IN FOCUS

I. The Hungarian Labour Market
– A European Perspective
II. The Failures of "Uncertified"
Vocational Training

Edited by
JÁNOS KÖLLŐ

PREFACE

The *In Focus* section of the *Hungarian Labour Market* yearbook usually summarises previously published research. This year we have decided to depart from this tradition to some extent. The first part of this year's *In Focus* presents a simple descriptive statistical overview of the Hungarian labour market as seen through the data of the *European Labour Force Survey* (EU LFS). The microdata of the EU LFS became available recently, and analytical research is likely to take quite some time. We believe that even the raw data, which is now readily comparable across countries thanks to Eurostat efforts, is suitable for revealing some of the characteristic features of the Hungarian labour market from a hitherto unfamiliar perspective. We would like to stress that we shall not attempt to give an explanation for observed deviations from European trends (if any) – what we undertake to do is present the comparative data in order to bring clearly to light those Hungarian specifics that actually need to be explained by future research. Naturally, this compels us to present more statistics than usual, while explanations and references to the literature will be given far less space.

More in line with our usual practice, in the second part of *In Focus* a specific aspect of the labour market is discussed in as much detail as is possible on the basis of currently available research evidence. *Vocational training* is a relatively under-researched area of the Hungarian labour market, even though not a day goes by without businessemen and policy makers making explicit comments on the shortage of skilled workers, the quality of training, and the desirable direction of development. The focus of this chapter is an overview of the results of research on the labour market position of workers with vocational qualifications but no secondary school qualifications (Matura certificates), and an attempt is made to draw the most important conclusions for education policy.

THE EDITOR

I. THE HUNGARIAN LABOUR MARKET – A EUROPEAN PERSPECTIVE

BLANKA BAJNAI, SZILVIA HÁMORI & JÁNOS KÖLLŐ

Introduction

In 2007 researchers were given access to the micro data of the *European Labour Force Survey* (EU LFS), a collection of quarterly and annual labour force surveys covering the EU member states. The data allows us to analyse the major characteristics of the labour market while choosing our own preferred grouping and using multivariate models. The Eurostat online interactive database allows some of the published data to be grouped according to age and educational attainment, but it is not always possible to limit the analysis to the specific population (or group the data in the specific way) required for the purposes of a given research.

In this first chapter of *In Focus* we use individual level data from the EU LFS with the aim of characterising selected aspects of the Hungarian labour market. Setting several issues of crucial significance aside we selected areas in which Hungary's position in an international context had previously been difficult to establish due to the lack of comparable data. The chapter departs from the tradition of *In Focus* in that it presents descriptive statistics rather than research evidence. We firmly believe that an overview of the data constitutes a major step forward relative to comparisons based on small samples, and limited to a small number of countries.

The data on employment confirms that the substantial disadvantage observed among the 15–64 year old population in Hungary is primarily explained by low levels of employment among the oldest and the youngest: the transition from school to work is a slow-moving process and a large number of men over the age of 40 have left or are leaving the labour market permanently. As regards people "of the best working age," Hungary's disadvantage is far less pronounced thanks to a lower level of absenteeism and long working hours. The population of the best working age is divided into two groups with a remarkably sharp boundary between them: those who work the standard eight hours a day, five days a week, and a strikingly large group of those who are out of work and do not even search for jobs. Forms of labour attachment other than full time employment are underdeveloped and rudimentary: few of the employed work part time, few workers are temporarily away from their workplace; few people have working hours deviating from the standard, and those who do, do not owe this to flexible working arrangements; few people work at home; few workers participate in adult training programmes, and

even fewer attend training courses as part of their regular working hours. Of those who are not employed, few are actively seeking employment, and few register with the unemployment agency. The share of persons out of work who have no desire to find paid employment is particularly high.

The first part of this chapter is primarily concerned with the features mentioned above, namely the sharp boundary between employment and non-employment in the population of "best working age". This will be supplemented by a discussion of the two areas, where employment is low by any standards: transition from school to work, and employment in old age.

1. The data

The overview is based on data from 2005. For most countries four quarterly observations were recorded, but only a single observation is available for some of the member states. We use the quarterly population weights to make our calculations representative, because not all of the countries compute annual weights.[1]

As regards the most important grouping variables, *educational attainment* is measured according to the classifications provided by Eurostat (primary, secondary and tertiary), where vocational training involving no Matura qualifications is classified as secondary education.[2] The continuous variable of *age* unfortunately fell victim to the efforts ensuring anonymity; it has been replaced by five-year cohort variables in the dataset made available to researchers. The data on social benefits and wages has also been removed, leaving only a dummy variable indicating the presence or absence of benefits specifically tied to unemployment. Identifiers that would allow individuals to be followed over time have been removed from the public version of the dataset, and since they were not replaced with anonymity-preserving codes, it is impossible to build panel datasets for those countries, where individuals are observed several times in the national survey (as is the case in Hungary, where each respondent is interviewed six times in an 18 month period).

The majority of the national labour force surveys follow the Eurostat recommendations. They are similar in their choice of variables and in their concepts, although not all variables are recorded in all countries and some national surveys (especially those of Iceland, Cyprus and the Baltic States) appear to be too small to allow detailed analyses. Cells with an insufficient number of observations will either be deleted from the tables, or starred, and we add notes to explain why some countries are missing from the given table or equation.

2. Employment in the population aged 15–64 years

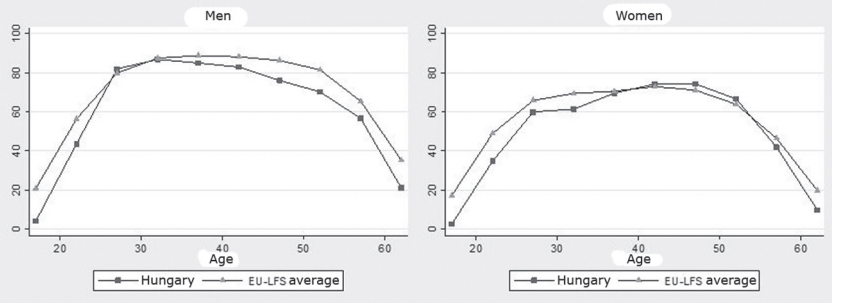
There are three groups for which the figures indicate substantially lower employment rates in Hungary compared to the European average: *young peo-*

1 The results of the two types of weighting show little difference.

2 This also applies to Poland in the European Labour Force Survey. In the publication *Education at a Glance* (*OECD,* 2007c), Poland lists vocational training in a separate column, distinct from other forms of secondary level education.

ple, men older than 40, and women aged 25–40. As shown by the curves of employment by age displayed in *Figure 1.1*, young Hungarians appear to be characterised by low levels of employment both among men and women. Men aged 25–40 display similar or only marginally lower employment rates than the EU average, but looking at the next section of the curves, a wide gap can be seen between the Hungarian and the European average figures for men aged 40–54. Employment rates among women aged 25–40 are similarly low, but the figures characterising 35–59 year old women approach or, for some cohorts, even surpass the European average.

Figure 1.1: Employment rates among the population aged 15–64 as defined by the ILO-OECD, second quarter of 2005 (percent)



EU LFS-average: average of the aggregated and weighted sample of member states.

The problem of exceptionally low employment among young women and, within the group, those with young children was discussed in detail in last year's issue of The Hungarian Labour Market (*Bálint & Köllő,* 2008). Putting this issue aside, we devote two sections to young people and men over 40 at the end of the chapter, with the main text focussing on the 15–59 year old population not enrolled in full time education. We will not dedicate a separate section to the issue of exceptionally low employment rates among people having at most primary education, a widely known problem in all former socialist countries, but educational differences will be discussed within each of our topics.

3. Employment and working hours among the 15–59 year old non-student population

The ILO-OECD convention defines employed persons as those who performed at least one hour's paid work during a reference period – typically the week preceding the interview – adding those who did not perform any work, but were only temporarily absent from the job to which they had a formal attachment. Taking this definition, in Hungary 69.3 percent of the non-student population aged 15–59 was employed, which is the fifth lowest

value in the European Union (*Table 1.1*), but is only 3.1 percent lower than the EU–15 average, as opposed to the 9.4 percent disadvantage observed in the 15–64 year old population.[3]

Table 1.1: Employment among the 15–59 year old non-student population under different definitions of employment, 2005 (percent)

Country	ILO-OECD-employed	Country	Worked at least 1 hour	Country	Full-time equivalent employment[a]
Iceland	90.4	Iceland	79.5	Iceland	82.4
Denmark	84.9	Estonia	74.8	Latvia	77.6
Norway	83.9	Latvia	74.6	Czech Republic	76.3
Sweden	83.7	Lithuania	74.4	Estonia	75.1
Netherlands	80.7	Portugal	73.1	Cyprus	74.1
Finland	80.2	Cyprus	73.1	Greece	73.4
Austria	79.9	Denmark	73.0	Portugal	72.9
Cyprus	79.2	Czech Republic	72.4	Slovenia	72.6
Slovenia	78.8	Ireland	71.4	Lithuania	71.1
Czech Republic	78.7	Austria	70.6	Austria	70.0
Lithuania	78.6	Norway	70.5	Denmark	69.3
Portugal	78.5	Sweden	70.3	Slovakia	69.1
Luxembourg	77.9	Slovenia	69.8	Ireland	67.8
Estonia	77.7	Netherlands	69.7	Hungary	67.1
Ireland	77.4	Luxembourg	68.4	Finland	65.9
Latvia	77.0	Greece	68.3	Sweden	65.8
France	76.0	Finland	68.0	Luxembourg	64.7
United Kingdom	74.0	Slovakia	67.3	Poland	63.3
Belgium	73.8	Hungary	66.1	France	61.5
Greece	71.3	France	64.9	United Kingdom	60.3
Slovakia	70.9	United Kingdom	64.7	Norway	59.9
Hungary	69.3	Germany	62.8	Italy	59.4
Italy	68.9	Belgium	62.6	Belgium	58.7
Germany	68.8	Italy	61.7	Netherlands	57.8
Spain	66.2	Poland	61.3	Germany	56.5
Poland	64.0	Spain	57.1	Spain	55.9

[a] The figures show the percentage of the given population who could complete the total number of hours worked if everyone worked 40 hours a week. The hours of work performed by a person are equated with the usual working hours (with the exception of "highly variable" working hours, in which case the actual hours worked during the reference week are taken).

The number of people actually performing work during the reference week is somewhat smaller, and there are substantial differences between the East and the West. In Hungary 3 percent of the population categorised as being in employment were away from their job during the reference week, while the corresponding values approach or exceed 10–12 percent in several West European countries. With respect to the proportion of people actually performing work, Hungary occupies a more favourable rank – it is the eighth country from the

3 The group of countries labelled as EU–15 here does not include Malta, for which no data is available. The group includes Norway, however, which is not an EU member but provides data for the European Labour Force Survey.

bottom: 66.1 percent of the population of the best working age worked for at least one hour during the week under observation, which is two percent *higher* than the average value for the old EU member states.[4]

Hungary climbs even higher in the ranking if full-time equivalent employment (FTE) is considered. The FTE measure compares total hours actually performed by those in employment to total hours potentially performed by the working age population provided that each person makes 40 hours a week. Formally, $FTE = hE/40P$, where E stands for employment, P denotes the working age population and h denotes actual average weekly working time. The average working week is quite long in Hungary, longer than 40 hours. Taking this into consideration we arrive at the position where 67.1 percent of the population would have needed to work 40 hours during the reference week to complete the total number of working hours actually performed that week. In the ranking of the European countries according to full-time equivalent employment, Hungary occupies a central position close to Slovakia and not far from Denmark, Finland or Ireland, with a score 7.1 percent *above* the old EU members' average.

Table 1.1 clearly shows that the relative positions of all the former socialist countries change similarly to Hungary's, as we move from the ILO-OECD employment ranking towards the FTE ranking: in the latter list even Poland, the Eastern European country with the lowest value, ranks higher than the UK, France, Germany, Norway, Belgium, the Netherlands, Spain and Italy.

It is not the low level of employment that merits special attention regarding the population of the best working age in Hungary: the country is not far behind the EU average in terms of the ILO-OECD criteria of employment, and it does not display any disadvantage at all in terms of the two alternative indicators considered in Table 1.1. A relatively high share of the labour potential is put to use, however the structure of employment is characteristically different from the Western model: relatively few people work and they work relatively long hours.[5]

4. The non-employed of "best working age"

One of the characteristic features of the Hungarian labour market is that the labour force participation rate of the working age population remains at a low level. The recommendations of the ILO and the OECD classify those non-employed as economically active who were seeking employment during the weeks preceding the interview, and are able and available to start work. Inactive persons are those who do not work and are not seeking employment, or are searching but are unable or unavailable to start work should they find a job. (In practice the classification relies on job search with the criterion of availability playing only a marginal role.)

4 The figure applies to the aggregated samples of the old member states together with Norway and Iceland.

5 We shall return to the issue of working hours in the section *In between work and non-work*.

In Hungary a markedly high proportion of the non-employed is *not seeking employment* compared to other Central and Eastern European countries and to most old EU member states, as can be seen in *Table 1.2*.

Table 1.2: The distribution of the 15–59 year old non-student population by labour market status. Regional averages, within-region standard deviations of national averages, and the Hungarian mean, 2005

		EU–15	Baltic	CEE	All	Hungary
Men						
ILO-OECD employed	Mean	84.3	83.6	80.0	83.6	76.2
	St.dev.	(4.7)	(5.2)	(7.2)	(5.1)	
ILO-OECD unemployed	Mean	5.5	6.2	10.2	6.3	5.8
	St.dev.	(1.8)	(2.6)	(5.0)	(3.0)	
Non-seekers who desire	Mean	1.9	4.0	2.1	2.2	5.2
paid work	St.dev.	(1.1)	(3.3)	(1.0)	(1.5)	
Those who do not desire	Mean	8.2	6.2	7.7	7.9	
paid work	St.dev.	(2.9)	(1.0)	(3.2)	(2.8)	12.7
Women						
ILO-OECD employed	Mean	70.7	71.5	66.1	70.0	62.7
	St.dev.	(9.6)	(4.9)	(7.4)	(8.8)	
ILO-OECD unemployed	Mean	5.6	5.5	10.1	6.3	5.0
	St.dev.	(2.3)	(1.3)	(4.0)	(3.0)	
Non-seekers who desire	Mean	3.9	5.7	4.1	4.1	6.0
paid work	St.dev.	(2.8)	(5.2)	(1.9)	(3.0)	
Those who do not desire	Mean	19.8	17.2	19.6	19.5	26.3
paid work	St.dev.	(7.1)	(10.5)	(3.0)	(6.8)	
Formerly working women						
ILO-OECD employed	Mean	77.6	74.5	70.0	76.0	67.1
	St.dev.	(7.7)	(4.8)	(6.6)	(7.6)	
ILO-OECD unemployed	Mean	4.9	4.9	8.3	5.4	4.6
	St.dev.	(2.3)	(1.3)	(3.2)	(2.6)	
Non-seekers who desire	Mean	3.2	5.1	3.6	3.5	5.0
paid work	St.dev.	(2.4)	(4.7)	(1.8)	(2.6)	
Those who do not desire	Mean	14.2	15.3	18.0	15.0	23.2
paid work	St.dev.	(5.3)	(9.9)	(3.0)	(5.6)	
Number of countries		18	3	4	25	1

EU–15: excluding Malta, including Norway. Baltic: Estonia, Latvia, Lithuania. CEE: excluding Hungary: Czech Republic, Poland, Slovakia, Slovenia. All: excluding Hungary and Malta, including Norway.

The employment rate of men is lower in Hungary than the EU average, and falls outside the Western European and Baltic ranges. The rate of *unemployment* nevertheless remains low. We have, in contrast, a high proportion of non-employed not seeking but "wanting" paid employment: their share is two and a half times higher than the figures observed in Western or Central and Eastern Europe, although it is not substantially higher than the average of the Baltic region. We also find a high proportion of men who do not

want paid employment.[6] Women display a similar pattern of labour market status, but there is more variation across other countries considered in Table 1.2.: the Hungarian level of female inactivity falls near the top of the range. If, however, we limit our attention to women attached to the labour market – those, who have had at least one job before – we find that Hungary is once again exceptional with its rather high proportion (23.2 percent) of women not willing to work. Values similar to Hungary's are observed in only two other countries: Ireland (24.2 percent) and Luxembourg (26.6 percent).

Table 1.3 shows the percentage of jobseekers *within* the non-employed population broken down into the categories used above. In Hungary only a quarter of non-working men and less than one in seven non-working women are classed as unemployed. The Hungarian value is outside the EU–15 and Central and Eastern European ranges.[7] For women, the proportion of those seeking employment is also below the regional averages: it appears in the lower half of the overall European range and remains well below the average value for Central and Eastern Europe.[8]

Table 1.3: Proportion of jobseekers among the 15–59 year old non-student and non-working population. Regional averages, within-region standard deviations of national averages, and the Hungarian mean, 2005

	EU–15	Baltic	CEE	All	Hungary
Men					
Mean	35.0	36.8	50.0	37.7	24.6
st.dev.	(6.9)	(5.1)	(14.5)	(9.7)	
Women					
Mean	19.5	20.1	29.0	21.1	13.4
st.dev.	(7.1)	(7.1)	(6.1)	(7.6)	
Formerly working women					
Mean	22.4	20.5	27.1	23.0	13.5
SD	(8.7)	(7.8)	(5.8)	(8.0)	
Number of countries	18	3	4	25	1

EU–15: Excluding Malta, including Norway. Baltic: Estonia, Latvia, Lithuania. CEE: the Czech Republic, Poland, Slovakia, Slovenia.

Working-age inactivity is not only frequent in Hungary, but also rather long-term. In the European Labour Force Survey the duration of inactivity can only be measured with the help of retrospective data, by comparing labour market status at the time of the survey to the preceding years' status. Holding the level of inactivity constant, however, *the proportion of currently inactive persons who were also inactive a year before* is indicative of the probability of becoming active following a period of inactivity.[9] The lists of the countries ranked according to this approximate indicator (*Table 1.4*) reveal that Hungary is characterised by the most persistent inactivity among working-age men in Europe. Looking at inactivity among women, Hungary is only

6 The proportion of those not wanting to work is similar to the Hungarian figure in Belgium, Germany, Poland, Spain and the United Kingdom.

7 A similarly low value is observed in only one other country (the United Kingdom).

8 Five of the countries display lower values than Hungary's: the Netherlands, Luxembourg, the United Kingdom, Ireland and Iceland.

9 If n denotes inactivity, p_{nn} indicates the probability of a path starting in n being in n a year later, p_{xn} is the probability of a path starting in a state other than n being in n a year later, we obtain the equation $n_1 = n_0 p_{nn} + (1 - n_0)p_{xn}$. If $n_1 = n_0$, then the ratio $n_0 p_{nn}/n_1$ corresponds to the probability of remaining inactive (p_{nn}).

outranked by countries – Italy, Greece and Cyprus in one group and Belgium and Luxembourg in the other – where women's employment has never been comparable to the level characteristic of Hungary in the past, and where the traditional division of labour in the family has not faded as much as in most Western European countries.

Table 1.4: Proportion of 15–59 year old non-student persons inactive during the reference period who were also inactive a year before the survey – rankings for men and women

	Men		Women	
Rank	Country	Percent	Country	Percent
1	Hungary	89.6	Italy	95.9
2	Italy	88.8	Greece	95.2
3	Slovakia	88.4	Luxembourg	91.7
4	Portugal	85.7	Cyprus	91.3
5	Denmark	84.9	Belgium	89.6
6	Lithuania	84.4	Hungary	87.9
7	Greece	84.4	Lithuania	86.1
8	Latvia	83.0	Portugal	85.5
9	Estonia	82.9	Norway	83.7
10	Belgium	82.7	Slovakia	81.7
11	Czech Republic	81.9	Latvia	81.4
12	Norway	81.7	Estonia	80.9
13	Finland	80.3	Poland	80.0
14	Poland	78.8	Czech Republic	78.1
15	Slovenia	78.2	Denmark	76.7
16	Cyprus	77.9	Slovenia	76.6
17	Luxembourg	69.3	Finland	69.7
18	Sweden	55.9	Sweden	68.0

Note: The variable indicating labour market status a year before the survey is not available for the countries not shown in the table.

The pattern of inactivity observed in Hungary is in especially sharp contrast with the Polish and Slovakian patterns. In Hungary, 69.3 percent of the 15–59 year old non-student population of men and women had jobs in 2005, and the corresponding figure was 70.9 percent for Slovakia. Thus while the two employment rates are essentially equal, the rate of unemployment in Slovakia (16.3 percent) was more than twice as high as the Hungarian figure (7.2 percent).[10] Poland was characterised by a somewhat lower rate of employment (64 percent), but unemployment was more than two and a half times as high here (18.2 percent) as it was in Hungary. What might provide an explanation for such striking differences between countries which have similar employment rates and are closely matched in other respects as well? This is the question we now turn to.

10 Annual figures based on the European Labour Force Survey.

Unemployment versus inactivity – a comparison of Hungary, Poland and Slovakia

Table 1.5 displays the results of a logit estimation. The model applies to the 15–59 year old non-student and non-working population. The dependent variable equals 1 for individuals seeking employment (and available for work) and 0 for inactive individuals. The estimated odds ratios indicate the effect of a one unit change (from 0 to 1) in each explanatory variable on the probability of an individual seeking a job, controlling for the effects of other variables in the equation. (The odds ratio refers to the ratio of the probability of job search to the probability of the absence of search: $p/(1-p)$. If the odds ratio is greater than 1, the variable in question has a positive effect, while a number smaller than 1 indicates a negative effect.) This is clearly not an explanatory model, but an attempt to map group differences with respect to the intensity of job-seeking.

Table 1.5: Factors affecting job-seeking in Hungary, Slovakia and Poland in 2005 – logit odds ratios

	Hungary	Slovakia	Poland
Female	0.6762	0.3654	0.4004
Education: primary	0.3187	0.3643	0.4691
Education: secondary	0.5754	0.5321	0.6341
Aged 15–19 years	1.6894	1.7220	2.6788
Aged 20–24	2.3775	2.4834	2.9166
Aged 25–29	1.5375	1.1279[n]	1.3354
Aged 55–64	0.2681	0.2326	0.2089
Period of being out of work			
13–24 months	0.7256	0.7982	0.6437
25–36 months	0.7039	0.3883	0.5336
37–48 months	0.5088	0.4936	0.6220
Longer than 48 months or never worked	0.2578	0.3321	0.4499
Registered, not receiving unemployment benefit	11.0509	56.5593	20.0708
Registered, receiving unemployment benefit	6.3514	35.7442	9.4638
Pseudo R^2	0.3022	0.5493	0.4130
Number of observations	52 650	17 695	45 025
Search rate	16.9	46.2	37.6

Sample: 15–59 year old non-student, non-working population.
Dependent variable: 1 if seeking work, 0 if not.
Significance: Each odds ratio shown is statistically significant at $p < 0.01$ except those marked by the superscript index n
Reference categories: male, tertiary education, aged 30–54 years, has been out of work for 0–12 months, not registered unemployed.

We find a smaller difference between men and women in Hungary compared to the other two countries, but educational attainment has similar effects in all three countries.[11] The probability of looking for a job varies between age groups in roughly the same way in Hungary and Slovakia and also in Poland

11 Those having low educational attainment would like to find paid work with more than average probability, but within the group wishing to work are less likely to be actively looking for a job.

for those aged over 24. (There is a considerably higher share of jobseekers, however, among the 15–24 year old non-student Polish population.) The probability of job-seeking declines with the passing of time following the loss of an individual's job in all three countries, although the three patterns show some differences. Those out of work for 25–36 months are more likely to be looking for a job in Hungary than they are in Slovakia, while those who left their last job more than four years before data collection or never had a job are less likely to search. Compared to Poland, in Hungary the intensity of job search declines more slowly in the first three years and more steeply thereafter.

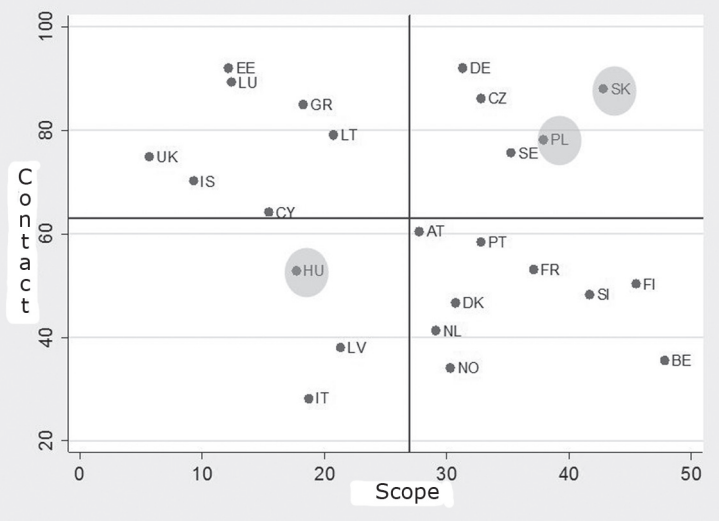
These dissimilarities are, however, negligible compared to the differences between the relative job-seeking intensities of *the registered unemployed and those receiving unemployment benefit* in Hungary, and in the other two countries. The odds ratios indicate that while a higher proportion of the registered unemployed and the benefit recipients report that they are looking for a job relative to the unregistered non-workers in all three countries, the difference is far greater in Slovakia and Poland than in Hungary. This cannot be explained by a high level of job search among the non-registered in Hungary: only 8.8 percent of them reported that they were looking for work here, while the corresponding figures are 14.1 percent for Slovakia and 14.9 percent for Poland. Among those not receiving unemployment benefits, the corresponding proportions are 12.6 percent for Hungary, 46.1 percent for Slovakia, and 38.1 percent for Poland.

To be able to understand the differences in the relationship between job-seeking and unemployment registration, a brief detour is in order here. Hungary is one of the few countries where a relatively small portion of the non-working population are registered with the national employment agency and, as evidenced by the data on the frequency of contact, the relationship between the jobcentres and their clients is fairly loose. This can be seen in *Figure 1.2*. The horizontal axis of the graph displays the percentage of unemployment registrations among the 15–59 year old non-employed population, while the vertical axis shows the percentage of registered unemployed who made contact with the employment office sometime during the month preceding data collection. Most of the Western European countries are located in the top left or bottom right quarter of the data space. In the former case, relatively few people are registered with the agency, but there is an intensive relationship between the job centre and its clients. The other group (bottom right corner) is characterised by a high proportion of registrations (25–50 percent) but a looser relationship.

Of the Visegrad countries, the Czech Republic, Slovakia and Poland – together with the post-Hartz Reform Germany and Sweden – form a third group: we find a fairly high proportion of registrations and contact remains intensive nevertheless. Hungary is located in the bottom left quarter of the

space sharing this corner with only Italy from among the old member states (and Latvia as the only other new EU member): few non-workers are registered with the labour market organisation, and their contact with the job centre is not at all intensive compared to European employment services having a clientele of a similar size.

Figure 1.2: Registration of the non-employed and contact with the job centre, 2005



Scope: the proportion of registered unemployed within the non-employed population (aged 15–59 = 100).
Contact: the proportion of registered unemployed contacting the employment agency sometime during the month preceding the interview.
The vertical and horizontal lines mark the unweighted EU average.
Country codes: AT – Austria, BE – Belgium, CY – Cyprus, CZ – Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, FI – Finland, FR – France, GR – Greece, IE – Ireland, IS – Iceland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, HU – Hungary, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, SI – Slovenia, SK – Slovakia, SE – Sweden, UK – United Kingdom.

The substantial differences between the national strategies are related to a number of factors. These include the division of duty between the public employment agency and local governments with respect to unemployment support; the relative weights of state and private employment services; coverage (whether the job centre is prepared to assist inactive clients not claiming unemployment benefit or clients with jobs),[12] and the role of the job centre within the social security system. Last but not least, the position of a particular country is also influenced by the nature of the services: whether the job centre expressly requires its clients to look for work, and how often clients are required to report on their progress. The various strategies are discussed in detail by *Frey* (2005) and in *OECD* (2007*a*).

12 In Denmark and Norway, more than a third of registered clients are employed. The overall average figure for Europe is 14 percent and the corresponding Hungarian value is 1.3 percent.

Returning to the three countries under scrutiny, let us examine the details of the differences between the Hungarian, Slovakian, and Polish registration practices, and their relationship to the intensity of job search. We start out from *Table 1.6* indicating that the Hungarian Public Employment Service registers only a small percentage of non-employed, and within the group, those seeking a job as unemployed. The dominant share of clients registered with the Employment Service receive unemployment benefits or social assistance (or are individuals that receive active support, who cannot be identified in the European Labour Force Survey).

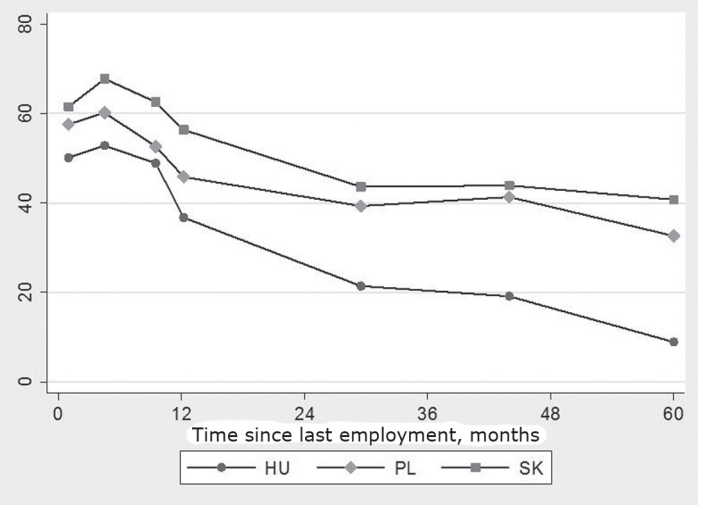
Poland and Slovakia are characterised by a far lower proportion of *unemployment* benefit recipients but that does not mean that registered clients do not receive some other type of support. In Slovakia, several welfare benefits are only accessible to those who have registered with the "Centres for Labour and Families", and in Poland, pension entitlement is tied to registration. (In Hungary pension entitlement is dependent on the social security contribution paid by the state after some kinds of benefits such as insurance-based unemployment benefit or childcare allowance.) Hungarian registered clients and benefit recipients visit the job centres less frequently, and fewer of them report that they are seeking work than do their Slovakian or Polish peers. At the same time, four and ten times more of them say that although they are not looking for a job, they would like to have paid work than do, respectively, Polish and Slovakian registered clients and benefit recipients. The total proportions of those who are searching for *or at least desire* a job are actually similar in the three countries: 85–95 percent.

