

# NEW ENTRANTS ON THE ESTONIAN LABOUR MARKET: A COMPARISON WITH THE EU COUNTRIES

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**ABSTRACT:** The aim of this paper is to present a descriptive overview of patterns and labour market outcomes characterising the labour market entry in Estonia compared to the EU countries. The assumption that labour market institutions and educational systems have an impact on the labour market entry process makes up the starting point for the formulation of the hypotheses. The hypotheses have been formulated on the basis of the comparison between the educational systems as well as labour market institutions in Estonia and in the EU countries. The paper draws upon data from the Estonian Labour Force Survey (ELFS) 2002 and from the 1997 ELFS' macro level data about the EU countries. The paper will present evidence concerning differences in labour market outcomes between new entrants and experienced workers. Based on macro level data, the analysis will attempt to empirically identify distinct country clusters.

**Key words:** labour market entrants; school-to-work transition; comparative research; labour market entry patterns

## 1. Introduction

The transition from school-to-work has been described as a dynamic process where a person moves from the educational system to a relatively stable working position (Hannan *et al.* 1997). The process is influenced by individual resources (e.g., education, labour market experience), ascriptive characteristics (e.g., gender, social origin, etc.) as well as by economic situation and the way in which the labour market is organised. According to various findings, the organisation of the national educational systems and the way it is perceived and used by the production system are also very important (Allmendinger 1989; Kerckhoff 1996; Marsden 1997; Müller and Shavit 1998; Müller and Gangl 2003). The transition process

reflects the way young people's entry into the labour market is regulated rather than being the consequence of individual resources and characteristics. The institutional context influences individual resources, which depend on the institutional arrangements of educational systems, organisation of the employment system and linkages between these institutions (Hannan *et al.* 1997).

There are a great number of empirical studies on school-to-work transitions carried out in the European Union countries (Hannan *et al.* 1997; Shavit and Müller 1998; Kerckhoff 2000; Smyth *et al.* 2001; Kogan and Müller 2003; Müller and Gangl 2003), whereas the studies conducted in the Central and Eastern European countries are relatively rare (see for example Cedefop 2001; Toomse 2003; Kogan and Unt 2005; Róbert and Bukodi 2002). However, some attempts have been made to identify the position of these countries in typologies of labour market entry patterns. Authors of the Cedefop report (2001) conclude that Central and Eastern European countries are moving away from a model of 'regulated inclusion' to the one of 'competitive regulation' (Cedefop 2001: 106). Bukodi and Róbert (2002) assert that in Hungary, the strong link between education and occupation and mobility space, typically qualificational in nature, started to change slowly in the direction of an organisational mobility space, where the curriculum of the educational institutions is more general and where the match between the type of qualification and the type of job is not so strong anymore.

Previous analysis has shown that the Central and Eastern European countries are moving in different directions adopting various employment and unemployment protection models and changing their educational systems (see, for example, Helemäe and Saar 2002; Riboud *et al.* 2002; Hampalová 2003). Estonia took a very liberal approach, by contrast, with few barriers to labour market dislocation or new job creation, meagre support for the unemployed, no effective wage floor, low taxation of labour, and privatisation methods that strengthened corporate governance and thus encouraged labour shedding (Vodopivec 2000).

The aim of this paper is to present a descriptive overview of the patterns and labour market outcomes characterising the labour market entry in Estonia in comparison to the EU countries, and to classify the Estonian labour market entry pattern using previous typologies. Our research interest concentrates on the aggregate effectiveness of youth labour market integration in Estonian institutional context. Many recent comparative studies of labour market entry processes have used the classifications based on a dichotomy of institutional arrangements: the organisational (internal) labour markets and the occupational labour markets. Proceeding from the trio internal/occupational/unorganised labour market, Garonna and Ryan (1989) have identified three different

ways in which young people are integrated into labour market (regulated inclusion, selective exclusion and competitive regulation). This typology has been elaborated in other publications (Cedefop 2001; Couppié and Mansuy 2001b). Couppié and Mansuy (2001a) emphasize some advantages of Garonna and Ryan's presentation: collective agreements and practices at the workplace are part of the picture; the educational system and production system linkages are included; market regulation changes are taken into account.

In this paper, we will not concentrate on the analysis of youth as a specific age group. We prefer to compare labour market entrants and experienced workers<sup>1</sup> because previous studies have demonstrated that national organisation of the educational system as well as labour market regulation influence the biographical timing of the transition (Couppié and Mansuy 2003). The category of new labour market entrants is useful because it combines characteristics of youth's position '... towards the education and training system with the experience accumulated on the labour market' (Couppié and Mansuy 2001a: 24). Compared with the rest of the labour force, new entrants are defined by their lack of labour market experience. It makes their labour market status particularly vulnerable.

The starting point for the formulation of the hypotheses in this paper is based on the assumption that different labour market institutions and educational systems have an impact on the labour market entry process. The comparison between the educational systems as well as labour market institutions of Estonia and the EU countries will help us to formulate hypotheses about labour market entry process in Estonia using the classification results from previous studies. Of course we should consider that trends in Estonia as well as in other post-socialist countries are hard to predict based on existing institutional patterns, because institutions are still undergoing transitions. Previous attempts to classify Estonian institutional pattern into different institutional regimes indicated the contradictions and inherent dissonance of institutional rules operating in educational system and labour market (Helemäe and Saar 2001).

The paper draws upon data from the Estonian Labour Force Survey 2002 as well as the macro level data from the ELFS 1997 about the EU countries published in Cedefop report (2001).

The study will start with an overview of relevant theories and the summary of the most relevant empirical results. Thereafter, the institutional context will be analysed and the hypotheses formulated. Section 5 will discuss the database and the methodological approach to the analysis.

1. One can distinguish two kinds of surveys covering the school-to-work transition: age cohorts, which are based on the date of birth and event cohorts, grouping people who have experienced the labour market entry at the same time.

Empirical results will be presented in Section 6 holding the basic descriptive analysis about labour market entry process in Estonia and in the EU countries and the cluster analysis for classifying the pattern in different European countries. The concluding section will summarise the results.

## 2. Labour market entry patterns

Most previous research on entry of youth into labour market has contrasted two polar types of systems on the European labour market: the occupational labour market system operating in countries with strongly vocationally oriented training and the internal labour market systems operating in countries where labour market allocation predominantly relies on experience (Marsden 1986). Nevertheless, Gangl (2001) has found that important cross-national differences in labour market entry patterns exist within both groups of countries.

Authors of the final report of the CATEWE project (Smyth *et al.* 2001) suggested that national transition systems could be represented as a single continuum. At the one end of this continuum are countries such as Germany having strong occupational labour markets, standardised and track-differentiated educational systems, and strong links between education and labour market. At the other end of the continuum are countries dominated by internal labour markets, with less standardised and less differentiated educational systems, weaker links between education and the labour market and little formal work-based training (Smyth *et al.* 2001: 93). Examples of later type are the USA with Scotland and Ireland as its European counterparts.

Garonna and Ryan (1991) using the trio of internal market/occupational market/unorganised market models proposed three different ideal systems regulating the entry of youth into labour market: regulated inclusion, selective exclusion and competitive regulation.

Regulated inclusion operates in the context of dominating occupational labour markets. Initial training is acquired through vocational training, usually on apprenticeship. Certification of training allows admission to the occupational market (Cedefop 2001). Apprenticeship opens up to labour market entrants skilled occupations that remain closed off in countries that lack mass work-based vocational preparations (Marsden and Ryan 1991). Work experience has a limited impact on recruitment decisions and this means that the unemployment gap between experienced workers and new entrants is low – new entrants are not affected by prolonged unemployment spells. Skills are transferable between the firms but the insiders are partly protected competition with outsiders because the access is regulated by the completion of the corresponding qualification (Couppié and

Mansuy 2001b). Stratification, standardisation and vocational specialisation in educational systems allow for a more rapid and efficient transition into stable careers of labour market entrants (van der Velden and Wolbers 2003). This means that young people would be in a less disadvantaged situation compared with experienced workers. The qualification-based criteria by recruitment favoured entry to skilled jobs and therefore the variation of new entrants' share among industries is limited. Transferability of skills would increase job mobility among experienced workers as well as among new entrants. This kind of organisation of the labour market is based on a co-operation among employers as well as between employees and employers.

