THE HUNGARIAN LABOUR MARKET
REVIEW AND ANALYSIS
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EDITED BY

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INSTITUTE OF ECONOMICS, HAS
HUNGARIAN EMPLOYMENT FOUNDATION
BUDAPEST, 2007

EDITION AND PRODUCTION: Institute of Economics, HAS
& National Employment Foundation

TRANSLATED BY: Márton Csillag, Károly Fazekas, Péter Galasi, Gábor Kézdi, Ágnes Kozma, Gábor Kőrösi, Péter András Szabó, Álmos Telegdy, Júlia Varga

REVISED BY: Stuart Oldham

DESIGN, PAGE LAYOUT: font.hu

TYPOGRAPHY: Franklin Gothic, Garamond

PRINTING: ETO-Print Nyomdaipari Kft.

ISSN 1785-8062

The publication of this volume has been financially supported by the OFA Employment Promotion Foundation.

Copies of the book can be ordered from the Institute of Economics.

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FOREWORD BY THE EDITORS

The original goal of our labour market yearbooks is to review annually the main developments in the Hungarian labour market and to give an in-depth analysis on selected issues. Experiences accumulated through the publication of the previous volumes (seven in Hungarian and five in English) and their reception in Hungary and abroad confirmed our original idea and gave us the stimulation to enhance both the contents and the quality of the new volumes. This volume consists of four parts:

1. Labour market trends in Hungary

In this chapter we present the main labour market trends in 2006. Alongside with the discussion of the standard indicators of employment is a more detailed analysis is devoted to the increase in the number of unemployed both in the private and public sectors. We also provide information on the development of wages and regional differences in labour markets.

2. In Focus

This year we put "in focus" wage formation on the Hungarian labour market. Five years ago the 2002 volume of The Hungarian Labour Market focused on how wages evolved during the post-communist transformation. In this volume, we take again a close look at Hungarian wages and answer the question whether transition related trends continued into the 2000s. It will also be also revealed how more recent developments and policies have affected wages.

The first study analyses the role of in-kind benefits in total labour income in Hungary. Little attention was paid to this issue so far, not at least because of the lack of adequate data. This study fills the gap by deriving data from a new household survey and analyzing earnings and in-kind benefits data to-

gether. The second study points out factors determining inter-firm differences in average wage rates, with an emphasis on firm-level wage dynamics. Its main focus is on rent sharing, i.e. the split of productivity gains between employers and employees. The third study, analyzes the wage differences between the public and private sectors during the period of 2000–2004. In the middle of this period the wages of public employees were raised significantly. As a result, their average wage increased by 36 percent in real value. The analysis focuses on wage differentials in narrowly defined groups. The subject of the fourth study is how regional earnings differences have changed since 2000. The fifth study looks at the labour market value of higher education degrees. The main question of this study is whether higher education degrees can still be considered as exceptionally good investments in Hungary, or have the returns on such type of investments have eroded with the mass production of graduates. The sixth study analyzes the composition and earnings of public school teachers. Using large datasets, the study documents the trends in earnings and (measurable) skill composition between 1992 and 2004, a period that includes the significant raise of salaries of public employees. It also examines the incentives for current teachers and the career choice of potential teachers. The seventh study examines male-female earnings differences between 1986 and 2002 and relates those to occupational and firm-level gender segregation. The main question here is whether gender disparities in occupational composition are a major factor in sustaining the gender wage gap. The last study takes yet another look at a hotly debated issue in post-transition Hungary: the effect of the expansion of higher education on the employment and wages of young graduates. The analysis makes use of a unique dataset of fresh graduates in order to analyze their earnings mobility.

3. Legal and Institutional Environment of the Hungarian Labour Market

Previously, Labour Market Reviews concentrated on annual changes in the legal and institutional environment of the Hungarian labour market. This year's study, however, is different: it is a summary overview of the current legislation and rules, having unemployment benefits and active labour market policies in its focus.

4. Statistical data

The closing chapter presents a statistical data set, and gives comprehensive information on the main economic developments, such as demographic trends, employment, unemployment and inactivity, wages, education, labour demand and supply, regional differences, migration, commuting, and labour relations, together with some international comparisons and methodological remarks.

Labour market developments at various regional levels are also included This chapter is especially rich in information on wages and earning in Hungary.

* * *

Publication of this volume was supported by the National Employment Foundation. Editors are grateful to numerous experts from the Institute of Economics – HAS, Central Statistical Office, National Employment Service, Corvinus University of Budapest, Ministry of Social Policy and Labour for their valuable contributions, comments and suggestions.

LABOUR MARKET TRENDS IN HUNGARY

KÁROLY FAZEKAS & ÁLMOS TELEGDY

INTRODUCTION

The year 2006 was not very successful for the Hungarian economy. Unrestricted public spending peaked in a budget deficit of 10 percent of the GDP, which would have been even higher if the newly elected government had not started to bring it down in September. Balancing he deficit was inevitable, and will continue in the short and medium run, and several measures are already affecting, and are going to affect labour markets. The main policy instrument used in the stabilization program is the increase of taxes, which affects labour in at least two ways. The main policy instrument used in the stabilization program is the increase of taxes, which affected labour in at least two ways. Taxes levied on labour increased, making this factor of production more costly but taxes on corporations also increased, which can have an indirect effect on employment and wages. Also in the framework of the stabilization program, the government started the restructuring of the public sector, which will result in a decline in public sector employment. At the same time, the rate of unemployment remained as high as 7.4 percent, which is a slight additional increase after the previous year's large jump.

In this chapter we present the main labour market trends in 2006. We present the employment and activity rates, and devote a longer discussion to the increase in the number of unemployed. We also discuss changes in corporate and public sector employment separately, as these evolved very differently. We also provide information on the development of wages and regional differences in labour markets. In our analysis we will merely point out the most important developments, and provide several possible reasons for them, but a detailed discussion does not form a part of this study.

1. EMPLOYMENT, INACTIVITY

The traditionally low economic activity in Hungary did not change significantly in 2006, either. Of the 7.7 million people in the 15–74 year old age cohort, only 4 million 247 thousand were active on the labour market, which corresponds to a 55 percent activity rate, as shown in Table 1.[1] A year earlier the number of active persons was 41,500 less, which is an activity rate of 0.5 percentage points lower than in 2006. The activity rate of men was 62.4 percent, while the figure for women was only 48.2 percent. The 14 percent dif-

1 Employment and unemployment rate calculations are based on the definitions of the International Labour Organization. According to these, people who work one hour during the week of reference for money or in kind are considered as employed. The employment rate is the ratio of employed within the working-age population (the Hungarian Statistical Office reports the 15–74 year old age cohort). The unemployed are those who did not work during the reference week, but are willing to work, are available, and are actively seeking a job. The unemployment rate is the ratio of people within the active population (which equals the sum of employed and unemployed). Inactive are those who are not active.

ference between men and women corresponds to the values observed in the European Union (EU); in the 25 member states of the EU men were 15.2 percent more active than women (Eurostat). Though the Hungarian data do not refer to the same age groups as the Eurostat (which observes the 15–64 year old population), the proximity of the two figures show that the Hungarian labour market is similar to the EU average as far as the activity gap between men and women is concerned. The activity rate of both sexes became somewhat higher compared to 2005: it rose by 0.7 percentage points for men and by 0.4 percentage points for women.

Table 1: Population by labour force status

	Employed	Unemployed	Active	Inactive	Employment rate	Unemployment rate	Activity rate
Year	Thousands				Percentages		
Total							
2005	3901.5	303.9	4205.4	3517.1	50.5	7.2	54.5
2006	3930.1	316.8	4246.9	3474.9	50.9	7.5	55.0
Men							
2005	2116.1	159.1	2275.2	1409.7	57.4	7.0	61.7
2006	2137.4	164.6	2302.0	1385.5	58.0	7.2	62.4
Women							
2005	1785.4	144.8	1930.2	2107.4	44.2	7.5	47.8
2006	1792.7	152.2	1944.9	2089.4	44.4	7.8	48.2

Source: Hungarian Statistical Office Stadat data.
Notes: The figures refer to the population aged 15–74.

The number of employed people was 3,930 thousand in 2006, and the employment rate was 51 percent, which is only 0.4 percentage points higher than the 2005 rate. Differences in the activity rate between the sexes are generated mainly by the employment rate: while 58 percent of men had a job, the same ratio among women was only 44 percent, and these rates changed only little compared to the previous year.

The employment rate by international comparison is very low. Based on Eurostat data the rate in 2005 – the last available figure – for the 15–64 year old population group was 56.9 percent, which is 7 percentage points lower than the EU average. Only Malta (53.9) and Poland (52.8) have lower employment rates among the EU member states besides Bulgaria and Croatia (55.8 and 55 percent respectively).

From the employed 58.4 percent were employees, and the remaining 41.5 percent self-employed, and 29 percent of the employees worked in the public sector. The dynamics of job creation and destruction in the public and private sectors had different patterns. While 11 thousand jobs net were created in the private sector between 2005 and 2006, there were almost 17 600 jobs

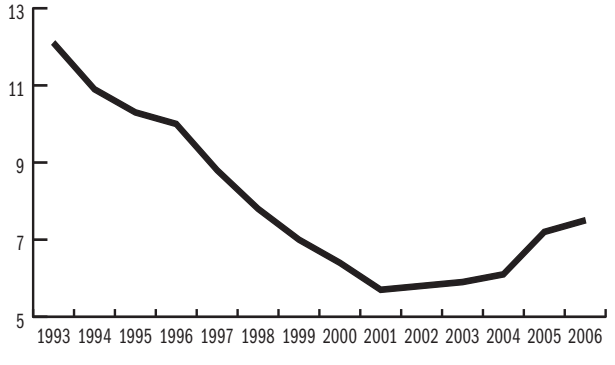
cut in the public sector (the data refer to employees, the self-employed are not included in the private sector).

The number of unemployed grew by almost 13 thousand. This is a much smaller increase than was experienced in 2005, when the number of people who lost their job jumped from 253 thousand to 304 thousand. These 50 thousand new unemployed raised the unemployment rate to 7.2 percent in 2005, which meant a 1.1 percentage point increase compared to the previous year. In 2006 the unemployment rate of both sexes grew slightly, by 0.2 percentage points for men and 0.3 percentage points for women. Therefore, in 2006 the large increase of unemployment curved downwards, but its increasing trend did not stop. As the increase of the unemployment rate seems to be the most important development on the labour market over recent years, we analyze it in more detail in the next section.

2. UNEMPLOYMENT[2]

After several years of decrease and stagnation the unemployment rate rose in 2005. As shown in Figure 1, the unemployment rate was 12.1 percent in 1993, and this high rate gradually diminished over the following eight years, reaching 5.7 percent by 2001. In the course of the following three years the unemployment rate started to increase very slowly: by a mere 0.5 percentage points until 2004. However, in 2005 the rate rose by more than one percentage point and reached the 7.2 percent level, and in 2006 it continued to increase, albeit at a much smaller pace. The unemployment rate in Hungary is still below the European Union average, which was 8.8 percent in 2005 (Eurostat), and in Central-Eastern Europe only Slovenia has a lower rate of unemployment of 6.5 percent. Its rapid rise, however, all the more so since it was happening in parallel with a 4.3 percent increase of the GDP, is alarming.

Figure 1: Unemployment rate, 1993–2006



Source: Hungarian Statistical Office Stadat data.
Notes: The figures refer to the population aged 15–74.

2 This section refers mainly to the increase of the unemployment rate in 2005, as this is the year when the high jump took place.

Who are the unemployed and which social group's unemployment rate is responsible for the increase in 2005? Table 2 shows the unemployment rates by sex, age and level of education in 2004 and 2005, and the shift from one year to the other. As mentioned above, the women's rate is 0.5 percentage points higher than the men's, which is the consequence of the 0.5 percentage point higher change from year to year. The unemployment rate shows a downward trend by age: among 15–19 year olds 34.9 percent of the active population cannot find a job, while the same rate in the 20–24 age group is 13.4 percent, and in older cohorts the rate of unemployment is between 6.5–4.8 percent.

Table 2: Rate of unemployment by worker characteristics

	2004	2005	Change
Total	6.1	7.2	1.1
Sex			
Men	6.1	7.0	0.9
Women	6.1	7.5	1.4
Age			
15–19	34.9	37.8	2.9
20–24	13.4	17.5	4.1
25–29	6.5	8.2	1.7
30–39	6.0	6.8	0.8
40–49	5.0	5.7	0.7
50–59	3.9	4.8	0.9
Level of education			
8 grades or less	12.3	15.6	3.3
Vocational school	6.9	7.4	0.5
Secondary school	4.7	4.9	0.2
University	2.3	2.3	0.0

Source: Hungarian Statistical Office (2005), (2006) Stadat data.
Notes: The figures refer to the population aged 15–74.

The year-to-year change in unemployment also reflects the fact that younger generations were more seriously hit by the increase than older ones. Among the youngest people on the labour market unemployment rose by 2.9 percentage points, in the 20–24 age group by 4.1 and among 25–29 year olds by 1.7 percentage points. And the rate of the population group above 29 years of age increased by less than 1 percentage point. The high rate among young people proves that these generations have considerable problems when seeking employment. This can lead to serious consequences. When a young person loses connection with the labour market for a long period of time – which is one result of long-term unemployment – then the society has to bear two different expenses at the same time. Such a person will most probably depend more on social transfers, and the human capital acquired during his or her studies will also be lost.

We have to mention though that in case of the young, changes in the unemployment rate in itself does not properly describe the growing or easing difficulty in finding a job. The reason for this is that in these age groups the ratio of inactive – mostly students – is high and is in a state of constant change, which also influences the rate of unemployment even if the number of unemployed does not change (see Footnote 1). Table 3 shows that the difficulties of young workers in finding employment grew in 2005. The unemployment rate in the 15–24 year old age group rose from 4.3 to 5.3 percent. While the size of this cohort shrank by 25 thousand people, the number of unemployed rose by 11 thousand, which corresponds to approximately 20 percent. Although the number of full time students slightly increased in 2005 by 2,700, the number of inactive for other reasons decreased slightly, by 1,500.

Table 3: Economic activity of young workers

			Inactive					
Year	Employed	Unemployed	Pension	Maternity benefits	Full time student	Other reasons	Total	Population
			receiving					
2003	355,5	54,9	6,4	46,6	705,1	162,9	921,0	1331,4
2004	305,8	55,9	7,3	40,0	708,6	178,6	934,5	1296,2
2005	277,4	66,9	6,1	37,4	711,3	171,9	926,7	1271,0

Source: Hungarian Statistical Office, Employment observations.
Notes: Thousands of individuals. The figures refer to individuals aged 15–24.

Unemployment and the highest educational level have a negative correlation with each other. While the unemployment rate of people with no more than eight grades and of vocational school graduates is 15.6 and 7.4 percent respectively, the same figure for secondary school and higher education graduates is 4.9 and 2.3 percent. Increasing unemployment clearly affected people with lower education more than their more skilled colleguages, as the rate of the least educated population group rose by 3.3 percentage points. The increase among vocational school graduates was only a half percentage point, while above this educational level no change was observed.

Length is a very important characteristic of unemployment. A possible reason for short term unemployment is that when changing a job people inevitably become unemployed while they find another placement. Short-term unemployment can be useful for the economy, as it has a disciplinary effect: if an employee knows that it is hard to get a new job, they learn to appreciate the current position. On the other hand, long term unemployment has several negative effects. A person seeking employment might lose confidence in their ability to find a job, and thus might give up the search and become inactive. He may also lose part of his professional knowledge if he stays unemployed for a longer period of time. And last, but not least, long lasting unemployment

can stigmatize people, as employers might use long term unemployment as a screening device. Unfortunately, the length of unemployment in Hungary is long, as is shown in Table 4. In 2005 only 5 percent of the unemployed found a job within a month, 16.5 percent in 1–3 months, 41.6 percent remained unemployed for more than a year and 18.4 percent for more than two years. Compared to 2004, the length of unemployment underwent minor changes only. The proportion of those who have been looking for a job for more than a year slightly increased.

Table 4: Length of unemployment

Length of employment (in months)	2004		2005	
	Unemployed (thousands)	Percentage	Unemployed (thousands)	Percentage
Less than 1 month	13.0	5.2	14.8	5.0
1–3	42.0	16.8	48.9	16.5
4–6	39.9	15.9	44.1	14.9
7–12	55.3	22.1	65.4	22.1
13–18	33.4	13.3	41.0	13.9
19–24	19.6	7.8	27.4	9.3
25 months or more	47.2	18.8	54.3	18.4
Total	250.4	100.0	295.9	100.0

Source: Hungarian Statistical Office (2005, 2006).
Notes: The figures refer to the population aged 15–74.

These data prove that the 1.1 percentage point increase in the unemployment rate can be traced back mainly to the growing unemployment among women, younger generations and undereducated people. But what is the reason for the increase in the rate? It is hard to answer this question. In this study we try to enumerate – and if possible, prove with data – some possible causes.

It is possible that the country went through a technological change leading to an increasing demand for a workforce with higher skills, so the demand for people with low education dropped. Data presented so far support this concept to some extent as investment volumes grew and the unemployment rate rose among people with a lower education and the young who have little or no work experience. It is also possible that in spite of aggregate economic performance, industries traditionally employing people with lower skills are in recession. A more competitive international environment can lead to that. The available aggregate data do not support this hypothesis. It is true that in agriculture the number of jobs fell by a net 10 thousand, and in industry by 24 thousand, but in commerce 40 and in catering 5 thousand new jobs were created (*Hungarian Statistical Office*, 2006).

The supply side of the labour market could also exert some influence on the increase of the unemployment rate in the event that the inactive decided to actively search for a job. The cause of this can be that for some reason they

conclude it has become easier to find a job (they count on the government's job creation policies, for example). Consequently, unemployment grows as some of the inactive go on the job market and not because of layoffs. We try to find evidence in support of this in Table 5. First we take advantage of the panel aspect of the labour force survey, and we compute the shifts among the employed – unemployed and inactive – unemployed population groups as a percentage of the employed and inactive between 1st and 4th quarters of 2004, and 4th quarter in 2005.[3] According to these calculations (shown in Panel A) the flow to unemployment status from the employed and inactive status happened at the same rate, and it is unlikely that the flow of inactive to unemployment grew significantly as compared to previous years (see Figures 5.3 in the Statistical data). This method may suffer from a bias if the sample is not adequately describing the population. In order to correct for this, we use the retrospective question of the labour force survey on the economic activity of the person one year ago. Unfortunately this measure also suffers from a bias, as the labour force status is not defined according to the International Labour Organization criteria, but it is left to the judgement of the interviewed person (or somebody else living in the same household). Nevertheless, we compute the transition rates between employment-unemployment and inactivity-unemployment using these data. The results are presented in Panel B of Table 5 for both 2003–2004 and 2004–2005. Here we find a higher percentage of employed-unemployed transitions, but it is likely that people mix up unemployment with inactivity and this is the reason for the low transitions between inactivity and unemployment. More importantly, the flows do not change significantly between 2003–2004 and 2004–2005 and thus these results do not support the hypothesis that government policies mobilized the inactive, and this is the reason for increased unemployment.

Table 5: Flows between labour force statuses

	Employed – unemployed	Inactive – unemployed
Panel A		
4th quarter, 2004 – 4th quarter, 2005	2.0	1.6
1st quarter, 2005 – 4th quarter, 2005	1.4	1.4
2nd quarter, 2005 – 4th quarter, 2005	1.3	1.7
4th quarter, 2004 – 4th quarter, 2005	0.1	0.1
Panel B		
Retrospective question on labour force status one year before		
2003-2004	32.3	22.8
2004-2005	31.2	20.7

Source: Labour Force Survey.

Notes: Panel A shows the employed – unemployed and inactive – unemployed shifts as a percentage of the employed and inactive population.

3 We get the percentages by dividing the number of people who were unemployed in the 4th quarter of 2005, and who arrived from a given labour market status (employed or inactive) by the number of employed or inactive in the base year.

3. WAGES

The average gross wage of full time employees nationwide was 171 thousand HUF in 2006. The wages were 8.1 percent higher than in the previous year, as is shown in Table 6. As the rate of inflation during this period was 3.9 percent, real wages went up by 4.2 percent. Wages increased both in the private- and public sectors, but the magnitude of the change is different. In the private sector wages on average rose by 9.3 percent, which reflects an increase of 5.4 percent in real value. In the public sector the nominal wage increase was 6.4 percent and thus the real wage increase of public sector employees was only 2.5 percent, less than half as much as in the corporate sector.

The wages of blue collar workers did not reach half of the wages of white collar workers: while blue collar workers earned 112 thousand HUF on average, white collar workers pocketed 128 thousand more. The gross wage of blue collar workers increased more than white collar workers' by 1.5 percentage points, which is a novelty, as during the recent years the skill premium has mostly increased. In the private sector blue and white collar workers' wages had very similar growth rates of 9 percent. In the public sector white collar workers, however, had a wage increase of only 5.5 percent, while blue collar workers of almost 10 percent.

Table 6: Average wages in 2006

	Total		Private sector		Public sector	
	Average wage	Percent Change	Average wage	Percent Change	Average wage	Percent Change
Total	171,239	108.1	162,391	109.3	193,924	106.4
Blue collar	111,843	108.9	111,722	108.8	113,819	109.7
White collar	239,400	107.4	259,703	109.0	219,341	105.5

Source: Hungarian Statistical Office Stadat data.
Notes: Data refer to gross wages of full-time employees. Change refers to the same period in the previous year.

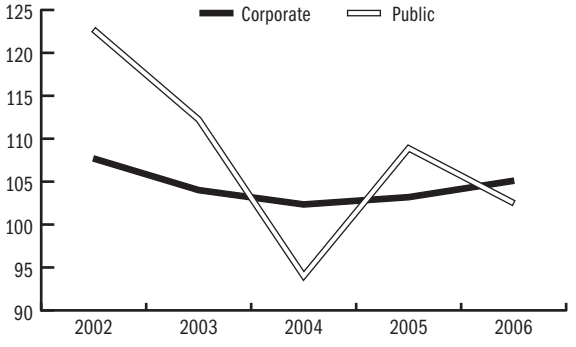
Different growth rates in the private- and public sectors are not surprising if we take into consideration that wages are influenced by various factors. In the private sector idiosyncrasies of the labour market are the main determinants, such as the supply of, and demand for, certain professions, while in the public sector politics plays the major role.[4] This is also demonstrated in Figure 2, which shows the growth rates of real wages in the two sectors between 2002 and 2006. In the private sector wages rose by 7.7 percent in 2002, and the rate of increase slowly diminished, reaching a 3.2 percent level by 2005. In 2006 the growth rate was over 5 percent. However, in the public sector data on wages reflect significant fluctuations. In 2002 and 2003 wages rose by 23 and 12 percent respectively, – the result of the wage measures introduced by the Government.[5] However, in the following year wages in the public sector

4 Unions may also have an effect in either sector.

5 The almost 50 percent wage increase came into effect in September 2002, and as we compare yearly average wages, a part of the increase manifests itself only in the following year. For the extent and effect of wage increases on relative wages see Chapter 3 of the In Focus part of this yearbook.

decreased by 6 percent, the probable cause of which was the budgetary deficit. In 2005 though, with the approaching parliamentary elections, wages rose again, this time by 9 percent, while in the next year the real change was only 2.4 percent. The drastically changing public wages – with a probable influence on the wages of the private sector – make economic decisions more difficult, as nobody can foretell wage levels in the near future.

Figure 2: Change in the real wage in the public and corporate sector



Source: Hungarian Statistical Office Stadat data.
Notes: Wages were deflated with the consumer price index.

Table 7: Average wages and changes in real wage by industry in 2006

Industry	Wage	Change
Agriculture, fishing and forestry	111,978	105.0
Industry, of which	164,106	104.6
Mining	194,948	111.6
Electricity, water supply	226,791	104.9
Construction	117,466	106.3
Trade	145,194	107.2
Hotels, restaurants	102,890	103.5
Transportation, postage, telecom.	183,936	104.3
Financial intermediation	403,862	111.2
Real estate, business services	171,966	102.3
Public admin., defense, social security	222,946	103.6
Education	191,094	101.4
Health care, social services	151,829	101.5
Other services	156,148	101.6
Total	171,239	104.2

Source: Hungarian Statistical Office Stadat data.
Notes: Average gross wages of full time employees. Change refers to the same period in the previous year.

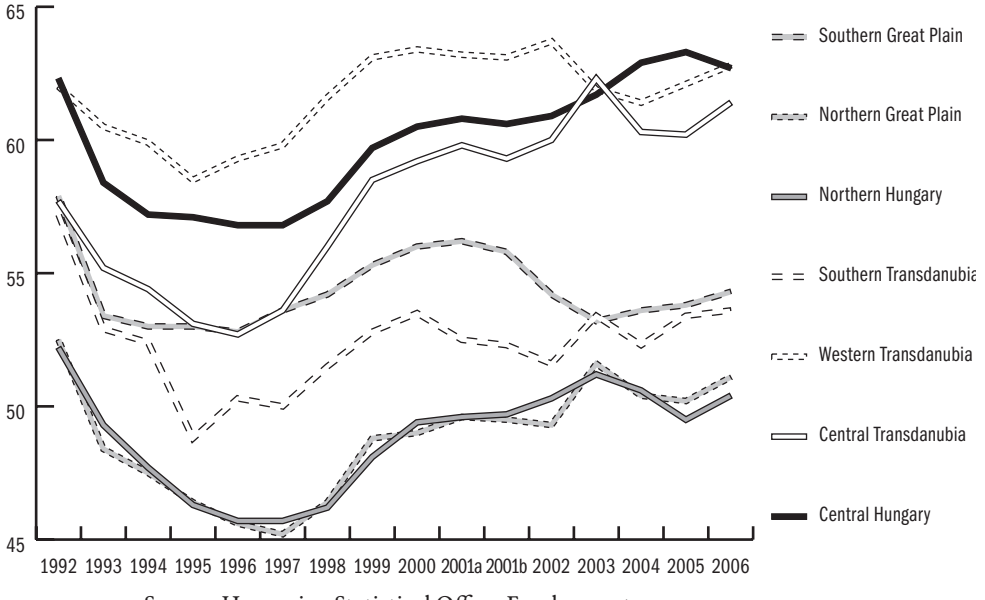
Table 7 presents the absolute level of average wages and the yearly increase of real wages by industries. Wages did not decrease in any industry, but the growth rates varied greatly. In most industries the increase was smaller or close to the 4.2 percent national average meaning that wage increases were

concentrated in a few fields only. These are mining (12 percent), financial intermediation (11 percent), trade (7 percent), and construction (6 percent). The lowest growth rates were experienced in health care and social services (1.5 percent) and other services (1.6 percent).

4. REGIONAL DIFFERENCES IN EMPLOYMENT, UNEMPLOYMENT AND WAGES

In post-transition Hungary, the regional differences in unemployment by regions, counties and settlement types have grown significantly. Although the differences across counties and regions have become somewhat smaller in the past few years, there is still no significant tendency for levelling-off despite governmental efforts. To the contrary, a strong polarization is taking place, the result of which is the splitting of the country to the relatively developed Central- and Western Transdanubia regions, in contrast to the Southern Transdanubia, the Northern and Southern Great Plains, and Northern Hungary regions (*Fazekas*, 2004). Comparing the regional differences in labour market activity with other Central-East European countries, the United States, and countries of Western-Europe, the differences are significant (*OECD*, 2005, 2006).

Figure 3: Employment rate by region, 1992–2006

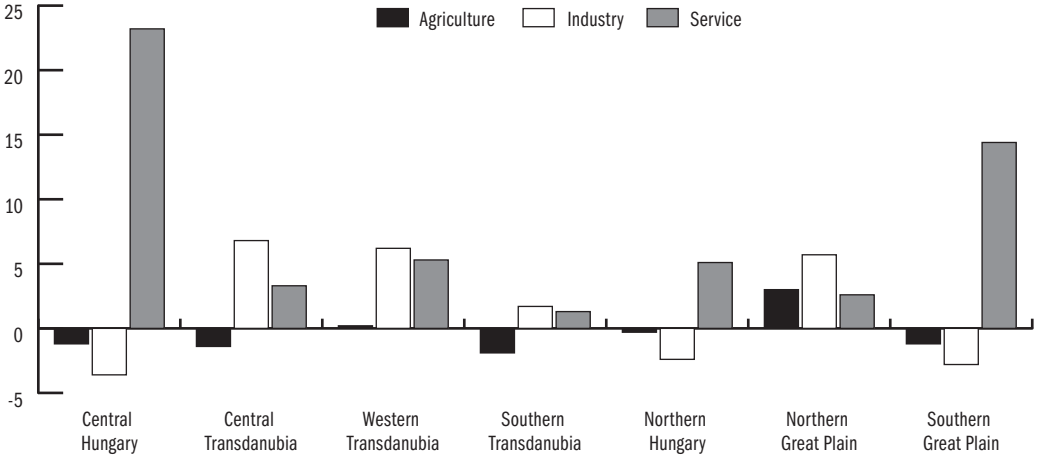


Source: Hungarian Statistical Office, Employment survey.
Notes: The figures refer to the population aged 15–64.

Data in Figure 3 also show that since the millennium there is a noticeable polarization in the development of employment rates by regions. The employ-

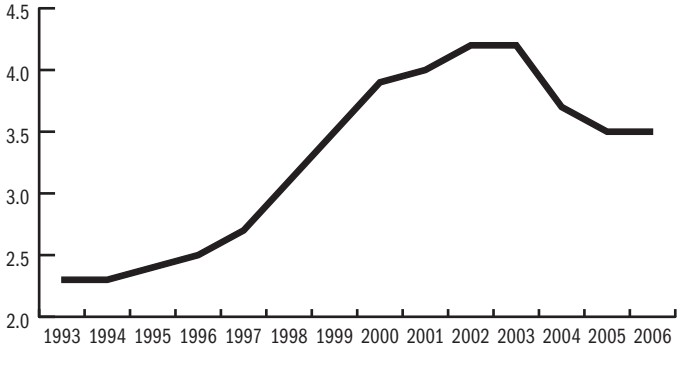
ment rate is relatively high in Central Hungary, Central and Western Transdanubia, and a relatively low employment rate is characteristic of the regions of Southern Transdanubia, Northern Hungary, and the Northern and Southern Great Plains. In 2006, in the high employment regions the rates of employment were 62.8 and 61.4 percent, while in the low employment regions they were between 50.4 and 51.1 percent. In Central Transdanubia the employment rate increased by 1.2 percentage points, while in the other regions changes in employment rates were below one percentage point. The ratio of the highest and lowest employment rates was constant in the past few years.

Figure 4: Sectoral changes by region in 2005–2006



Source: Hungarian Statistical Office, Employment survey.
Notes: Thousands of individuals. Sectoral changes are measured by the fluctuation of the number of employed.

Figure 5: Registered unemployment rate disparities by county



Source: Employment Office, Unemployment registry.
Notes: Quotient of the average bottom and top quartiles calculated from the rates of registered unemployment.

Figure 4 presents the shift in the sectoral breakdown of employment in the different regions. The figures show that the ratio of employment in services grew mainly in the most developed region (Central Hungary). Service sector employment in the Southern Great Plain underwent a significant increase in hand with a decrease in the number of employees in agriculture and industry.

The unemployment records kept by the Employment Office also give valuable information by counties on registered unemployment. Data show that the differences in registered unemployment rates grew until 2001, and started to decrease afterwards. This process continued in 2005 as well. Figure 5 shows that the difference between the lowest and highest quintiles calculated from the registered unemployment rate doubled between 1993 and 2003. In the past two years the relative differences diminished from 4.2 to 3.5.

According to statistics on inter-regional wage differences, raw regional wage differentials in Hungary grew significantly during the 1990s, and these differentials have not diminished considerably ever since. Table 8 presents the development of regional disparities in gross monthly wages by NUTS-2 level regions. It is apparent that wages in Budapest surpass the national average by 23 percent, while in the Southern and Northern Great Plains region they barely reach 80 percent of it. The gap between the highest and lowest paying regions has been approximately one and a half fold for years.

Statistical data in Chapter 9.5 of this volume prove that wage gaps by counties are even higher and show no tendency to diminish. Analyses searching for the causes of regional wage differences arrive at the conclusion that the main reason for these gaps lays in the different composition of the workforce and in the productivity disparities of the enterprises. By cleaning the data from composition effects and inter-enterprise productivity differences we find that regional wage differences diminished significantly in the second half of the 90s, and have not changed significantly since.

SUMMARY

The most important labour market developments originate in the macroeconomic stabilization program of the government, launched in September 2006. The increase of taxes and the restructuring of the public sector is most probably going to have a negative effect on the employment rate and boost unemployment, at least in the short and medium run. The decline of the public sector employment is already showing in the data.

While the employment rate did not change during 2006, the unemployment rate continued to increase, albeit not as much as in the previous year. In this study we presented the facts about the increase of unemployment in 2005 and speculated about its possible causes. We also document wage changes in 2006 and find that for the first time in several years, blue collar workers' wages increased by more than white collar workers'. Regional differences in

Table 8: Regional differences in wages by planned regions

Region	1989	1992	1995	1998	2001	2003	2004	2005	2006
Central Hungary	108.3	121.0	116.9	124.5	127.5	125.4	125.1	122.3	123.4
Central Transdanubia	100.5	98.7	95.8	98.4	96.9	94.2	93.2	93.6	91.9
Western Transdanubia	93.4	93.4	90.6	93.1	92.9	89.5	89.7	92.4	91.1
Southern Transdanubia	96.9	88.6	88.0	87.5	83.8	86.3	83.5	86.4	83.9
Northern Hungary	96.8	92.2	89.6	87.0	85.6	86.8	87.3	88.6	88.8
Northern Great Plains	89.4	87.1	86.4	83.9	82.0	84.9	84.3	83.1	82.7
Southern Great Plains	90.9	89.2	83.7	84.3	81.8	83.6	82.7	82.7	83.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Maximum	108.3	121.0	116.9	124.5	127.5	125.4	125.1	122.3	123.4
Minimum	89.4	87.1	83.7	83.9	81.8	83.6	82.7	82.7	82.7
Maximum/minimum	1.2	1.4	1.4	1.5	1.6	1.5	1.5	1.5	1.5

Source: Employment Office.

Notes: Data are observations in May of a given year, and comprise the employees of the public sector and enterprises according to the following size categories: 1992–1994: 20 or more employees, 1995–1998: 10 or more employees, 1999–2000: 5 or more employees. Full time employment only. Gross monthly wages.

terms of employment and unemployment remain high. There are no signs of levelling between leading core regions (Central Hungary, Central and Western Transdanubia) and the periphery. As the employment rate is historically low in the country, and the unemployment rate has been increasing in the most recent period, fighting unemployment and boosting employment will be the most important labour market related task of the government in the coming years.

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IN FOCUS

WAGES: NEW DEVELOPMENTS

Edited by
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INTRODUCTION

PÉTER GALASI & GÁBOR KÉZDI

In the 2002 volume of The Hungarian Labour Market, part I of the "In Focus" section focused on how wages evolved during the post-communist transformation of Hungary. In the initial years of the transition, real wages dropped slightly when compared to other former socialist countries during the "transformational recession", while unit labour costs increased under the influence of a combination of factors. In the second half of the 1990's both real earnings and wage costs dropped significantly. The resulting rise in profits helped to pave the way for re-launching economic growth, which triggered a climb in real wages. Another definitive development of the transformation decade was a steady widening of inequalities in earnings, extremely rapid by international comparison. The gap grew particularly large within industries – between groups with different education levels and between different types of companies.

The 2002 study argues that company level decisions and bargaining gained the dominant role in setting wages. The shape of relative earnings increasingly reflected differences in companies' ability to pay and in the bargaining positions of workers. One decade after the collapse of the socialist system, the Hungarian labour market looks like a well-functioning labour market, in which earnings are related primarily to productivity. From the perspective of the labour market transition is thus over. That of course does not mean the emergence of a frictionless competitive labour market. Some of the problems have their origins deep in the past, like increased regional inequalities or the size of public sector employment. At the same time, new developments and policies produce additional problems that create a more complex labour market picture. The significant rise in the minimum wage and the wages of public sector employees, and the extraordinary expansion of higher education all might have their effect on wages.

Five years after the first In Focus section on the same topic, we take another close look at Hungarian wages. Some studies in the present section analyze how new developments and policies affect wages. Other studies examine whether transition-related trends continued into the 2000's. And yet other studies address questions that were not previously analyzed.

The first study by *Hedvig Horváth, Péter Hudomiet* and *Gábor Kézdi* looks at the role of in-kind benefits in total labour income in Hungary. These benefits include car and cellular phone usage, representation expenses, meals-, clothing- and transport subsidies, etc. The literature has paid less attention to these issues so far in Hungary, in part because of the lack of adequate data. In this study the authors use earnings and in-kind benefits data from a detailed (albeit relatively small) household survey, the Monitor survey of Tárki. They find that both the likelihood of receiving benefits and the amount received is strongly positively related to earnings, which implies that firms do not use benefits for compensating lower earnings but rather treat them as part of total remuneration. As a consequence, inequality in terms of total labour income is larger than in terms of earnings. The results also imply that conclusions drawn from standard earnings regressions hold for the more broadly defined labour income. An important exception is that returns to education are greater if measured in broader income terms than in earnings.

In the second study, *Gábor Kőrösi* analyzes the factors determining inter-firm differences in average wage rates, with an emphasis on firm-level wage dynamics. The study identifies the main determinants shaping inter-firm wage differences in Hungary over the past decade. It also shows the factors that did not seem to play a significant role in spite of their importance in the international literature. The overall picture emerging from the estimates shows that rent sharing (i.e. the split of productivity gains between employers and employees) is present in all Hungarian firms, although the extent varies considerably across industries. Rent sharing is influenced not only by differences in technology but also the market environment that firms face. In the early years of the post-communist transition the degree of rent sharing was significantly higher than in market economies, and has decreased considerably since. The high degree of rent sharing may seem paradoxical at first sight as it is usually accompanied by strong labour unions. Hungarian unions are, on the other hand, relatively weak. It is therefore likely that some transition-specific factors played an important role in the early years.

The third study, by *Álmos Telegdy*, analyzes the wage differences between the public and private sectors during the period of 2000–2004, in the middle of which the wages of public employees were raised significantly and as a result their average wage increased by 36 percent in real value. Consequently, the average wage in the public sector surpassed that of the business sector by 18 percent. Wage differences by education and occupation are significant. The

highest relative wage throughout the period is related to the least educated employees and to the ones who occupy positions requiring unskilled labour. Employees graduated from college or university have the lowest relative wages (–25 percent in 2004). However, after controlling for other observable factors (age and gender being the most important), wages in the public sector in 2004 are found to be higher in virtually all education or occupation categories than in the business sector. The only category for which this is not true is college and university graduates, but the difference here is a mere 3.7 percent. According to these findings the government has not only levelled the wages in the public and business sectors but also pays a wage premium to the majority of its employees. That most likely has major consequences for the whole of the Hungarian labour market.

The fourth study, written by *Péter András Szabó*, looks at whether, and how, regional earnings differences have changed since the turn of the century. Data suggest that regional earnings and labour cost differentials are moderate between 1998 and 2004. The wage gain of the poorest region compared to the most developed part of the country does not exceed 6 per cent by the end of the period. All these results show that labour cost differentials do not play a dominant role in a firms' migration decisions, since a moderate wage gain might not provide enough incentive for a firm to relocate. In the depressed regions, however, the recruiting and screening costs are lower due to the (relatively) abundant labour supply. Thus the less developed regions may have other characteristics that foster formation of companies to a greater extent than the slight gain in earnings (*Köllő* 2003). Hence rural development policy should not concentrate only on "raw" differentials in earnings and labour costs but also on factors that affect the regional distribution of earnings, such as education or unemployment.

The fifth study, written by *Gábor Kertesi* and *János Köllő*, looks at the labour market value of higher education degrees. The economic transformation following the political transition brought about a spectacular increase in returns to higher education. It also brought about a rapid growth of the supply of graduates. As a result, limits to demand will sooner or later put an end to the upward trend in the rising returns. According to conventional wisdom in Hungary, graduate degrees have already entered a steep decline. The authors contrast that with detailed evidence using the data available before May 2005. They conclude that the earnings advantage – very large by international comparison – in the rapidly rejuvenating professions of the business and clerical-administrative sectors has indeed diminished. Meanwhile, the position of the young graduates in the public sector was significantly improved by the pay-rise in 2002. Despite the following decline, their relative earnings are still higher than in the period before the expansion of the higher education. In summary, higher education degrees can still be considered exceptionally

good investments in Hungary taking into account the current earnings, job prospects and individual costs of education.

Julia Varga, in the sixth study, analyzes the composition and earnings of public school teachers. The level of skills in an economy is crucial for its growth, and teachers in state schools play an important role in the production of skills. Hiring and keeping highly skilled schoolteachers has become very difficult in Hungary in the past twenty years as their relative earnings steadily declined. Using large datasets, the author documents the trends in earnings and (measurable) skill composition between 1992 and 2004, a period that includes the significant raising of the salaries of public employees. Relative wage of schoolteachers declined steadily until 2002, especially compared to young college graduates employed in the private sector. At the same time, the average age in the profession rose significantly. As a result of the general raising of public sector wages in 2002, older teachers' wages have become pretty close to wages of older private sector employees. At the same time, young schoolteachers' wages continue to lag behind considerably. This naturally fed back to the career choice of potential teachers. The results suggest that during the entire period, self-selection has led to a declining average quality of the pool of teachers' college entrants and the pool of entrants to the profession itself.

In the seventh study, *Márton Csillag* examines male-female earnings differences between 1986 and 2002 and relates those to occupational and firm-level gender segregation. His analysis shows that while towards the end of communism gender disparities in occupational composition were a major factor in sustaining gender wage gap, following the transition male and female work, however, becomes less strictly defined and that working in a feminized occupation does not, necessarily, entail a wage penalty. The author argues therefore, that the current gender wage gap in Hungary is not due to occupational exclusion coupled with an undervaluation of female work. It is rather a result of women being paid less than their male counterparts in a given occupation and firm. The available evidence is not enough to tell whether that is due to differences in productivity or discriminatory practices, and so further research is needed on the subject.