Table 1.6: Some indicators of registration practices in Hungary, Poland and Slovakia, 2005

	Hungary	Slovakia	Poland	Conclusions
Registered/non-employed	17.8	42.8	37.9	Only a small share of non-employed and jobseekers register in Hungary.
Registered/jobseeker	59.0	83.3	76.7	
Benefit recipient/registered	66.9	7.6	10.5	A large share of the registered receive unemployment benefits.
Visited in the past month/registered	52.1	86.8	77.0	Registered clients and benefit claimants rarely visit their job centres.
Visited in the past month/benefit recipient	49.1	87.2	75.0	
Jobseeker/registered	57.3	90.3	72.5	Few of them are actively looking for a job...,
Jobseeker/benefit recipient	54.2	93.0	74.3	
Wants paid work/registered	29.3	3.1	7.7	..., but a large share "would like to work."
Wants paid work/benefit recipient	33.0	3.1	9.0	
Is looking for or desires work/registered	86.4	93.4	80.1	A relatively high proportion would at least like to have paid work.
Is looking for or desires work/benefit recipient	87.2	96.1	83.3	

The proportion of active jobseekers among registered clients remains low despite the fact that the Hungarian Public Employment Service reaches a substantially smaller percentage of the long-term unemployed than do its Polish or Slovakian counterparts. As shown in *Figure 1.3,* while the registration rates among the short-term unemployed do not substantially differ between the three countries, the gap grows to between twenty to thirty percentage points if we look at those who have been out of work for two or more years. This is of course related to the fact that there is a high proportion of unemployment benefit and active support recipients among the clients of the Hungarian employment service, and these welfare programmes have a limited duration, while in the other two countries, clients continue to benefit from being registered for a longer time period. In Hungary, the active-age non-employed receiving regular social assistance are required by law to register and co-operate with the job centre, but since social assistance is tied to an income threshold, only a minority of the long-term unemployed receive assistance.

Figure 1.3: Proportion of the registered unemployed among the non-employed as a function of time since last employment in Hungary, Poland and Slovakia, 2005



HU – Hungary, PL – Poland, SK – Slovakia.
Note: within the 15–59 year old non-student non-working population.

Registered and ILO-OECD unemployment

The data reviewed so far suggests that there is a rather loose relationship in Hungary between the two types of unemployment measures (registered versus ILO-OECD unemployment). We have not only a low proportion of jobseeking unemployed, but also a low registered unemployment rate. Both Type I and Type II "errors" are significant: a relatively small share of active jobseekers are registered, while job centres have a large number of registered clients

not looking for a job. The magnitude of the problem is indicated by the figures in *Table 1.7*. In 2005, 59.0 percent of active jobseekers were registered in Hungary. This figure is 20–25 percentage points lower than the corresponding figures for Poland and Slovakia. The proportion of jobseekers among the registered (57.3 percent) is not only poor relative to the Polish and Slovakian levels, but is in fact the lowest in the whole of Europe.

Table 1.7: The association between ILO-OECD unemployment and registered unemployment in Hungary, Poland and Slovakia, 2005

	Hungary	Slovakia	Poland
Employed/population	69.3	70.6	63.6
ILO-OECD unemployment rate	7.3	16.6	18.6
Registered unemployment rate	7.5	15.5	19.8
Percentage of registration among jobseekers	58.5	92.2	76.8
Percentage of job-seeking among the registered	60.8	82.2	72.1
Cramér's *V* (registered and ILO-OECD unemployment)	0.499	0.778	0.660

The last row of the table shows Cramér's *V,* which estimates the strength of the association between job-seeking and registered unemployment.[13] The closer the value is to 1, the stronger the association between the two unemployment measures. We can see that the *V* indicator is far lower in Hungary than in Poland or Slovakia. A more detailed analysis – not shown here – reveals that this difference holds for each level of education, and regardless of the period of time passed since the non-worker's last employment.

Why does Hungary differ so sharply from its neighbours? The available cross-sectional data does not allow us to identify the factors that lead to the low levels of both registered and ILO-OECD-defined unemployment, and the weak correlation between the two in Hungary: whether the reason for the small number of jobseekers is that the labour organisation only covers a small section of the market and/or fails to coerce the unemployed into job-seeking, or that the jobless choose not to establish contact with the employment service (job centres) because they do not want a paid job.

It is presumably the case that some of the jobless have access to a substantial income while out of formal employment, thanks to their activities in the hidden economy or to welfare transfers, and thus do not seek contact with the employment agency or only register to procure further welfare payments. This could perhaps constitute an explanation for the low registration rate and to some extent for the high share of non-search among the registered clients, but it cannot account for *the large number of non-registered jobseekers*. The observed symptoms could hardly occur simultaneously if it was not the case that *a)* unemployment support in the narrow sense had markedly diminished in Hungary and *b)* the employment agency was largely unable or unwilling to demand job-seeking as a condition of social assistance.

13 Given a special case of a 2 × 2 contingency table, this measure is equivalent to the square root of χ^2/n. Note that the population weights could not be used in computing the *V* values.

Transfers that make up a substantial part of the Hungarian social security system either do not specify co-operation with the employment agency as a requirement, or, if it is specified by the regulations, the job-seeking requirement is not given priority in practice. As much as 39 percent of the 15–59 year old non-student non-working population were pensioners in 2005. Even though labour market considerations such as expected wages and pensions, or job finding probabilities, play a major role in early retirement (*Cseres-Gergely,* 2007; *Scharle,* 2007), the employment service is assigned a marginal role in efforts to keep it under control. Hungary does not as yet maintain any comprehensive programmes treating early retirement as a labour market problem, such as the British *Pathways to Work* programme discussed in depth in last year's issue of the Hungarian Labour Market (*Scharle,* 2008). Further, in 2005, 17 percent of the non-employed were on paid childcare leave. Even though participation in family support programmes can also be shown to have a strong association with labour market prospects (*Bálint & Köllő,* 2007), the employment service records only 2–3 percent of the child-care recipients as unemployed, and no services have been developed to provide information or help for those out of work for a prolonged period. A further 15 percent of the non-employed of the best working age received social assistance benefits. Although in principle social assistance claimants are under an obligation to co-operate with the job centre and thus to look for work, in practice, this requirement is only partially enforced and there is substantial variation between job centres (*Bódis & Nagy,* 2008). Priority tends to be given to testing "availability for work" via occasional public works rather than job-seeking activity. Standing by and participation in the public work schemes organised by local governments take time and attention away from job-seeking on the part of the unemployed, and from the enforcement of job-seeking on the part of labour offices.

The only support scheme wherein job search is regularly monitored is insurance-based unemployment assistance. However, according to the data from 2005, only 5 percent of the non-employed received this type of unemployment benefits. Starting from the second half of the nineties, unemployment insurance was cut back and eligibility became more restricted (*Nagy,* 2000), which had the side-effect of limiting access to job centre services on the one hand, and reduced the power of the employment agency to sanction individuals' failure to look for a job by withholding some of the benefit on the other.

The most poignant counterexample within Europe is no doubt provided by Slovakia, where registration is requisite for a variety of social assistance claims, and the job-seeking requirement is rigorously enforced.[14] Prior to the reforms of 2005, the unemployed were required to visit the job centre once a month, while Hungarian regulations specified one visit every three months. (The local rules of some job centres specified more frequent visits; see *Bódis*

14 We are grateful to *Stepan Jurajda, Jaroslav Kačmar, Daniel Munich* and *Michal Palenik* for their help with the interpretation of registration practices in Slovakia.

& Nagy, 2008). The 2005 Slovakian reform amended the frequency of visits to one per week for the long-term unemployed and two per month for other clients, and introduced the requirement of supplying written proof of job-seeking activity, such as a certificate issued by the employer approached by the jobseeker.[15] The conditions of assistance claims play a decisive role in the fact that in Slovakia an exceptionally high proportion of the non-employed are registered, and a large share of the registered declare in the labour force survey that they are looking for a job.[16] We must remember that although the questions on job-seeking are asked by interviewers having no civil authority, they are often seen by respondents as persons representing official matters: if only jobseekers are eligible for unemployment support, respondents will tend to present themselves as jobseekers even in a semi-official setting, such as a survey interview.[17]

Does job-seeking matter at all?

A part of what seems to be a large difference between Hungary, Poland and Slovakia may result from distortions due to false declaration. However, the low search intensity of the non-registered non-employed in Hungary warns that another part of the difference is "genuine". Should we care about it? This leads us to the broader question of whether it makes sense at all to draw a boundary between unemployment (*U*) and non-participation (*N*). The answer depends to a great extent on the purpose of the investigation.

A dynamic macro-analysis is likely to be satisfied with the ILO-OECD unemployment rate as the descriptor of the labour market. Although there is huge variation across countries in the *U/N* ratio, the *U* and the *N* rates typically change in the same direction and at a similar pace. Static international comparisons are not significantly distorted either by using the ILO-OECD rate: even if the different definitions of unemployment show substantially differing unemployment rates (see, for instance, *Brown et al*, 2006), this has little effect on the ranking of countries (*Sorrentino* 1993, 1995, 2000).[18]

Studies investigating the issue of *employment potential,* however, cannot afford to be so nonchalant about the question of distinguishing *U* and *N,* in so far as the momentary presence/absence of job-seeking is indicative of long-term differences in the strength of labour market attachment. A seminal paper by *Flinnand & Heckman* (1983) found substantial differences between the *U* and the *N* groups in terms of their long-term attachment to the labour market and their employment prospects. *Juhn et al* (1991) and *Murphy & Topel* (1997), in contrast, found the combined analysis of the two groups to be the most fruitful approach. *Garibaldi & Wasmer* (2001) and *Boeri* (2000) – the latter using former socialist countries as the field of study – construct models where neither labour market equilibrium nor unemployment level can be predicted without considering the division between *U* and *N. Jones & Riddell*

15 Several small businesses offer to issue these certificates at a reasonable price (the equivalent of € 1–2).

16 The rigorous monitoring of job-seeking activity was relaxed in 2008. The return to the pre-2005 conditions suggests that the Slovakian government did not consider the earlier draconian measures a success.

17 Although it is also true for Poland that registration and the recognition of job-seeking by allowing the preservation of pension entitlement may motivate respondents to claim to be looking for a job, Polish job centres tend to be considerably less rigorous than their Slovakian counterparts. In fact, the *OECD* (2007*b*) reports that Polish job centres have the most relaxed approach to the monitoring of job-seeking activity among all the European countries assessed.

18 Hungary happens to demonstrate that there may be exceptions: even the ranking position of a country may be significantly influenced by the choice of unemployment indicator.

(1999) place their emphasis on the heterogeneity of the inactive population, revealing that those who *are not searching* for a job but *desire* work have a level of labour market attachment similar to the unemployed.

Research in Hungary has produced inconclusive results. *Micklewright & Nagy* (1999) and *Köllő* (2001) used a labour force survey to trace non-employment patterns for one and a half years starting in the first quarter of 1997. The authors' discrete time duration models indicated statistically equivalent job placement prospects for men *searching* for a job and for those *not searching but desiring* work. Women who search had higher exit to job rates than women who merely wanted a job. By contrast, the paper by *Köllő* (2001) also covered a cohort starting in the third quarter of 1997, and found a significant effect of job-seeking for men as well as women, which suggests that the results of the first quarter's sample may have been distorted by temporarily dismissed workers returning to their previous jobs at the start of the construction and agriculture sectors' season. Some of the inactive men were probably awaiting the opening of these seasonal jobs and could then return to work without any job-seeking activity.

A further piece of evidence suggesting that search matters is provided in *Micklewright & Nagy's* (2005) randomized trial, in which a group of unemployed were called to attend the job centre more frequently than usual. The results indicate that stricter enforcement of the job search criterion significantly increased the probability of employment for certain elements of the registered unemployed.

A related question to ask is whether the absence of job search reduces labour market flexibility. Within certain limits it does not, since most labour market movement (discounting first-time employment and retirement) occurs between employment and unemployment or between different jobs with no intermediate stage of unemployment. The Hungarian labour market appears to be highly flexible in analyses relying on the usual institutional indicators (*Riboud et al,* 2002, *Cazes* & *Nesporova*, 2003, *Rutkowski et al,* 2005) and inflexibility similarly does not appear to be a major problem in estimates of wage elasticity (*Kőrösi* 2005, *Köllő,* 2001), job turnover (*Kőrösi*, 2005) or adjustment costs (*Kőrösi & Surányi*, 2002). In terms of an indicator analogous to the one shown in *Table 1.4*, *unemployment* appears to be less persistent in Hungary as it is in Poland or Slovakia (or, for that matter, in Slovenia, Italy, Belgium, Greece or Lithuania). These results, however, do not necessarily contradict the suggestions of the preceding sections. Hungary may have a flexible labour market but it incorporates a relatively small fraction of the population, and is embedded in a large pool of inactivity.

The lack of job search and willingness to work can make itself felt in the event that the demand for labour rises. Latent labour market attachment may become active if there is a marked improvement in employment prospects.

This is indicated by the finding of the "discouraged worker effect" observed in many countries on many occasions: some of the inactive population enter the labour market in response to an upturn. In Hungary, only women display a macro data pattern that could possibly imply an effect of this type: the increase in employment among 15–55 year old women observed between 1997 and 2000 was accompanied by a decrease in inactivity. (This pattern, however, could have been related to an increase in womens' statutory retirement age.) Among men, the shifts clearly took place between employment and unemployment in both good and bad periods. If the discouraged worker effect does not surface, employment and unemployment can respond sensitively to market signals without having any effect on the large inactive population: the market can be flexible and very small at the same time. Considering the results of the studies cited above, it would not come as a surprise if a possible boost in economic growth would have the effect of lowering the by now high level of unemployment in Hungary, similarly to the process observed in all other former socialist countries over the past three years,[19] but large-scale and permanent inactivity may limit the benign effect of an economic upswing.

The impact of inactivity on flexiblity also depends on how non-participation affects wages. Unfortunately, no research has yet been carried out investigating the impact of all types of non-employment on wages. The effects of *unemployment* on wages have been investigated in a number of studies. *Kertesi & Köllő* (1998) found an association between unemployment levels and wage levels typical of mature market economies, while *Kőrösi's* (2005) results revealed the association loosening over time. As long as the inactive population fails to compete for jobs, the absence of job-seeking may also inhibit the growth of employment indirectly, by abating wage pressures.

Closing remarks

This section did not attempt to evaluate Hungarian unemployment registration and support policies, which are clearly interwoven with the problem of economic inactivity among people of working age. The overview of the data has convinced us, however, that if we were to conduct a more thorough analysis in order to find the key to the Hungarian peculiarity of low employment paired with low unemployment, we would need to investigate the welfare system rather than the old or the young, the school-leavers or the uneducated, or duration dependence among the long-term unemployed.

5. In between work and non-work

It is not only in the sense discussed in the previous section that there is a sharp boundary between work and non-work in Hungary. A similarly striking attribute is the continuing dominance of the traditional eight hours a day and five days a week working arrangement, i.e., the small number of workers hav-

19 In March 2005 Hungary had an unemployment rate of 6.8 percent, while the average figure for the eight former socialist EU members and the two candidate countries (Bulgaria and Romania) was 10.4 percent. By March 2008 the Hungarian rate rose to 7.6 percent, which was now higher than the average level for Eastern and Central Europe (6.1 percent) and the third highest in the region surpassed only by Poland (7.7 percent) and Slovakia (9.8 percent). Hungary is the only former socialist EU member state where the unemployment rate increased between 2005 and 2008 (Eurostat).

ing *partial* labour force attachment. The present section gives a brief overview of the availability of part-time work and its different realisations. This time, the discussion will concern all of Eastern and Central Europe (in some cases Eastern and Southern Europe) rather than just Hungary.

The subject of our inquiry remains the 15–59 year old non-student population. One reason for this choice is that there is substantial variation between countries in terms of the probability of part-time and temporary employment by age within Western Europe as well. As for the young, among 15–24 year olds not in full-time education the proportion of those working fewer than 36 hours a week ranges from 19 percent (in Italy) to 57 percent (in Norway), and the proportion of those working fewer than 20 hours a week may be as low as 1 percent (Iceland) or as high as 37 percent (Norway). A separate section will therefore be dedicated to the issue of employment and working hours among young people. Older cohorts are excluded from the discussion for the opposite reason: because of the relatively small variation across the countries. In Hungary on average 40.1 percent of the working population aged over 59 worked fewer than 36 hours a week between 2000 and 2005, which is within the range observed for the EU–15.[20] Old-age employment will also be discussed in a separate section.

Comments on methodology

The international comparison of working hours and the proportion of part-time workers is made difficult – or, strictly speaking, impossible – by the different interpretations of "usual hours of work" across countries in the EU LFS. Some of the respondents report having "highly variable" working hours, as they cannot say what their usual hours of work are in their main job. The percentage of persons giving this reply covers a very broad range (*Figure 1.4*).

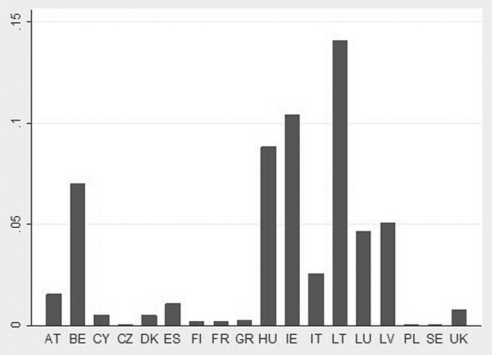
In a small share of the countries - Belgium, Ireland, Luxembourg, Latvia and Lithuania as well as Hungary – 4–10 percent of respondents declared that they had highly variable working hours in 2005. The corresponding figure is one or two percent in five countries, and zero or effectively zero in more than ten of the countries. This is clearly not a genuine difference, but rather a methodological discrepancy, since in some of the countries this option is not even offered in the survey, and in some others the interviewers presumably press the respondents for a choice of "usual hours."

Therefore, while the data on usual hours is of no use in establishing the length of the working day at an individual level (and is of limited use at a population level), the measure of *hours actually worked* during the reference week is an equally unreliable indicator, since it may substantially differ from the typical hours over a longer period. The hours of work performed during the reference week have a zero value for a non-negligible proportion of the population, as displayed in *Table 1.8*. Western Europeans are approximately three

20 The decision to average over several years was warranted by the small number of cases.

times as likely to be temporarily absent from their jobs as are the residents of the former socialist countries, and temporary absence is also far less frequent among the populations of Greece, Cyprus, Portugal and Ireland.[21]

Figure 1.4. Percentage of persons working highly variable hours, 2005



Country codes: AT – Austria, BE – Belgium, CY – Cyprus, CZ – Czech Republic, DK – Denmark, ES – Spain, FI – Finland, FR – France, GR – Greece, IE – Ireland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, PL – Poland, SE – Sweden, UK – United Kingdom.

This option is not available and the value is zero: Germany, Estonia, Iceland, Netherlands, Norway, Portugal, Slovakia, Slovenia

Table 1.8: Percentage of those temporarily absent from work during the reference week among the employed as defined by the ILO-OECD criteria, 2005

Rank	Country	Percent	Rank	Country	Percent
1	Sweden	16.0	14	Italy	10.5
2	Norway	15.9	15	Germany	8.8
3	Belgium	15.2	16	Czech Republic	8.0
4	Finland	15.1	17	Ireland	7.8
5	France	14.6	18	Cyprus	7.7
6	Denmark	14.0	19	Portugal	6.8
7	Spain	13.8	20	Lithuania	5.3
8	Netherlands	13.6	21	Slovakia	5.1
9	United Kingdom	12.6	22	Hungary	4.6
10	Luxembourg	12.3	23	Greece	4.2
11	Iceland	12.1	24	Poland	4.1
12	Austria	11.7	25	Estonia	3.7
13	Slovenia	11.4	26	Latvia	3.1

In order to circumvent this problem, the length of the working day and the probability of part-time employment is analysed within individual groups formed on the basis of the association between usual and actual hours of work, restricting our inquiry to persons who performed at least one hour's work during the reference week. Displaying our calculations for all of the countries would result in an unintelligible multitude of figures, thus, in ad-

21 The average proportion is 11.7 percent for the EU–15 countries, 5.2 percent for Eastern and Central Europe and 5.1 percent for the Baltic region.

dition to Hungary, we shall restrict our presentation to four countries representative of the different types observed in Europe: Denmark, Austria, Greece and Slovakia. The European averages and the ranges will be indicated in the accompanying text.

Table 1.9 displays the distribution of persons across the different groups formed according to actual and usual hours of work, and *Table 1.10* shows the actual hours worked by the different groups.

Table 1.9: Distribution of persons who worked during the reference week according to the numbers of actual and usual hours of work, 2005

Hours worked during the reference week relative to the usual hours of work	Austria	Denmark	Greece	Hungary	Slovakia
Men					
Actual=usual	61.2	53.2	85.3	76.9	96.3
Actual<usual	27.4	31.4	13.7	7.5	3.7
Actual>usual	9.8	14.5	0.8	3.2	n.a.
No usual hours (highly variable)	1.6	0.9	0.2	12.4	n.a.
Total	100.0	100.0	100.0	100.0	100.0
Women					
Actual=usual	60.7	51.9	82.9	82.1	94.5
Actual<usual	28.6	34.5	16.0	10.7	5.5
Actual>usual	9.2	12.3	0.8	2.1	n. a.
No usual hours (highly variable)	1.5	1.3	0.3	5.1	n. a.
Total	100.0	100.0	100.0	100.0	100.0

Sample: Persons who performed at least one hour's work during the reference week.

Table 1.10: Actual weekly working hours of persons who worked during the reference week (mean and standard deviation, 2005, hours)

	Actual hours worked during the reference week relative to the usual hours of work								Total	
	Equal		Actual<usual		Actual>usual		Highly variable			
Country	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.	Mean	St.dev.
Men										
Austria	44.0	11.0	35.0	11.5	50.8	11.0	..		43.0	12.1
Denmark	40.3	9.6	32.4	10.8	49.4	12.0	..		39.9	11.6
Greece	45.0	10.5	32.1	10.1	55.8	10.1	..		43.7	11.2
Hungary	41.3	5.9	30.2	9.8	50.7	7.4	45.6	12.6	41.6	8.0
Slovakia	42.1	6.6	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	42.1	6.6
Women										
Austria	34.4	13.3	27.1	12.0	41.5	13.2	..		34.0	13.7
Denmark	34.9	8.4	26.7	9.7	41.5	10.2	..		34.0	10.0
Greece	40.1	10.6	28.4	10.3	54.9	11.5	..		38.9	11.3
Hungary	39.4	5.5	27.1	9.1	48.0	8.4	41.0	13.6	39.0	7.2
Slovakia	39.9	5.7	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	39.9	5.7

Sample: Persons who performed at least one hour's work during the reference week.
Notes: Two dots indicate that the small number of cases did not allow analysis. n. d. = no data.

In Hungary – as well as in Greece and Slovakia – the actual hours worked relatively rarely deviate from the usual hours. 12.4 percent of men and 5.1 percent of women report "highly variable" usual hours here, while the corresponding figures are very small for the other countries. In Slovakia we only have data of actual hours corresponding to, or shorter than, the usual hours.

Average hours of work

The 41.3 hour working week observed for Hungarian men *working their usual hours* during the reference week is considerably shorter than the corresponding values for Greece and Austria but is similar to the Slovakian figure, both of which being longer than the hours recorded for Denmark. Women in Hungary, however, work five hours longer (39.1 hours) than women in Austria or Denmark, although their working week is somewhat shorter than that of Greek and Slovakian women. There is far less variation in working hours in the two former socialist countries than in the three old EU member states.

The data on persons working *less than their usual working hours* shows little difference between the countries, whether we consider men or women. Looking at the group of those working *longer than their usual hours*, we find Hungary positioned between the two Western European countries and Greece.

Hungarian men having *highly variable working hours* performed more than 45 hours of work during the reference week, and the corresponding figure was 41 hours for women. Further data (not displayed in the table) reveals that only 4.4 percent of Hungarians declaring to have highly variable working hours were altogether absent from work during the reference week, which means that this group is most similar to the population in full-time permanent employment both in terms of the frequency of work activity, and the hours of work performed during the reference week.[22] (The average working hours for the other countries are not shown because of the small number of cases observed. We should note, however, that high values, of more than 36 hours, were typical for these countries.)

On the whole, Hungarian men's actual average working week does not appear to be either outstandingly short or outstandingly long. It occupies a position halfway between the Danish value and the Greek value, the latter of which is remarkably high even in an overall European context. (The 41.6 hour working week is 36 minutes longer than the EU–15 average.) Hungarian – as well as other Central, Eastern and Southern European – working women, however, work substantially longer hours than their Western European peers: they work 5 hours longer a week than Austrians or Danes. Hungarian women's 39 hour working week is 6.5 hours, almost a whole day, longer than that of Western European women on average.

22 This group, however, has a higher than average proportion of persons working part-time, as will be discussed later. It should be noted that in the Hungarian labour force survey, the majority of those reporting to have *highly variable* hours of work are self-employed and assisting family members.

Part-time work

For the reasons discussed above, the proportion of part-time workers can only be reliably measured among those working their usual hours during the reference week. As shown in *Table 1.11*, 2.6 percent of men are estimated to have regular employment involving less than 36 hours of work, and a negligible proportion work less than 20 hours. This value is one half to a one third of the figures observed for the three old EU member states, and essentially equals the Slovakian value.

Table 1.11: Percentage of part-time workers among different populations, 2005

	Performed 1–35 hours of work during the reference week		Performed 1–19 hours of work during the reference week	
	Worked usual hours	Works highly variable hours	Worked usual hours	Works highly variable hours
Men				
Austria	5.0	..	1.1	..
Denmark	8.2	..	1.5	..
Greece	7.4	..	0.7	..
Hungary	2.6	16.0	0.1	2.2
Slovakia	2.1	n. d.	0.2	..
Women				
Austria	40.4	..	10.2	..
Denmark	37.8	..	3.6	..
Greece	21.0	..	3.1	..
Hungary	8.1	29.1	0.4	4.0
Slovakia	5.9	..	0.6	n. d.

Note: Two dots indicate that the small number of cases did not allow analysis.

Among women working their usual hours during the reference week, 8.1 percent worked less than 36 hours, which is less than half of the Greek, less than a quarter of the Danish, and a fifth of the Austrian value, but marginally higher than the Slovakian figure.[23]

As can be seen in *Table 1.11*, while Hungarians working highly variable hours work relatively long hours on average, there is a non-negligible proportion of part-time workers among them: 16 percent of men and 29.1 percent of women work less than 36 hours, and 2.2 and 4 percent work less than 20 hours – this, however, only adds about 1.5 percent to the probability of part-time employment among the total population.

It should be noted that the low probability of part-time employment is mainly typical of the former socialist countries *in Central Europe*: Hungary, the Czech Republic, Slovakia and Slovenia. Poland and the Baltic states are characterised by a substantially higher proportion (20.4 and 13–17 percent respectively) of women in regular part-time employment, although these values still fall behind the figures observed in the EU–15 countries.

23 For the female population of the EU–15, the overall part-time employment rate calculated using a similar method (1–35 hours worked) comes to 47.3 percent. This is a misleading figure, however, since in a number of countries even the median number of hours worked is less than 36. Discounting these countries, (the Netherlands, France, the United Kingdom and Germany), the average value is 36.1 percent. Note that the median hours of work exceeded 35 hours for each of the countries shown in *Table 1.11*.

Flexible work schedules

Work arrangements permitting a flexible work schedule are far less frequent in Hungary, which is an important factor explaining the result that Hungarian men and women are less likely to be absent from their jobs and far less likely to work either less or more than their usual working hours. In Austria and Denmark, respectively 30 and 44 percent of those working less than their usual hours during the reference week were in a position to do so due to their flexible work schedules, while the corresponding proportion is 5.6 percent for Hungary (and even lower for Greece and Slovakia). Similarly, in Austria and Denmark 40–50 percent of those working more than their usual hours cited their flexible work schedules as the reason, while in Hungary only 17 percent did so (*Table 1.12*). In this respect the demarcation line lies not between the East and the West but between the Western and Northern European countries on one side and the Central, Eastern and Southern European countries on the other. For the old EU member states, among persons working less than their usual hours, the unweighted average share of those citing flexible work schedules as the reason was 30.4 percent in 2005.

Table 1.12: The role of flexible work schedules in explaining shorter or longer than usual hours of work, 2005 (percent)

	Persons citing flexible work schedules as the reason for deviating from usual hours of work during the reference week	
Country	Among those working less than usually	Among those working more than usually
Austria	30.0	38.9
Denmark	43.9	51.7
Greece	0.4	2.6
Hungary	5.6	17.2
Slovakia	1.0	6.7

Sample: The employed population as defined by the ILO-OECD criteria.
Further choices were: bad weather, lack of work, strike, training, sickness, nursing, family reason, holidays, change of jobs, overtime, other.

Home-based work

The EU LFS defines home-based work as work performed on premises where the person lives. Work performed in the building containing the worker's home does not qualify as home-based working if the location of the work is separated from the living unit (e.g., a shop, restaurant, workshop or office with a separate entrance). The category also excludes work performed by farmers around the house, in the garden, stables, engine-shed, etc. Employees are considered to be working at home if this forms part of a formal work arrangement between the employer and the employee (telework contract, permitted regular home-based work).

As shown in *Table 1.13*, notwithstanding the incomprehensibly restrictive definition of home-based work, Austria and Denmark are characterised by a high proportion (20–25 percent) of people working at home at least some of the time, while the corresponding proportions remain below 10 percent in Hungary, Slovakia and Greece. A noteworthy feature of the data is that home-based work *is no more frequent* among women than it is among men. In about half of the countries, in fact, a higher share of men appear to fall into this category.

Table 1.13: Home-based work, 2005 (percent)

	Men		Women	
Country	Usually home-based	Sometimes home-based	Usually home-based	Sometimes home-based
Austria	5.3	19.0	7.6	13.9
Denmark	4.0	23.3	5.3	17.3
Greece	1.2	2.3	2.3	3.8
Hungary	2.7	5.0	2.8	6.5
Slovakia	3.2	4.6	4.9	4.4

Sample: The employed population as defined by the ILO-OECD criteria.
Note: See the text for the definition of home-based work.