Selective exclusion operates in a context of dominating internal labour markets. Entrants begin their career at the bottom and progress upward through tenure and internal promotion. In a context of high unemployment there are difficulties in job access for new entrants and so their unemployment rate is higher compared with experienced workers and they are engaged in long-term job search. Job access difficulties reduce job mobility among workers (both experienced workers as well new entrants) and the qualification is obtained within the firm and is not transferable. Access to these markets is restricted because the turnover costs are high and the insiders are protected against the outsiders. New entrants are likely to be recruited at the lowest levels (Couppié and Mansuy 2001b). This model leads to the concentration of youth in low skilled jobs and firms that belong to the secondary segment (Marsden and Ryan 1990). If job competition is intense and labour protection is strong even qualified labour market entrants may enter low skilled jobs. Labour market entrants are disadvantaged compared to experienced workers. The selective exclusion model empirically tends to be comprised of countries with high employment protection and little provision of specialised training in education and training systems. Ryan (2001) stressed that internal labour markets do not systematically produce selective exclusion: a strong position of insiders is also a necessary condition.

In competitive regulation settings, employers look for short-term profitability. This may occur in the cases of high unemployment, weak employment protection and weak union power. Employers take the maximum advantage of the competition between experienced workers and new entrants. They attempt to minimise costs for labour force. Employers may recruit young workers on lower wages using flexible forms of employment contracts instead of employing experienced workers with more stable contracts (Cedefop 2001). According to Garonna and Ryan (1991) this model is only a tendency, but they also suggest trends in the direction of this model in the UK and the US.

The third more realistic model seems to be selective exclusion mixed with competitive regulation, which takes place in the context of dominating internal labour markets, when deregulation and flexibility policies are introduced under economic pressure (Couppié and Mansuy 2001b). Firms choose among new entrants according to their educational level and their expected labour costs. As new entrants will have lower salary demands and they will accept precarious work relationship they can compete with more experienced workers. As a result job mobility is high and short unemployment spells are frequent, especially among new entrants. Nevertheless, the gap in unemployment rates between new entrants and experienced workers is narrower than in the selected exclusion model. The flexibilisation of labour market leads to a weaker position of experienced workers as well as to a downgrading of higher qualified new entrants. Table 1 summarises these assumptions about different models.

Proceeding from this typology, Couppié and Mansuy (2001b) classified the labour market entry patterns in different European countries into four groups. The first group comprises the countries where the model of integration of new entrants into the labour market is close to that of regulated inclusion. The second group includes countries where the

**TABLE 1. Labour market entry patterns**

	<i>Model of labour market entry</i>		
	<i>Regulated inclusion</i>	<i>Selective exclusion</i>	<i>Selective exclusion + competitive regulation</i>
<i>Differences between new entrants and experienced workers in:</i>			
–rate of unemployment	Low	High	Average
–exit from unemployment	Average	Low	High
–vulnerability to unemployment	Average	Low	High
–ISEI score	Low	High	Average to high
<i>The effect of education on youth's:</i>			
–unemployment rate	High (lower educated entrants have disadvantages)	Low	High
–exit from unemployment	High (lower educated entrants have disadvantages)	Average	High linear effect
–vulnerability to unemployment	High	Low	High (lower educated have disadvantages)
Concentration of young workers to industries	Low	High	Average
Job mobility of new entrants	Average	Low	High

Source: Cedefop (2001), Couppié and Mansuy (2001a), Couppié and Mansuy (2001b).

pattern is close to selective exclusion. In the third type, the competitive regulation is tempered by the selective exclusion for less qualified young people. Couppié and Mansuy (2001b) characterise the fourth group<sup>2</sup> as having a composite pattern representing all three forms of regulation. Compared to the third group, diplomas have a lower effect on the entry of youth into labour market. This model seems to be rather close to competitive regulation model.

### 3. Estonian institutional context

#### 3.1. Educational system

In the socialist period, the Estonian educational system was a part of the Soviet educational system. It was constructed as an integral part of the party-state institutional structure and organised on the basis of following main principles: centralisation, standardisation, utilitarian and egalitarian goals. The educational system was highly centralised and state controlled. The linkage between each level of education and the future job was clearly defined (Helemäe *et al.* 2000). Vocational schools trained skilled workers; secondary specialised schools trained semi-professionals. General secondary school was the most traditional academic track to follow and graduation from universities usually guaranteed access to high-level jobs (jobs of professionals and managers). Educational certificates played a more important role when access was desired to various specific jobs and careers. In this sense, schools and curricula were modelled after the example of the German system with clear social divisions. Nevertheless, the coupling of certificates and job opportunities in Estonia was quite different from the German case because the status match often tended to overweigh the skill match. Planning guaranteed the provision of status-adequate job placements even without skill match. Such kind of occupational matching has been found in several former socialist countries (Solga and Konietzka 1999; Róbert and Bukodi 2005).

Today, the Estonian educational system is characterised by a high level of standardisation and a medium level of stratification. While the high standardisation of the socialist period was reduced in the early 1990s, the second half of 1990s witnessed an increase in standardisation, most notably in the form of standardised graduation exams at the end of the secondary school called 'state exams'. On the secondary level, young people have the

2. First group includes Denmark, Germany and Austria; the second Greece and Italy, the third France, Sweden and Finland and the fourth Belgium, The Netherlands, Portugal, Spain, the UK and Ireland.

opportunity to choose between the general and vocational track. Up to 1999 they could also opt for secondary specialised education. While general secondary schools provide for a classical academic track giving their graduates the best preparatory education for further studies at the university, vocational schools can practically be considered as dead ends (Saar 1997). The vocational track is dominated by negative selection in the sense that those who have been denied admission to other educational tracks usually go to vocational schools.

The differentiating role of the secondary education track did not substantially decrease during the 1990s. Although the share of basic school graduates opting for a vocational track decreased, the internal differentiation of general secondary education increased. Regional differences between schools also increased, as well as the clear differentiation between ordinary schools and elite schools who select their pupils on the basis of their own criteria.

In the 1990s there was an expansion of higher education in Estonia: the number of both higher education institutions as well students grew constantly (Heinlo 1998). Within 4 years (1996–1999) the enrolment into universities increased by 51% (Education 1999/2000). Estonia together with the UK, France, Spain, Germany and The Netherlands belong to the group of countries with medium proportions of people with tertiary education (European Commission 2002).

In Table 2, the countries are classified by the characteristics of their educational systems. There are two indicators characterising the vocational specificity of educational systems: participation in vocational secondary schools is measured by the percentage of upper secondary school students enrolled in vocational education. As a result of the large share of people in the general secondary education track, the Estonian educational system is similar to that of the Southern European countries and Ireland. In addition, a distinction is made between the countries having an apprenticeship system where training and working are combined (dual system) and countries where vocational training is mainly school-based. Estonia, similar to most European countries, belongs to the latter group.

Since the Estonian secondary education system is based on the German model, Estonia should be classified as a country with a stratified and differentiated educational system. However, the actual extent of stratification in Estonia means it should be placed after Germany because in Germany as well as in Austria and The Netherlands, the differentiation takes place at a much earlier stage than in Estonia. The absence of school-to-work linkages comprises another great difference from the German-speaking countries. In the former centrally planned system there was a well-established link between schools and enterprises. With the introduction of reforms towards market economy this link was dismantled in Estonia.



