

## LONG-TERM UNEMPLOYMENT IN ECONOMIC BOOM AND BUST: THE CASE OF ESTONIA

Ülle Marksoo and Tiit Tammaru

*University of Tartu*

**Abstract.** Long-term unemployment is an increasing concern in Europe. This paper sheds new light on the development and determinants of long-term unemployment in Estonia over the last two decades, taking a particular focus on the years of economic boom and bust. The analysis is based on the individual level data of the Labour Force Survey. The results of regression analysis show that differences in the socio-demographic characteristics of long-term unemployed became smaller during economic bust compared to economic boom. The region of residence was a significant determinant of long-term unemployment only during economic boom. The risk of becoming long-term unemployed is high for older people, people with a lower level of education and for ethnic minorities at both economic boom and bust.

**Keywords:** long-term unemployment, economic boom, economic bust, logistic regression, Estonia

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### 1. Introduction

There has been a growing concern about the widespread and persistent unemployment in European societies during the last decades. A troubling aspect of unemployment is its long-term nature (Nesporova 2002). Many studies have shown that the chances of finding a job diminish rapidly as the duration of unemployment increases (Berkel and Brand 1996). In Europe 40 percent of unemployed were long-term unemployed in 2010, i.e. over 9 million people had been out of work for over a year. There are several reasons to be concerned about persistent long-term unemployment from economic and social viewpoints (Layard et al 2005, Machin and Manning 1999, OECD 1993). First, the long duration of unemployment spells tends to cause the erosion of human capital and lead to poverty, social exclusion and stress (Pissarides 1992, Rutkowski 2006, Eliason

and Storrie 2009, Kieselbach 2004). Second, public welfare expenditures increase as the expansion of long-term unemployment cumulates the problems related to population ageing, decreasing numbers of working-age population and related increasing labour shortages. Long-term unemployment makes also individuals increasingly unattractive to employers. A better understanding of the formation of long-term unemployment is thus crucial from the perspective of the future economic development of Europe.

The current economic crisis is the most serious one that the European Union (EU) has faced during its existence (European Commission 2009). The most important changes on the labour market took place in 2009 when the lack of job opportunities forced many job-seekers into long-term unemployment (European Commission 2010a). Compared with 2008, the long-term unemployment rate has increased in several EU Member States, most markedly in Ireland, Spain and the Baltic States. The economic crisis has had a greater impact on the traditionally more vulnerable population groups such as ethnic minorities, aggravating the risk of increased long-term unemployment and poverty among them (European Commission 2010b). The International Monetary Fund (IMF) predicts that the recovery of the labour markets will be slow since the ongoing global recession is unusually severe and deep, with a slow recovery (Terrones et al 2009). The International Labour Organisation (ILO) (2009) adds that it usually takes about five years for the unemployment rate to return to its pre-crisis level.

The aim of this paper is to clarify the determinants of long-term unemployment in Estonia over the last two decades. The data for our study come from Estonia. It is an interesting case study area for several reasons. First, this is the country that was among the first to apply radical measures to tackle the global economic crisis. The cornerstone of the policy of the Estonian government through the crisis has been to keep the state budget in balance by undertaking significant cuts in public costs and therefore, instead of stimulating the economy has decreased the demand side for goods and services in the national economy. With a time-lag, many other European governments have focused their attention on the balance of the state budget as well. Thus, the government did not interfere with the labour market and reduced spending on the one hand, but did not accumulate debts either. Second, this policy has a strong impact on labour markets; the long-term unemployment rate increased from 2 percent in 2008 to 8 percent by 2010, i.e. from the level that was below the EU average to the third highest level in the EU. Estonia has thus gone through a very high boom and very deep bust period in its economy, which is also reflected in long-term unemployment rates, making it an especially interesting case for studying regional and individual differences in long-term unemployment in the boom and bust periods. The modest unemployment benefits in Estonia should also be acknowledged in this context since standard job search theory implies that more generous unemployment benefits increase the expected duration of unemployment spells (Fitzenberger and Wilke 2004, Nickell and Layard 1999, Layard et al 2005). Modest unemployment benefits make this small country an interesting laboratory for studying the market effects on long-term unemployment. Third, an ethnic minority

population accounts for about a third of the population of Estonia (Tammaru and Kulu 2003), and the country's labour market is deeply segregated by ethnicity (Lindemann and Saar 2009). The number of immigrants is growing in all European countries. The Estonian case enables us to study the impact of large-scale economic boom and bust on a large ethnic minority population living in the country.

## **2. Literature review**

There is a rich body of research on long-term unemployment, its causes and consequences, and how it varies by population groups (Jackman and Layard 1991, Pissarides 1992, Payne et al 1996, Meager and Evans 1998, Partridge and Rickman 1998, Machin and Manning 1999, OECD 2002, Collier 2005, etc.). Machin and Manning (1999) critically reviewed the literature and they conclude that the common cause for the increase of both long-term and short-term unemployment is related to the significant decrease of the exit rates from unemployment at all durations. When being unemployed for a long time the professional skills and also the habit of working starts to decline. Therefore the chances of finding a new job decrease along with the increase in unemployment duration. This so-called 'duration dependence' results from the erosion of skills and motivation on the part of the long-term unemployed as well as from employers' reluctance to hire workers who were jobless for a long time, whom they consider as less productive (Rutkowski 2003, Heylen 1992, Machin and Manning 1999, Payne et al 1996). The long duration of unemployment spells tends to lead to poverty and social exclusion (Rutkowski 2006, Pissarides 1992, Jurajda and Munich 2002). Serious coping difficulties occur due to the sudden fall in the quality of life, which in turn affects both health and family relationships. Self-esteem decreases, as do the possibilities of finding a new job. This has a significant negative psychological impact on the long-term unemployed as they lose their willingness to compete for jobs (ILO 1996).