The proportion of those that work at home shows a large variation between countries even within the group of old EU members: it is over 20 percent in Austria, Belgium, Denmark, Great Britain and Iceland but remains under 10 percent – in terms of the definition used here – in Southern Europe. The figures range from 8 to 15 percent for the former socialist countries, which is not very far from the overall average figure for the total European Labour Force Survey sample (12.1 percent among men, 11.9 percent among women).

The average values and gender differences are of course highly sensitive to employment status. This is illustrated through a comparison of Austria and Hungary, as displayed in *Table 1.14*. It can be seen that in Austria the share of at-home workers is substantially higher in each employment category and, in a relative sense, the difference between the two countries is greatest when employees are considered. Gender differences remain small even if the data is broken down according to employment status (except for assisting family members in Hungary).

Table 1.14: Percentage of those who work at home in Austria and Hungary, 2005

	Hungary		Austria	
Employment status	Men	Women	Men	Women
Employee	4.4	6.6	14.4	14.4
Self-employed	28.6	31.2	59.2	61.3
Assisting family member	25.4	37.0	47.1	52.1

Sample: The employed population as defined by the ILO-OECD criteria.

Participation in adult education[24]

In this chapter, we do not look at adult education as a significant component of human capital formation, but as one of the activity statuses of those on the boundary between work and non-work. Some of the adult education participants are employed, but are currently not working, and the unemployed and the inactive individuals mostly attend job-related adult education courses.

Given that adult education participation varies significantly across age cohorts, we analyse the 25–29 year-olds and those aged over 29 separately. The comparative analysis is based on the countries analysed so far, except that we use Italy instead of Greece as a representative of Southern Europe – as the data concerning adult education is not complete for Greece. Whenever necessary, we refer to adult education participation rates in other European countries. *Table 1.15* presents the adult education participation rates for those aged 25–29 in five selected European countries. In Hungary, only a small proportion of the 25–29 year-olds participated in adult education in 2005, both in an absolute and in a relative sense: a mere three percent, which is the sixth lowest participation rate among the 24 European countries.[25] It is worth noting that a similarly low participation rate characterises Poland, the Slovak Republic and numerous Southern European countries. The participation rate is the highest in Finland, Sweden and Denmark, and amounts to 17 percent, 19 percent and 25 percent respectively.

Table 1.15: Participation rate in adult education among 25–29 year-olds, 2005 (percent)

Country	Men	Women	Together
Austria	12.6	13.9	13.2
Denmark	23.8	26.3	25.0
Hungary	2.0	4.1	3.1
Italy	2.6	3.9	3.3
Slovak Republic	3.4	4.1	3.8

The distribution according to the field of study shows that in Hungary and in Poland almost half of the 25–29 year-old adult education participants pursue foreign language courses (*Table 1.16*) – however, out of all those 25–29 year-olds who study foreign languages, the proportion who choose adult education foreign language courses (as opposed to other means) is similar in all of the five countries, and amounts to around one percent.

It is worth mentioning that in Hungary 78 percent of the adult education participants attend job-related adult education courses (as opposed to adult education courses whose purpose is personal/social). At the same time, in Hungary remarkably few participants attend adult education courses during paid working hours (a mere 10 percent).

24 Adult education participants are those individuals who attended any courses, seminars, conferences or received private lessons or instructions outside the regular education system within the last four weeks.

25 The international comparison is based on 24 countries: Norway, Iceland and the 25 European Union Member States, with the exception of Germany, Malta and the United Kingdom. At times, the text of the chapter refers to all of the 24 countries, however, the tables present figures for five selected countries only, namely, Hungary, one Western, one Northern, one Southern and one Central and Eastern European Union Member State.

Table 1.16: The distribution of 25–29 year-old adult education participants according to the field of study, 2004–2005 (percent)

Field	Austria	Denmark	Hungary	Italy	Slovak Rpublic
General programmes	3.78	2.76[a]	5.01[a]	1.16[a]	0.63[a]
Teacher training and education science	6.64	2.98[a]	1.35[a]	5.28	1.41[a]
Humanities, languages and arts	10.89	5.01	2.89[a]	6.44	0.72[a]
Foreign languages	22.15	6.00	40.46	15.47	45.14
Social sciences, business and law	9.37	19.94	20.39	26.08	17.98
Natural sciences and computing	8.36	6.20	10.17	13.90	9.58
Engineering and agriculture	9.73	6.90	2.29[a]	6.59[a]	6.00[a]
Health	22.61	10.43[a]	4.53[a]	11.66	3.77
Services	6.46	39.79	12.91[a]	13.42	14.77[a]
Total	100.00	100.00	100.00	100.00	100.00

Note: Given the small number of observations, we pooled the 2004 and 2005 samples for the analysis.
[a] The number of observations is less than fifty.

We model adult education participation in the framework of a logit model, based on a pooled 2004–2005 sample. The figures in *Table 1.17* present the odds ratios; an odds ratio less than one implies a negative effect and an odds ratio greater than one implies a positive effect. According to the figures for Hungary, within the population of 25–29 year-olds, single persons and women are more likely to participate in adult education than married individuals and men, individuals with low and medium education levels are less likely to participate than their highly educated counterparts and those who are employed are more likely to participate than the group of unemployed and inactive individuals. The estimation results for the other four countries under analysis are qualitatively similar to the results for Hungary as far as education level, gender and marital status are concerned – however, quantitative differences in the parameter estimates exist. For instance, in Denmark, education level is not as significant in determining the probability of participating in adult education as in the other countries.

In Hungary, only one percent of the individuals aged 30 and older participated in adult education in 2005, which is the third lowest figure among the 24 countries under analysis. The figures are similarly low in Southern and Eastern Europe, as opposed to Western Europe, where the participation rate in adult education is between five and eight percent for this age cohort. Adult education participation is remarkably high, over 12 percent, in the Nordic countries – it is the highest in Denmark, where it reaches 18 percent. It is worth noting that the one percent participation rate in adult education – the third lowest in the European ranking – characterises both genders in Hungary (*Table 1.18*).

Table 1.17: Logit odds ratios for participation in adult education for 25–29 year-olds, 2004–2005 (odds ratios)

Groups	Austria	Denmark	Hungary	Italy	Slovak Republic
Single	1.44***	1.36***	1.53***	1.58***	1.09
Low education level	0.23***	0.57***	0.14***	0.10***	0.20***
Medium education level	0.38***	0.65***	0.42***	0.29***	0.25***
Female	1.16***	1.11	1.76***	1.24***	1.67***
Unemployed or inactive	0.95	0.73***	0.87*	1.00	0.25***
Number of observations	19,656	5,507	42,764	70,310	15,962

Dependent variable: 1, if participated in adult education within the past four weeks, 0, if did not participate in adult education within the past four weeks.
Sample: individuals aged 25–29, excluding students and those in compulsory military service.
Reference: married, high education level, male, employed.
Single: single, divorced or legally separated, widowed.
Education levels: Low education level refers to at most lower secondary level (ISCED 0–2) completed, medium education level refers to at most upper secondary education (ISCED 3–4) and high education level refers to tertiary education (ISCED 5–6).
Statistically significant at the * 10 percent, *** 1 percent level.

Table 1.18: Participation rate in adult education among those aged 30 years and older, 2005 (percent)

Country	Men	Women	Together
Austria	7.6	8.6	8.2
Denmark	15.7	20.4	18.1
Hungary	0.9	1.2	1.1
Italy	2.2	2.3	2.2
Slovak Republic	2.7	2.6	2.6

The distribution by field of adult education for this age cohort is similar to that of those aged 25–29. It is worth mentioning that in 2005 both in Hungary and in the Slovak Republic the largest fraction (nearly one third) of adult education participants attended foreign language courses – as opposed to the other three countries under analysis. Similarly to the younger age cohort, 80 percent of the Hungarian adult education participants aged 30 and older attended job related adult education courses in 2005.

The figures in *Table 1.19* show the various factors that affect the probability of participating in adult education. In each of the five countries – as for the cohort aged 25–29 – single persons (with the exception of Denmark) and women are more likely to attend adult education than married individuals and men, and individuals with a low education level are less likely to participate in adult education than their highly educated counterparts. However, the effect of age on the probability of participating in adult education differs across the countries: whereas in Austria, Hungary and the Slovak Republic

older individuals are less likely to participate in adult education than those aged 30–34, in Denmark and Italy this only holds for those aged over 54. Furthermore, while in each country the inactive are less likely to attend adult education courses than their employed counterparts, the position of the unemployed individuals varies across countries.

Table 1.19: Logit odds ratios for participation in adult education for those aged 30 and older, 2005 (odds ratios)

Groups	Austria	Denmark	Hungary	Italy	Slovak Republic
Aged 35–39	0.94**	0.99	0.82***	1.07*	0.80***
Aged 40–44	0.91***	1.01	0.61***	1.27***	0.75***
Aged 45–54	0.83***	0.96	0.48***	1.25***	0.82***
Aged over 54	0.53***	0.78***	0.13***	0.93***	0.85**
Single	1.04**	0.86***	1.25***	1.17**	1.21***
Low education level	0.17***	0.28***	0.10***	0.09***	0.02***
Medium education level	0.42***	0.59***	0.38***	0.41***	0.18***
Female	1.55***	1.55***	1.62***	1.31***	1.32***
Unemployed	1.21***	0.87	0.97	0.67***	0.66***
Inactive	0.48***	0.53***	0.63***	0.32***	0.22***
Number of observations	132,758	39,203	182,681	484,750	71,643

Dependent variable: 1, if participated in adult education within the past four weeks, 0, if did not participate in adult education within the past four weeks.
Sample: individuals aged over 29, excluding students and those in compulsory military service.
Reference: aged 30–34, married, high education level, male, employed.
Single: single, divorced or legally separated, widowed.
Education levels: Low education level refers to at most lower secondary level (ISCED 0–2) completed, medium education level refers to at most upper secondary education (ISCED 3–4) and high education level refers to tertiary education (ISCED 5–6).
Statistically significant at the * 10 percent, ** 5 percent, *** 1 percent level.

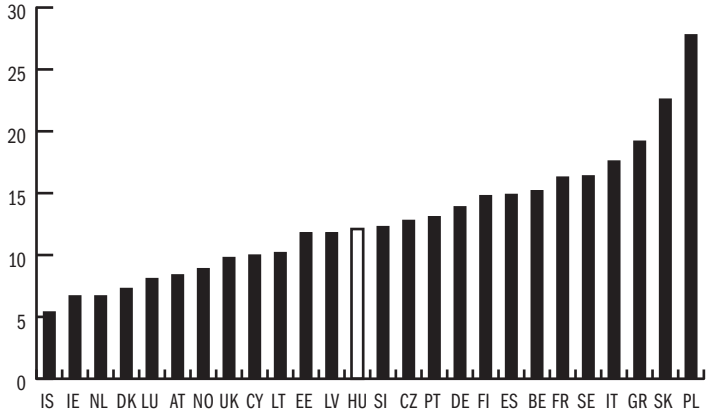
All in all, in Hungary participation in adult education was low in 2005, in both an absolute and a relative sense, which supports the findings for the time period of 1999–2003 (*Hámori*, 2008). The remarkably low participation rate characterises not only young adults, but also men and women aged 29 and over. It is worth mentioning that the low participation in adult education is generally characteristic of the Southern European and the Central and Eastern European countries, as opposed to the Scandinavian countries, which perform best in this area.

6. From education to the labour market – entering the labour market and unemployment among young people

The basic statistics indicate relatively high unemployment among young people in Hungary. The exceptionally wide range of ILO-OECD rates across the

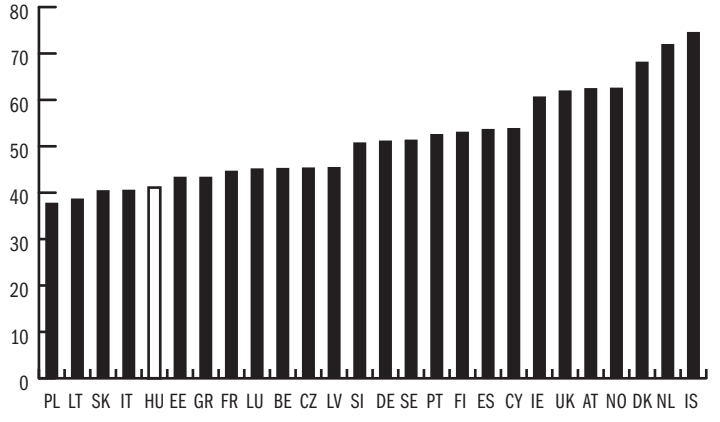
countries of the European Union suggest, however, that the ILO-OECD definition cannot accurately capture the highly complex process of transition from school to work. Similar cautionary remarks apply to the unemployment rates, which assign Hungary to an even worse position, as can be seen in *Figures 1.5* and *1.6*.

Figure 1.5: Unemployment rates among 15–29 year olds, 2005



Country codes: AT – Austria, BE – Belgium, CY – Cyprus, CZ – Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, ES – Spain, FI – Finland, FR – France, GR – Greece, IE – Ireland, IS – Iceland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, HU – Hungary, MT – Malta, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, SI – Slovenia, SK – Slovakia, SE – Sweden, UK – United Kingdom.

Figure 1.6: Employment rates among 15–29 year olds, 2005



Country codes: AT – Austria, BE – Belgium, CY – Cyprus, CZ – Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, ES – Spain, FI – Finland, FR – France, GR – Greece, IE – Ireland, IS – Iceland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, HU – Hungary, MT – Malta, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, SI – Slovenia, SK – Slovakia, SE – Sweden, UK – United Kingdom.

The *unemployment* rates of 15–29 year olds cover a considerably wide range: from 5.4 percent in Iceland to 27.8 percent in Poland, with Hungary (12.1 percent) occupying a middle position. The unweighted average of the 26 countries is 12.9 percent. As regards *employment* rates, we once again find Poland (37.7 percent) and Iceland[26] (74.5 percent) at the two extremes of the scale but Hungary, with 41.1 percent, is positioned well below the average (51.5 percent).

The position of young people making their way from school to the labour market is of outstanding significance with respect to both education and labour policies. It is unacceptable, however, to evaluate this process purely on the basis of unemployment or employment rates, since the values of youth unemployment and employment are to a large extent a function of the type of training, the typical timing of leaving school and the incidence of student employment.

This section is divided into three parts. First, we look at employment among young people who were not receiving formal education at the time of the interview. Student employment (and its weight within youth employment) will next be investigated, and finally, some features of youth – and within that student – labour will be discussed.

Employment among non-students

Looking at the employment rates of 15–49 year olds grouped according to the time at which they obtained their highest educational qualifications, the lowest employment rate is found among those who left education 1–3 years before the interview but even this level is over 80 percent in some of the Western European countries, including Austria and Denmark. The highest employment rates are typically observed among those who left education 4–5 years before the interview in Western Europe, among those who left 6–8 years previously in the Southern countries and among those who left more than 9 years previously in the transitional economies of Central and Eastern Europe.

The employment rates among *young people starting their careers having at most primary education* are displayed in the first data column of *Table 1.20.* The *value for Hungary is the lowest in Europe* (15.8 percent), followed by Greece and Cyprus (18.2 and 22.8 percent respectively). All other countries have rates of over 30 percent. The employment rates among labour market entrants with a low educational attainment are relatively high in the United Kingdom (71.1 percent), in Austria, Denmark, the Netherlands and Luxembourg within Western Europe (60.3–72.5 percent) and in Portugal (57.7 percent). The values for the remaining countries range from 33 to 57 percent.

26 Iceland is characterised by several exceptional figures by European comparison. Its special position resulting from its small population means that the high level of employment and the low unemployment rates cannot be taken as a reference point in international comparisons. When there are a sufficient number of cases, Iceland is shown in the tables and figures but in the remainder of this paper it will not be discussed in the text.

Table 1.20: Employment rates among the 15–49 year old non-student population by time since obtaining highest educational qualifications and by age cohort, 2005

	1–3 years since leaving education			4–5 years since leaving education				6–8 years since leaving education		
	15–19	20–24	25–29	15–19	20–24	25–29	30–49	20–24	25–29	30–49
Country	year old cohort									
Austria	60.3	85.7	89.7	52.8	85.9	91.6	92.0	75.6	87.2	90.2
Belgium	35.0	74.0	86.2	..	73.7	90.4	83.4	71.3	86.0	89.4
Cyprus	22.8	70.2	89.4	..	75.2	87.0	92.6	80.9	86.7	89.0
Denmark	67.3	84.5	90.1	..	78.9	93.3	93.6	77.6	87.9	92.6
United Kingdom	71.1	84.6	87.8	75.9	81.1	91.2	88.5	77.1	87.4	87.8
Estonia	46.6	69.6	83.6	..	74.5	79.6	82.8	69.0	72.3	93.1
Finland	55.8	77.2	85.4	..	71.4	84.1	86.2	69.4	82.9	87.4
France	43.3	71.4	78.1	35.1	70.6	82.1	76.2	67.1	81.8	81.4
Greece	18.2	53.2	66.8	53.8	62.5	80.7	83.8	69.7	78.0	84.4
Netherlands	71.5	89.0	92.7	70.9	85.5	94.9	88.4	82.5	90.4	89.2
Ireland	48.8	82.6	89.5	..	81.8	91.1	86.8	75.3	88.2	88.2
Iceland	86.1	90.7	95.6	..	82.8	96.7	92.6	83.2	95.0	95.4
Poland	33.7	53.8	78.7	..	53.9	76.7	88.1	50.9	69.2	88.1
Latvia	51.2	80.0	82.0	..	67.9	78.9	94.6	70.1	79.5	81.6
Lithuania	57.1	72.9	88.7	..	67.9	87.1	95.3	70.1	84.4	89.3
Luxembourg	72.5	85.9	94.1	..	89.2	95.0	89.8	80.2	91.7	90.2
Hungary	15.8	63.5	87.0	19.2	64.6	84.1	87.2	58.6	77.6	82.7
Germany	40.4	74.0	86.8	..	71.9	80.5	87.9	58.1	77.5	86.1
Italy	35.8	59.8	59.0	40.7	71.9	76.9	81.2	63.6	80.0	84.6
Portugal	57.7	76.0	84.6	62.4	82.5	85.9	92.3	81.2	87.1	91.8
Spain	49.4	69.7	76.1	54.7	75.4	83.1	80.6	74.5	84.0	83.1
Sweden	50.7	74.7	85.7	47.2	78.2	88.9	91.8	71.9	87.6	91.1
Slovakia	34.7	68.1	87.4	..	72.5	85.7	88.4	59.2	72.7	83.1
Slovenia	41.0	69.9	86.3	..	78.3	90.7	95.9	71.4	83.6	96.4
EU-24	48.6	74.2	84.6	51.3	74.9	86.5	88.3	71.2	83.3	88.2

Sample: The 15–49 year old population excluding students and conscripts enrolled in compulsory military service.
Notes: No data are available for the Czech Republic or Norway; two dots indicate that the small number of cases did not allow analysis.

The second data column (20–24 year olds) displays the employment rates among young *labour market entrants typically having secondary education,* which vary between 53 and 89 percent. The countries that stand out – with rates over 80 percent – are the Netherlands, Luxembourg, Austria, Denmark and the United Kingdom. Next in the ranking are the Northern countries, the remaining Western European countries (Germany and France), the Baltic states and, from among the Southern countries, Portugal (70–80 percent). The bottom of the range is occupied by the remaining Southern European countries and the former socialist countries (Hungary with 63.5 percent), with Greece and Poland showing the poorest results.

The order of the countries remains similar when we look at the employment rates among 20–24 year olds who left school 4–5 years preceding the survey,

the only difference being that not all countries show improvement relative to the population who left education 1–3 years previously. (This can probably be mainly attributed to a larger share of people having primary education in this group.) The Greek rate, however, increases by more than 9 percentage points to 62.5 percent, which makes the disadvantage of Poland (53.9 percent) even more pronounced.

25–29 year olds who obtained qualifications 6–8 years before the interview appear in the last column of the table. Most of their employment rates fall within the range of between 77 and 92 percent (the exceptions being 69.2 percent for Poland, 72.3 percent for Estonia and 72.7 percent for Slovakia), which indicates that the differences between the countries are reduced as labour market experience increases. There is not much change in the ranking of the countries, but as 17 out of the 24 countries have values of over 80 percent, the ranks may be less informative than the increase in the employment rate of those completing school 6–8 years before the interview relative to the employment rate of newly qualified persons. Let us look at the countries where a few years' experience is accompanied by a more than 10 percent increase in employment. This phenomenon is especially striking in the Southern countries: Greek school leavers have an employment rate of 53.2 percent compared to the 78 percent rate for those who qualified 6–8 years ago; an increase of 20.2 percentage points is observed for Italy and 11.1 percentage points even for Portugal. In the former socialist countries (with the exception of Slovakia) the employment rates among those leaving school 6–8 years before the interview are 14–15 percentage points higher than the rates among those who qualified 1–3 years preceding the survey.

The high level of employment among newly qualified secondary school graduates in the Western countries cited may be related to the structure of vocational training. Apprenticeship programmes have special significance in Austria, Germany and Switzerland (which is not included in our dataset), where vocational training is conducted in a dual training system, whereby apprentices receive training at two sites – at a school and in a company – in parallel, i.e., each week of training is divided between the two locations. In Germany and Switzerland, practical training programmes cover all areas of the economy; two thirds of 16–19 year old young people participate in some way during their studies. In Austria, practical training is mainly associated with vocational occupations and involves 40 percent of young people. Practical training is also an important tradition in Denmark, where, if needed, students can turn to their vocational schools for help in finding trainee positions at companies. (Some studies also classify the Danish system as a dual education system. See, for instance, *OECD,* 2008). The apprenticeship period spent with a company as part of the dual education programme is frequently treated as temporary but full-time employment (*OECD,* 2008), i.e., partici-

pants are classified as both full-time employees and students in statistical surveys. In the Netherlands, the vocational training system was reformed in the mid-1990s, assigning a greater role to company-based training. About a third of the young population participate in apprenticeship programmes in both of the countries. Internships are less wide-spread (with about 15 percent participation) but these programmes receive financial support in Britain and France. A feature shared by all seven countries is that companies are responsible for 70–80 percent of vocational training, and students successfully completing the programme are awarded nationally recognised qualifications (*Steedman,* 2005, pp. 2–4; *Quintini & Martin,* 2006, p. 23).

The lowest employment rates among *newly qualified graduates of tertiary education* (aged 25–29) are observed in the Southern countries, with the exception of Cyprus and Portugal (59 percent in Italy, 66.8 percent in Greece and 76.1 percent in Spain). France and Poland are characterised by rates just under 80 percent, and the rates of the remaining countries are over 80 percent. Several values fall in the range between 85 and 90 percent, including Hungary's 87 percent employment rate observed in 2005. The employment rates among those who graduated from tertiary education 6–8 years prior to the survey (aged over 30 at the time of the interview) are over 80 percent for all of the countries.

Summarising the data on the labour market entry of young people, we conclude that almost 90 percent of tertiary education graduates enter employment within three years of completing their studies in most of the countries under analysis, including Hungary, although this level is not met by some Southern countries, France, the Czech Republic, or Poland. The EU countries do not show major differences in terms of the employment rates among young college and university graduates. In contrast, less than one in five young people who have a low level of education finds employment within three years in Greece and Hungary, and one in three in Slovakia and Poland, while the corresponding rates are well over 50 percent in most of the Northern and Western countries.

Similar conclusions can be drawn from an analysis of employment rates broken down to the level of education and *age*, as displayed in *Table 1.21.*

Looking at employment among *those with a low educational attainment*, the lowest values are found in the countries of Eastern and Central Europe for all cohorts. The rates show large variation across the countries, especially for 15–19 year olds. The countries with the lowest employment rates for the youngest cohort of people with at most primary education are the Czech Republic, Slovakia, and Hungary, with values of around 8–10 percent. The highest values (over 60 percent) are observed in the Netherlands, Luxembourg and Denmark, while – with a few exceptions – the employment rates in the remaining Western countries, the Southern countries, and the Baltic

states fall in the range between 30 and 50 percent. In most of the countries, within the group of those with a low educational attainment, the 30–49 year old cohort has the highest probability of being employed. This pattern is not followed by the Southern countries – with the exception of Italy – where the employment rates are highest among those in their twenties.

Table 1.21: Employment rates among the 15–49 year old non-student population by level of education and age, 2005

	Low				Medium				High		
	15–19	20–24	25–29	30–49	15–19	20–24	25–29	30–49	20–24	25–29	30–49
Country	year old cohort										
Austria	31.9	58.5	59.4	69.4	73.4	86.3	87.3	86.1	85.9	89.7	92.1
Belgium	19.7	52.8	56.3	65.2	45.4	72.6	82.7	82.9	81.4	91.0	91.7
Cyprus	19.8	78.2	76.5	73.4	31.4	70.7	82.1	83.8	73.8	87.7	89.3
Czech Republic	8.2	34.9	39.7	55.2	55.0	76.0	76.8	86.0	76.2	84.9	92.2
Denmark	63.1	71.5	65.5	72.3	80.0	86.4	86.5	89.5	87.3	90.2	92.6
United Kingdom	38.3	42.1	44.0	55.3	70.9	78.2	79.5	83.4	86.8	92.7	91.7
Estonia	51.4	52.6	55.1	60.2	..	73.0	76.9	80.2	83.1	82.7	87.4
Finland	48.7	62.2	64.1	71.9	69.2	76.1	80.8	83.9	90.5	87.7	89.4
France	28.7	50.1	56.4	71.1	52.9	72.0	78.2	84.4	74.6	85.6	87.4
Greece	19.7	65.3	69.9	69.4	25.2	59.7	75.9	75.7	58.2	77.3	88.1
Netherlands	64.7	74.0	72.1	73.0	77.8	88.7	88.9	85.0	91.8	94.9	91.9
Ireland	31.7	59.6	61.6	66.8	68.1	82.2	86.1	79.7	87.3	92.1	89.6
Iceland	85.7	81.9	86.0	81.7	..	90.6	90.9	93.4	..	96.4	93.8
Poland	22.0	30.9	42.8	51.2	33.9	53.8	66.7	72.6	64.8	82.0	92.4
Latvia	46.8	60.3	60.6	63.0	39.3	75.5	77.1	79.2	90.0	84.5	90.9
Lithuania	41.9	59.8	64.3	58.2	44.1	66.6	83.2	81.1	82.7	89.5	91.4
Luxembourg	63.1	69.1	78.1	77.3	70.6	86.7	89.2	81.5	84.7	93.7	88.7
Hungary	10.2	39.0	46.6	52.0	38.5	64.5	75.1	79.7	78.5	87.0	89.3
Germany	28.5	42.7	49.6	61.1	61.7	75.8	78.1	80.1	83.2	87.8	89.4
Norway	42.0	54.4	60.0	68.4	71.8	80.5	83.1	86.0	84.6	91.4	92.4
Italy	35.2	56.8	62.6	66.2	38.3	66.8	77.6	81.4	46.2	61.9	88.4
Portugal	57.5	77.9	80.8	79.9	45.8	79.4	85.5	89.2	68.6	85.9	94.3
Spain	48.1	70.8	72.5	67.3	46.5	73.6	81.0	78.8	72.5	81.9	86.4
Sweden	48.4	56.0	68.4	77.1	66.2	78.8	85.8	89.3	81.1	89.0	92.7
Slovakia	8.1	19.4	14.9	34.4	40.8	69.3	71.7	80.3	76.4	85.5	91.1
Slovenia	21.6	45.0	63.3	75.2	44.9	74.5	85.1	89.0	75.4	87.6	96.0
EU26	37.9	56.4	60.4	66.0	53.8	75.3	81.2	83.2	78.6	86.9	90.8

Sample: The 15–19 year old population excluding students and conscripts enrolled for compulsory military service.
Note: Two dots indicate that the small number of observations did not allow the calculation of employment rates.

Having a few years of labour market experience more than doubles the probability of employment in the former socialist countries (with the exception of Poland). In Slovakia, however, the employment rate among 20–24 year olds is still only 19.4 percent, while the corresponding values are between 31 and

39 percent for Poland, the Czech Republic, and Hungary, and 45 percent for Slovenia. Looking at the 30–49 year old cohort of people with primary education, the lowest employment rate is observed in Slovakia (34.4 percent), followed by Poland (51.2 percent), Hungary (52 percent) and the Czech Republic (55.2 percent). The corresponding values fall between 60 and 80 percent in the Northern, Southern and Western countries.

Among *those with secondary education,* 60 to 80 percent of 15–19 year olds are in employment in the Western and Northern countries (with the exception of Belgium [45.4 percent] and France [52.9 percent]), while in the Southern and the former socialist countries the corresponding rates range from 25 to 46.5 percent (with the exception of the Czech Republic at 5 percent). The top positions are occupied by Denmark, the Netherlands, and Austria, probably thanks to the dual vocational training system discussed above. Employment odds increase with age in every country. Initially low rates show greater improvement, while initially high rates are affected to a lesser extent. For the majority of the countries the employment rates are highest among 30–49 year olds, which is primarily explained by the temporary labour market absence of women in their twenties .

As expected, *people with tertiary qualifications* enjoy the highest probability of being in employment; the employment rates among 30–49 year olds are over 86 percent in all of the countries. Younger cohorts are somewhat less likely to have jobs, which is related partly to child bearing, and partly to difficulties in starting a career. The unweighted average employment rate of newly qualified higher education graduates is 78.6 percent for the 26 countries, which is dragged down by the rates observed in the Southern countries. The low employment rate among newly qualified graduates in the Southern countries is accompanied by a high unemployment rate. It has been pointed out by *Fernández* (2006), among others, that the labour markets of these countries differ from those of the other countries in that the probability of unemployment among the 20–29 year old population increases with their level of education. In her analysis of the employment odds of young Spaniards, the author finds that employers give priority to labour market experience and, she argues, the curriculum acquired at universities is not sufficiently demand-oriented.

Hypotheses suggesting that Hungarian graduates face exceptional difficulties in finding a job because of the large-scale overproduction of tertiary qualifications have been questioned before by a number of studies (*Galasi,* 2004; *Kertesi & Köllő,* 2006), and do not appear to be supported by the present international comparison either, which uses considerably simpler methods than were previously available: Hungarian graduates' employment rates do not deviate significantly from the average of the 26 countries, no matter which age cohort or labour market experience group we look at.