**TABLE 2. Institutional context in different countries: educational systems**

Country	Participation in vocational secondary schools (%) <sup>a</sup>	Dual system <sup>b</sup>	Stratification of secondary education <sup>c</sup>	Upper secondary qualifications (%) <sup>d</sup>	Tertiary education share (%) <sup>e</sup>
Austria	71	1	2	86	16
Denmark	55	1	0	75	33
Germany	63	1	2	79	26
The Netherlands	68	1	2	73	27
Spain	34	0	1	69	29
Italy	25	0	1	71	12
Greece	32	0	1	81	26
Portugal	28	0	0	80	11
France	57	0	1	84	27
Belgium	67	0	1	83	35
Sweden	49	0	0	85	32
Finland	55	0	0	90	41
UK	67	0	0	84	28
Ireland	–	0	0	81	21
Estonia	33	0	1	84	29

Source: Shavit and Müller (2000), European Commission (2002), Velden and Wolbers (2003).

<sup>a</sup>Participation in vocational secondary schools is measured as the percentage of upper secondary school students enrolled in vocational education. Source: European Commission 2002.

<sup>b</sup>1 – countries with an apprenticeship system in which learning and working are combined (dual system); 0 – absence of an extensive dual system. Source: Velden and Wolbers 2003.

<sup>c</sup>0 – the prevalence of comprehensive schools that may or may not practice curricular and/or ability-based tracking; 1 – a prevalence of between-school tracking such that those on the academic route usually attend separate schools from those on the lower or vocational route; 2 – an extreme form of stratification with very early differentiation among a plurality of programs. Source: Shavit and Müller (2000).

<sup>d</sup>Percentage of those aged 22 who have completed at least upper secondary education. Source: European Commission (2002).

<sup>e</sup>Percentage of people aged 30–34 with tertiary education qualifications. Source: European Commission (2002).

Thus, the low proportion of the secondary school students attending the vocational track, the medium level of stratification, and the rapid expansion of tertiary education make the Estonian educational system more similar to the same of the Southern European countries (especially in Spain and Greece), as well as Belgium and France.

### 3.2. Labour market institutions

According to the evaluation of the World Bank, Estonian Employment Protection Legislation falls in the middle range in comparison to a group

of the EU countries (Riboud *et al.* 2002: 6). Employment protection in Estonia is considered to be stronger than in the UK and Ireland but weaker compared to the Southern Europe (Table 3). However, the main problem of the legal regulation of the labour market in Estonia is employers' unwillingness to follow the necessary regulations. In the private sector and in small firms, violations of working time, work safety, and holiday regulations are particularly common (Arro *et al.* 2001).

The main reason for violation of such regulations is the weakness of trade unions. During the 1990s, the union membership declined in Estonia from almost 100% to about 12–13% (Arro *et al.* 2001: 62). Thus, the union density in Estonia is quite similar to that of the US and Spain (Riboud *et al.* 2002: 49).

**TABLE 3. Institutional context in different countries: employment and unemployment protection**

Country	Employment protection <sup>a</sup>	Trade union density <sup>b</sup>	Collective bargaining coverage <sup>c</sup>	Unemployment benefit replacement ratio <sup>d</sup>	Unemployment benefit duration index <sup>e</sup>	Spending on labour market policies <sup>f</sup>
Austria	2.4	30	92	0.25	0.68	0.46
Denmark	1.5	88	69	0.66	1.00	0.94
Germany	2.8	30	79	0.37	0.75	0.39
The Netherlands	2.4	27	82	0.70	0.60	1.30
Spain	3.2	15	83	0.63	0.29	0.14
Italy	3.3	35	70	0.42	0.00	0.16
Greece	3.5	33	–	–	–	0.09
Portugal	3.1	40	70	0.65	0.58	0.28
France	3.1	9	95	0.59	0.47	0.28
Belgium	2.1	69	96	0.46	0.78	0.40
Sweden	2.4	79	92	0.74	0.02	0.50
Finland	2.1	79	83	0.54	0.63	0.35
UK	0.5	29	39	0.17	0.96	0.17
Ireland	1.0	45	66	0.35	0.77	0.35
Estonia	2.3	15	29	0.10	0.00	0.02

<sup>a</sup>Employment protection is measured by the overall strictness of employment protection legislation in a country. *Source:* Riboud *et al.* (2002).

<sup>b</sup>*Source:* European Commission (2003).

<sup>c</sup>*Source:* European Commission (2003).

<sup>d</sup>Initial benefit level divided by previous earned income. *Source:* Riboud *et al.* (2002).

<sup>e</sup> <sup>b</sup>Based on  $[0.06 \text{ (replacement ratio in 2<sup>nd</sup> and 3<sup>rd</sup> years of a spell)} + 0.04 \text{ (replacement ratio in 4<sup>th</sup> and 5<sup>th</sup> year of a spell)}] \div \text{(replacement ratio in the 1<sup>st</sup> year of a spell)}$ . *Source:* Nickell (2003).

<sup>f</sup>Spending per unemployed individual as a percentage of GDP per labour force participant. *Source:* Riboud *et al.* (2002).

In countries where the percentage of unionised workers is low, collective agreements can still cover a large number of workers securing their rights. This is the case for example in France and Spain. In Estonia, however, the rate of workers' interests' coverage by collective bargaining (i.e., the proportion of workers who have their income and working conditions set by collective agreement) is very low, even lower than in the UK.

While according to the evaluation of the World Bank the co-ordination between the employers and trade unions in Estonia is on the medium level (Riboud *et al.* 2002: 49), in reality, the collective bargaining system in Estonia is poorly developed on enterprise, branch as well as state level (Arro *et al.* 2001). This allows for relatively high wage flexibility.

The Estonian labour market regime has been characterised as very flexible with only setting up very few entry and exit barriers (Freytag 2002). With respect to low trade union density and collective bargaining coverage it resembles the one in the UK.

In Estonia, the overall expenditure on labour market policies is the lowest among the transition countries comprising 0.16% of the GDP (Eamets 2001). Regulations for the recipients of unemployment benefits are very restrictive. For various reasons, many unemployed people do not qualify for unemployment benefits, which could be a reason why only a half of them register themselves as unemployed. As a result, these people also lose the opportunity for further training, which is available for the registered unemployed only. Estonia uses the flat rate unemployment benefit system. The replacement ratio of unemployment benefit is very low (below 10% of the national average income). In relative terms, the active labour policy measures have declined in the last years. Estonian unemployment policy is closer to the United Kingdom and the Southern Europe than to the Central and Northern European countries (Table 3).

#### 4. Hypotheses

The Estonian educational system seems to be quite similar to the educational systems in the Southern European countries. However, the employment as well as unemployment protection is much lower in Estonia than in the countries named above (see also Saar 2005).

We suppose that different labour market institutions and educational systems have an important effect on the labour market entry process of young people. Using the comparison of the labour market institutions presented previously we can propose the following hypothesis: the labour market entry process in Estonia is most similar to this process in the

UK and Ireland. On the typology scale from selective exclusion to regulated inclusion, Estonia should be placed in the middle closer to the selective exclusion model with some features of the competitive regulation model.

According to Table 1 we could formulate following hypotheses for the labour market entry process in Estonia:

*Hypothesis 1.* New entrants have a higher unemployment rate than experienced workers but in Estonia, the differences between these two categories are lower than in countries with selective exclusion and higher than in countries with regulated inclusion.

*Hypothesis 2.* Higher level of education protects the entrants from unemployment. In Estonia, the effect of education is higher than in countries with selective exclusion but lower than in countries with regulated inclusion.

*Hypothesis 3.* Compared to experienced workers, new entrants have a greater risk of losing their jobs as well as higher probability to leave unemployment. The differences between these two groups are average compared with other countries.

*Hypothesis 4.* The least qualified labour market entrants have the lowest probability to leave unemployment and the highest risk of losing jobs. The effect of education in Estonia is stronger than in the countries with selective exclusion.

*Hypothesis 5.* Labour market entrants have considerably lower job position than experienced workers.

*Hypothesis 6.* Low employment protection in Estonia supports high job mobility of labour market entrants. Job mobility is more intensive than in the countries with selective exclusion as well as regulated inclusion.