The last study, by *Péter Galasi*, takes another look at a hotly debated question in post-transition Hungary: the effect of the expansion of higher education on the employment and wages of young graduates. The author makes use of a unique dataset of fresh graduates in order to analyze their earnings mobility at the turn of the century. Most of them obtained other higher-education degrees, participated in training courses, and accumulated additional labour market experience. Some of them could also ameliorate their position in terms of better job/education matching. The author finds, however, that these developments did not necessarily result in higher wages. An

initial 5-year university diploma implies some wage premium over an initial 4-year college diploma even at the time of the second observation, and the premium remains the same whether college-diploma holders obtain another higher-education degree or not. Moreover, the results show that the wage gain attributable to a second higher-education diploma in addition to an initial university diploma is not higher than the one due to a university diploma with no additional higher-education degree. Some types (and combinations of types) of education (business/economics, law, informatics, technical sciences) produce a wage advantage as compared to one degree in agricultural sciences, but these gains seem to be the same for all combinations of types of education. Language courses and short-term courses in business/economics also result in wage gains. Job/education mismatch in itself does not affect earnings, only transition from one state of mismatch to another (from over-education to under-education and from under-education to over-education) implies lower wages. As regards labour market experience, unemployment negatively influences earnings. It seems that, at least in the short run, additional human-capital accumulation might go hand in hand with earnings losses as well as gains.

1. IN-KIND BENEFITS IN HUNGARY

HEDVIG HORVÁTH, PÉTER HUDOMIET & GÁBOR KÉZDI

This study looks at the role of in-kind benefits in total labour income in Hungary. These benefits include car and cellular phone usage, representation expenses, meals-, clothing- and transport subsidies, etc. The literature has paid less attention to these issues so far in Hungary, in part because of the lack of adequate data. In this study we use earnings and in-kind benefits data from a detailed (albeit relatively small) household survey, the Monitor survey of Tárki.

We raise two closely related questions in this study. The first question considers who receives in-kind benefits in Hungary, why, and of what kind. It is possible that, because of compensating differentials, those who earn more might expect less in-kind benefits. In this case, inequality measured solely by earnings would overestimate total labour income inequality. Compensating differentials may occur if, for exogenous reasons, in-kind benefits are higher in some occupations than in others, and employers use other earnings components (wages, bonuses) to compensate for the differential. Of course, a positive correlation is also possible, i.e. higher wages may coincide with higher in-kind benefits. In this latter case, inequality measured solely by earnings would underestimate total labour income inequality. This latter case may occur if the tax cost of in-kind benefits is smaller. Our results support the second case. Although on average the ratio of in-kind benefits to total labour income is small, there is a significant positive relationship between wages and in-kind benefits. Moreover, determinants of in-kind benefits match the determinants of earnings, indicating that overall, the role of in-kind benefits is very similar to that of other earnings components.

Our second question considers how total labour income is affected by the most commonly used covariates in earnings functions (gender, education, etc.). This question is rather technical and tries to examine whether conclusions drawn from those estimates can be extended to total labour incomes as well. Given our answer to the first question, it is not surprising that we find a strong confirmative answer. The estimated parameters of the standard Mincer type regressions are quite similar in both cases, with the notable exception of

the effect of education. Returns to education on total labour income are even larger than on earnings itself.

In-kind benefits

Since 1998, Tárki Social Research Inc.[1] has collected cross-sectional household surveys called Household Monitor, generally every two years. In 2003, 2335 households were successfully interviewed. The main advantage to us of this survey is that, in addition to the usual measures of wages, bonuses and other monetary premiums,[2] it contains detailed data on other sources of labour income: tips, secondary jobs, and in-kind benefits. The survey was carried out on a relatively small sample, and the data collection is based on self-assessment, which could affect reliability.

Table 1.1 contains simple descriptive statistics on the fraction of recipients of the different types of labour income. As far as in-kind benefits are concerned, the relevant information is given in monetary intervals (under 30,000 HUF, 30,000–60,000 HUF, etc.) For the descriptive statistics, we have simply assigned the midpoint of the category, but for the detailed analysis we shall allow for interval-coding.

Table 1.1: Partaking in the different income components (panel A) and the ratio of them to total income (panel B). Tárki Monitor 2003 (N=1752)

	Tips	Payments on invoice	Secondary jobs	In-kind benefits	Monetary earnings
A. What fraction receives it? (Per cent)					
Top managers	0.0	6.3	13.5	79.7	100.0
Middle managers	7.3	10.9	3.9	81.3	100.0
Junior managers	14.8	2.9	8.8	72.6	100.0
White-collar employees	2.8	9.7	7.5	77.9	100.0
Other white-collar workers	6.2	4.8	2.7	74.6	100.0
Skilled workers	6.4	1.6	1.9	61.4	100.0
Agricultural labourers	0.0	0.0	0.0	57.5	100.0
Semi-, unskilled workers	3.8	1.6	0.8	66.4	100.0
TOTAL:	5.5	3.7	3.1	66.4	100.0
B. What is the average fraction of the income component in total labour income? (Per cent)					
Top managers	0.0	0.4	4.3	4.9	90.3
Middle managers	0.1	5.0	2.1	4.4	88.4
Junior managers	0.9	0.1	3.4	4.4	91.2
White-collar employees	0.0	1.2	1.9	3.5	93.4
Other white-collar workers	1.1	4.9	1.0	4.6	88.4
Skilled workers	0.5	0.3	0.6	2.8	95.8
Agricultural labourers	0.0	0.0	0.0	2.0	98.1
Semi-, unskilled workers	0.7	0.6	0.5	2.4	95.9
Total:	0.5	1.6	1.3	3.5	93.1

1 www.tarki.hu/en
2 Earnings include bonuses and premiums. The exact definition is described below.

The most important message of Table 1.1 is that labour income is more than primary job monetary earnings for most Hungarians. Payment on invoice is most frequent for middle managers, junior managers get the most tips, and a non-negligible fraction of managers and other white-collar employees have second jobs. Two-thirds of Hungarian employees receive some in-kind benefits, the higher qualified the job is the more so. At the same time, based on our estimates from the Tárki Monitor survey, the fraction of these to total labour income seems to be quite small. The total income of blue-collar workers is nearly the same as their monetary earnings. It is possible that data on monetary earnings are more reliable than those other components and systematic underestimation is more pronounced there. As we have only self-reported data, we cannot check this potential bias.

The survey also has data, although without monetary equivalent, on different types of in-kind benefits. Table A1.1 (in the appendix) contains these by employment status. Among them, meal benefit is the most frequent one: 50 to 70 per cent of employees in all jobs receive it. Clothing is less frequent but is also *distributed rather homogenously (10–36 percent), and, excluding agricultural workers, the same is true for the transport benefit (11–25 percent). Car usage is mainly given to white-collar and to some extent to skilled workers.

In what follows, we look at the probability of receiving in-kind benefits in a more systematic way, by estimating probit probability models. For each type of benefit, we run two models. In the first model, we control for log wage, job characteristics and job tenure besides the usual Mincer-type explanatory variables (gender, potential experience, education, ownership of the firm, regional location and type of settlement). We address three questions in these models. (a) Is the (partial) correlation between wages and benefits positive or negative? (b) Are the effects of job characteristics and job tenure significant after controlling for wages? (c) Are the effects of the Mincer type variables significant after controlling for wages? The second type of model features the standard Mincer type variables only. We run those models in order to see whether the estimated effects are similar for different types of in-kind benefits. Table 1.2 shows the estimated effects of the most important variables. The table presents the average partial effects (average effect of different explanatory variables on the independent variables).

There is a significant positive link between wages and the probability of receiving in-kind benefits. The narrower models show that the effects of education on any type of in-kind benefits are always significant, positive, and substantial except for company car usage and transport benefits. Nevertheless, this relationship disappears or almost disappears if we control for wages. The complete models (not reported here) also show that while labour market experience is not significant, the gender effect on benefits is similar to the one on wages: women can expect less of both. These results suggest that in-kind

benefits supplement wages and move along with them. Our results therefore support the second possibility in the introduction: benefits are very much like monetary components of earnings and there is no evidence for compensating differentials.

Table 1.2: Probit models for the probability of receiving different kinds of in-kind benefits. Average partial effects on probabilities. Tárki Monitor 2003

	Company car		Cell phone		Mean benefits		Clothing benefits		Transport benefits	
log(wage)	0.053		(0.030)		0.106		0.113		0.104	
Manager	0.038		0.043		(–0.051)		–0.094		(–0.050)	
Blue-collar	–0.039		–0.044		–0.096		–0.114		(–0.048)	
Job tenure (years spent with firm)	(–0.000)		–0.002		0.004		(0.000)		(0.001)	
Education (years)	(0.003)	0.016	0.010	0.021	(0.004)	0.026	(0.003)	0.023	(–0.001)	0.013
Private firm	0.049	0.048	0.057	0.064	–0.227	–0.259	–0.181	–0.207	–0.083	–0.101
Foreign firm	–0.027	(–0.009)	(–0.005)	(0.007)	0.223	0.250	(–0.052)	(–0.024)	0.067	0.096

Note: Parameters in brackets are not significant at 5 percent.

Other results from the models are also interesting. First, the effect of job status and job tenure do not disappear completely even when we control for wages. This can reflect the nature of within-firm incentives, but it can also mean that, besides measured current wages, these variables can also predict long-term (permanent) wages. In the latter case, these variables are significant after controlling for current wages, but they would not be significant if we could control for permanent wages. Second, firm ownership matters. Our models suggest that domestic private firms give less meal and transport benefits to their employees than either foreign or public firms. It seems therefore that domestic private firms do not make use of the legal possibilities of giving such benefits. Furthermore, we can see that public firms give more clothing benefit and less car and cellular phone usage.

Recall from Table 1.1 that the share of in-kind benefits within total labour income is quite small. Therefore, we have estimated models that examine the amount of benefits together. Our main question is that if somebody gets any kind of benefits, what is their monetary equivalent. In addition, we have also examined the factors that can affect the probability of receiving any kind of benefits. Both questions refer to the benefits together, because the survey does not provide information about the amount of the benefits one by one. For the second question we have used probit models. These models estimate the relationship between the explanatory variables and the probability of receiving any kind of benefits. For the first question we have used ordered probit models, because the survey only provides data on the interval in which the monetary equivalents of the benefits are (0–30,000 HUF; 30,000–60,000 HUF; etc.) This latter method is also called interval regression because it is an ordered probit with known thresholds (see *Wooldridge*, 2002, pp. 508.)

For easier interpretations, we have used the logarithms of the category-margins. In this way the estimated parameters of the interval regressions can be directly interpreted: they show the percentage increase of the value of benefits (conditional on having received any) associated with a one unit change in the independent variable.

Just as in the previous case, we estimated two models for both the probability and the magnitude of benefits. The first one contains the standard Mincer type variables; the second one has the job description and job tenure (years spent with the firm) variables. The most important results are shown in Table 1.3 and the complete output is in Table A1.2 in the appendix. We show here models with education measured by completed school years; results from models with degrees of qualification are very similar.

Table 1.3: Probability of receiving any benefits (probit) and value of the benefits if any (interval regression). Tárki Monitor 2003, Hungary

	Probability of any benefits (average partial effects from probits)		Value of the benefits if any (elasticities from interval regressions)	
	(1)	(2)	(1)	(2)
Log(wage)		0.132		1.021
Manager		(–0.023)		(–0.001)
Blue-collar		–0.117		–0.447
Job tenure (years spent at firm)		0.004		(–0.007)
Women	–0.064	–0.062	(–0.131)	(–0.056)
Education (years)	0.037	(0.010)	0.128	(–0.019)
Private firm	–0.187	–0.149	(–0.019)	(0.036)
Foreign firm	0.195	0.162	(0.010)	(–0.178)

Note: Parameters in brackets are not significant at 5 percent.
For complete output see Table A1.2.

Women are 7 per cent less likely to receive in-kind benefits even if we control for job status, tenure and earnings. Domestic private enterprises are less likely to give in-kind benefits, by 20 per cent (16 per cent in model 2), than state-owned ones or foreign private firms (the latter two are about as likely to give). Model 2 implies that 1 per cent higher earnings are associated with 0.15 per cent more likely benefits. Blue-collar workers receive benefits with a 13 percent smaller probability, and each 2.5 years spent at the company increases the chance of benefits by 1 percentage point.

The value of benefits (if positive) does not correlate with ownership. Education matters more for benefits than for earnings: returns to education here are 13 per cent, compared to 9 per cent in the standard Mincer type regressions (see later) but conditional on earnings, it has no effect on benefits. Conditional on earnings and job characteristics, neither gender, nor education seems to matter. One per cent higher earnings are associated with benefits

higher by the very same 1 percent. Blue-collar workers, however, receive half as much even if they receive any.

These results suggest two important conclusions. First, blue-collar jobs are associated with significantly less likely and smaller benefits, even when we control for earnings and education. Second, earnings and benefits move closely together: benefits are related to the marginal product of work the very same way wages do, as a first approximation (that is to say, except that blue-collar jobs seem to have an extra penalty).

Mincer-type regressions for earnings and total labour income including in-kind benefits

Most studies on Hungarian earnings use the wage-tariff data surveys.[3] The first study using the data was *Kertesi and Köllő* (1997a). In the In Focus chapter of the present volume all studies are based on Wage-tariff surveys except for that of Péter Galasi.

Wage-tariff surveys were carried out in 1986, 1989 and yearly from 1992, they contain data on earnings and basic demographical information. The sample covers all public sector workers and a large representative sample of private sector workers at enterprises, together with some data on the plant and the enterprise. Earnings data contain wages and yearly bonuses and premiums. The remarkable value of the wage-tariff surveys is in their size (hundreds of thousands of employees each year) and the possibility to match them with employers' data (e.g. with balance sheets).

All data in the wage-tariff surveys are provided by the employer. Earnings are thus more precise than those gained from household surveys (*Kézdi*, 1998). At the same time, employer provided data have their drawbacks as well. For one thing, families and households are impossible to link. For another, we have the data from one single employer even if a worker has more jobs (or, to be more precise, each record is about one job, and employers are not possible to identify). In addition, wage-tariff does not have information on in-kind benefits.

Below, we compare the most important results of Mincer type regressions from the 2003 wage tariff survey and the 2003 Tárki Monitor survey.[4] First, for a benchmark comparison, we run standard Mincer-type regressions on earnings using variables that are available in both surveys. Average after tax earnings are about 15 percent lower in the self-reported data, which is very similar to the 20 per cent difference in the wage tariff – household survey comparison measured, for the 1980's, by *Kézdi* (1998). Table 1.4 shows the main results of the basic models that can be estimated from both surveys (for complete results, see Table A1.3 in the appendix).

3 The data-owner of the Wage-tariff surveys is the Employment Office (Foglalkoztatási Hivatal), and IE-HAS provided the yearly harmonized data suitable for analysis. The work was lead by János Köllő and the final harmonized version was put together by Mónika Bálint. Original data files can be analyzed according to the agreement with the Employment Office, while the cleared, harmonized, complete and re-weighted database can be analyzed in accordance with agreements with IE-HAS and the consent of the Employment Office. See more details at www.econ.core.hu

4 In the wage tariff survey, after-tax earnings mean the monthly wage in May, 2003 plus one twelfth of 2002 yearly bonuses and premiums, also after tax. In the Monitor survey, respondents report their average after-tax monthly wage between October 2002 and September 2003 and the after-tax value of bonuses and premiums received during the very same period (the latter we divided by twelve).

Table 1.4: Mincer-type earnings regressions, comparable samples of full-time workers. Wage-tariff 2003 and Tárki Monitor 2003

	Wage-tariff	Monitor	Wage-tariff	Monitor
Women	-0.159	-0.162	-0.176	-0.186
Potential experience	(0.006)	0.021	(0.008)	0.022
(Potential experience)^2/100	(0.002)	-0.039	(-0.003)	-0.041
Education (years)	0.086	0.089		
Vocational degree			0.128	0.148
Secondary degree			0.279	0.35
College or more			0.701	0.718

Notes: Linear regression models; the dependent variable is the logarithm of net monthly wage.
Parameters in brackets are not significant at 5 percent. Robust standard errors.
For complete output see Table A1.3.

The explanatory power of the models are of the usual order, though R-squares for Wage-tariff regressions are systematically lower. All coefficients are very close except for potential labour market experience, which is not significant in Wage-tariff-regressions.

If we change the logarithm of net monthly wages to the logarithm of net hourly wages as the dependent variable of the model, gender difference decreases considerably but still remains significant. The most important result for us, however, is that although the return to experience is different, gender wage difference and the return to education are nearly the same in the two samples. This is remarkable, especially if we take into account how different the circumstances of the two surveys are.[5]

After having established comparability, we can analyze what happens if we run regressions of total labour income on the left-hand side instead of monthly earnings. Full labour income consists of the monthly wage, yearly bonuses and premiums projected to one month, and tips, payment for invoice, income from second jobs, and the monetary value of in-kind benefits (recall that the latter include company car, cellular phone, meal, clothing, transport benefits). Table 1.5 shows the main results.

Returns to experience are the same in the two models, gender differences are a little bit greater (men may count on more benefits) but the difference is not significant. On the other hand, returns to education are significantly larger in terms of total labour income than earnings only. The coefficient on education is about 10 percent higher whether it is measured by completed years or degrees – in the latter case, in addition, the difference is nearly 10 percent in all categories. Table A4 also shows that full labour income is lower at Hungarian private companies than at foreign- or state-owned firms.

The results of Mincer type regressions run on the Monitor database are in line with those of the probit models described in the previous part. They report that if the left-hand-side variable contains all the benefits besides mon-

5 Regional differences, however, differ significantly in the two datasets. One important reason for that may be the fact that while Wage-tariff reports the place of employment Monitor reports the place where the individual lives. Henceforth, because of commuters the two variables might show significant deterioration (e.g. in Pest county). Differences between Hungarian and foreign firms are very much alike (they are a bit lower in Monitor), state- and private-owned differences, however, are much lower in Monitor. Ownership is defined differently in the two surveys, and in a household survey it is likely to be much noisier.

etary earnings, the results are basically the same, except for education, the returns of which are about 10 per cent stronger.

Table 1.5: Net monthly wages and net monthly total incomes. Results of Mincer type regressions. Tárki Monitor, 2003.

	Earnings	Total labour income (incl. benefits)	Earnings	Total labour income (incl. benefits)
Women	–0.162	–0.165	–0.186	–0.193
Potential experience	0.021	0.022	0.022	0.023
(Potential experience)^2/100	–0.039	–0.039	–0.041	–0.041
Education (years)	0.089	0.098		
Vocational degree			0.148	0.161
Secondary degree			0.350	0.385
College or more			0.718	0.796

Notes: Linear regression models; the dependent variables are the logarithms of earnings or total labour income.
Parameters in brackets are not significant at 5 percent. Robust standard errors.
For total output see Table A1.4.

Conclusion

Two questions were raised at the beginning of this chapter. The first asked who receives in-kind benefits in Hungary, why and of what type. We answered the question using the Monitor household survey of Tárki. The most important results are the following. The most frequent in-kind benefit is meals and clothing, though other benefits (e.g. company cars and cellular phones) may also be frequent depending on the type of job. Both the likelihood of receiving benefits and the amount received is strongly positively related to earnings, which implies that inequality in terms of total labour income is larger than in terms of earnings. Benefits are related to the marginal product of labour in the same way wages are, implying that firms do not use benefits for compensating lower earnings but rather treat them as similar parts of total remuneration. However we also found that blue-collar workers receive significantly less benefits than their white-collar colleagues with a similar level of earnings.

The second question was whether conclusions drawn from standard earnings regressions hold for more broadly defined labour income. The results here are in line with the ones seen before. Determinants of broad labour income are very similar to determinants of earnings, with one notable exception: returns to education are ten per cent larger if one looks at broad labour income.

Appendix

Table A1.1: Sharing in the different kinds of in-kind benefits. Tárki Monitor 2003, % (N=1752)

Job-status	Car usage	Mileage benefit	Cellular phone usage	Represen-tation expenses	Meal benefit	Clothing benefit	Transport benefit	Other expenses
Top-managers	38.1	21.6	38.8	10.7	60.9	21.7	12.4	8.4
Middle-managers	11.9	10.0	23.2	1.8	65.9	24.6	11.0	4.8
Junior-managers	6.1	3.5	12.5	0.5	66.1	17.8	16.9	1.5
White-collar employees	3.1	3.8	7.1	0.5	70.5	36.2	24.6	6.5
Other white-collar workers	4.5	5.6	6.3	1.3	64.2	28.5	19.0	3.9
Skilled workers	3.8	3.2	4.7	0.2	52.5	15.0	17.1	1.6
Agricultural labourers	0.0	12.2	3.5	0.0	63.0	10.0	0.0	0.0
Semi-, unskilled workers	0.0	0.1	1.3	0.0	53.3	13.3	14.0	2.0
Total:	3.9	3.7	6.3	0.6	58.4	19.9	16.9	2.9

Table A1.2: Models for the probabilities of getting any kinds of benefit and of their amount. Tárki Monitor 2003

	Is any kind of benefit received? (average partial effect on probabilities)				If received, then what is their monetary equivalent (elasticity)			
log(wage)		0.147		0.153		1.021		1.014
Manager		(–0.027)		(–0.026)		(0.001)		(0.015)
Blue-collar		–0.129		–0.145		–0.447		–0.345
Job tenure (Years spent at firm)		0.004		0.004		(–0.007)		(–0.007)
Women	–0.071	–0.069	–0.077	–0.065	(–0.131)	(–0.056)	–0.185	(–0.042)
Potential experience	(0.004)	(–0.002)	(0.004)	(–0.003)	(0.017)	(0.001)	(0.014)	(–0.002)
(Potential experience)^2/100	(0.003)	(0.012)	(0.003)	(0.014)	(–0.040)	(–0.006)	(–0.032)	(0.002)
Years spent in school	0.042	(0.011)			0.128	(–0.019)		
Vocational training school			0.099	(0.059)			(0.239)	(0.061)
Secondary school			0.171	(0.038)			0.850	(0.233)
Higher education			0.262	(0.070)			1.065	(0.018)
Central Hungary	–0.195	–0.241	–0.196	–0.243	0.883	0.577	0.840	0.579
Central Transdanubia	0.172	0.141	0.172	0.138	0.779	0.560	0.751	0.562
Western Transdanubia	0.225	0.198	0.226	0.197	0.558	0.413	0.534	0.416
Southern Transdanubia	(0.008)	(–0.017)	(0.006)	(–0.018)	0.577	0.409	0.544	0.410
Northern Hungary	(–0.003)	(–0.025)	(–0.004)	(–0.026)	0.477	0.419	0.485	0.432
Northern Great-Plain	0.086	(0.055)	0.086	(0.055)	0.470	0.381	0.464	0.390
City	(–0.050)	(–0.053)	(–0.050)	(–0.052)	–0.482	–0.502	–0.509	–0.511
County centre	–0.186	–0.204	–0.187	–0.199	–0.473	–0.561	–0.505	–0.573
Budapest	0.138	0.118	0.140	0.119	–0.756	–0.848	–0.782	–0.860
Private firm	–0.201	–0.163	–0.199	–0.165	(–0.019)	(0.036)	(0.006)	(0.031)
Foreign firm	0.207	0.174	0.206	0.174	(0.010)	(–0.178)	(–0.007)	(–0.181)
Constant					1.408	–7.604	2.423	–7.915
Observations	1652	1626	1652	1626	1135	1128	1135	1128

Notes: Column 2–5: probit models, average partial effects. Column 6–9: parameters of ordered probit models with known category-bounds (interval regressions).
Parameters in brackets are not significant at 5 percent.

Table A1.3: Models for the net monthly wages of full-time workers, and for net hourly wages. Wage-tariff 2003 and Tárki Monitor 2003

	Wage-tariff	Monitor	Wage-tariff	Monitor	Wage-tariff	Monitor	Wage-tariff	Monitor
	Net monthly wages, full-time workers				Net hourly wages			
Women	–0.159	–0.162	–0.176	–0.186	–0.099	–0.110	–0.115	–0.136
Potential experience	(0.006)	0.021	(0.008)	0.022	(0.012)	0.018	0.014	0.019
(Potential experience)^2/100	(0.002)	–0.039	(–0.003)	–0.041	(–0.009)	–0.031	(–0.014)	–0.035
Years spent in school	0.086	0.089			0.092	0.099		
Vocational training school			0.128	0.148			0.141	0.153
Secondary school			0.279	0.350			0.293	0.344
Higher education			0.701	0.718			0.755	0.802
Central Hungary	(0.065)	0.244	(0.065)	0.241	(0.022)	0.190	(0.019)	0.187
Central Transdanubia	(0.09)	0.165	(0.094)	0.164	(0.05)	0.141	(0.051)	0.142
Western Transdanubia	(0.048)	0.131	(0.051)	0.133	(0.096)	0.114	(0.097)	0.118
Southern Transdanubia	(0.021)	0.090	(0.023)	0.086	(–0.016)	0.109	(–0.016)	0.106
Northern Hungary	(–0.048)	(0.039)	(–0.045)	(0.037)	(–0.087)	(0.054)	(–0.087)	(0.052)
Northern Great-Plain	–0.085	0.090	–0.087	0.091	–0.123	0.091	–0.127	0.092
City	0.135	(0.077)	(0.123)	(0.067)	0.168	(0.069)	0.157	(0.066)
County centre	0.08	0.072	0.072	0.066	0.063	(0.016)	0.055	(0.013)
Budapest	(0.037)	(0.008)	(0.035)	(0.005)	(0.077)	(–0.017)	(0.076)	(–0.017)
Private firm	–0.195	–0.079	–0.194	–0.068	–0.189	–0.122	–0.19	–0.107
Foreign firm	0.221	0.200	0.222	0.189	0.173	0.213	0.172	0.201
Constant	10.088	9.823	10.839	10.599	6.301	4.650	7.109	5.518
Observations	121272	1417	121272	1417	129756	1512	129756	1512
R-squared	0.32	0.44	0.33	0.45	0.27	0.40	0.28	0.42

Notes: Linear regression models; the dependent variables are the logarithms of the different types of income. Parameters in brackets are not significant at 5 percent. Robust standard errors.

Table A1.4: Net monthly wages and net monthly total incomes. Results of Mincer-type regressions. Tárki Monitor, 2003

	Net monthly wages, full-time workers				Net hourly wages			
	Monetary earnings	Total income	Monetary earnings	Total income	Monetary earnings	Total income	Monetary earnings	Total income
Women	–0.162	–0.165	–0.186	–0.193	–0.110	–0.113	–0.136	–0.141
Potential experience	0.021	0.022	0.022	0.023	0.018	0.018	0.019	0.019
(Potential experience)2/100	–0.039	–0.039	–0.041	–0.041	–0.031	–0.030	–0.035	–0.034
Years spent in school	0.089	0.098			0.099	0.108		
Vocational training school			0.148	0.161			0.153	0.167
Secondary school			0.350	0.385			0.344	0.378
Higher education			0.718	0.796			0.802	0.879
Central Hungary	0.244	0.242	0.241	0.239	0.190	0.191	0.187	0.187
Central Transdanubia	0.165	0.207	0.164	0.206	0.141	0.178	0.142	0.179
Western Transdanubia	0.131	0.140	0.133	0.142	0.114	0.123	0.118	0.128
Southern Transdanubia	0.090	0.113	0.086	0.109	0.109	0.130	0.106	0.126
Northern Hungary	(0.039)	(0.040)	(0.037)	(0.037)	(0.054)	(0.054)	(0.052)	(0.052)
Northern Great-Plain	0.090	0.093	0.091	0.093	0.091	0.094	0.092	0.095
City	(0.077)	(0.079)	(0.067)	(0.068)	(0.069)	(0.071)	(0.066)	(0.066)
County centre	0.072	(0.041)	0.066	(0.033)	(0.016)	(–0.013)	(0.013)	(–0.017)
Budapest	(0.008)	(–0.001)	(0.005)	(–0.004)	(–0.017)	(–0.026)	(–0.017)	(–0.026)
Private firm	–0.079	–0.076	–0.068	–0.063	–0.122	–0.114	–0.107	–0.098
Foreign firm	0.200	0.209	0.189	0.197	0.213	0.224	0.201	0.212
Constant	9.823	9.757	10.599	10.613	4.650	4.579	5.518	5.527
Observations	1417	1417	1417	1417	1512	1512	1512	1512
R-squared	0.44	0.44	0.45	0.45	0.40	0.41	0.42	0.42

Notes: Linear regression models; the dependent variables are the logarithms of the different types of income. Parameters in brackets are not significant at 5 percent. Robust standard errors.

2. DYNAMICS OF INTER-FIRM WAGE DIFFERENTIALS

GÁBOR KŐRÖSI

Wage dynamics is an obviously important issue both for the employer and the employee. Until now the employee side was emphasized: wage differentials among Hungarian individuals and groups of employees have been extensively studied. This chapter analyses the factors determining inter-firm differences in average wage rates.

Firms react to changes in the corporate environment, and they adjust their behaviour to the new circumstances. A company simultaneously decides on several factors such as changes in the technology, production level, employment and wages, although the implementation of these decisions may have different time horizons. For example, wage rates usually change at predetermined dates, conditional on agreement with trade unions or the company work council. Nevertheless, wage dynamics is inherently linked to other developments at the firm and in its competitive environment.

Company level wage decisions typically concern the average wage and the level of dispersion around it. Thus it is inherently different from a Mincerian human capital model explaining wage differentials among individual employees. The human capital model measures how individual skills are valued in the labour market, relative to a reference group. Obviously, the two levels change consistently: for example, company level average wage may change when the employment structure changes at the firm. Corporate wage decisions influence average wage without shifts in employment structure.

Wage dynamics are analysed from a large panel of annual corporate financial accounts, covering the period between 1992 and 2003.[6] The dataset contains 2356 observations for 1992. The sample size increases year by year, and by 2003 it covered 20076 firms. Sampling probability increases by firm size; thus, 65–77 percent of corporate employment is covered by the sample in each year. Coverage exceeds 80 percent in manufacturing employment in all years, but is more than 60 percent in other sectors, too.[7]

There is a substantial inter-firm dispersion of mean annual wages (per person). An important part of this dispersion shows up as regional wage differences. For example, the mean per capita wage of the corporate sector was

6 The dataset also contains observations from previous years. Those are used for lagged values and as instrumental variables.

7 *Kőrösi* (2005) provides detailed information on the characteristics of the sample.

more than twice as high in Budapest than in Bács-Kiskun county: 1936 vs. 943[8] (wages + premiums). The prominence of Budapest is best reflected by the fact that even the highest county average (1309, Fejér) was below the national average wage (1315) in the corporate sector.

Other classifications show similarly substantial differences in wages at groups of firms. Ownership seems to strongly influence wages: domestic private firms paid 1134, state-owned enterprises 1782, while foreign owned companies 2082 on average. Compared to these differences, sectoral dispersion is much smaller, at least if we look at a high level of the classification. When looking at differences in sectoral wage levels, concentration seems to be the most important factor: the mean wage is much higher in sectors with a very small number of firms. For example, the average wage at the five firms of the *Extraction of crude petroleum and natural gas* (NACE 11) sector was 3184, while the 20 firms of the *Insurance* (NACE 66) sector paid 5436 on average. This suggests that sectoral concentration influences wage determination.

Most of these differences in average wages persisted over time, and they seem to tell an interesting story on their own. Still, we are interested in the dynamic process of corporate wage determination, in the importance of the factors driving the substantial dispersion in wage setting, and in the possible temporal changes in corporate wage policies, rather than in the above raw figures. Several alternative theoretical explanations were suggested in the literature for explaining differences in corporate wage setting. We embedded the driving factors of the alternative theories into a uniform wage model, also allowing for the interactions of various terms.

Literature survey

The *wage curve* hypothesis of *Blanchflower and Oswald* (1994) offers a plausible explanation for the regional dispersion of average wages. They suggest that differences in regional unemployment rates strongly influence wage setting in the corporate sector. *Köllő* showed in the 2002 volume of the *Hungarian Labour Market* the fast growing role of local unemployment in wage setting in the early 1990's. Regional unemployment exerted an increasingly negative effect on wages in the competitive sectors.

Nickell and Wadhani (1990), in a seminal paper on British corporate wage determination, developed a dynamic adjustment model, where firms share the yields of productivity gains with their employees. This *rent sharing* is conditional on the financial position of the firm, as well as outside factors, *e.g.,* the unemployment rate. Thus, the efficiency of corporate activities becomes one important factor in the bargaining process between the management and the employees. Following the *Nickell and Wadhani* (1990) model, many empirical studies analysed the importance of insider power in corporate wage determination. One major explanatory factor of inter-firm wage dispersion is

8 All figures are annual wages, including premia, in HUF 1000 in 2003.

productivity. Trade unions usually can successfully refer to productivity gains at wage negotiations, and management typically is ready to share the yield of efficiency gains with employees.

Nickell et al. (1994) extended the previous model, incorporating the effect of variables describing the intensity of product market competition and market position of the firm into the wage equation. They demonstrated that the favourable market position was also subject to a similar bargaining, and market power had a positive impact on wages in Britain. This positive impact also depended on firm size: trade unions were stronger at large firms, and thus, they had a stronger bargaining power against the management.[9] Dominant firms were less likely to use unemployment pressure for limiting wage growth, thus making the *wage curve* effect conditional on firm size.

A well-known and robust result of Hungarian labour market studies is that the ownership of the employer plays an important role in wage differentials at employee level, and that cannot be attributed to standard explanatory variables of the human capital model. *Kertesi and Köllő* (1997) and (2001) or *Köllő* (2002) also showed that ownership structure changed the effect of other factors determining individual wages: while wages were strongly influenced by *firm size* at foreign-owned companies, productivity differences were more important at domestic firms. Foreign-owned companies paid relatively larger wage premium in low-wage sectors; thus, sectoral wages are less dispersed at foreign-owned employers than at domestic ones. They attributed a substantial part of ownership related sectoral wage differences to this relative advantage of low-wage sectors.

Ownership-related differences were also observed in some other economies. *Dobbelaere* (2001) showed that foreign-owned firms paid higher wages in Bulgaria, but those wages were independent of the efficiency, thus, they did not share rents with their employees. Wages at state-owned enterprises, however, were strongly linked to productivity.[10]

This analysis differs from previous Hungarian wage studies in an important aspect: we look at wage dispersion at the firm, rather than at the employee level. The disadvantage of analysing average company wages is that assuming homogeneous labour we lose the human capital component of wage setting. However, due to the constraints of the available data, that is necessary for analysing the dynamic adjustment process of wage setting, as we cannot identify individuals over time in our sample. The most important deficiency of the human capital based wage models is that they are static, thus unable to handle the adjustment process. One major feature of transition economies is that agents have to cope with much larger shocks than in mature market economies, thus adjustment to changed circumstances is essential.

Several empirical papers, written on corporate wage setting in transition economies, used the above-formulated assumptions. Polish wage determina-

9 Several alternative mechanisms have been suggested for explaining why firm size (*e.g.,* measured by the number of employees) may have a positive influence on corporate wages, *c.f., Bayard and Troske* (1999).

10 Foreign-owned firms seem to have different wage setting strategies in different transitional economies. *Damijan and Kostevc* (2002) analysed whether foreign investment had a positive effect on wage catch-up in transition economies. Their main result was heterogeneity: while they found a strong positive impact for Bulgaria and Hungary, the relationship was reversed in Estonia and Romania, and FDI had no significant effect on wages in Slovenia.

tion was especially extensively analysed. *Grosfeld and Nivet* (1997) and (1999) estimated wage equations for the period 1990–4, using a Polish corporate dataset.[11] They found productivity as the main driving variable of inter-firm wage differentials. Sharing productivity rents varied with ownership structure, and was strongly asymmetric: while productivity losses had no impact on wage setting, productivity gains significantly increased wages.

Christev and Fitzroy (2002) extended the above analysis of Polish wage determination to the period 1994–7, using a similar panel dataset. They paid special attention to the consequences of the privatisation process. Following the logic of the rent-sharing model, they analysed the wage effect of changes in productivity. Their results largely confirmed the previous findings, but they also found a significant wage effect of declining productivity in this later period, although rent-sharing remained asymmetric. However, the rent-sharing rules were different at fully privatised companies and at firms still having substantial state ownership.

Mickiewicz et al. (2005) further extended the scope of analysis. They used data from the period 1998–2001, but the more important extension is substantial: they tested several alternative hypotheses on the wage setting behaviour of Polish enterprises. They refined the analysis of the ownership structure: they not only distinguished majority private or state ownership, but also differentiated private ownership, whether the firm was privatised or *de novo* private enterprise. They also incorporated labour market conditions (*e.g.,* regional unemployment or employment rates) into the model, which had an atypically strong effect on corporate wage setting behaviour, even in the short-run. These coefficients were way higher than any comparable effect estimated for mature market economies. Corporate efficiency had a relatively smaller effect on wages than outside labour market conditions. Private firms were especially unwilling to share the rents from productivity gains with their employees, and that was true for both privatised and *de novo* firms. Except for this minor difference, ownership did not seem to have a measurable effect on corporate wage determination after taking labour market conditions into account. It may thus happen that the previously observed strong ownership effect (*Grosfeld and Nivet* [1997] and [1999], and *Christev and Fitzroy* [2002]) was due to the omission of these labour market conditions. It appears that the probability of *private investment* was strongly influenced by the labour market conditions, and as variables describing external conditions were omitted, ownership variables proxied their effect. The contradicting results of a simpler model in *Bedi and Cieslik* (2002) also suggest the endogeneity of the ownership structure. They interpreted their results supporting efficiency wage hypothesis, but their much stronger rent-sharing most probably is biased by the oversimplified model specification. However, all Polish studies found a strong, sometimes extremely intensive rent sharing. Furthermore

11 All Polish wage studies used very similar corporate datasets, based on financial reports of companies listed at the Warsaw Stock Exchange. This is a highly and very specially selected sample: most firms are large, and all firms started market oriented reorganisation, including at least partial privatisation prior to stock exchange listing. Even though some of these firms initially were in majority state ownership that never meant full state control: these firms already had some important private owners. Thus, this sample is far from being representative of the population of Polish firms, and empirical evidence derived from this information may be subject to strong selection bias.

an important lesson from the Polish empirical work is that corporate wage setting behaviour changed rapidly and substantially over time as transition progressed.

Hypotheses on Hungarian wage determination

The model specification, used for analysing the determinants of inter-firm wage differentials, is based on the surveyed theoretical and empirical literature. The model explains the average real wage (incl. all premia) at the firm with a dynamic adjustment model. Such a dynamic model gives a more realistic description of corporate behaviour: the firm, taking into account developments in the circumstances, re-optimises its activity level, and decides on the necessary changes, thus adjusting its behaviour, including wage setting, to the new situation. We assume that this adjustment cannot be immediate on the labour market: rigidities of labour market regulation, the cost of adjustment, and the institutional framework of inside bargaining jointly hinder the adjustment to the equilibrium wage (which is the marginal product of employed labour).

The first assumption of the model is that the company may share the rent of productivity gains (*Nickell and Wadhani,* 1990).[12] This rent sharing may be influenced by the size of the firm, which is measured by the number of employees (*Bayard and Troske,* 1999). External product and labour market conditions may also influence rent sharing: strong competitive pressure may limit the willingness, indeed the ability of the firm for any bargain, while dominant position may make the firm more pliable[13] (*Nickell et al.,* 1994). Firms in a favourable position on foreign markets, with high export commitments,[14] may react to wage demands with larger flexibility (*Abowd and Lemieux,* 1993). Ownership structure may also impact the wage policy of the firm. Substantial local unemployment may limit the bargaining power of employees, forcing them to accept lower wages (*Blanchflower and Oswald,* 1994). All these factors may interact with each other. For example, in the initial model specification ownership, firm size, market position, or competitive pressure may influence rent sharing, or, indeed, the effect of any other factor. Obviously, the initial specification incorporated factors without real measurable impact on the wage dynamics. Irrelevant factors, interactions were eliminated using standard statistical hypothesis testing. This statistical analysis was used for identifying the most important factors determining wage setting in Hungarian firms.

As output, employment and wage decisions are the consequences of the same optimization process at the firm, wage, employment, output, exports, productivity, and all related variables (for example, market share, or various interactions) were treated as endogenous variables. Differenced lagged vari-

12 Rent sharing may be consistent with efficiency wages: the company may want to attract better (*i.e.,* more productive) labour by paying higher wages. In this case the higher wage may only reflect the market return of the higher human capital of the new employees, which may be the precondition for (further) productivity improvements. Thus, the positive wage effect of productivity growth may just be the consequence of the heterogeneity of labour. This means that productivity must be treated endogeneously even if we disregard the simultaneous nature of corporate decisions.

13 Competitive pressure was measured by two proxies: the market share of the firm within its four digit sector, and market concentration, also within four digit sectors.

14 Foreign exposure is measured by the share of export revenues within total output.

ables and sectoral indicators (related to the detailed sectoral classification) were used as instruments during the GMM estimation.

I also tested the homogeneity of corporate labour market behaviour with respect to differences over ownership, region, sector, size and time.[15] I regularly found significant structural breaks according to sector and time, while wage setting almost always proved to be homogeneous with respect to the other factors. Thus, despite the fact that the statistical analysis was based on a panel dataset, I had to estimate annual sectoral wage equations, *i.e.,* the same model was re-estimated for all sectors and for all years in the sample. The final model specification included the explanatory variables that proved to be significant in at least some of the estimated equations.[16]

Results

The first important result is that the wage setting behaviour of Hungarian firms was homogeneous with respect to the ownership structure and size, unlike in some other transition economies, *e.g.,* in Bulgaria or Poland. That is also an important difference to previous Hungarian results, which were based on an augmented human capital model, using individual employee data. Ownership did influence the returns to human capital, but apparently these effects offset each other, thus they are not discernible at the company level. It is not surprising that corporate wage setting behaviour changed over time: transition is the period of substantial behavioural adjustment. The general picture is that behavioural differences in wage determination in any year are related to the major technological differences, represented by the main sectoral classification.[17] It is interesting to note that sectoral differences in the raw wage data were much smaller than those related to ownership or region, still, the real behavioural differences are related to sector.

The empirical model specification was usually acceptable for the different annual sectoral models, except that they included many insignificant coefficients. The initial model specification consisted of 45 coefficients. Not surprisingly, the estimates were strongly influenced by multicollinearity among the variables: while most coefficients were individually and jointly insignificant, the joint omission of all insignificant explanatory variables substantially changed some of the remaining coefficients. Thus, the final specification still included some coefficients, which were insignificant, but their omission would have changed the results. Also, explanatory variables, which proved to be significant in some cases, were kept in the model estimated for all subsamples, thus ensuring the comparability of the empirical models.

Lagged variables, especially the lagged wage, were essential explanatory factors of the regression models. That indicates the importance of the dynamic adjustment process. Adjustment to the changed conditions was almost immediate in the "golden age" of very rapid growth in the period 1996–2000.

15 Obviously, when testing for a structural break, some corresponding variables had to be omitted. For example, when testing ownership, the ownership related variables were excluded from the model.