Working students

For present purposes the category of "student" is not restricted to full-time students but includes every person participating in education or training. A respondent is classed as a student if he or she participated in a primary, vocational, secondary, college, university or PhD programme as a student or apprentice during the four weeks preceding the survey)[27] (*Eurostat,* 2005, p. 34).

The proportion of students among the 15–29 year old employed population is shown in the first four data columns of *Table 1.22.* A striking feature of the data is the enormous variation between countries, with a tenfold difference between the two extremes (Greece 4.5 percent, the Netherlands 43.7 percent). For the 15–19 year old cohort, the percentage of students among the employed is exceptionally high in Germany, the Netherlands, Denmark and Austria, which can be attributed to the dual training system. Among the 15–29 year old population in employment, students are least frequent in the Southern and the former socialist countries, but there are former socialist countries (Slovenia, Poland) where 15–19 year old workers are several times more likely to be in education than are older people, which reflects the emphasis on apprenticeship in vocational training.

The countries widely differ in terms of the proportion of students among *the 20–24 year old* employed population. In seven of the countries more than a third of persons in this group are (by now typically) university or college students, in 11 countries more than a quarter, while in 8 countries less than one in ten. Hungary, together with the Czech Republic, Slovakia and several Southern European countries, belongs to the latter group.

The frequency of students among the employed decreases as we move to older cohorts, just as we find a small proportion of students within a given age cohort if we move up to a higher level of education. It is therefore worth looking at the probability of employment among the student population, which is displayed in the right block of the table.

Looking at the youngest, 15–19 year old cohort, the probability of employment among students covers a wide range of values (from 0.3 percent to 52.3 percent, the former of which is the value observed in Hungary): the student employment rates are high in the countries with dual training systems and in the Northern states, while they are low in the the former socialist countries.

There are only five countries where the employment rates among 20–24 year old higher education students remain below 10 percent: Hungary being one of them in the company of Italy, Greece, the Czech Republic and Slovakia. In 12 of the countries, at the same time, more than a third of students are in employment. It is only the group of 25–29 year old students typically studying for their second degree or PhD for which the Hungarian data approaches the European average.[28]

27 Students were identified based on the EDUCSTAT variable of the European Labour Force Survey.

28 It has previously been suggested (*Kutas & Tóth*, 2007) that the labour force survey captures only a small section of student employment. The authors argue that the employment rate estimated by the labour force survey is substantially lower than the actual rate partly because full-time higher education students are more likely to work than the labour force survey suggests: the study shows that 176 thousand students were enrolled in full-time higher education in 2000–2001, out of which 26 thousand were in employment according to the labour force survey. The authors argue, citing survey evidence, census data and aggregated data supplied by student organisations, that at least half of full-time higher education students "work fairly regularly" and should therefore be classified as being in employment as defined by the ILO-OECD. If this is correct, the employment rate among young people in Hungary is higher than the data shown in the present chapter indicates. However, observing the employment criteria of the labour force survey, we could only classify the working 50 percent of full-time students as employed if *each of them* worked at least one hour during *each of the 52 weeks of the year:* only this would guarantee that the number of working students in any one randomly chosen week of the year equalled half of the total student population. This assumption appears to be too strong. Therefore we regard the results of Kutas & Tóth as an overestimation.

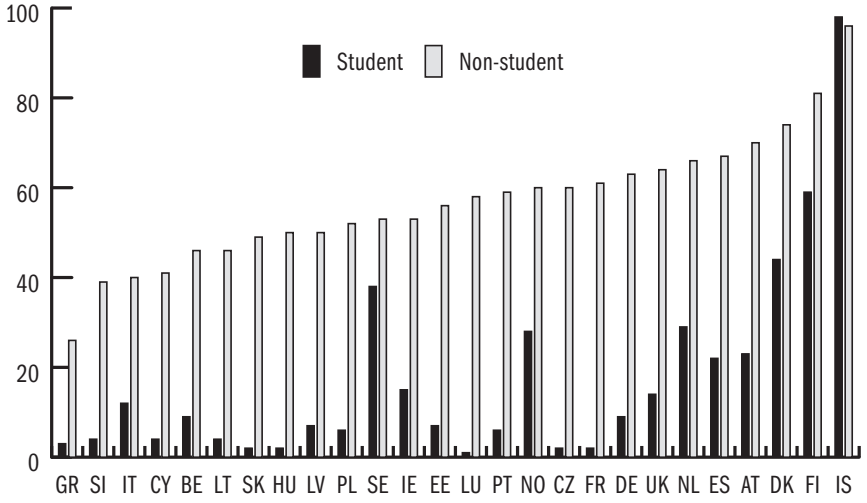
Table 1.22: Percentage of students among the employed population by age cohort, 2005

	Students among the employed				The employed among students			
	15–19	20–24	25–29	15–29	15–19	20–24	25–29	15–29
Country	year old cohort							
Austria	76.7	18.2	8.4	24.8	33.2	39.0	54.4	36.8
Belgium	45.4	8.1	3.9	7.4	3.5	10.4	45.3	7.7
Cyprus	..	6.6	..	5.6	.	20.4	..	9.9
Czech Republic	15.0	5.0	4.2	4.8	0.9	6.6	43.7	5.5
Denmark	84.4	45.3	21.8	46.0	52	61.4	62.1	56.5
United Kingdom	56.7	21.4	10.7	24.6	30.1	50.2	68.7	39.0
Estonia	..	28.4	.	21.4	3.2	33.2	..	17.8
Finland	70.5	40.1	21.0	34.6	17.2	44.8	64.2	33.5
France	64.5	15.8	2.6	12.7	8.1	19.6	37.3	12.5
Greece	17.4	7.6	2.3	4.5	1.6	7.8	24.1	5.5
Netherlands	86.1	44.2	16.4	43.7	52.3	68.6	75.4	60.1
Ireland	47.5	17.5	5.3	15.3	16.8	42.7	55.6	27.6
Iceland	.	44.5	20.5	42.0	..	63.5	60.9	61.7
Poland	71.5	33.6	10.9	21.8	4.7	23.9	60.3	15.9
Latvia	42.1	30.2	..	22.2	4.8	37.4	.	20.1
Lithuania	..	18.0	11.6	14.2	..	14.4	64.7	9.8
Luxembourg	..	..	..	..	2.0	..	..	1.8
Hungary	7.6	9.6	6.8	7.7	0.3	9.2	51.7	7.8
Germany	87.7	36.7	13.1	34.6	24.6	46.7	46.4	33.9
Norway	66.8	31.0	11.6	29.5	35.3	49.9	53.5	42.5
Italy	15.1	9.6	5.4	7.3	1.5	9.9	23.5	7.0
Portugal	13.0	9.7	6.6	8.1	2.3	14.0	43.5	11.0
Spain	25.3	14.2	7.0	10.9	5.6	23.4	51.0	16.9
Sweden	43.7	16.6	10.4	17.7	13.3	28.9	43.6	21.5
Slovakia	..	5.8	3.6	4.5	..	8.4	42.7	4.5
Slovenia	77.5	39.7	21.3	32.2	11.6	37.2	67.0	29.6

Sample: The 15–29 year old employed population.
Note: Two dots indicate that the small number of cases did not allow analysis.

While the above data characterises student and employment status at the time of the survey, *Figure 1.7* below shows the proportion of those having some *previous* formal work experience among the 15–29 year old non-employed and non-student population. (Short-term employment such as vacation work and compulsory military or public service are disregarded.) These figures are concordant with our earlier results. At least 60 percent of young non-students have previously had a job in the countries with dual training systems (Denmark, Austria, the Netherlands, the United Kingdom, Germany and France), while the corresponding figure is 49.5 percent for Hungary, which positions the country in the bottom third of the scale. Among those still pursuing education, having work experience is very infrequent in Hungary and other Eastern and Central European countries, as well as in Greece and France.

Figure 1.7: Percentage of students and non-students with labour market experience, 2005



Sample: The 15–29 year old currently non-employed population.
Country codes: AT – Austria, BE – Belgium, CY – Cyprus, CZ – Czech Republic, DK – Denmark, DE – Germany, EE – Estonia, ES – Spain, FI – Finland, FR – France, GR – Greece, IE – Ireland, IS – Iceland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, HU – Hungary, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, SI – Slovenia, SK – Slovakia, SE – Sweden, UK – United Kingdom.

The forms of youth employment

Part-time and fixed-term employment are frequent solutions when young people first enter the labour market. This may have both supply and demand causes: in some countries, employers prefer not to employ new entrants full-time or on a permanent contract while on the part of the students, part-time work may be a transitory form of moving from education to the labour market. In most of the countries this type of employment is only a temporary solution for young people; they transfer to full-time and permanent jobs within a few years. Part-time work among 15–29 year old students is the most common in the Netherlands, Norway, Sweden and Denmark, where more than 70 percent of working students have part-time employment. It is least frequent in Lithuania and Hungary, where roughly 90 percent of working students are in full-time employment. Part-time employment is – as expected – less frequent among non-students than among students in all countries. It is relatively common (over 20 percent) in the Netherlands, Norway and Sweden, and the least common in the former socialist countries (2.5 percent in Hungary and 1.5 percent in Slovakia).

Table 1.23: Percentage of part-timers and workers on fixed-term contracts, 2005

	Part-timer		Temporary/fixed-term worker	
Country	Student	Non-student	Student	Non-student
Austria	29.1	12.8	67.6	8.6
Belgium	47.4	15.4	59.6	17.9
Cyprus	..	5.8	35.0	19.7
Czech Republic	26	2.3	28.7	11.4
Denmark	71.8	16.4	33.9	12.2
United Kingdom	62.2	14.7	17.7	7.4
Estonia	30.8	..	..	..
Finland	53	11.4	49.2	29.4
France	39.1	12.7	81.7	25.1
Greece	34.3	6.4	41.1	19.6
Netherlands	82.7	31.9	44.9	24.5
Ireland	57.7	7.4	22.5	4.6
Iceland	58.1	11	17.1	9.2
Poland	30.1	9.4	59.8	45.9
Latvia	18.6	5.1	15.8	13
Lithuania	8.9	6.8	9.4	9.3
Luxembourg	49.2	8.6	..	14.7
Hungary	10.9	2.5	12.4	11.4
Germany	25.4	15.4	79.1	22.1
Norway	76.1	26.2	29.8	20.3
Italy	54.1	11.4	47.5	24.8
Portugal	29.8	4.8	52.2	35.9
Spain	53.6	11.6	70.4	53
Sweden	76	23.4	61.7	35.3
Slovakia	17	1.5	20	7.8
Slovenia	40.6	5.1	65.1	34.9

Sample: 15–29 year old students and non-students in employment.
Note: Two dots indicate that the small number of cases did not allow analysis.

Fixed-term employment contracts among students are the most common in Germany, Spain, France and Austria, where more than 65 percent of student employment pertains to this category. Our data indicates a considerably lower proportion for Hungary, only 12.4 percent. Looking at non-students, more than 40 percent of young workers are employed on fixed-term contracts in Spain and Poland while, at the other end of the scale, the figure is less than 10 percent in the United Kingdom, Ireland, Austria, Slovakia, Iceland and the Baltic states.[29]

The distribution of young workers across blue-collar, white-collar, and service sector occupations is well represented by the data for the five countries shown in *Table 1.24*. The majority of student workers perform white-collar work in Greece, Slovakia, and Hungary, while in Denmark and Austria students are more evenly distributed across the three categories of occupations. The high share of manual jobs observed in some Western countries is prob-

29 It is an important question from the point of view of young people starting their working lives whether they enter fixed-term employment by choice or would prefer permanent employment but cannot find any. As revealed by an OECD study from 2006, the latter possibility tends to be the case among young people on fixed-term contracts in Spain. It also takes them longer to transfer to a permanent job (*Quintini–Martin,* 2006).

ably the result of their emphasis on apprenticeship in vocational training. A somewhat higher proportion of non-students have manual rather than white-collar occupations in the two former socialist countries, and the exact opposite pattern is observed for the other three countries.

Table 1.24: Distribution of young workers across occupation categories, 2005

	Student			Non-student		
Country	White-collar	Services	Manual	White-collar	Services	Manual
Austria	39.1	22.3	38.6	47.6	16.2	36.2
Denmark	26.7	34.4	38.9	41.9	22.5	35.6
Greece	45.5	36.1	18.5	38.0	25.1	36.9
Hungary	69.0	18.1	12.9	38.6	19.6	41.7
Slovakia	75.3	17.5	7.3	38.0	18.5	43.5

Sample: 15–29 year old students and non-students in employment.
Note: White-collar: managerial and office jobs requiring tertiary education qualifications; manual: jobs in agriculture, manufacturing, mechanical, maintenance and installation jobs and others.

Atypical (evening, night-time, or week-end) work is most frequent in the Southern countries among both students and non-students: these countries are characterised by the highest proportions of the young frequently performing work of this type (*Table 1.25*). Among students, those who never work atypical hours are represented in the highest proportions in Hungary and Austria, while among non-students, their share is the highest in Hungary, Belgium, Finland and Sweden.

Table 1.25: Frequency of atypical working times among the young, 2005 (percent)

	Student			Non-student		
	Often	Occasionally	Never	Often	Occasionally	Never
Evening or night-time work						
Austria	10.2	13.3	76.5	15.7	18.9	65.4
Denmark	32.6	13.6	53.7	25.6	20.8	53.6
Greece	28.8	39.6	31.6	26.6	37.2	36.2
Hungary	10.2	11.5	78.3	11.4	15.4	73.2
Slovakia	17.9	13.9	68.3	27.6	13.7	58.7
Weekend work						
Austria	28.2	10.3	61.5	30.6	12.8	56.6
Denmark	40.3	19.3	40.4	28	17.7	54.3
Greece	38.8	24.3	36.9	42.5	23.6	33.9
Hungary	11.4	20.5	68.1	14.4	25.9	59.7
Slovakia	19.2	15.9	64.9	29	27	44

Sample: 15–29 year old students and non-students in employment.

Our most important results are summarised in a logit model, in which employment probabilities among the 15–49 year old population are estimated as a function of gender and the interaction between level of education and

the time since leaving education for non-students, and the highest completed level of education for students (*Table 1.26*). The reference category is men with tertiary education who obtained their qualifications more than nine years prior to the EU LFS interview. Their employment rates are shown in the last row of the table.

As shown in *Table 1.26* the probability of employment is significantly reduced relative to the reference group by student status in all five countries. The lower the educational level, the smaller the odds ratio. Denmark is characterised by substantially higher employment odds of secondary school students relative to the reference category compared to any of the other four countries, which is presumably due to the apprenticeship system in vocational training.

Table 1.26: The employment odds of 15–49 year olds (logit odds ratios)

	Austria	Denmark	Greece	Hungary	Slovakia
Gender	0.471***	0.582***	0.185***	0.456***	0.518***
Non-students (level of education, time since obtaining qualifications)					
Low, 1–3 years	0.0289***	0.122***	0.00984***	0.00495***	0.0054***
Low, 4–5 years	0.0821***	0.148***	0.105***	0.0249***	0.0139***
Low, 6–8 years	0.113***	0.216***	0.161***	0.0612***	0.0190***
Low, longer than 9 years	0.188***	0.181***	0.254***	0.107***	0.0358***
Medium, 1–3 years	0.449***	0.398***	0.0955***	0.153***	0.146***
Medium, 4–5 years	0.623***	0.701**	0.236***	0.244***	0.234***
Medium, 6–8 years	0.573***	0.609***	0.335***	0.307***	0.196***
Medium, longer than 9 years	0.526***	0.590***	0.380***	0.381***	0.300***
High, 1–3 years	0.819*	0.688***	0.271***	0.917	0.501***
High, 4–5 years	1.087	1.584**	0.650***	0.767***	0.540***
High, 6–8 years	0.667***	1.032	0.833***	0.597***	0.380***
Students (highest completed education)					
Low	0.0391***	0.104***	0.00197***	0.00098***	0.00016***
Medium	0.0717***	0.0987***	0.00730***	0.0238***	0.0146***
High	0.194***	0.165***	0.0544***	0.252***	0.118***
Constant	37.75***	32.23***	125.2***	32.30***	34.25***
Number of observations	98,392	23,377	140,061	142,237	55,904
Pseudo R^2	0.172	0.122	0.306	0.292	0.334
Employment in the reference category (percent)	95.73	95.54	95.17	94.75	96.03

Reference category: men with a high level of education attained more than 9 years previously.
Statistically significant at the * 10 percent, ** 5 percent, *** 1 percent level.

The odds ratios of students increase with the level of education and with labour market experience. This is not entirely correct for Greece, however, since the difficulties of young labour market entrants in finding employment are reflected in the results (for Greece – whichever educational level is considered –

newly qualified people have very low odds ratios compared to those who left education more than nine years prior to the survey). The opposite pattern can be observed for the remaining countries: within each educational level, the increase in odds ratios due to the accumulation of time since leaving education is slower than the increase observed between educational levels.

The odds ratios of people with tertiary education who graduated 6–8 years previously are low in the two Western and the two Central European countries. To demonstrate that this phenomenon is caused by women being absent from the labour market because of child rearing, the estimation was run on men and women separately and the results confirm that the decline only occurs in the odds ratios of women.[30]

Closing remarks

The most important conclusion of this section is that the usual employment and unemployment figures, when used to characterise the young population are misleading without a closer look at the details. The ILO-OECD indicators calculated for young cohorts are heavily affected by the system of vocational training and by the patterns of student work, both of which are factors that show extreme variation across the countries of Europe. The extent of the problem will be illustrated through two examples: a comparison between Denmark and Hungary, and one between Portugal and Hungary.

For 2005, in Hungary the employment rate of the 19–29 year old population was 41.1 percent, while the corresponding value was 68.2 percent in Denmark. It does not follow, however, that the Danish young person's labour market prospects are so much better, since the Danish rate is pushed up by the high incidence of employment among students, which is a consequence of the apprenticeship system in vocational training. Moreover, in Denmark there is a higher proportion of students – who work in far higher proportions than their Hungarian peers – in this age cohort.

If the employment rate among ***students*** in Hungary was equal to the corresponding rate in Denmark, the employment rate of the total 15–29 year old population would be considerably higher: a level of student employment similar to the Danish level would push the aggregate employment rate of young Hungarians up to 60.9 percent, approaching the Danish rate (an increase of 19.9 percentage points).[31]

If ***non-student*** young people were employed with the same probability in Hungary as they are in Denmark – i.e., if the Hungarian non-student employment rate was replaced by the Danish figure – the employment rate of 15–29 year olds would increase to a lesser extent, to 52.35 percent (by 11.26 percentage points).

If the ***share*** of students within the 15–59 year old cohort was the same in Hungary as in Denmark while the group-specific employment rates remained

30 The results of the logit model run separately on men and women would be more informative than the results shown in Table *1.26,* but we decided not to display those results because of the small number of observations for a number of variables in Denmark and Slovakia.

31 The employment rate of 15–29 year olds is given by $e = s \times e^s + (1 - s) \times e^{ns}$, where s denotes the proportion of students and e^s and e^{ns} stand for the employment rates of students and non-students, respectively. The calculations give an indication of the changes that would follow if the Hungarian values of s and e^s, e^{ns} corresponded to the values observed for Denmark.

constant, the Hungarian employment rate would fall by 8.36 percentage points to 32.74 percent.[32]

The effects of the different components have also been calculated for countries where vocational training is not apprentice based. In Portugal, for instance, young people have an employment rate of 52.5 percent, which is 11.4 percentage points higher than the Hungarian rate. Roughly the same proportion of 15–29 year olds are students in the two countries, and the employment rates among students are also similar, i.e., the difference must be primarily explained by the higher level of employment among Portuguese school leavers: if non-student youngsters in Hungary were employed with the same probability as their peers in Portugal, the employment rate for the total 15–29 year old population would increase by 9 percentage points to 49.8 percent. For Austria, Denmark, Norway, Portugal and Slovenia (the countries for which the different components of the employment rate were compared to the Hungarian figures), the substitution of the non-student employment rate would lead to an increase of 7.7 to 11.3 percentage points in the employment rate of Hungarian youth.

The simple calculations presented in this section incorporated educational attainment, student status, and the period of time since leaving education. The indicators derived from these details reveal that the countries display the least amount of variation with respect to the employment of young people with tertiary education. In each of the countries under analysis, graduates have a fairly good chance of entering employment within a short period following graduation. The employment figures of the labour force survey characterising the young populations with primary or secondary education are highly sensitive to the role of apprenticeship in the vocational training programme of a given country. Most of the Western and Northern countries operate dual vocational training systems, where the time spent at a company carries at least as much weight as the time spent in a classroom. This system both has the effect of boosting the number of students classified as having employment and is likely to improve the labour market prospects of young people with secondary education in these countries. The employment rates among young *non-students* having at most primary education are strikingly low in the countries of Eastern and Central Europe, and the rates among those having secondary education are also not particularly high either.

The level of youth employment in Hungary is substantially lowered by the infrequency of apprentice work among secondary school students and the low share of students working in parallel with their college or university studies. It is a notable feature of the data that not even student workers are likely to have jobs with atypical working hours such as part-time, seasonal, weekend or evening/night-time employment. Hungarian student workers are less mobile: they remain in the same job for longer.

32 In Hungary $e = 0.41$, $e^s = 0.08$, $e^{ns} = 0.64$, $s = 0.41$. In Denmark $e = 0.68$, $e^s = 0.57$, $e^{ns} = 0.83$, $s = 0.55$.

7. Men approaching retirement age

In Hungary, the the employment ratio of men aged 40–64 is the second lowest in the European ranking[33] – Hungarian men rank between their Polish and Slovak counterparts –, while Hungary takes first place in terms of the proportion of men in retirement or permanently disabled[34] (*Table 1.27*). It is worth mentioning that among Slovak, Czech and Polish men approaching retirement age, the fraction of those in retirement and permanently disabled is by around ten, eight and six percentage points lower respectively than among their Hungarian counterparts.

Table 1.27: The distribution of men aged 40–64 years according to their self-perception regarding their labour status, 2005 (percent)

Country	Employed	In retirement/permanently disabled	Unemployed/other inactive person	Together
Austria	71.77	21.72	6.50	100.00
Belgium	70.12	20.71	9.17	100.00
Cyprus	83.56	10.22	6.22	100.00
Czech Republic	74.80	20.63	4.57	100.00
Denmark	79.33	16.17	4.50	100.00
Estonia	71.32	16.18	12.50	100.00
Spain	78.27	4.66	17.07	100.00
Finland	70.95	19.38	9.67	100.00
France	72.27	17.45	10.28	100.00
Greece	79.40	16.34	4.26	100.00
Hungary	62.69	29.28	8.03	100.00
Ireland	79.92	13.59	6.49	100.00
Iceland	94.26	3.53	2.21	100.00
Italy	71.59	20.91	7.50	100.00
Lithuania	74.54	14.77	10.69	100.00
Luxembourg	75.49	21.08	3.43	100.00
Latvia	73.17	14.64	12.19	100.00
Netherlands	77.60	14.52	7.87	100.00
Norway	81.55	13.95	4.50	100.00
Poland	61.25	22.89	15.87	100.00
Portugal	74.53	14.99	10.48	100.00
Sweden	80.02	12.87	7.11	100.00
Slovenia	67.90	21.90	10.20	100.00
Slovak Republic	69.48	18.98	11.54	100.00

Sample: Men aged 40–65, excluding students and those in compulsory military service.
Other inactive person: fulfilling domestic tasks, other inactive person.

A cross-country comparison of the proportion of employed males within the different age cohorts[35] – when all education levels are pooled – shows that in Hungary, out of all age cohorts, those aged 45–54 are the worst off. In all 24 countries, the fraction of employed men aged 40–64 is lower among those

33 The international comparison is based on 24 countries: Norway, Iceland and the 25 European Union Member States, with the exception of Germany, Malta and the United Kingdom. Some of the text of the chapter refers to all of the 24 countries, however, the tables present figures for five selected countries only, namely, Hungary, one Western, one Northern, one Southern and one Central and Eastern European Union Member State.

34 The groups of men in retirement and permanently disabled are aggregated into one category, as the criteria for belonging to these two groups may differ across countries.

35 The disadvantage of the EU Labour Force Survey is that the exact age of the individuals is not available, only aggregated five year age groups, hence cross-country differences in retirement age cannot be accounted for in the analysis.

with a low education level than among those with medium or high education levels. It is not surprising that in Hungary the proportion of employed men varies greatly with education level: it amounts to 55 percent, 87 percent and 94 percent within the group of men aged 40–44 with a low, medium and high education level respectively (*Table 1.28*). There are noteworthy cross-country differences in terms of the proportion of employed men within the oldest group of the low-educated men: while, as in Hungary, this proportion is small in numerous Eastern European countries, in the Northern European countries the corresponding proportion is significantly higher – in Sweden it reaches 53 percent. In fact, Hungary belongs to the laggard countries concerning the fraction of employed men among the low-educated for each age cohort. However, Hungary's position in the international ranking is better regarding certain age cohorts with higher qualification levels: Hungary takes seventh place in terms of the proportion of employed men with a secondary education level aged 40–44 and aged 60–64, and is in the middle of the ranking regarding men aged 55–64 with a tertiary qualification.

For three age cohorts, Hungary has the highest proportion of men in retirement and permanently disabled – when all education levels are pooled – namely, those aged 40–44, 45–49 and 50–54, among the 24 countries under analysis (*Table 1.29*). Moreover, the figures for the 24 countries imply that the high proportion of men in retirement or permanently disabled within the 60–64 age cohort is a Central and Eastern European phenomenon: in the Visegrád countries, this proportion is between 66 and 85 percent in the given age cohort, while in the Scandinavian countries it is between 39 and 54 percent.

Turning to the education levels separately, Hungary belongs to the group of countries with the highest proportion of men in retirement or permanently disabled for each education level and for each age cohort. In fact, Hungary has the highest or second highest proportion of men in retirement or permanently disabled among men aged 40–49 for each education category among the 24 countries under analysis. The large proportion of men in retirement or permanently disabled among the low-educated men aged 45–49 characterises numerous Central and Eastern European countries as well: in the Visegrád group it is in the range of 17 to 21 percent.

Overall, in Hungary, the proportion of employed men is remarkably low within the group of low- educated men near retirement age – a phenomenon which is characteristic of men aged 60–64 in several former socialist countries. However, this is not the case for Hungarian men with higher qualification levels. Furthermore, the detailed analysis of men in retirement or permanently disabled supports the fact that in Hungary the proportion of men claiming pension is remarkably high within the 40–64 age cohort: among the 24 European countries under analysis, Hungary has the highest (or second highest)

share of men in retirement or permanently disabled within each education group, and the situation is especially alarming for men aged 40–49.

Table 1.28: The proportion of employed men within the group of men aged 40–64, by age group and education level, 2005

Country/Age group	Low education level	Medium education level	High education level	Together
Austria				
40–44	81.6	91.8	95.1	91.4
45–49	80.4	89.3	94.6	89.1
50–54	75.7	83.9	92.1	84.1
55–59	49.1	58.4	78.8	60.8
60–64	9.2	13.5	29.2	15.7
Denmark				
40–44	77.9	91.5	96.5	90.3
45–49	77.8	90.8	94.9	89.2
50–54	71.6	87.7	91.2	86.0
55–59	66.1	82.1	87.3	81.0
60–64	31.8	39.7	60.6	43.8
Greece				
40–44	89.7	94.3	95.5	93.0
45–49	87.4	92.9	94.9	91.1
50–54	83.8	85.6	91.8	86.0
55–59	69.6	67.2	77.6	70.3
60–64	44.1	36.7	54.3	43.8
Hungary				
40–44	54.8	86.8	93.9	82.5
45–49	53.1	77.9	92.5	75.6
50–54	48.6	70.5	90.2	69.6
55–59	34.3	56.6	79.3	55.6
60–64	8.1	20.2	43.2	18.8
Slovak Republic				
40–44	39.6	85.1	97.2	83.8
45–49	35.4	81.9	91.6	79.3
50–54	49.1	77.5	91.1	76.1
55–59	37.0	69.3	84.1	67.6
60–64	3.9[a]	13.4	29.0	13.9

[a] The number of observations is less than fifty.

Sample: Men aged 40–65, excluding students and those in compulsory military service.

Education levels: Low education level refers to at most lower secondary level (ISCED 0–2) completed, medium education level refers to at most upper secondary education (ISCED 3–4) and high education level refers to tertiary education (ISCED 5–6).

Table 1.29: The proportion of men in retirement or permanently disabled within the group of men aged 40–64, by age group and education level, 2005

Country/Age group	Low education level	Medium education level	High education level	Together
Austria				
40–44	7.9	1.9	0.7[a]	2.3
45–49	7.8	3.9	1.7[a]	4.1
50–54	10.1	9.9	5.3	9.0
55–59	38.1	33.4	15.8	30.7
60–64	82.8	83.3	69.2	80.4
Denmark				
40–44	14.1[a]	3.8[a]	0.0[a]	4.8
45–49	18.6	5.8[a]	1.8[a]	7.3
50–54	20.3[a]	9.1	4.5[a]	9.6
55–59	24.2	11.1	6.7[a]	12.0
60–64	65.6	57.6	38.1	53.9
Greece				
40–44	4.8	1.4	1.7[a]	2.7
45–49	6.2	3.0	3.0	4.3
50–54	10.1	10.5	5.9	9.4
55–59	25.4	28.8	19.4	25.3
60–64	52.8	59.6	44.1	53.1
Hungary				
40–44	17.3	5.5	3.1[a]	7.1
45–49	26.5	12.3	4.5	13.7
50–54	36.1	21.7	6.6	22.0
55–59	53.6	36.1	17.2	36.7
60–64	90.4	78.4	56.1	79.8
Slovak Republic				
40–44	17.1[a]	2.7	0.3[a]	3.3
45–49	17.1	5.9	3.0[a]	6.4
50–54	23.5	11.1	4.7[a]	11.7
55–59	34.3	19.6	8.5[a]	19.8
60–64	94.8	85.5	70.5	85.0

[a] The number of observations is less than fifty.

Sample: Men aged 40–65, excluding students and those in compulsory military service.

Education levels: Low education level refers to at most lower secondary level (ISCED 0–2) completed, medium education level refers to at most upper secondary education (ISCED 3–4) and high education level refers to tertiary education (ISCED 5–6).

8. Concluding remarks

Our study did not aim to find an explanation for the low level of employment in Hungary. Neither the cross-sectional, nor even the repeated cross-sectional data of the European Labour Force Survey are suitable for that purpose; the best they can do is to highlight the areas where more detailed investigations are needed.