## **5. Data and statistical methodology**

The following analysis draws upon data from the Estonian Labour Force Survey (ELFS) 2002. ELFS carried out by the Statistical Office of Estonia is representative for the entire working-age population. In addition to standard labour market information, respondents aged 15–35 were asked to provide information about their social background, all the quits from the educational system, and the first significant job. In total, the dataset used in this analysis includes 15,909 observations.

We will compare labour market entrants and experienced workers. An approach to the concept of 'labour market entrants' requires information on the individuals' pathways to a stable job position. In constructing a 'labour market entrants' category we will use information on the dates (month and year) of entry into the first permanent job.<sup>3</sup> The first permanent job was defined as non-marginal employment at least 20 hours per week that has lasted at least 6 months and started after the employee left continuous education. We included those respondents who have finished their studies and have been unemployed since having left school additionally in our sample. We will identify various categories of respondents: firstly, labour market entrants consist of individuals aged over 15 and under 35 who entered the labour market less than 5 years ago. Two sub-categories have been identified: entering the labour market from 0 to 2 years ago and from 3 to 5 years ago. Secondly, experienced workers – respondents aged 16–50 entering the labour market more than 5 years ago.

The paper will first present descriptive evidence on the differences in labour market outcomes for labour market entrants and experienced workers in Estonia and in the EU countries. Labour force outcomes were measured in two ways: the odds of being unemployed at the time of the survey, and the occupational attainment as the ISEI score (an index of occupational status constructed by Ganzeboom (see Ganzeboom and Treiman 1996)). Following the first description of the phenomenon in different countries we will explore the role of educational achievement. The level of education is measured using the following classification: low (having attained no more than lower secondary qualifications), medium (vocational secondary education or general secondary education), high (tertiary education).

We differentiate between two situations: the initial search period and the instability of the early career. First we will observe both the exit from unemployment (persons being unemployed a year before) and vulnerability to unemployment (the mobility from employment to unemployment of persons employed a year before). Mobility from unemployment to a job indicates the relative ease of exiting unemployment. 'Vulnerability to

3. Couppié and Mansuy (2001a) have used a different method. The European Labour Force Survey did not include information on the dates of entry into the first permanent job. They used information on the highest level of general education and post-school training attained by individuals. By drawing on the national educational contexts they constructed the typical ages of leaving educational system. On the basis of this information and the age of respondents the theoretical period elapsing since the diploma was calculated.

unemployment indicates a relative fragility on the labour market as it reveals the existence of latency periods between two jobs' (Couppié and Mansuy 2001b). We compare these respective transitions for both labour market entrants and experienced workers. Complementary to this, we will also explore the role of education in more detail considering the circumstances under which the individuals face the risk of unemployment.

A very important dimension characterising labour market entry process is the intensity of job mobility. Rigid youth labour market regulation in terms of formal employment protection will have an impact on career mobility patterns among labour market entrants decreasing job mobility (Gangl 2003).

Based on macro level data the analysis will then attempt to empirically identify distinct country clusters.<sup>4</sup> Cluster analysis is one tool for reducing the complexity of trajectories by summarising them. Appendix 1 summarises the indicators used in the cluster analysis. Indicators cover unemployment features, the intensity of job mobility, the possible concentration into specific sectors and the occupational downgrading associated with youth employment. Previous analysis has shown that macroinstitutional differences play a much more limited role with respect to employment outcomes than with respect to unemployment risks (see, for example, Gangl *et al.* 2003). Therefore we decided to pay special attention to unemployment features and include the ratio of unemployment rates as well as three measures of unemployment rate at different levels of education into the cluster analysis.

Data about the EU countries derives from the book 'The transition from education to working life. Key data on vocational training in the European Union' published by Cedefop (2001) as well as from the working paper of Couppié and Mansuy (2001b). The set of indicators is somewhat different from indicators used by Couppié and Mansuy (2001a) because we have only used the published macro level data for the EU countries. Nevertheless, the set chosen should reflect the labour market entry process successfully enough. The second step of the analysis will focus on the number of different patterns of labour market entry in Europe and especially on the location of Estonia in this classification.

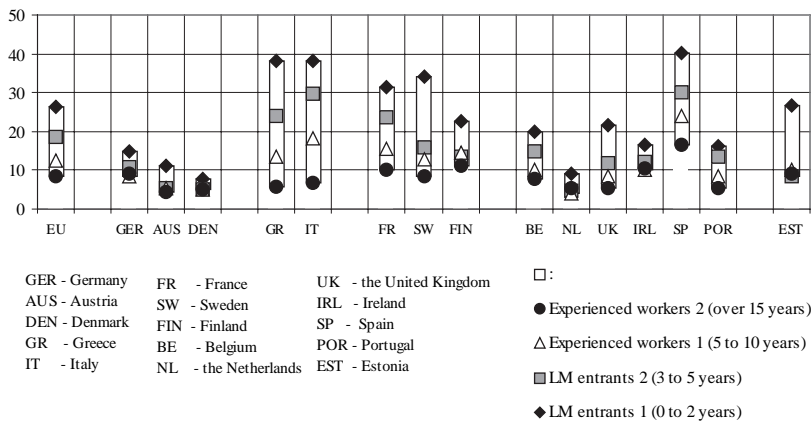
4. Estonian set of indicators is calculated by author. For other countries we use data from report published by Cedefop (2001) and the working paper of Couppié and Mansuy (2001a).

## 6. Findings

### 6.1. Unemployment rate

In Estonia, as everywhere in Europe the rate of unemployment falls for those who have been longer on the labour market (Figure 1). Even 2 years of experience greatly reduces the risk of unemployment. Although entrants with less than 2 years' experience are at greater risk of unemployment than experienced workers the advantages connected to the longer labour market experience differs considerably from country to country (see also Gangl 2001). It is most evident in countries with the selective exclusion model (Greece and Italy) as well as in Spain, France and Sweden. On the other hand, it is low in countries representing the regulated inclusion model (Germany, Austria, and Denmark), in The Netherlands and Ireland. In Estonia, the differences are on the medium level, thus closer to those in the United Kingdom.

What distinguishes Estonia is that for workers, who entered the labour market more than 2 years before the survey was conducted, experience seemed to have no effect on the risk of unemployment. Only the labour market entrants, having less than 2 years of experience, faced this disadvantage. Above that level the risk of unemployment was identical. The situation is similar to the unemployment pattern in countries with the regulated inclusion model. However, the unemployment rate among labour market entrants in Estonia is more than twice higher than in these countries. This result confirms the first hypothesis. The Estonian pattern resembles that of Sweden showing high unemployment rate for recent



**Figure 1.** Rate of unemployment of labour market entrants and experienced workers, %. *Source:* Cedefop (2001), Estonian LFS (2002).

labour market entrants and small differences between experienced workers and labour market entrants having 3–5 years of working experiences.

Figure 2 provides cross-tabulation between education and the rate of unemployment for labour market entrants (entering the labour market earlier than 5 years ago) in different countries. European countries have