16 Occasionally, there were also significant coefficients for the included variables in some estimated equations. As we estimated the same model over various samples (sectoral estimates for each year separately), it is no surprise that some coefficient estimates seemed to be significant. If we use 0.05 significance level, we expect that one in twenty coefficient estimates will seem to be different from 0 even if the true value is exactly 0. Thus, rarely significant explanatory variables were ignored.

17 Sectoral wage negotiations are almost unknown in the Hungarian competitive sector, thus that cannot explain the sectoral heterogeneity of wage setting.

In this period the wage model could be simplified to a differenced equation, where wage changes are a function of changes in productivity and other variables. Adjustment was hindered by the larger and less predictable shocks before 1996 and after 2000, but was still much faster than in developed market economies. (*C.f., Surányi and Kőrösi,* 2003.)

Usually, productivity is the single most important explanatory variable of wage determination. The short-run coefficient is almost always significantly positive. The long-run elasticity is frequently uncertain. Its large standard error is mostly due to the rapid adjustment: in most cases it is the change of productivity rather than its level, which drives the development of inter-firm wage differentials. The short-run productivity coefficient is large by international comparison: a one percent gain in productivity may frequently yield up to half a percent wage increase, *ceteris paribus,* although with significant sectoral and temporal variations. This elasticity is much larger than the values observed for mature market economies (typically not larger than 0.2), although much smaller than some Polish estimates (up to 2). Rent sharing was the largest and the most stable in some labour intensive manufacturing sectors (*e.g.,* textile, clothing and footwear). Firms in more capital intensive manufacturing sectors, such as the engineering and chemical industries, were less willing to share the benefits from the rapid productivity growth: the elasticity was insignificant in some years, and was usually smaller than in the light industries. The willingness to share the rent of productivity growth with their employees declined in all manufacturing sectors except in the light industries, although with a very large variation. This trend is less visible in the non-manufacturing sectors, but those were usually characterised by lower rent sharing, except for services.

Although variables representing the market position of the firm, or competitive pressure were typically insignificant, both individually and jointly, they still frequently had a substantial impact on the value of the rent-sharing coefficient. Figure 2.1 depicts the development of short-run productivity elasticities, *i.e.,* rent-sharing for the major sectors, while Figure 2.2 depicts the same for selected manufacturing sectors. The left-hand graph shows the time path of these coefficients after omitting the insignificant variables in both figures, while the right-hand one shows the same values from the broad model, including all variables describing market position and competitive pressure. The omission of these apparently completely irrelevant variables clearly biases the estimated rent-sharing coefficient downwards in a large part of the sample period. Although market concentration or strong competitive pressure do not directly influence corporate wages, they limit the ability and/or willingness of the company to share the proceeds of productivity growth with its employees. (Still, even these downwards-biased estimates are high compared to the estimates for mature market economies.)

Figure 2.1: Rent sharing in major sectors

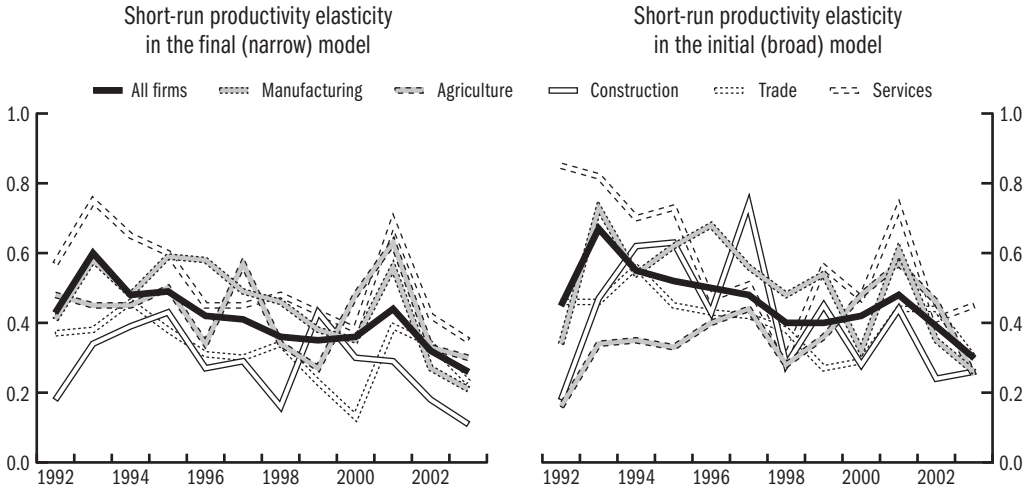
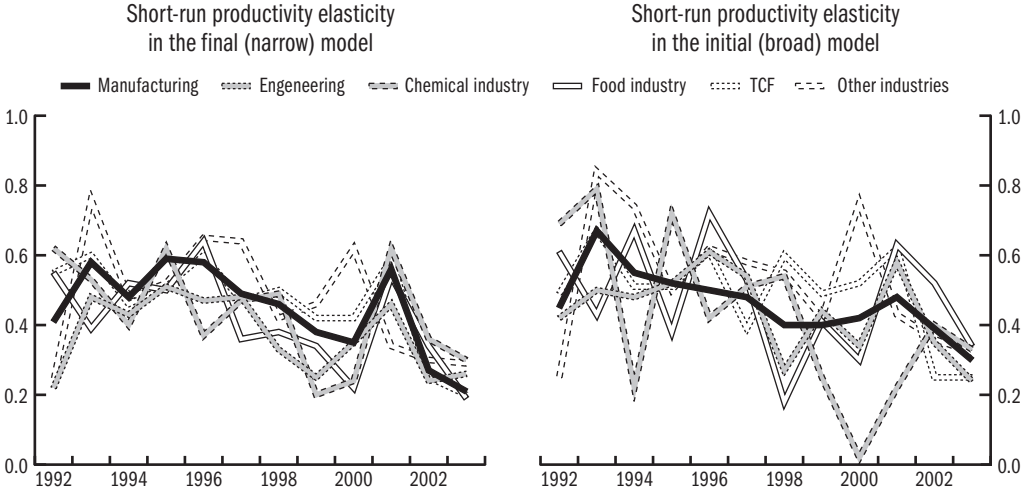


Figure 2.2: Rent sharing in manufacturing



The role of the ownership structure was also extensively studied. Neither ownership variables, nor their interactions with other factors were significant in the initial specification. All ownership related variables could be omitted from the final specification; their omission did not change the statistical properties of the estimated model. Still, I revisited the role of ownership after finalising the specification for empirical analysis. Table 2.1 summarizes the foreign ownership coefficients and their significance (LM-test), when the final specification was augmented by the foreign ownership indicator. Although the foreign ownership almost always has a positive effect on wages, when sig-

nificant, but it rarely matters; it usually gives a negligible premium. And it is insignificant in the majority of the cases, just as all other ownership variables. The only difference is that foreign ownership tends to have a significant wage effect in 1995–6, during the peak of FDI related privatisations, while other ownership variables were mostly significant in 1997. However ownership never had a large impact on wages.

Table 2.1: Foreign ownership premium

Classification	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
All firms	0.06*	0.00	0.01	0.03**	0.04**	0.03**	-0.01	0.01	0.01	0.03**	0.02**	0.02**
Manufacturing	0.10**	-0.04*	0.00	0.02*	0.01	0.01	-0.03*	-0.01	-0.01	0.01	-0.01	0.00
engineering	0.07	-0.02	0.02	0.01	0.03	0.05*	-0.03	-0.02	0.00	0.05**	0.01	0.00
Chemical industry	-0.01	0.01	0.09*	0.09*	-0.01	0.02	-0.01	0.02	-0.01	0.03	0.02	0.03
Food industry	0.08	0.08	0.08	0.07*	0.05	0.01	0.03	0.05	0.03	0.06	0.02	0.05
TCF	0.06	0.00	0.02	0.05**	0.05*	0.00	0.01	0.01	0.03	0.04*	0.00	-0.01
Other industries	-0.06	-0.08*	-0.05	0.05	0.04	0.03	0.01	0.04	-0.04	0.06	0.02	0.01
Agriculture	0.00	-0.08	0.10	0.05	0.08	0.02	0.02	0.04	0.09*	-0.01	0.01	0.09**
Construction	0.12	0.18*	0.04	0.03	0.04	0.10	-0.05	-0.02	0.08**	0.05	0.08	-0.02
Trade	-0.04	0.02	0.00	0.01	0.04*	0.01	0.01	0.03*	-0.01	0.06**	0.04**	0.04**
Services	0.01	0.09	-0.01	0.04	0.02	-0.01	-0.01	0.02	0.01	-0.02	-0.01	0.03
Small firms	0.15*	-0.01	0.01	0.04*	0.02	0.04**	0.00	0.02	0.00	0.02	0.02**	0.04**
Medium-sized firms	0.02	0.00	0.01	0.03*	0.04**	0.02	0.01	-0.01	0.02	0.04**	0.01	-0.02*
Large firms	0.07	0.00	-0.06*	0.02	0.07**	0.00	0.00	0.00	0.00	0.06**	-0.01	0.00

Legend: The value of the coefficient shows the difference between the logarithm of the average wage at foreign and domestic companies, *ceteris paribus* (*i.e.,* assuming identical productivity, employment, etc.). If the coefficient is 0.01, then foreign-owned enterprises pay 1 percent higher wage under identical conditions. One asterisk indicates that the coefficient is significant at the 0.05 probability level, while two asterisks indicate significance at the 0.01 level.

Foreign-owned enterprises paid higher wages on average than domestic ones. But these higher wages are not directly caused by the foreign ownership: they were consistent with the higher productivity of foreign-owned firms. Another important explanation is the dynamic nature of the wage equation. As the past wage level is a very important component of the wage setting model, the model really measures whether the ownership variable causes a difference in the *wage setting strategy of the firm,* rather than in the actual wage level. After privatisation, these firms followed similar wage setting rules as domestic companies. Unlike in some other transition economies such as Poland, foreign-owned firms did not have a distinct wage policy. That probably reflects the much higher penetration of foreign investors into the Hungarian corporate sector: foreign-owned companies set the pace for all firms in the Hungarian economy.

These results apparently contradict to the previously cited results of K*ertesi and Köllő* (2001). They found that foreign ownership and market structure both had a significant impact on individual wages. But there are important

differences between their analysis and this one. First, they used a static model. Thus, they explained the differences in wages. The lagged wage frequently has a coefficient close to 1 in our dynamic model, thus this analysis mostly reflects differences in wage dynamics rather than in levels.

Secondly, they broke up the sample according to ownership categories, assuming that behavioural differences are related to ownership, and not to the sectors. My empirical results do not support that assumption: sectoral differences were substantial, but ownership did not cause changes in behaviour. If I do not differentiate estimation by sector, I also find significant ownership and market structure effects on wages estimated from the entire sample of all firms, or all manufacturing firms, etc, in almost all years. Also, interactions of ownership variables and productivity almost always are significant, if estimated from the entire sample. But those model specifications are always rejected by the diagnostic tests, because they are ridden by structural breaks. Ignoring the technology related heterogeneity of the wage determination would yield strong ownership and market structure impacts, comparable to those in *Kertesi and Köllő* (2001). But the coefficient estimates of these pooled models are biased by the specification errors.

The most likely explanation is that there are substantial sectoral differences in ownership structure. We measure most market structure and competitive pressure variables at a detailed sectoral level, thus their differences are obviously related to the sectoral classification. As wage determination is heterogeneous over the sectors, when ignoring these structural breaks, their impact is largely taken up by variables related to sectoral differences, *i.e.,* by the ownership and market structure variables.

It would theoretically be possible that the omission of the human capital variables, representing the quality of labour, caused a substantial bias in the ownership-related coefficients. But the large sectoral variation of the estimated coefficients (especially the estimates for the short-run productivity elasticity of wages) makes that proposition unlikely. It is difficult to imagine a mechanism, which would always just eliminate the ownership effect in such different estimates. It is much more plausible to assume that a more or less homogeneous wage setting strategy emerged in practically all sectors, and this strategy is only differentiated according to ownership in extreme situations.

The coefficient for the regional unemployment (wage curve effect) has a trend different from the one predicted in *Kertesi and Köllő* (1997b). Local unemployment indeed had a significant negative impact on wages in the early 1990's, but that disappeared after the mid-1990's. Companies most probably quickly adjusted their wage policy to the labour market conditions when mass unemployment became an important characteristic feature of the labour market in the early transition period, creating substantial unemployment-related wage differentials. The distribution of regional unemployment

has remained very stable ever since. Although unemployment levels changed, the relative differences in regional wages reflected differences in labour market conditions. As lagged wages are incorporated into the dynamic model, and these lagged wages already reflected the differences in local labour market conditions after the mid-1990's, there was no need for further differentiation. That explains why the wage curve effect was not observable later in this dynamic setting.

The intensity of import competition is the only variable measuring competitive pressure frequently having a significant coefficient. It is remarkable that when import competition had a significant effect on wages, that typically was positive. *Kramarz* (2003) found an opposite effect for French firms. There is, however, an important difference between the two studies: Kramarz could take the human capital of employees into account. Firms facing stiff foreign competitors are likely to employ better quality labour to improve their competitive position. Thus, the positive coefficient of import competition may reflect the higher wages paid to better and thus more productive employees.

Firm size (measured by the number of employees) usually has a small effect on wages in the sectoral estimates. That is, large firms tend to pay higher wages on average, or to increase wages faster, but this premium is tiny, and sometimes is reversed.

Temporal comparison identifies clear trends in the productivity and the regional unemployment coefficients. The other coefficients rather fluctuated without a clear tendency. These fluctuations, however, seem to be strongly synchronized with each other, and with the fluctuations in rent sharing (short-run productivity elasticity). Corporate wage setting seems to be rather sensitive to the developments in the macroeconomic conditions. The most visible indicator for that sensitivity is the substantial drop in the short-run productivity elasticity in all sectors in 2002–3, reflecting the coincidence of the business and the political cycles.

Conclusions

Sharing the rents of productivity improvements seems to be the single most important factor determining corporate wage strategies in Hungary. That is the only factor having a strong impact on wages in all sectors at most time points. There are substantial sectoral differences in the intensity of rent sharing, which may reflect technology related differences in work practices as well as the varying competitive environment of firms. Rent sharing is much more intensive in Hungary than in any mature market economy however its importance declined over time.

Productivity seems to be the dominant determinant of wage setting, and the only important variable influencing wage determination in the entire period. The impact of all other factors is much smaller. The introduction to

this chapter described large regional wage differences, and similar ones related to ownership. However, these differences seem to be largely consistent with productivity differences, especially after the 1995–6 macroeconomic stabilization.

This intensive rent sharing is somewhat paradoxical. Rent sharing is usually attributed to the bargaining power of trade unions, to organised labour. However, union power is negligible in most of the Hungarian corporate sector. Trade union membership is small and Hungarian trade unions are only combative in the public sector. The strong rent sharing rather reflects a different important characteristic feature of Hungarian transition.

Hungary gives an example for intensive rent sharing without strong trade unions. During the period of large-scale privatisation the (frequently foreign) investors had to realise that few employees were equipped with the skills necessary in a competitive market environment. Transition to the market economy really is a wholesale structural readjustment, which offered huge opportunities to the firms able to exploit them. Successful companies could increase their output by 30–40 percent annually from the mid-1990's. Thus, those companies, which were able to invest into productive capacities, fast productivity improvements, better work practices, and more efficient management, were eager to attract properly qualified labour by paying higher wages. That is reflected in the ever-increasing returns to education in the Mincerian wage equations. (*C.f., Kertesi and Köllő* [2001] or *Galasi* [2003].) Multinational companies were best placed for exploiting these market opportunities, as domestic firms faced strong liquidity constraint during much of the high growth period because of the underdeveloped domestic financial markets. Multinationals not only had a natural access to foreign financial markets, and thus faced no such liquidity constraints, they also had much more modern management and marketing skills. Successful companies could easily pay the wage premium of the well-trained, and thus highly productive young employees. As these well-trained employees were in short supply, expanding firms were forced to attract additional high quality labour by constantly raising their wages. That explains why companies were willing to share the rents of productivity gains even without trade unions. The skill mismatch improved the bargaining position of the well-trained employees in a rapidly expanding market.

Changes in the education system: the expansion of secondary and tertiary education, and a modernisation of the teaching material gradually increased the inflow of better educated employees. As the pool of properly trained people grew, firms faced a less tight labour market, which is reflected in the declining trend of rent sharing.

As the structural adjustment process makes the Hungarian economy increasingly more similar to mature market economies, and labour supply adjusts to demand, the intensive rent sharing is likely to disappear. It may very

well happen that other factors will drive corporate wage determination in the future, factors such as size, market structure, or competitive pressure. Corporate behaviour was still characterised by the transition process in the Hungarian labour market in 2003, but the special effects of transition were gradually losing importance.

3. THE EFFECT OF THE PUBLIC SECTOR WAGE INCREASE ON THE PUBLIC-PRIVATE RELATIVE WAGES

ÁLMOS TELEGDY

One of the most important promises of the election campaign in 2002 was a fifty percent wage increase in the public sector and the winning socialist-liberal coalition government fulfilled its promise. In September, a few months after the elections, the wages of all public sector employees – incorporating roughly 800,000 people – were raised from one day to the other.[18] This can very well be considered as one of the most important labour market measures directly affecting a significant proportion (approximately 20 percent) of the Hungarian labour force. The effect on the labour market can be considerable as the introduced measures altered the relative wages and had a strong influence on both the supply and demand side of the market.

The wage increase had a positive effect on labour supply. The public sector is concentrated in three industries – education, health care and public administration – in which the ratio of the private sector is very low. As the accumulated human capital of public sector employees is worth more in these sectors than elsewhere, higher wages in these industries can induce a higher labour supply among them.

The wage increase is also important as far as fairness in concerned. The wages of public sector employees were lagging far behind the salaries earned in the private sector in all occupation groups and at every educational level (as is shown later in this study). Furthermore, the public sector might favour employees from more disadvantaged groups: new entrants to the labour market, women and the elderly. If the wage increase induces higher participation among these groups, the direct effect can be the higher participation of disadvantaged people as well.

Another positive effect of the wage increase of employees in education and health care is that in the medium or long run this has a positive influence on the human capital of the whole population, as on the one hand it decreases the migration from these occupations, and on the other hand more people

18 In this study only the budgetary institutions are considered as public sector, state owned production units are not included, as the wage increase in 2002 did not cover the latter ones, and this study focuses on the effects related to this increase. For general industrial wage differences see *Kézdi* (2000) and *Kertesi and Köllő* (2003).

might choose professions in these sectors of the economy. In conclusion, the long term effect of the wage increase can reduce negative selection both at entering and leaving these occupations, which had a negative effect on the quality of professions tied to the public sector.

These measures, however, also have disadvantages, which lead to a shrinking number of jobs. Public sector wage increase is a heavy strain on the budget, and as a result it is very likely that public sector employment should be cut.[19] The increased wages may have a direct effect on the labour demand of the private sector, too. As in certain fields mobility does exist between the public and private sectors, the wage increase might also raise the salaries in the private sector: if the wage premium in the private sector decreases or vanishes, enterprises should increase the salaries in order to keep the more able employees. Increased wages, however, have a negative impact on employment.

In this paper I present the extent of wage increase and its effect on the relative wages between the public and private sectors.[20]

Wage changes in the public sector: average wage increase

We start our analysis by showing the level and changes of average wages during the period of 2000–2004 in the public and private sectors. As seen in Table 3.1, at the beginning of the period studied real wages of public sector employees lagged well behind those of the employees in the corporate sector.[21] The average wage in the public sector was 74 thousand HUF, while in the corporate sector it reached up to 95 thousand HUF, which represents a 21.6 percent difference. However, the wages of employees in public institutions in the coming years rose more significantly than in the corporate sector. Average wages in the public sector increased by 8.9 percent in 2001, and by 10.7 percent in 2002, while in the corporate sector this increase was 3.1 and 8.6 percent, respectively. As a result, the average wage difference shrank to 15.6 percent by 2002.

As shown by the data, the salary increase in 2002 raised real wages in the public sector by 36.2 percent, thus the relative average wage rose by 31 percent. As the public wage increase in comparison to the corporate sector was again more significant in the following year, the difference between the average wages increased to 18 percent in 2004. (That year the average wage in the public sector was close to 127 thousand HUF, while in the corporate sector it reached only 105 thousand HUF.) According to our calculations the promised "50 percent" raise materialized as a 35 percent increase only. This is partly the consequence of the fact that in Table 3.1 we calculated real wage differences (the consumer price index rose by 4.7 percent from 2002 to 2003), but the promised wage increase considered nominal wages. However, the nominal wage increase proved to be only 41 percent, 9 percent less than the promised 50 percent, at least according to the sample used in this analysis.

19 The enactment of the 122/2004 law, which is aimed at helping people laid off from the public sector in finding a job, and the measures taken after the parliamentary elections in 2006 resulting in a decreasing number of public employees show that the government is indeed planning layoffs from the public sector.

20 A deficiency of the analysis derives from the fact that after 2002 data are available for 2 years only, therefore longer tendencies cannot be identified. Furthermore, mobility data would also be needed to estimate how the wage increase affected the number of people entering and leaving their job in the public sector.

21 Data on wages are calculated from the Wage Survey database (the wages of public sector employees are gained using a 10 percent random sample taken from this database). Small enterprises are under-represented, and as the employees of large companies usually earn more than the employees of smaller entities, the results are somewhat distorted in favour of the competitive sector.

Table 3.1: Public and private sector wages

	Public				Private				Public/
Year	Average	SD	Change	N	Average	SD	Change	N	Private
2000	74.2	52.1	n.a.	53,038	94.8	114.0	n.a.	125,145	0.78
2001	80.8	57.3	8.9	53,995	97.7	105.7	3.1	127,995	0.83
2002	89.5	58.8	10.7	66,252	106.1	118.9	8.6	126,520	0.84
2003	121.9	64.1	36.2	39,958	106.2	116.6	0.1	149,395	1.15
2004	126.6	77.1	3.9	43,918	107.3	122.9	1.0	165,923	1.18

Source: Hungarian Wage Survey database.
Notes: Average wage refers to May, deflated by CPI (base year: 2000). Changes in percentage. n.a. = not applicable.

As the average wage is also influenced by the employment composition of the sector, it is possible that the measured 41 percent was due to changes in the public sector employment composition: in the event that the government – in parallel with the wage increase – initiates the restructuring of the public sector resulting in a decreasing ratio of higher ranked and more educated officials, then the average wage increases less, as the proportion of high-wage earners is smaller following the wage increase. Table 3.2 shows the composition of public sector employees by gender, age, education and occupation in 2002 and 2003. I created four categories of education: employees with 8 grades of schooling or less, vocational education, high school diploma or a university degree. I categorized the employees into five groups by occupation: unskilled, skilled manual, skilled non-manual, professionals and managers. Compared to 2002, the following year saw the ratio of women among public sector employees 3.9 percent higher and the average age rose by two years. In 2002, 16.4 percent of public sector employees had no more than 8 years of education, 15.5 percent had graduated from vocational schools, 28.9 percent had a high school diploma and 39.1 percent had graduated from college. In 2003 the number of graduates from vocational schools was nearly 5 percent less, while that of college or university graduates rose by 4.4 percent. The composition by occupation supports this fact showing that in 2003 5.5 percent less employees with a vocational education worked in the public sector than a year before, and the number of skilled white collar workers and professionals grew by 2.7–3.0 percent.

All the above confirm the fact that, following the wage increase, the number of public sector employees with higher than average wages did not drop, but in fact increased. Thus the data do not support the assumption that the lower than 50 percent wage increase is due to the changes in the composition by occupation and education. However, the higher ratio of women could possibly lower the rate of average wage increase, as it is apparent from the data that women in the public sector on average earn 23 percent less than men.[22]

22 There is a possible distortion in the data as the sample size was very different in 2002 compared to 2003. For verification I compared 2002 and 2004 data; the results are very similar to those shown in the Table, which proves that differences in the composition are not likely to derive from the error in sampling.

Table 3.2: Public sector composition, 2002–2003

Year	2002	2003	Percent change
Gender			
Female	72.9	76.8	3.9
Age			
Average age	42.5	44.7	2.2
Education			
8 or less	16.4	16.5	0.1
Vocational	15.5	10.8	–4.7
High school	28.9	29.2	0.3
University	39.1	43.5	4.4
Occupation			
Unskilled	15.4	15.2	–0.2
Skilled, manual	10.9	5.4	–5.5
Skilled, office	34.0	36.7	2.7
Professional, non managerial	31.3	34.3	3.0
Manager	8.3	8.4	0.1
N66,252	39,958		

Source: Hungarian Wage Survey database.

So far this study has surveyed general trends in wage changes. Now we break down these changes by education and occupation. Figures 3.1 and 3.2 show the trends in average wages by education and occupation. During the period observed the lowest wage increase affected vocational school graduates, their earnings being 54 percent higher in 2004 than four years previously. (Employees in this category even suffered a 2 percent drop in their wages in 2004 while the average wage in other categories never decreased.) The earnings of employees with no more than 8 grades of education and with a high school diploma grew at the same rate (by 64 and 66 percent). Employees with a higher educational degree benefited from the largest increase, the rate in this case being 71 percent. The nominal wage raise in 2002–2003 reached 50 percent only in the case of vocational school graduates.

Figure 3.1: Public sector wages by education

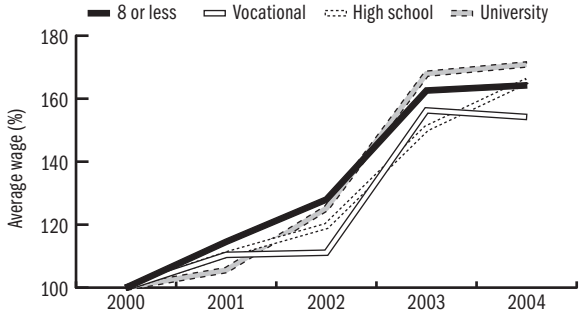
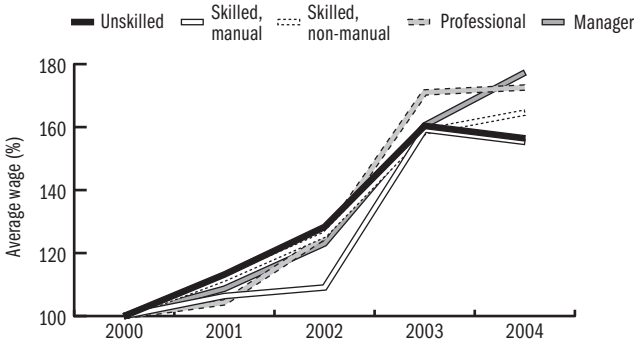


Figure 3.2 shows wage changes by occupation. The results are very similar to the ones concluded from Figure 3.1. The lowest wage increase affected vocational school graduates (55 percent), while the highest was received by people with professions for which a higher educational degree is necessary (73 percent) and by managers (77 percent). It is worth mentioning that the wages grew in almost all education and occupation groups even before the significant raise in 2002 and in certain groups in 2004, as well.

Figure 3.2: Public sector wages by occupation



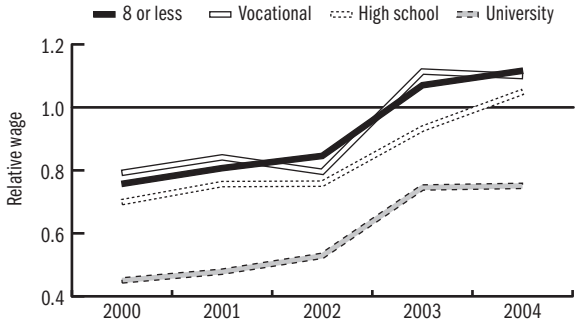
Public and private relative wages

Having examined the evolution of average wages, we now turn to the relative wages by occupation and education. The political aspects of this are interesting because employees in the public sector do not take into account the average relative wages. Instead they consider the wages paid within their occupation and education category. From economic aspect it is also important because the average relative wage within a given educational and occupational category will be the driving force behind selecting between the public and private sectors.

Figure 3.3 shows the relative average wages by education groups. As *Kézdi* (2000) shows, relative wages significantly differ by the level of education. In 2000, at the beginning of the period observed, the wages of vocational graduates total up to 79 percent of the wages in the corporate sector; those of elementary school graduates are very similar (76 percent); the relative wages of high school graduates are somewhat lower (70 percent); those who lose most on being employed in the public sector are the employees with a higher education diploma, as their wage was only 45 percent of the wages earned in by people with a similar educational background in the corporate sector. The government must have been aware of this fact as until 2002 the relative wages of higher educational graduates increased faster than those of other employees – thus the wage premium of higher educational graduates in the private sector diminished by 8 percent in two years. In the same year the average wage

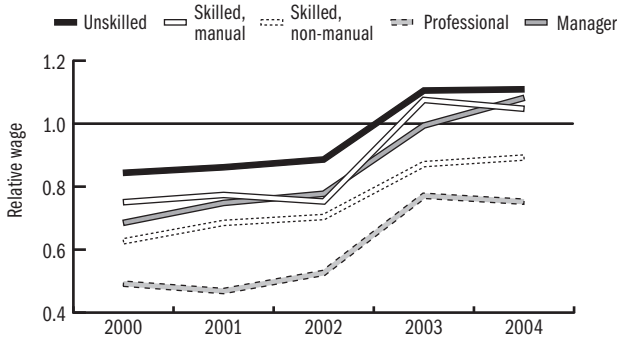
of people with a high school diploma lagged behind by 24 percent compared to workers with a similar education in the corporate sector, that of vocational school graduates was behind by 20 percent, the highest relative wages were paid to people with the lowest education – their earnings were only 15 percent less in the public than in the private sector.

Figure 3.3: Relative wage by education



As was expected, the high wage raise abruptly changed the relative wages between the two sectors. The wages in the public sector approached those of the private sector, and even surpassed them in the lower education groups: for elementary and vocational school graduates the public sector paid a 13–15 percent wage premium. The relative wage of employees with a high school diploma remained below the wages paid in the private sector by 7 percent, and in the higher education group the lag was still significant –25 percent. Relative wages stagnated during the year following the considerable increase, except for the salaries of high school graduates, which went through an additional raise, and in the last year of the period in question they already surpassed the wages in the competitive sector by 5 percent.

Figure 3.4: Relative wage by occupation



The relative wages of the different occupation groups show a similar picture to the wage differences by education. Unskilled workers had the highest relative

wage (84 percent in 2000), this was followed by the relative wages of skilled manual workers (75 percent), and managers (69 percent). The relative wage of skilled white collar workers was 63 percent, and that of highly educated professionals a mere 49 percent. At the end of the period the ranking was the same with the exception that the wage of managers was the second best. This year the public sector already pays a premium to three occupational groups. These are the unskilled workers whose average wage is 10 percent higher in the public than in the competitive sector, the managers (8 percent) and the skilled manual workers (5 percent). The relative wage of skilled non-manual workers is 90 percent, and that of professionals is 75 percent.

There are several possible explanations for relative wage differences. One of them is that fringe benefits are higher in the public than in the competitive sector and they compensate for, or at least diminish, sectoral wage differences. However, it is contradictory that managers are the most significant recipients of fringe benefits and yet are paid similarly in both sectors. It is also possible that there is less stress in the public sector, working hours are shorter, and this compensates the employees for the lower wages. For example, if people work shorter hours in the public sector then they have more time for additional work activities, which makes up for lower wages. However, this is in contradiction to the fact that wage differences are high for professional employees only, and it is also very unlikely that pleasant jobs were so strongly selected by occupation. The third possibility is that the government is well aware of the phenomenon that employees with a higher education degree are tied to the public sector, as doctors or teachers have their human capital valued much more in the public sector. The officials may also know that among managers and less educated occupation groups the mobility between the public and private sectors is higher. Finally, it is also possible that employers choose their employees according to certain criteria, not measurable for the researcher and on average they hire less efficient employees in the public sector. Unfortunately, these hypotheses cannot be tested due to lack of relevant data, but using regression techniques we can take into account all the observable characteristics of employees at the same time, i.e. we appraise the wage differences in the public and private sectors by comparing the wages of employees with the same observable characteristics. In this case we compare the wages of employees of the same sex, educational background, work experience and occupation in the public and private sectors.[23]

The nature of changes in the relative wages over time (Table 3.3) is the same as shown in the last row of Table 3.1: compared to the competitive sector the average wage in the public sector is lower in the first three years of the period and higher in the last two. However, the differences between the two sectors are much bigger where we control for human capital differences: this time the wages in the first year observed are 27 percent lower in the public sector

23 We determine the effect of a certain characteristic on the relative wage by creating an interaction between this variable and the dummy variable of the public sector.

compared to the 21.6 percent we calculated without using control variables. And at the end of the period the wages are only 8.4 percent higher in the public sector (set against the 18 percent).

Table 3.3: Change of the relative wage over time

Year	Effect	
2000	-0.270	(0.003)
2001	-0.257	(0.003)
2002	-0.205	(0.002)
2003	0.070	(0.003)
2004	0.084	(0.003)
N	951,831	

Notes: The coefficients represent year effects from Mincerian equations. Standard errors in parentheses. The coefficients are significant at the one percent level.

Table 3.4: Change of the relative wage by education and occupation

	2000		2004	
Education				
8 classes or less	-0.134	(0.007)	0.147	(0.007)
Vocational	-0.133	(0.007)	0.137	(0.008)
High school	-0.220	(0.005)	0.098	(0.005)
University	-0.432	(0.006)	-0.037	(0.005)
Occupation				
Unskilled	-0.061	(0.007)	0.175	(0.007)
Skilled, manual	-0.242	(0.009)	0.091	(0.010)
Skilled, office	-0.266	(0.005)	0.041	(0.005)
Professional, non-managerial	-0.479	(0.008)	-0.085	(0.006)
Manager	-0.199	(0.009)	0.248	(0.009)
N	178,046		209,827	

Notes:. The coefficients come from Mincerian equations augmented with occupation. and year effects. Standard errors in parentheses. The coefficients are significant at the one-percent level.

In Table 3.4 we ran regressions separately for 2000 and 2004, and we study wage differences by education and occupation.[24] In the first year of the period observed the regression results do not differ from simple averages. However, in 2004 the public-private sector relative wage increases significantly if we take into account all the observable characteristics at the same time. According to the estimated coefficients both low educated groups earned 14 percent more in the public sector in contrast to people with a similar educational background in the corporate sector; in case of high school graduates this difference is 10 percent, and for employees with a higher educational qualification the relative wage difference drops to 3.7 percent from the 25 percent we measured in Table 3.3! We also attain the same results by occupation groups. Highly qualified employees constitute the only category where the wages are lower

24 Similarly to observing changes over time, now we interacted educational and occupational category variables with the dummy variables of the public sector.

in the public than in the private sector, but the difference is less than 10 percent. Employees of other occupation groups receive a premium in the public sector. The premium is the highest among managers at almost 25 percent, the second highest premium is paid to the unskilled workers (17.5 percent), but the wage of skilled employees in the public sector also surpasses the respective wage in the corporate sector.

Summary

In this study I analyzed the wage differences between the public and private sectors during the period of 2000–2004, in the middle of which (in 2002) the wages of public employees were raised significantly and as a result their average wage increased by 36 percent in real value. Consequently, the average wage in the public sector surpassed that of the corporate sector by 18 percent. If we analyze the wages by education and occupation groups, the differences we find are quite significant. The highest relative wage throughout the period is related to the least educated employees and to the ones who occupied positions requiring unskilled labour. Workers pertaining to these groups earned 15 percent more in 2004 than their counterparts with a similar education or in similar positions in the corporate sector. Employees who graduated from college or university had the lowest relative wages (–25 percent in 2004). However, if we estimate the relative wages with the help of regression techniques and thus we consider all the observable characteristics of the employees at the same time then the wages of the public sector in 2004 are higher in almost all education or occupation categories than in the corporate sector. The only category it is not true for is college and university graduates, but the difference here is a mere 3.7 percent. According to our findings the government has not only levelled the wages in the public and corporate sectors but also pays a wage premium to the majority of its employees.

Some beneficial factors of employment can even raise this public wage premium. We measured only salaries while the employees also receive fringe benefits. Where the extent of the latter is more significant in the public sector then we underestimated the volume of the premium. It is also possible that other, non-wage type dimensions of jobs are not the same in the two sectors. If working in the public sector is less demanding, or the psychological satisfaction is higher, and job security is greater then, beside similar wages, the overall work conditions are better in the public sector. Finally, we would like to point out that if public sector employees differ from the employees of the corporate sector based on some characteristics, which are not measured by the data available to us, and these characteristics influence their productivity, then the results might be biased.

4. REGIONAL DIFFERENTIALS IN EARNINGS AND LABOUR COSTS

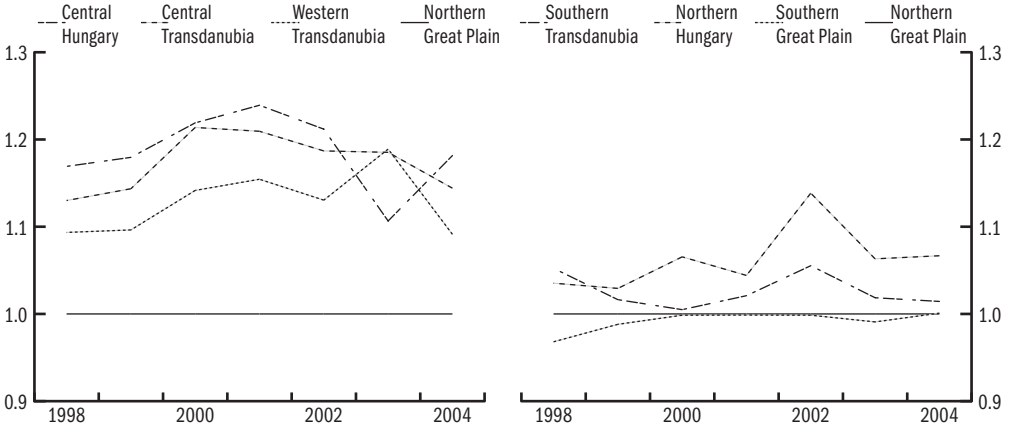
PÉTER ANDRÁS SZABÓ

Data suggests that wage differentials between Hungary's NUTS-II level regions are substantial. Figures 4.1 and 4.2 clearly show the three most developed macro-regions: Central Hungary, Central Transdanubia and Western Transdanubia. In the last 15 years the regional differentials – which are even greater in point of gross earnings – followed an increasing trend. However earlier studies (*Köllő* [2000], [2004]) showed that over the period of transition (1986–2001) these differences decreased significantly if we control for personal characteristics and productivity.[25]

In this chapter we analyse the dynamics of wage and earnings differentials between 1998–2003. We try to answer whether the tendencies of the last ten years have been continued or not. We also investigate the differences between the types of municipalities.

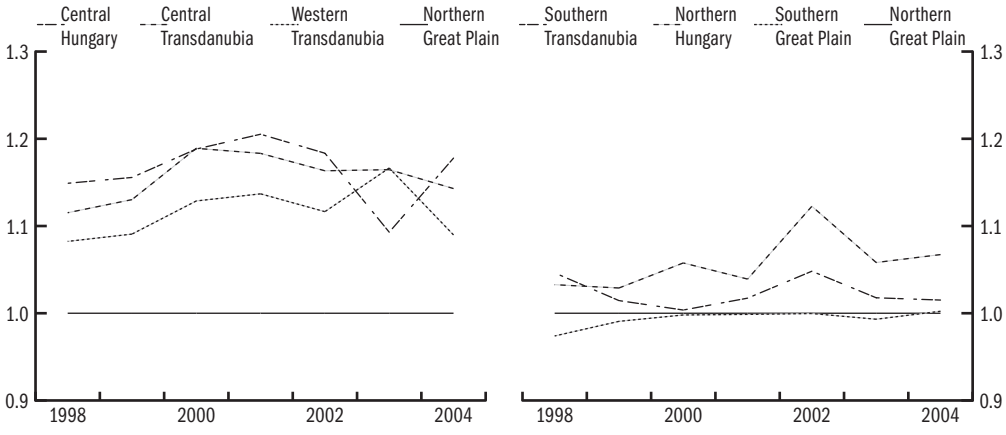
25 The calculations published here follow the method used by *Köllő* (2004), there is some difference, however, in the definition of the macro-regions. To make the comparison with the official statistical data easier, I used the definitions of the Central Statistical Office throughout the analysis. I am indebted to János Köllő for his help.

Figure 4.1: Gross wage differentials across regions (relative to the Northern Great Plain), 1998–2004



Source: Wage Survey.

Figure 4.2: Net wage differentials across regions (relative to the Northern Great Plain), 1998–2004



Source: Wage Survey.

According to neoclassical economics the mobility of labour and capital tends to equalise prices across markets. In connection with regional earnings it means that wage rates should have a tendency toward convergence across regions. However in Hungary growing wage differentials could be observed in the transition period.

Eberts and Schweitzer (1994) distinguish the following causes of regional wage differentials.

First, it should be recognized that *not all factors are mobile across regions*. Workers and firms may respond quickly to changes in market conditions, yet there are factors unique to a region, which influence wage rates and change only slowly.

Second, the convergence can be hampered by the *regions' diverse adjustment to various shocks*. Examining U.S. regional data *Blanchard and Katz* (1992) suggest that the adjustment to a local labour-market shock can take as long as 10 years.

Third, if we are to measure regional wage differentials precisely it is important to compare "identical" workers. The so-called "unconditional" wage differentials may not measure the real differences accurately. Therefore individual characteristics that affect productivity and wage cost (for example age or education) should be controlled for in any analysis of regional wage convergence.

Several studies analysed the Hungarian situation (e.g. *Fazekas* 2005, *Hahn* 2004). Their main findings are that the causes of regional differences are to be found on the demand side of the labour market. After the change of the regime the creation of new workplaces were related to the region's infrastructural position and the workforce's educational standard, therefore the new workplaces were concentrated mostly in the central and western part of the

country (*Fazekas* 2005). On the other hand differences in wages between the low and high unemployment regions can promote wage convergence through the potential gains of migration. Thus the substantial wage differences denote low regional mobility. Till 2003 the Hungarian employment policy did not treat the reduction of regional differentials as a priority, only at that time there originated a separate employment policy directive (*Fazekas and Németh* 2005).

After 1989 the most important factor influencing wage differentials was unemployment, thus we look at the relationship between wages and unemployment first. Then we analyse the differentials among types of municipalities and macro-regions. *Köllő* (2004) shows that wage differentials in the public sector are negligible among macro regions and smaller across types of settlements than in the private sector,[26] so throughout the analysis we deal only with the private sector.