One long-known problem is that of people exiting the labour market permanently at about the age of 40, i.e., far too early. Several measures have been introduced in the past 10 years to combat this problem, proposals of active intervention have also been put forward, and it is becoming quite clear that the retirement options of the groups that are the most prone to exiting will radically narrow over the years ahead of us. The groups at higher risk of claiming early pension do not accumulate sufficient accrued years to apply for pension (or at least a pension to cover their subsistance), and this will reduce outflows to retirement in the foreseeable future (*Augusztinovics,* 2005, *Augusztinovics & Köllő,* 2007, *Augusztinovics, Gyombolai & Máté,* 2008).

The concerns voiced in connection with youth unemployment – in particular unemployment among young university graduates – appear to be overpessimistic in light of the results of a European comparison: the undoubtedly low employment rate of the 15–29 year old population is to a large extent explained by the structure of training (the absence of company-based training) and the low fraction of working students. The data does give cause for concern, however, in the case of the population who leave the education system with only primary qualifications (mostly secondary school drop outs).

Based on our overview of the labour market position of people of the best working age, two major directions for future research have emerged. First – and foremost – further analyses are needed to assess the degree of labour market attachment of the population classified as inactive according to the ILO-OECD definition, and whether this population competes for jobs, curbing the pressure on wages. Within this problem area, it would be fruitful to investigate the relationship between job search intensity and unemployment registration plus benefit claims, which would shed some light both on the reasons why the services of the labour organisation fail to reach almost 40 percent of active jobseekers, and on the causes behind the exceptionally low probability of job-seeking among benefit claimants and the registered unemployed. The cross-sectional data of the EU LFS does not allow us to establish whether we are faced with a case of statistical illusion or a genuine problem – longitudinal cohort studies would be needed to clarify this issue – but it is clear from the results that the key to the problem of inactivity, which is at the forefront of daily politics, is to be sought in the welfare system.

Second, more information would be needed regarding the expenses – employer or employee – constituting a barrier to the spread of intermediate forms of employment, the absence of which in Hungary and other former socialist countries create a sharp demarcation line between work and non-work. While it may be the case that in Hungary the amount of work performed by those of the best working age is actually higher than in Western Europe, the low level of employment in terms of working persons is still a warning sign, since the demand for benefits is primarily determined by the number of non-

working individuals rather than by the total amount of hours worked. Atypical forms of employment are not necessarily worth encouraging (let us recall the negative experiences of work sharing in Western Europe, see for instance *Kapteyn et al,* 2004), but if high fixed employee costs turn out to constitute the main barrier to atypical work arrangements, a decision to reduce these costs may alleviate long-term joblessness and may even lower welfare expenditure on the whole.

Appendix 1: Participation in regular education, individuals, aged 20–29

The fraction of Hungarians aged 20–29 participating in regular education – mostly tertiary education – is in the middle of the international ranking. Nevertheless, participation in regular education is significantly lower in Hungary than that in certain Scandinavian countries: whereas in Hungary 23 and 24 percent of men and women aged 20–29 respectively has been a student or apprentice in regular education in 2005, in Denmark it is 36 and 43 percent respectively (*Table A1.1*). The Slovak and Czech participation level in regular education is lower than that in Hungary, as opposed to the Polish participation level. It is worth noting that the OECD statistics – although they do not cover the exact same cohort – provide a similar picture as the figures in *Table A1.1*: in Denmark, (a remarkably high proportion) 40 percent of the individuals aged 25–34 possessed a tertiary degree in 2005, while in Hungary merely 20 percent (*OECD*, 2007).

The analysis by age cohorts indicates that the participation in regular education is significantly higher for those aged 20–24 than for the 25–29 year-old age cohort.[36] Hungary is in the middle of the European ranking for both age cohorts, but lags significantly behind numerous Northern European countries: it lags behind Denmark and Finland by 12 percentage points for the 20–24 year-old age cohort, and for the 25–29 year-old age cohort the magnitude of the lag is even greater, namely, 19 and 16 percentage points respectively.

The last three columns of *Table A.1.1* present the proportion of tertiary graduates aged 20–29 who pursue further studies (in regular education) in the selected countries. It is apparent from the figures for the five countries that Hungary – similarly to the Slovak Republic – is a laggard in this area, in both age groups and for both genders. In fact, in Hungary, the proportion of tertiary graduates aged 20–29 who pursue further studies is the sixth lowest out of the 24 countries under analysis. Numerically, for the full sample, while in Hungary this proportion amounts to 16 percent, in Norway, Sweden and Denmark it is around 30 percent. The magnitude of the lag is smaller for women than for men.[37]

36 The disadvantage of the EU Labour Force Survey – as mentioned earlier – is that the exact age of the individuals is not available, only aggregated five year age groups, hence cross-country differences in school entry and leaving age cannot be accounted for in the analysis. For instance, the usual age range at which individuals acquire ISCED5A and ISCED5B degrees in Austria is between 23 and 25 years of age and between 20 and 22 years of age respectively, in Denmark it is the highest, namely, between 22 and 27 years of age and between 21 and 25 years of age respectively, in Hungary between 21 and 25 years of age and 21 years of age respectively, in Italy between 23 and 25 years of age and between 22 and 23 years of age respectively, and in Slovakia between 22 and 25 years of age and between 21 and 22 years of age respectively *(OECD, 2007*).

37 From the 24 European countries under analysis, in Hungary, the female proportion of tertiary graduates and those aged 25–29 who pursue further studies in regular education is eighth and ninth lowest respectively.

Table A1.1: Participation in regular education, individuals aged 20–29, 2005 (percent)

	Entire sample			Tertiary graduates		
Country	Men	Women	Together	Men	Women	Together
Aged 20–24						
Austria	30.6	33.1	31.9	33.8	31.8	32.8
Denmark	47.6	57.9	52.8	62.0a	51.4[a]	56.1
Hungary	39.6	42.0	40.8	24.0	24.2	24.1
Italy	35.5	44.1	39.8	65.4	51.0	56.7
Slovak Republic	29.3	35.4	32.3	22.5[a]	19.8	20.7
Aged 25–29						
Austria	13.8	11.0	12.4	21.8	14.8	17.9
Denmark	25.6	29.6	27.6	28.8	26.8	27.7
Hungary	9.0	9.8	9.4	14.6	13.6	14.0
Italy	13.2	15.8	14.5	19.1	17.3	18.0
Slovak Republic	5.4	6.2	5.8	7.9	8.2	8.1
Aged 20–29						
Austria	22.2	22.2	22.2	24.7	18.5	21.3
Denmark	35.5	42.6	39.0	33.3	30.1	31.5
Hungary	22.6	24.2	23.4	16.1	16.0	16.1
Italy	23.2	28.5	25.9	28.8	24.2	26.0
Slovak Republic	17.1	20.6	18.8	10.2	11.0	10.6

[a] The number of observations is less than fifty.

2. THE FAILURES OF "UNCERTIFIED" VOCATIONAL TRAINING

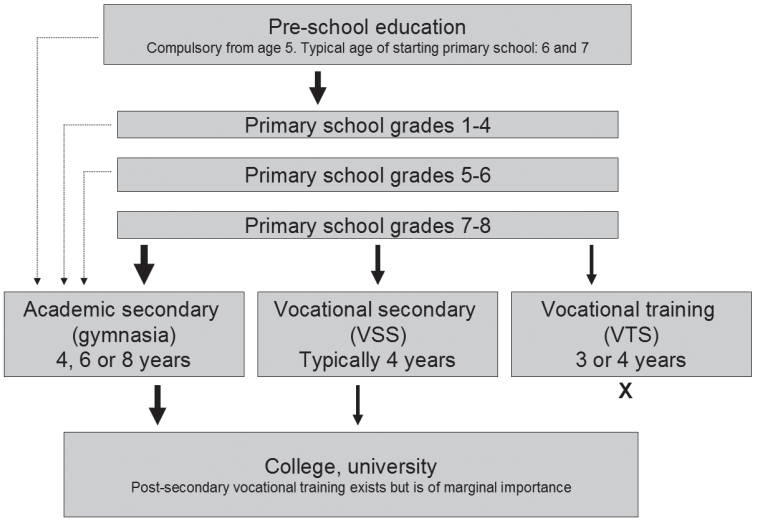
GÁBOR KÉZDI, JÁNOS KÖLLŐ & JÚLIA VARGA

Introduction

"Uncertified" vocational training, in which no upper secondary (Matura) qualifications are awarded, remains an important segment of the Hungarian education system. Research addressing the quality of training and the skills and labour market careers of vocational school graduates depicts a troubling picture of this form of education. This chapter summarises the main findings of the Hungarian literature and presents the most important data supporting the belief that vocational training is an ailing part of the educational system and is an area where profound reforms are required.

For readers unfamiliar with the Hungarian educational system chart below gives a simplified overview of how pupils move from pre-school to higher education.

Figure 2: Hungarian educational system



Note: A matura exam is required for those applying to higher education. Vocational training schools do not prepare their pupils for matura exam but the graduates can participate at preparatory courses at their will.

Vocational training schools (VTS) are typically commenced after the completion of 8 years in primary school, at age 14–15. Unlike the graduates of vocational secondary schools (VSS), VTS students can not enter higher education unless they pass a maturity exam on their own. (In both VSS and gymnasia students are prepared for the examination within the frame of their standard curriculae). Vocational training is partly apprentice-based in Hungary: about 60 per cent of the pupils acquire practical skills in firms while 40 per cent practice in school-based workshops.

Vocational school students have always come from relatively poor and uneducated social backgrounds and from among the lowest-achieving primary school graduates, but the gap between secondary schools and VTS has critically widened over the past decade. A study by *Liskó* (2008) reveals that in the new millennium, the children of parents having a primary school background were eight times as likely to enrol in vocational training as children from better educated middle class backgrounds. Almost two thirds of Roma children in post-primary education attend this type of school. Children of parents who have at least Matura qualifications represent no more than 25 percent of VTS students. These schools are characterised by five to six times higher dropout rates, and two and a half to three times higher grade retention rates than VSS or academic secondary schools.[1] The students and graduates of vocational training schools tend to show very poor performance in skills assessment tests, as will be discussed in more detail later in the chapter. Data on wages indicates that the market value of vocational qualifications has been depreciating, and the only reason why employment remained relatively high was that a large share of VTS graduates became employed in simple jobs requiring no qualifications.

The above data reflects two simultaneous effects: the poor quality of education, and adverse selection. An increase in the latter of these had inevitably followed *i)* from the extension of compulsory education to 16 and then to 18 years of age,[2] *ii)* from the circumstance that some of the better quality vocational training schools have been turned into VSS, and *iii)* from the fact that colleges and universities have become accessible to a broader audience, thus enhancing the attractiveness of school types that promise better chances for higher education. It is a complicated task to separate the effects related to selection from those related to the quality of education – it would require the analysis of experimental settings, which is a task Hungarian labour market research has not yet undertaken, or been in a position to undertake.[3]

It is, however, unacceptable to cite adverse selection as the sole explanation for the low level of skills typical of VTS graduates, or as an excuse for the failures of education. Firstly, as we will show in what follows, those graduating from VTS displayed substantially poorer performance than those graduating from VSS prior to the contraction of traditional vocational training. Data from the mid-1990s on the basic skills of VTS graduates did not show

1 *Liskó* (2009) reports a dropout rate approaching 30 percent. The Tárki-Educatio Life Course survey (*Kertesi & Kézdi,* 2008), however, observes a 3.7 percent dropout rate between school years 9 and 10 in vocational training, and 0.5 and 0.1 percent dropout rates in, respectively, vocational and academic secondary schools. It may be the case that students are most likely to drop out after year 10, but it is also possible that the Life course survey sample of ten thousand people provides a more reliable estimate and the absolute dropout rate is indeed lower. Both sources however indicate a large gap between school types.

2 At the end of 2005, only 3 percent of 15 year olds and 6 percent of 16–17 year olds said they were not students in reply to the question concerning their main labour market status as part of the labour force survey. The replies to the question on participation in school-type training during the four weeks preceding the interview indicate similar proportions.

3 In Romania *Malamud & Pop-Eleches* (2008) studied the effects of the 1973 education reform, when the share of general education was substantially increased at the expense of vocational education in ten-year primary schools. The authors find that the cohorts affected by the reform were more likely to find white-collar jobs but – contrary to the results of cross-section data – no increase could be observed either in their employment rate or in their relative wages. The authors conclude that the cross section data indicating differences between primary school leavers and vocational training school leavers essentially reflects a selection effect. It should be noted that the Romanian reform only changed the structure of educational content but did not bring about a significant change in the composition of teaching staff over the short period of its duration.

the kind of improvement relative to older generations that was observed in the case of secondary school graduates. Furthermore, adverse selection obviously does not lessen, but merely transforms and makes more difficult the task facing educators: schools have to educate students with lower starting abilities to a level that helps them find employment in the service sector and modern manufacturing industry. The data and research results discussed in this chapter suggest that this objective has not been achieved, and that no radical improvement can be expected from current development plans concerning vocational training.

It is important to note that the inadequacies of vocational training reflect on the entire public education system, since those dropping out of, or graduating from, VTS continue to constitute well over one-third of the "final output" of the public education system; they make up the *largest* share of the population moving directly from public education to the labour market.

The expansion of higher education has brought about a shift in the function of primary and secondary education. The majority (according to the latest figures about 90 percent, cf. *Liskó,* 2009) of secondary school students successfully takes the Matura examinations; almost 90 percent of academic secondary school graduates and two thirds of VSS graduates continue their studies and enter the labour market only after spending at least a few years in higher education.[4] Academic secondary schools and VSS institutions essentially prepare their students – from the age of 10, 12 or 14 depending on the school – for further education, rather than for employment directly following the Matura examinations. Vocational training institutions are characterised by entirely different proportions: a far higher share of their students drop out, and only a third of those completing the programme continue their studies in college (*Liskó*, 2004).

Although the precise proportions are impossible to determine as no accurate figures are available on dropout rates, approximate estimates can be made based on the Labour Force Survey. The educational distribution of the 20–25 year old non-student population with no higher education degree at the time of the observation is shown in *Table 2.1* for 1995, 2000 and 2005.

Between 1995 and 2005, the share of those with vocational training decreased by about ten percentage points among the young population shown in *Table 2.1.* The decline in traditional vocational training was fully counterbalanced by the expansion of vocational education incorporating Matura examinations.[5] The probability of exiting the public education system with at most primary school qualifications remained at a high level, almost half of which – if the results of *Liskó* (2009) are correct – can be attributed to vocational training school dropouts. Taking the dropout figures of *Kertesi & Kézdi* (2008) as a lower bound, and *Liskó's* estimates as an upper bound, we estimate that about 35–45 percent of the 20–25 year old population not en-

4 It must be emphasised that contrary to common assumptions, the coverage of Hungarian higher education is still substantially smaller than the European average. In 2005, in Hungary 20.9 percent of the 25–29 year old non-student population had higher education degrees as opposed to the European average of 29 percent (the average observed in the European Labour Force Survey, which excludes Malta but includes Norway and Iceland). The Hungarian higher education graduate rate was the seventh lowest of the 26 countries included in the European Labour Force Survey data. (The figures were calculated by the authors of the present study using the European Labour Force Survey data. See Chapter 1 of this *In Focus* on the Survey.)

5 The data reveals that among those entering the labour market after secondary school, the proportion of vocational qualifications was essentially the same in 2005 as it had been ten years previously, although it was lower compared to 2000.

rolled in higher education had attended vocational training institutions for some period of time preceding the 2005 labour force survey.

Table 2.1: The distribution of the 20–25 year old population* by highest educational attainment in 1995, 2000 and 2005 (percent)

Highest educational attainment	1995	2000	2005
0–8 years of schooling	26.4	21.9	24.7
Vocational training (VTS)[a]	41.3	40.3	32.2
Vocational secondary school (VSS)[b]	20.7	28.0	29.1
Academic secondary school	11.6	9.8	13.9
Total	100.0	100.0	100.0

* Full-time students and college/university graduates excluded.
[a] Vocational training not offering Matura qualifications: vocational training schools and technical schools, including those of only one or two-year training programmes.
[b] All types of vocational secondary schools offering Matura qualifications.
Source: KSH Labour Force Survey data for the fourth quarter.

While traditional vocational training remained a sizeable sector of the educational system we have ample evidence calling into question the quality of its "output". The papers summarized in the forthcoming sections (*Kertesi & Varga,* 2005; *Kézdi,* 2008; *Kézdi & Varga* 2007, *Köllő,* 2006, 2008) suggest that vocational training fails to equip students with the basic skills and competencies needed for post-school development and adaptation. This conclusion is supported by direct observations as well as indirect evidence based on the employment careers and wages of VTS graduates. Occupational mismatch and the deficiencies of practical skills are part of the problem, but we believe that by focusing on the problem of basic skills, we are addressing the key issue.

1. Basic skills of vocational training school students and graduates

Indirect indicators: skilled workers' life-course wages

The shape of skilled workers' age earnings profile provides indirect evidence of deficiencies in their basic skills. An analysis of pay curves may help reveal the causes of the striking decrease in the labour market value of vocational training qualifications relative to the value of Matura qualifications. VSS institutions assign greater importance to general skills while vocational training schools have always (or certainly up to the turn of the millennium) focused on vocation-specific skills. We have reason to believe that specific skills became devalued with the transition from a planned to a market economy. First, compared to socialist times a worker is now far less likely to remain in the same vocation for the duration of his or her active lifetime. Second, vocational content itself has also changed. The latter phenomenon is a consequence of

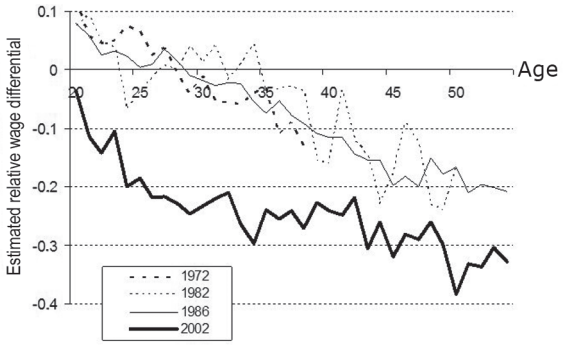
general technological development, which took place at an accelerated pace in Hungary following the regime change.

If general skills can be made use of in a wider range of tasks, or constitute a better foundation for career development, the wages of workers in possession of these skills will rise faster over the course of their careers. When comparing qualification types, a progressively widening gap is therefore expected between skilled workers' wages and secondary school graduates' wages as their careers progress. Also, if general skills gained value during transition, this gap is expected to grow faster during the post regime-change period. To test these hypotheses, the following regression model is estimated for 1972, 1982, 1986 and 2002. Each cross-section sample is limited to workers who have vocational training or Matura qualifications as their highest educational attainment.

$$\ln w_i = \sum_{s=20}^{54} \alpha_s A_{si} + \sum_{s=20}^{54} \beta_s A_{si} \times sw_i + \gamma' x_i + u_i \qquad (1)$$

In *Equation (1), i* denotes an individual, and *s* stands for age. A_{si} is a set of dummy variables measuring age (1 if individual *i* is *s* years old, and 0 otherwise), *sw* (skilled worker) is a dummy variable standing for education (1 for skilled workers, 0 for Matura qualifications), and the vector *x* stands for other individual traits (gender, region, settlement type). The aim of the analysis is to estimate the β_s coefficients. These show the difference between skilled workers' wages and Matura qualified workers' wages at a given age (*s*). The results are displayed in *Figure 2.1*.

Figure 2.1: Skilled workers' wages relative to secondary school graduates' wages over the course of their careers, 1972, 1982, 1986, 2002



Authors' estimations based on Regression Equation (1). Data: Income Surveys (1972, 1982) and Wage Surveys (1986, 2002). Interpretation of relative wage differential: a value of –0.1 for instance means a 10 percent disadvantage.

Figure 2.1 shows a significant decline with the advancement of age both during the socialist and the post-transitional time period in Hungary. The estimates

follow essentially the same pattern for 1972, 1982 and 1986. All of them indicate that skilled labour probably appeared quite attractive to young people, since higher wages could be expected with less studying relative to the population with Matura qualifications. This advantage quickly disappeared, however, as from about age 25–30, the latter population had higher earnings. A notable feature of the graph is the steady relative decline of skilled workers' wages, which suggests that the specialised skills these workers possessed became obsolete over the course of their careers, even during the period of state socialism.

The regime change brought about two significant changes in connection with our subject of investigation. First, skilled workers now have lower wages even at the start of their careers. Second, their disadvantage grew at a considerably faster rate over the years up to the age of 35. The wage gap somewhat narrowed after this age, but skilled workers' relative wages remained well below the level observed before the regime change throughout their career cycle. The data therefore supports our hypothesis that the specialised skills acquired in vocational training substantially depreciated following the regime change. As a consequence, skilled workers can expect lower wages from the very start of their careers than can secondary school graduates, and their disadvantage increases rapidly and to a substantial extent over the course of their working lives. The results further reveal that the devaluation of specialised vocational skills over the career path is not a new phenomenon: although it became more pronounced with the regime change, it had also been unmistakably present in socialist Hungary. At that time, completing vocational training had been a good investment for the worker in the short term, but not in the long term. At present, it is not even a good investment in the short term.

Direct observations of the basic skills of adults with vocational training

We have access to valuable direct evidence – albeit from ten years ago – on the basic skills of workers with vocational training. The International Adult Literacy Survey (IALS), organised by the OECD and Statistics Canada and conducted in two waves in 21 countries – in 1998 in Hungary – aimed to gather comprehensive data on practical reading, writing, and numeracy skills. Rather than complete school-type tests, respondents were asked to interpret simple texts and documents (brief news items, announcements, user instructions, timetables, bills, etc.), and to solve simple arithmetic problems of the kind they encounter at work or in everyday life. Thus the survey examined the existence of basic skills whose absence constitutes a barrier not only to employment, but also to further learning and the ability to adjust to changes (see, for instance, *Murnane & Levy,* 1996 on this subject). The survey, using random household samples, covered reading and writing tasks typical of

a workplace, and recorded information on the respondents' origins, education, labour market status and cultural habits.[6]

The following discussion focuses on the data and test results of people who have vocational training in Hungary and other former socialist countries, and compares them to Western workers of a similar educational level. It is not a straightforward task to decide which respondents should be included in this category, as the International Standard Classification of Educational (ISCED) used in the IALS does not provide sufficient details. [Hungary, similarly to the Czech Republic and Slovenia, but unlike Poland, classifies people who have vocational training as secondary school graduates. See *Kertesi & Varga* (2005) on the untenability of this choice.] The international literacy survey includes, however, data on the number of successfully completed school years. The great majority of the population who have vocational training completed 11 years of schooling not counting repeated years – in 1998 this was predominantly made up of eight years of primary school, and the three years of the traditional vocational training programmes.[7] In what follows we will look at respondents with 11 years of schooling from Hungary, Poland, Slovenia, and the Czech Republic, and compare the results to the corresponding results of the Western European population who have the same number of years in school. Although we are not in a position to compare Hungarians who have vocational training with people educated in the very different Western European vocational training system, our choice of the target population is not motivated by feasibility alone: it appears to be a valid research question to look into the overall basic skills possessed by people completing the same number of school years in the two halves of Europe.

The report on the IALS results uses average scores and a scale running from 1 to 5 to evaluate performance in each of the three test areas (the reading of prose, understanding of documents, and numeracy) (*OECD,* 2000). Our analysis relies on the averages of the three final scores, ranging from 0 to 500 points.[8]

In terms of test scores, the Czech Republic showed relatively good performance (283 points, 16 points above average), while Hungary, Poland, and Slovenia performed very poorly (254, 229 and 235 points, respectively). (See *Appendix 2.1.*) The spread of scores within the former socialist countries was not wider than the average, but for each of these countries, the results showed a much stronger association with educational attainment than for Western Europe.

In the regressions behind Figure 2.2. (*Köllő*, 2006) the within regions variations in the standardized test scores were explained by various individual and contextual variables. In studying the effects of education and age *young higher education graduates were chosen as the reference category*, a group whose absolute test results were only slightly (3 percent) lower than those of their Western

6 The survey results were published in a detailed report (*OECD,* 2000) supplemented by a publication providing guidelines for using individual data (*Statistics Canada,* 2001). The methodological issues emerging in the course of analysing the IALS data and some other skill surveys are discussed at length by *Micklewright & Brown* (2004). American and European skill and wage distributions are compared by *Devroye & Freeman* (2000) and *Blau & Kahn* (2000), while the IALS, PISA and TIMMS results of English speaking countries are analysed by *Micklewright & Schnepf* (2004). *Denny et al* (2004), *Carbonaro* (2002) and *McIntosh & Vignoles* (2000) attempt to isolate the wage returns to education and literacy (and also occupation in the latter study).

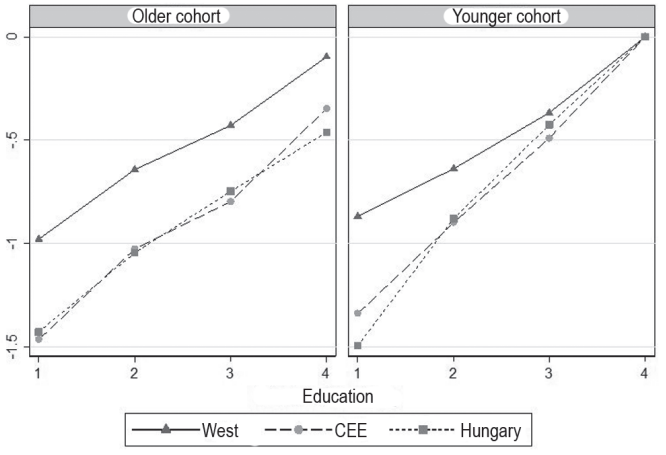
7 The Czech Republic does not fully fit the description, as between 1960 and 1978 and after 1990 primary schools had 9 years. That is, some of those who were born between 1954 and 1964 or after 1975 and completed 12 years of schooling are likely to have completed 3 years of vocational training. This group may include those born in September-December 1953 or 1974 but the International Adult Literacy Survey does not provide data on the month of birth. See Appendix 2.1.

8 It would be unacceptable to collapse the results into a single score for an investigation of reading literacy and education, but an averaged score should suffice for an economist looking into other issues as long as this indicator does not obscure overly large differences that would question the validity of averaging. The between-country variation observed in the IALS results is highly stable, there is only minor deviation within test types, and the differences across test types are not significant enough to question the validity of an aggregated indicator.

European peers (300 points compared to an average of 309 points for Western respondents).[9] This allows the parameters to be used to evaluate both *relative* and (with some error) *absolute* advantages and disadvantages.[10]

While the test score variation due to social background, place of residence, immigration status, first language, and cultural habits (whether the respondent goes to the cinema or theatre, reads newspapers or books) observed in Central and Eastern Europe is similar to, or lower than, the variation observed in Western Europe, the differences explained by education and age are substantially larger (*Figure 2.2*). The pattern of the Central and Eastern European disadvantage differs between age cohorts: older cohorts' performance lags behind the performance of their Western peers to about the same extent at each educational level. The Eastern gap between young secondary school graduates and young higher education graduates is similar to the gap observed in Western Europe, i.e., the disadvantage of young secondary school graduates is not especially marked, just as the test results of young higher education graduates are not far below those of their Western peers in absolute value. *Young Central and Eastern Europeans who do not have Matura qualifications – and, within them, those with 11 years of schooling – in contrast, are at a major disadvantage relative to both local secondary school graduates and their Western peers. Also, their performance is only slightly, or not at all, better than that of older cohorts with similar educational attainment.*

Figure 2.2: Literacy test scores relative to young higher education graduates in Western Europe, CEEs and Hungary (IALS, Europe, the 15–59 year old non-student population)



Education: 1: 0–10 years; 2: 11 years; 3: 12–14 years; 4: more than 15 years.
Older cohort: 35–59 year olds. *Young cohort*: 15–34 year olds, excluding students.
West: The European countries participating in the IALS literacy survey, excluding the former socialist countries.
CEE: the Czech Republic, Poland, Hungary, Slovenia.

9 People in this group were born in 1970 on average, and started their higher education studies around 1989.

10 See *Köllő* (2006), (2008) for details of the calculations discussed here, methodological difficulties and the limitations of the datasets.

The curve data points show the IALS score disadvantage of the different educational groups relative to the population of young higher education graduates in a given country, measured in standard deviation, controlling for other factors (gender, place of residence, father's education, immigration status, first language and cultural habits).

It is a reassuring development that the better educated members of young generations display reading and writing literacy skills on a par with Western levels, while the basic skills of older Central and Eastern European higher education graduates remain far below those of their Western peers. *No signs of similar generational improvement can be observed, however, for those with vocational training,* and this cannot be attributed to the strengthening of adverse selection among those enrolling in vocational training institutions. The average VTS graduate in the IALS sample was 27 years old at the time of the survey, i.e., had attended vocational training school sometime between 1986 and 1990, years before the point when this type of school went on the decline.[11]

The basic skills of current vocational training school students

Recent surveys assessing the basic skills of VTS students, using methods similar to the IALS, continue to indicate major deficiencies relative to secondary school students. In the 2006 Hungarian Assessment of Student Competencies, among tenth year students, 8 percent of academic secondary school pupils and 25 percent of VSS students failed or barely passed text comprehension tasks, and, respectively, 14 and 31 percent performed at this level at the arithmetic test. In the case of VTS students, by contrast, the proportion of *failed* tests amounted to *75 percent* in both reading and arithmetic.[12]

The results of the PISA surveys[13] also indicate poor performance. Vocational training institutions can only be distinguished from other vocational schools in the survey of 2000. In that year's text comprehension tests, Hungarian VTS students displayed a disadvantage of 152 points (30 percent) relative to academic secondary school students, while the average difference between the two groups was only 50 points (9 percent) in the OECD on average (*Liskó*, 2009). For Hungary, the test results revealed a vocational training school disadvantage of 119 points in arithmetic skills, and 137 points in scientific literacy, while the corresponding average OECD values were, respectively, 47 and 53 points. As vocational training school qualifications cannot be distinguished from vocational secondary school qualifications in the 2003 and 2006 PISA surveys, Hungary and the OECD as a whole can only be compared in terms of the performance of students receiving general education relative to those receiving either form of vocational education. These results reveal a vocational school disadvantage of 70–90 points in Hungary, while this disadvantage varies between 2 and 40 percent for the OECD depending on the type of the test and the survey year. It is important to remember that the PISA tests,

11 It is also apparent that the Hungarian data reveals a striking disadvantage for the population with only primary education, and the gap is even larger than it was for previous generations.