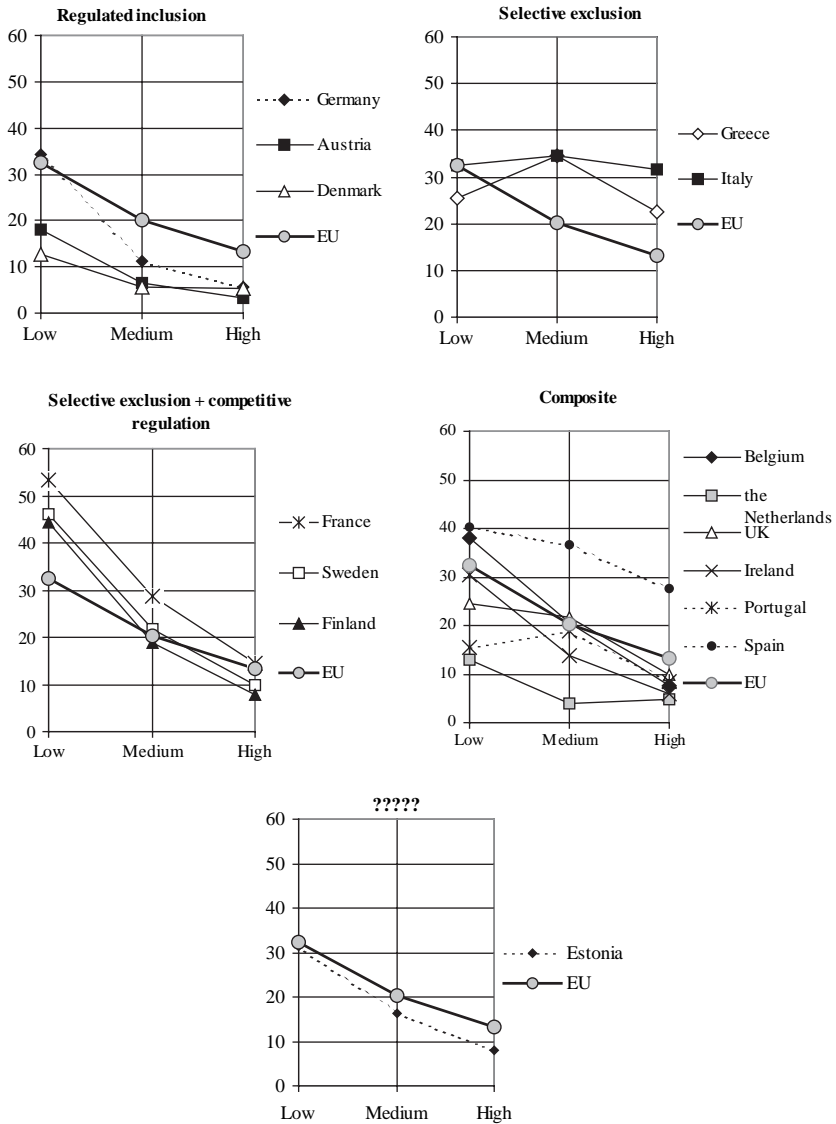


Figure 2. Rate of unemployment of labour market new entrants by level of education, %.



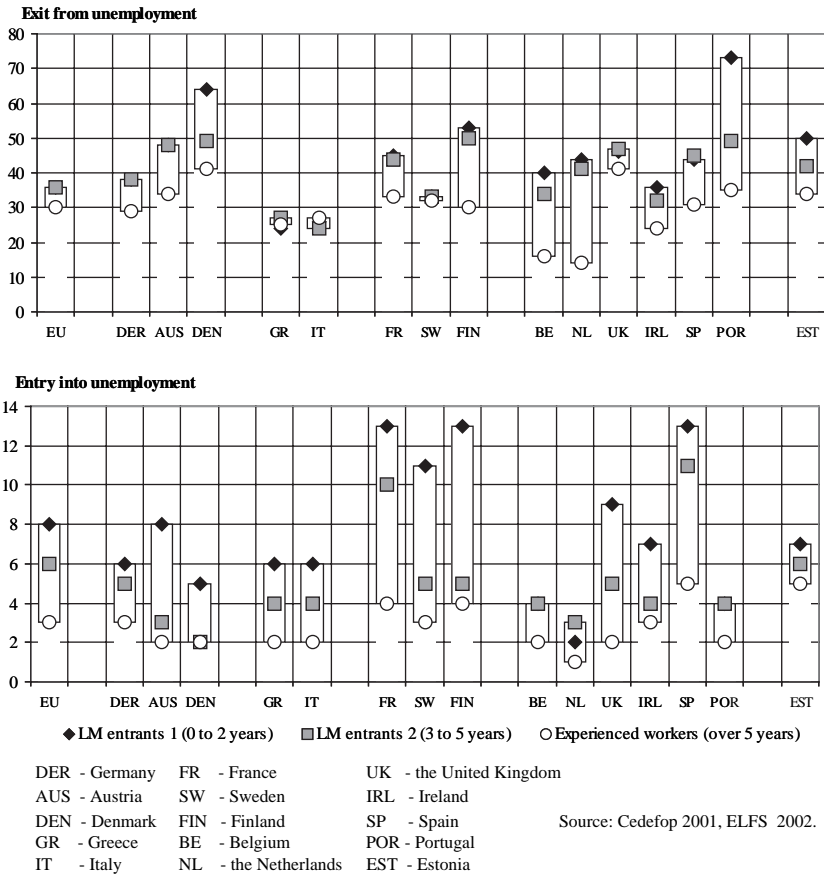
tentatively been classified into four groups expectedly having different labour market models. The results show substantial variation, both between the countries and the types of education. Higher level of education protects labour market entrants from unemployment; the only exceptions to the rule seem to be Italy and Greece. These countries are different in the sense that there are hardly any benefits attached to higher levels of education in terms of unemployment. Even young people having the highest level of education have difficulties entering the labour market. Bernardi *et al.* (2000: 225) have concluded that in Italy, the insider protection often gives rise to a collective form of exclusion, which is working against younger job seekers.

In Estonia, the unemployment rates on the upper secondary level are about half the figure for the lowest qualified, and reduced to about one-third for labour market entrants with tertiary education. Similar relations hold in Ireland and Belgium (the countries with composite model). Estonian unemployment pattern differs considerably from the one in the countries with regulated inclusion because the unemployment rate for all levels of education is higher in Estonia than in these countries (one exception is the labour market entrants with lowest qualification level in Germany). In Estonia and Ireland, the effect of education on the unemployment risk seems to be linear and quite as expected, also higher than in the countries representing the selective exclusion model but lower than in the countries with regulated inclusion.

## 6.2. Vulnerability to unemployment

Seeking the first job is not the only high-risk factor of unemployment for labour market entrants. Compared to experienced workers, they also have a greater risk of losing their jobs in most European countries. Labour market entrants are already disadvantaged compared to experienced workers, but they are all the more at the risk of losing their jobs having only minimal work experience. Estonian labour market entrants did not have higher risks of losing their job than experienced workers, which is quite unique for European countries (Figure 3).

Nevertheless, even the initial conversation of qualifications into job position has occurred, we find evidence of the effect of education on unemployment risks in the early labour market career (Table 4). The analyses reveal both cross-national similarities and dissimilarities. The commonalities between the observed countries refer to two different aspects of the educational stratification pattern: (1) having a low level of



**Figure 3.** Exit from unemployment and entry into unemployment, %.

education is a handicap in most European countries, the risk of losing the job is greater; (2) the relative advantage provided by tertiary education. The effect of educational level is more influential in countries dominated by selective exclusion tempered by competitive regulation, as well as in Germany. The specificity of the German pattern is the most disadvantageous position of labour market entrants with low level education compared to the other educational groups. The same pattern is also characteristic of the Estonian labour market entrants. 12% of young people with the basic level of education became unemployed during 1 year after entering the labour market and for the individuals with secondary education this figure is three times lower and for the tertiary education graduates it is six times lower.

**TABLE 4. Exit from unemployment and entry into unemployment by level of education, %**

Country	Exit from unemployment			Entry into unemployment		
	Low	Medium	High	Low	Medium	High
EU	31	36	52	10	7	4
<i>Regulated inclusion</i>						
Germany	29	41	55	15	5	2
Austria	–	–	–	9	5	3
Denmark	–	–	–	8	3	2
<i>Selective exclusion</i>						
Greece	27	23	33	4	6	3
Italy	22	27	32	5	5	2
<i>Selective exclusion + Competitive regulation</i>						
France	24	48	63	26	14	5
Finland	48	51	58	40	7	3
<i>Composite</i>						
Belgium	19	36	56	13	5	2
The Netherlands	30	42	68	6	2	2
UK	43	45	68	10	6	4
Ireland	22	43	59	11	5	2
Spain	41	43	50	16	14	8
Portugal	47	68	76	–	–	–
Estonia	26	56	92	12	4	2

–, Data not available.

Source: Cedefop (2001), Estonian LFS (2002).