Even when employment starts to grow it has less impact on the labour market entry of the long-term unemployed (Partridge and Rickman 1998, Machin and Manning 1999, Layard et al 2005, Jackman and Layard 1991). Most of the new jobs are taken by short-term unemployed and by new entrants to the labour market (European Communities 1998). Long-term unemployed must compete against new labour market entrants with recently acquired training and skills (ILO 2000). Firms hiring new people tend to pick the applicant with the shortest unemployment spell (Blanchard and Diamond 1994). In short, the long-term unemployed frequently stand in the end of the job queue.

Unemployment durations are also dependent on individuals' personal and demographic characteristics. Previous employment career, age, gender, educational attainment and job search behaviour are important in this regard (O'Connell et al. 2010, Collier 2005, Brown and Sessions 1997, Van Berkel and Brand 1996). According to human capital framework, age (experience) and education (skills) have the most important impact on individual labour market outcomes. While earnings tend to rise

along with the increase of experience, the situation is different with regard to labour market participation. Young people have difficulties in entering the labour market, but older people are more likely to remain unemployed after losing their job (Steiner 2001). Especially for low-educated youth, failure to find a first job can have negative long-term consequences on their career prospects (Scarpetta et al 2010). The young tend to experience particularly high rates of unemployment during recessions since it is most difficult to enter the labour market at that time (Bell and Blanchflower, 2010). Among older workers, those losing their jobs in traditional industrial sectors are particularly vulnerable to long-term unemployment.

Education is another key individual characteristic that relates to long-term unemployment. According to Jurajda and Munich (2002) the most important factor behind the increase of long-term unemployment relates to the increase of unemployment duration among low-educated people. The unemployment rate is generally higher the lower the educational level is. Less skilled workers have fewer chances of finding work, and accordingly face longer unemployment spells. As a result they are disproportionately represented among the long-term unemployed (Rutkowski 2006). In addition to the main human capital variables, labour market tends to be highly segmented by gender and ethnicity (Leping and Toomet 2008, Tammaru et al 2010a, Toomet 2011). In most countries the incidence of long-term unemployment is lower for women than men. One reason for this is that a higher proportion of women than men are leaving the labour force rather than entering employment (Machin and Manning 1999, p. 3093, Domenico and Spattini 2008). But women tend to have higher unemployment and long-term unemployment rates. Ethnicity is also associated with the risk of long-term unemployment in a significant way (Machin and Manning 1999, Rudolph, 2001). For example, being a member of the ethnic minority population tends to be one of the principal risk factors of becoming unemployed and long-term unemployed in the Baltic countries (OECD 2003, Aasland and Flotten 2001).

While education, age and ethnicity are the key individual variables that shape labour market outcomes, labour markets function regionally (Peck, 1996). For example, Campbell (2000, p. 657) argues that there are substantial spatial variations in the concentration of long-term unemployment. In some areas the proportion of long-term unemployed is particularly high and therefore active labour market policy is particularly relevant in those localities. Lindsay et al (2003) argue that unemployment, and in particular long-term unemployment, explains much of the continuing problem of social exclusion in some rural areas. Long-term unemployed are often prone to becoming discouraged and drop out of the labour force, especially in rural districts. General labour market data do not therefore reveal the true seriousness of long-term joblessness for the economy. Under the conditions of strong labour demand during the period of economic growth, the long-term unemployed still have difficulties entering the labour market due to the lack of skills or local job opportunities, i.e. regional job mismatch (Rutkowski 2007). Geographic differences in employment opportunities contribute in this way both to structural unemployment and long-term unemployment.

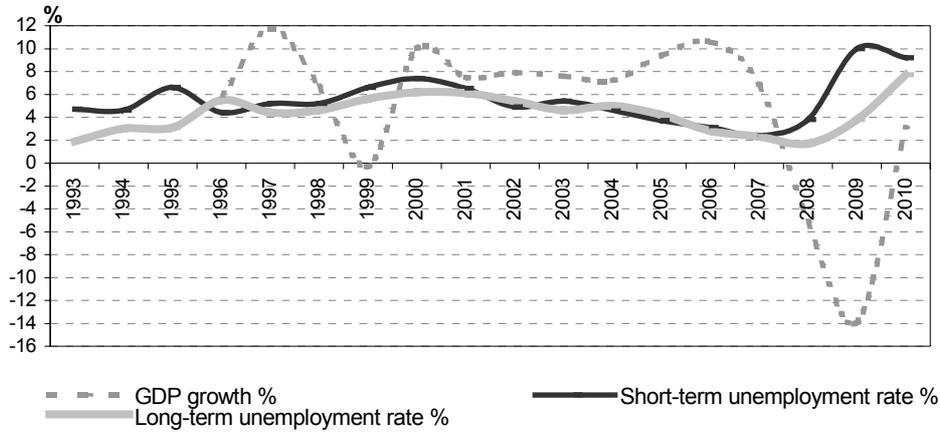
### 3. General trends of long-term unemployment in Estonia