12 See *Hermann & Molnár* (2008) for details of the National Assessment of Basic Competencies.

13 PISA: Programme for International Students Assessment.

similarly to the IALS tests, are aimed at assessing the most important basic skills and the ability to put the acquired theoretical knowledge to practical use, rather than encyclopaedic knowledge.

The role of work experience

While reading and writing skills are acquired at school, the attained knowledge matures at and via the workplace, or – depending on the kind of job – is forgotten once in employment. One non-negligible reason why Central and Eastern European workers struggle with functional literacy is that *they spent decades working in jobs where they had little use for literacy,* and training schools were designed to prepare them for such types of jobs. The effects of this system are still clearly manifest in the IALS data gathered ten years after the regime change.

The IALS literacy survey includes questions on the incidence and frequency of 13 types of reading and writing tasks at work. These are summarised in *Table 2.2. The number* of reading and writing tasks, which is a continuous variable with a value ranging from 0 to 13, appears to be an indicator that aptly characterises the literacy requirements of various jobs. (A job is classed as involving reading and writing if the respondent chose any one of answers 1–4 listed beneath *Table 2.2.*)[14]

Table 2.2: International literacy survey questions on reading and writing requirements at work

Reading at work	Writing at work	Arithmetic at work
Reading letters or memos	Writing letters or memos	Measuring objects
Reading invoices or forms	Filling in invoices or forms	Calculating prices and costs, preparing budgets
Reading reports, catalogues or manuals	Writing reports or articles	
Reading diagrams or graphs	Writing estimates or technical specifications	
Reading budget tables		
Reading directions or instructions		
Reading material in a language other than Hungarian		

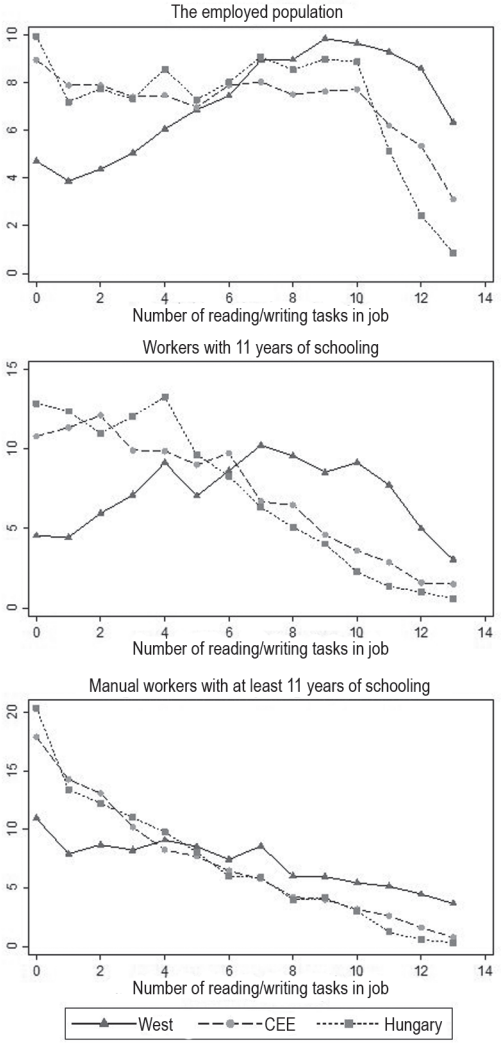
Choices: 1. Every day; 2. A few times a week; 3. Once a week; 4. Less than once a week; 5. Rarely or never.
Source: *Statistics Canada* (2000).

The three graphs in *Figure 2.3* display the distribution of respondents in Hungary and the Western and Central/Eastern European countries participating in the international literacy survey across jobs involving different numbers of reading and writing task types broken down into three populations:

14 The most important requirement is that the indicator (R) should accurately reflect the complexity of the job and, ideally, map it onto a linear function. Whether this is the case can be assessed using calculations over the entire sample. The complexity of the job must be reflected in the skills of the workers employed in the job, which may be estimated by a number of measurements: educational attainment, IALS test results, and wages. The indicator chosen to approximate complexity can be taken to be reliable if it is found that the workers' various skill indicators are monotone and, ideally, linearly increasing as we progress from the simplest ($R = 0$) to the most complex ($R = 13$) type of job. This condition appears to be satisfied: with only a few exceptions, a higher level of R is accompanied by higher educational attainment, literacy skills and wages observed among those employed in a given job, and the associations are characterised by curves approaching linear functions (*Köllő*, 2008).

all workers, workers with 11 years of education, and *manual workers* with at least 11 years of education. (The International Standard Classification of Occupations or ISCO was used in the IALS. The class of manual workers comprises *"craft and related trades workers", "plant and machine operators"* and *"elementary occupations"*.)

Figure 2.3: Distribution of jobs by the number of reading and writing tasks involved (IALS, Europe, 15–59 year olds' jobs)



West: The European countries participating in IALS excluding the former socialist countries.
CEE*:* The Czech Republic, Poland, Hungary and Slovenia.
The curves show the percentage of workers in the sample who reported performing 0, 1, ..., 13 of the reading and writing tasks listed in *Table 2.2* at work.

The first graph reveals that in 1998, the probability of being employed in jobs not involving any reading or writing tasks was *twice as high* in Central and Eastern Europe, including Hungary, as in Western Europe. Compared to the Western European sample, those required to perform 0–4 tasks involving literacy skills are heavily overrepresented, while those who have to perform 7–13 tasks are underrepresented. Looking at the subpopulation of workers with 11 years of education, the same pattern emerges. Although jobs requiring little functional literacy dominated among the jobs filled by skilled workers (who are identified as manual workers with at least 11 years of schooling) in the West as well, jobs involving 0–4 reading or writing tasks were found with far higher frequency, and those involving 7–13 such tasks were found with far lower frequency in the Eastern countries. In the West, 10 percent of skilled workers had jobs that did not involve any kind of reading, writing, or mathematical tasks, while the corresponding figure was 20 percent for Hungary.

We cannot contend that the data displayed in *Figure 2.3* simply reflects a heritage of the socialist era. At the time of the IALS literacy survey, only 30 percent of the non-student population under the statutory retirement age were still employed in their pre-1990 jobs (and an even smaller proportion if we limit the sample to the private sector), and 40 percent entered the job held in 1998 after the regime change. (30 percent were out of work). The corresponding figures are, respectively, 29, 43 and 28 percent for the population with vocational training (*Köllő,* 2008). The pattern observed in the IALS literacy survey closely reflects the way in which the post-socialist economies allocated workers with different levels of educational attainment to jobs involving different levels of literacy – which is the subject of the next section.

2. Employment and workplaces of the population educated at vocational training schools

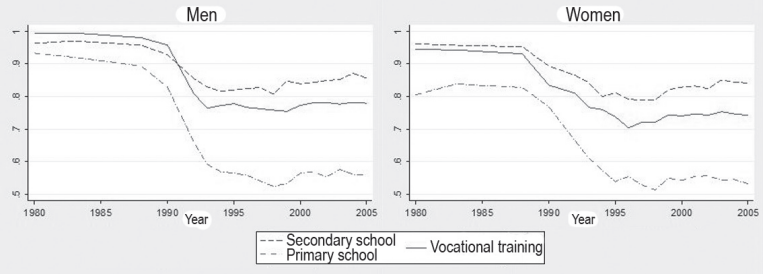
The shock of the transition and the restructuring of the economy resulted in a substantial fall in the demand for skilled labour, which was reflected in the drop in their employment rate, a shift towards jobs not requiring vocational training, and lower wages. This section looks at some key data concerning employment.

Employment rate

Our analysis of employment relies on the following datasets: a 3 percent household sample from the 1980 census and a 2 percent sample from the 1990 census; the 1983 and 1988 income survey data collected by the Hungarian Statistical Office (KSH); and the Labour Force Surveys between 1992 and 2005. Our analysis here is limited to the first quarter samples of the labour force surveys. The datasets provide individual level data, and are exceptionally extensive. The KSH labour force surveys adhere to the ILO international

standard definition of employment while the older surveys use the definitions of the census. There are discrepancies between the two but these do not have a significant distorting effect on our analysis. The datasets are described in detail in *Ábrahám & Kézdi* (2000), for instance. The trends in employment rates, as indicated by the available data, are displayed in *Figure 2.4*.

Figure 2.4: Employment rates among the populations with primary, vocational and secondary (with Matura) education, 1980–2005

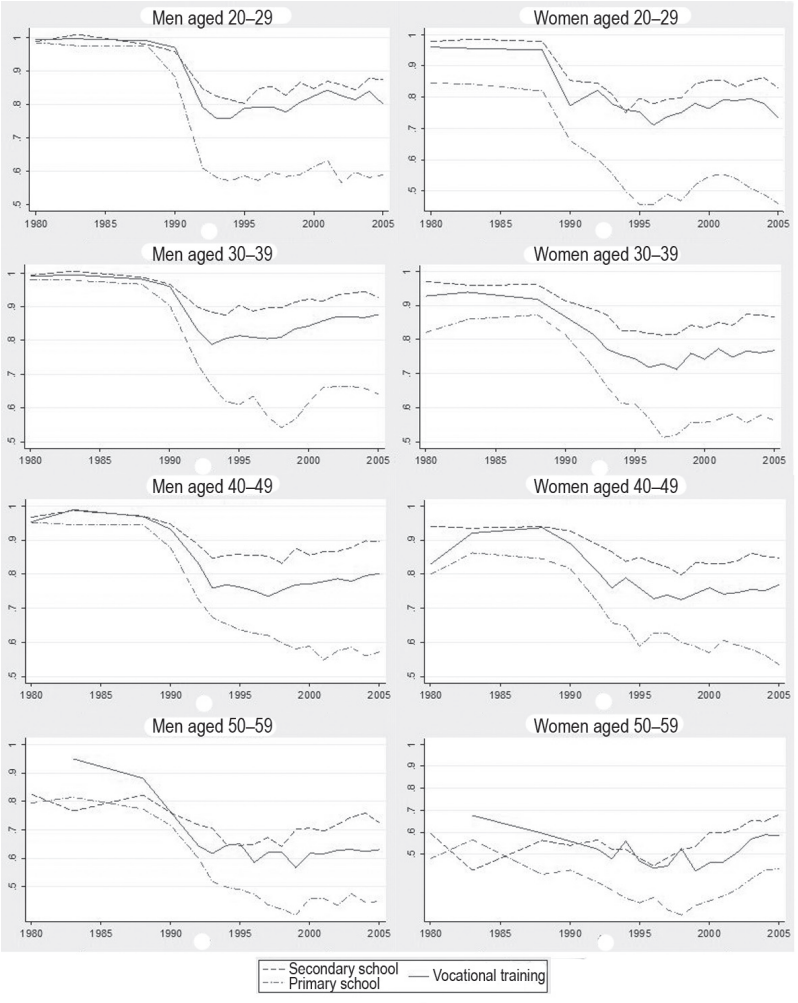


Note: Men aged 20–59, women aged 20–54. Full-time students and mothers on paid childcare leave are excluded.
Data source: based on individual samples from the 1980 and 1990 census, individual samples from the 1983 and 1988 KSH income surveys, and individual samples from the first quarters of the KSH labour surveys from 1992 to 2005.

The regime change brought about a substantial decline in the employment of unskilled workers, which indicates a reduction in demand. Between 1989 and 1995, the employment rate among those with only primary education fell from 90 percent among men and 80 percent among women to about 50 percent, and, since that time, has not increased. Skilled workers with no Matura qualifications also experienced a substantial decline in employment, but to a lesser extent. The almost 100 percent pre-transition employment rate of men dropped to less than 80 percent, while the figure for women fell from 90 to about 70 percent. The employment pattern of the group with Matura qualifications displays a similar course, but the decline is less pronounced than it is for skilled workers. Also, the employment rate among the former group shows a slight increase starting in 2000, which is not observed, or not to the same extent, for the other two groups under analysis.

These trends are shown broken down into age cohorts in *Figure 2.5*. The most striking feature of the graphs is that while for the youngest cohort, the employment rates among people with vocational qualifications and those with Matura qualifications follow the exact same curve, the two curves characterising the middle cohort diverge. We see a smaller gap for the oldest cohort, but here the employment rates are also closer to that of the population with only primary education.

Figure 2.5: Employment rates by age cohort among those with primary, vocational and secondary (with Matura) education

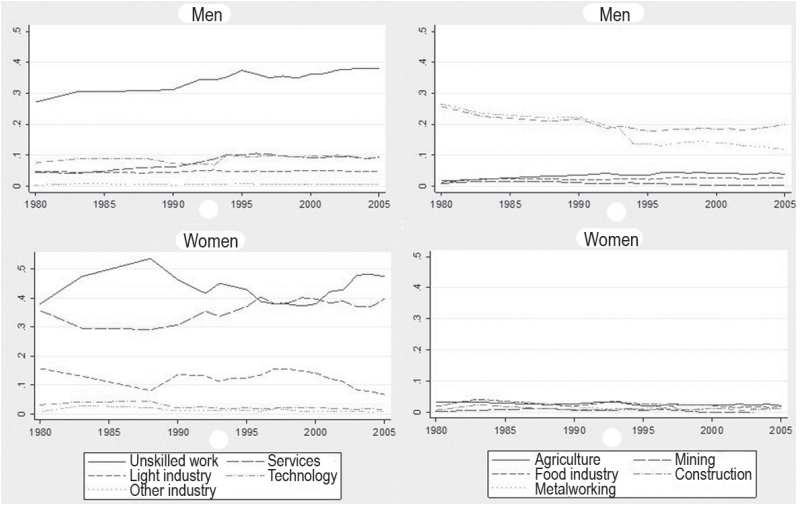


Note: Full-time students and mothers on paid child care leave are excluded.
Data source: based on individual samples from the 1980 and 1990 census, individual samples from the 1983 and 1988 KSH income surveys, and individual samples from the first quarters of the KSH labour surveys from 1992 to 2005.

The occupational composition of employment is displayed in *Figure 2.6*, where only the population with vocational qualifications (skilled workers) are shown. The graphs show the distribution of workers in employment across different occupations or, more accurately, across different groups comprised of similar occupations. Those employed in occupations that are not, and have never been, taught at vocational training schools are assigned to a separate category.

This information comes from an analysis of occupations among the outflow of vocational training schools (see the next section).

Figure 2.6: Distribution of skilled workers with no Matura qualifications across occupational groups, highlighting unskilled occupations (those not taught at vocational training schools)



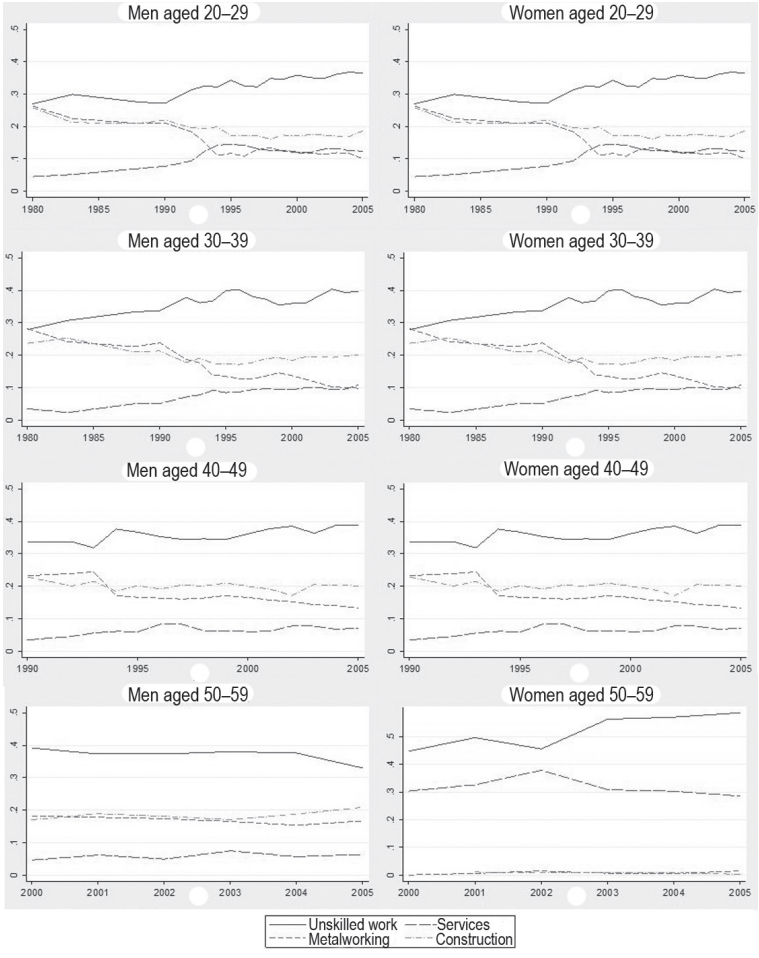
Note: The sample only includes workers with vocational qualifications (skilled workers) who are employed. Age restrictions: between 20 and 59 years.
Data source: based on individual samples from the 1980 and 1990 census, individual samples from the 1983 and 1988 KSH income surveys, and individual samples from the first quarters of the KSH labour surveys from 1992 to 2005.

The skilled workers working in unskilled occupations are, of course, "career changers": none of them works in their original occupation. Their share among men steadily increased from 25 percent in 1980 to almost 40 percent in 2005. A similar increase can be observed among women, although starting at a higher level, especially during the last few years of the socialist regime. This peak is followed by a downward trend lasting until 2000, when the curve starts rising again, and in 2005, the proportion of women not employed in their original vocation approaches 50 percent.

Looking at the "genuine" skilled occupations, the proportions of men working in the service sector and in agriculture increased slightly, and, following a moderate dip, the frequency of employment in technology stabilised at the pre-regime change level of 10 percent. A notable decline is only observed in metalworking and construction, with the proportion of male workers stagnating or only slightly decreasing in other occupations. The only occupations in which women were employed in significant numbers were in light industry and in the service sector. The transition brought about a substantial decline in the proportion of women working in light industry, in parallel with an increase in the proportion of those employed in services.

It should be noted that the graphs show the proportions within the employed population. Since the overall employment level declined following the regime change, employment decreased in every occupation but those displaying a marked increase in their share of the employed population (namely, unskilled occupations among men and service sector jobs among women). That is, with the exception of service sector occupations, there was a decline in the demand for all skilled occupations and this decline was substantial in most cases.

Figure 2.7: Distribution of skilled workers with no Matura qualifications across major vocational groups by age cohort



Note: The sample only includes workers with vocational qualifications (skilled workers) who are employed.

Data source: based on individual samples from the 1980 and 1990 census, individual samples from the 1983 and 1988 KSH income surveys, and individual samples from the first quarters of the KSH labour surveys from 1992 to 2005.

The trends of the most important occupational groups are broken down into age cohorts in *Figure 2.7*. There are two important features to note. First, we find a higher proportion of workers in unskilled occupations among the oldest population, but the curve characterising changes through time is more level. Therefore, for each age cohort, the proportion of both men and women working in unskilled occupations was around 40 percent in 2005 (with the exception of the oldest group of women, almost 60 percent of whom were in this position). Second, the trends displayed by skilled occupations are also more marked among 20–39 year olds than among those over 39.

Matching supply and demand

The match between the supply and the demand for vocational qualifications can be more accurately characterised by looking at the probabilities of graduates trained in different vocations remaining in their occupations, transferring to other occupations, or being excluded from the labour market. It may be the case that the reason behind the marked decrease in the labour market value of vocational training is that it is more difficult for skilled workers to find employment in their original occupation in the post-socialist era than it was before the regime change.

It has been shown by *Fazekas & Köllő* (1990) that during the period of Hungarian state socialism there were significant discrepancies between students' preferences and enterprises' demand for skills as well as between both of these and vocational training school capacities. Authorities tried to adjust demand, supply and capacities in a multi-step bargaining process. At the end of the day, however, the occupational structure of employment proved to be closer to students' original preferences and highly dissimilar to both the occupational structure of vocational qualifications and the needs declared by companies.

As well as leading to a drastic shift in demand, the regime change also transformed the nature of the bargaining process. Vocational training, at the same time, remained subject to strict central regulation. In principle, this could have resulted in either a poorer or a better match: with the demand decentralised, the central administration has to make do with less information but bargaining processes may be less affected by political distortions. *Liskó* (2001) reveals that several years after the regime change, only 50 percent of vocational training school graduates were employed a year after obtaining their qualifications, and this figure rose to only 75 percent five years after graduation. More than a third of skilled workers found employment in occupations not related to their training.

As we have seen, virtually 100 percent of skilled men and 90 percent of women were employed under state socialism in Hungary. Following the transition, these employment rates dropped to 80 for men and 70 percent for women.

We have also looked at data revealing that during the period preceding the regime change, 30 percent of men and 40–50 percent of women with vocational qualifications worked in unskilled occupations. Following the regime change, the proportion steadily increased to 40 percent among men and after a period of decrease returned to 50 percent among women.

Combining these figures we see that before the regime change, at least 30 percent, and after the regime change, at least 60 percent of men with vocational qualifications failed to find employment matching their qualifications. The corresponding proportion increased from 50–60 percent to 70–80 percent for women. Given that two thirds of the population with vocational training are male, the overall result is that the proportion of those not working in their occupation (employed in other jobs or not working at all) rose from the pre-transitional level of 35–40 percent to about 60 percent under the new regime. Note that these are conservative estimates, since those employed in skilled occupations other than the one they qualified in are not included. It is this issue that the following analysis addresses. The proportion of those employed in jobs matching their qualifications, and the temporal trends of this proportion are analysed using an inter-temporal comparison of cross-section data, which is the best method allowed for by the availability of data (see the box below for a discussion of data problems).

3. On the deficiency of data available for longitudinal analysis

Under optimal circumstances, the issue of occupational matching should be investigated by following the careers of vocational training school students graduating in different years. In Hungary, however, no suitable data sources are currently available. The *life-course* survey organised by Sulinova and Tarki tracks the careers of 10 thousand students who were in Year 8 of schooling in 2006. In a few years' time there will be data on the careers of those continuing their studies at vocational training schools and the survey will provide an exceptionally rich source of information. The dataset, however, will not be ready for analysis for several years, and the survey is limited to a single cohort. If we want to compare the careers of workers graduating in different years – which is one of the tasks involved in an analysis of the development of supply and demand – regular longitudinal surveys are needed covering every cohort of school graduates.

Careers in the different vocations can, in principle, be mapped with the help of *cross-section* surveys in the absence of the *longitudinal* data. Surveys of the adult population can include questions on vocational qualifications and the respondent's current occupation. In theory, this allows an

assessment of the proportions of respondents with various qualifications being out of work, employed in their original occupations, or working in other occupations at the time of the survey. If a cross-section survey of this kind is available for every year, the employment proportions in different occupations can be followed over time. This method cannot be a substitute for longitudinal surveys, since it does not permit an analysis of occupational switches. It can, however, shed light on the question of trends in the proportions of workers employed in occupations matching their qualifications with respect to different characteristics.

A major problem concerning surveys collecting information on vocational qualifications retrospectively is that respondents may remember inaccurately, and inaccuracies tend to be systematic. In these surveys, a larger number of respondents tend to report that their original qualifications match (or almost match) their current qualifications than the number for whom this is indeed the case. This distortion alone is sufficient to question the validity of an analysis of employment by vocation.

The KSH labour force survey, which is an excellent source of information on employment in Hungary, is not a longitudinal survey, but a series of regularly repeated cross-section surveys. Although the surveys have a longitudinal aspect in the sense that that each household is interviewed six times over a period of one and a half years, no efforts are made to locate respondents who move or fail to respond for some other reason. As this would introduce a distortion into an analysis of job changes, the labour force survey is not suitable for even a short-term longitudinal analysis, but is best seen as a series of cross-section datasets. Also, the survey is clearly unsuitable for our purposes, since it is not sufficient to follow careers for only one to one and a half years after leaving school. The labour force survey presumably records retrospective occupational details, since questions have always been included on employed respondents' occupation and on all adults' vocational qualifications. For a large part of the period under analysis, however, the data on vocational qualifications is not accessible in the publicly available databases (stored by the Institute of Economics of the Hungarian Academy of Sciences). That is, in addition to the general problems raised by retrospective qualification data, there are practical barriers to using the survey data for a long-term longitudinal analysis.

Our analysis takes the number of vocational training school graduates qualifying in each occupation in each year starting with 1966, and compares the observed pattern to the occupational structure of the employed population with vocational training. The data sources used for the analysis are the lists

of final year students of vocational training schools for each occupation, and the cross-section employment surveys.

The principle behind the method is that the number of students qualifying in a given occupation in a given year can be compared to the size of the population of the appropriate age working in that occupation (with vocational qualifications). If every young vocational training school student was 17 years old when he or she obtained the school graduation qualifications, and mortality and emigration are at a negligible level, the proportion of those working in their original occupations can be estimated through a survey conducted, for instance, 20 years later, assessing the size of the 37 year old employed Hungarian-born population with vocational qualifications for each occupation. This method, of course, cannot capture potential symmetrical vocation changes. Let us assume that each textile worker either works in his or her own occupation, or as a hairdresser, and *vice versa,* each qualified hairdresser is either employed in his or her original occupation or as a textile worker. If the number of qualified textile workers employed as hairdressers equals the number of qualified hairdressers working in the textile industry, our method falsely indicates that everyone is employed in their original occupation. That is, the method shows some kind of net occupational immobility and provides a conservative estimate of the percentage of people who do not work in their original occupation. It can deal with some problems, however, that previous estimations could not. The results are, of course, highly sensitive to measurement errors, which may introduce various distortions.

The model used here is a panel regression model similar to the one described by *Bound et al* (2002), where it is used to investigate a problem of different content but a very similar structure. Let j stand for a job, g denote the year of qualification and t the year of observing employment. Let S_{jgt} stand for the number of vocational training school educated people qualifying in year g and working in job j in year t (the stock). Finally, let F_{jg} stand for the number of individuals qualifying in job j in year g (the outflow). This analysis excludes people working in unskilled occupations. The regression equations are the following:

$$\log\left(S_{jgt}\right) = \beta \log\left(F_{jg}\right) + \alpha_j + u_{jgt} \qquad (2)$$

$$\log\left(S_{jgt}\right) = \beta \log\left(F_{jg}\right) + \alpha_j + \gamma_g + u_{jgt} \qquad (3)$$

$$\log\left(S_{jgt}\right) = \beta \log\left(F_{jg}\right) + \alpha_j + \gamma_g + \theta_t + u_{jgt} \qquad (4)$$

The parameter of interest here is β. If the outflows are exogenous, β can be interpreted as an elasticity. It shows the percentage increase in employment in a given occupation in year t among the birth cohort qualifying in year g that results from a one percent increase in the outflow of training in the given oc-

cupation in year *g*. The elements α_j, γ_g and ϑ_t indicate the fixed effects of, respectively, employment, outflow year, and employment year.

If graduates qualified in each of the occupations continue to work throughout their lives and to stay within their original occupations, β will take the value 1 (perfect match). If graduates work in different occupations (or, more precisely, work in other occupations with the same probability as in their original occupations), β will have a value of 0 (no match). The actual value of β is likely to fall between these two extremes. A lower value indicates a poorer match. A poor match may mean that school graduates fail to find employment, or that they are employed, but not in their original occupations. As was mentioned before, the present analysis captures net mobility: β remains unaffected if the people qualified in *A* are employed in occupation *B* with the same probability as people qualified in *B* are employed in occupation *A*. The results are displayed in *Table 2.3*.[15]

Table 2.3: Estimated employment outflow regression parameters analysing occupational matches (weighted estimates)[a]

	Pre-regime change			Post-regime change		
	Equation			Equation		
	(2)	(3)	(4)	(2)	(3)	(4)
Log outflow [log(F)]	0.416	0.420	0.295	0.518	0.514	0.360
	(0.056)***	(0.059)***	(0.077)***	(0.038)***	(0.038)***	(0.037)***
Occupation, fixed effects[a]	+	+	+	+	+	+
Year of employment, fixed effects	–	+	+	–	+	+
Year of qualifying, fixed effects	–	–	+	–	–	+
Number of observations (N)	1235	1235	1235	8426	8426	8426
Within R^2	0.54	0.54	0.54	0.48	0.48	0.48
Overall R^2	0.80	0.80	0.83	0.70	0.71	0.73

Dependent variable: log(*S*)
[a] Weighted by outflow size.
Statistically significant at the *** 1 percent level.
Fixed effects: take the fixed effects of occupation and year into consideration.
Robust standard errors given in brackets, clustered within year-occupation cells.

The results of the most plausible specification (equation (4) where all three fixed effects are controlled for) show that 29.5 percent of workers settled in their occupations in the pre-regime change era and 36 percent in the period following the regime change. Looking at the figures from the opposite perspective, 70 percent were not employed in their occupations before and 64 percent after the regime change. As a reminder, in addition to the non-employed and those employed in unskilled occupations, these figures also include those permanently working in another occupation. Our previous results, which excluded the latter group, showed 35–40 percent before and 60 percent after the regime change. For the period preceding the regime change, the regression results indicate either that the mobility between skilled occupations was

15 The regression was weighted by outflow size. Since some of the cells have a value of 0, the log(*S*) and log(*F*) values were replaced by log(*S* + 1) and log(*F* + 1). The substitution has a negligible effect on the values of non-zero cells, since the figures are in the order of thousands. Robust standard errors are corrected for heteroscedasticity and clustering within year-occupation cells.

several times higher than it was after the regime change, or that the measurement of employment occupations is too noisy in the data, noisier than in the labour force survey data. Neither explanation is very likely.

The results for the post-regime change period are easily interpretable: they show negligible mobility (or at least negligible net mobility) between different skilled occupations. Overall, about a third of those not working in their occupations for an extended period are not in employment of any kind, and the remaining two thirds are employed in occupations that do not require vocational qualifications. The proportion of those working in another skilled occupation is therefore negligible.

Flows into occupations not requiring vocational qualifications

The fact that the employment level among the population educated at vocational training schools remained relatively high in the post-regime change period is to a substantial extent explained by their large-scale flow into occupations not requiring vocational qualifications – as we have learnt from the data discussed above. What was the course of this process?