### 6.3. Exit from unemployment

Although the labour market entrants are at greater risk of unemployment they are also more likely to exit from unemployment, except in Greece and Italy (see Figure 3). In Estonia as well as in Ireland and Portugal, the effect of labour market experience on the likelihood of returning to work seems to be linear. Longer working experience usually decreases this likelihood, but in Estonia this likelihood is lower than in Portugal and higher than in Ireland.

The mobility pattern between unemployment and jobs is quite different in various countries. Couppié and Mansuy (2001b: 30) have found three configurations. The first characterises countries where the position of labour market entrants is weak: their risk of losing a job is higher and the chances to exit from unemployment are on the same level as for experienced workers. France, Sweden and the United Kingdom belong to this group. Greece and Italy belong to the second configuration where there are no considerable differences between labour market entrants and

experienced workers. The third configuration is dominated by favourable prospects for labour market entrants. Compared to more experienced workers, they have greater chances to move from unemployment to a job without being affected by the risk of becoming unemployed. Estonia, Portugal and The Netherlands represent this profile. Finally, the fourth and most typical configuration characterises countries where young people have higher risks of losing the job as well as higher chances to return to employment.

Educational level seems to have an effect in the same countries as in those where the qualification affects the risk of unemployment. In Estonia, the effect of educational level on the unemployment risk as well as on the likelihood of finding a job is very strong. While most of the young unemployed with tertiary education return to employment within a year, the respective figure for the less qualified unemployed is more than three times lower. Only a quarter of them have returned to employment. The effect of education on the exit from unemployment is strongest in Estonia, compared to other European countries. This result confirms our hypothesis 4.

#### 6.4. Job positions and mobility of new entrants

Apart from the specific features of employment access companies may allocate new entrants to specific positions as well as entrants may concentrate on specific activities. Comparison of the ISEI values for labour market entrants and experienced workers indicates the relative independence between ISEI grading and accumulated experience in Estonia (see Appendix 2). This result does not confirm hypothesis 5. The ratio is quite similar to this one in countries with regulated inclusion model as well as in Sweden and Portugal.

The coefficients of variation of new entrants' share among industries indicate significant variations between countries (see also Couppié and Mansuy 2001b). The concentration is very high in Southern European countries (Italy, Greece, Portugal) as well as in Sweden. On the other side, Germany, Denmark and other countries having strong vocational training show a low degree of concentration. The variation coefficient for Estonia is relatively high too. It can be interpreted as stratified economy for labour market entry.

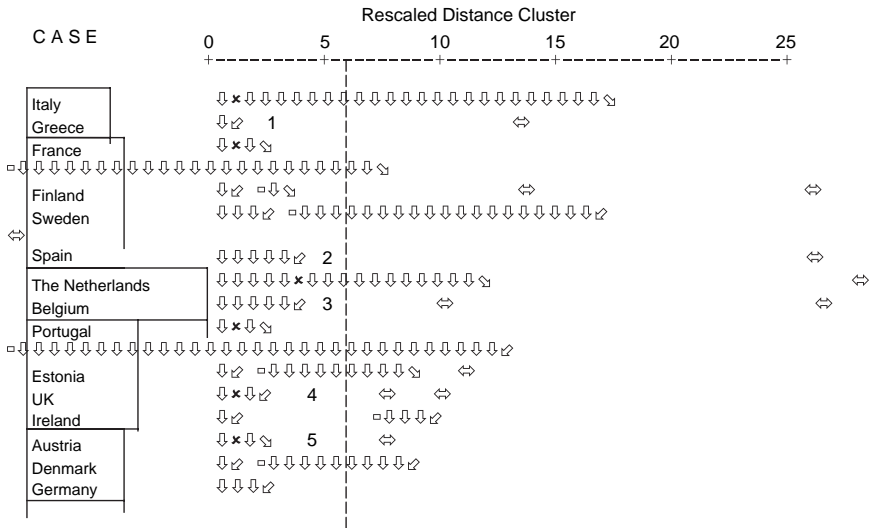
The intensity of job mobility varies strongly across countries (see Appendix 2). The most contrasting countries are from Southern Europe: Spain is characteristic of massive labour market entrants mobility while Italy and Greece experience low mobility. Surprisingly in Estonia the share of job exits among labour market entrants is relatively low too. It is higher than in Greece and Portugal but lower than in other European

countries. Low employment protection has not facilitated job mobility. This result is in accordance with our conclusion about women's job mobility. We concluded that the strong policies aimed at reducing restrictions on employers' freedom of action and at flexibilisation of labour market accompanied by weak policies aimed at reducing the impact of forced mobility on individual social welfare reduces mobility (Helemäe and Saar 2003).

## 6.5. Patterns of labour market entry

Using macro level data for cluster analysis, we have identified patterns of labour market entry. The cluster dendrogram is given in Figure 4. The cluster analysis has been carried out using the Ward algorithm<sup>5</sup> based on a squared Euclidean distance of  $z$ -standardised transforms of macro level indicators given in Appendix 1. Five clusters are clearly identifiable and seem to be relevant to previous classification.<sup>6</sup> The first cluster includes Italy and Greece, the second France, Finland, Sweden and Spain, the third The Netherlands and Belgium, the fourth Portugal, Estonia, the United Kingdom and Ireland, and the fifth Austria, Denmark and Germany. The clustering result is quite close to the grouping presented by Couppié and Mansuy (2001a).<sup>7</sup> Our classification results and the typology constructed in Cedefop (2001) are almost identical. The only

5. The Ward algorithm achieves a sequential fusion of least deviant case.
6. There is the issue of the extent to which the chosen cluster solution might depend on particular indicators. The results from a sensitivity analysis based on the deletion of single indicators from the cluster analysis are quite supportive of the solution (see Appendix 3). According to our results no single aspect of early work career is of decisive importance for arriving at the cluster solution. Effect of education on unemployment rate of new entrants, as well vulnerability to unemployment deserves special attention as probably the most influential indicators in the analysis. Removing effect of education on unemployment rate from the set of indicators leads to an important reallocation of the countries, the UK and Ireland clustering together with France, Finland and Spain, Estonia and Portugal belongs with Sweden to another cluster. Deletion of vulnerability to unemployment from the cluster analysis has changed the allocation of two countries; Belgium belongs to one cluster with France, Finland and Spain, Sweden to another cluster with the UK, Ireland, Portugal and Estonia.
7. Their second cluster is analogous with our first cluster which include Italy and Greece. The cluster closest to the regulated inclusion type includes in Couppié's and Mansuy's clustering Austria, Germany, Denmark and The Netherlands. In our clustering The Netherlands belongs with Belgium to the separate cluster. Their most heterogeneous cluster (Belgium, Ireland, France, Finland, Luxembourg, Portugal, Sweden and the United Kingdom) splits in our clustering into two clusters. Spain forms a separate cluster.



Source: for Estonia Estonian LFS 2002, for other countries LFS 1997.

**Figure 4.** Cluster analysis of pattern of labour market entry, cluster dendrogram, Ward method using a squared Euclidean distance based on z-standardized transforms.

exception is the group including countries identified as having composite model. In our clustering this group has split into two clusters. As we mentioned above, Estonia belongs to this one.

Table 5 summarises for each cluster the indicators' mean, maximum and minimum values and standard deviations. In first cluster countries new entrants' unemployment rate is more than six times higher that of experienced workers. New entrants' jobs are located in specific industries. The effect of education on unemployment rate is low. Job mobility is limited and youth's relative chances for exit from unemployment are low. All this suggests that the cluster is the closest to the selective exclusion model. High employment protection, low job flexibility and limited vocational training are institutional characteristics of these countries.