The Estonian labour market went through great changes in the 1990s. After the restoration of independence in 1991, Estonia adopted a simple and very liberal framework for its economic policy. In June 1992, Estonia was the first former Soviet Union country to introduce its own national currency. Macroeconomic reforms and structural changes significantly reduced the demand for labour, and brought along the skills and regional job mismatch with the consequence of laying a foundation for long-term unemployment in 1992. Long-term unemployment grew constantly since then, peaking in 2000 as a response to the Russian crisis in 1998. According to Eamets et al (2003), the Russian crisis caused a depression in the Estonian economy on the one hand, but it brought along a significant change in export destinations on the other. Eastward export flows (largely foodstuffs) declined drastically while exports to the Nordic countries of Finland and Sweden increased considerably. Both the unemployment and long-term unemployment rates peaked in 2000, at 14% and 6%, respectively. In 2001, the number of unemployed started to decrease while the number of discouraged persons<sup>1</sup> achieved its highest level. We can assume that the Russian crisis caused workers' discouragement. Many people lost hope and became inactive, especially in rural areas where employment opportunities were minimal. But a sustained period of economic growth could be observed between 2001 and mid-2008. Economic activity, as measured by the growth rate of the real GDP, increased rapidly, peaking at 10.6% in 2006 (Figure 1).

There is a clear link between the growth of GDP and the fall of the unemployment rate, both short and long-term unemployment. The long-term unemployed formed 48% of all unemployed in 2006 and 58% of the long-term unemployed had been seeking a job for more than two years at that time, which means that for many it was very difficult to break out of the vicious circle even during the economic boom. Major changes in the Estonian labour market took place in 2008, earlier compared to most other European countries. The number of the long-term unemployed in Estonia was 11,800 in 2008. This was the lowest level since 1993 and the long-term unemployment rate (2%) was also considerably smaller than in most other EU member states (3%) at that time. The impact of the global recession on the labour market became noticeable in the second half of 2008. The Estonian labour market reacted dramatically to the crisis. The employment rate, which had been close to 70 percent in mid-2008, dropped below 59 percent by the beginning of 2010, reflecting in particular the strong adjustments in the construction sector and manufacturing, but also in trade, transport and communication. The number of employed persons decreased by about 100,000 while the number of unemployed persons increased to 137,000 and the unemployment rate to 19.8%.

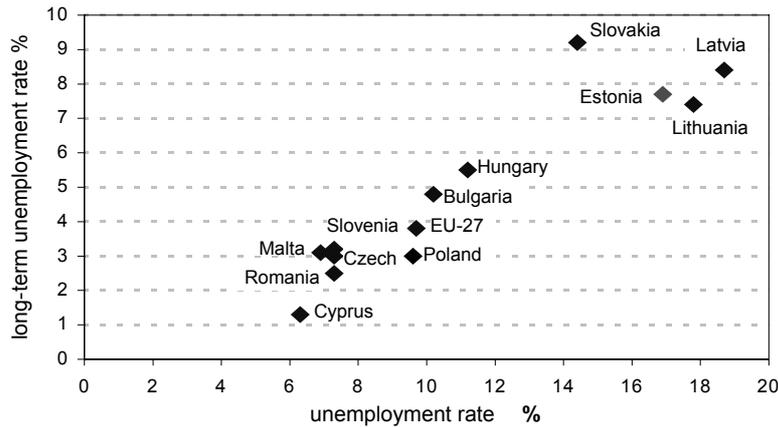
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<sup>1</sup> Discouraged persons – non-working persons who would like to work and would be available for work, but who are not actively seeking work because they do not believe in the chance of finding any.



**Figure 1.** Dynamics of short and long-term unemployment in 1993–2010.  
*Source:* Statistics Estonia, Labour Force Survey.

The dramatic increase in unemployment since the end of 2008 had at first a stronger impact on the number of short-term unemployed than on the number of long-term unemployed. But the growth of long-term unemployment follows the unemployment growth with a time lag, and between the second quarters of 2008 and 2010 the number of long-term unemployed increased by 6 times (up to 58,000). In 2010 the long-term unemployment rate in Estonia (7.7%) was twice higher than the average in EU (3.8%) (Figure 2). Along with Estonia, the labour markets of the other Baltic states and Slovakia became most severely affected by the global economic recession among the new member states and among all member states of the EU as well with regard to long-term unemployment.



**Figure 2.** Unemployment and long-term unemployment rates in the EU new member states in 2010.  
*Source:* Eurostat.

#### **4. Policy context: active labour market measures for long-term unemployed in Estonia**

The systemic feature of the Soviet economic system was labour shortage rather than unemployment (Kornai 1992). Long-term unemployment thus only emerged with the transition from the centrally planned to market economy at the beginning of the 1990s, and it took some time before Estonia started to deal with it. When the Russian economic crisis hit also Estonia in 1998, the Ministry of Social Affairs initiated a pilot project to tackle long-term unemployment. In October 2000, the new Labour Market Services Act extended the circle of persons entitled to labour market services, including the long-term unemployed. The most important policy development included the implementation of the new Labour Market Services and Benefits Act at the beginning of 2006.

The 2006 Act brought about significant changes in the principles of provision of labour market services. The focus is on supplementary social services and benefits aimed at rehabilitating those excluded from the labour market. Following the European Union's employment strategy (Council of the European Union 2008), the implementation of the personalised approach to the long-term unemployed in Estonia is an especially important change in this Act. The personalised approach means that one consultant deals with the problems of a certain unemployed person, and engages different partners (for example, local governments, schools, probation officer, etc.) if necessary. All services are offered on the basis of an individual job-seeking plan prepared in cooperation with the unemployed person and their personal consultant. For the long-term unemployed the most common services are public work, work exercise, wage subsidy and labour market training (Table 1).