During the socialist period the large batches in production and the low quality requirements permitted the mass-scale employment of uneducated labour in a long line of skilled occupations: in 1986 workers with only primary education were represented in the same proportion as workers with vocational qualifications among cooks, waiters, bakers, tailors, upholsterers, jewellers, electricians, printers, smelters and welders and in a fairly high proportion among workers such as carpenters (33 percent), masons (35 percent), machinists (29 percent), locksmiths (26 percent) and shoemakers (19 percent). In total, less than half of the population with at most 8 years of primary education were employed as unskilled workers, and more than a third were engaged in skilled occupations.[16] Large numbers of them were employed as human substitutes for absent auxiliary machinery (such as material handling and packaging machinery or feeding systems) in factories which were aptly described by *Ellmann* (1979) as "labour intensive variants of capital-intensive techniques."

Let us now look at employment trends among those with only primary education, those with vocational qualifications, and the two groups together, distinguishing among between-occupation and within-occupation changes. While the former is closely related to shifts in the industry structure, the latter is a better reflection of changes in the skill requirements.[17] The data suggests that *within-occupation* shifts between the two groups played an important role throughout the period and an absolutely dominant role after 1995. Workers with primary education were being displaced in almost all occupations and all periods at a rate which was faster than the decline of their population share. The non-voluntary nature of the process – that is a process of

16 The data cited come from the 1986 wage survey.

17 Contrasting the two components this way is only justified in the short term; in the long term the industry structure itself adapts to changes in education.

crowding out – is suggested by the fact that their disappearance from skilled as well as unskilled occupations was accompanied by a steady increase in their unemployment rates.

Our analysis relies on a panel database that distinguishes 16 occupations and four education levels, giving a total of 64 qualification groups, and includes data on employment, unemployment, and wages for 1986, 1992 and 1994–2003. A summary of the database is given in *Appendix 2.2*.

Changes in the employment of those with only primary education and those with vocational qualifications are displayed by occupational group in *Figures 2.8–2.10* during the early stage of the transition (1986–1992), at the intermediate stage (1992–1995) and at the latest stage under analysis (1995–2003).

The changes are divided into between-occupation (c_B, between or external) and within-occupation (c_W, within or internal) components as defined by Equation (5), where W denotes the size of the working population of a given educational level in each occupation, w stands for their share within an occupation, S is the total number of workers employed in an occupational group, the summation applies to the occupations, and the indices 0 and 1 mark the base and the reference periods.

$$\sum F_1 - \sum F_0 = \sum f_1 L_1 - \sum f_0 L_0 = \sum (L_1 - L_0)\frac{f_0 + f_1}{2} + \sum (f_1 - f_0)\frac{L_0 + L_1}{2} = c_K + c_B \qquad (5)$$

Figure 2.8: The components of changes in the employment of the population with less than Matura qualifications, 1986–1992

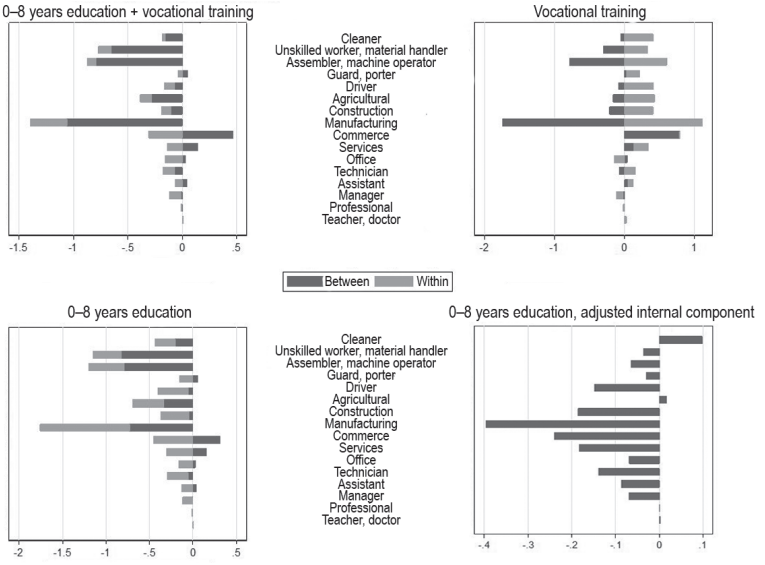


Figure 2.9: The components of changes in the employment of the population with less than Matura qualifications, 1992–1995

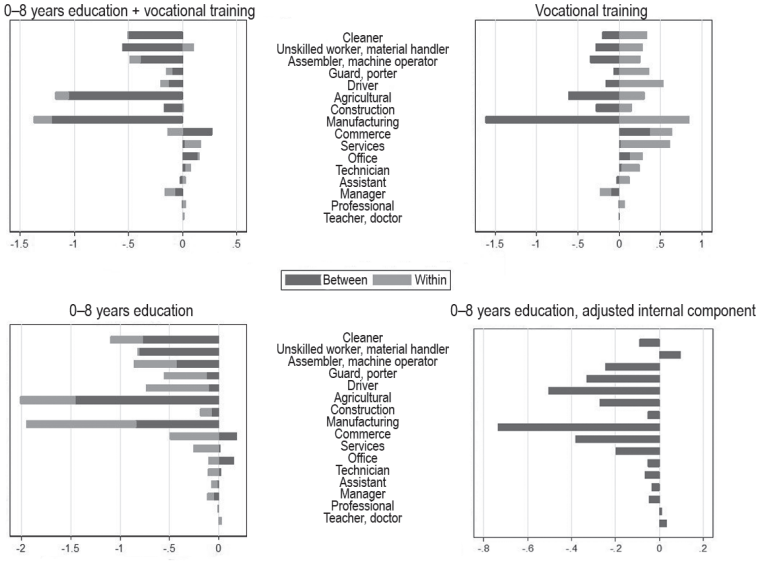
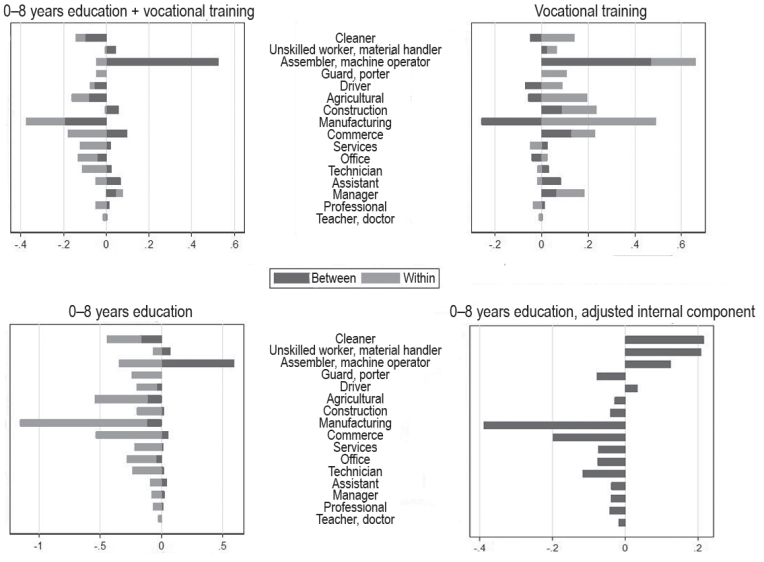


Figure 2.10: The components of changes in the employment of the population with less than Matura qualifications, 1995–2003



The components shown in *Figures 2.8–2.10* are expressed as annual percentage change relative to the initial aggregated worker stock with a given educational level. For example, in the period 1986–1992, the between component $c_B = -1.1$ for manufacturing workers having no Matura qualifications means

that as a result of workforce cuts in manufacturing, the aggregate employment of this educational group fell by 1.1 per cent per annum The corresponding internal component $c_W = -0.3$ shows that an inflow of workers with Matura qualifications into manufacturing decreased the aggregate employment of primary school and VTS graduates by 0.3 percent per annum. The shifts observed in manufacturing had a total employment effect of $c_B + c_W = -1.4$ percent each year.

In addition to the three graphs per period, *Figures 2.8–2.10* also display a fourth graph labelled "Adjusted internal components." In some sense Equation (5) overestimates the share of within-occupation changes, because it disregards the decline in the supply of workers with only primary education. The adjusted internal component was calculated according to Equation (6) for the population with up to 8 years of primary education to correct for this distortion. A negative value of <?> indicates that the proportion of those with primary education decreased faster (or increased more slowly) in the given occupation than among the total working age population. In Equation (6), *N* stands for the size of the working-age population with a given educational level.

$$c_B^* = \Sigma\left(f_1 - \frac{N_1}{N_0} f_0\right)\frac{L_0 + L_1}{2} \quad (6)$$

During the early period of the transition (1986–1992), the change with the strongest effect on unskilled employment was the decline of manufacturing, which affected skilled manufacturing workers, assembly workers and machine operators, as well as unskilled labourers and material handlers. A second factor was the shift *within* elementary occupations in favour of VTS graduates. Those with primary education were replaced in these occupations (with two exceptions: cleaners, and, to a much lesser extent, agricultural workers) at a faster rate than the rate of their decline within the total population. By contrast, the employment of both primary school and VTS graduates increased slightly as a result of the expansion of trade and services.

Looking at the period between 1992 and 1995, the years of the transformational recession, the continuing decline of industry was coupled with a weakening of agriculture, with almost as strong an effect. The positive employment effects of the expansion of the tertiary sector continued to be limited to the population with vocational qualifications. Among porters, guards, drivers, and manual workers in the retail trade, those with only primary education were replaced by skilled workers on a mass scale. The rate of displacement among the under-educated continued to be faster than the decline of this group among the total population for all but one occupational group (unskilled workers and material handlers).

The period starting in 1995 was characterised by slower changes, which were also of a different character. The number of assemblers and machine operators grew at an exceptionally rapid rate (by 42 percent from 1995 to 2003). Dur-

ing the post-transition period this was the only occupational group in which the employment of workers with primary education increased (by 11 percent), even though the internal proportions still favoured those with higher educational attainment, predominantly skilled workers. Also, the share of primary school educated workers among assemblers/machine operators, as well as among cleaners and unskilled workers, declined at a slower rate than their proportion among the total population.

Figures 2.8–2.10 suggest that the ratios of external and internal components showed considerable variation across the different stages of the transition. This feature is shown more clearly in *Table 2.4,* where the external and internal components calculated for the different occupational groups are summed up. It can be seen that although by the last stage of the transition the changes in the total size of the workforce in the different occupations had a (very weak) positive effect, the negative effect of the shifts within occupations decreased only very slightly.

Table 2.4: Contribution of the between and within components to annual changes in the employment of the population with 0–8 years of education (percent, base period employment=100)

Component	1986–1992	1992–1995	1995–2003
Between (c_B)	–2.5	–4.3	0.4
Within (c_W)	–4.5	–4.7	–4.2

Definitions are given in Equation (5) and in the text.

Exclusion from jobs requiring literacy skills

Towards the middle and end of the nineties, Central and Eastern European under-educated workers were concentrated in jobs not requiring reading or writing to a substantially larger extent than were their Western European counterparts. This was observed for both older and younger cohorts, even after controlling for the effects of industrial and occupational composition. This is unquestionably a Central and Eastern European phenomenon: no similar degree of concentration could be observed in the Western countries, not even in those characterised by a low level of employment among the population having only primary education.[18]

To show this we return to the IALS. The details of the sample and the selection criteria used for our analysis are given in *Appendix 2.1.* An analysis of how jobs and workers are matched should undoubtedly be carried out by country and, within that, by economic sector. Such an analysis cannot be carried out due to the absence of a sufficient number of observations. For this reason, our data are organised into three groups of countries. The first group is composed of six countries in continental Europe (Norway, Denmark, Germany, the Netherlands, Belgium and Italy). The second group comprises

18 Our analysis of workplace-worker matches therefore uses two variables which can more or less justifiably be labelled exogenous. One is educational attainment, which rarely increases once an individual has entered the labour market. Our second variable is an indicator describing job requirements. We shall return to the question whether the latter depends on the individual.

Great Britain, Ireland and Finland: three Western countries where exceptionally low employment rates – approaching those of the former socialist countries – were observed among the population with basic education at the time of the survey. Finally, the four participating Central and Eastern European countries, the Czech Republic, Hungary, Poland and Slovenia, are assigned to the third group. In what follows, the three groups will be labelled West1, West2 and CEE.[19]

Our objective is to estimate the effect of a one unit increase in the indicator capturing literacy requirements in the job on the probability of that job being filled by a worker of low, medium or high educational attainment. In doing so we assume that employers are in a position – or have been in a position in the past – to choose a worker with the appropriate level of education to fill a position requiring given skills. We consider observed job-worker matches as evidence – by virtue of their existence – for the appropriateness of the employer's past decision. We rely on the premise that individuals educated to various levels will differ in their productivity in fulfilling tasks of different levels of complexity. A job not requiring reading or writing skills may perhaps be performed with similar productivity by a university educated candidate and by an individual with only primary education. Given a job requiring several types of reading, writing, and mathematical skills, however, the former applicant will prove to be more productive. A rational employer will evaluate expected productivity and wage costs in deciding between jobseekers of different educational levels.

The problem calls for an *alternative specific multinomial choice model* or McFadden model (*McFadden* 1974), where the employer's choice is determined by the type of job on the one hand, and the attributes of the chosen alternative on the other (complexity of the job and wages). We measure complexity by the number of reading and writing tasks (R) introduced earlier. How a unit increase in R affects workforce composition is influenced by the expected productivity of workers with different levels of education and by their relative wage levels, and is furthermore affected by unobserved individual characteristics.

The considerations discussed in *Appendix 2.1* suggest that in addition to a McFadden model, the available sample should be analysed in a simpler (multinomial logit) model, which does not make use of the available wage data of questionable value, and is easier to control. Such a model seeks an answer to the question of what is the probability of an employer choosing a worker with primary, secondary, or tertiary education for a job involving R literacy tasks *within* sectors and occupational groups.[20]

The different model specifications unequivocally suggest that an increase in the value of *R* is accompanied by a far more pronounced decrease in the share of low-educated workers in the former socialist countries compared to

19 In the countries pertaining to West1, the employment prospects of men improved by 0.7–1.9 percent as a result of each year of schooling. The corresponding figures were 3.1–4.2 percent for the countries in West2 and 2.5–5.2 percent for the CEE countries. To avoid the data from larger countries dominating the aggregated group results, the observed frequencies were converted such that their sum equal 1 for each individual country. Also, most of our estimations use standardised variables (with an expected value of 0 and a standard deviation of 1 for each country.)

20 See *Köllő* (2008) for the results of the alternative-specific models.

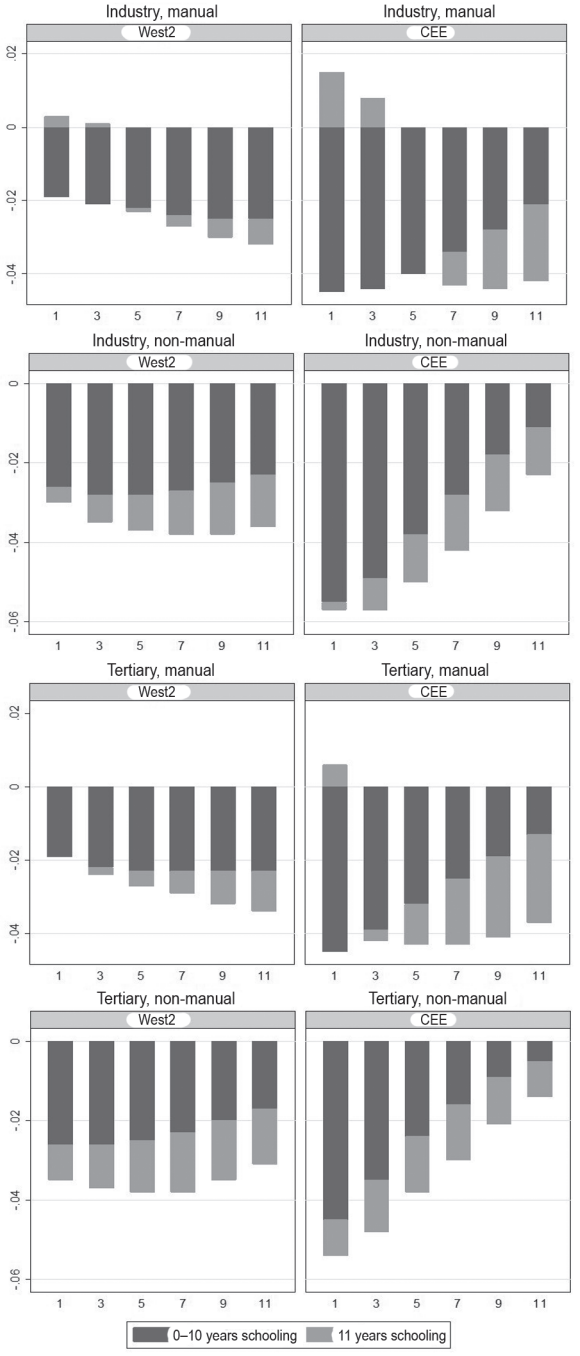
the two Western groups, the latter of which display very similar patterns with respect to workforce composition as a function of *R*. The changes in workforce composition accompanying an increase in *R* in the West2 and the CEE countries – as indicated by multinomial logit estimation – are displayed in *Figure 2.11*. The category of "industry" includes the construction industry and agriculture, and the category of "non-manual" comprises professionals, assistants, office workers, and technicians. *Figure 2.11* shows the difference in the percentage of workers with 0–10 or 11 years of schooling when *R* increases from 1 to 2, from 3 to 4, ..., from 11 to 12. The marginal effects add up to 0, i.e., the total change in the share of the two educational levels included in the model is balanced out by the total change of opposite sign in the share of the two upper levels of education.

Looking at industrial workers, an increase in *R* is accompanied by an increasingly fast rate of decline in the proportion of workers with 0–10 and 11 years of education in the West2 countries. This effect is, however, far weaker than it is for the former socialist countries, and the two patterns differ to some extent. For the CEE group, *at lower levels of R* an increase in literacy requirements may be accompanied by an increase in the proportion of VTS graduates at the expense of workers with 0–10 years of schooling. *At higher levels of R,* however, the proportions of both groups of workers with less than 12 years in school drop as *R* increases. Similar effects are observed among manual jobs in the tertiary sector.

In the West2 group a one unit increase in *R* in white-collar jobs is associated with a 3.5–4 percent decrease in the share of workers with 0–11 years of schooling at all levels of literacy requirements. In the former socialist countries, low-educated workers were excluded from non-manual jobs requiring reading and writing skills at a considerably faster rate *at low levels of R*. A 5–6 percent marginal effect can be observed as the value of *R* rises from 1 to 2, from 3 to 4 or from 5 to 6 while at higher levels of *R* the effects are similar to those observed in the West.

What this means is that Central and Eastern European employers tended to seek workers with at least Matura qualifications to fill positions involving even minimal reading and writing skills. In other words, during the late nineties, those with less than Matura qualifications clustered to an exceptional degree in jobs requiring no or almost no literacy skills. It is also clear from the data that at lower levels of literacy requirements, workers with only primary education are replaced by skilled workers as these requirements become more demanding.

Figure 2.11: Marginal effect of the number of reading and writing tasks on the proportion of workers with 0–10 and 11 years of schooling in different sectors and occupational groups, for two country groups (IALS, Europe, age 15–59)



Old and new jobs

Analysing the relationship between basic skills and job requirements, we may wonder why deficiencies in literacy skills should constitute a barrier to the employment of skilled workers given that – compared to the West – jobs not requiring such skills abound in the former socialist countries. Should it be the case that Central and Eastern European workers who have only primary or vocational qualifications are excluded from jobs with high literacy demands, this problem ought to be counterbalanced by the fact that jobs of this category are less frequent. This argument ceases to be convincing, however, as soon as the differences between ***older and newer workplaces*** are considered – which we shall now turn to, circumventing the problem that only a few (and moderately accurate) observations of the latter are included in the IALS sample.

Although the duration of employment in a particular job (the "age" of a given job-worker match) is not recorded in the IALS, there are indirect ways of identifying certain types of "new" jobs. Respondents were asked how many jobs they had during the 12 months preceding the interview. If a respondent had two or more jobs, his or her latest job is categorised as a new job for our analysis. Among respondents declaring only one job, this job was categorised as an old one if the worker's age and education suggested that the respondent was not a school-leaver.[21] We do know that some of the job-worker matches classified as old in this way are in fact new. This is the case if, for instance, the job was started during the year preceding the interview but the previous job had been left more than a year before the interview. This error is expected to dampen demonstrable differences between old and new jobs.

Our hypothesis that the literacy demand gap between the East and the West is smaller for recent jobs than it is for older ones is tested through simple regression equations estimated within educational groups and job type (old vs. new), as shown in Equation (7). Beta measures literacy demand relative to West1. The equations are estimated with and without controls (X) for sector and occupation.

$$R_i = \alpha X_i + \beta_1 \text{West2}_i + \beta \text{CEE}_i + u_i \qquad (7)$$

As shown in *Table 2.5*, there was only a slight difference between the West1 and the West2 countries in terms of the number of reading and writing tasks. In Central and Eastern Europe ***old workplaces*** demanded a substantially smaller number of literacy tasks (with the exception of higher education graduates) than they did in the West, and the gap was increasingly larger at lower levels of education. Looking at ***new workplaces***, however, the difference between Western and Eastern requirements is substantially smaller, and tends to be less or not at all significant. We observe the largest changes in the case of unskilled workers. These "generational" shifts suggest that the lower

21 The only variable available for screening such cases was the estimated variable of potential labour market experience (age – number of years at school – 6) taking 6 as the typical age of starting school.

mode of the distribution of literacy requirements, which used to draw a sharp boundary between the former socialist countries and the West – even in the late nineties – is gradually disappearing.

Table 2.5: Number of reading and writing tasks at work relative to West1 countries in Central and Eastern Europe and in the WEST2 countries, for old and new workplaces

	No control variables		With control variables		N
	West2	CEE	West2	CEE	
0–10 years of schooling					
Old job	0.47***	-2.73***	0.34***	-2.06***	5515
New job	0.28	-1.75**	0.14	-0.72	527
11 years of schooling					
Old job	-0.28*	-2.38***	-0.18	-2.06***	3166
New job	-0.39	-1.23***	-0.38	-0.90**	380
12–14 years of schooling					
Old job	-0.43***	-1.15***	-0.30	-0.93***	7923
New job	-0.55**	-1.03***	.0.27	-0.97***	1076
15 or more years of schooling					
Old job	0.57***	-0.22**	0.38***	-0.40***	5749
New job	0.35	0.40	0.16	0.01	930

For an explanation of the coefficients see the text introducing equation (7). Control variables: 12 dummy variables for sectors and occupations.
Statistically significant at the * 10 percent, ** 5 percent, *** 1 percent level.

Skills and unemployment

Beside exerting influence on the allocation of workers across jobs, basic skills also affect a worker's probability of having a job at all. This effect is difficult to demonstrate because of endogeneity: workers in employment now have been more likely to work in the past, and therefore possess higher measurable skills, all else being equal. Regressing employment on skills therefore would yield strongly biased coefficients. We try to overcome the endogeneity problem by limiting the analysis to a sample of *actual and potential entrants.* The estimation sample comprises respondents who participated in the labour force during the year preceding the interview, and were either left unemployed, or entered a new job. The literacy skills of this population can be regarded as given for employers, allowing us to examine how the selection of entrants was affected by these competencies. We estimate a two equations model, where:

a) literacy skills are a function of educational attainment, potential labour market experience, and whether at least some of this is actual work experience, origins (immigration status, first language, father's education), and cultural habits (cultural event attendance, reading habits);

b) employment odds (which are captured by the number of weeks worked during the year preceding the survey) are a function of literacy skills, educa-

tional attainment, gender, age and age squared, place of residence, and transfer status (receipt of pension).

Literacy skills and employment odds may have further – possibly correlated – determinants. Taking this possibility into account, the two equations are estimated simultaneously using the method of three stage least squares (3SLS). The critical variable of IALS literacy test scores is represented by two alternative measurements. One version relies on scores standardised on the country level, thus capturing the relationship of *within-country relative knowledge* and either education or employment. In the second version the scores are standardised using the mean and standard deviation of skills in the entire IALS sample. In this individual test scores are measured relative to the "world" average. As before, the estimation is run separately for the two groups of Western European countries and for Central and Eastern Europe. The results are summarised in *Table 2.6* with the coefficients of the control variables not shown.

Table 2.6: Association between education, basic skills, and employment in Western Europe and Central and Eastern Europe (three stage least squares estimation)

	Variable capturing literacy skills:					
	Standardized on the country level			Standardized on the level of the entire IALS sample		
	West1	West2	CEE	West1	West2	CEE
Test result equation						
Dependent variable: standardised IALS test score (Mean = 0, SD = 1)						
Education (years)	0.3266 (24.3)	0.4110 (19.45)	0.3782 (19.75)	0.0801 (25.35)	0.1144 (18.20)	0.1138 (19.35)
Time since leaving school × some work experience	–0.0084 (9.01)	–0.0021 (1.51)	–0.0064 (5.06)	–0.0066 (8.47)	0.0001 (0.14)	–0.0049 (4.17)
Time since leaving school × no work experience	–0.0105 (7.53)	–0.0051 (1.88)	–0.0131 (4.57)	–0.0126 (10.45)	–0.0071 (2.82)	–0.0165 (6.15)
Employment equation						
Dependent variable: number of weeks worked during past year						
Test result	5.7210 (6.73)	4.7056 (4.63)	8.4267 (4.74)	5.7952 (6.15)	4.6175 (4.75)	7.0820 (4.72)
Education (years)	0.2873 (0.58)	1.7822 (2.49)	–0.9289 (0.95)	0.3880 (2.84)	0.6397 (3.05)	0.2334 (4.72)
N	5836	2518	2898	5836	2518	2829
"R^2": test result equation	0.3757	0.4065	0.3218	0.4198	0.4098	0.3723
"R^2": employment equation	0.2295	0.2102	0.1224	0.2464	0.2167	0.1792

Other control variables in test result equation: immigrant, first language other than interview language, father's education (5 dummy variables), never goes to the theatre or cinema, never reads books, never reads newspapers. In the employment equation: age, age squared, gender, immigrant, rural residence, pension recipient, never worked.

Sample: 15–59 year old non-student population either not employed or employed for no longer than a year.

As shown by the results of the first equation, education had a slightly stronger effect on basic skills in the West2 and the CEE countries than in the rest of the sample. Also, in Central and Eastern Europe, test performance relative to the world average was substantially improved by each additional year of schooling. Looking at the result from the opposite perspective, it follows that *in Central and Eastern Europe a missed year of education results in more pronounced knowledge deficiencies.*[22]

The second equation reveals that employment is affected by both literacy skills and education, although with test results controlled for, the effects of the latter are not always statistically significant and are generally weak. Given that the standard deviations of the years of education are, respectively, 3.7, 2.7 and 3 years for the three groups of countries, a one standard deviation difference in education is associated with an additional 1–2 weeks spent working, while a one standard deviation test result differential increases working time by 4.7–8.4 weeks. Crucially, as indicated by the estimation, in Central and Eastern Europe basic skills have a far greater impact on employment prospects compared to either of the two regions of Western Europe; the effects of the test results are 25–50 percent stronger than in West1, and surpass the values estimated for West2 by 50–80 percent.

In summary, CEE firms are keen to employ workers with vocational qualifications (preferred to primary school educated workers) for jobs with low literacy requirements, but even the VTS graduates are excluded from knowledge-intensive jobs. With respect to literacy, the demands of new Central and Eastern European workplaces are much closer to the Western pattern than those of old CEE workplaces. An especially marked change can be observed in jobs for workers with primary education or vocational qualifications. Changing demands and the low level of basic skills have major impact on the employment prospects of low-educated workers in Central and Eastern Europe. Education programmes that neglect to emphasize the enhancement of basic skills leave their graduates in a despondent position.

4. Wages

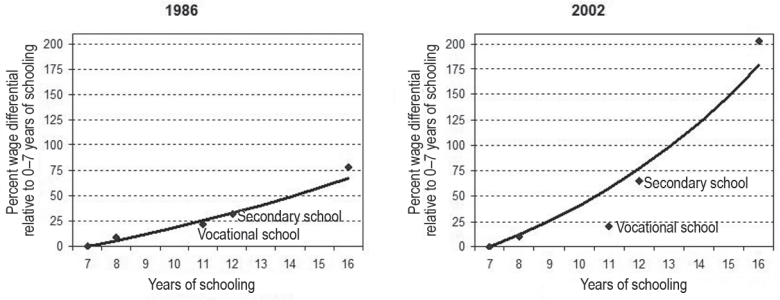
Our analysis of earnings relies on the following data sources: the 1973 and 1983 income surveys of the Hungarian Statistical Office (KSH) and the 1986, 1996 and 2002 payroll surveys. The wage surveys are administered by the Hungarian Labour Centre, the data are provided by employers, and the samples are large (with more than a hundred thousand observations). A more detailed description of these data sources can be found in Hungarian in *Ábrahám & Kézdi* (2000) and in the databank description of the IE-HAS (2006).

Figure 2.12 displays changes in the returns to education based on Mincer-type wage regressions. The returns to education show the percentage wage differential between high-educated and low-skilled workers with gender, age,

22 It is also clear that in these countries, it is only those who have not worked at all since leaving school whose knowledge fades with age at an especially fast rate.

region and settlement type held constant. The regression is estimated using two methods for both 1986 and 2002. In the first version, educational level is measured by the number of completed school years, while in the second version this is substituted by the qualification categories themselves.[23] *Figure 2.12* displays changes in the returns to education, with the continuous line showing the returns to the number of years in education and the diamonds indicating skill categories.

Figure 2.12: The returns to education, 1986 and 2002



The figure has two notable features. One is that the returns to education increased steeply between the two periods. While in 1986, each additional year at school implied a 6 percent rise in wages, this advantage doubled by 2002. The other, for our purposes more important, message of the chart is that while in 1986 all of the qualification categories fell close to the curve of average returns, in 2002 vocational qualifications appear well below it. The explanation for the disadvantage of vocational training is that there was a substantial increase in the returns to secondary schooling, and especially to tertiary education, compared to primary education or less (i.e., the curve shifted upwards), while the returns to vocational qualifications remained at the level observed before the transition. The labour market appears to have divided into workers with secondary (Matura) qualifications and those with lower education levels.

The wage effects of increased demand for skills versus "crowding out"

The available data allows us to disentangle the wage effects of "upskilling" and "crowding out," the latter referring to the case when skilled workers are willing to accept unskilled jobs for wages typical of unskilled workers. The data suggests that both processes were present, and they each had their distinct effect on skilled worker wages. The general increase in educational level (whereby the demand for higher skills increased throughout the qualification distribution) brought about an increase in the market value of vocational qualifications. The inflow of VTS graduates – in the event that it was not

23 The original regression model places log wages on the left. The coefficients can then be converted to percentages using the formula $(e^b - 1) \times 100$. It is this representation that has transformed the linear association between log wages and years of schooling into an exponential association.

accompanied by an increase in the share of high-skilled workers – however, resulted in the depreciation of the value of vocational skills.