Unemployment elasticity of earnings and labour costs

One of the most influential factors determining wage differentials is unemployment (*Köllő* 2000). The unemployment elasticity of earnings and labour costs[27] can be seen on Figure 4.3. The graphs show that if the regional (NUTS-IV) unemployment rate is one percentage point higher, how much lower – controlled for any other factors[28] that effect wages – the net and gross earnings are.

As shown in Figure 4.3, the unemployment elasticity of wages continued to decline after 2000. The peak in 2000 may be attributable to single factors (e.g. 57% minimum-wage increase) that caused the relationship between unemployment and earnings to loosen.

Figure 4.3: Unemployment elasticity of earnings and labour costs, 1998–2003

Source: Wage Survey.

The calculated elasticities are smaller in absolute value if the effect of firm's productivity is taken into account. It can be explained by the fact that in high unemployment regions the productivity is lower. After 1998 the elasticities

26 This is due to the bureaucratic rules of wage setting that allows no adjustment to (regional) labour market conditions. The observed weak negative correlations across types of settlements "reflect compositional differences – the fact that the depressed areas, most of them rural, have smaller schools, basic health institutions, and only low-ranked offices of public administration." (*Köllő* 2004, pp. 70.)

27 In the following labour cost means earnings at the given level of firm productivity controlled for individual characteristics, industry etc. The detailed description of the model can be found in the Appendix.

28 In the regression we controlled for gender, age, education, experience, industry, firm size, firm ownership, firm's capital-labour ratio and NUTS-II dummies.

of earnings and labour costs changed differently: till 2001 the difference between the two increased, which means that in high productivity regions there was a greater decline in the unemployment related labour cost differentials. In 2002–2003 this trend has been reversed, the gap between the unemployment elasticities of earnings and labour costs reduced. At the end of the period one percentage rise in the unemployment rate resulted in a 5 percentage decline in earnings and 6 percentage decline in labour costs.

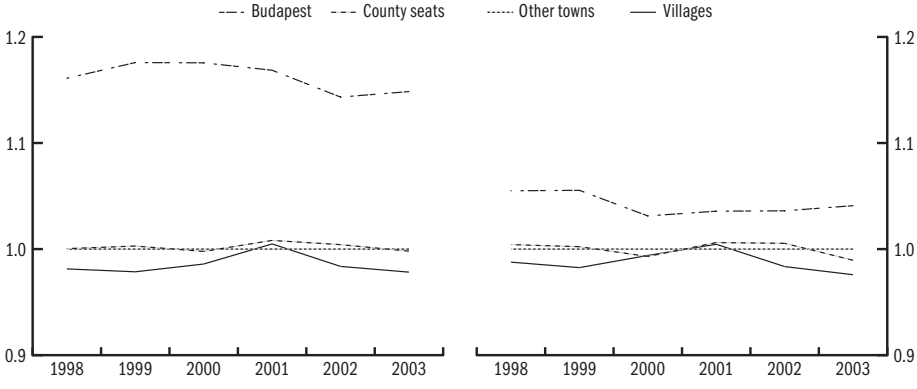
Examining 16 countries *Blanchflower and Oswald* (1994) found that wages have – not controlling for firm's productivity – an unemployment elasticity of approximately –0.1. This result was also confirmed by the authors' new calculations (*Blanchflower and Oswald* 2005). In Hungary the unemployment elasticity of earnings diverged from this 'benchmark' level, which is in line with *Köllő's* (2004) earlier calculations. The reason for this divergence may be the concentration of long-term unemployment and inactivity in specific regions. That being the case labour cost differentials can be persistent due to the lower competition for workplaces.

Nevertheless unemployment is not the only factor that affects wage differentials, therefore we use wage equations in our analysis of regional differences. For further details of the model see the Appendix.

Earnings and labour cost differentials across types of settlements

Figures 4.4 and 4.5 show the net and gross earnings differentials of Budapest, county seats and villages relative to other towns. In the calculations we controlled for individual and environmental characteristics (this is shown on the left graph) and also for firm's productivity and local unemployment (right graph).

Figure 4.4: Net wage differentials across types of settlements, 1998–2003

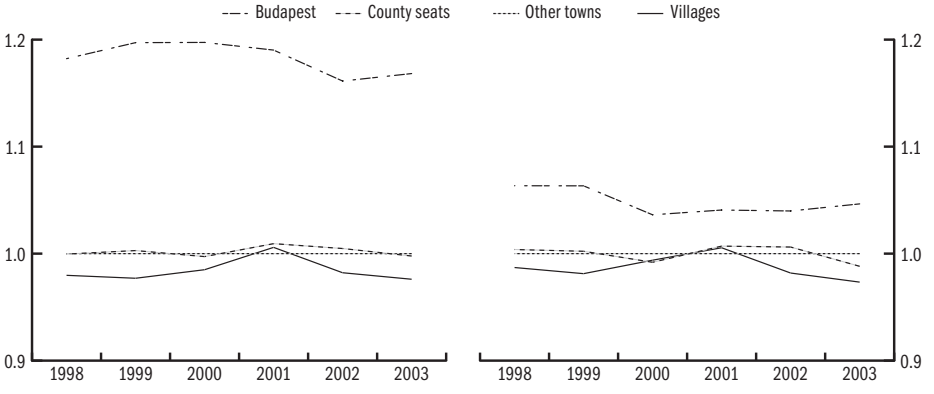


Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

Ignoring the effect of unemployment and firm's productivity the net earnings differentials are negligible through the whole period among county seats, other towns and villages, even the greatest difference does not exceed 3 per cent. The earnings differentials for Budapest versus other settlements are substantial, around 15–17%, though they have a decreasing trend.

If we control for unemployment and productivity, the differentials remain at the same level for county seats and villages. In the case of Budapest, however, there is a remarkable change: the productivity adjusted differentials drop below 5 per cent. Thus a firm holding its productivity level fixed and moving from the capital to a small town with the same level of unemployment realises only a modest, 4–5 per cent wage gain.

Figure 4.5: Gross wage differentials across types of settlements, 1998–2003



Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

The estimated labour cost differentials (Figure 4.5) follow a similar pattern. In order to realise the 17–20% labour cost differentials which a small town possesses relative to Budapest, the firm has to accept a higher unemployment rate and lower productivity resulting from the loss of the benefits of a prosperous, metropolitan area. If the firm wants these two factors to be held constant, the potential gain is 10 percentage point lower, about 5 per cent in 2003. The difference between county seats, other towns and villages has almost completely disappeared by the end of the period.

We can conclude that the earnings and labour cost differentials followed the same trend presented in *Köllő* (2004).

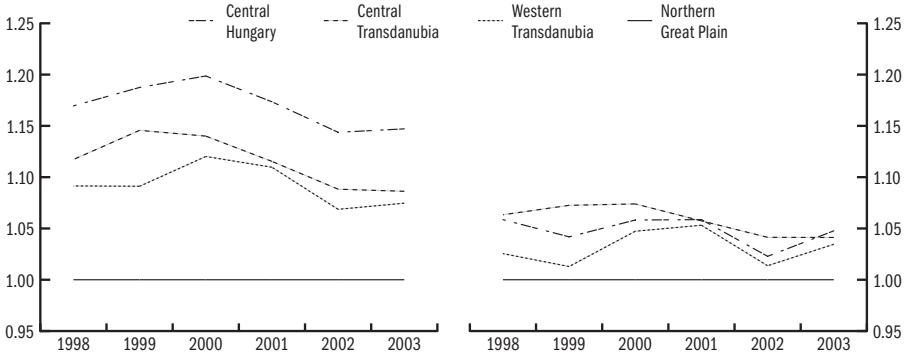
Regional differences

Regional differences – like those between types of settlements – are much smaller than the unconditional differences if we allow for individual and

employer attributes. On Figures 4.6–4.9 – similarly to Figures 4.4 and 4.5 – the left panel shows the earnings differentials controlling for individual and environmental characteristics, while on the right side we depict differences holding also unemployment and firm's productivity level constant. In the estimates the poorest region, the Northern Great Plain was treated as the reference category.

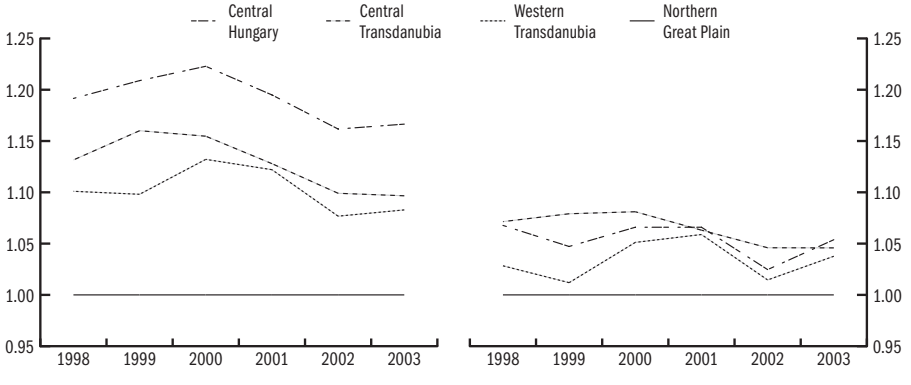
Figures 4.6 and 4.7 show the trend of the net and gross wages in the most developed three regions (Central Hungary, Central and Western Transdanubia) relative to the Northern Great Plain.

Figure 4.6: Regional net wage differentials, 1998–2003



Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

Figure 4.7: Regional gross wage differentials, 1998–2003



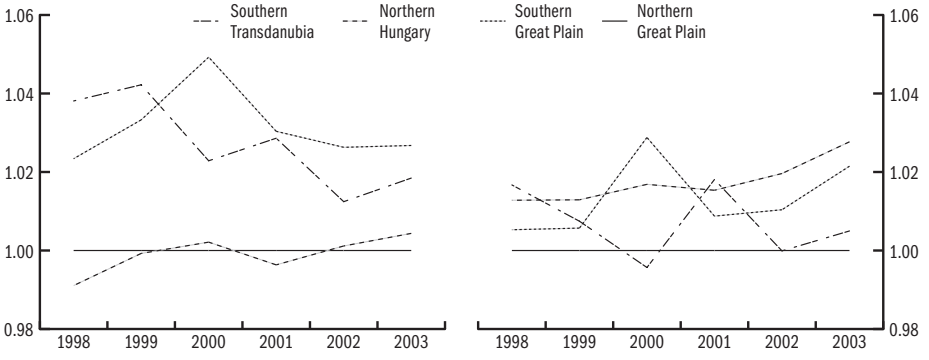
Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

The wage advantage of developed regions decreased over the period, from 9–20 to 7–15 per cent by 2003. It is clear from the comparison of the two panels

that this gap is mainly attributable to the growing relative productivity and the decreasing relative unemployment of the central and western regions. If we adjust for these factors the difference is around 3–5 per cent.

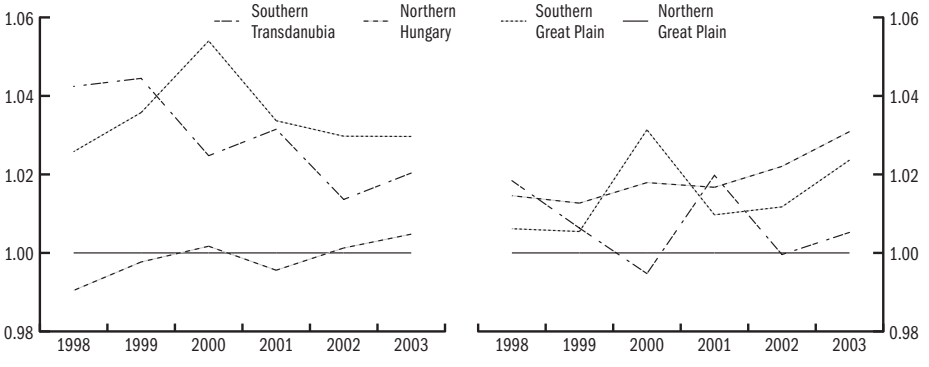
The estimates of the gross wage differentials yield similar results. The remaining difference between the poorest and the most developed regions of Hungary is around 8–17 per cent after controlling for individual characteristics, which decreases further (below 5 per cent) if the level of unemployment and firm's productivity is held fixed. The results presented here are consistent with those of *Köllő* (2004).

Figure 4.8: Regional net wage differentials, 1998–2003



Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

Figure 4.9: Regional gross wage differentials, 1998–2003



Note: The left panel shows the earnings differentials adjusting for individual and environmental characteristics, while on the right side we also control for unemployment and firm's productivity.
Source: Wage Survey.

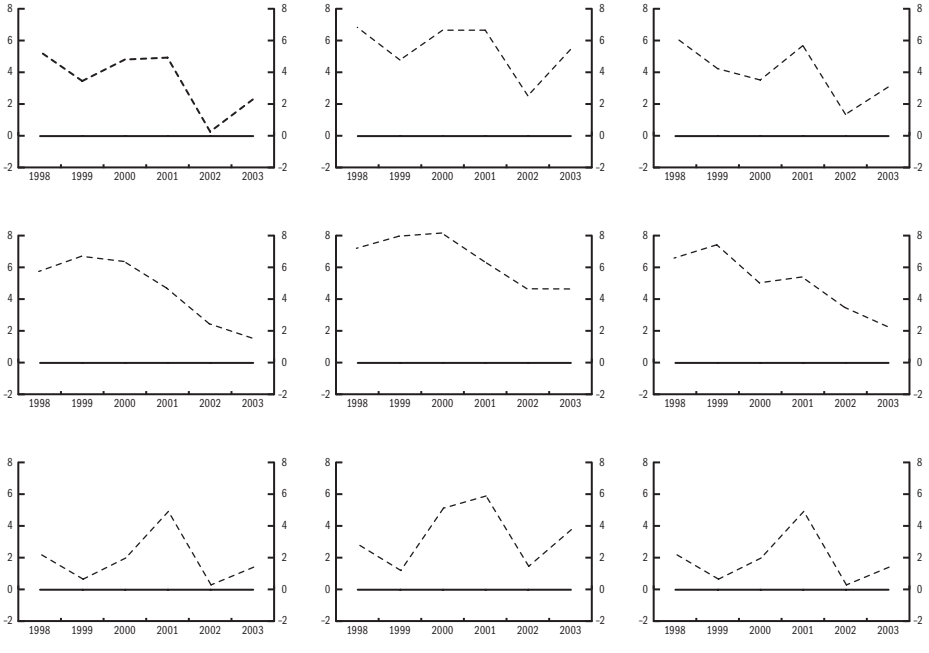
As shown in Figures 4.1 and 4.2 the raw earnings differentials between the less developed regions are modest and become negligible if individual and

employer attributes are controlled for. Whichever estimation is considered the differences remain below 3 per cent. These results are confirmed by estimates of the gross wage differentials whether they are controlled for productivity or not.

Summary

Data suggests that regional earnings and labour cost differentials were moderate between 1998–2004. Across types of settlements only the capital has a substantial 15–20 per cent wage advantage, but it is reduced below 5 per cent if differentials are adjusted for firm's productivity and unemployment. As for regional differences, the wage gain of the poorest region compared to the most developed part of the country does not exceed 6 per cent by the end of the period (Figure 4.10).

Figure 4.10: Estimated gross labour cost differentials for a firm relocating from region i to region j while holding its productivity fixed, 1998–2003



Source: Wage Survey.

All these results show that labour cost differentials do not play a dominant role in the firms' migration decisions, since some percentage wage gain does not provide enough incentive for a firm to relocate. In the depressed regions, however, the recruiting and screening costs are lower due to the (relative) abundant labour supply. Thus the less developed regions may have other characteristics that foster formation of companies to a greater extent than the

slight gain in earnings (*Köllő* 2003). Hence rural development policy may not concentrate only on "raw" differentials in earnings and labour costs but also on factors that affect the regional distribution of earnings, such as education or unemployment.

Appendix

The Wage Survey (WS) is an annual survey conducted by the National Labour Centre in 1986, 1989 and each May since 1992. Since 2000 the sampling procedure is the following (i) the firm census provided by the CSO serves as the sampling frame (ii) it is a legal obligation of each firm employing more than 5 workers (1986–1993: 20 workers, 1994–1999: 10 workers) to fill in a firm-level questionnaire and provide individual data on a 10 per cent random sample of the employees. (iii) public sector institutions irrespective of size have to fill in the institution-level questionnaire and provide individual data on all employees (iv) Firms employing between 5–20 (1995–1999: 11–20) workers according to the census are sampled in a procedure stratified by four-digit industries. The firms contacted are obliged to fill in the firm-level questionnaire and provide individual demographic and wage data on all employees. The observations are weighted to ensure that they are representative. About 180 thousand individuals employed in 20,000 firms and public sector institutions were observed in 1999–2004.

The regressions quoted in this section had log monthly gross or net earnings on the left hand side. The right hand variables were as follows:

- Male
- Labour experience in years and its squared value
- Education: vocational school, secondary school and college/university degree (reference category: elementary school)
- Log micro-level (NUTS-IV) unemployment rate
- Types of settlements: Budapest, county seats and villages (reference category: other towns)
- Six regional (NUTS-II) dummies (reference category: the Northern Great Plain)
- 50 industry dummies
- Productivity: Log of sales net of material costs divided by the number of workers in the respondent's firm
- Dummy taking 1 if the firm's value added is negative, otherwise 0
- Firm's capital-labour ratio
- Firm ownership: private majority, foreign majority or mixed (reference category: state, local government or cooperative majority)

The coefficients were estimated on private sector data with ordinary least squares adjusting for heteroscedasticity and without using weights. The charts display approximations of the percentage differentials by $\exp(b)$.

5. GRADUATE EARNINGS IN 1992–2005

GÁBOR KERTESI & JÁNOS KÖLLŐ

The economic transformation following the political transition brought about an increase in the value of higher education degrees. According to surveys around 2000, this trend continued in the later years of transition as well. According to the standard Mincer regression returns to education in Romania (only 0.034 in 1985–1989) increased from 0.069 to 0.085 between 1997 and 2000 (*Andren, Earle and Sapatoru* [2004] p. 23.).[29] In the Czech Republic, the relative earnings advantage of university graduates to people with secondary education rose from 0.409 logarithm points in 1998 to 0.482 logarithm points in 2002. (*Jurajda* [2004], data from companies with more than 10 employees in the business sector.)[30] *In Hungary* with the data of the wage-tariff surveys the standard Mincer equations suggest that the returns to education increased from 0.106 to 0.127 for women and from 0.118 to 0.147 for men, and the log premium of graduates to people with a high school degree grew from 0.363 to 0.535 for women and from 0.550 to 0.693 for men in the period between 1998 and 2005.

The rapid growth in the supply of graduates and limits to demand will sooner or later put an end to the upward trend in the value of higher educations degrees. In this chapter we consider whether there are signs of the devaluation of degrees using the data available before May 2005.

Earlier studies by *Galasi* (2004a), (2004b) examine the potential signs of the devaluation of degrees. One potential indication is when graduates are forced to fill jobs which require secondary education. Galasi finds that there were no trends in this direction before 2002. On the contrary an increasing share of the graduates were working in "graduate jobs", where employers reward the degrees with a high wage premium (*Galasi* [2004b]). At the same time, the number of "graduate" professions (in which the wage premium for a university degree exceeded a certain threshold, 44% in the given study) doubled.[31]

29 In the standard Mincer equation ($\ln w = b_0 + b_1 S + b_2 X + b_3 X^2$, where S indicates the number of years spent in school and X the number of years spent in employment) the parameter b_1 measures the returns to education with infinite time-horizon, zero direct costs of education and a stable experience-earning profile.

30 Using the standard Mincer equation, the return of one year in education was 0.089 for women and 0.111 for men in 2002, which by-and-large should correspond to the Romanian values, considering that the Czech study does not include the public sector where wage differentials are usually smaller.

31 As newer and newer professions were included in these categories, the wage premium of the average worker in a "graduate job" diminished (after 1998). This however does *not* contradict the significant overall increase in the earnings advantage of graduates to workers with secondary education. On the one hand the overall earnings advantage depends on the earnings premium of the graduates in these jobs, and on the other hand a number of new jobs among the "graduate professions" have just passed (closely) the 44% threshold of returns in the studied period.

Another possible sign of the devaluation of degrees is discussed in another study by *Galasi* (2004a) that analyses the returns to education according to whether the individual is in a job corresponding to the level of their education, or higher or lower than that. The level of necessary education is defined by the modal educational attainment of workers filling the job, those who are above that are considered "overqualified" and the number of years spent in education over the mode are the "extra years". (The proportion of overqualified workers increased from 10 to 20% between 1994 and 2002, while that of underqualified dropped from one third to one fifth.) A remarkable finding is that between 1995 and 2001 the market valued the "extra years" slightly more than the educational attainment corresponding to the job. The rank returned only in 2002 when a "necessary" year increased the individual's logarithm of earning by 0.108, while the "extra" year increased it by "only" 0.094. The absolute value of the wage premium of the "extra" years nevertheless has been declining since 1999, after it had nearly doubled between 1994 and 1998. This together with the increase in the number of overqualified workers can be interpreted as the first sign of the excessive output of higher education with a negative impact on the returns. Below we will argue that there are further trends in 2003–2004 that lead to similar conclusions.

Before addressing the change of the value of new degrees, we should put their level into an international perspective. Relatively accurate comparisons can be made using the data from *Brunello, Comi and Lucifora* (2000), and *Jurajda* (2004). *Brunello et al.* calculate the logarithmic differentials of hourly wage for men with secondary and higher education aged between 45–51 years. Their measured values ranged between 0.28 (Italy) and 0.57 (Portugal). The value for Austria and Germany that have similar educational systems to Hungary are 0.37 and 0.41 respectively. In the Czech business sector the wage differential was significantly higher, 0.6 in 2002; in Hungary it was 0.64 in the public sector and 0.87 in the business sector in 2004. All in all, taking into account that the differences in working hours in the public sector are marginal, we can estimate that the logarithmic differential of hourly wage is at the level of 0.71 in the Hungarian economy. This means that while a middle-aged male graduate in Austria earns 45% more than his peer with secondary education ($e^{0.37}$=1.448), the advantage of the graduate worker in Hungary is 103%; more than double that of the Austrian figure![32]

Expansion of higher education and employment prospects

The earnings advantage of graduates can be expected to decrease as a result of a sharp increase in supply. After the change of regime, higher education expanded rapidly in Hungary. The number of full time students has been on the rise since 1986 and the number of part-time students has been increasing since 1992. The number of college and university students has grown from

32 A new generation of studies on the returns to the human capital supports the claim that the exceptionally high wage premium of graduates in Hungary cannot be explained by their exceptionally high relative skills, using the data from the International Adult Literacy Survey (IALS). Models that include both scores and educational attainment (*OECD* [2002], *Danny, Harmon and O'Sullivan* [2004], *Carbonaro* [2002]) equally find that in the transition countries, including Hungary, the effect of education on wages is strong even at identical skill-levels. See especially *Carbonaro* (2002), pp. 21–22.

100,000 before the political transition to 350,000 today. The number of new graduates began to increase in 1995, however it did not grow as rapidly as the number of students because students spend a longer time in education and second degrees are becoming increasingly widespread. Nowadays each year more than 50 thousand fresh graduates leave the higher education system, approximately twice as many as in the early years of transition. Table 5.1 shows the extent of the supply shock. Some 120 thousand fresh graduates entered the labour market in the five years before and after the political transition. In the following 5-year period this figure was nearly 200 thousand and since 2000 – based on our estimates – more than 250 thousand. The total number of graduates is 150% of the pre-transition level and nearly one third of them are new graduates.

Table 5.1: Extent of the supply-shock

Period	Number of new graduates (thousand)	Total number of graduates (thousand)	Ratio of new graduates as % of the total number of graduates
1986–1990	121	1988: 572[a]	21.2
1991–1995	120	1993: 640[b]	18.8
1996–2000	196	1998: 694[b]	28.2
2001–2005[c]	257	2003: 850[b]	30.1

[a] Source: Central Statistical Office (CSO) Income Survey 1987/88.
[b] Source: The autumn wave of the CSO Labour Force Survey in the given year.
[c] The number of new graduates in 2004 and 2005 is based on estimates.

The expansion did not cause significant unemployment among graduates, including fresh graduates until 2003.[33] Unemployment was 1–3% of the cohorts except for the brief period (up to the age of 27) after graduation in the case of men and after child birth for women. (The same figure was 5.5–6 times higher for people with primary education.) The number of jobless persons looking for paid employment was steadily falling among young graduates, their job prospects were improving even in 2001–2003. A slight decrease could be observed only in the 21 to 23-year-old age group after 2000. However most of this group had a college degree and they represented only 17–18% of the 21–26-year-old age group of young persons. In the typical cohorts of new entrants (24–26 years), the share of unemployed people was steadily falling by the end of 2003.

The trends after 2003 can only be studied using the data of the unemployment register, which is hardly adequate for our purposes. While one in four persons who completed primary or vocational training school and one in six persons with secondary education is registered as unemployed by the Public Employment Service, the same figure is only one in eight for graduates.[34] Between 1995 and 2005 the yearly average number of registered graduate unemployed increased from 11,973 to 19,433, the number of fresh graduates from

33 See also *Kertesi and Köllő* (2006), pp. 205–207.
34 Figures are calculated from the data of CSO Labour Force Survey, third quarter of 2001.

1,800 to 4,561 with most of the growth taking place in 2004–2005. (Data from the Employment Office). When interpreting these changes, it should be taken into account that the total graduate population grew rapidly, by 40% in the above period, and the number of fresh graduates nearly doubled. Taking these into account, it still seems that registered unemployment grew rapidly among fresh graduates in 2005.

A further question is to what extent decisions to extend the time spent in education are based on the difficulties of finding work. The study by *Varga* (2006) on the career path of fresh graduates addresses this question and finds that the labour market status had no significant impact on decisions to continue studies in the years around 2000. Decisions to get a second degree were based on the potential earnings premium on the one hand, and on returning to the original career choice (returning to the original choice of programme after getting a first degree in another field free of charge) on the other.

Available data thus suggest that difficulties emerged after 2003, the 8th year of rapid growth of supply. The budgetary restrictions put forward in the summer of 2006 are likely to have a negative impact on the situation of young graduates, which will have a strong effect on graduate earnings.

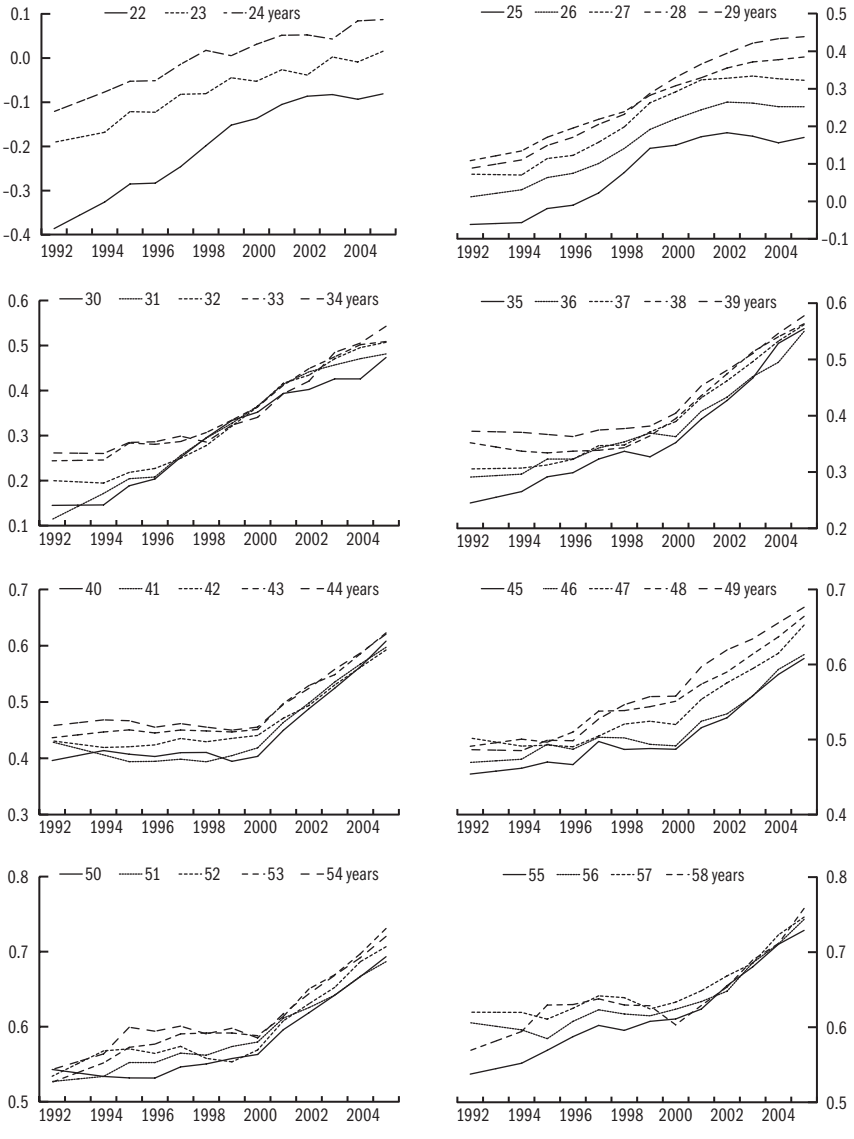
Graduate earnings

The trends of graduate earnings can be followed more accurately than unemployment thanks to the Wage-tariff surveys, which include the data of more than 1,000 graduate employers for all ages. First we examine the aggregate data without making a distinction betweens professions and sectors. The earnings advantage of each graduate cohort is measured by the b_4 coefficient of the following cross-sectional regressions:

$$\ln w_i = b_0 + b_1 \text{GEND}_i + b_2 \text{PRIM}_i + b_3 \text{VOC}_i + \sum_i b_4^i \text{AGE}_i \times \text{GRAD}_i + b_5 \text{BUDAPEST}_i + u_i, \quad (1)$$

where GEND, PRIM, VOC and GRAD stand for gender and educational attainment (primary, vocational, and graduate degree), respectively, and AGE *stands* for age. The parameters measure the relative earnings advantage of graduate cohorts to the average-aged employees with a secondary education, controlling for the significant difference between Budapest and the rest of the country on the graduate job market which we consider an equalizing differential. The regressions use the data of companies with more than 20 employees in 1992–94 and companies with more than 10 employees and the public sector between 1995 and 2005. The possible distortions of this are discussed later. The results are shown in Graph 1. The graphs plot the trend of measured earnings premium for each age-year. (The trends are estimated from time series with data from 1986, 1989 and 1992–2005 using moving average smoothing.)

Figure 5.1: Trends of earnings premiums by age, 1992–2005



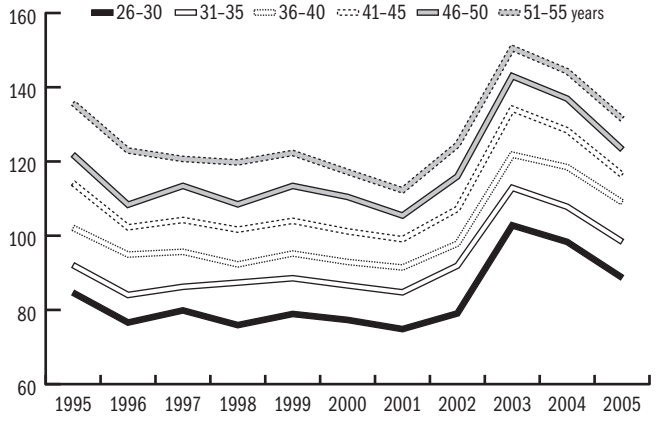
Source: Wage-tariff surveys.

The graphs clearly show that after 2000 the earnings advantage of graduates aged 30 years and over has increased even more than before. (In the 1990s the earnings of graduates aged less than 33 years grew much faster than those of older graduates.) The upward earnings trend of new entrants (see charts 1 and 2) however was interrupted in 2003–2004, and the earnings advantage levelled off for the 22–27-year-old age group. The 28–29-year-olds – similarly to older age groups – increased their earnings premium in these years as well.

For a more accurate exploration of trends we categorise the professions into five groups based on the proportion of graduates and whether the share of young persons among them increased, decreased or remained the same between 1995 and 2003. This way we distinguish three groups (ageing, stable age composition, rejuvenating), clerical professions and a residual category.[35] The average earnings for each group are given as a percentage of the national average earning.

Three major professions (medical doctors, primary school teachers and teaching staff in child care homes) are in the group of *ageing graduate professions*. Their earning position improved significantly, nearly by 20 percentage points in the period of generous redistribution before and after the elections of 2002, and deteriorated in 2004–2005. In this group the relative wages are not determined by the market forces but by statutory public sector salary scales, the earnings of the different age groups followed a similar development. This is clearly shown by the parallel graphs indicating the relative wage of each cohort throughout the period. (Graph 2)[36]

Figure 5.2: The relative earnings of graduates in the ageing group of professions between 1995 and 2005



Source: Wage-tariff surveys.

The majority of the professions in the stable age composition group are also in the public sector (secondary school teachers, academic staff in higher education, in the cultural sector, management in health care, education and government sectors) but it also includes unit managers from agriculture, construction, retailing, catering and services. The relative earnings of graduates in the graduate professions of the stable age composition group have risen notably over recent years. (See Graph 3)

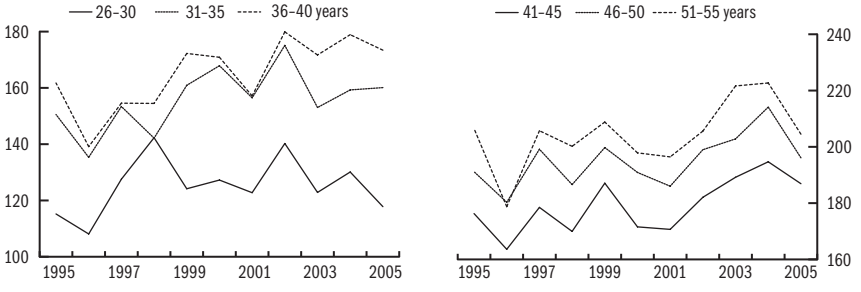
Among the rejuvenating graduate professions we find the engineers, economists, lawyers, IT professionals, highly qualified administrators and the man-

35 The exact definition of the groups of professions can be found on pages 210–213 and in the appendix of the article by *Kertesi and Köllő* (2006).

36 The graphs clearly plot the effects of the general pay-rise in the public sector in 2002.

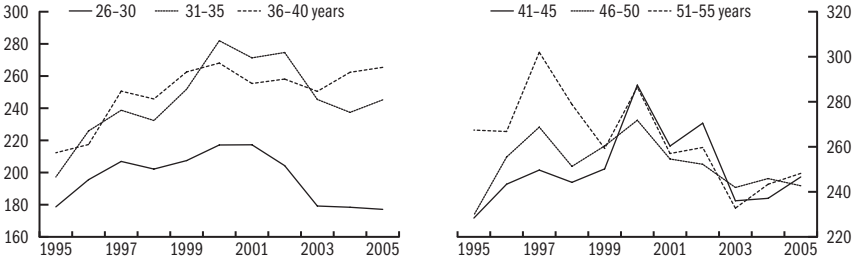
agers in the industrial, business, finance and marketing sectors. Although these jobs are the 'number one' targets of young graduates, the demand seemed more than sufficient to absorb the increasing supply: employment rates are continually high and unemployment rates fell both among younger and older graduates.[37] Nevertheless, after 2000 the expansion of employment took place with declining relative wages in each cohort. Thus in the rejuvenating graduate professions the excess demand clearly ended. However this was not manifested in difficulties in finding work but in changing prices. (see Graph 4)

Figure 5.3: The relative earnings of graduates in the professional groups with stable age composition between 1995 and 2005



Source: Wage-tariff surveys.

Figure 5.4: The relative earnings of graduates in the rejuvenating group of professions between 1995 and 2005



Source: Wage-tariff surveys.

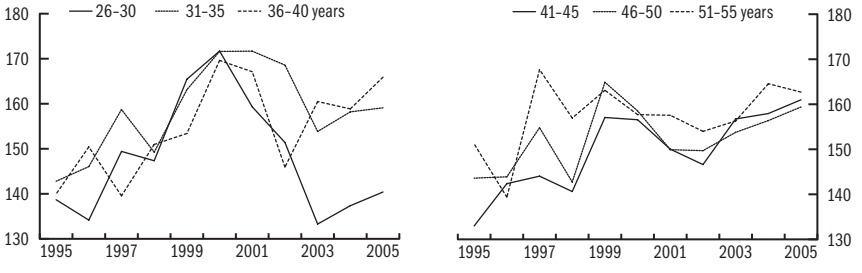
Administrative-clerical professions are the fourth group where the share of graduates increased – from 7.5% to 12.5% between 1995 and 2003. According to our estimates, one in seven new graduate jobs was created in this category, and nearly two thirds of the new jobs here were filled by graduates. The employment rate increased and unemployment decreased steadily and significantly among people with an administrative-clerical background regardless of the level of their educational attainment and age. The relative wage of fresh graduates entering these jobs grew sharply before 2000, however it fell between 2001–2003 (see graph 5). This decline affected the 31–35-year-old age group as well, while the earnings of older age groups continued to rise.[38]

37 On the employment and unemployment rates of the groups of professions see Graphs 4 and 5 in *Kertesi and Köllő* (2006).

38 It is likely that this is influenced by the access to management positions which linked to age.

In 2004 and 2005 the decline of the earnings disadvantage of the business sector increased the relative earnings of fresh graduates in clerical jobs, which now stands at approximately the 1997–98 level and is not lower than in the period preceding the expansion of higher education. The price-adjustment process, which was observed in the graduate professions of the business and clerical-administrative sectors and re-shaped the distribution among the age groups, did not take place in the public sector.

Figure 5.5: The relative earnings of graduates in the clerical-administrative positions between 1995 and 2005



Source: Wage-tariff surveys.

In conclusion, it can be argued that the earnings advantage – clearly enormous by international comparison – in the rapidly rejuvenating professions of the business and clerical-administrative sectors has diminished. The position of the fresh graduates in the public sector was significantly improved by the pay-rise in 2002. Despite the following decline, their relative earnings are still higher than in the period before the expansion of the higher education.

Higher education degrees can still be considered exceptionally good investments in Hungary taking into account the current earnings, job prospects and individual costs of education. The shrinking of the public sector, which currently employs nearly 60% of graduates, and the introduction of tuition fees are however expected to change the situation and diminish the still outstandingly high earnings advantage of graduates.

6. CHANGES OF RELATIVE WAGES AND THE COMPOSITION OF THOSE EMPLOYED IN PUBLIC EDUCATION

JÚLIA VARGA

In this section we focus on recent trends in wages in the public education sector and on the effect of relative earnings on the composition of the teaching force. Trends in wages in public education might be interesting for different reasons. First, public education has a large share in employment. During the 2000's 8 per cent of the employed and 14 per cent of the female employed worked in the public education sector.[39] Public education has a large share in public sector employment – more than a third of the public sector employed are working in public education.[40] The effect of the increase of civil servants' salaries on the composition of the teaching force might also be interesting. Finally the analysis of teachers' relative wages may contribute to the understanding of teachers' quality and of students' performance. During recent years the results of the internationally comparable students' assessments show that the performance of the Hungarian students is unfavourable[41] and the results of most of the empirical analysis show that the key determinants of students' performance are teachers' qualifications, their skills and motivation.[42] Relative wages in teaching compared to comparably qualified graduates may contribute to the decision to teach, the exit decisions of teachers and to teacher quality.

Average salaries, relative salaries

Figure 6.1 shows average wages in the public education sector between 1992 and 2004 as a percentage of average salaries. In 1992 there was a large increase in civil servants' salaries and as a consequence relative wages in public education have changed during recent years. In 1992 relative earnings in public education were 8 per cent down on average earnings. In primary and lower secondary education average earnings were 15 per cent lower while in upper secondary education relative earnings were 15 per cent higher than average earnings. Between 1992 and 1996 relative earnings in public education decreased by 10 percentage points, relative wages of those working in

39 In 2000 the share of public education in employment was 8.4 per cent; in 2001 8.1; in 2002 8.2; in 2003 8.4; in 2004 8.5; in 2005 8.3 per cent. In female employment the share of public education was 14.4 per cent in 2000, in 2001 13.9; in 2002 14.1; in 2003 14.3; in 2004 14.6; in 2005 14 per cent (Central Statistical Office LFS data).

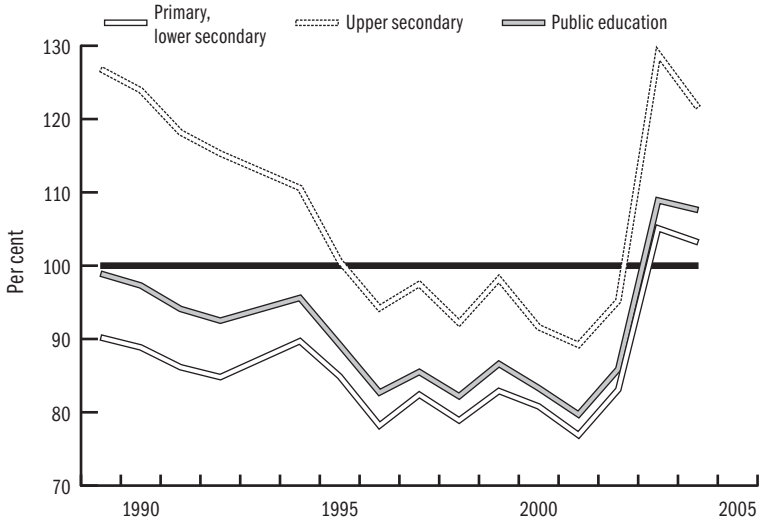
40 In 2005 36.5% (Central Statistical Office LFS data).

41 See for example*: Horváth-Környei* (2003).

42 See for example: *Rivkin-Hanusek-Kain, 2000; Darling-Hammod,* 1999.

upper secondary education by 21 percentage points and of those who were working in primary and lower secondary education by 7 percentage points. In 1997 and 1999 the relative position of public education was recovering by 1–2 percentage points but in 2001 it reached its lowest level when relative earnings in public education were less than 80 per cent of the national average. After the increase of civil servants' salaries in 2002 the average wages in public education exceeded the national average in 2003, but in 2004 the advantage moderated and by 2004 the relative position of public education was close to that of 1989. Nevertheless the relative position of those working in primary and lower secondary education in 2004 was still better than in any other year since 1989.

Figure 6.1: Relative earnings in public education, 1989–2004, %



Source: Based on data of National Employment Service Wage Tariff Surveys.