For increasing the efficiency of public employment services, an important labour market reform was accomplished in 2009. The activity of the Labour Market Board was terminated and the agency's functions of providing active labour market services were transferred to the Unemployment Insurance Fund, which had previously only dealt with administering unemployment insurance. The supervisory board of the new institution includes representatives of the employers' union, trade unions and the Government, which creates good basis for implementation of employment policy (Estonian Government Office 2010). To tackle the impact of the recession, the conditions for wage subsidy measure were simplified in early 2010 and the financial means for the wage subsidy scheme increased considerably. Under this scheme the employer can apply for a reimbursement of a maximum of 50% of the salary paid to an employee when hiring a person who has been unemployed for six months or more. The ceiling of reimbursement is equal to the national minimum wage. In 2010, wage subsidy agreements had been signed for placing 10,897 people. The recent changes have also focused on extending active labour market services such as retaining the employability of unemployed people by organising job clubs and offering opportunities for voluntary work.

**Table 1. Number of participants in active labour market policy (ALMP) measures**

	2006	2007	2008	2009	2010
Labour market training	7,073	5,503	5,801	18,110	16,595
Community work/public work	170	231	592	1,577	1,342
Business start-up grant	289	141	162	495	680
Wage subsidy to employer	238	127	116	194	10,897
Career counselling	8,356	8,272	12,046	23,785	18,256
Work exercise	446	1,208	862	1,528	1,004
Work practice	676	792	631	1,718	3,769
Measures for disabled people	109	60	46	18	21
Other measures			326	1,293	1,951
Total number of registered unemployed during the year	48,167	40,247	55,863	136,112	155,927
Ratio of participations in ALMP measures out of registered unemployed, %	51	57	39	36	35

Source: Unemployment Insurance Fund.

Currently there are two complementary unemployment compensation systems in Estonia: unemployment insurance and unemployment benefits. The latter is paid to those who fail to fulfil the insurance criteria or when unemployment insurance benefits run out. As the long-term unemployed have not been working during the last 12 months, they do not receive unemployment benefits. But in case a long-term unemployed person participates in labour market training organised by the Unemployment Insurance Fund for at least forty hours, or either in work practice or in work exercise, they can get a labour market grant. Also transport and accommodation allowances are available for the long-term unemployed if they participate in labour market training or in work practice. Since 2007 all the registered unemployed have been covered by health insurance; this measure is particularly important for ill-health unemployed. It is very important to stimulate people to register their unemployment status since only then will they be eligible for participating in the active labour market measures. According to the Estonian Labour Force Survey only 37% of the long-term unemployed were registered with the Unemployment Insurance Fund in 2009, in 2010 the respective share increased to 50%. The main reasons why many unemployed do not officially register and seek a job on their own are the lack of vacancies offered by employment offices, and skill mismatch between the unemployed and job offers. Preventing unemployment training programmes for the unemployed are extremely important for tackling structural unemployment. To conclude, the government initiatives to tackle long-term unemployment have increased during the 2000s in Estonia on the one hand, but only about a half of the long-term unemployed can benefit from the available active labour market measures.