Both upskilling and crowding out are likely to have occurred in each broad occupational category, since the shifts in educational composition were associated with changes in technology, market, and ownership patterns, i.e., with *firm* level events (as will be discussed later). We therefore attempt to capture the impacts of the two scenarios by analysing within-occupation shifts in workforce composition and their impact on wages, rather than by trying to assign individual occupations to one or the other category. Our analysis is based on a fixed effects panel regression model (8):

$$\left(\frac{w^S}{w^A}|X\right)_{jt} = \beta_1\left(\frac{F_S}{F_A+F_S}\right)_{jt} + \beta_2\left(\frac{F_K+F_F}{F_A+F_S}\right)_{jt} + c_j + u_{jt} \qquad (8)$$

where w stands for wages, P, V, S and T denote the four categories of education (primary, vocational, secondary, tertiary), X is a vector of control variables, c_j stands for fixed occupational effects, j marks occupations, and t stands for years. The panel regression models the impact of two types of changes in workforce composition on the relative wages of workers with vocational qualifications. The first component $[F_V/(F_P + F_V)]$ will increase if *within* the low education group there is a shift towards VTS graduates. The second component – $(F_S + F_T)/(F_P + F_V)$, with $F_V/(F_P + F_V)$ held constant – will increase if the number of those with at least the Matura qualification grows relative to the number of workers with no Matura qualifications while the educational composition of the low qualification workforce is held constant. We expect the first component to have a negative effect on skilled workers' wage premium ($\beta_1 < 0$, the mere fact of crowding out should decrease skilled workers' wage advantage) and the second component to have a positive impact ($\beta_2 > 0$, a general increase in the demand for skills should boost skilled workers' relative wages).

The data relate to 1994–2003 and comprise ten occupations in which a substantial number of uneducated people were employed: agricultural workers, porters and guards, cleaners, auxiliary workers, drivers, assemblers and machine operators, those employed in manufacturing, construction, commerce and the service sector. Such fine-grain earnings data are only available for the years of the Wage Surveys (1986, 1989, 1992, 1994–2003), and we only have annual panels for a relatively late stage of the regime change (from 1994 onwards), as the 1993 payroll survey did not break down the public sector data into educational levels.

Education-specific wages within occupations (w^P, w^V) were measured by estimating individual earnings functions using the data from the Wage Surveys, with log wages on the left hand side, and gender, labour market experience, and the square of labour market experience, a Budapest dummy, and 63

(16 × 4 – 1) dummy variables interacting occupation and education on the right hand side. The parameters of the latter set of variables measure the log wage premium of workers relative to academic secondary school (gymnasia) graduates employed in office-related jobs that was used as the base category.

The results are shown in the first row of *Table 2.7*. The coefficients confirm the expectations as to the direction of the effect: a one percent increase in the share of skilled workers within the low-educated workforce *lowered* the wage advantage of skilled workers by half a percent (with the combined share of low-education workers held constant), while a one percent increase in the share of high-educated workers was accompanied by a 0.17 percent *increase* in the wage advantage of WTS graduates.[24]

Table 2.7: Estimation of Equation (8) in a panel regression model assuming fixed occupational effects

Dependent variable	β_1 (Prob > t)	β_2 (Prob > t)	Constant (Prob > t)	R^2 internal / R^2 total	F (Prob > F)	Hausman (Prob > chi^2)	Number of observations (number of groups)
$\ln(w^V/w^P)$	–0.4939 (0.000)	0.1696 (0.001)	0.2895 (0.038)	0.4106 (0.0707)	30.66 (0.000)	28.7 (0.000)	100 (10)
$\ln(w^V)$	–0.3693 (0.002)	0.1043 (0.229)	–0.0752 (0.155)	0.1147 0.1220	5.70 (0.004)	7.48 (0.024)	100 (10)
$\ln(w^P)$	0.1242 (0.328)	–0.0653 (0.494)	–0.3647 (0.000)	0.0100 0.1860	0.49 (0.614)	1.66 (0.436)	100 (10)

Sample: ten blue-collar occupations in 1994–2003
Note: The probability levels of the appropriate statistical test are given in brackets.

The estimation was repeated with the relative wages themselves as the dependent variable, i.e., the wage disadvantage of those having primary education and those having vocational qualifications relative to *office workers with Matura qualifications* (shown in the second and third data rows of *Table 2.7*). An increase in the share of skilled workers within the low-educated population was associated with a falling wage premium for VTS graduates, while primary school educated workers' wages were unaffected by the changes in workforce composition. This suggests that the reduced wage advantage associated with "crowding out" was *not* a consequence of wage concessions on the part of workers with primary education, but a reflection of the overall declining wage position of VTS graduates. Although skilled workers' wages increased and primary school educated workers' wages slightly decreased as a result of a growing share of high-education workers, neither effect was statistically significant on its own (in contrast with the significant results obtained for the ratio of the two wages shown in the first row of the table).

24 The introduction of a dummy variable controlling for the increase in the minimum wage for 2001–2002 did not effect any changes in the results. As expected, the coefficient was negative: –0.026, at the 1 percent level of statistical significance

5. On the "shortage of skilled workers"

While we have convincing empirical evidence that vocational qualifications have become less marketable, the media, business chambers, and economic policy makers have repeatedly complained of *a shortage of skilled workers*. The available evidence suggests that the problem essentially lies in difficulties in adjusting to technological advances rather than in some sort of "underproduction" of vocational qualifications.

We must clearly acknowledge that there *is* a shortage of skilled workers and the constant flow of complaints is triggered by some actual problems. Nor can we brush aside the issue contending that since we can only speak of a "shortage" at a given wage level, the problem could be solved overnight by raising the wages of skilled blue-collar workers. This would probably work in the long term, but if it could also provide a solution in the short term, firms – which are not constrained in this respect – would presumably raise skilled workers' wages. They do not do so however: not only do the average skilled worker's wages fall well below those of a worker educated to the Matura level, but even the best paid skilled workers' earnings remain at a low level. Although company managers and chamber officials tend to comment that firms today "offer wages to good skilled workers surpassing the salaries paid to top managers," such statements appear to be rhetorical exaggerations: as revealed by the 2005 wage survey, only *0.2 percent* of skilled workers earned more than the *average* manager, including lower-level managers and the owners of small firms. Enterprises do not offer high wages to WTS graduates, and the most likely reason they do not is that such a step is not expected to alleviate shortages.

The data analysed in the rest of this section suggests that the problem is likely to lie in deficiencies in workers' ability to adjust to technological changes. The companies complaining of a shortage of skilled workers tend to be those where difficulties in the adjustment to technological changes are seen as barriers to progress.

Our analysis is based on the Hungarian data from the EBRD Hungarian-Russian-Romanian corporate survey of 1997–2000 (*Commander & Köllő,* 2008). The sample covers 302 firms selected from the sample of the Labour Market Prognosis survey of the Hungarian Employment Agency, excluding agricultural employers and employers in rural areas or small towns. (Some of our calculations cover a smaller number of firms because of data availability.) The main details of the sample are given in *Appendix 2.3*.

The data in *Table 2.8* first of all reveals that a substantial proportion of companies complained of a shortage of skilled manual workers at the turn of the millennium: while for other categories of workers, only 7–11 percent of companies reported a smaller than ideal workforce size, the corresponding figure for skilled workers was 36 percent. The number of "missing" skilled

workers relative to the number employed by the companies was, however, several times smaller: no more than 3–5 percent. In general, companies approached the workforce size they considered to be ideal, both surplus and shortage were in the range of 0–5 percent. (This was incidentally true for the Romanian and Russian samples as well.)

Table 2.8: Firms reporting workforce surplus or labour shortage in 2000

	Larger than ideal workforce			Smaller than ideal workforce		
	Percentage of firms	Percentage of given category of workers (estimate)[a]		Percentage of firms	Percentage of given category of workers (estimate)[a]	
		Lower	Upper		Lower	Upper
Unskilled workers[b]	7.3	1.2	1.5	11.2	1.5	2.4
Skilled workers	3.0	0.7	1.0	35.8	3.2	4.5
Non-manual	9.0	3.6	3.7	9.9	0.4	0.4
Managerial	5.3	1.0	1.1	7.0	0.7	0.7

[a] The firms were presented with the following choices: workforce 0–5, 5–10, 10–20 or more than 20 percent larger than ideal, or 0–5, 5–10 or more than 10 percent smaller than ideal. The lower estimate was calculated by assuming 25 percent surplus or 15 percent shortage for the open-ended top categories while the upper estimate assumes 40 percent surplus or 25 percent shortage. The upper and lower estimates were calculated using these percentages and the median values of the closed range choices.

[b] Including workers trained on the job for simple tasks.

Source: EBRD survey 2001. See *Commander & Köllő* (2008) for details.

The estimates in *Table 2.9* are used to identify the factors increasing the probability of complaints of labour shortage (smaller than ideal workforce size) for different categories of workers.

The first important feature of the data is that the probability of skilled worker shortage is higher among companies that had previously *reduced* the number of skilled workers, indicating that their skilled workforce had not matched their requirements. Shortages were reported more frequently in manufacturing than in the tertiary sector. Large companies were also more likely to complain. Technological changes on their own did not increase the probability of shortage complaints, but complaints were substantially more frequent for companies where both new technologies had been introduced, and worker adjustment problems were reported. A company that considered worker adjustment deficits to be a major barrier to progress and had also introduced new technologies was more than *40 percentage points* more likely to complain of a shortage of skilled workers than a company not introducing new technologies.

The *co-occurrence* of shortage and adjustment complaints – among firms with technological innovations – was also frequent for other worker categories, but none of these displayed an association of comparable strength to that

observed for skilled workers. These results are concordant with the results of age-wage curve analyses and the IALS literacy tests, suggesting deficiencies in vocational school educated workers' basic skills, constituting a barrier to adaptation.

Table 2.9: Factors affecting the probability of smaller than ideal workforce in 2000 (probit marginal effects and standard errors)

	Unskilled worker	Skilled worker	Non-manual	Manager
Occupation change within given category (1997–2000, log)	0.0476 (0.0447)	–0.1509 (0.0736)**	0.0561 (0.0376)	0.0813 (0.0448)*
Medium-sized company (51–250 employees)	0.0033 (0.0561)	0.1491 (0.0794)*	–0.0392 (0.0369)	–0.0202 (0.0332)
Large company (251 or more employees)	0.0065 (0.0608)	0.1645 (0.0900)**	0.0385 (0.0465)	0.0126 (0.0392)
Manufacturing	0.0880 (0.0468)	0.1703 (0.0724)**	–0.0923 (0.0497)**	0.0447 (0.0300)
Private ownership (less than 50 percent state ownership)	–0.0081 (0.0601)	0.1483 (0.0789)*	0.1078 (0.0266)***	–0.0631 (0.0524)
Major technological change (dummy variable)[a]	–0.0906 (0.0989)	–0.0026 (0.1104)	–0.0061 (0.0559)	–0.0559 (0.0686)
Major technological change × deficient adjustment skills are a major barrier to progress[b] (dummy variable × agreement on a scale of 1–5)	.0356 (0.0208)*	0.0940 (0.0298)***	0.0292 (0.0137)**	0.0276 (0.0122)**
LR chi^2	7.28	46.70	25.48	10.31
Prob > chi^2	0.4005	0.0000	0.0006	0.1716
Pseudo R^2	0.0405	0.1337	0.1468	0.0745
Number of companies	228	263	261	276

Dependent variable: 1 if workforce size at firm is smaller than ideal, 0 otherwise.

[a] The variable is assigned the value 0 if the company has not introduced any new products, updated any existing products, or introduced quality assurance. The variable is assigned the value 1 if at least one of the above changes has taken place.

[b] Five if adjustment skills are a major barrier to progress. The average grade is 1.89 for the Hungarian sample, with a standard deviation of 1.18.

Statistically significant at the * 10 percent, ** 5 percent, *** 1 percent level.

6. Barriers to improving vocational training programmes

The declining labour market value of vocational qualifications is primarily associated with the steady depreciation of the specialised skills acquired at vocational training schools and the coinciding rise in the value of general skills. This phenomenon is explained first by the shift in employment stability, i.e., that a young worker entering the labour market is considerably less likely to stay in the same occupation throughout the active decades of his or her life than was the case in the past. The second reason is that as a consequence of

general technological advancement and the constant evolution of occupational content, an ability to keep up with new developments at all times and to acquire new skills is a prerequisite to long-term employment even within the same occupation. Also, as a result of changing job contents and increasing demand for basic skills (such as reading and writing at work), deficiencies in basic skills substantially depress the employment prospects of workers educated at vocational training schools.

Young people entering the labour market after leaving vocational training schools will spend more than 40 years in the labour market. What will happen to them in the course of their careers, whether their skills will be marketable or not, is contingent on unforeseeable changes in technology. Technological changes may render some occupations redundant and may entirely transform the content of others. Skilled workers' future employment prospects therefore depend on their ability to retrain themselves and keep up with the changes in their own occupations. Should they fail, they may have to contend with unskilled work, or may even be excluded from employment altogether. The key question is, then, whether skilled workers will be successful in acquiring the new skills that the changes call for, i.e., whether they will be able to participate in on-the-job training. In the absence of appropriate basic skills, they may get by for a few years with a mechanical application of their skills, but with the foundations missing, adjustment will remain beyond their reach.

One factor contributing to the worsening problem of adjustment is likely to be the increasingly fragmented institutional structure of vocational training. Even though the number of vocational school students has substantially decreased over the past decades, in 2006, training programmes were distributed across 580 locations compared to 465 locations in 1990. 90 percent of vocational training programmes are provided by multi-purpose institutions also offering secondary school and/or primary school education. These institutions accommodate vocational training in addition to education programmes offering Matura qualifications. The range of programmes offered by an institution depends on various factors, including considerations such as preserving teaching jobs, or gaining access to vocational training funds (*Mártonfi,* 2007). The labour market success of the students obtaining vocational qualifications is, however, not a decisive factor in developing the programme profile of an institution (partly because no relevant information on the graduates' careers is available). Neither is student demand for individual programmes a key consideration, in contrast to public opinion blaming the increasing share of "fashion occupations" among vocational training programmes for the structural inadequacies of the system. Almost 10 percent of primary school graduates intending to continue their studies are not admitted to the school of their choice (*Híves,* 2007). These students are redirected to vocational training schools and thus almost half of all vocational school

students attend a training programme that they did not choose as part of the usual application process. This is essentially a continuation of the career orientation practice that demonstrably increased the probability of the abandoning of careers during the socialist era.[25]

In 2007, a number of legislation amendments were endorsed to help improve the match between training and labour market demands. Regional Development and Training Committees were instructed to plan the enhancement and restructuring of vocational training in their region, to participate in the delivery of a career monitoring system, and to approach their local governments with proposals to set up associations coordinating vocational training programmes. The members of regional training committees are delegated by regional professional chambers, the Hungarian Employment Agency, the Education Office, and the Ministry for Education and Culture. In an effort to ensure the functioning of the career monitoring system, the Amendment to the Public Education Act specifies what kind of data must be supplied by different participants for the career monitoring system. The required details must be supplied by the school graduate if he or she is not employed at the time of data collection; for an individual in employment, data is provided by the employer specifying the position filled by the newly qualified worker as well as job responsibilities; finally, the school is required to notify the career monitoring system of a graduate successfully obtaining qualifications.

The success of efforts to attune the training system to labour market demand with the aim of improving the labour market prospects of workers educated at vocational training schools hinges on the availability of appropriate information. The Regional Development and Training Committees have access to more accurate information on the labour market prospects of newly qualified skilled workers than do either schools or school administrators. The problem is, however, that whatever data is currently available from the state administration or from sporadic survey sources is still not sufficient for assessing labour market success, and it is highly questionable whether the career monitoring system about to be introduced will be capable of providing reliable data. There are major barriers to an assessment of the demand for individual qualifications even for the short-term future. A worrying demonstration of the problem is that in the short-term labour market forecasts by the national Public Employment Service, which are based on employers' reports and categorise professions into those in demand and those that are in decline, several vocations appear in both categories at the same time. *Table 2.10* reproduces part of such a county-level vocation classification table from 2006 showing the vocations that appear in both groups.

25 According to a survey by *Fazekas & Köllő* (1990, p. 148), for instance, in the 1970s in a West Hungarian county, 31 percent of vocational school students studied for an occupation other than their first choice and these students were substantially more likely to drop out of school than were students who attended the school to which they had applied.

Table 2.10 Classification of vocations by the Northern Hungary Regional Labour Centre

Occupations in demand as indicated by workforce expansion plans	Vocations of declining marketability as indicated by workforce reduction plans
National total	
150 or more workers	
Other unskilled workers (e.g., casual workers)	Other unskilled workers (e.g., casual workers)
Tailor, seamstress, model maker	Tailor, seamstress, model maker
Locksmith	Locksmith
Shop assistant	Shop assistant
Material handler, packaging worker	Material handler, packaging worker
100–149 workers	
Other doorkeepers and similar simple occupations	Other light industry machine operators and assembly line workers
Other light industry machine operators and assembly line workers	Other doorkeepers and similar simple occupations
50–99 workers	
Bricklayer	Bricklayer
Bus driver	Bus driver
Social worker	Social worker
Shoe manufacturing machine operator and assembly line worker	Shoemaker
Upholsterer	Upholsterer
General nurse	Social nurse
Machinist	Machinist
House and office cleaner	House and office cleaner

Source: The Hungarian Public Employment Service (ÁFSZ) 24th September, 2006. http://www.afsz.hu/engine.aspx?page=full_borsod_stat_szakma_fogl_poz.

Methods relying on company interviews are of little practical use for even the short-term forecasting of changes in demand. First, companies will not suffer any disadvantages if they report an employment intention that fails to be realised at a later stage. Also, questionnaire data does not usually provide any information on why a certain position is vacant: because there would be no applicants even if higher wages were offered, or because the wages the company is prepared to offer are not high enough, or else because the employer is dissatisfied with the skills of the applicants, which is usually equivalent to saying that as long as the wage offer remains low, the vacant position could only be filled by workers with poorer skills. Low wage offers are likely to be one of the key reasons for the shortage of applicants in some of the professions classified as being "in demand" by the short-term labour market projections (*MKIK GVI,* 2007). Even if reliable short-term estimates of future labour demand trends could be obtained, these would not solve the problem.

What is needed for determining the optimal distribution of student places at vocational training and vocational secondary schools are medium-term projections. Reliable, methodologically sound medium-term labour market projections are, however, unavailable at present, and there are no data banks from which medium-term projections could be derived.

An analysis of the education and labour market careers of school graduates may be an important tool in co-ordinating supply and demand. The data collection method specified by the Public Education Act, however, raises grave concerns with respect to the reliability of the data intended to be collected for the career monitoring programme. Firstly, a large share of non-employed school graduates are likely not to comply with the requirement to report their status, and a systematic difference is likely to exist between compliers and non-compliers. Similar concerns hold for employers' duties of providing data. Also, the results can be seriously distorted by missing or "manufactured" data. The programme only collects data on the fact of employment and whether the job "matches" the qualifications of the newly qualified employee. It does not extend to the most important indicator of labour market success, namely earnings, or to other factors affecting a worker's labour market outcomes (such as post-school training history and general competencies acquired at or outside school).

In the absence of appropriate forecasts and information sources, there is a danger that the Regional Development and Training Committees charged with planning a balanced secondary-level training structure will succumb to pressure from companies and give priority to satisfying *short-term* corporate needs at the expense of improving general education and long-term adjustment skills. Companies gain short-term benefits from this strategy, since they will have newly qualified workers to employ for a few years, and when these workers can no longer adapt to changing requirements, there will be another generation of newly qualified workforce, who are employable for another few years, and so on. In the long term, this solution has very serious social costs. This danger seems all the more likely since currently very few Hungarian companies make efforts to provide continued on-the-job training for their employees. The majority of companies expect the education system to supply *a specially trained and experienced* workforce to them. This expectation is not only unreasonable, but also stands in sharp contrast to modern Western corporate practices, where extensive on-the-job training is the key component in ensuring that large numbers of employees acquire specialised skills and experience.

As was discussed in detail in Chapter 1 of *In Focus*, Hungary is characterised by one of the lowest adult training participation rates among the EU countries. The proportion of companies offering in-service training programmes and employee participation rates in these training programmes are

both below the average level. According to a Eurostat survey, 37 percent of Hungarian companies offer on-the-job training (*Eurostat,* 2002), which is substantially less than the average value of 57 percent for the EU-25, and few countries display figures lower than the Hungarian ones.

The participation rate in the training programmes on offer is 26 percent in Hungary, which is also below average. A survey by the Business Analysis Institute of the Hungarian Chamber of Commerce and Industry (MKIK GVI) indicates an even lower incidence of training programmes. According to their results, in 2006 18 percent of companies provided training for their employees (*MKIK GVI,* 2007). The reasons behind the unpopularity of training services are currently unknown. The issue must be investigated, however, to allow policies to create an environment that encourages companies to offer training programmes. We can only speculate at present that the factors contributing to this situation may include the minimum wage regulations, which – especially in the case of uneducated employees – prevent companies from transferring some of the costs of training by reducing wages; companies' insecure business prospects; deficiencies in employees' general skills and learning skills, which would greatly increase training costs should the company wish to train its employees; and a number of other institutional and legislative factors.

If, however, the training system is tailored to companies' short-term needs, the long-term employment prospects of participants will suffer. Publicly financed vocational training should focus on enhancing participants' general competencies and core vocational skills, since it is these that empower skilled workers to successfully participate in advanced training and retraining programmes and in (company-funded) on-the-job training programmes that are necessary to acquire the specialised knowledge required by their employers throughout their careers, i.e., to enjoy long-term labour market success.

Appendix 2.1: The International Adult Literacy Survey

Survey sample. Our analyses cover the European sub sample of IALS excluding the three Swiss (German, French and Italian) sub samples. The number of observations is given in *Table A2.1.*

Table A2.1: IALS sample (15–59 year old non-student population)

Country	West1	West2	CEE
Belgium (Flemish)	2,261	0	0
Czech Republic	0	0	3,132
Denmark	3,026	0	0
Northern Ireland	0	2,907	0
Finland	0	2,928	0
Netherlands	3,090	0	0
Ireland	2,369	0	0
Poland	0	0	3,000
Hungary	0	0	2,593
Great Britain	0	3,811	0
Germany	2,062	0	0
Norway (Bokmal)	3,307	0	0
Italy	2,974	0	0
Sweden	3,038	0	0
Slovenia	0	0	2,972
Total	22,127	9,646	11,697

IALS test scores. Table A2.2 lists average score, and the percentages of those achieving Level 1 and Level 2 in each country. The countries are ranked according to their average score.

Table A2.2: Various indicators of IALS test results

	Average	SD	At least one test result at Level 1 or 2	All test results at Level 1 or 2
Norway (Bokmal)	297.299	42.804	0.388	0.192
Denmark	295.286	39.309	0.471	0.180
Netherlands	291.061	43.103	0.445	0.228
Germany	290.105	42.138	0.514	0.219
Finland	288.952	47.135	0.454	0.262
Czech Republic	287.789	45.732	0.564	0.247
Belgium (Flanders)	284.011	50.557	0.488	0.276
United Kingdom	278.208	61.904	0.527	0.351
Ireland	263.982	59.974	0.616	0.424
Hungary	255.969	47.570	0.831	0.444
Italy	252.067	55.690	0.727	0.516
Slovenia	233.994	60.312	0.831	0.622
Poland	233.002	61.646	0.839	0.628
Total	272.653	56.765	0.598	0.361

Measuring educational attainment. The IALS offers two methods for measuring educational attainment: the number of completed school years and the International Standard Classification of Education (ISCED). Although it was the problem of comparability that motivated the development of ISCED, the classification practices of different countries vary to such an extent that it renders any ISCED-based comparison nearly impossible, at least in some ranges of the hierarchy of qualifications. Individuals with 10 or 11 completed years of schooling, for instance, are assigned to the ISCED3 category (upper secondary) with a 0 percent probability in some countries, but with a 99 percent probability in others. The percentage in this category of those who completed 12 years of education varies between 22 and 99 percent, and we find 4–99 percent of those having completed 13 years here. The most critical argument against the use of the ISCED system for East-West comparison is, however, that with the exception of Poland, all Central and Eastern European countries lump individuals educated at vocational training schools together with those having Matura qualifications in the ISCED3 category.

Education and employment in Ireland. It is supported by OECD statistics that in the United Kingdom and Finland there is an exceptionally strong association between the level of education and employment. By contrast, judging from the data reported in *OECD* (2003*b*), in Ireland those assigned to the ISCED 0–2 categories appear to have a decidedly high employment rate: 74 percent as opposed to the OECD average of 68 percent for 2001. The ISCED 0–2 category is, however, very broad; 42 percent of the Irish male population were classed here in 2001. According to the IALS, this population was fairly evenly distributed across the educational groups of 6–10 completed years of schooling. While for the total male population, one additional year of schooling increased employment odds by 4.2 percent, the corresponding figure was 5 percent within the ISCED 0–2 category, which suggests marked heterogeneity and accounts for the discrepancy between school year-based and ISCED-based statistics.

The "Czech miracle". Czech participants displayed substantially better performance at the tests of the International Adult Literacy Survey (IALS) than did respondents in any of the other three former socialist countries; their educational attainment was higher (with a median of 12 years of schooling compared to 11 years for the other Central and Eastern European countries); Czech jobs were reported to have higher demands for literacy (7.3 versus 5.7 tasks); and the Czech population had a higher level of employment (83 versus 73 percent). Also, a substantially lower proportion of people had 11 years of schooling (17 versus 31 percent), which is, however, explained by the reform of primary education rather than a lower probability of vocational training. Primary schools had 9 grades between 1960 and 1978 and then again from 1990. As a consequence, some of those who were born between 1954 and

1964 or after 1975 and completed 12 years of schooling in fact attended 3-year post-primary vocational training programmes. (This group may include those born in September-December 1953 or 1974 however the IALS does not provide data on the month of birth.) *Table A2.3* suggests that among those who completed 12 years of schooling, the members of these cohorts are indeed less proficient and tend to be employed in jobs involving fewer literacy tasks than the members of previous or later generations.

Table A2.3: Some indicators of literacy skills and requirements for the Czech sample

Education	Proportion	*R*	*S*
Less than 10 years	9.8	–4.12	–1.64
11 years	17.4	–3.29	–1.19
12 years, probably vocational education	13.5	–3.29	–0.95
12–14 years, probably secondary education	38.3	–2.37	–0.65
More than 14 years	21.0	Reference	Reference

R: Reading and writing tasks at work, reference: higher education graduates.
S: Standardised IALS test scores, reference: higher education graduates.

The figures suggest that those educated at vocational training schools may constitute about 30 percent of the population, similar to other countries of the region. The linkages between education and employment are also similar to the patterns elsewhere. For this reason and because the overall Central and Eastern European results are not significantly affected by the inclusion or exclusion of the Czech Republic, our study does not separate the country from the rest of the former socialist countries.

Estimating workplace-worker matches. The questionable quality of the available wage variables is not the only barrier to the construction of alternative specific, multiple-outcome choice models (*Wooldridge,* 2002, 497–503). The way of estimating the coefficients of workplace-specific covariates (such as *R* itself, or company size and industry classification) is by creating interacted variables: the given covariate is multiplied by the dummy variables for education. This makes it practically impossible to control the equation for a large number of covariates. Secondly, the conditional logit (Stata *clogit*) and the "alternative specific simulated maximum likelihood multinomial probit" (Stata *asmprobit*) methods only allow the use of importance weights, which distort standard errors as do frequency weights. Third, it is not possible to compute marginal effects if there is a single positive outcome per group. (For an explanation see http://stata.com/support/faqs/stat/mfx_unsuit.html.) For the above reasons, our preferred specification is the multinomial logit model where the wage variable is excluded, but the sample is weighted, and controlled for sector, occupation, and company size.

Appendix 2.2: The occupational classification used for the analysis of skilled workers' wage advantage

Table A2.4: Codes defined by the Hungarian Standard Classification of Occupations (FEOR) of 1997 (or equivalent codes from before or after 1997)

Occupational group	FEOR code
Cleaners	911
Unskilled/semi-skilled workers	913–919
Machine operators, assemblers	81–83
Doorkeepers and cleaners	912 and 536
Agricultural workers	61–64 and 92
Drivers	833, 835, 836
Construction workers	76
Manufacturing workers	71–75
Workers in commerce	51, 421, 422 and 429
Workers in services	52–53 except 532, 533 and 536
Office clerks	41–42 and 532–533
Technicians	31–34
Assistants	35–39
Managers	11–14
Professionals	21–29 except 22–24
Teachers and doctors	22–24

Appendix 2.3: EBRD survey, 2001

Table A2.5: The EBRD survey sample and the average values of some indicators for 2000

	Sub-sample		
	Hungarian	Romanian	Russian
Number of firms	302	319	300
Number of employees	68,219	332,738	205,633
Manufacturing firms	203	184	156
Other sector firms	99	135	144
Small firms (fewer than 50 employees)	87	110	74
Medium-sized firms (50–249 employees)	128	88	115
Large firms (250 or more employees)	87	121	111
Private firms (less than 50 percent state ownership)	228	269	283
Firms established in or after 1990	78	123	56
Firms in foreign majority ownership	55	54	8
Firms introducing new products or modernising existing products	212	199	270
Firm introducing ISO 9000 quality control system	104	58	n. a.
Firms with significantly increased export	69	55	25

The EBRD survey covered more than 900 Hungarian, Russian and Romanian firms. The Hungarian companies were selected from the Short-term Labour Market Prognosis sample of the Hungarian Labour Centre (recently

renamed Employment Agency), excluding firms based in rural areas or small towns (having fewer than 20 thousand inhabitants), and agricultural and service sector companies. The firms included were grouped by sector and size. The survey questions concerned workforce size and average wages in 16 educational-occupational categories between 1997 and 2000. Several further questions were included on the prehistory of the company, on the technological, ownership, and market changes taking place between 1997 and 2000, and on the company's assessment of its human resources. The questionnaire is available at request. For an analysis based on the sample see *Commander & Köllő* (2008).

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