Table 6.1: Real average earnings in public education, public and business sector 2000–2004 (thousands HUF)

Year	Public education	Public sector	Business sector
2000	72.9	74.2	94.7
2001	75.4	80.3	97.2
2002	91.0	85.9	101.8
2003	122.3	115.9	100.9
2004	119.8	123.6	104.7
Change between 2000 and 2004 %	+ 64.3	+ 66.5	+ 10.5

Source: National Employment Service Wage Tariff Surveys.

Table 6.1 shows changes of real wages in public education and in the public and business sector. Between 2000 and 2002 real wages in public education

rose by more than 64 per cent which is a somewhat lower than the increase of real wages in the public sector but much higher than the increase of real wages in the business sector. It's worthwhile to note that real wages had already increased in public education by 25 per cent between 2000 and 2002, that is before the increase of civil servants' salaries, while in the business sector real wages rose by 7.5 per cent during the same period.

The composition of public education employment differs by gender, age and qualification from employment in the business sector. In public education there is a far higher ratio of female employed and there is a much higher ratio of highly qualified and older workers. Table 6.2 shows employment in public education by gender, age, educational attainment and the percentage of teaching staff among the employed. (Four educational categories are distinguished: less than upper secondary education with the maturation[43] exam, upper secondary education with the maturation exam, college and university.) Table 6.3 shows average age of the teaching force in public education by gender and qualification.

Table 6.2: Distribution of employed in public education by gender and educational attainment and their average age, 1998–2004

	1998	2001	2002	2003	2004
Female %	75.1	77.9	80.8	81.2	80.5
Average age	41.4	43.1	43.7	44.9	44.4
Highest educational attainment (%)					
Lower than upper secondary education with maturation exam (at most 11 years of education)	24.8	23.3	23.1	23.1	22.4
Upper secondary with maturation exam	19.1	11.9	11.6	11.6	11.9
College	42.2	53.0	53.5	52.5	53.1
University	13.9	11.8	11.8	12.8	12.6
Total	100.0	100.0	100.0	100.0	100.0
Proportion of teaching force among employed (%)	58.3	59.3	59.4	59.5	59.8

Source: National Employment Service Wage Tariff Surveys.

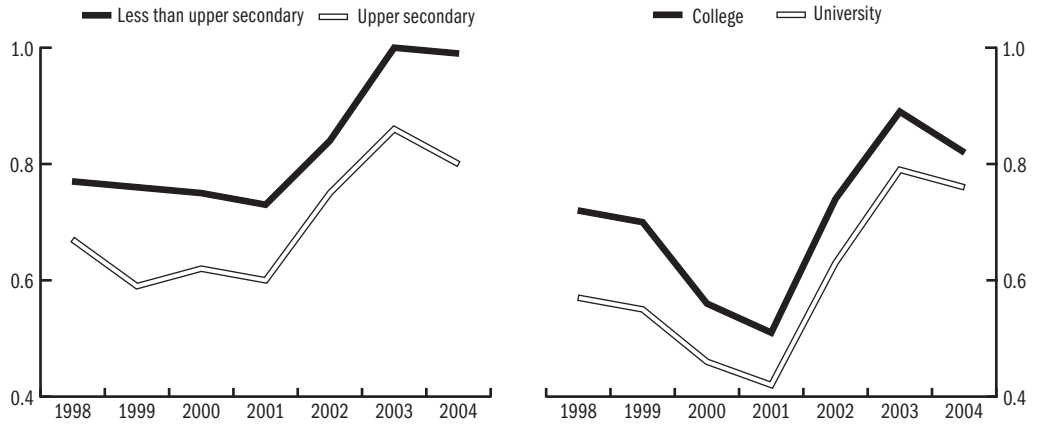
Table 6.3: Average age and highest educational attainment of the teaching force in public education, 1998–2004

	1998	2001	2002	2003	2004
Female %	79.7	81.9	82.0	82.3	80.8
Average age	39.6	41.3	41.9	42.9	42.6
Educational attainment					
Less than college	5.2	6.0	4.8	4.0	4.9
College	74.9	77.3	78.2	77.2	77.0
University	15.4	16.7	17.0	18.8	18.1
Total	100.0	100.0	100.0	100.0	100.0

Source: National Employment Service Wage Tariff Surveys.

43 Maturation exam (érettségi vizsga) is the secondary school leaving examination which is required for higher education studies.

Figure 6.2: Relative earnings in public education by educational attainment controlling for gender and experience (national average = 1), 1998–2004



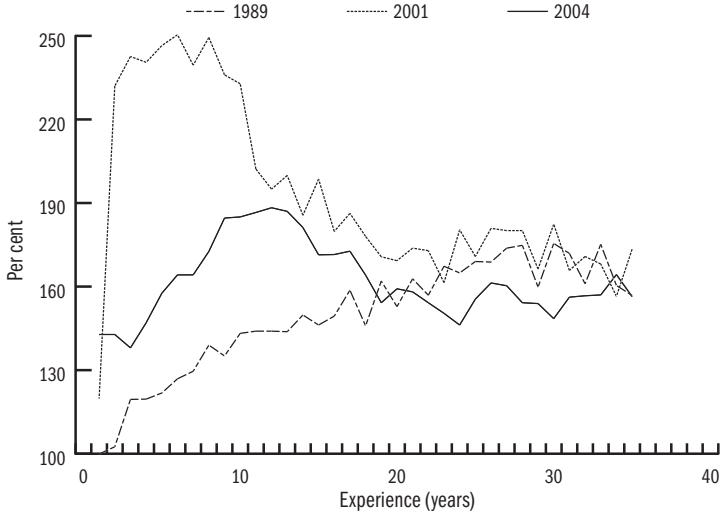
Source: Based on data of National Employment Service Wage Tariff Surveys.

Figure 6.2 displays relative earnings of employees in public education by educational categories between 1998 and 2004 controlling for gender and experience, that is it gives a picture of how the earnings of employees in the different educational categories in public education relate to similar (same gender and experience) employees in the same educational category in the whole economy. The figure shows that the low-level educated group (with less than upper secondary education with the maturation exam) had already had the best position in public education before the increase of civil servants' salaries, and after the salary increase the earnings of this group even exceeded the average earnings of employees with the same educational attainment, gender and experience. The figure also shows that between 1998 and 2002, before the increase of civil servants' salaries, the higher the educational category was the worse was the relative earnings position of those employed in the public education sector. After the salary increase the relative earnings position has improved the most of those whose highest educational attainment is college, and the relative position of those whose educational attainment is university has still been the worst. About 60 per cent of those employed in public education are working as teachers and from these less than 20 per cent have a university education, and more than three-quarters have a college education (Table 6.3). This means that the relative position of the teaching force has improved the most in public education after the salary increase for civil servants.

Figure 6.3 shows the average salary of an employee with a tertiary level qualification as a proportion of the salary of qualified teachers by years of experience in 1989, 2001 and 2004. During the transition the relative returns to higher educational qualifications increased across all experience groups, but the returns to education increased at substantially higher rates in the young

cohorts. People who graduated after the beginning of the transition were suddenly very highly valued. From 1992 and even more so from 1995 onwards the rise in returns to higher education was the highest in cohorts with 0–5 years of experience, and by the end of the 1990's, the group with 6–10 years of experience had also caught up.[44] The rise in return to formal education was accompanied by the devaluation of experience acquired under socialism – the returns to experience have declined for the older age cohorts and have increased only for the youngest cohorts. For the youngest cohorts the returns to formal education and to experience have increased as well.

Figure 6.3: Average earnings of employed with higher education qualification as a proportion of earnings of teachers by years of experience, 1989, 2001, 2004 (%)



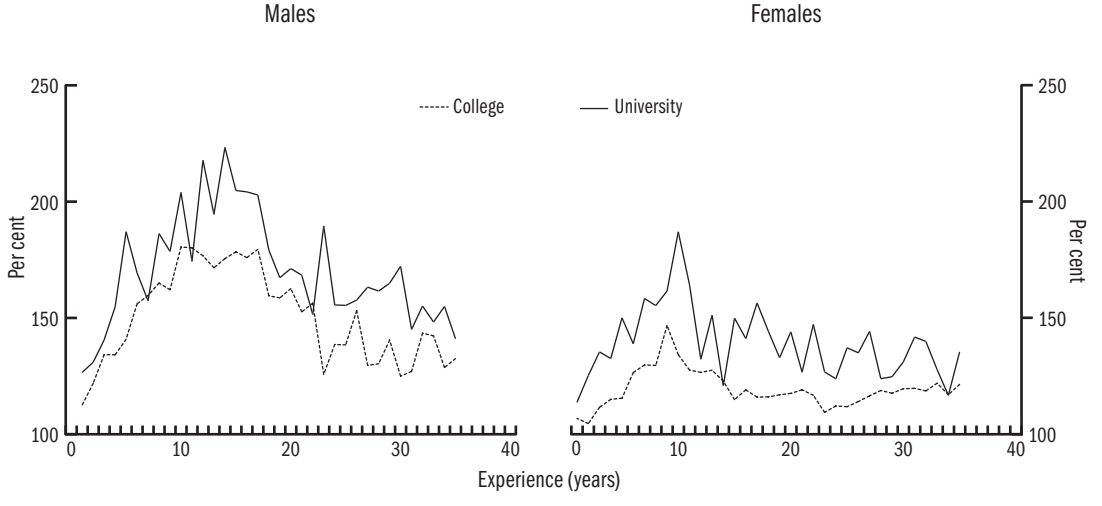
Source: Based on data of the National Employment Office Wage Tariff Surveys.

For employees working as teachers this was not the case. As a consequence of the civil servants remuneration system teachers' wages grow with experience. The figure shows that in 1989, before the transition the wage advantage of the average employee with a higher education qualification compared with teachers was the smallest at the start of their career, and was the biggest among those who had served for 25–30 years. After the transition this pattern has changed. In 2001, the difference between the average earnings of an employee with a tertiary level qualification and that of a person working as a teacher was the biggest in the groups with 5–10 years of experience; not only was the difference between teachers and non-teachers having worked for over 20 years much smaller but its increase between 1989 and 2001 was also significantly smaller than in the case of younger cohorts. Following the salary increase of civil servants earnings differences have become smaller, but they were still the biggest for the younger cohorts. Following the salary in-

44 See for example: *Köllő* (2002), *Kézdi* (2005).

crease the relative position of the older cohorts with more than 20 years of experience has improved the most and has become more favourable than before the transition. Figure 6.4 shows the average salary of an employee with a tertiary level qualification as a proportion of the salary of qualified teachers by years of experience by gender and level of higher education qualification (college/university).

Figure 6.4: Average earnings of employed with a college education as a proportion of earnings of teachers with college education and average earnings of employed with university education as a proportion of earnings of teachers with university education by gender and years of experience, 2004 (%)



Source: Based on data of the National Employment Office Wage Tariff Surveys.

Earnings differences have declined between teachers and the average but the average male employee with a university degree and 10–12 years of experience still earns twice as much as a teacher with the same characteristics and the average female employee with a university degree and 10–12 years of experience earns 1.5 as much. The salary increase has improved much more the relative position of teachers with a college degree, and even more so in the relative position of female teachers with a college degree. The difference between the wages of female teachers with a college degree and having 15–20 years of experience has practically diminished if we take account of the longer vacation for teachers. The changes seems to have little effect on attracting and retaining young graduates with a university degree in public education, but it might have an effect on retaining female teachers with a college level degree and more than 20 years of experience. In the next section we summarize basic facts regarding changes in the statistical profile of teachers. These changes also support the assumption that, due to changes in the relative position of teachers, individuals with different qualifications and ability have chosen teaching than earlier.

Changes in the statistical profile of teachers

The percentage of women among teachers continued to rise between 1989 and 2005 from 75 to 83 per cent. At primary and lower secondary level the proportion of female teachers rose from 78.5 to 88 per cent, at upper secondary level from 46.9 to 63 per cent. The increase was more substantial at upper secondary level, where, during the same period, the number of teachers also rose because of the expansion of the longer upper secondary programs which are finalised with a maturation exam. The rise in the proportion of female teachers in a period of growing demand may reflect the fact that teaching is less attractive for young male graduates just starting out on their careers. The proportion of female teachers is even higher among young cohorts. In 2004, among teachers younger than age 30, less than one third of upper secondary school teachers were men and, in the same category about 10 per cent at primary and lower secondary education.[45]

During the same period the average age of teachers also rose from 38.1 to 42.6 per cent. Another characteristic of career beginner teachers is that in upper secondary education the proportion of teachers with a college degree is growing and is higher than the proportion of teachers with a university degree. In 2001 in general upper secondary schools 52 per cent of career beginner teachers had a college degree and in 2004 71 per cent of them had a college qualification. At vocational secondary schools the proportion of teachers with a college degree rose from 58 to 70 per cent among career beginner teachers. An element of the young teachers with a college degree probably obtain a university level degree later on in their career, but these changes also support the assumption that teaching is not attractive for young graduates with a university degree even following the salary increase of civil servants. These changes may also reflect the fact that schools attempt to adjust for the increase in civil servants salaries by employing less educated and less expensive labour.

Determinants of the choice of teaching

The sharp drop in teachers' relative wages took place simultaneously with the expansion in higher education. The number of applicants and those admitted to higher education has increased steadily during the last fifteen years. It means that for prospective students the alternative possibilities for higher education studies have increased. These changes might have an effect on the composition of students who choose teacher training. Changes in the statistical profile of teachers suggest that unfavourable self-selection processes have started in the course of becoming qualified for the teaching profession. In the following we analyse these processes, with the help of two data-bases,[46] at two decision points: (1) the choice of teacher training (2) choice of teaching after graduation.

45 Based on data of ÁFSZ (National Employment Service).

46 The analysis of the decision on choosing teacher training is based on a survey of secondary school students carried out in 2000. The survey asked students about their personal and family background, their results in secondary schools, their labour market expectations and plans about further studies. For a detailed description of the survey see *Varga* (2002). The analysis of the choice of teaching after graduation is based on the follow-up of the Hungarian Higher Education Graduates Survey (FIDÉV) conducted in 2004 which requested information on the labour market success of graduates 5 or 6 years after graduation. The sample consisted of graduates who graduated in 1998 and 1999 from full time higher education We also had information on the labour market success of the graduates 1 year after graduation.

The first decision is choosing teacher training in higher education studies. The questions to be considered are – if there is a difference between students who choose teacher training and who choose other orientations in their abilities and labour market expectations and how these differences affect the probability of choosing teacher training. The second choice is to enter teaching after graduation. The question to be answered here is – if the ability of graduates' earnings that could-be earned in non-teaching occupations have an effect on the probability of a graduate working as a teacher 5 or 6 years after graduation.

The results of the first model, which describes the choice of teacher-training, are reported in Table 6.4. As for university level teacher training the results show that the ability of students has no significant effect on teacher training, that is the results do not support the assumption that less able students are more likely to choose university level teacher training. On the contrary less able students (whose "accumulated score" is less) are significantly more likely to choose college level teacher training. The results seem to support the conclusion that, through a self-selection process, for college level teacher training less able students are selected. Students who have a lower accumulated score, whose earnings-foregone are smaller, who think their probability of getting an appropriate job after finishing secondary school to be less and who expect a smaller wage-gain from higher educational studies are more likely to choose college level teacher training.

Table 6.4: Determinants of the choice of teacher training[1]

	Marginal effect dy/dx
Male	
College level teacher training	–0.052
University level teacher training	–0.072
Expected earnings gain	
College level teacher training	–0.009
University level teacher training	–0.021
Expected probability of finding a job with secondary school degree	
College level teacher training	–0.001
University level teacher training	–0.001*
Ability (accumulated score)	
College level teacher training	–0.003
University level teacher training	0.001*

1 Multinomial logit estimation with robust standard errors.
Base category: choosing university level non-teacher training programme.
The model included the following further explanatory variables: type of secondary school, educational attainment of father and mother, type of settlement where the individual is living, per capita family income, applying for cost-priced education.
Number of observations: 1477. Pseudo R^2: 0.2011
* Significant at 1 % level.

Table 6.5: Determinants of choice of teaching[1]

	Specification 1	Specification 2
	Marginal effect dy/dx	
Field specialization of diploma		
Humanities	0.0052	0.0629**
Foreign languages	0.0795	0.2012
Elementary school teacher training	0.0981	0.3224*
Natural sciences	0.0439	0.0698**
Technical, informatics	0.0138	0.0356
Law, economics	-0.0222	-0.0316**
Ability		
Admitted as a percentage of applicants at home institution in the year of application	0.2457**	0.3876*
Hours of work	-0.0003*	-0.0004*
Mother worked as teacher	-0.0213*	-0.0251*
Exp($W(T=0)-W(T=1)$)	-0.0852	-0.1548**
Prob. working as teacher at 1st observation	0.1321*	-

1 For detailed description of the model see Annex.
* Significant at 1 % level, ** significant at 5 % level.
Exp($W(T=0)-W(T=1)$is the expected wage differential for the individual between teaching and non-teaching occupation.

Table 6.5 summarizes the results of the model describing the choice of teaching following graduation.[47] Two different specifications were used. In the first a dummy variable was included indicating if the graduate was working as a teacher at the 1st observation (one year after graduation) or not. In the second specification this variable was omitted. The results show that the ability of graduates has a significant effect on the probability of an individual working as a teacher 5 or 6 years after graduation. The (in all likelihood) less able individuals, those who have graduated from a less selective institution/field specialization are more likely to work as a teacher at the 2nd observation. Using the 1st specification which included the variable indicating if the individual was working as a teacher at the 1st observation the difference between the wage that the individual could be earned in an alternative job as a non-teacher and the wages that could be earned as a teacher had no significant effect on the probability that the individual was working as a teacher at the 2nd observation. Nevertheless in estimation results of the other specification (when this variable was omitted from the model) the effect of the wage difference was significant. The aim of the estimations with the 2nd specification was to decide if the wage difference has an effect through the probability of being in a teaching position at the 1st observation and the results supported this assumption. Using the 2nd specification the wage difference also had a significant effect on the probability of an individual working as a teacher at the 2nd observation.

47 For detailed description of the model see Annex.

In summary, the results supported that there are self-selection processes in the course of less able students choosing college level teacher training and then less able graduates choosing teaching.

Appendix

Using data of the Follow-up Survey of Higher Education Graduates' Survey (FIDÉV) the decision to enter and continue teaching was analysed.

The key equation is the following which describes if the graduate is in the teaching profession at the 2nd observation or not:

$$T_t = \beta_0 + \beta_1 (\ln W_t^N - \ln W_t^T) + \beta_2 T_1 + \beta_3 \underline{X} + \mu_1, \qquad (1)$$

T_t is a dummy variable taking the value of 1 if the individual is working as a teacher at the 2nd observation, and 0 otherwise.

One of the most important explanatory variables is the difference between the wage that the individual could earn in an alternative job as a non-teacher W_t^N and the wages that could be earned as a teacher W_t^T.

T_1 is a dummy variable indicating if the individual's job at 1st observation (1 year after graduation) was as a teacher or not. (Working as a teacher – 1; 0 – otherwise.)

$\underline{X}$ vector includes the qualification of graduates (university or college level, field of study, obtaining a 2nd degree), gender, type of settlement where the individual is living, monthly hours of work, and "ability" of graduates.

We have no direct observations for ability of graduates. As a proxy for the ability problem the admission rate (admitted as a percentage of total applicants) of the home institution and field specialisation for each individual in the year of admission was used. The lower the admission rate the more selective the institution/field specialisation proved to be and applicants with "better ability" were able to gain admission, and, in contrast, the higher the admission rate the less selective the institution/field specialization proved to be and "less able" applicants were also able to gain admission.

The variable indicating if the individual was working as a teacher at first observation is clearly endogenous, so a reduced form probit equation for choice of teaching as first job was estimated and predicted values were used in estimation of equation (1) as T_1 values.

To obtain wage variables two wage equations were estimated, one using data for all current teachers and one using data for all non-teachers in the sample and the predicted values of these were taken as the wages that individuals could earn in teaching and the non-teaching state. Of course, we only observe teachers' wages for those who are working as teachers and we only observe non-teachers' wages for those who are working in other professions not as teachers. As it seems very unlikely that individuals choose teaching by accident we can not assume that wages of non-teachers are unbiased pre-

dictors for teachers' wages if they were working as non-teachers and wages of teachers are unbiased predictors of non-teachers if they were working as teachers. To allow for this selectivity a reduced form version of equation (1) was estimated omitting from the equation the wage and first job choice variable and then the inverse Mills ratios (λ) from these equations were put in the estimated wage equations, in equations (2) and (3).

$$T_t = \beta_0 + \beta_1 \underline{X} + \mu_1 \quad (2)$$

$$\ln W_t^T = \delta_0{}^T + \delta_1{}^T \underline{X}' + \sigma\rho^T\lambda + \mu_2 \quad (3)$$

$$\ln W_t^N = \delta_0{}^N + \delta_1{}^N \underline{X}' + \sigma\rho^N\lambda + \mu_3 \quad (4)$$

$\underline{X}$ includes variables indicating parent's education (two dummy variables: father worked as teacher yes=1, no=0; mother worked as teacher yes=1, no=0). These variables may influence the choice of becoming a teacher (the individual has better knowledge of a teaching career and is more or less likely to choose teaching) but have no direct effect on teachers' wages.

$\underline{X}$' also includes some variables, which are not included in the selection equation but which may have effect on wages. These variables are: experience, experience squared, type of job contract if the individual has permanent, open ended employment contract=1 or not=0).

For analysing if wage difference has an effect through the probability of the individual working as a teacher at the 1st observation estimations were repeated omitting the variable indicating that the individual was working as a teacher at 1st observation.

7. "FEMALE WORK" AND THE GENDER WAGE GAP FROM LATE SOCIALISM TO TODAY

MÁRTON CSILLAG

In spite of the equal pay for equal work guarantees inscribed in the constitutions of the socialist period and the rhetoric of emancipation for women practiced by communist governments, the gender wage gap was of a similar magnitude in socialist countries as in western societies. At the same time, gender differences in occupational distribution were even more pronounced in socialist countries than in western ones. This was due to the official encouragement of women entering the labour force in occupational categories that were considered/deemed suitable for them. Given that the "productive sphere" and physical work was given priority over services, and that this preference was translated into the centrally set wage tariff system, "women's jobs" were characterized by low wages. In essence, the gender wage gap was mostly due to institutionalized discrimination that took the form of occupational gender segregation. (For more on this see, for example, *McAuley* [1981].)

In this chapter we first take a look at changes in occupational segregation from late socialist times until today, then we examine the returns to "women's jobs", finally we document how the two above factors affected the evolution of the gender wage gap. In our analysis using the Wage Surveys of the National Employment Office, we limit the investigation to employees of medium and large companies of the business sector, and we examine two subperiods separately: 1986–1993, and 1995–2002.[48]

An analysis of the relationship between the gender composition of occupations and occupational wage differentials is not only useful for examining how patterns inherited from socialist times might still be effective. We might also look at whether the substantial rise in women's relative wages after the collapse of the socialist system was due to a shift in the occupational structure of labour demand as a result of the transition to a market economy, and in this sense was a one-time adjustment. By contrast, examining whether women have started to enter occupations previously considered as "men's" we might be able to predict whether there are trends pointing towards greater gender

48 We do not analyze the public sector as there wages are still centrally set; while based on the business sector we are able to examine the effect of the liberalization of wage setting on the gender wage gap. We excluded smaller firms, as in our analysis of gender (and occupational) wage differentials we would like to control for the fact that women and men work in different types of firms. We are only able to control for firm effects if there are at least two employees in our sample from a given firm, which we can guarantee by only including firms with at least 100 employees. Finally, we examine the two above periods separately due to a major change in the occupational coding system that occurred in 1994.

equality in the longer run. Finally, this analysis is also useful from a policy viewpoint in the sense that it will give hints as to whether public intervention is more needed in countering gender discrimination in recruitment and promotion practices or rather direct wage discrimination (meaning gender wage differentials within a given occupation and firm).

Explanations and methods

As our goal is not only to document the role of gender disparities in the occupational distribution in shaping male-female wage differentials, but also to make an attempt at figuring out whether these gender differences result from gender discrimination, we will now take a look at the three main explanations of the relationship between the gender composition of occupations and occupational wage differentials, so that these give us guidance in interpreting our econometric evidence.

The leading explanation of gender differences in the occupational distribution is the crowding theory. According to this theory women are excluded from certain occupations for which they are deemed less able, and as a consequence, there is excess supply of labour to the remaining occupations that drives wages down in these occupations. So both occupational segregation and the negative wage differential to working in "female occupations" results from employers' discriminative behaviour. The second explanation builds on gender differences in tastes and on the theory of compensating wage differentials. According to this women typically prefer some job characteristics that employers can only provide by incurring additional costs (say more flexible work schedules), and wages in female occupations are lower to compensate for this. Third, the non-random sorting of workers across occupations based on skills might also explain occupational wage differentials. If "female occupations" require lower skills, then there will be a negative payoff to working in these occupations. Providing evidence on which of these explanations might prevail is important from a public policy viewpoint: if gender differences result from differences in skills, or from differences in tastes, then we cannot firmly speak about current discrimination in the labour market, and there is no clear reason for state intervention in the labour market.

The above-discussed theories explaining the link between the gender composition of occupations and occupational wage differentials also call our attention to the problems inherent in trying to empirically measure whether female jobs are "undervalued". This is due to the omitted variables problem: if we are not able to properly measure either job characteristics or the skills of workers in different occupations, and "female occupations" systematically differ in either of these, then we will measure the link between the gender composition of jobs and their relative wages in a biased manner. To mitigate these problems, we will use a two-step procedure in which we will measure

how much of the difference in the wages of two employees who are working in different occupations, but are otherwise comparable, is due to differences in the gender composition of their jobs. (See Appendix 1 for details on the estimation procedure.)

We will look at two results of the above empirical procedure in detail. First of all, we will examine how much of the gender wage gap can be explained by gender differences in occupational composition, which we will consider as a measure of the discrimination against women that takes the form of occupational segregation. Second, we will look at the adjusted gender wage gap, that is the wage gap that remains after controlling for all observable differences between women and men, which is considered as the simplest measure of direct wage discrimination. We will calculate these two elements of the wage differences for each year analyzed, and we will also consider how changes in these two possible forms of discrimination contributed to changes in the gender wage gap between 1986–1993 and 1995–2002. (The details of decomposing the gender wage gap can be found in Appendix 2.)

Women's work and wages in late socialism

Gender segregation along occupational lines in Hungary was higher than in Western economies during late socialism, similar to that which has been documented for other post-socialist economies.[49] We found a negative relationship between the "feminization" of an occupation and its relative wages that was significant both in the statistical and economic sense. This meant that an employee in a typically female occupation earned 8 percent less than if she had worked in a male occupation. As a result, in late socialism roughly one-fourth of the gender wage gap could be attributed to occupational segregation. At the same time, a female employee earned 18 percent less than her male counterpart having the same age, schooling and occupation and working at the same firm as her.

The early period of the transition: the revaluation of "female work"

The relative wages of women increased substantially after the collapse of socialism and roughly half of this increase was due to an appreciation of female work. More precisely, even though female occupations paid slightly less than male occupations in 1993, this difference was not statistically significant. This change came about with the growth of relative wages in administrative/economic/financial jobs which were typically done by women under socialism, and this revaluation led to a 6 percentage point increase in the relative wages of women.

During this period, the proportion of female employees in the business sector increased slightly, with all of this change coming from a shift in the occupational structure of employment, as male-dominated occupations lost

49 *Blau et al.* (1998) report an index of segregation of 0.53 based on US data from the late eighties, which is lower than our results, even though they calculated this index at a much finer level of disaggregation, with more than 400 different occupations. *Jurajda* (2003) uses Czech and Slovak data, while *Ogloblin* (1999) using Russian data gets results similar to ours.

their importance to be replaced by female-dominated occupations. At the same time, gender segregation also increased slightly, which was partly due to the occupational structure tilting towards more segregated occupations, and partly to women losing ground in traditionally male occupations. All of the above evidence suggests that the improvement in the relative position of women during early transition was due to a very pronounced decrease in the demand for "male work", and not to an alleviation of the exclusion of women from certain occupations.

Table 7.1: Basic results, 1986–2002

Year	Observed female-male wage ratio	Proportion female	Occupational segregation	Female-male difference in proportion female in occupation
1986	0.738	0.401	0.595	0.441
1993	0.833	0.431	0.627	0.450
1995	0.805	0.438	0.589	0.431
2002	0.798	0.408	0.541	0.369

Note: The observed female to male wage ratio is based on monthly earnings. In order to measure occupational segregation, we use the standard dissimilarity indices:

$$D = \sum_{i}^{T} \frac{1}{2} |f_i - m_i|$$

where f_i and m_i represent the share of female and male employees in occupation (firm) i, respectively, which ranges from 0 to 1, with 1 meaning maximum unevenness. We also provide a second measure: mean differences between women and men in proportion female in occupation.

Table 7.2: Distribution of workers by gender composition of occupation (%)

Sex composition of occupation	Women	Men	All	Women	Men	All
		1995			2002	
Male	6.9	61.7	39.6	5.4	57.2	35.6
Integrated	21.8	24.2	23.2	16.5	26.0	22.1
Female	71.3	14.1	37.2	78.1	16.8	42.3
		1995			2002	
Male	8.4	59.6	38.2	11.0	58.8	40.0
Integrated	25.8	29.9	28.2	27.8	29.4	28.8
Female	65.8	10.5	33.6	61.2	11.9	31.2

Note: Occupations with up to 25% female share in employment were classified as "male", those with over 55% female share as "female", and the rest as "integrated".

The late transition period

The second half of the nineties brought substantial positive change in terms of gender differences in the occupational distribution, even though there was no further improvement in the relative wages of women. First of all, occupational segregation decreased with women starting to find pathways into professions formerly considered as male. This was not only due to the entry of

new generations with new skills and preferences into the labour market after transition, as the decrease in occupational segregation was a general phenomenon, happening within given cohorts (see Table 6.4 for evidence). Second, the negative payoffs to working in a female occupation also decreased in the second half of the nineties. Both these changes contributed to the fact that gender disparities in the occupational distribution have become a minor factor in sustaining the gender wage gap.

Table 7.3: The gender wage gap and the effect of gender composition on wages

Year	Total gender wage gap	Adjusted gender wage gap	Wage effect of occupational femaleness	Occupational composition effect
1986	–0.304	–0.205	–0.176	–0.078
1993	–0.183	–0.182	–0.033	–0.015
1995	–0.216	–0.138	–0.107	–0.046
2002	–0.227	–0.147	–0.083	–0.030

Note: The total gender gap here is the mean logarithmic difference in the monthly earnings of women and men. For a definition of the other measures, see Appendix 2.

Table 7.4: Mean difference between women and men in proportion female in occupation, by cohort

Years of experience	2002	1995	1995 cohort in 2002
0–10	0.315	0.419	0.353
11–20	0.365	0.447	0.383
21–30	0.392	0.446	0.410
31–40	0.410	0.415	0.386

Note: We used data from 1995 to calculate the proportion female in a given occupation, and calculated the gender differences within given experience cohorts. By fixing the gender composition of each occupation, we look at the effects of pure changes in occupational composition. The results presented in the fourth column are calculated by sliding the upper and lower bounds of the cohorts in time, this means for example that in the row 11–20 years of experience, we actually used 18 and 27 years of experience to define this cohort.

Female work before the introduction of anti-discrimination legislation

Finally we will use data from 2002, the last year before the introduction of anti-discrimination legislation, to examine more thoroughly whether we find evidence that might support the crowding hypothesis. To do that, we will modify the analysis in two respects. First, we will use hourly wages instead of monthly earnings as our dependent variable, which might have an effect on our results if the negative correlation between monthly earnings and the femaleness of occupations is due to women working shorter hours. Second, we will use additional occupation characteristics,[50] in order to control for equalizing differences that are related to these. These more detailed and thus

50 Additional occupational characteristics were calculated from the 2001 and 2002 waves of the Labour Force Survey. These characteristics were the following ones: usual weekly hours worked, proportion of those working with variable work schedules, proportion of those working in multiple shifts, average years of schooling, average number of years of experience, proportion of those working with a contract of limited length.

more reliable analyses could not be done for earlier years due to a lack of appropriate data.

The first step of this analysis shows that controlling for the number of hours worked does not modify results: based on monthly earnings the coefficient on the proportion female in an occupation is –0.083 (with a standard error of 0.069), while using hourly wages as a dependent variable it is –0.082 (standard error: 0.085).[51] Our second result is more substantial: we do not find evidence that occupational segregation and the negative payoff to working in feminized occupations would be the result of labour market discrimination. Our evidence shows that occupational wage differentials are more due to occupational characteristics other than feminization; after controlling for these the coefficient on the proportion female in an occupation changes to 0.027 (standard error: 0.056). Relative earnings in female occupations are low because these jobs require both lower general and specific knowledge, as well as because working hours are shorter[52] and work schedules are more flexible in these occupations.

Our analysis shows that while in late socialist times gender disparities in occupational composition were a major factor in sustaining the gender wage gap, following the transition male and female work has become less strictly defined and that working in a feminized occupation does not entail a wage penalty. In other words, currently the gender wage gap in Hungary is not due to occupational exclusion coupled with an undervaluation of female work. The gender wage gap is rather a result of women being paid less than their male colleagues in a given occupation and firm. Further research is needed in order to find out whether this is due to employers' discriminative behaviour or rather to gender differences in productivity.

Appendix

1: The estimation procedure

In order to model the relationship between the gender composition of occupations and occupation wage differentials we use a two-step procedure. In the first stage we estimate individual-level wage equations of the form:

$$w_{ijk} = G_{ijk}\alpha + X_{ijk}\beta + O_j\,\eta_j + F_k\gamma_k + v_{ijk}\,.$$

This means that we model individual wages (more precisely their natural logarithms) as a function of an individual's gender (G_{ijk}, female=1, male=0), other individual level observables (X_{ijk}: schooling, experience and its square), the firm where she is employed (F_k), and her occupation (O_j) (and v_{ijk} is an individual-specific error term). This means that we use occupation-specific dummies (O_j= 1 if the individual works in the jth occupation and O_j = 0 otherwise) to estimate occupation wage effects. We used a modified version of the three-digit occupational codes (FEOR), which results in 125 differ-

51 This is due to the fact that women in our sample work only roughly 2 hours per month less than men.

52 The fact that in our sample the number of hours worked for women is not substantially lower than for men even though the usual hours worked in female occupations is lower is probably due to this latter measure being calculated from a different sample.

ent occupations for 1986–1993 period, and 120 occupations for the 1995–2002 period.

Then, in a second stage, we regress these occupation wage effects on the proportion female (PF_j) and other occupation characteristics (Z_j):

$\eta_j = PF_j\phi + Z_j\delta + \varepsilon_j$.

Thus we estimate how much of the wage differences between two otherwise comparable individuals working in different occupations can be explained by differences in the feminization of their occupations, thus the coefficient will measure the payoff (or penalty) to "female work".

2: Decomposing the gender wage gap

Using the results of the above two-step estimation procedure we can decompose the raw gender wage gap in the following way (using m to denote males and f for females, and over bar for averages):

$$\bar{w}_m - \bar{w}_f = \alpha + (\bar{X}_m - \bar{X}_f)\beta + (\bar{F}_m - \bar{F}_n)\gamma + (\overline{PF}_m - \overline{PF}_f)\phi + (\bar{Z}_m - \bar{Z}_f)\delta.$$

In our discussion, we analyze the first and the fourth elements of this decomposition. The first element (α) is the adjusted gender gap, the difference between women and men that remains after having controlled for all observable characteristics, and which is considered as the simplest measure of wage discrimination. The fourth element is the occupational composition effect $[(\overline{PF}_m - \overline{PF}_f)\phi]$ that shows the effect of women working in larger proportions than men in feminized occupations.

We also examined how the above factors contributed to the changes in the gender wage gap in the periods 1986–1993 and 1995–2002: we shortly describe this dynamic decomposition here. Let us denote by t_2 and t_1 the ending and starting date of a given period, respectively. For simplicity, we will now assume that the vector (X) contains all observable individual characteristics (except for gender) and firm dummies, and we will forget about all characteristics of occupations except for the proportion female. Then we can decompose the change in gender wage differentials in the following way:

$$(\bar{w}_f^{t_2} - \bar{w}_n^{t_2}) - (\bar{w}_f^{t_1} - \bar{w}_n^{t_1}) = (\alpha^{t_2} - \alpha^{t_1}) + \left[(\overline{PF}_f^{t_2} - \overline{PF}_n^{t_2}) - (\overline{PF}_f^{t_1} - \overline{PF}_n^{t_1})\right]\phi^{t_2} +$$
$$+ (\overline{PF}_{\cdot}^{t_1} - \overline{PF}_{\cdot}^{t_1})(\phi^{t_2} - \phi^{t_2}) + \left[(\bar{X}_{\cdot}^{t_2} - \bar{X}_{\cdot}^{t_2})\beta^{t_2} - (\bar{X}_{\cdot}^{t_1} - \bar{X}_{\cdot}^{t_1})\beta^{t_1}\right].$$

In this decomposition, the first term is the change in the adjusted gender wage gap, the second reflects the effect of changes in the gender differences in occupational composition. The third term measures the effect of the change in returns to femaleness of an occupation, while the last term captures all additional changes.

8. EARNINGS OF HIGHER-EDUCATION GRADUATES: THE ROLE OF EDUCATION, TYPE OF EDUCATION AND UNDER/OVER-EDUCATION

PÉTER GALASI

Nowadays the labour market situation of higher-education graduates has attracted much attention. This is partly due to higher-education expansion resulting in a fast-growing higher-education output, and, thus raising the question of the devaluation of higher-education diplomas in terms of relative earnings and also the deterioration of the labour market situation of the young graduates from higher-education institutions.

Although these concerns (*Polónyi and Timár* 2001) have not been justified as yet (*Kertesi and Köllő* 2005, *Galasi and Varga* 2005), there have recently been some signs that the labour market entry of young graduates has been becoming more difficult. The number of the registered unemployed among young people with a higher-education diploma has been increasing dynamically.[53] At the same time the (ILO/OECD) rate of unemployment of the young with tertiary education attainment is low by European standards, though it has been slightly increasing,[54] and the wage premium for a higher-education diploma is quite high and increasing.[55]

Though we have information on the labour market position of young persons with the higher-education diploma, data are only available from cross-sections, therefore nothing has been known to date about their labour-market mobility. Below we will try to identify some characteristics of their earnings' mobility by using data from three surveys conducted on samples representative of the former full-time higher-education students. The first contains information on the September 1999 labour-market situation of young career-beginners who graduated from higher education as full-time students in 1998, the second one describes the September 2000 labour-market situation of persons graduated from higher education as full-time students in 1999, the third is a follow-up survey on the February 2004 labour market situation of the two cohorts graduated in 1998 and 1999. Here we will use the sample of persons employed and having non-zero observed earnings[56] at the time of both the first (September 1999 or 2000) and the second (February 2004) observation.

53 For example the proportion of young persons registered unemployed with a higher-education diploma among the young registered unemployed increased from 4.4 per cent to 11.7 per cent between 1998 and 2004 (Employment Office's data).

54 Out of 11 European countries (Denmark, Finland, Germany, Great Britain, Hungary, Italy, Norway, Poland, Slovenia, Spain, Sweden) the Hungarian unemployment rate of the 15–39 years old with tertiary education is the lowest one between 1998 and 2003 (EUROSTAT).

55 The wage premium of the employees aged 15–39 with tertiary education attainment as compared to those with high-school diploma is 72 per cent in 1998 and 86 per cent in 2004 (Employment Office's wage surveys).

56 The terms earnings, wages, pay, salary and income are used interchangeably. All these refer to monthly net (after-tax) real earnings an employee obtains on the labour market.

The sample size is relatively modest (N: 1582), and it is weighted by types of education and higher-education institutions.[57]

We focus on changes in earnings as a result of investment in human capital and education/occupation mismatch. Due to the uniqueness of the data, our analysis might produce new insights into the changing situation of the young graduates, and, consequently, usefully complement the results of the literature on the subject (especially *Galasi* [2005b], [2005c], *Kertesi and Köllő* [2005]).

At the time of the first observation (1999 and 2000) a strong and growing demand for higher-education graduates was witnessed, coupled with a quite inelastic supply, and no negative side-effect of higher-education expansion was detected. The strong demand was reflected in very high wage premia for some types of education: business/economics, informatics, and technical education. By the time of the second observation the supply of the higher education has become more elastic, the demand for young graduates might have diminished, and this might have resulted in a deteriorating labour market position of those graduates who entered the labour market with the types of education which exhibited a rapid increase in terms of the number of students during the period of transition (i. e. business/economics, law).

Earnings, education, type of education and under/over-education: the raw data

Three factors affecting earnings are considered below: education (highest degree: college and university), type of education and over/under-education. Simple two-dimensional tables will be presented. Before we proceed it is worth mentioning two problems related to the interpretation of our results. First, the two cohorts (1998's and 1999's graduates) entered the labour market in different calendar years, and their labour market position was first observed in the 15th-16th months after graduation, whereas the second observation was made in the same calendar year and month. Therefore the length of their potential labour market experience differs at the time of the second observation, thus it would be better to analyse their earnings mobility separately. The relative small sample-size however does not allow us to do so, consequently the results might contain a labour-market career-path (or life-cycle) bias. Second, a quite considerable (about 50 per cent high) one-time wage rise occurred in the public sector between the first and the second observation. About a half of the sample are employed in the public sector, thus this pay rise strongly affects the earnings mobility of the young graduates. In order to control for this measure it would be appropriate to limit our analysis to the business sector, but then – again – half of the sample would be lost, thus the effect of this one-time wage rise would not be separated from other processes affecting earnings mobility.

57 Some earlier results from these surveys are summarised in: *Galasi* 2003a, 2003b, 2005a, *Galasi and Varga* 2002, 2005.

Information about average net (after-tax) monthly wage and its standard deviation at the time of the first and second observation are reported in Table 8.1. First-observation wages are converted to 2003 prices thus the table says something about real-wage changes.

Table 8.1: First- and second-observation earnings, Gini (N: 1582)

	Mean	Standard deviation	95 % confidence interval	
First-observation earnings (in thousand forint)	68	44.3	65	70
Second-observation earnings (in thousand forint)	120	70.1	117	123
Gini coefficient				
First-observation earnings (in thousand forint)	0.287			
Second-observation earnings (in thousand forint)	0.256			

Note: first-observation earnings are converted to 2003 prices

We can detect a quite considerable increase in the average real wage – from HUF 68 to 120 thousand coupled with a lessening wage dispersion (see the values of the Gini index). The latter might be due to the one-time pay rise in the public sector since the average wage in the public sector was much lower than that of the business sector at the time of the first observation.