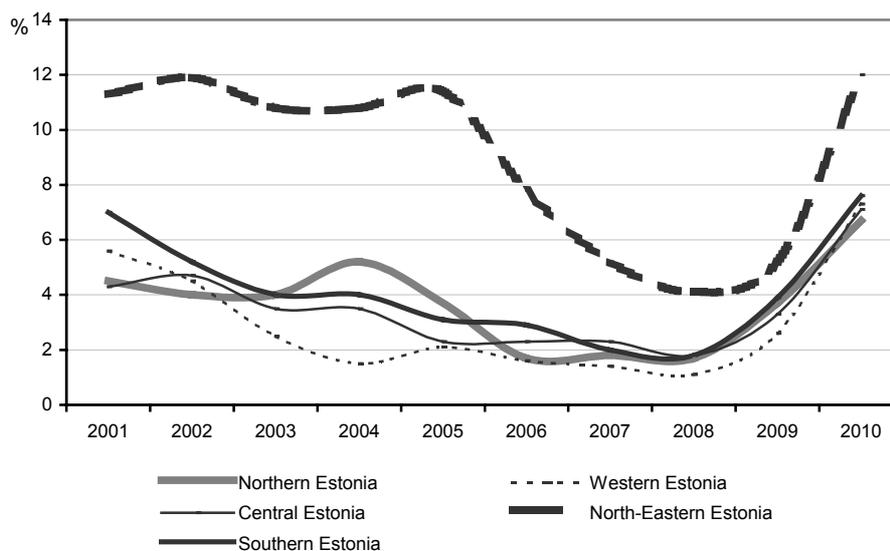
## 5. Material and methods

This article is based on the data of the Estonian Labour Force Surveys (ELFS) conducted by Statistics Estonia in line with the definitions of the International Labour Organisation. The first ELFS was conducted at the beginning of 1995. In 1997–1999, the surveys were conducted in the 2nd quarter. Since the year 2000, survey data collection has taken place the year round and the results are tabulated by quarters and years. The target population of the ELFS contains all working-age residents of Estonia aged between 15 and 74 in the reference week. All samples in 1995 and from 1997 onwards are drawn from this age group. The data for the period 1989–1994 and 1996 was collected retrospectively in the ELFS 1995 and ELFS 1997 for persons aged 15–69 (Statistical Office 2005, p. 119). Therefore, most of the statistics given in this paper are based on the data of 1997–2010, and it is generalised on the whole working-age population of Estonia. We start out with a descriptive analysis to explore the regional characteristics of the long-term unemployed. We then extend our analysis into a multivariate research setting. This analysis is based on ELFS 2006 data that includes 16,786 working-age individuals with 605 unemployed, including 272 long-term unemployed, and 2009 data that includes 16,246 working-age individuals with 1430 unemployed, including 383 long-term unemployed. The year 2006 was the peak year of economic growth (GDP growth +10.6%), while the year 2009 represents the bust year (GDP decline –13.9% in 2009). Our research population consists of short-term unemployed (unemployed less than 12 months) and long-term unemployed (unemployed 12 months or more). We fit a logistic regression model to clarify which population groups are most affected by long-term unemployment in the economic boom and bust years. Logistic regression allows testing the models to predict categorical outcomes with two or more categories (Pallant 2006). The dependent variable in this analysis represents unemployment categories – short-term unemployed are coded 0 and long-term unemployed are coded 1. The set of independent variables includes place of residence, region, sex, age, education and ethnicity. We include regional variables in Models 1 and 3 and we add the demographic characteristics in Models 2 and 4.

## 6. Findings

Place of residence has a great impact on labour market outcomes. However, the differences in long-term unemployment are not particular in Estonia between urban and rural areas, and the situation has reversed several times over the years. The economic crisis has not brought along any major changes, either. Some differences still exist. The long-term unemployment rate was slightly higher in rural areas in 2006–2008. During economic recession, unemployment started to increase in urban areas (including the capital city Tallinn), with the long-term unemployment rate in urban areas climbing higher compared to rural areas (8%

and 7% respectively in 2010). While urban-rural differences are not particular, there are large disparities in the long-term unemployment rate across the five regions of Estonia. The differences emerged at the very beginning of the transition period (Figure 3).



**Figure 3.** Long-term unemployment rates by regions, 2001–2010.

*Source:* Statistics Estonia, Labour Force Survey.

Regional disparities remained and even deepened between 2001 and mid-2008 during the period of favourable macroeconomic conditions. This implies that the regions of Estonia participated selectively in the economic boom. Despite such selective effects on the gap between the best-performing and worst performing regions, the ranking of the regions has not changed much over the years. The best performing region is Western Estonia with many small enterprises; Central Estonia and Northern Estonia have shared the second and third positions. Northern Estonia, where the capital city is located, has the most diverse economic base. This region has experienced one of the lowest unemployment and long-term unemployment rates during the boom years and one of the highest unemployment increases during the recession. The worst performing region has been the industrial North-Eastern Estonia, which had the highest employment rate in 1989 but the region suffered from the sharpest employment decline at the beginning of the 1990s as a result of the decrease of industrial output. In the years of economic boom, the long-term unemployment rate in North-Eastern Estonia was 4–5 times higher than in the other regions. Regional differences in long-term unemployment rate decreased

significantly during recession as the overall level of long-term unemployment increased (12% in North-Eastern Estonia and 7–8% in the other regions in 2010).

According to the human capital framework, education (skills) and age (experience) are the key determinants of individual labour market success. Individuals with a higher level of education and special skills search for work with greater intensity, are more attractive for employers and find suitable work over a shorter period of time. We find significant differences in the short-term unemployed, the long-term unemployed and the employed by education (Table 2). There are almost three times more people with ISCED level I or primary education (26%) among the long-term unemployed than among the employed (9%). The respective figures for tertiary education (ISCED level III) are 16% and 39%. This indicates that a low level of education and the consequent lack of special skills and qualifications is the main barrier that prevents people from exiting unemployment. Long-term unemployment rate for highly educated has not changed much during the boom and bust years, while people with lower education were particularly hard hit during current recession (Figure 4).

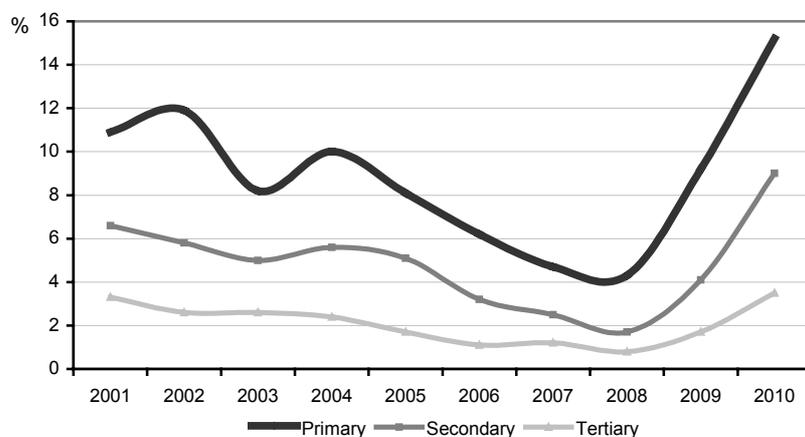
In addition to education, there are also significant differences in long-term unemployment between age groups. Youth unemployment is especially high (33% in 2010). Less-skilled young but also many young university graduates have problems in finding a suitable job during recession. This is one of the reasons for a steep rise of long-term unemployment rate among the young (13% in 2010). The share of long-term unemployed among 15–24 year olds has increased progressively over the last years and formed 40% of all unemployed in this age group in 2010. This implies that along with the increase of the long-term unemployment rate the relative position of young people on the labour market has also become worse. The situation is slightly different for people in the prime working age (25–49-years old). Their relative position improved on the labour market during the economic boom years and the long-term unemployment rate of this age group