In cluster 2 the unemployment probability of new entrants compared to experienced workers is quite high but lower than in cluster 1. The effect of educational level on unemployment rate is very high. Labour market entrants with low level of education are in disadvantaged position. The downgrading risk for new entrants as well as their concentration to specific industries are on the medium level. The specific feature for countries belonging to this cluster is very high job flexibility for new entrants. It seems that high labour protection for experienced workers have caused flexibilisation of youth labour market. There is a moderate

**TABLE 5. Labour market entry patterns within clusters<sup>a</sup>**

	<i>1. cluster</i>	<i>2. cluster</i>	<i>3. cluster</i>	<i>4. cluster</i>	<i>5. cluster</i>
<i>Ratio of unemployment rates</i>					
Mean	<b>6.1</b>	2.9	2.2	2.8	<b>1.9</b>
Maximum	6.5	4.0	2.6	3.9	2.4
Minimum	5.8	2.0	1.7	1.6	1.6
Standard deviation	0.5	0.9	0.6	0.9	0.5
<i>Unemployment rate for labour market entrants with low level of education</i>					
Mean	<b>29.1</b>	<b>45.6</b>	25.5	25.4	21.6
Maximum	32.5	53.3	38.0	31.3	34.2
Minimum	25.6	40.2	12.9	15.5	12.6
Standard deviation	4.9	5.5	17.7	7.2	11.3
<i>Unemployment rate for labour market entrants with medium level of education</i>					
Mean	<b>34.5</b>	<b>26.4</b>	12.2	15.8	7.8
Maximum	34.5	36.6	20.5	18.8	11.2
Minimum	34.5	18.8	3.9	13.7	5.5
Standard deviation	0	7.9	11.7	2.3	3.0
<i>Unemployment rate for labour market entrants with high level of education</i>					
Mean	<b>27.1</b>	<b>15.0</b>	6.3	7.3	4.6
Maximum	31.5	27.6	7.6	8.4	5.5
Minimum	22.6	7.8	4.9	5.9	3.2
Standard deviation	6.3	8.9	1.9	1.1	1.3
<i>Percent of employed labour market entrants moving into unemployment during a year</i>					
Mean	5.6	<b>12.3</b>	<b>3.2</b>	6.6	6.1
Maximum	5.6	13.0	4.2	9.1	7.7
Minimum	5.5	10.6	2.3	4.2	4.7
Standard deviation	0.1	1.1	1.3	2.0	1.5
<i>Relative chances for exit from unemployment</i>					
Mean	<b>0.96</b>	1.41	<b>2.84</b>	1.53	1.51
Maximum	0.98	1.8	3.24	2.06	1.57
Minimum	0.94	1.04	2.43	1.12	1.43
Standard deviation	0.03	0.31	0.57	0.38	0.07
<i>Ratio of ISEI scores</i>					
Mean	0.93	0.93	<b>0.90</b>	0.93	<b>0.98</b>
Maximum	0.94	0.95	0.91	0.96	1.02
Minimum	0.92	0.92	0.89	0.91	0.95
Standard deviation	0.01	0.01	0.02	0.03	0.04
<i>Coefficient of variation of labour market entrants' share across economic activities</i>					
Mean	<b>0.40</b>	0.30	0.23	0.34	<b>0.20</b>
Maximum	0.43	0.39	0.24	0.39	0.24
Minimum	0.37	0.25	0.22	0.28	0.18
Standard deviation	0.03	0.06	0.01	0.04	0.03
<i>Share of mobile entrants</i>					
Mean	<b>16.2</b>	<b>36.2</b>	25.8	26.4	23.7
Maximum	17.5	54.0	26.3	33.1	30.9

**TABLE 5** (*Continued*)

	<i>1. cluster</i>	<i>2. cluster</i>	<i>3. cluster</i>	<i>4. cluster</i>	<i>5. cluster</i>
Minimum	14.8	27.0	25.3	20.8	17.9
Standard deviation	1.9	12.2	0.7	5.1	6.6

<sup>a</sup>1. cluster: Italy Greece; 2. cluster: France, Finland, Sweden, Spain; 3. cluster: The Netherlands, Belgium; 4. cluster: the UK, Ireland, Portugal, Estonia; 5. cluster: Austria, Denmark, Germany  
*Source:* Cedefop (2001), Estonian LFS (2002).

risk of long-term unemployment because new entrants have quite good chances to move out from unemployment. Nevertheless new entrants with low level of education suffer from a very high risk of recurrent unemployment. In cluster 2 the selective exclusion pole seems to be tempered by competitive regulation for least qualified labour market entrants.

In cluster 5 unemployment risk is comparable for new entrants and experienced workers. New entrants are less often downgraded than in other countries. They are not concentrated in specific industries. Job mobility is intermediate. There seems to be quite big differences in unemployment risk between labour market entrants with low level of education and higher levels of education. Strongly vocationally oriented training systems in these countries facilitate labour market entry. It means that least qualified market entrants have substantially lower job opportunities compared with entrants having vocational training. This model of integration of labour market entrants is close to the one of the regulated inclusion.

Cluster 3 is rather close to cluster 5 (the regulated inclusion model). However, some differences can be seen. While employed workers with low accumulated experience have lower risks to lose their jobs, the downgrading risks for labour market entrants are higher and they have better chances for exit from unemployment. Labour market entrants are more vulnerable to unemployment than experienced workers, but they do not suffer from long-term unemployment. In countries with regulated inclusion, the low qualified comprise the most disadvantaged group. The differences in unemployment risks between this educational group and other groups are considerable. In countries belonging to cluster 3 the impact of education on unemployment is linear. Youth labour market seems to be flexible while the job mobility is relatively intensive.

Cluster 4 containing Estonia is more heterogeneous. It has specific features as well as common trends with clusters 3 and 2. The unemployment rate among the labour market entrants is almost three times higher than among the experienced workers. The unemployment ratio is higher than in clusters 3 and 5, but still lower than in cluster 1 countries. The impact of



education on unemployment rate among the labour market entrants seems to be linear. Nevertheless, young workers with low qualification are not so much exposed to unemployment as in countries belonging to cluster 2. The unemployment risk is on the medium level. Labour market entrants have better chances to exit unemployment than experienced workers do but the differences between these two groups are not so big as in countries belonging to cluster 3. The downgrading risk for labour market entrants is on the medium level, but there is a wide variation within a cluster. The concentration of labour market entrants in specific industries is higher than in clusters 3 and 5 but lower than in cluster 1. Job mobility is intermediate and lower than in cluster 2. This cluster is the closest to the competitive regulation model. The specific feature is intermediate level of job flexibility.

Estonia seems to connect on the one side the UK and Ireland and on the other side Portugal. This result is rather surprising but our preliminary analysis has indicated that Estonian institutional regime after big changes in the 1990s is similar to this one in liberal countries by the low levels of employment protection. Nevertheless, some features are close to Southern European countries, especially strong insider–outsider logic what decreases labour market flexibility in Estonia (Saar and Täht 2005). Portugal would seem to share high employment protection with the other Southern European countries, it also shares rather deregulated youth labour market with the UK and Ireland.

There are other important institutional factors as well as public policy issues that have not been addressed in our research. Very important seems to be the role of families (Blossfeld *et al.* 2005) and special training and labour market policies, which attempt to prevent youth exclusion (see for example Ryan 2001). It will be a task for future research.

## 7. Conclusions

The analysis confirms the value of the conceptual approach adopted in the paper. Previous studies have shown that national labour market institutions and educational systems have an impact on the labour market entry process. Considering this conclusion and comparing the educational system as well as labour market institutions in Estonia and in the EU countries we have formulated hypotheses about labour market entry process in Estonia using the classification results from previous studies. The typology of labour market entry patterns helps to explain the transition process and the outcomes in Estonia.

In Estonia as well as in other countries having competitive regulation pattern:

- the unemployment rates of labour market entrants' as well as the ratio of entrants compared to the unemployment rates of experienced workers tend to be on the medium level compared with the other European countries;
- new entrants have a higher probability for leaving unemployment compared to experienced workers;
- those labour market entrants who have the best chances to enter the labour market also tend to have the best chances to profit from a fairly stable career in terms of lower risks of losing their jobs;
- the effect of educational level on the risk of unemployment and on the likelihood of finding a job is strong; and
- the concentration of labour market entrants in specific industries is quite strong.