Not all of the employed young graduates could, however, gain in terms of real wages during the period in consideration, some of them even suffered from wage losses between the first and the second observation. This is shown in Table 8.2 where changes in the relative earnings position of young graduates are presented with the help of wage quintiles. In order to interpret the results properly, it is worth mentioning that the precision of wage estimates are relatively low because of the small sample-size and that some of the wage (im)mobility might be due to measurement error.

Table 8.2: Earnings quintile mobility (row per cent) (N: 1582)

First-observation quintiles	Second-observation quintiles					
	1st	2nd	3rd	4th	5th	Together
1st	35.1	29.0	15.3	10.0	10.6	100.0
2nd	26.3	30.3	25.9	10.9	6.6	100.0
3rd	19.3	21.0	29.6	19.4	10.8	100.0
4th	10.0	16.3	20.3	35.7	17.8	100.0
5th	7.2	9.3	9.5	23.2	50.8	100.0
Together	19.9	21.5	20.5	19.5	18.6	100.0

A quite intensive earnings mobility took place between the two observations. By inspecting the main diagonal of the table we can conclude that about one third of our graduates stayed in the same quintile, except for the fifth quintile where some half of the persons are stayers. Two thirds of persons being in the first quintile at the time of the first observation could ameliorate their earnings position, and the same holds true of 43, 31 and 18 per cent of those

residing in the second, third and fourth initial quintiles, respectively. Similarly, the proportion of downwardly mobile persons is quite high: about one fourth of those initially being in the second quintile face a deteriorating position, and this is also true for 40, 46 and 49 per cent of employees being initially in the third, fourth and fifth quintile, respectively.

The effect of education on earnings is reported in Table 8.3, where means, standard deviations and 95 per-cent confidence intervals are presented. At the time of the first observation our respondents had one college or university diploma, and university-diploma holders could then realise a quite considerable and significant wage premium (see the first panel of the table). As regards their additional educational attainment, about half of the young graduates obtained another higher education degree between the two observations. Our main question might be whether additional diplomas might have resulted or not in additional wage gains.

Table 8.3: Earnings and a higher-education degree

Higher-education degree	Mean	Standard deviation	95 % confidence interval		N	N (%)
First observation						
University	78	57.7	73	82	565	35.7
College	62	33.4	60	64	1017	64.3
Mean	68	44.3	65	70	1582	100.0
Second observation						
One university	140	91.1	130	151	282	18.0
University and AHD	143	94.7	113	174	38	2.4
University and college	111	40.7	102	119	85	5.5
Two universities	130	74.2	118	143	134	8.6
University and PhD	118	55.2	95	142	22	1.4
One college	115	73.8	109	122	483	30.9
College and AHD	102	37.7	91	112	48	3.1
Two colleges	111	49.8	105	117	267	17.1
University and college	112	52.5	105	119	205	13.1
Mean	120	70.1	117	123	1564	100.0

Note: cells with less than twenty observations are omitted (second-observation earnings)

18 and 31 per-cent of our respondents have still one college or university diploma, respectively, and the remaining half have an additional higher-education degree at the time of the second observation. The first column of the second panel of the table (wages at the time of the second observation) shows the degrees obtained and their sequence. For example the row "college – university" contains information about the wages of those having obtained first a college, and then a university diploma. The average wage of those having one or two university diplomas or a university plus a PhD degree or a university degree combined with an AHD[58] might not differ at the time of the second

58 AHDs are short (one-year-long) higher-education programmes.

observation. Moreover one university diploma produces significantly higher average wages than one college diploma, and we can arrive at the same conclusion when a college degree is combined with any other one (university plus college, college plus university, college plus AHD, two college diplomas). The results are instructive since they suggest that additional diplomas do not necessarily imply wage gains. This problem will be analysed later with the help of multivariate techniques.

We also take a look at the relationship between earnings and type of education. Due to sample-size limits we cannot distinguish here between college and university education, and we use a one-digit variant of the type of education variable (see Table 8.4).

Table 8.4: Earnings and types of education of the higher-education degree

Type of education	Mean	Standard deviation	95 % confidence interval		N	N (%)
First-observation earnings (thousand forint)						
Agricultural	66	31.3	61	70	194	12.3
Humanities	50	23.0	48	52	464	29.3
Technical	81	41.5	77	85	368	23.3
Arts	50	32.8	38	63	25	1.6
Medical	56	28.5	51	61	126	8.0
Social science	91	68.0	83	99	310	19.6
Natural science	50	23.8	45	55	96	6.0
Mean	68	44.3	65	70	1582	100.0
First-observation earnings (thousand forint)						
One degree						
Agricultural	125	59.7	112	137	85	6.3
Humanities	101	81.0	91	112	215	15.9
Technical	132	70.7	122	141	221	16.3
Arts	117	69.4	100	133	70	5.2
Medical	152	87.3	138	166	147	10.8
Social science	91	27.5	82	100	38	2.8
Natural science	110	47.1	91	128	25	1.9
Two degrees						
Humanities	88	21.1	84	91	129	9.5
Technical	125	51.9	112	137	68	5.0
Social science	149	77.9	134	163	109	8.0
Social science and humanities	104	46.0	84	123	21	1.5
Social science and technical	139	59.8	113	165	20	1.5
Agricultural and social science	121	49.4	108	134	54	4.0
Arts and social sciences	118	50.5	107	130	74	5.5
Technical and social science	131	44.2	120	143	54	4.0
Medical and social science	156	97.6	116	197	22	1.7
Mean	120	70.1	117	123	1352	100.0

Note: cells with less than twenty observations are omitted (second-observation earnings).

In Panel 1 and 2 first- and second-observation earnings are presented, respectively. As regards first-observation wages, respondents with diplomas in social sciences and technical education appear to realise the highest earnings, agricultural education does produce the second-third highest earnings, whereas the remaining types of education do not seem to differ in terms of average wages.

Panel 2 provides information on second-observation average earnings by types of education. Since several respondents obtained a second higher-education degree between the second and the first observation, many of them have two diplomas at the time of the second observation, and these degrees might be different in terms of type of education. A considerable segment of those having two degrees have an additional degree in social sciences, several of them entered the labour market with diplomas in agriculture, arts and humanities, and technical sciences. A brief inspection of the confidence intervals shows that one or two degrees with almost any type of education, and any combination of types of education might result in the same wage level. Only those with one degree in natural sciences and two degrees in arts and humanities face lower wages than the other groups.

Finally, we consider the role under/over-education might play in wage determination. Models of under/over-education assume that any job represents a schooling requirement, but employers might hire persons with different levels of schooling for any job, if they do not find the necessary number of potential employees with the required education at the going market wages. If this is the case then an employee might be under/over-educated because s/he will have more or less education than the level of education required, and this might affect his/her wage (*Chevalier* 2003, *Rubb* 2000).[59] It is worth noting that over/under-education is an everyday phenomenon on the labour market, especially among young workers who have just started their career, sometimes in low-level jobs. The distribution of the sample by over/under-education is shown in Table 8.5.

From Panel 1 we can conclude that almost half of our sample possess the required education, more than forty and less than ten per cent of them are over- and under-educated, respectively, at the time of the first observation. As for the second observation, they have, on average, a higher level of schooling, and, as a consequence, more of them are over-educated, and the number of properly and under-educated persons is lower. This change went hand in hand with a quite intensive matching mobility (see Panel 2 of the table). Some 30, and 27 per cent of the young are over- and properly educated at the time of both the first and second observation, for some 40 per cent occupation/schooling matching changed. 18 per cent of our respondents become over-educated from being at the properly educated level, and about every tenth can ameliorate their school/education matching (from over- to properly educated).

59 Over/under-education can be measured in several ways. We use *Kiker–Santos–Oliveira's* (1997) method. We assume that the recent occupation of the respondent is a good proxy for her/his job, and that modal years of education observed in a given occupation correctly represent the education requirement of that occupation. Modal years of education are then computed from the sample for each occupation, and these modal values are assigned to each respondent as years of required education. With observed and required education at hand, years of over- and under-education can also be computed.

Table 8.5: Occupation/education matching

	First observation	Second observation
Distribution (per cent)		
Properly educated	47.6	41.1
Over-educated	42.7	52.1
Under-educated	9.7	6.8
Together	100.0	100.0
Matching mobility (from first to second observation)		
Stayers		
Properly educated	27.4	
Over-educated	30.8	
Under-educated	2.4	
Movers		
Properly and over-educated	17.9	
Properly and under-educated	2.3	
Over - and properly educated	9.8	
Over- and under-educated	2.1	
Under- and properly educated	3.9	
Under- and overeducated	3.4	
Together	100.0	

Let us see now whether matching has an effect on earnings or not. We consider first matching and earnings at the time of the first observation, then we take a look at the effect of matching mobility on second-observation earnings. Results are shown in Table 8.6.

Table 8.6: Earnings and occupation/education matching

Matching	Mean	Standard deviation	95 % confidence interval		N	N (%)
First observation	**First-observation earnings**					
Properly educated	60	34.1	58	63	762	47.6
Under-educated	64	32.3	59	69	152	9.7
Over-educated	79	55.3	74	83	668	42.7
Mean	68	44.3	65	70	1582	100.0
First and second observations	**Second-observation earnings**					
Stayers						
Properly educated	108	55.4	103	114	433	27.4
Under-educated	107	55.4	89	125	38	2.4
Over-educated	133	79.1	126	140	487	30.8
Movers						
Properly and over-educated	120	63.5	113	128	283	17.9
Properly and under-educated	140	180.5	82	199	37	2.3
Over- and properly educated	122	71.9	111	133	156	9.8
Over- and under-educated	106	59.1	86	126	34	2.1
Under- and properly educated	114	48.0	102	126	61	3.9
Under- and overeducated	122	63.0	105	138	54	3.4
Mean	120	70.1	117	123	1582	100.0

Regarding first-observation earnings (Panel 1) it seems that over-education produces wage advantages, whereas the under- and properly educated might have the same level of earnings. The results of matching mobility in terms of earnings might be summarised as follows. Those who are over-educated at the time of both the first and the second observation have a significant wage advantage over those who are properly and under-educated at the time of both observations. In general, we can conclude that over-education does not result in any wage disadvantage.

Determinants of second-observation wages[60]

The second section focuses on the determinants of second-observation earnings with the help of a five-equation structural model.[61] We consider human capital (education, training, labour-market experience) and schooling/occupation matching as potentially important factors influencing wages. The key dependent variable is the natural logarithm of after-tax wage rate (hourly wage). As human capital variables, education (one- or two higher-education degrees, and their level – college, university diploma, PhD degree), type of education, non-higher-education degrees obtained and training courses completed between the two observations, and labour market experience are available.

Higher education degrees are included as a series of dummies representing the number, the level and the sequence of higher education diplomas (one college, one university degree, two college, two university degrees, university-college, college-university, university-PhD, college-AHD, university-AHD diplomas). Type of education is inserted as the possible combination of the following types: agricultural education, humanities, foreign language, minor languages, teacher training, physical education, informatics, technical education, arts, medical education, law and public administration, business and economics, natural sciences. Non-higher-education and training courses completed between the two observations are also inserted as dummies (technical education, informatics, business-economics, agricultural, medical education, teacher training, law and public administration, foreign language).

Labour market experience is represented by three dummy variables: the length of time (in months) of being unemployed, full-time student and on child-care allowance.

Both first- and second-observation occupation/education matching is measured (properly educated, over- and under-educated), and a series of dummies captures the possible combinations of the first- and second-observation states (properly, over-, under-educated at the time of both observations, properly educated – under-educated, over-educated – under-educated, etc.).

Estimation results are shown in Table 8.7. The figures are point-estimate values significant at the p=0.05 level of the regression parameters expressed in percentage from the first equation of the structural model.[62]

60 *Varga* (2006) analysing similar problems using the same samples but a different formulation and econometric techniques arrives at a similar conclusion.

61 A skeletal description of the model and its estimates appear in the appendix. Estimation results of Table 7 are from the first equation of the structural model.

62 The whole set of estimation results is presented in Table A1 in the appendix.

Table 8.7: Second-observation wage premium or penalty due to higher-education degree, types of education, matching and labour-market-career interruption (per cent)

A. Second-observation higher-education degree	
One university	32.1
University and PhD	30.0
University and AHD	29.4
Two universities	28.5
University and college	16.1
B. Matching mobility	
Over- and under-educated	–12.0
Under- and overeducated	–9.8
C. Type of education of the higher-education degree	
One degree	
Law	19.1
Informatics	17.5
Business/economics	14.4
Two degrees	
Law and humanities	43.1
Business/economics and law	42.1
Informatics	41.3
Law and business/economics	37.2
Business/economics	35.0
Business/economics and technical	29.5
Agricultural and technical	28.8
Technical	18.4
Humanities and technical	–34.4
D. Types of education of the non-higher-education degree	
Technical	–4.9
Language	152.7
E. Type of education of courses not providing any degree	
Business/economics	27.2
F. Labour-market-career interruption	
Unemployment (in months)	–1.0

Notes: Iterated 3SLS.
Dependent variable: natural log of the second-observation (after-tax) wage rate.
Only parameter estimates significant at the p=0.05 level are shown.
Reference categories:
Second-observation higher-education degree: one college degree.
Matching mobility: properly educated at the time of both observations.
Type of education of the higher-education degree: one degree in agricultural sciences.
Types of education of the non-higher-education degree: non-participation.
Type of education of courses not providing any degree: non-participation.

Panel A of the table contains information about the impact of higher-education degrees on wages. Our respondents have either one or two higher-education diplomas, the reference category is one college diploma. The cells in the Table then show the relative wage premium/penalty in percentage terms which an average young worker with given degree(s) realises as compared to those having only one college diploma. A university degree produces wage

advantages, and any higher-education degree in addition to an initial university degree (two university, university and college, university and AHD, university and PhD diplomas) results in a significant wage premium. No extra wage is detected (and for this reason these combination of degrees are not presented in the Table) for those young workers who initially had a college diploma and obtained another degree between the two observations (college and university, two college, college and AHD diplomas).

Another important question is whether the significant point-estimates differ one from another. The joint test of significance[63] suggests that this might not be the case, that is, we cannot exclude that the estimated wage premia are the same for all groups of workers. A pair wise testing of coefficients, however, reveals that two university diplomas produce higher wages than one university diploma combined with a college diploma.

We can conclude that workers having entered the labour market with a university diploma have wage advantages even at the time of the second observation over those who initially had a college degree – whether they obtained a second degree or not. Secondly, although an initial university diploma combined with any other higher-education degree implies some wage premium as compared with a college diploma with no additional degree, in most cases it does not produce higher wages than a university degree with no additional degree. All these suggest that additional higher-education degrees do not necessarily result in extra wages at least in the short term.

In Panel B of the table the impact of matching mobility on wages is shown. The reference category is the group of workers having the required education at the time of both observations. Here we have only two significant and negative parameter estimates. Matching mobility negatively affects wages in the case of workers who are first over-educated and then become under-educated, and this is so for those initially under- and then over-educated. This suggests that matching mobility influences wages only if the initial state of mismatch is replaced by another state of mismatch, a worker with the same state of mismatch at the time of both observations (over-educated – over-educated, under-educated – under-educated) does not experience any wage loss.

Significant parameter estimates for types of education are presented in Panel C of the table. Since the reference type of education is one degree in agricultural sciences, the figures show the relative wage premium/penalty in percentage terms which an average young worker with given types of education realises as compared to those having only one degree in agricultural sciences. The workers in the sample might have a maximum of two higher-education diplomas, that is, at most two different types of education, and also they might possess two diplomas with the same type of education. It seems that either one diploma with a given type of education, or two diplomas with different types of education, or two diplomas with the same type of education

63 Results of pair wise and joint parameter testing are available from the author upon request.

might produce wage advantages. For those having one diploma at the time of the second observation, law, informatics or business/economics provide a statistically significant wage premium. Respondents with two diplomas might face higher wages if they acquired their degrees in law and arts/humanities, business/economics and law, business/economics and technical sciences, agricultural and technical sciences, and also if they obtained two degrees in informatics, business/economics, and technical sciences. The only one negative parameter estimate is for the combination of arts/humanities and technical sciences. It might be worth mentioning that most of the parameter estimates are non-significant, and therefore they are not included in Table 8.7.

Here, it might also be instructive to test for the joint and pair wise equality of the significant parameter estimates. In the light of the joint test the hypothesis of equality of the parameter estimates cannot be rejected, that is, that the wage premia of all combinations of types of education do not differ. The pair wise tests of significance, however, show that respondents holding two diplomas in business/economics earn more than those with one diploma in business/economics and with two diplomas in technical sciences.

Among the courses that do not provide a higher-education degree (Panel D), or any degree at all (Panel E), we can find very few significant parameter estimates. In both cases the reference group is non-participation in such courses. If a worker participates in a program in technical sciences, they can expect a wage penalty that amounts to about five per cent, a completed language course, however, produces a huge (some 150 per cent high) wage premium (Panel D). Training courses in business/economics also provide some wage advantage (Panel E).

Out of the three dummies representing labour market experience (length of time of being unemployed, full-time student and on child-care allowance), only unemployment seems to affect earnings (Panel F). Each month of unemployment implies about a one per cent decrease in wages.

Our results can be summarised as follows. The young workers in the sample invested heavily in their human capital between the two observations by obtaining other higher-education degrees, participating in training courses, and by accumulating additional labour market experience. Some of them could ameliorate their position in terms of better job/education matching as well. All these developments, however, did not necessarily result in higher wages. An initial university diploma implies some wage premium over an initial college diploma even at the time of the second observation, and the premium remains the same whether college-diploma holders obtain another higher-education degree or not. Moreover, the second-observation wage gain attributable to a second higher-education diploma in addition to a(n initial) university diploma is not higher than the one due to a university diploma with no additional higher-education degree. Some types of and combinations of

types of education (business/economics, law, informatics, technical sciences) produce a wage advantage as compared to one degree in agricultural sciences, but these gains seem to be the same for all combinations of types of education, except for two diplomas in business/economics that result in higher earnings than one diploma in business/economics and two diplomas in technical sciences. Language courses and short-term courses in business/economics also result in wage gains. Job/education mismatch in itself does not affect earnings, only transition from one state of mismatch to another one (from over-education to under-education and from under-education to over-education) implies lower wages. As regards labour market experience, unemployment negatively influences earnings.

Appendix
A structural model for determinants of first- and second-observation earnings.

We have two observations regarding the wages of career-beginners with the higher-education diploma. Two wage equations can then be estimated. We assume that when choosing a job, our respondents consider wage rate – hours of work packages, that is, the problem of simultaneity arises regarding the estimation of the two earnings functions. In order to handle simultaneity we have to run two hours-of-work equations in addition to the two wage-rate equations, and we have to insert the wage variable into the hours-of-work equations and the hours-of-work variable into the earnings equations. We also assume that the two wages are not independent, that is initial wages have an impact on second-observation wages, therefore first-observation wages have to be inserted into the first-observation earnings equation. The working time variable is the natural log of monthly hours of work, the wage rate variable is the natural log of net (after-tax) wage rate constructed by having divided the monthly after-tax wage by the monthly hours of work.

We assume that the human capital an individual accumulated over their labour-market career might have an impact on their wages. We distinguish five elements of human capital: higher-education degree, field of studies of the higher-education diploma, types of non-higher-education degrees, types of courses not providing any diploma, labour market experience. As regards the first element, we have a dummy for the first observation (university =1, college=0), and a series of combination of higher education diplomas obtained at the time of the first and the second observation. The second one is a series of dummies representing first-observation types of education, and a series of combination of first- and second-observation types of education. Non-higher education fields of studies contain also a series of dummies covering the non-higher-education courses completed between the first and the second obser-

vation. The fourth variable comprises a series of fields of courses (in general short-term training programs) the individual attended and finished between the two observations. Finally, labour market experience is a represented by three variables capturing the length of labour-market-career interruptions (unemployment, full-time student, being on child-care leave) detected between the first and the second observations.[64] Wages might be influenced by occupation/education matching, and also changes in occupation/education matching. Therefore we have inserted dummy variables showing the first-observation (mis)match into the first-observation wage equation (over-, under-, and properly educated), and also dummy variables capturing matching mobility between the two observations into the second-observation wage equation (over-, under-, properly educated at the time of both observations, over-educated – under-educated, under-educated – over-educated, etc.). Finally, we assume that the higher-education variable in the first-observation wage equation is endogenous due to ability bias, and for this reason we estimate a fifth equation, where the dependent variable is the first-observation higher-education degree (university=1, college=0), and the explanatory variables are two proxies for ability: mother's and father's education (years of schooling).

We estimate a structural model of five equations. Most of the equations contain endogenous explanatory variables, therefore the error terms and these variables are correlated. Plus explanatory variables of some equations are at the same time dependent variables of other equations, implying that the error terms of the individual equations are also correlated. We make use of the 3SLS estimator that applies an instrumental-variable approach to consistently estimate the parameters, and uses the GLS estimator so as to handle the correlation between the error terms of the individual equations (see *Greene*, 1993, p.611).

The equations and their key variables are as follows:

1. $\log w_{t1} = f(\log h_{t1}, \log w_{t0}, S_{t1}, TE_{t1}, SP_{t1}, TR_{t1}, MM_{t1}, EXP_{t1}...)$
2. $\log h_{t1} = g(\log w_{t1}...)$
3. $\log w_{t0} = h(\log h_{t0}, S_{t0}, TE_{t0}, SP_{t0}, TR_{t0}, M_{t0}...)$
4. $\log h_{t0} = k(\log w_{t0}...)$
5. $S_{t0} = z(S_p, S_m)$,

where t_0 and t_1 indicate the first and the second observations. log*w* and log*h* stand for wage-rate and monthly working time. *S*, *TE*, *SP*, *TR*, *EXP* denote higher-education degree, type of education of the higher-education degree, type of education for a non-higher-education degree, training courses not providing any degree, and labour-market experience, respectively.

The *p* and *m* are for the father and mother of the respondent. *M* and *MM* indicate first-observation matching, and matching mobility between the

64 Labour market experience at the time of the first observation seems to be irrelevant because every single worker had then practically the same labour-market-experience length.

first and second observations. The dependent variable of the fifth equation is dummy, therefore a linear-probability model is estimated. The most important objection to this, that the predicted value of the model does not fall into the interval 0–1, is not justified in the case of our sample.

Estimation results are summarised in Table A8.1.

Table A8.1: Determinants of wages

	Dependent variable	Second-observation wage rate (log)	
Equation 1	Coefficient	z	P>|z|
Second-observation hours of work (log)	–0.9863	–10.15	0.000
First-observation wage rate (log)	–0.0170	–0.97	0.334
Female	-0.1150	–5.80	0.000
Second-observation higher-education degree			
One college	0.0000	0.00	0.000
One university	0.2782	10.01	0.000
College and university	0.0235	0.32	0.751
Two colleges	–0.0556	–0.77	0.443
College and AHD	–0.0905	–1.13	0.260
College and university	–0.0519	–0.40	0.686
Two universities	0.2506	3.25	0.001
University and college	0.1492	2.64	0.008
University and AHD	0.2575	2.88	0.004
University and PhD	0.2626	2.47	0.014
Matching mobility			
Stayers			
Properly educated	0.0000	0.00	0.000
Over-educated	0.0245	0.98	0.329
Under-educated	0.0229	0.40	0.692
Movers			
Properly and over-educated	–0.0117	–0.42	0.671
Properly and under-educated	–0.0153	–0.27	0.784
Over- and properly educated	0.0204	0.67	0.504
Over- and under-educated	–0.1276	–2.09	0.037
Under- and properly educated	–0.0255	–0.55	0.585
Under- and over-educated	–0.1030	–2.13	0.033
Type of education of the second-observation higher-education degrees			
One degree			
Agricultural	0.0000	0.00	0.000
Humanities	–0.0514	–1.03	0.303
Foreign languages	0.0260	0.39	0.693
Teacher	–0.0245	–0.44	0.658
Informatics	0.1611	2.90	0.004
Technical	0.0219	0.49	0.625
Health care	0.0403	0.62	0.538
Law	0.1751	2.34	0.019
Business/economics	0.1344	2.79	0.005
Natural sciences	–0.0590	–0.86	0.392

	Dependent variable	Second-observation wage rate (log)	
Equation 1	Coefficient	z	P>|z|
Two degrees			
Agricultural	–0.0659	–0.63	0.526
Humanities and agricultural	–0.1326	–0.49	0.623
Teacher and agricultural	–0.0894	–0.47	0.637
Technical and agricultural	–0.0576	–0.42	0.677
Health care and agricultural	–0.1421	–0.79	0.428
Business/economics and agricultural	0.3012	0.94	0.346
Natural sciences and agricultural	–0.2737	–1.31	0.190
Agricultural and humanities	0.0166	0.09	0.927
Informatics and humanities	0.0150	0.17	0.867
Humanities	–0.0363	–0.34	0.736
Foreign languages and humanities	0.0350	0.36	0.720
Teacher and humanities	0.3994	1.89	0.058
Technical and humanities	–0.0712	–0.46	0.643
Health care and humanities	–0.0045	–0.03	0.979
Law and humanities	0.3581	2.33	0.020
Business/economics and humanities	0.1765	1.36	0.175
Natural sciences and humanities	–0.0028	–0.02	0.984
Agricultural and foreign languages	–0.0595	–0.26	0.792
Humanities and foreign languages	0.0391	0.28	0.779
Foreign languages	–0.0056	–0.04	0.970
Teacher and foreign language	–0.1315	–1.00	0.316
Health care and foreign languages	0.0280	0.12	0.902
Business/economics and foreign languages	–0.0048	–0.03	0.978
Natural sciences and foreign languages	–0.0893	–0.28	0.776
Agricultural and teacher	–0.1053	–0.34	0.734
Humanities and teacher	0.0114	0.11	0.914
Foreign languages and teacher	0.0325	0.20	0.843
Teacher	–0.0075	–0.08	0.940
Technical and teacher	0.0210	0.15	0.882
Health care and teacher	0.0904	0.48	0.634
Law and teacher	0.2904	0.88	0.381
Business/economics and teacher	0.0484	0.26	0.798
Natural sciences and teacher	–0.1501	–1.19	0.234
Agricultural and informatics	0.0237	0.16	0.876
Humanities and informatics	0.0902	0.34	0.733
Foreign language and informatics	–0.1372	–0.66	0.510
Informatics	0.3454	2.25	0.025
Technical and informatics	0.0753	0.48	0.634
Health care and informatics	0.2499	1.19	0.234
Business/economics and informatics	0.0168	0.11	0.909
Natural sciences and informatics	0.0844	0.53	0.598
Agricultural and technical	0.2529	2.40	0.016
Humanities and technical	–0.4213	–2.14	0.032
Foreign language and technical	–0.1351	–0.64	0.521
Informatics and technical	0.1782	1.02	0.308

	Dependent variable	Second-observation wage rate (log)	
Equation 1	Coefficient	z	P>|z|
Technical	0.1691	1.98	0.047
Health care and technical	0.0158	0.08	0.935
Business/economics and technical	0.2584	2.27	0.023
Natural sciences and technical	0.0980	0.49	0.628
Humanities and technical	–0.0759	–0.38	0.702
Foreign language and health care	0.0417	0.13	0.896
Health care	–0.0668	–0.66	0.512
Business/economics and health care	0.0443	0.23	0.814
Agricultural and law	0.1122	0.82	0.411
Humanities and law	–0.0125	–0.12	0.907
Foreign language and law	0.0818	0.37	0.715
Informatics and law	0.2922	0.93	0.353
Technical and law	0.2611	1.65	0.098
Law	0.1307	1.35	0.175
Business/economics and law	0.3516	3.01	0.003
Natural sciences and law	–0.0256	–0.22	0.826
Agricultural and business/economics	0.1039	1.21	0.228
Humanities and business/economics	0.1366	1.36	0.175
Foreign language and business/economics	0.1565	1.43	0.153
Informatics and business/economics	0.0818	0.73	0.467
Technical and business/economics	0.1750	1.89	0.058
Health care and business/economics	0.2012	1.89	0.058
Law and business/economics	0.3160	2.62	0.009
Business/economics	0.3000	3.64	0.000
Natural sciences and business/economics	0.0795	0.68	0.494
Agricultural and natural sciences	0.1271	0.74	0.459
Humanities and natural sciences	–0.0796	–0.54	0.592
Foreign languages and natural sciences	0.0572	0.21	0.832
Teacher and natural sciences	–0.0930	–0.49	0.623
Informatics and natural sciences	0.2539	0.81	0.419
Technical and natural sciences	0.0426	0.22	0.827
Health care and natural sciences	0.1089	0.47	0.635
Law and natural sciences	–0.4133	–1.31	0.192
Business/economics and natural sciences	0.0964	0.30	0.762
Natural sciences	0.0419	0.35	0.723
Date of obtaining a second higher-education degree	0.0112	1.13	0.260
Non-higher-education degree (obtained between the two observations)			
No degree	0.0000	0.00	0.000
Technical	–0.0506	–2.33	0.020
Informatics	–0.0042	–0.11	0.912
Agricultural	–0.0013	–0.03	0.979
Business/economics	–0.0032	–0.03	0.976
Health care	0.2779	1.73	0.084
Teacher	0.0882	0.55	0.582
Law	0.4013	1.53	0.125
Foreign language	0.9272	3.10	0.002

	Dependent variable	Second-observation wage rate (log)	
Equation 1	Coefficient	z	P>|z|
Other courses attended between the two observations			
No course attended	0.0000	0.00	0.000
Technical	0.0078	0.12	0.901
Informatics	–0.0538	–0.85	0.395
Agricultural	0.1695	1.05	0.295
Business/economics	0.2410	4.37	0.000
Health care	0.0213	0.31	0.760
Teacher	0.0236	0.46	0.649
Law	–0.0098	–0.12	0.904
Foreign language	–0.0053	–0.15	0.877
Other	–0.0074	–0.12	0.902
Labour market characteristics			
Manager	0.1358	6.72	0.000
At least half a year of labour market experience abroad after having completed the first degree	0.1356	3.40	0.001
Attending a higher-education institute at the time of the second observation	0.0312	0.89	0.373
Full-time student and employee at the time of the second observation	0.0280	0.36	0.720
Length of time of being full-time student in a higher-education institute between the two observations	–0.0003	–0.13	0.897
Working with his/her first employer at the time of the second observation	–0.0102	–0.59	0.553
Number of months of unemployment between the two observations	–0.0101	–3.92	0.000
Number of months of being on child-care leave between the two observations	–0.0019	–0.79	0.429
Ownership of the firm at the time of the second observation			
State-owned and Hungarian private owner	0.0000	0.00	0.000
Non-Hungarian private owner	0.2915	12.18	0.000
Hungarian and non-Hungarian private	0.2565	7.12	0.000
Wave	0.0308	1.52	0.129
Constant	8.9202	4.46	0.000

	Dependent variable	Second-observation wage rate (log)	
Equation 2	Coefficient	z	P>|z|
Second-observation hours of work (log)	–0.9863	–10.15	0.000
Second-observation wage (log)	0.0022	0.69	0.489
Female	–0.0840	–5.08	0.000
Working as a teacher at the time of the second observation	–0.2623	–13.86	0.000
Number of months of being on child-care leave between the two observations	0.0000	–0.18	0.855
Number of months of unemployment between the two observations	0.0000	0.22	0.825

Attending a higher-education institute at the time of the second observation	–0.0009	–0.70	0.486
Full-time student and employee at the time of the second observation	–0.0017	–0.40	0.693
Ownership of the firm at the time of the second observation			
State-owned	0.0000	0.00	0.000
Hungarian private owner	–0.0018	–1.39	0.165
Non-Hungarian private owner	–0.0013	–0.80	0.426
State-owned and Hungarian private owner	–0.0018	–0.25	0.804
Hungarian and non-Hungarian private	–0.0016	–0.74	0.459
Constant	5.1378	210.59	0.000

	Dependent variable	First-observation wage rate (log)	
Equation 3	Coefficient	z	P>|z|
Second-observation hours of work (log)	–0.9863	–10.15	0.000
First-observation hours of work (log)	–0.8705	–45.11	0.000
Female	–0.0816	–3.45	0.001
Higher-education degree: university	0.2382	9.29	0.000
First-observation matching			
Properly educated	0.0000	0.00	0.000
Under-educated	0.0140	0.34	0.733
Over-educated	0.0666	2.66	0.008
Type of education of the first higher education degree			
Agricultural	0.0000	0.00	0.000
Humanities	–0.2054	–4.15	0.000
Foreign languages	–0.0474	–0.82	0.412
Teacher	–0.1618	–3.31	0.001
Physical education	–0.2651	–2.25	0.025
Informatics	0.3293	5.75	0.000
Technical	0.2011	4.80	0.000
Arts	–0.2379	–2.42	0.016
Health care	–0.0816	–1.39	0.166
Law	–0.1229	–1.77	0.077
Business/economics	0.4039	9.33	0.000
Social	–0.0631	–0.77	0.444
Natural sciences	–0.2505	–4.44	0.000
Wave	0.0575	2.39	0.017
Constant	4.5699	1.92	0.055

	Dependent variable	First-observation wage rate (log)	
Equation 4	Coefficient	z	P>|z|
Second-observation hours of work (log)	–0.9863	–10.15	0.000
First-observation wage rate (log)	0.0011	1.17	0.243
Female	–0.0822	–5.01	0.000
Working as a teacher at the time of the second observation	–0.2620	–13.96	0.000
First-observation training courses			
No course	0.0009	0.34	0.734
Technical	0.0005	0.23	0.820
Informatics	0.0000	0.00	0.000
Agricultural	–0.0003	–0.17	0.861
Business/economics	–0.0204	–7.63	0.000
Health care	0.0002	0.07	0.944
Humanities	–0.0003	–0.14	0.887
Teacher	0.0005	0.15	0.882
Law	0.0001	0.04	0.967
Foreign language	–0.0011	–0.68	0.500
Other	5.1212	48.83	0.000

	Dependent variable	First-observation higher education degree: university	
Equation 5	Coefficient	z	P>|z|
Second-observation hours of work (log)	–0.9863	–10.15	0.000
Mother's education (years of schooling)	0.0242	4.40	0.000
Father's education (years of schooling)	0.0182	2.91	0.004
Constant	–0.1841	–2.71	0.007

Equation	chi^2	P
1st	914.10	0.000
2nd	259.11	0.000
3rd	2402.25	0.000
4th	321.58	0.000
5th	64.55	0.000

N = 1324
Estimator: iterated 3SLS.

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LEGAL AND INSTITUTIONAL ENVIRONMENT OF THE HUNGARIAN LABOUR MARKET

MÁRIA FREY

Each year the Labour Market Review has presented those changes in the legal and institutional environment of the labour market which have taken place since the publication of the previous volume, together with their reasons and motives. This year however, instead of presenting the changes, the study was commissioned to give an overview, in a comprehensive and clear way, of the current legislation and rules. The subsequent review of documents serves this objective.

As has happened a number of times previously, once again during the writing of this paper a proposal for a new legislative amendment has been put forward, the outcome of which is not known at the time of the submission of the final draft. Therefore in addition to the facts, expected future changes are also indicated.

*

The legal basis of the current institutional system of the labour market was created by Act IV of 1991 on Job Assistance and Unemployment Benefits. The bill which entered into force on March 1, 1991 and amended several times:

– created an insurance scheme for unemployment benefits,
– established the institutions of organised social dialogue,
– established the single public employment service,
– expanded the range of active labour market measures.

From the above, the present chapter – due to limitations of space – focuses only on *unemployment benefits and active labour market policies*.

1. INCOME REPLACEMENT ASSISTANCE OF THE UNEMPLOYED

To compensate for the loss of income as a result of unemployment the Employment Act originally introduced three types of assistance: the unemployment benefit, the unemployment allowance of young persons and the prepension. The unemployment allowance of young persons was phased out as

of July 1, 1996. New eligibility for the pre-pension could be established up until December 31, 1997. As of January 1, 1998 however it was replaced by the *pre-retirement unemployment allowance*.

At the beginning of 1993 a new type of unemployment assistance was introduced by Act III of 1993 on Social Administration and Social Assistance; the income replacement allowance for those who exhausted their entitlement for unemployment benefit. This was phased out from May 1, 2000. Since then, the only form of financial assistance for people in long term unemployed is the *regular social allowance*.

Table 1 gives an overview of the different forms of passive unemployment-compensation and the distribution of their recipients. The table shows that while in the early 1990s approximately one fourth of the registered unemployed were not receiving any assistance, this share has increased and stabilised to around one third to date. In the beginning most people received some sort of insurance-based benefit such as the unemployment benefit or the job search assistance. In 2005 less than 50% of recipients were getting such benefits.

Table 1: Distribution of recipients of passive unemployment compensation by type of assistance between 1992–2005 (percentage)

	Distribution of recipients at the end of the year									
Type of compensation	1992	1993	1994	1998	2000	2001	2002	2003	2004	2005
Unemployment benefit	86.6	57.8	34.8	40.8	44.8	51.1	47.2	45.4	43.8	42.0
Unemployment allowance of young persons	5.3	6.5	7.4	–	–	–	–	–	–	–
Income replacement assistance	8.1	27.8	45.6	45.5	36.9	10.8	4.0	0.8	0.3	–
Regular social allowance	–	–	–	..	13.2	34.8	45.6	48.4	47.9	49.1
Pre-pension	0.0	7.9	12.1	13.2	2.2	0.3	–	–	–	–
Pre-retirement unemployment allowance				0.5	2.9	3.0	3.2	2.7	2.3	2.0
Job-search assistance								2.7	5.7	6.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Those not receiving any assistance, as percentage of total registered unemployed	22.6	26.4	26.2	26.1	29.5	33.5	33.3	33.6	33.5	33.8

Source: Calculations based on data of the Employment Office.

Antecedents of the reform of the unemployment compensation system

The coverage of the registered unemployed looks far less favourable if we consider only those who are actively looking for work. Table 2 shows that while 61.9% of those who are considered unemployed according to the ILO definition were receiving assistance in 1992, this figure was 43.2% in 1999, and only 34.9% in 2004. Within this, the share of people receiving unemployment benefit dropped from nearly two thirds in 1999 to 15.7% in 2004. On the contrary, the share of the recipients of income replacement assistance increased from 6.5% in the year of its introduction (1993) to 20.9% in 1999, the year prior to its withdrawal. The regular social allowance which replaced it was paid to 13.9% of those unemployed who were actively looking for work.

Table 2: Coverage of active job-seekers by different types of compensation 1992–2004 (percentage)

Recipients of compensation	1992	1993	1994	1995	1996	1998	1999	2000	2001	2002	2003	2004
Men												
Unemployment benefit	63.0*	55.3	36.0	26.0	22.2	21.3	20.7	16.7	17.5	16.3	18.9	15.7
Unemployment allowance of young persons		2.7	2.9	3.1	2.2							
Income replacement assistance		7.2	17.5	23.1	24.0	22.8	21.7	17.5	5.7	3.0	2.1	2.3
Social allowance									13.7	16.7	15.0	15.1
Total	63.0*	65.3	56.3	52.2	48.4	44.1	42.4	34.2	36.9	36.0	36.0	33.1
Women												
Unemployment benefit	60.2*	51.5	36.0	27.8	26.4	24.2	24.4	17.9	19.6	19.4	18.3	17.0
Unemployment allowance of young persons		3.5	3.4	2.4	1.5							
Income replacement assistance		5.4	13.5	18.6	18.7	22.9	19.8	15.0	6.3	2.7	2.7	2.4
Social allowance									9.4	11.7	12.6	12.4
Total	60.2*	60.3	52.9	48.7	46.6	47.1	44.2	32.9	35.3	33.8	33.6	31.8
Total												
Unemployment benefit	61.9*	53.9	36.0	26.7	23.8	22.4	22.3	17.1	18.3	17.6	18.6	16.3
Unemployment allowance of young persons		3.0	3.0	2.8	2.0							
Income replacement benefit		6.5	16.0	21.4	21.9	22.8	20.9	16.5	5.9	2.8	2.4	2.3
Social allowance									12.1	14.6	13.9	13.8
Total	61.9*	63.4	55.0	50.9	47.7	45.2	43.2	33.6	36.3	35.0	34.9	32.4

* Including recipients of the unemployment allowance of young persons.
Source: Calculations based on the labour force survey of the Central Statistical Office.

According to the labour force survey of the Central Statistical Office, in 1992 37% of job-seeking unemployed men and approximately 40% of unemployed women were not covered by assistance, and the same figure increased to 64% among men and 66.4% among women by 2004.

In 2004 two thirds of the unemployed who were actively looking for work were not receiving any unemployment-related financial assistance. However, the proportion of those not looking for work and not ready to take up employment was growing among the recipients of benefits. Therefore the share of those who cannot formally be considered unemployed among benefit-recipients increased from 28 percent in 1992 to 52 percent in 2004. The figures in Table 3 on the one hand clearly illustrate that the longer the period of unemployment the more the readiness to take up employment – at least on the formal jobs market – diminishes. For example, in 1997 59.2% of benefit-recipients took concrete steps to find employment, while the same figure among the recipients of the income-replacement allowance was around 50%. By 2004 these indicators deteriorated; 56.1% of benefit- and 40.4% of welfare allowance recipients were actively looking for work.

The fact that barely half of the recipients of any compensation complied with the obligatory cooperation[1] and therefore were not classified as unemployed but inactive, urged the government bodies to fundamentally reconsider the unemployment-compensation system. Moreover the inconsistencies of the old benefit system (for instance the loss of the value of the benefits) were also strong arguments for change.

1 In the framework of the obligatory cooperation benefit-recipients are required to regularly visit the job centre, accept the "suitable" job offers made by the centre, enrol in training programmes offered, undertake active job search and inform the job centre of any changes in their situation (for example illness resulting in temporary inability to work, finding permanent or temporary employment).

Table 3: The share of those actively looking for work* and those not looking for work (passive unemployed)** among the recipients of unemployment-related assistance

	1992			1997			2004		
Receive unemployment-related assistance	Men	Women	Total	Men	Women	Total	Men	Women	Total
Among the recipients of unemployment benefit:									
– actively looking for work	75.0	68.0	72.0	62.7	54.4	59.2	62.5	50.4	56.1
– passive unemployed	13.0	11.0	12.0	6.2	5.3	5.8	14.5	10.0	12.1
Among the recipients of income-replacement allowance:									
– actively looking for work				52.2	46.9	50.1	55.4	53.8	54.6
– passive unemployed				17.2	11.5	15.0	23.2	10.9	17.6
Among the recipients of regular social allowance:									
– actively looking for work							40.6	40.1	40.4
– passive unemployed							35.5	23.6	30.6
Out of the total recipients of assistance:									
– actively looking for work	75.0	68.0	72.0	57.1	50.7	54.5	49.8	46.0	48.0
– passive unemployed	13.0	11.0	12.0	12.0	8.4	10.5	26.8	16.1	21.8

*Among the recipients of assistance only those can be considered unemployed who have been actively looking for work in the four weeks prior to the survey and are available to commence working within two weeks of finding an adequate job. Active job search is defined as contacting public or private employment agencies, employers, relatives or acquaintances to enquire about job opportunities.