**Table 2. ISCED levels of education of the employed, short-term unemployed and long-term unemployed in 2006 and 2009, %**

	Employed		Short-term unemployed		Long-term, unemployed		Unemployment rate %		Long-term unemployment rate %	
	2006	2009	2006	2009	2006	2009	2006	2009	2006	2009
Primary	10	9	23	20	24	26	13	29	6	9
Secondary	55	52	53	64	62	58	6	16	3	4
Tertiary	35	39	23	16	13	16	3	6	1	2
Total	100	100	100	100	100	100	6	14	3	4

Source: Labour Force Survey data, Statistics Estonia.

Note: Educational levels according to ISCED 97 codes: primary (I level) – primary and basic education; secondary (II level) – general secondary education, vocational education, vocational secondary education after basic education; tertiary (III level) – vocational secondary education after general secondary education, higher education, Master's degree, Doctoral degree.

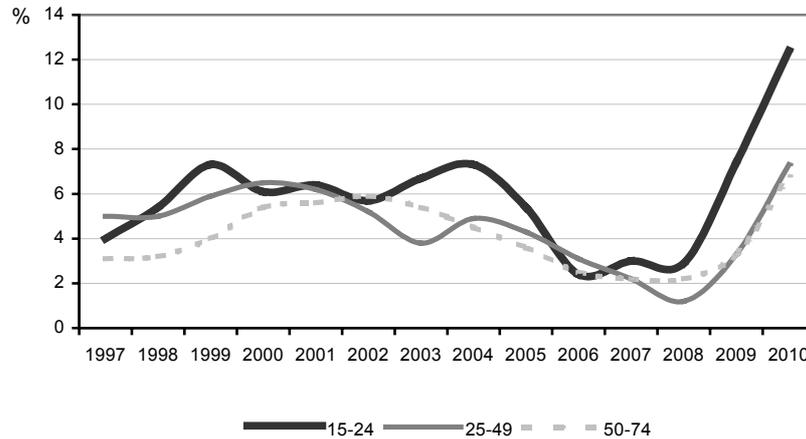


**Figure 4.** Long-term unemployment rates by ISCED levels of education 2001–2010.  
*Source:* Labour Force Survey data, Statistics Estonia.

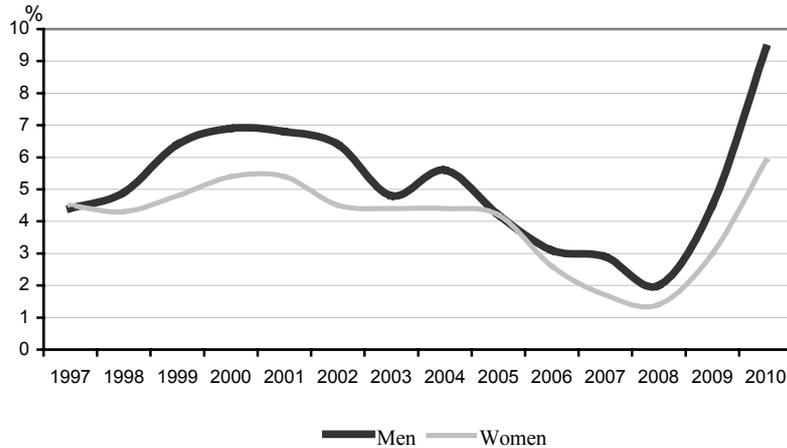
dropped to 1.2% in 2008. The situation changed with the crisis, and long-term unemployment has quickly grown among people in the prime working ages as well. In other words, the situation in Estonian families has become significantly worse during the period of economic decline. This is the social cost for the keeping the state budget in balance. As in younger age groups, we can observe that the long-term unemployment rate of older people aged 50 and more decreased steadily between 2003 and 2008, but started to increase since 2009 (Figure 5).

In addition to education and age, labour market outcomes tend to differ significantly by gender and ethnicity. Regarding gender, men's unemployment and long-term unemployment rates have been higher than women's since unemployment emerged in Estonia at the beginning of the 1990s. This is contrary to most EU countries (OECD 2003, Marksoo 2007). Taking a look at the trend line, we can observe that long-term unemployment increased equally among men and women up until 2000 and started to decrease thereafter with men having higher long-term unemployment rates than women at almost each point in time (Figure 6). It appears, however, that the long-term unemployment of men tends to increase during the economic bust years. Men had much higher long-term unemployment rates in the end of the 1990s during the Russian crisis and the gender gap has widened again since 2009. It seems that jobs where men are over-represented are more sensitive to economic cycles. For example, employment increased considerably in construction sector during the years of the economic boom, and this sector has experienced the most significant job losses during the bust years. Of the 100 000 jobs lost from the start of 2008 to mid-2010, around 80 000 were in the constructions and manufacturing sectors (OECD 2011). The long-term unemployment rate of men thus increased severely during the crisis in most of the EU

countries and exceeded that of women (3.9% for men and 3.7% for women in 2010 for EU-27).