Most of these results are consistent with the ideas underlying previous typology. At the one end of the continuum, there are the Southern European countries (except Spain and Portugal) where labour market entry process for entrants is difficult (selective exclusion model). At the other end, there are countries where the process, on the contrary, is quite smooth (low educated labour market entrants are the exception) (regulated inclusion model). Estonia, together with other countries having competitive regulation model, has medium position in this continuum.

We also found some specific features for labour market entry process in Estonia. Compared to more experienced workers, labour market entrants have greater chances to move from unemployment to a job without being affected by the increase in risk to enter unemployment. There are no downgrading risks for entrants. Analysis indicates the relative independence between labour market position and accumulated experience. The main problem for youth in Estonia is to enter into the labour market. If they have succeeded they could compete with experienced workers on equal conditions.

Labour market entrants with basic education are far more likely to be unemployed. When unemployed, they have fewer opportunities to find another job quickly because in Estonia, the effect of educational level is very strong, even stronger than in the countries where selective exclusion model is tempered by forms of competitive regulation. Exclusion from entry into employment operates on a clear-cut qualificational base. This kind of educational sorting finally leads to labour market segmentation based on the skill levels among labour market entrants. The youth labour market flexibility is rather low and hence the institutional rules worked out during the reform period that were aimed at preventing labour market rigidities have not worked as intended.

With regard to the policy aspect, previous studies have shown that policies that are effective in one type of transition system are not necessarily effective in the other (see, for example, Ryan 1999; Smyth *et al.* 2001). Policies for the transition from school-to-work must be designed in accordance with the particular transition system in which they are to be introduced. Our analysis demonstrated the similarity between the labour market entry processes in Estonia, the United Kingdom, Ireland and Portugal, and it would be wise to learn from each others experiences. For example, the attempts to establish a high status work-based training route have been unsuccessful in the United Kingdom. Its declining popularity among young people has led to the introduction of more radical reforms connected to the introduction of a unified system of post-compulsory education in Scotland and 'linkages' approach seeking to reduce differences between tracks in England (Hannan *et al.* 1999; Raffe 2001). Both reforms aim to raise levels of participation, attainment and progression and to raise the status of vocational education (Brannen *et al.* 1999).

Of course, the institutional borrowing from abroad often fails but the institutional development may constitute another alternative. According to Ryan (1999), there are two important obstacles to institutional development though: lack widely based employer and employee organisations and short-termism, both economic and political. Both of them are also present in Estonia, and the first task should be to remove them. Thereafter, the implementation of more radical reforms in the educational system would be possible in order to facilitate the education-to-work transition for the Estonian youth.

This paper has mainly been based on cross-sectional data. Now it remains unclear whether experienced workers really represent age differences compared to entrants or rather entrant's cohort differences. The analysis of Toomse (2003) indicates that young people starting their career right after the collapse of the Soviet system were able to turn their youthfulness and lack of experiences into an advantage and benefit from the better employment opportunities. The use of longitudinal information and comparison of different age cohorts will add a dynamic aspect to the analysis. We consider this very much a task for future research.

### **Acknowledgements**

This study has been prepared as part of the research project funded by Estonian Science Foundation (grant no. 5110). Support by and discussion with my colleagues Jelena Helemäe, Rein Vöörmann, Marge Unt and Mari

Toomse are gratefully acknowledged. Two anonymous reviewers provided additional invaluable comments. Data from the Estonian Labour Force Survey have been provided by Estonian Statistical Office.

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## Appendix 1. Indicators used in macro level analysis

<i>Indicator</i>	<i>Description</i>
Job access	Ratio of unemployment rates (labour market entrants/experienced workers)
Effect of education on unemployment rate of labour market entrants	Unemployment rate for labour market entrants with low level of education Unemployment rate for labour market entrants with medium level of education Unemployment rate for labour market entrants with high level of education
Relative chances for exit from unemployment	Ratio of transition rates (transition rate for labour market entrants/ transition rate for experienced workers)
Vulnerability to unemployment for labour market entrants	Percent of employed labour market entrants moving into unemployment during a year
Relative downgrading risk	Ratio of ISEI scores (the weighted mean of ratios calculated on average ISEI scores in two different groups (one for labour market entrants and experienced workers with low and medium level of education and one for labour market entrants and experienced workers with high level of education))
Concentration of entrants to industries	Coefficient of variation of labour market entrants' share across economic activities
Job mobility of labour market entrants	Transition rate for labour market entrants from a job held the previous year to another employment status (unemployed, new job)



## Appendix 2. Values of indicators included in the cluster analysis

Country	Ratio of unemployment rates	Unemployment rate for labour market entrants with			Relative chances for exit from unemployment	Vulnerability to unemployment for labour market entrants	Relative downgrading risk	Coefficient of variation of labour market entrants' share across economic activities	Share of mobile entrants
		Low educational level	Medium educational level	High educational level					
Austria	2.44	17.9	6.6	3.2	1.43	7.7	94.6	23.8	17.9
Denmark	1.55	12.6	5.5	5.2	1.57	4.7	97.7	17.7	30.9
Germany	1.63	34.2	11.2	5.5	1.52	6.0	102.1	18.6	22.2
The Netherlands	1.72	12.9	3.9	4.9	3.24	2.3	88.6	21.6	25.3
Spain	2.44	40.2	36.6	27.6	1.43	13.0	93.1	27.5	54.0
Italy	5.79	32.5	34.5	31.5	0.98	5.6	92.5	42.6	14.8
Greece	6.49	25.6	34.5	22.6	0.94	5.5	94.1	37.9	17.5
Portugal	2.93	15.5	18.8	8.4	2.06	4.2	95.1	38.8	25.3
France	3.15	53.3	28.6	14.5	1.39	12.5	91.9	28.0	29.5
Belgium	2.61	38.0	20.5	7.6	2.43	4.2	90.0	23.6	26.3
Sweden	4.02	46.0	21.7	10.0	1.04	10.6	95.0	38.6	27.0
Finland	2.04	44.3	18.8	7.8	1.80	13.0	93.7	25.3	34.3
UK	3.91	24.6	14.5	6.9	1.12	9.1	91.1	28.1	33.1
Ireland	1.60	30.3	13.7	5.9	1.49	6.7	90.6	35.5	26.3
Estonia	2.85	31.3	16.2	8.1	1.47	6.6	96.4	34.4	20.8

Source: Cedefop (2001), ELFS (2002).

**Appendix 3. Sensitivity analyses of clustering results**

<i>Variables included</i>	<i>Cluster solution</i>
BASE: FULL MODEL	(IT, GR)-(FR, FIN, SW, ES)-(NL, BEL)-(POR, EST, UK, IRL)-(AUS, DK, GER)
Full model – rate of unemployment	(IT, GR)-(FR, FIN, SW, ES)-(NL, BEL)-(POR, EST, UK, IRL)-(AUS, DK, GER)
Full model – effect of education on unemployment rate	(IT, GR)-(FR, FIN, ES, UK, IRL)-(NL, BEL)-(POR, EST, SW)-(AUS, DK, GER)
Full model – relative chances for exit from unemployment	(IT, GR)-(FR, FIN, SW, ES)-(NL)-(POR, EST, UK, IRL, BEL)-(AUS, DK, GER)
Full model – vulnerability to unemployment for labour market entrants	(IT, GR)-(FR, FIN, ES, BEL)-(NL)-(POR, EST, UK, IRL, SW)-(AUS, DK, GER)
Full model – relative downgrading risk	(IT, GR)-(FR, FIN, SW, ES)-(NL, BEL)-(POR, EST, UK, IRL)-(AUS, DK, GER)
Full model – concentration of entrants to industries	(IT, GR)-(FR, FIN, SW, ES)-(NL)-(POR, EST, UK, IRL, BEL)-(AUS, DK, GER)
Full model – job mobility	IT, GR)-(FR, FIN, SW, ES)-(NL, BEL)-(POR, EST, UK, IRL)-(AUS, DK, GER)

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