**Passive unemployed are those who, although they would like to work, consider it hopeless and thus do not even try to look for work.

Source: Calculations based on data from the Labour Force Survey.

Before presenting these changes, it should be recalled that as of January 1, 2005 private entrepreneurs and full members of corporations also became eligible for unemployment assistance (entrepreneurs' benefit) if they pay the statutory entrepreneurs' contribution.[2] The rules of the entrepreneurs' benefit remained unchanged in the reform of the unemployment compensation system.

1.1. Entrepreneur's benefit and contribution

Entrepreneurs – based on the payment of the entrepreneurs' contribution – are entitled to entrepreneurs' benefit if they:

– are unemployed;
– have spent at least 365 days in employment as a private entrepreneur or as a member of a corporation over the four years prior to becoming unemployed, and have satisfied the payment obligation of entrepreneurs' contribution during this time;
– are not eligible for incapacity or accident-related disability pension, or are not receiving sick-pay;
– are registered job-seekers with the local job centre and have not been offered suitable employment.

The amount of entrepreneurs' benefit is calculated on the basis of the income which has served as the base for the entrepreneurs' contribution. For this

2 The unemployment benefit scheme for the entrepreneurs was introduced by sections 39/C, 42 (7), 44-46/B, and 58 (5) of Act IV of 1991 on Job Assistance and Unemployment Benefits.

purpose the income of the last calendar year is taken into account in which the unemployed paid the entrepreneurs' contribution for at least 6 months during the period of 4 years prior to becoming unemployed. The actual level of the entrepreneurs' benefit is 65% of the monthly average income defined in this way. Nevertheless, there are minimum and maximum amounts: the monthly minimum and maximum benefit are equal to 90% and 180% of the minimum old-age pension respectively. The period of payment of the benefit is a maximum of 270 days; one day of disbursement corresponding to 5 days of contribution.

The entrepreneur's contribution is payable by self-employed private entrepreneurs and members of corporations for the income subject to the health insurance contribution. The level of the contribution is 4%. (The sum of the 3% employers' contribution and 1% employees' contribution.)[3]

1.2. The reform of the Unemployment Benefit System

Unemployed people redefined as jobseekers

As of November 1, 2005 the unemployment-compensation system has undergone fundamental changes – but the new measures are applied only for the new entrants.[4]

The various types of unemployment compensation were replaced by a range of job-search support schemes that are available only for job-seekers, *in other words, people who are not simply wishing to return to work, but are actively engaged in job search and do their best to find work.*

1.2.1. Job-search benefit

Primary objective: promoting the take up of work

In the new system the unemployment benefit is replaced by the job-search benefit. The eligibility conditions (see Table 4) are similar to a mixed, insurance-based and universal benefit coupled with stronger incentives to take up work. The latter is manifested for example in the fact that the amount of assistance decreases with the duration of unemployment.

Table 4: Conditions of eligibility for job-search benefit

Introduction of job-search benefit	Employment records	Eligibility period		Waiting period	
		minimum	maximum	voluntary departure	redundancy
November 1, 2005	A minimum of 12 months within 4 years of becoming unemployed	73 days	270 days	3 months	N/A

Job-search benefit can be granted to job-seekers who were employed for at least 365 days within four years of becoming unemployed. As eligibility to one benefit day requires five days spent in employment, *the shortest disbursement period of the job-search benefit will be 73 days* (previously the shortest peri-

3 The annual contribution calculated on the basis of the minimum wage should be paid regardless of whether the entrepreneur has received income – in the form of entrepreneur's withdrawal or personal involvement – from the private enterprise or the company

4 Act LXX of 2005 on the Amendment of Act IV of 1991 on Job Assistance and Unemployment Benefits. The Act was adopted by Parliament on June 27, 2005, and entered into force on November 1, 2005.

od was 40 days requiring 200 days in employment), while *the longest period will remain at 270 days. The level of the job-search benefit equals 60 percent of the eligible average wage. The maximum and minimum amounts* are no more linked to the minimum old-age pension but *to the minimum wage*.

The two phases of disbursement
– *In phase one, the duration of which is half of the disbursement period, but a maximum of 91 days, the level of the job-search benefit is 60% of the beneficiary's earlier average wage*, with a fixed minimum and maximum The minimum amount is equal to 60% of the minimum wage, while the maximum is the double of this (see Table 5). (The minimum wage was HUF 57,000 on November 1, 2005. Thus the minimum amount of the benefit was HUF 34,200 and the maximum was HUF 68,400 per month; in contrast to HUF 22,230 and HUF 44,460 before the 1st of November.).
– The duration of phase two is the number of the remaining entitlement days, but not longer than 179 days. The benefit during this phase is a fixed amount: 60% of the minimum wage. (If the job-seeker's eligible monthly average earning was lower than the minimum amount of the benefit, then the amount of the benefit is equal to that).

Table 5: Calculating the amount of job-search benefit

The level of the benefit in		Duration of Phase 1	Formula to calculate the average wage	Amount	
phase 1	phase 2			minimum	maximum
60% of previous average wage	60% of the minimum wage	Half of the entitlement period, but a maximum of 91 days	The average wage in the four quarters before becoming unemployed	60% of the minimum wage	120% of the minimum wage

Active job search is a key requirement in order to qualify for the benefit. Its steps are established in an agreement between the job seeker and the local job centre. In this document the two parties set out a sequence of activities that help the individual to return to work. Active engagement and participation of the individual in job search is crucial to the extent *that in case of non-compliance the benefit must be terminated.*

Bonus for taking up employment

The introduction of a so-called bonus for successful job-seekers – already used as part of the earlier job-search incentive scheme – might encourage finding work in a shorter period. The bonus is granted to job-seekers who take up full-time, or part-time – at least 4 hours a day – work with a permanent contract during the disbursement of their job-search benefit, and they remain in the job for a certain time. It is a lump-sum payment that amounts to 50% of

the remaining benefit entitlement. This case should be regarded as if the individual had been receiving the benefit for the whole entitlement period.

The job-search benefit gives entitlement to social security benefits, and thus – like the unemployment benefit – is subject to health insurance and pension contributions which are administered by the disbursing authorities.

1.2.2. Job-search allowance

The aim of the amendment is to ensure that no group of unemployed persons receives a lower amount of benefit, and any reduction in the average daily assistance is compensated by a longer entitlement period. Therefore for those who:

– exhausted their eligibility for the job-search benefit;
– are close to the statutory retirement age;
– or due to the changes in the eligibility conditions, do not qualify for job-search benefit

a new scheme, the job-search allowance was created. (*see Table 6*) The allowance is 40% of the minimum wage, a fixed-sum which was HUF 22,800/month on November 1, 2005 when the act entered into force. The allowance gives entitlement to social security assistance, thus the allowance is subject to health insurance payable by the disbursing authority and pension contributions payable by the recipients. Its payment can be suspended, but in the event that the allowance is terminated, the remaining entitlement days cannot be taken over for a new period.

Table 6: Main features of the job-search allowance

Eligibility	The amount of the allowance	Length of payment
1. For persons who have been entitled to at least 180 days of job-search benefit, already used-up their entitlement however have not yet found work.	40 percent of the minimum wage	90 days, for persons aged 50 and over 180 days
2. Job-seekers who have spent between 200 and 364 days in employment during the 4 years before becoming unemployed.	40 percent of the minimum wage	90 days
3. Persons who were eligible for pre-retirement unemployment allowance before November 1, 2005.	40 percent of the minimum wage	Until reaching statutory retirement age, but maximum 5 years

Eligibility for job-search benefit and length of payment

The introduction of the job-search incentive on July 1, 2003 served the purpose of promoting longer and closer cooperation with the job centre. One of the eligibility conditions of this new assistance was closer cooperation during

the period of disbursement. This allowance could be granted to those who had received unemployment benefit for at least 180 days and had entirely used up their entitlement. The amount of the allowance was 85% of the minimum old-age pension and the duration was 180 days, which could be extended by another 90 days for people aged 45 years and over.

The job-search incentive had to be adjusted to the new system of job-search assistance, while preserving those features that worked. One of these for example is that active job search is expected from the beginning of unemployment and not only following a longer period of passive benefit-receipt. In the new system indeed, engagement in active job search is one of the main conditions of eligibility.

Therefore job-seekers allowance can be granted to those job-seekers who have been eligible for at least 180 days of job-seeker's benefit and have already used them up but were not able to find work. The allowance is paid for 90 days, in the case of job-seekers aged 50 years and over, for 180 days.

– Furthermore, job-seekers allowance can also be paid to those who became eligible for unemployment benefit for 40 days based on 200 days in employment, according to the old rules (in effect) before November 2005. However in the new system they cannot receive benefit because they have not reached 365 days in employment. To avoid a situation whereby these people are worse-off in the new system, *they are granted job-seekers allowance if they had been employed for at least 200 but less than 365 days during the four years before their unemployment. The allowance is also paid for 90 days in their case.*

– The pre-retirement unemployment allowance was kept with identical eligibility and payment conditions. (The amount of the allowance has increased: previously it was 80% of the old-age minimum pension and now it is 40% of the minimum wage). However, its name has been changed and under the term 'job-search allowance' it has been integrated into the general scheme. The allowance can be paid – as in the previous scheme – until the individual becomes eligible for a pension, but for no longer than 5 years.

Employment during job-search assistance

People receiving job-search benefit – likewise the recipients of the previous unemployment benefit – are not permitted to take up employment with the exception of casual jobs.

The welfare allowance system evidently can be less expected to "promote return to work", nevertheless it should minimise the disincentives to work and avoid the benefit trap. To this end, one of the necessary conditions is that *working does not lead to the immediate termination of the allowance.* Therefore, short-term employment with the casual employee log is permitted, and – not like in the case of job-search benefit – with no consequences on the amount of the allowance.

1.2.3. Job-search assistance and the regular social allowance

People who are receiving certain types of job-search assistance or who have already exhausted their entitlement are eligible for a means-tested social assistance that is administered by the local governments. *The regular social allowance can be paid to people of working age who are not in employment, are not receiving job-search benefit and do not have other means to support themselves or their family.*

Reintegration programme to promote taking up work

One of the conditions of the regular social allowance is cooperation with the designated authorities.[5] This involves:

– registering and,
– signing a written agreement on the individual reintegration programme with the designated authorities, and
– compliance with the terms and conditions of the agreement.

This reintegration programme might *require the claimant to cooperate with the local employment services in order to find work*, or in other words to become an active job-seeker.

1.3. Registration as a job-seeker with the Public Employment Service

Those clients of the Public Employment Service are considered job-seekers who satisfy the following criteria:

– have the capacity and satisfy the general conditions to be employed and
– are not enrolled in full-time education, and
– not entitled to old-age pension, and
– are currently not in employment, other than casual employment, and are not engaged in any other income-earning activity, and
– inform the job centre of any changes in the above four conditions within 8 days, and
– are engaged in active job-search, and
– sign a job-search agreement with the local office of the job centre, and
– accept any suitable job offers, and
– are registered by the local office of the job-centre as job-seekers.

The registration is initiated by the client by submitting the appropriate registration form in the local office of the job centre. If the individual meets the conditions of registration, the job-search *agreement* is signed.[6] *The agreement is in fact a document that sets out the ways the individual gets engaged and cooperates in active job-search.*

Progress and compliance with the content of the job-search agreement is evaluated jointly by the individual and the designated member of staff of the local office of the job centre on a regular basis at personal meetings. The doc-

5 See Act CXXXVI of 2004 on the Amendment of certain social acts. Among others, this concerns Act III of 1993 on Social Administration and Social Assistance The relevant section has been in force since September 1, 2005.

6 The rules concerning the job-search agreement are set out in MoEL regulation 18/2005 (October 18) and its amendment by MoEL regulation 24/2005 (December 27).

ument can be modified or amended by mutual agreement of the individual and the job-centre if:

– *any change in the conditions of the job-seeker prevents compliance* with the terms of the agreement or to fulfil the tasks and requirements specified in it, or
– the job-seeker wishes to *modify the means and methods of job-search* specified in the document.

1.4. The experiences of the implementation of the new rules

Experiences following November 1, 2005 suggest that the modification of the term 'unemployed person' caused significant confusion, especially the replacement of the term 'unemployed' by the term 'job-seeker' because job-search is not linked only to the unemployed status. Active job-search could also be enforced by using the term 'job-seeking unemployed'.

The emphasis on active job-search nevertheless should be regarded as *positive*. However, *the mandatory job-search agreement has not fulfilled the expectations* and it – in its current form – raises constitutional concerns as well.[7]

The ombudsman for national and ethnic minority rights put forward the criticism concerning the role of the job-search agreement that over the past few months a number of plaintiffs who are receiving regular social allowance complained that the local office of the job centre removed them from the database of registered job-seekers. Later this decision was justified by the lack of compliance with the job-search agreement, the failing to undertake active job-search by the plaintive. But plaintiffs claimed that they failed to fulfil their tasks because the requirements were unclear to them.

Feedback from the job centres also suggest that the rules concerning job-search agreements should be revised. The agreement might be helpful to those who live in areas with better labour market conditions, because "in the absence of vacancies" active job-search might not be successful.

Furthermore, they indicate that concluding job-search agreements with certain clients is a formality because it obviously will not lead to employment. They also complain about the administrative burden and that agreements are paper-consuming. As a result waiting times become longer which makes clients edgy and less tolerant. On top of these the positive impact of the job-search agreement, namely any improvement in the employment indicators remains imperceptible.

Planned changes

Therefore the amendment of the Employment Act as of January 1, 2007 introduces the following changes in order to clarify the situation of job-seekers:

7 Ministry of Social Affairs and Labour (MoSAL), Department of Employment Policy: Proposal for the amendment of the unemployment assistance system and the rules on the mandatory cooperation. Draft, Budapest, August 10, 2006.

– *it puts forward a list of statutory* requirements that form part of the mandatory cooperation non-compliance with these leading to adverse legal consequences (impact negatively on the status of the job-seeker),
– it clearly indicates the nature and scope of sanctions that are attached to any non-compliance with the requirements.

The proposal[8] makes it *mandatory* to conclude job-search agreements when it is made necessary and *justified by the particular circumstances of the co-operation requirement*. In other words, when the job-seeking unemployed person receives any unemployment-related assistance, namely:
– job-search assistance or
– regular social allowance and the reintegration programmes require co-operation with the PES.

2. ACTIVE LABOUR MARKET POLICIES

Paragraph 1 of Section 5 of the Employment Act asserts that employment services and employment-related aid should be the primary means of solving, managing and mitigating tensions on the labour market, as well as preventing, reducing and alleviating the negative consequences of unemployment. The tasks related to eligibility, payment and monitoring are carried out by the local offices of the job centres and supported by the decentralised budget of the Employment Sub-Fund of the Labour Market Fund. The different types of assistance, their conditions and scope of eligibility are set out in this act.[9] In general, *access to these schemes* – in contrast to passive assistance – is not *guaranteed neither for employers nor people in unemployment* even if they meet all eligibility criteria laid down in the act.

2.1. Employment promotion and support for training aid

The Act that entered into force on March 1, 1991 defined the following range of employment incentive measures:
– *labour market training/re-training,*
– support to unemployed people to become self-employed,
– subsidy for the employment of people in long-term unemployment,
– *public work,*
– subsidy for *job creation*,
– subsidy for part-time employment,
– early retirement.

By the end of 1996 this list was amended only at one point: *as of July 1, 1995 the funding of early retirement from the Employment Sub-fund was terminated.*

8 Ministry of Social Affairs and Labour: Proposal for the Policy Management Meeting on the Amendment of Act IV of 1991 on Job Assistance and Unemployment Benefits August, 2006, Budapest.

9 The detailed rules are now more often published in the Ministry of Labour regulation no. 6/1996 (VII. 16) on employment aid and aid to mitigate the effects of crisis situations on the labour market.

More significant changes took place on January 1, 1997 when:
– *the subsidy for part-time employment was phased-out*
– and new measures were introduced:
  • support for the job-creation of self-employed persons,
  • subsidy for the protection of employment: *a)* in the form of capital grants and b) subsidy for the part-time employment of certain groups of employees,
  • and compensation for *employment-related contributions*.

As of March 19, 1998:
– in the framework of mobility support, in addition to commuting, the costs of transportation of workers, accommodation and recruitment are also eligible for funding.

As of January 1, 2000:
– Job-creation and employment-protection subsidies were dropped from the Employment Act, however these were re-incorporated as of January 1, 2002,
– besides single active measures, the combination of them is also eligible for funding in the form of active labour market programmes,
– the regulation of employment services was carried out and new services were introduced as of May 20, 2004,
– public interest organisations can also undertake temping to promote the employment of disadvantaged groups. This activity is eligible for support as of 2005.

Besides the Employment Act, other acts (on personal income tax; corporate and capital return tax, fixed-sum health insurance contribution) also provide for targeted reductions of tax and contributions for the employment and training of job-seekers and other disadvantaged or disabled people. Community work programmes also play an important role in the transitional, temporary employment of unemployed people who are impossible or difficult to place in the primary labour market. The main rules of these schemes are summarised in *the Appendix*.

Each year 2–3% of the economically active population take part in active measures

A significant number of people were channelled out from unemployment by the active labour-market measures. Between 1993–2005 the average number of participants in active measures was between 75–116 thousand each year (table 7). This corresponds to 2–3% of the economically active population. This also means that during this period *the unemployment rate, which fluctuated between 9–11%, would have been that much higher had jobless people or people threatened by redundancy not received preventive or active support to remain or return to the labour market.*

Table 7: Average number of participants in active labour market measures, 1993–2005

Active labour market measures	1993	1994	1998	2000	2001	2002	2003	2004	2005
Labour market training		30,662	23,039	26,307	27,187	23,410	25,044	17,919	11,838
Public work*		27,021	30,877*	23,705	23,185	17,751	17,534	14,235	15,790
Wage subsidy		20,442	29,313	27,524	26,547	21,963	20,439	18,909	18,417
Job-creation investment aid**		23,051	12,291	3,192	6,943	1,708	1,270	2,717	2,742
Entrepreneurship aid		3,668	1,307	1,506	1,616	1,269	1,250	953	1,137
Part-time employment aid		1,781	–	–	–	–	–	357	586
Early retirement		6,283	1,348	45	–	–	–	–	–
Travel costs reimbursement		1,907	2,326	4,091	3,483	3,294	3,088	2,112	1,836
Measures for young persons			10,302	7,816	7,094	6,827	7686	7,908	8,086
Self-employment support scheme			1,992	4,505	5,142	5,204	4,642	3,963	3,111
Aid for job protection			1,528	3,029	156	2,209	3,419	2,923	4,284
Reduction of contributions			556	1,255	3,399	3,116	3,887	3,324	3,821
Total	75,864	114,815	114,879	102,975	104,752	86,751	88,259	75,320	71,648

* Including all forms of community work.
** The number of jobs newly created with the aid and for which workers were hired.
Source: Statistics of the Employment Office.

These measures offered employment and training opportunities initially for an increasing and then for a decreasing proportion of jobseekers. The so-called activation rate – which compares the number of participants in active measures with the sum of active measure participants and registered unemployed – was around only 16–17% in the mid 1990s then rose above 20% in 1998 and reached 22.4% in 2001. Since then, a sharp decline has been taking place and the rate fell to 18.5% in 2003 and 14.9% in 2005.

When considering these figures, it should be taken into account that in 2004 the programmes funded by the European Union were launched and from 2005 – in the framework of the "100 Steps Programme" – a number of new measures were introduced to increase employment and reduce unemployment. These to some extent overlap with the active measures of the Employment Act but the beneficiaries of these programmes do not appear in the statistics on participation in active measures.

2.2. The "100 Steps Programme"

The labour market chapter of the "100 Steps Programme" initially included 15 and then a number of further measures to increase employment and improve transparency on the labour market relating to undeclared work. Here only the relevant measures are presented, namely those that *reduce social insurance contributions, based on a universal entitlement.*

2.2.1. The Start Programme

The Start Programme was launched on October 1, 2005. The programme covers young people under the age of 25 years or – in the case of people with

higher education – 30 years who finished or temporarily left school and entered their first job.[10] Their employers are eligible for a subsidy *during a period of 2 years.* The subsidy takes the form of a *reduction of social insurance contributions based on universal entitlement*: employers have to pay (monthly) *15% of the eligible wage as a contribution in the first year, and 25% in the second year.* The reduction can be used for *wages equalling up to 150% of the minimum wage for people aged less than 25 years, or 200% in the case of young graduates up to the age of 30.* Nevertheless, this does not mean that the actual wage cannot be higher than this amount, only the subsidy is capped at these levels.

It is worthwhile to hire young persons

Eligibility is proven with the Start-card issued by the tax authority. All young people aged less than 25 years (in the case of people with higher education 30 years) who enter their first job or paid internship are entitled to claim this card provided they finished or interrupted their studies. *Between October 1, 2005 and August 28, 2006 32,865 young people applied for the card and 9,000 people entered employment using the discount provided by the Start Programme.*

2.2.2. Increasing employment and promoting flexibility

From January 2006 micro-, small- and medium-sized enterprises and NGOs with less than 250 employees *are exempt from the employer's contributions* if they hire new workers who have been registered unemployed for at least 3 months.[11] The reduction is for one year during which the new workers should be retained and their employment should be maintained for an additional year. The discount covers the fixed-sum health insurance contribution, the social security contribution payable by the employer and the employer's contribution for unemployment insurance. The basis for the reduction shall be up to 130% of the minimum wage for full-time employees and correspondingly less for part-time workers. *Based on data from the first 6 months of the year, 7723 people who were unemployed for more than 3 months found work as a result of this new scheme.*

2.2.3. Expanding the Start Programme

Based on the positive experiences of the Start Programme, with the support of the European Social Fund the Programme is expanded from 2007.

– In the framework of the Start Plus programme for people returning to work after child care or caring for a next of kin the statutory contributions payable by the employer are partly covered by the Labour Market Fund.

– The Start Extra Programme aims to provide assistance to return to work for people in long term unemployment who face difficulties in the labour market because of their age or because they live in deprived areas. In their case the Labour Market Fund fully covers the employer's contributions in the first year and partly in the second year.

10 Act LXXIII of 2005 on Incentives to Promote the Employment of Young persons, Unemployed People Aged 50 Years and over and People Returning to Work after Child Care or Nursing, and on the Amendment of Act CXXIII on the Paid Internship Employment. The act was adopted on June 27, 2005 and entered into force on October 1, 2005.

11 Act CLXXX of 2005 on Measures to Increase Employment and Promote the Flexibility of Employment. The act was adopted on December 19, 2005 and entered into force on January 1, 2006.

2.3. Changes in the system of employment promotion[12]

Reasons for the changes

Changes in the system of employment subsidies have been long due.

– During the years an unmanageable number of employment subsidies have been created that are often overlapping as well. Therefore the PES has to provide subsidies with different conditions often for the same target group. Their administration is very difficult and their impacts are not transparent.

– *The system of employment subsidies is for the most part in conformity with EU regulations.* The main reason for this is that a number of subsidies that are not in line with the rules on block exemption are provided as *de minimis* aid.[13] This means that the subsidies could be maintained avoiding the lengthy notification and approval procedures of the Commission. Nevertheless, besides its advantages, *de minimis* aid has also many disadvantages. Therefore it is desirable to reduce the number of *de minimis* schemes and keep them to the smallest possible extent.

The Community regulations on block exemptions for state aid to enterprises remain in force until December 31, 2006 and can be applied for an additional 6 months, until June 30, 2007. Most of the national aid schemes were notified to the Commission with an expiry on December 31, 2006. Therefore information or a simplified notification (according to Article 4 of 794/2004/EC regulation) had to be sent to the Commission in order to extend their application for the additional 6 months. It is expected that the application of block exemption regulations will be extended to December 31, 2007. Therefore the application of existing national aid schemes can be extended to this date.

The six months transition period does not apply to aid schemes that were in conformity with the Community regulation in force before the adoption of Commission Regulation (EC) No 2204/2002 and were notified to the European Commission before EU accession. These aid schemes are *aid for increasing employment, aid for the protection of employment, aid for increasing the employment of disabled people and aid to work placement.*

In conclusion: The reasons for the review of the system of employment-related subsidies and the amendment of the regulation of active measures are to:

– ensure conformity with Community legislation,
– increase transparency of the aid system,
– eliminate overlapping subsidies, and
– improve the effectiveness of employment aid schemes.[14]

The changes concern the following schemes:

– aid to reimburse wage and its contributions (wage subsidy),
– aid to support the provision of employment services,
– aid to support the mobility of workers,
– support to business start-up, and
– labour market training aid.

12 This chapter is based on the proposal of the Ministry of Social Affairs and Labour for the Amendment of Act IV of 1991 on Job Assistance and Unemployment Benefits submitted in August 2006.

13 According to the Commission Regulation No 69/2001 of 12 January 2001 on the application of Articles 87 and 88 of the Treaty to *de minimis* aid, the total *de minimis* aid granted to any one enterprise shall not exceed EUR 100000 over any period of three years. *De minimis* aid shall not be granted to the transport sector and to the activities linked to the production, processing or marketing of agriculture and fisheries products, to activities directly linked to export and activities contingent upon the use of domestic over imported goods.

14 The amendment does not concern those schemes that provide a reduction of contributions and other taxes on the basis of other acts (on personal income tax; corporate and capital return tax, fixed-sum health insurance contribution) to promote the employment and training of job-seekers and other disadvantaged or disabled persons. These schemes are not considered state aid in the meaning of Community legislation. They are so-called general measures (open to all enterprises meeting the eligibility conditions) and are not subject to prior notification to the Commission.

2.3.1. Wage subsidy

The previous sections have showed that various target groups are eligible for different wage- and contribution subsidies. It is the wage subsidy that undergoes the most fundamental changes: some of the existing subsidies are being merged into the new scheme or are being phased out.

Purpose and beneficiaries of the wage subsidy

The purpose of the wage subsidy is to promote the employment of disadvantaged persons. Commission Regulation (EC) No 2204/2002 defines the concept of disadvantaged workers and the categories of disadvantaged persons. On the basis of this employers[15] are eligible for a wage subsidy if they employ workers falling into the categories set out in the Community regulation.

Disadvantaged persons are those *job-seekers*[16] who:

– have not attained an upper secondary educational qualification, or
– are aged 50 years or over when entering employment, or
– are disabled[17] or
– have been registered as unemployed with the local office of the job centre for at least 12 of the previous 16 months, or in the case of young persons for 6 of the previous 8 months, or
– live as a single adult looking after a child or children under 18 years, or
– before registering as a job-seeker has been receiving any form of child care benefit, maternity pay, or carer's allowance during the previous 12 months, or
– before registering as a job-seeker have been imprisoned during the previous 12 months.

Moreover, employers are eligible for wage subsidy if they retain in employment a *disadvantaged person (worker) who is losing their job,* namely:

– their work contract is terminated because of redundancy, or their fixed-term employment contract ends within 90 days, and
– they are aged 50 years or over when they are re-employed, or
– they have not attained upper-secondary education,
– except in the event that the parties sign an employment contract within 60 days from the termination of the previous employment relationship.

Eligibility conditions apply in order to qualify for wage subsidy of disadvantaged workers. Employers shall:

– employ disadvantaged workers with the wage subsidy for a minimum of 12 months (employment obligation), and
– have not made workers in similar jobs redundant in the 6 months prior to claiming the wage subsidy.[18]

Employers are eligible for a wage subsidy of up to 50% of the wage costs, in the case of disabled workers up to 60%, for a period of 12 months.[19]

According to the *rules on cumulating*[20] the amount of the wage subsidy cumulated with other State aid or Community funding shall not:

15 *Employer:* pursuant to Article 58 (5) c) of the Employment Act.

16 Pursuant to Article 58 (5) d) of the Employment Act

17 Section e) of the Government regulation No. 177/2005. (September 2)

18 The aid shall be suspended and the received sum paid back fully or partly – according to the extent of non-compliance – if the employer fails to provide employment. Employers are exempt from the repayment if it proves that positions have fallen vacant following the lawful dismissal or the voluntary departure of the employee or because of the liquidation of the company.

19 Pursuant to Article 5 (3) point b) of Commission Regulation No 2204/2002 of 12 December 2002 on the application of Articles 87 and 88 of the EC Treaty to State aid for employment "the worker or workers must be entitled to continuous employment for a minimum of 12 months". This is most likely fulfilled if funding is available for 12 months. Nevertheless, the above provision can also be understood as the workers are entitled to 12 months subsidised employment.

20 Employment aid for disadvantaged workers can be granted on the basis of Commission Regulation No 2204/2002 of 12 December 2002 on the application of Articles 87 and 88 of the EC Treaty to State aid for employment and therefore provisions in Articles 8 (4) and 9 (2) on the cumulation of aid also apply.

– result in a gross aid intensity exceeding 100 % of the wage costs over any period (month, year etc.) for which the worker or workers are employed, and
– exceed a gross aid amount of EUR 15 million over any three-year period.

Wage subsidy of the participants of labour market programmes

If wage costs can only be subsidised in the case of ***community work*** or in the form of the above wage subsidy as of January 1, 2007 then the implementation of labour market programmes will be at risk. Community work concerns only a small segment of employment (with a limited number of employers, and the wage subsidy only supports the employment of disadvantaged workers for a maximum of 12 months and up to 50 or 60% of wages costs). There is no exemption from Community rules, therefore employment in the labour market programmes of enterprises are not eligible for funding for 3 years and in the case of non-disadvantaged workers. For this reason a new active measure (***wage-cost subsidy***) is being introduced, which can only be applied in the framework of labour market programmes and allows *funding of wage costs up to 100% for a maximum of 3 years.*

Changes in current support schemes

Considering that the successful implementation of the programmes is difficult without adequate programme management, the *new measure funds* not only *the wage costs* of the target group but also *of those involved in implementation.*[21]

With the introduction of the wage subsidy scheme:

a) the following schemes would be merged into the new scheme
– support for increasing employment including:
  • higher rates of wage subsidy for persons aged 45 years and over,
– subsidy of the statutory contributions including:
  • higher rates of subsidy for job-seekers aged 50 years and over, and
  • for people released from prison or on probation,
– support for part-time employment,
– support for vocational rehabilitation, and
– support for the work placement of unemployed young persons.

b) the following schemes would be ended
– employment aid of young persons,[22]
– employment aid of temporary agency workers;[23]

c) the protection of employment remains eligible for aid under the de minimis rules.

2.3.2. Support for the provision of employment services

Under the current provisions of the Employment Act this aid can be granted to organisations providing information or counselling services. This will change however, and private agencies will also become eligible for funding.

21 If the recipient of the aid is an enterprise, the relevant *de minimis rules shall apply.*

22 The ending of the support scheme to access work experience is justified by the new wage subsidy scheme and the universal contribution reductions available in the Start Programme launched in 2005 that adequately promote the employment of young persons.

23 The employment aid of temporary agency workers was introduced by the Ministry of Employment and Labour Regulation No. 31/2004. (December 21). But, due to the lack of interest (in 2005 there were no applications for this aid) it is not justified to keep it in its current form. Moreover, the labour market re-integration of disadvantaged persons can also be supported by the employment aid schemes.

This will create the possibility of outsourcing some of the job-brokerage activity of the Public Employment Service.

2.3.3. Scheme to support the mobility of workers

The purpose of this aid scheme is to reduce the extra costs arising from employing workers who commute from another place by partly or fully subsidising their travel costs payable by the employers. Currently the rules of the aid scheme are set out in a government regulation, but they will be incorporated into the Employment Act.

2.3.4. Scheme to support business start-up

Under the current legislation business start-up is supported by two measures: one provides assistance in the form of extended job-search benefit, entrepreneurship training, consultancy and a contribution towards the collateral costs only for the registered job-seekers who receive job-search benefit – except in the case of disabled job-seekers. The other, self-employment scheme, provides repayable, interest-free financial assistance of up to HUF 3 million.

The purpose of the scheme is to promote entrepreneurship and business start-up, and to encourage the self-employment of job-seekers. Following the changes, the two measures will be merged with a somewhat modified content. In the new scheme:

– aid of HUF 3 million can be granted *in the form of repayable and/or non-repayable financial assistance*, and
– unemployed job-seekers who are beneficiaries of the scheme are eligible for a monthly allowance up to *the amount of the minimum wage* for 6 months regardless of whether they receive job-search benefit.

The beneficiaries of this scheme are job-seekers (persons) therefore it does not qualify as state aid.[24]

2.3.5. Support for training

To encourage participation in training the amount of the training allowance is increased. According to the legislative proposal, from the current 60% of the minimum wage it will be increased to 100%. The condition of eligibility is enrolment and participation in a training course of at *least 20 hours per week (intensive training)* offered or approved by the job centre.

Training is important not only for job-seekers, but *workers* should also possess the knowledge that is necessary to remain competitive on the labour market. Consequently, "employee-specific" training remains eligible for support under *de minimis* rules.

The training aid will incorporate the following schemes and therefore they will cease to exist as separate measures*:*

– the universal training scheme of unemployed young persons,

24 The following schemes cease to exist separately because they are merged into the aid scheme supporting the setting-up of enterprise:
– support for the self-employment of job-seekers
– higher rate support for the business start-up of disabled job-seekers.
The entrepreneurship training scheme is integrated into the training aid schemes.
The support of collateral costs will be ended.

– the training scheme of disabled job-seekers, and
– the entrepreneurship training of job-seekers.

* * *

The proposal for the amendment of the Employment Act, including employment aid will be debated by Parliament during the autumn of 2006 and in the event of its adoption; the new rules enter into force on January 1, 2007.

APPENDIX

Table M1: Employment promotion and support for training financed from the Labour Market Fund

Name of the measure	Scope	Conditions	Level/Amount	Length	Legal basis
Subsidy of wage costs					
Support for increasing employment	Employment of persons in unemployment for at least 6 months (in case of young persons or people aged 45 years and over: 3 months)	Continue employment after the end of the subsidy for at least the duration of its payment; the employer has not made redundant any workers in similar jobs in the 6 months before the subsidised employment and will not do so during the payment of the subsidy; has not been fined in the previous two years due to the infringement of labour regulations with fines reaching the amount of HUF 100,000 to HUF 500,000; and cooperates with the Public Employment Service.	50–100% of the wage; 70–100% for people aged 45 years and over	maximum 1 year, 2 years for people aged 45 and over	Act IV of 1991. Article 16 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 11
Support for community work	Regular employment of unemployed persons referred to the employer by the job centre.	Represents a net increase in the number of employees from the previous month (except in the case of people aged 45 years and over); The employer does not receive payment for the same service or subsidy for the same person from other sources (e.g. from the local authority), funding can be granted to employment related expenditure of non-business activities. The employer has not made redundant any workers in similar jobs and no fines were imposed because of infringement of labour regulations.	Up to 70% of the direct expenditure of employment, up to 90% in the case of people aged 45 years and over or employment by the local Roma government. The Steering Committee of the Labour Market Fund or the county labour council might extend it to 90% and 2 years for other target groups as well.	Up to 1 year; 1.5 year for people aged 45 and over; 2 years for local Roma governments	Act IV of 1991. Article 16/A Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 12–15.
Support for part-time employment	The part-time employment of persons in registered unemployment for at least 3 months, persons living as single adults looking after a child or children under 14 years or receiving carer's allowance	Part-time employment equivalent to 50–75% of full time employment, continue employment after the end of the subsidy for at least the duration of its payment, The employer has not made redundant any workers in similar jobs, and has not been fined due to the infringement of labour regulations.	75% of wage costs and/or up to 100% of the costs of commuting that are borne by the employer.	Up to 1 year	Act IV of 1991. Article 19/C Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 11/A
Support for the temporary agency work of job-seekers	Public interest company that employs 50 persons who have been registered unemployed for at least 3 months, young unemployed or unemployed persons aged 50 years and over	A fixed-term work contract for at least 200 days; temping the workers for third parties; the temping fee reaches at least the total wage costs of the minimum wage. One unemployed person is eligible for the subsidy once in any 2 year period. The temporary work agency has not been fined due to the breach of labour regulations with fines reaching the amount of HUF 100,000 or HUF 500,000 in the previous 2 years.	Up to 50% of the wage costs of the monthly wage agreed in the fixed-term work contract, but up to 150% of the minimum wage at the time of the claim.	For up to 200 days for the temporary work agency	Act IV of 1991. Article 16/B Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 16–17.
Scheme to promote access to work experience of young persons	Regular employment of young persons	Fixed-term employment for at least 360 days, giving access to adequate work experience. If the cumulated sum of the subsidy exceeds the *de minimis* threshold then the employment should be continued for at least the duration of the payment.	50–100% of the wage, the fixed-sum insurance contribution (in case the subsidy reached 100%, for people with no qualifications up to 150%, secondary education up to 200% and higher education 250% of the minimum wage)	For the period of employment but up to 360 days	Government regulation No. 68/1996. (V.15.) Article 7
Support for employment	The employment of young persons leaving vocational training school, training school, special training school by the employer where they spent at least 1 year of apprenticeship.	Employment in a job corresponding to the qualification of the young person, for at least 6 hours/day, starting within 90 days from receiving the qualification. The claimant is the employer. Employment shall be maintained for at least 90 days after the end of the subsidy.		270 days	Government regulation No. 68/1996. (V.15.) Article 9

Name of the measure	Scope	Conditions	Level/Amount	Length	Legal basis
Support for employment for vocational rehabilitation	Employment of disabled people who have been unemployed in the previous 12 months and lost at least 40% of their working capacity.	The unemployed person is not entitled to old-age, accident-related pensions, regular social benefit, transitional benefit, miners' impairment benefit. The employer has not made redundant any workers in similar jobs in the previous 6 months. Continue employment after the end of the subsidy for at least the duration of its payment. The employer is not required to pay rehabilitation contribution (i.e. fills the statutory quotas of disabled workers)	In the first third of the payment the wage, the fixed-sum health insurance contribution, health care and employers' contribution. In the second third the wage, and in the third health care and employers' contribution and the fixed-sum health insurance contribution.	Up to 18 month in the case of full-time employment, in the case of part-time employment proportionately	Ministry of Labour regulation No. 11/1998. (IV.29.) Article 4
Reimbursement of the statutory social insurance contributions	Employment of job-seekers		Up to 100% of health care and pension contributions, employers' contribution, fixed-sum health insurance contribution. For people on probation the level should reach at least 70%, for people aged 50 years and over at least 50%.	Up to 200 days. Up to 1 year for unemployed people aged 50 years and over, people on probation or released from prison during the previous 6 months.	Act IV of 1991. Article 18/A Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 18/B-18/E
Support for the employment of young persons	Persons under 25 years	Full time or part-time employment of at least 4 hours/day for at least 9 months, continue employment for a further 3 months after the subsidised period.	50% of the contributions (for a gross monthly wage of up to HUF 90,000)	9 months	Act CXXIII. of 2004, article 2–3
Support for the employment of persons entering work after child-care or caring for a next of kin	Employment of persons returning to work following child care or caring for a next of kin.	Full time or part-time employment of at least 4 hours/day and 9 months, continue employment for a further 3 months after the subsidised period. Eligible persons are not employed and they take up their first regular employment after the end of their eligibility for child care or carers' allowance.	50% of the contributions (for a gross monthly wage of up to HUF 90,000)	9 months	Act CXXIII. of 2004, article 4
Paid internship	Young persons with higher education with no formal work experience.	The monthly grant equals the minimum wage or higher. The employer and the intern sign a contract. After graduation, for a single period.	50% of the contributions (for a gross monthly wage of up to HUF 90,000), in the public sector the subsidy can be 50% of the grant.	9–12 months	Act CXXIII. of 2004, articles 9–16 Government regulation no. 20/2005. (II.11.)
Support for the employment of unemployed persons aged 50 years and over	Unemployed persons aged 50 years and over		Between 50–100% of the health care and pension contributions, employers' contributions and fixed-sum health insurance contributions payable by the employer.	up to 12 months	Act IV of 1991, article 18/A
Support for training					
Support for training	Unemployed, under 25/30 years and not eligible for unemployment benefit, employees whose employment cannot be continued without training, people receiving child-care benefits or carers' allowance, participants of community work programmes (the Steering Committee of the Labour Market Fund can add further target groups)		Income top-up or income replacement assistance and up to 100% of the costs of training	During the training	Act IV of 1991. Article 14 Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 1–9
Support for training aid for unemployed persons with disability	The costs of training placements of unemployed persons with disabilities in the training courses subsidised by the Labour Market Fund.		Justified extra expenditure	The duration of training placement	Ministry of Labour regulation No. 11/1998. (IV.29.) Article 5