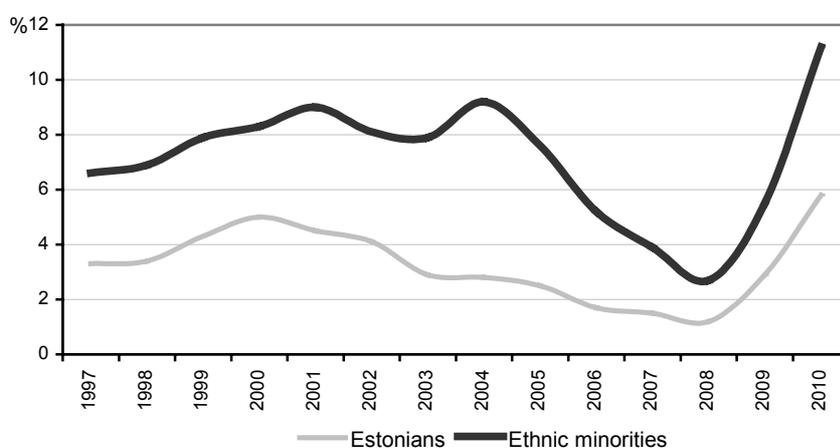
**Figure 5.** Long-term unemployment rates by age groups 1997–2010.  
*Source:* Statistics Estonia, Labour Force Survey.



**Figure 6.** Long-term unemployment rates by gender, 1997–2010.  
*Source:* Statistics Estonia, Labour Force Survey.

Throughout the last two decades, unemployment among Estonians has been notably lower than among ethnic minorities (cf. Aasland and Fløtten 2001). In 2010 the average unemployment rate for ethnic minorities (mostly Russians) was much higher than that of Estonians – 23% and 13%, respectively. The duration of

job-seeking has usually been much longer among minorities than among Estonians and therefore, the long-term unemployment rates differ as well (6% for Estonians and 11% for ethnic minorities). It appears that the relative gap decreased somewhat during the recession due to a higher increase of unemployment among Estonians (Figure 7). The share of ethnic minorities among the long-term unemployed was highest (over 60%) during the period of economic growth between 2004 and 2006. The difference was especially large among females in 2006 — the long-term unemployment rate of Estonians was down to just 1% while that of ethnic minorities remained close to the level of 6%.



**Figure 7.** Long-term unemployment rates by ethnicity, 1997–2010.

*Source:* Statistics Estonia, Labour Force Survey.

Higher unemployment among ethnic minorities is partly due to their geographic concentration and low spatial mobility (cf. Tammaru and Kulu 2003). Minorities live mainly in cities and are concentrated in two regions: the industrial North-Eastern Estonia region where 80% of the population are ethnic minorities, and the capital Tallinn (almost half of the population are ethnic minorities). In North-Eastern Estonia, a region that directly borders Russia, the major pre-transition employers were large industrial enterprises that experienced significant job losses both at the beginning of the transition period in the early 1990s and as a result of the Russian crises in the late 1990s. Therefore, the unemployment rate in North-Eastern Estonia has been higher than in other regions of the country almost for the last 20 years. We are interested, whether ethnic differences are independent of the region of residence since the decline of industrial output has been also regionally selective.

### **7. Results of the regression analysis: determinants of long-term unemployment in boom and bust**

Some people are much more likely to experience long-term unemployment than others. We will next compare the long-term unemployed with the short-term unemployed. The role of the place of residence and personal characteristics such as education, age, gender and ethnicity may be substantial in prolonged unemployment spells. We will clarify the differences in the probability of being long-term unemployed in the peak of economic boom (2006) and at the bottom of economic bust (2009) as measured by GDP change (Figure 1). The results of the regression analysis enable us to shed more light on the differences in long-term unemployment. It appears that living in North-Eastern Estonia significantly raised the odds of remaining without a job for an extended period of time in 2006 (Table 3, Model 1). Living in rural areas also significantly contributed to long-term unemployment. The geographical differences in the probability to be long-term unemployed decreased significantly during economic recession (Table 3, Model 3). While people living in rural areas and the North-Eastern Estonian industrial region could not enjoy the favourable macroeconomic conditions during the economic bust to an equal degree with people living in urban areas and other regions of the country, they also suffered relatively less from the economic recession that hit quickly-developing regions stronger. Results on regional differences in long-term unemployment did not change after adding personal characteristics into the model (Table 3, Models 2 and 4). This implies that the geographic location plays an important but different role in long-term unemployment at times of economic boom and economic bust, independent of the characteristics of the people living there. Let us now turn to the individual characteristics. Education is expectedly and linearly related to long-term unemployment. People with primary education had 2.5 times and people with secondary education had 2.2 times higher odds of remaining long-term unemployed compared to people with tertiary education in 2006 (Table 3, Model 2). However, we can observe a significant reduction of education differences in long-term unemployment in 2009; differences between tertiary and secondary education become insignificant and people with primary education have 1.6 times higher odds to be long-term unemployed than people with tertiary education in 2009.

