by 3.3% in 1998–1999).

**Table 1. Impact of Russian crisis: changes in the real wages in 1998 and 1999**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Real wage in 1998</th>
<th>Real wage in 1999</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>1,713</td>
<td>1,561</td>
<td>-8.9%</td>
</tr>
<tr>
<td>Fishing</td>
<td>2,483</td>
<td>2,287</td>
<td>-7.9%</td>
</tr>
<tr>
<td>Construction</td>
<td>2,836</td>
<td>2,536</td>
<td>-10.6%</td>
</tr>
<tr>
<td>Hotels and restaurants</td>
<td>1,773</td>
<td>1,528</td>
<td>-13.8%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>2,758</td>
<td>2,693</td>
<td>-2.4%</td>
</tr>
<tr>
<td>Electricity, gas and water supply</td>
<td>3,758</td>
<td>3,732</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Forestry</td>
<td>2,743</td>
<td>2,704</td>
<td>-1.4%</td>
</tr>
<tr>
<td>Mining</td>
<td>3,307</td>
<td>3,370</td>
<td>1.9%</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>2,451</td>
<td>2,815</td>
<td>14.9%</td>
</tr>
<tr>
<td>Transport and communication</td>
<td>3,461</td>
<td>3,620</td>
<td>4.6%</td>
</tr>
<tr>
<td>Financial intermediation</td>
<td>6,024</td>
<td>6,402</td>
<td>6.3%</td>
</tr>
<tr>
<td>Real estate</td>
<td>3,086</td>
<td>3,280</td>
<td>6.3%</td>
</tr>
<tr>
<td>Public administration</td>
<td>3,340</td>
<td>3,738</td>
<td>11.9%</td>
</tr>
<tr>
<td>Education</td>
<td>2,277</td>
<td>2,593</td>
<td>13.9%</td>
</tr>
<tr>
<td>Health care and social maintenance</td>
<td>2,494</td>
<td>2,718</td>
<td>9.0%</td>
</tr>
<tr>
<td>Other</td>
<td>2,291</td>
<td>2,512</td>
<td>9.6%</td>
</tr>
</tbody>
</table>
Conclusion

In conclusion we can say that the Estonian labour market has been flexible in the past decade, considering the job-to-job mobility, intersectoral mobility and flexibility of the wages. However, regional mobility of labour has been low. Considering the increase in the labour market regulation due to the expected EU membership and the likely increase of the role of trade unions, there is reason to suppose that in the future labour market will be less dynamic in Estonia than in the 1990s.