The narrowing of differences in long-term unemployment between the boom and bust could be observed for other population groups as well (Table 3, Models 2 and 4). Age-wise, a young age (less than 25 years) considerably reduces the likelihood of being without job for a longer period of time in 2006 but this age effect is smaller in 2009. Although young people have lower probability of being long-term unemployed than older people, we can observe that they have become worse off during the economic crisis as their probability of being long-term unemployed has increased over three times during the bust years. Gender differences were significant in 2006, but insignificant in 2009. Ethnic minorities are significantly worse off both at times of economic boom and bust when we take

into account both personal characteristics and residential context. It follows that ethnic differences are not only due to the concentration of members of the minority population into the region of the highest level of long-term unemployment (North-Eastern Estonia). This confirms the results of previous studies that show the disadvantage of ethnic minorities in the Estonian labour market (Lindemann and Saar 2009).

**Table 3. Logistic regression models estimates for the long-term unemployed**  
(dependent variable: long-term unemployed = 1; short-term unemployed = 0)

		2006		2009	
		Model 1	Model 2	Model 3	Model 4
Region	North-Eastern Estonia	2.752***	2.327***	1.198	1.119
	Other	1.000	1.000	1.000	1.000
Place of residence	Rural	1.451**	1.592**	1.106	1.185
	Urban	1.000	1.000	1.000	1.000
Education	Primary		2.457***		1.595**
	Secondary		2.174***		0.841
	Tertiary		1.000		1.000
Age	15–24		0.173***		0.565***
	25–49		0.987		0.727**
	50–74		1.000		1.000
Gender	Female		0.734*		1.056
	Male		1.000		1.000
Ethnicity	Ethnic minority		1.540*		1.286*
	Estonian		1.000		1.000
-2 log likelihood		812.136	730.254	1660.582	1632.090
Cox & Snell R Square		.033	.156	.001	.021
Nagelkerke R Square		.044	.208	.001	.030

\*\*\*Significant at 0.01 level. \*\*Significant at 0.05 level. \*Significant at 0.1 level.

## 8. Conclusions and discussion

One of the important drawbacks of the economic slowdown is the spread of long-term unemployment. In Estonia, the number of people remaining out of work for more than a year increased almost sixfold, from 9,500 in mid-2008 up to 58,200 in mid-2010. The aim of this study was to analyse changes in long-term unemployment during the years of economic boom and bust. Previous literature has shown that long-term unemployment rather than short-term unemployment increases during periods of economic growth since the long-term unemployed are not effective competitors on the labour market (Partridge and Rickman 1998, Jackman and Layard 1991). However, our analysis reveals that both short-term and long-term unemployment decreased steadily during the economic growth period in 2001 to mid-2008. In the years of the economic boom, long-term unemployment dropped to very low levels; under the conditions of high labour

demand and low labour supply even vulnerable groups, including long-term unemployed and discouraged persons, were able to find a job. This was largely related to the real estate boom and expansion of the construction sector. Due to a labour shortage unemployed people with low educational levels and without specific skills were also hired. Our analysis showed that during the boom years long-term unemployment decreased the most among the less educated people who, however, became unemployed as the economic crisis started.

Our study also clarified which population groups were most vulnerable for extended exclusion from the labour market during the years of economic boom and bust. The results of our study reveal clear changes between 2006 (biggest GDP growth) and 2009 (biggest GDP decrease). It appears that the economic boom was beneficial for some regions, while regional differences became insignificant during the economic bust. The economic slowdown thus had a stronger impact on previously more well-off regions. Estonians, the well-educated, the young and people living in cities were the winners of economic boom. Although the labour market outcomes of vulnerable population groups such as ethnic minorities and people with lower levels of education improved as well, the situation of other population groups improved even more. The results of the regression analysis that compared the characteristics of long-term unemployed with short-term unemployed showed a narrowing of differences between regions and population groups during the economic recession; long-term unemployment has hit all regions and population groups, also those with good education and people living in a capital city area. Still, long-term unemployment is most common among less educated, ethnic minorities and people who are in their late working ages. An alarming issue is the unprecedented rise of youth long-term unemployment that is a serious social risk factor. Therefore the active labour market policy should focus on special measures for this age group.

To conclude, Estonia is a country that has gone through a very high economic boom and very deep economic bust period between 2000 and 2010. The dynamics of long-term unemployment has mirror imaged GDP change (Figure 1). The social cost of keeping the state budget in balance at times of economic crises relates thus to the overall high level of long-term unemployment; 8% of labour force stays for an extended period outside the labour market. This could bring along two types of negative consequences. First, the self-esteem of people decreases, causing significant negative psychological impact for people who could lose their willingness to compete for jobs (ILO 1996). Second, since the labour markets of the neighbouring Nordic countries of Estonia have remained relatively strong, an increase in emigration could follow. For example, Finland has become the main destination of Estonian emigration over the last two decades, and we can observe an increase in emigration to Finland since the economic crises started (Tammaru et al., 2010b). Thousands of Estonians are also involved in cross-border working in Finland that lowers unemployment in Estonia. But in the context of overall increase in long-term unemployment, the differences in long-term unemployment between population groups and regions diminished. This implies that social

stratification and strong regional in-balances in labour markets have reduced as is quite common at times of economic bust. This could thus reduce the levels of inter-regional migration and contribute to the decrease of depopulation and aging processes in more peripheral and rural areas of the country.

Addresses:

Ülle Marksoo  
Department of Geography  
University of Tartu  
Vanemuise 46  
Tartu 51014, Estonia

E-mail: ylle.marksoo@sm.ee

Tel.: +372 626 9173

Tiit Tammaru  
Department of Geography  
University of Tartu  
Vanemuise 46  
Tartu 51014, Estonia

E-mail: tiit.tammaru@ut.ee

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