Name of the measure	Scope	Conditions	Level/Amount	Length	Legal basis
Subsidy to the creation of new employment opportunities					
Subsidy for job creation	Creation of new jobs, expansion of existing jobs, and investment in tangible and non-tangible assets or the personnel costs of job creation.	Recruitment and long-term employment of unemployed persons; for investment projects; aid distributed through competition, at least 25% own contribution (non-repayable grant)	Applicable aid intensity		Act IV of 1991. Article 18 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 18 Government regulation no. 85/2004. (IV.19.)
Support for the employment of disabled persons	Employment of disabled persons (at least 50% loss of working capacity or demonstrated difficulties in finding or maintaining work as a result of physical or mental impairment), creation of jobs, adaptation of workplace, purchase of special aids, purchase or adaptation of equipment, refurbishment of workplace or equipment, and *the above together with investment*	The employer shall submit an application and meet the following criteria: the company has been operating for not less than 12 months; at least 20% own contribution; provide adequate financial guarantees; regular employment of disabled workers for 2 years; has not been fined due to the breach of labour regulations with fines reaching the amount of HUF 100,000 or HUF 500,000 in the previous 2 years; if received funding from the Labour Market Fund in the previous 2 years, fulfilled all requirements by the deadline; there was no collective redundancy in the previous 6 months; employs disabled workers above the statutory quota for at least 1 year; had at least 50 employees in the previous month, 50% of which are disabled; starts the investment by the end of the calendar year following the receipt of the full sum; maintains the capacities for at least 5 years; provides continuous employment for at least 3 years.	According to the call for proposals (the maximum aid intensity is 80%)	According to the call for proposals	Act IV of 1991. Article 19 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 19 Government regulation no. 85/2004. (IV. 19.)
Assistance for business start-up of job-seekers	Persons receiving job-search benefit who are not offered adequate jobs by the job centre	Proven entrepreneurial activity	Assistance equals to the amount of the job-search benefit, up to 50% contribution to the costs of professional consultancy, up to 50% contribution to the collateral costs.	Assistance: for up to 6 months after exhausting the job-search benefit Collateral: up to 1 year	Act IV of 1991. Article 15 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 10
Assistance for business start-up of disabled job-seekers	At least 40% loss of working capacity	The unemployed person is not entitled to old-age, accident-related pensions, regular social benefit, transitional benefit, miners' impairment benefit. Eligibility for job-search benefit is not a condition.	Assistance equals to the amount of the job-search benefit (if the person is not eligible for job-search benefit, then the minimum amount of the benefit), up to 50% contribution to the costs of business consultancy, up to 100% contribution to the costs of necessary training, up to 50% contribution to the collateral costs.	Assistance: for up to 1 year after exhausting the job-search benefit Collateral: up to 1 year	Act IV of 1991. Article 15 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 10 Ministry of Labour Regulation No. 11/1998 (IV.29.) article 6
Assistance for self-employment	Persons who have been unemployed for at least 3 months and would like to become self-employed.	Eligible persons should submit a business plan, they should contribute at least 20% own resources to the investment and have adequate financial guarantees to repay the loan.	Up to HUF 3 million repayable, interest-free capital loan, cost of business consultancy	The grant should be repaid starting from the 13th month after the receipt of the full sum in not more than 60 equal instalments indicated by the job centre.	Act IV of 1991. Article 17 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 17/A

Name of the measure	Scope	Conditions	Level/Amount	Length	Legal basis
Scheme for the protection of employment and managing collective redundancy					
Scheme for the protection of employment	Employee to be dismissed as redundant due to operational reasons of the company	Notification of the planned dismissal to the local job centre at least 30 days in advance, written confirmation that attempts to retain the employee were not successful, the company is not bankrupt or under liquidation, the employee concerned has been working for the company for at least 6 months, continue employment after the end of the subsidy for at least the duration of its payment, with no decrease of the total number of employees, and the employer has not been fined due to the infringement of labour regulations with fines reaching the amount of HUF 100,000 or HUF 500,000 in the previous 2 years.	25–75% of wage costs, 50–90% for disabled workers or workers earning the minimum wage or in the case of voluntary reduction of working time (to 4–6 hours/day) but up to 150% of the minimum wage	Up to 1 year	Act IV of 1991. Article 18 Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 18/A
Aid to mitigate the negative effects of collective redundancies	Employers making collective redundancies	The employer has initiated consultations on the collective redundancy, agrees to set up and support the activity of outplacement committees in the affected branches, and agrees to submit a written financial report and evaluation on the use of the grant. The application should be submitted prior to the notification of the employees on their dismissal.	Up to HUF 1 million/committee, non-repayable (the actual amount depends on the employment situation of the area, the number of employees affected by the collective redundancy and the amount of available funding). The grant can be used for the operational costs of the Outplacement Committee.	Grant to be used within 12 months	Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 21/A-21/B
Support for the mobility of workers					
Contribution to the costs of commuting between towns	Persons who have been in unemployment for at least 6 months, or 3 months in the case of young persons or disabled persons.	The employer has not made redundant any workers in similar jobs in the previous 6 months.	Up to 100% of the part of cost of commuting to be borne by the employer (on the basis of Government regulation No. 78/1993. [V.13.])	Up to 1 year	Government regulation no. 39/1998 (III.4.) article 2
Aid for the collective transportation of workers	Employers that arrange collective transportation for their workers between the company and their place residence (because the use of public transportation would put an unreasonable burden on the employees, i.e. would exceed 2 hours/day)	Arranges the transportation of not less than 4 workers. Employers that arrange the transportation of a larger number of disabled or previously unemployed workers enjoy priority.	The subsidy is equal to the amount the employer would be required to contribute to the price of the bus pass between the company and the place of residence of the workers.	Up to 1 year	Government regulation no. 39/1998 (III.4.) article 3
Contribution to the accommodation costs of workers	Employers that hire registered unemployed persons	The employer contributes to the monthly rent or other accommodation costs (e.g. B&B) of the worker or arranges accommodation in a workers' hostel	Up to the minimum amount of the unemployment benefit for each worker	Up to 1 year	Government regulation no. 39/1998 (III.4.) article 4
Aid for the recruitment costs of workers	Employers that organise recruitments in areas where the unemployment rate is above the national average.	Demonstrates a genuine and real need for the recruitment of new workers.	Contribution to the costs of recruitment. The budget must be approved in advance by the job centre. Up to HUF 500,000 per recruitment round.	Per recruitment round	Government regulation no. 39/1998 (III.4.) article 5
Other (support to services and programmes)					
Full or partial funding of the design and implementation of labour market programmes	Companies with or without legal entity, private entrepreneurs	Granted on the basis of competition. The job centre signs a contract with the beneficiary. (program: Pursuant to the Employment Act and its implementing regulations programmes are labour market services and employment aid funded by the Employment and Rehabilitation sub-funds of the Labour Market Fund)	Amount and level set out in the agreement	Length set out in the agreement	Ministry of Labour Regulation No. 6/1996 (VII.16.) Articles 26/G
Funding of labour market programmes	A combination of employment aid and services for employers, employees and the target group of the programme.	The Steering Committee of the Labour Market Fund and the minister responsible for employment can initiate labour market programmes	Defined in the programme	As defined in the programme, up to 3 years	Act IV of 1991. Article 19/B Ministry of Labour Regulation No. 6/1996 (VII.16.) Article 26

Name of the measure	Scope	Conditions	Level/Amount	Length	Legal basis
Aid for the providers of employment services	Non-profit companies if they provide labour market and job information free of charge in disadvantaged geographical areas or for disadvantaged people; companies that provide advice about work and jobs, career orientation, vocational rehabilitation and psychological support for jobseekers on a local/regional basis or for jobseekers upon recommendation of the personal advisers.	Service providers can apply for funding. Providers are eligible if they have been providing the continuous service for at least 1 year; agree to maintain the physical and human conditions and level of service provision; ensures adequate and lawful management of information and personal data.	Non-repayable grant, the exact amount is set out in the official decision.	Up to 3 years, as set out in the official decision.	Act IV of 1991. Article 13 (3) Ministry of Economy regulation no. 30/2000. (IX.15.) articles 21–25
Income replacement assistance for participants of labour market services	Unemployed persons who participate in collective job-search activities offered by the local office of the job centre (i.e. jobseekers' club) or are in intensive job-search.	The length of the activity is at least 15 days in the case of jobseekers' club and 5 days in the case of intensive job-search	The minimum amount of the unemployment benefit at the time of claiming the assistance.	Up to 90 days in any calendar year	Ministry of Economy regulation no. 30/2000. (IX.15.) article 26

STATISTICAL DATA

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Data Sources

FH BT	NLC [National Labour Centre] Wage Survey
FH REG	NLC Unemployment Register
FH SREG	NLC Unemployment Benefit Register
FH PROG	NLC Short-term Labour Market Forecast Survey
KSH	Table compiled from regular CSO-publications [Central Statistical Office]
KSH IMS	CSO institution-based labour statistics
KSH MEF	CSO Labour Force Survey
KSH MEM	CSO Labour Force Account
MC	Microcensus
MNB	Hungarian National Bank
NSZ	Population Census
NYUFIG	Pension Administration
OM STAT	Ministry of Education, Educational Statistics
TB	Social Security Records

Table 1.1: Basic economic indicators

Year	GDP	Industrial production	Real earnings[1]	Employment	Consumer price index	Unemployment rate
	Previous year = 100					
1989	100.7	95.0	99.7	98.2	117.0	...
1990	96.5	90.7	94.3	97.2	128.9	...
1991	88.1	81.6	93.0	92.6	135.0	...
1992	96.9	84.2	98.6	90.3	123.0	9.8
1993	99.4	103.9	96.1	93.8	122.5	11.9
1994	102.9	109.7	107.2	98.0	118.8	10.7
1995	101.5	104.6	87.8	98.1	128.2	10.2
1996	101.3	103.2	95.0	99.1	123.6	9.9
1997	104.6	111.1	104.9	100.1	118.3	8.7
1998	104.9	112.5	103.6	101.4	114.3	7.8
1999	104.2	110.4	102.5	103.2	110.0	7.0
2000	105.2	118.1	101.5	101.0	109.8	6.4
2001	103.8	103.6	106.4	100.3	109.2	5.7
2002	103.5	102.8	113.6	100.1	105.3	5.8
2003	102.9	106.4	109.2	101.3	104.7	5.9
2004	104.6	107.4	98.9	99.4	106.8	6.1
2005	104.1	107.3	106.3	100.0	103.6	7.2

[a] Preliminary.
Source: Employment: 1989–1991: KSH MEM; 1992–: KSH MEF. Other data: KSH.

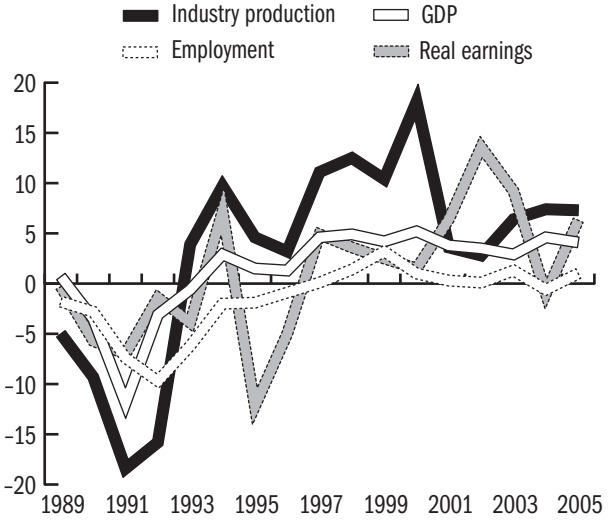


Figure 1.1: Annual changes of basic economic indicators

Table 2.1: Population*

Year	In thousands	1992 = 100	Annual changes	Dependency rate	
				Total[1]	Old age[2]
				population	
1980	10,709	103.6	–	0.54	0.21
1989	10,421	100.8	–	0.51	0.20
1990	10,375	100.4	–0.2	0.51	0.20
1991	10,373	100.0	0.0	0.50	0.20
1992	10,374	100.0	0.0	0.49	0.20
1993	10,365	99.9	–0.1	0.49	0.20
1994	10,350	99.8	–0.1	0.48	0.21
1995	10,337	99.6	–0.1	0.48	0.21
1996	10,321	99.5	–0.1	0.48	0.21
1997	10,301	99.3	–0.2	0.47	0.21
1998	10,280	99.1	–0.2	0.47	0.21
1999	10,253	98.8	–0.3	0.47	0.21
2000	10,221	98.5	–0.3	0.47	0.21
2001	10,200	98.3	–0.2	0.46	0.22
2002	10,175	98.1	–0.2	0.46	0.22
2003	10,142	97.8	–0.3	0.46	0.22
2004	10,117	97.5	–0.3	0.46	0.23
2005	10,098	97.3	–0.2	0.45	0.23
2006	10,077	97.1	–0.2	0.45	0.23

* January 1th.
[1] (population age 0–14 + 65 and above) / (population age 15–64)
[2] population age 65 and above / (population age 15–64
Note: Recalculated on the basis of Population Census 2001.
Source: KSH.

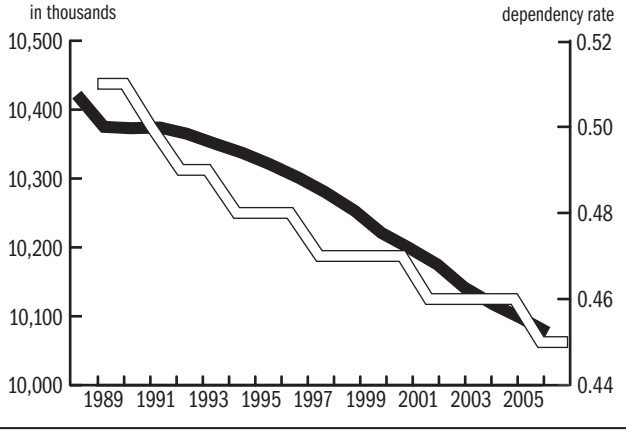


Figure 2.1: Population on 1st January

Table 2.2: Population by age groups – in thousands*

Year	0–14	15–24	25–54 years old	55–64	65+	Total
1980	2,341.2	1,464.4	4,399.8	1,054.7	1,449.4	10,709.5
1990	2,130.5	1,445.5	4,231.4	1,193.5	1,373.9	10,374.8
1991	2,068.0	1,510.3	4,223.1	1,176.0	1,395.7	10,373.2
1992	2,018.7	1,558.1	4,222.6	1,159.4	1,414.7	10,373.6
1993	1,972.3	1,587.0	4,230.4	1,148.5	1,426.9	10,365.0
1994	1,929.6	1,601.5	4,240.6	1,136.2	1,442.2	10,350.0
1995	1,891.7	1,610.1	4,250.6	1,126.2	1,458.0	10,336.7
1996	1,858.8	1,609.7	4,253.6	1,120.8	1,478.3	10,321.2
1997	1,824.4	1,607.2	4,260.3	1,118.9	1,490.5	10,301.2
1998	1,792.8	1,593.0	4,262.6	1,124.4	1,506.9	10,279.7
1999	1,762.4	1,573.2	4,268.5	1,127.9	1,521.4	10,253.4
2000	1,729.2	1,526.5	4,291.4	1,143.4	1,531.1	10,221.6
2001	1,692.0	1,480.1	4,338.5	1,144.7	1,545.0	10,200.3
2002	1,660.1	1,436.9	4,378.0	1,147.9	1,551.9	10,174.9
2003	1,633.7	1,392.5	4,390.8	1,166.1	1,559.2	10,142.4
2004	1,606.1	1,355.0	4,401.6	1,186.9	1,567.1	10,116.7
2005	1,579.7	1,322.0	4,409.1	1,209.2	1,577.6	10,097.6
2006	1,553.5	1,302.0	4,399.8	1,230.0	1,590.7	10,076.6

* January 1th. Recalculated on the basis of Population Census 2001.
Source: KSH.

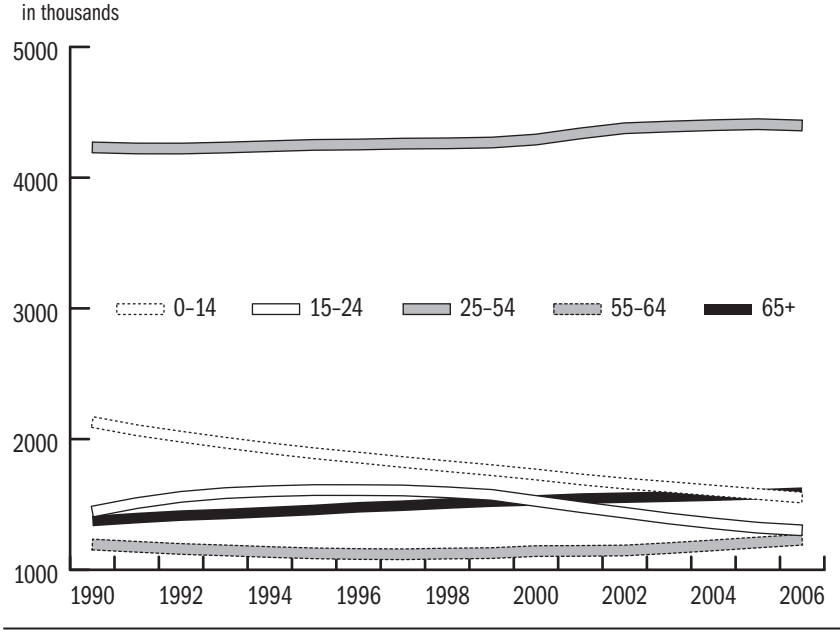


Figure 2.2: Population by age groups

Table 2.3: Male population by age groups – in thousands*

Year	0–14	15–24	25–59	60–64	65+	Total
			years old			
1980	1,205.4	749.9	2,475.6	170.5	587.3	5,188.7
1990	1,090.4	740.3	2,366.9	259.9	527.5	4,984.9
1991	1,057.9	773.4	2,355.5	258.5	534.5	4,979.8
1992	1,032.3	797.7	2,350.4	255.5	539.8	4,975.7
1993	1,008.7	812.2	2,349.0	253.9	542.5	4,966.3
1994	986.8	819.9	2,350.3	250.5	546.0	4,953.4
1995	967.4	824.0	2,353.3	246.1	550.8	4,941.6
1996	950.5	823.7	2,358.3	239.5	557.2	4,929.2
1997	933.0	822.4	2,366.2	233.9	560.5	4,916.0
1998	916.8	815.4	2,375.5	229.3	564.7	4,901.8
1999	901.5	805.0	2,383.2	226.1	568.6	4,884.4
2000	885.0	780.9	2,403.8	224.8	570.8	4,865.2
2001	865.7	757.0	2,425.2	228.9	574.2	4,851.0
2002	850.1	733.9	2,446.1	233.0	573.8	4,837.0
2003	836.8	711.3	2,456.5	239.9	574.0	4,818.5
2004	823.0	691.9	2,470.3	244.4	574.5	4,804.1
2005	809.5	674.6	2,480.0	252.2	576.8	4,793.1
2006	796.7	664.0	2,493.7	249.3	580.9	4,784.6

* See: Table 2.2.
Source: KSH.

Table 2.4: Female population by age groups – in thousands*

Year	0–14	15–24	25–54	55–59	60+	Total
			years old			
1980	1,135.8	714.5	2,232.8	365.3	1,072.4	5,520.8
1990	1,040.1	705.2	2,144.4	327.6	1,172.5	5,389.9
1991	1,010.0	737.0	2,139.8	321.3	1,185.3	5,393.3
1992	986.5	760.4	2,138.1	318.1	1,194.9	5,397.9
1993	963.6	774.8	2,141.2	314.4	1,204.7	5,398.7
1994	942.8	781.6	2,146.2	313.1	1,212.9	5,396.6
1995	924.4	786.2	2,151.0	312.6	1,221.0	5,395.1
1996	908.3	786.0	2,152.4	316.4	1,228.8	5,392.0
1997	891.4	784.8	2,155.6	318.3	1,235.1	5,385.3
1998	876.0	777.6	2,156.0	324.4	1,243.9	5,378.0
1999	861.0	768.2	2,159.3	326.7	1,253.8	5,369.0
2000	844.3	745.6	2,170.5	334.8	1,261.3	5,356.5
2001	826.3	723.1	2,193.4	330.4	1,276.1	5,349.3
2002	810.0	703.0	2,211.6	328.6	1,284.7	5,337.9
2003	796.9	681.2	2,217.4	330.7	1,297.8	5,323.9
2004	783.1	663.1	2,220.8	338.5	1,307.1	5,312.6
2005	770.2	647.4	2,221.9	341.7	1,323.1	5,304.3
2006	756.8	638.6	2,213.0	356.6	1,327.0	5,292.0

* See: Table 2.2.
Source: KSH.

Table 3.1: Labour force participation of the population above 14 years*

	Population at male 15–59 and female 15–54								Population at male above 60 and female above 55			
			Inactive									
Year	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	4,887.9	0.0	300.8	370.1	259.0	339.7	1,269.6	6,157.5	570.3	0.0	1,632.1	2,202.4
1990	4,534.3	62.4	284.3	548.9	249.7	297.6	1,380.4	5,977.1	345.7	0.0	1,944.9	2,290.6
1991	4,270.5	253.3	335.6	578.2	259.8	316.9	1,490.7	6,014.5	249.5	0.0	2,045.2	2,294.7
1992	3,898.4	434.9	392.7	620.0	262.1	435.9	1,710.7	6,044.0	184.3	9.8	2,101.7	2,295.8
1993	3,689.5	502.6	437.5	683.9	270.5	480.1	1,872.0	6,064.1	137.5	16.3	2,141.2	2,295.0
1994	3,633.1	437.4	476.5	708.2	280.9	540.7	2,006.3	6,076.8	118.4	11.9	2,163.8	2,294.1
1995	3,571.3	410.0	495.2	723.4	285.3	596.1	2,100.0	6,081.3	107.5	6.4	2,180.6	2,294.5
1996	3,546.1	394.0	512.7	740.0	289.2	599.4	2,141.3	6,081.4	102.1	6.1	2,184.6	2,292.8
1997	3,549.5	342.5	542.9	752.0	289.0	599.9	2,183.8	6,075.8	96.9	6.3	2,189.0	2,292.2
1998	3,608.5	305.5	588.8	697.0	295.5	565.7	2,147.0	6,061.0	89.3	7.5	2,197.6	2,294.4
1999	3,701.0	283.3	534.7	675.6	298.5	549.8	2,058.6	6,042.9	110.4	1.4	2,185.2	2,297.0
2000	3,745.9	261.4	517.9	721.7	281.4	571.4	2,092.4	6,099.7	130.3	2.3	2,268.0	2,400.6
2001	3,742.6	231.7	516.3	717.9	286.6	601.6	2,122.4	6,096.7	140.7	2.4	2,271.8	2,414.9
2002	3,719.6	235.7	507.1	738.3	286.8	593.0	2,125.2	6,080.5	164.1	3.2	2,263.9	2,431.2
2003	3,719.0	239.6	485.0	730.7	278.2	603.7	2,097.6	6,056.2	202.9	4.9	2,245.6	2,453.4
2004	3,663.1	247.2	480.5	739.8	271.0	633.8	2,125.1	6,035.4	237.3	5.7	2,236.1	2,479.1
2005	3,653.9	296.0	449.7	740.8	263.6	605.3	2,059.4	6,009.3	247.6	7.9	2,258.3	2,513.8

* In thousands. Annual average figures.

Note: Till 1999 updated figure based on 1990 population census since 2000 based on 2001 population census. 'Employed' includes conscripts and working pensioner. Data on students for 1995–97 have been estimated using projected population weights. 'Other inactive' is a residual category.

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

Table 3.2: Labour force participation of the population above 14 years – males*

Year	Population at male 15–59								Population at male above 60			
			Inactive									
	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	2,750.5	0.0	173.8	196.3	0.0	99.1	469.2	3,219.7	265.3	0.0	491.8	757.1
1990	2,524.3	37.9	188.4	284.2	1.2	80.3	554.1	3,116.3	123.7	0.0	665.5	789.2
1991	2,351.6	150.3	218.7	296.5	1.5	115.0	631.7	3,133.6	90.4	0.0	700.7	791.1
1992	2,153.1	263.2	252.0	302.4	1.7	174.8	730.9	3,147.2	65.1	3.2	722.1	790.4
1993	2,029.1	311.5	263.2	346.9	2.0	203.3	815.4	3,156.0	47.9	4.5	735.7	788.1
1994	2,013.4	270.0	277.6	357.1	3.7	239.6	878.0	3,161.4	41.6	3.8	740.0	785.4
1995	2,012.5	259.3	282.2	367.4	4.9	237.8	892.3	3,164.1	37.1	2.1	742.6	781.8
1996	2,007.4	242.4	291.9	372.8	3.3	248.3	916.3	3,166.1	28.9	1.3	746.3	776.5
1997	2,018.0	212.2	306.0	377.6	1.5	251.6	936.7	3,166.9	25.5	1.9	743.5	770.9
1998	2,015.5	186.5	345.4	350.4	1.0	264.2	961.0	3,163.0	26.2	2.8	737.3	766.3
1999	2,068.4	170.3	312.7	338.8	4.2	261.5	917.2	3,155.9	34.7	0.4	727.2	762.3
2000	2,086.0	158.2	315.2	358.2	4.1	261.7	939.2	3,183.4	39.8	0.7	758.8	799.3
2001	2,087.6	141.6	311.0	353.4	4.3	283.2	951.9	3,181.1	41.1	0.9	763.0	805.0
2002	2,080.4	137.3	307.5	370.3	5.0	273.4	956.2	3,173.9	45.2	0.7	764.4	810.3
2003	2,073.5	137.6	293.6	367.9	4.3	288.1	953.9	3,165.0	53.0	0.9	762.5	816.4
2004	2,052.7	136.2	293.5	371.2	4.6	300.2	969.5	3,158.4	64.6	0.6	758.8	824.0
2005	2,050.7	158.2	278.8	375.4	5.8	288.8	948.8	3,157.7	65.4	0.9	763.9	830.2

* See: Table 3.1.

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

Table 3.3: Labour force participation of the population above 14 years – females*

Year	Population at female 15–54								Population at female above 55			
			Inactive									
	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	2,137.4	0.0	127.0	173.8	259.0	240.6	800.4	2,937.8	305.0	0.0	1,140.3	1,445.3
1990	2,010.0	24.5	95.8	264.7	248.5	217.3	826.3	2,860.8	222.0	0.0	1,279.4	1,501.4
1991	1,918.9	103.1	116.9	281.8	258.3	201.9	858.9	2,880.9	159.1	0.0	1,344.5	1,503.6
1992	1,745.3	171.7	140.8	317.6	260.4	261.1	979.9	2,896.9	119.2	6.6	1,379.6	1,505.4
1993	1,660.4	191.1	174.3	337.0	268.5	276.8	1,056.6	2,908.1	89.6	11.8	1,405.5	1,506.9
1994	1,619.7	167.4	198.9	351.1	277.2	301.1	1,128.3	2,915.4	76.8	8.1	1,423.8	1,508.7
1995	1,558.8	150.7	213.0	356.0	280.4	358.3	1,207.7	2,917.2	70.4	4.3	1,438.0	1,512.7
1996	1,538.7	151.6	220.7	367.2	285.9	351.1	1,224.9	2,915.2	73.2	4.8	1,438.3	1,516.3
1997	1,531.5	130.3	236.9	374.4	287.5	348.3	1,247.1	2,908.9	71.4	4.4	1,445.3	1,521.1
1998	1,593.0	119.0	243.4	346.6	294.5	301.5	1,186.0	2,898.0	63.1	4.7	1,460.3	1,528.1
1999	1,632.6	113.0	222.0	336.8	291.1	288.3	1,138.2	2,883.8	75.8	1.0	1,458.0	1,534.8
2000	1,659.9	103.2	202.7	363.5	277.3	309.7	1,153.2	2,916.3	90.5	1.6	1,509.2	1,601.3
2001	1,655.0	90.1	205.3	364.5	282.3	318.3	1,170.4	2,915.5	99.6	1.5	1,508.8	1,609.9
2002	1,639.2	98.4	199.6	368.0	281.8	319.6	1,169.0	2,906.6	118.9	2.5	1,499.5	1,620.9
2003	1,645.6	102.0	191.4	362.8	273.9	315.6	1,143.7	2,891.2	149.9	4.0	1,483.2	1,637.1
2004	1,610.2	111.0	186.8	368.6	266.4	333.6	1,155.4	2,876.6	172.8	5.1	1,477.3	1,655.2
2005	1,603.2	137.8	170.9	365.4	257.8	316.5	1,110.6	2,851.6	182.2	7.0	1,494.4	1,683.6

* See: Table 3.1.

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

Table 3.4: Labour force participation of the population above 14 years – per cent

Year	Population at male 15–59 and female 15–54								Population at male above 60 and female above 55			
			Inactive									
	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	79.4	0.0	4.9	6.0	4.2	5.5	20.6	100.0	25.9	0.0	74.1	100.0
1990	75.9	1.0	4.8	9.2	4.2	5.0	23.1	100.0	15.1	0.0	84.9	100.0
1995	59.7	6.9	8.3	12.1	4.8	8.3	33.4	100.0	4.7	0.3	95.0	100.0
1999	61.2	4.7	8.8	11.2	4.9	9.1	34.1	100.0	4.8	0.1	95.1	100.0
2000	61.4	4.3	8.5	11.8	4.6	9.4	34.3	100.0	5.4	0.1	94.5	100.0
2001	61.4	3.8	8.5	11.8	4.7	9.9	34.8	100.0	5.8	0.1	94.1	100.0
2002	61.2	3.9	8.3	12.1	4.7	9.8	35.0	100.0	6.7	0.1	93.1	100.0
2003	61.4	4.0	8.0	12.1	4.6	10.0	35.0	100.0	8.3	0.2	91.5	100.0
2004	60.7	4.1	8.0	12.3	4.5	10.5	35.2	100.0	9.6	0.2	90.2	100.0
2005	60.8	4.9	7.5	12.3	4.4	10.1	34.3	100.0	9.9	0.3	89.8	100.0

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

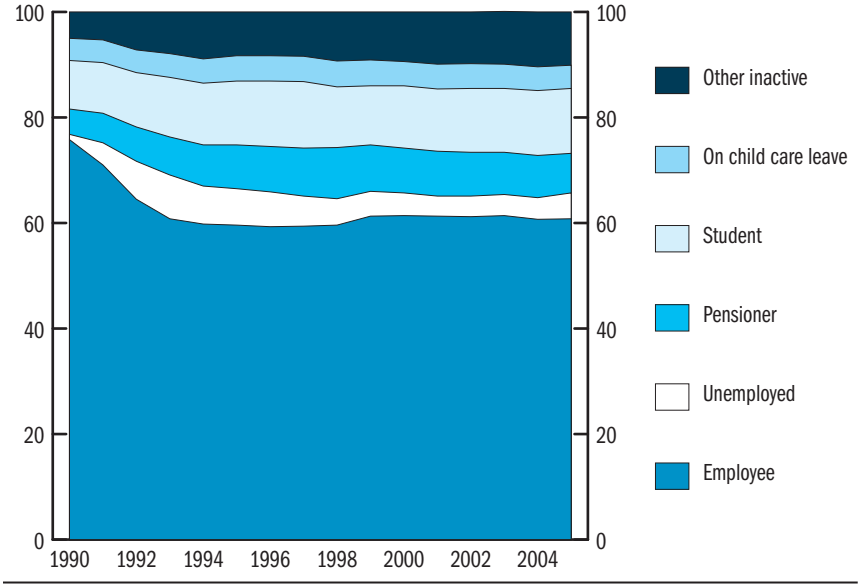


Figure 3.1: Labour force participation of population at working age, total

Table 3.5: Labour force participation of the population above 14 years – males, per cent

Year	Population at male 15–59								Population at male above 60			
			Inactive									
	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	85.4	0.0	5.4	6.1	0.0	3.1	14.6	100.0	35.0	0.0	65.0	100.0
1990	81.0	1.2	6.0	9.1	0.0	2.6	17.8	100.0	15.7	0.0	84.3	100.0
1995	63.6	8.2	8.9	11.6	0.2	7.5	28.2	100.0	4.7	0.3	95.0	100.0
1998	63.7	5.9	10.9	11.1	0.0	8.4	30.4	100.0	3.4	0.4	96.2	100.0
1999	65.5	5.4	9.9	10.7	0.1	8.3	29.1	100.0	4.6	0.1	95.4	100.0
2000	65.5	5.0	9.9	11.3	0.1	8.2	29.5	100.0	5.0	0.1	94.9	100.0
2001	65.6	4.5	9.8	11.1	0.1	8.9	29.9	100.0	5.1	0.1	94.8	100.0
2002	65.5	4.3	9.7	11.7	0.2	8.6	30.1	100.0	5.6	0.1	94.3	100.0
2003	65.5	4.3	9.3	11.6	0.1	9.1	30.1	100.0	6.5	0.1	93.4	100.0
2004	65.0	4.3	9.3	11.8	0.1	9.5	30.7	100.0	7.8	0.1	92.1	100.0
2005	65.0	5.0	8.8	11.9	0.2	9.1	30.0	100.0	7.9	0.1	92.0	100.0

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

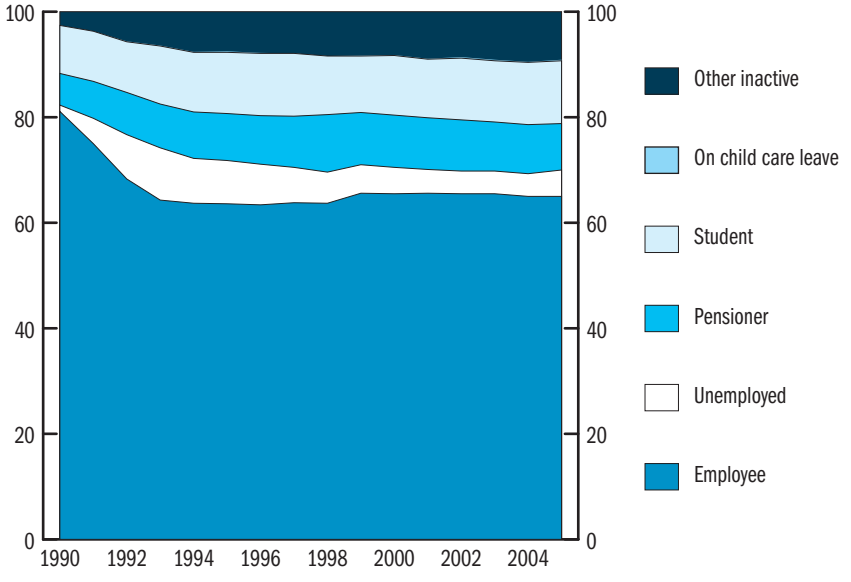


Figure 3.2: Labour force participation of population of working age, males

Table 3.6: Labour force participation of the population above 14 years – females, per cent

Year	Population at female 15–54								Population at female above 55			
			Inactive									
	Em-ployed	Unem-ployed	Pen-sioner	Full time student	On child care leave	Other inactive	Inactive total	Total	Em-ployed	Unem-ployed	Pen-sioner, other inactive	Total
1980	72.8	0.0	4.3	5.9	8.8	8.2	27.2	100.0	21.1	0.0	78.9	100.0
1990	70.3	0.9	3.3	9.3	8.7	7.6	28.9	100.0	14.8	0.0	85.2	100.0
1995	53.4	5.2	7.3	12.2	9.6	12.3	41.4	100.0	4.7	0.3	95.1	100.0
1997	52.6	4.5	8.1	12.9	9.9	12.0	42.9	100.0	4.7	0.3	95.0	100.0
1998	55.0	4.1	8.4	12.0	10.2	10.4	40.9	100.0	4.1	0.3	95.6	100.0
1999	56.6	3.9	7.7	11.7	10.1	10.0	39.5	100.0	4.9	0.1	95.0	100.0
2000	56.9	3.5	7.0	12.5	9.5	10.6	39.5	100.0	5.7	0.1	94.2	100.0
2001	56.8	3.1	7.0	12.5	9.7	10.9	40.1	100.0	6.2	0.1	93.7	100.0
2002	56.4	3.4	6.9	12.7	9.7	11.0	40.2	100.0	7.3	0.2	92.5	100.0
2003	56.9	3.5	6.6	12.5	9.5	10.9	39.6	100.0	9.2	0.2	90.6	100.0
2004	56.0	3.9	6.5	12.8	9.3	11.6	40.2	100.0	10.4	0.3	89.3	100.0
2005	56.2	4.8	6.0	12.8	9.1	11.1	39.0	100.0	10.8	0.4	88.8	100.0

Source: Pensioners: 1980–91: NYUFIG, 1992–: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–: KSH MEF.

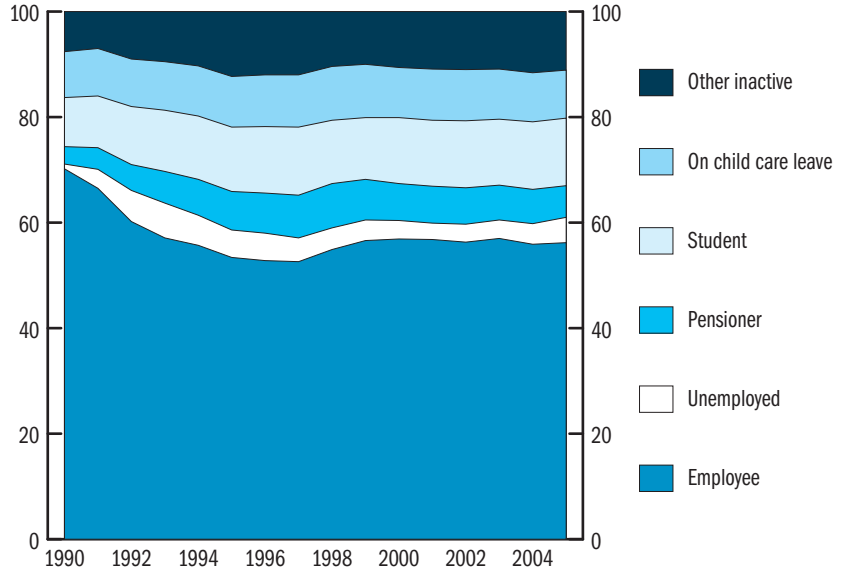


Figure 3.3: Labour force participation of population of working age, females

Table 3.7: Population between 15–64 by labour market status (self-categorised) in thousands

	1999	2000	2001	2001[a]	2002[a]	2003[a]	2004[a]	2005[a]
Total								
In work	3,710.8	3,778.9	3,804.1	3,827.4	3,827.1	3,843.6	3,834.4	3,852.2
Unemployed	473.5	448.1	411.6	414.5	410.4	431.8	451.0	488.2
Student; pupils	753.9	749.9	716.4	739.9	763.1	767.7	783.8	792.0
Pensioner	1,079.7	991.8	968.9	990.8	940.4	856.4	800.3	755.6
Disabled	195.5	223.8	245.4	251.0	284.4	338.3	370.4	359.7
On child care leave	289.0	272.4	280.1	272.3	278.3	281.7	274.7	272.4
Dependent	167.5	165.9	168.9	170.7	160.4	135.1	133.3	134.6
Out of work for other reason	113.1	133.6	181.8	184.7	185.7	181.7	178.4	160.0
Total	6,783.0	6,764.4	6,777.2	6,851.3	6,849.8	6,836.3	6,826.3	6,814.7
Males								
In work	2,042.7	2,075.4	2,091.8	2,089.5	2,090.2	2,087.3	2,082.8	2,088.3
Unemployed	286.1	270.4	255.7	255.2	239.3	244.2	247.7	265.2
Student; pupils	375.9	371.4	353.0	363.6	380.9	383.7	391.1	398.5
Pensioner	426.4	388.6	377.3	386.3	368.1	337.4	322.5	304.5
Disabled	106.0	120.4	133.1	134.2	148.1	169.9	184.5	178.7
On child care leave	3.9	3.8	4.0	4.0	4.9	4.7	4.9	6.1
Dependent	6.5	5.3	6.3	6.3	5.1	5.3	6.0	7.0
Out of work for other reason	67.4	77.6	99.9	100.8	101.2	97.5	89.6	80.1
Total	3,314.9	3,312.9	3,321.1	3,339.9	3,337.8	3,330.0	3,329.1	3,328.4
Females								
In work	1,668.1	1,703.5	1,712.3	1,737.9	1,736.9	1,756.3	1,751.6	1,763.9
Unemployed	187.4	177.7	155.9	159.3	171.1	187.6	203.3	223.0
Student; pupils	378.0	378.5	363.4	376.3	382.2	384.0	392.7	393.5
Pensioner	653.3	603.2	591.6	604.5	572.3	519.0	477.8	451.1
Disabled	89.5	103.4	112.3	116.8	136.3	168.4	185.9	181.0
On child care leave	285.1	268.6	276.1	268.3	273.4	277.0	269.8	266.3
Dependent	161.0	160.6	162.6	164.4	155.3	129.8	127.3	127.6
Out of work for other reason	45.7	56.0	81.9	83.9	84.5	84.2	88.8	79.9
Total	3,468.1	3,451.5	3,456.1	3,511.4	3,512.0	3,506.3	3,497.2	3,486.3

[a] Marked data are weighted on the basis of the 2001 Population Census. 2001 is existing as a "Janus year".

Table 3.8: Population aged 15–64 by labour market status [self-categorised] percentage

	1999	2000	2001	2001[a]	2002[a]	2003[a]	2004[a]	2005[a]
Total								
In work	54.7	55.9	56.1	55.9	55.9	56.2	56.2	56.5
Unemployed	7.0	6.6	6.1	6.0	6.0	6.3	6.6	7.2
Student; pupils	11.1	11.1	10.6	10.8	11.1	11.2	11.5	11.6
Pensioner	15.9	14.7	14.3	14.5	13.7	12.5	11.7	11.1
Disabled	2.9	3.3	3.6	3.7	4.2	4.9	5.4	5.3
On child care leave	4.3	4.0	4.1	4.0	4.1	4.1	4.0	4.0
Dependent	2.5	2.5	2.5	2.5	2.3	2.0	2.0	2.0
Out of work for other reason	1.7	2.0	2.7	2.7	2.7	2.7	2.6	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Males								
In work	61.6	62.6	63.0	62.6	62.6	62.7	62.6	62.7
Unemployed	8.6	8.2	7.7	7.6	7.2	7.3	7.4	8.0
Student. pupils	11.3	11.2	10.6	10.9	11.4	11.5	11.7	12.0
Pensioner	12.9	11.7	11.4	11.6	11.0	10.1	9.7	9.1
Disabled	3.2	3.6	4.0	4.0	4.4	5.1	5.5	5.4
On child care leave	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Dependent	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Out of work for other reason	2.0	2.3	3.0	3.0	3.0	2.9	2.7	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Females								
In work	48.1	49.4	49.5	49.5	49.5	50.1	50.1	50.6
Unemployed	5.4	5.1	4.5	4.5	4.9	5.4	5.8	6.4
Student; pupils	10.9	11.0	10.5	10.7	10.9	11.0	11.2	11.3
Pensioner	18.8	17.5	17.1	17.2	16.3	14.8	13.7	12.9
Disabled	2.6	3.0	3.2	3.3	3.9	4.8	5.3	5.2
On child care leave	8.2	7.8	8.0	7.6	7.8	7.9	7.7	7.6
Dependent	4.6	4.7	4.7	4.7	4.4	3.7	3.6	3.7
Out of work for other reason	1.3	1.6	2.4	2.4	2.4	2.4	2.5	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[a] See: Table 3.7.
Source: KSH MEF.

Table 4.1: Employed

Year	1000 prs	1992 = 100	Employment ratio[1]
1980	5,458.2	133.7	65.3
1990	4,880.0	119.5	59.0
1991	4,520.0	110.7	54.4
1992	4,082.7	100.0	49.0
1993	3,827.0	93.7	45.8
1994	3,751.5	91.9	44.8
1995	3,678.8	90.1	43.9
1996	3,648.2	89.4	43.6
1997	3,646.4	89.3	43.6
1998	3,697.8	90.6	44.3
1999	3,811.4	93.4	45.7
2000	3,849.1	94.3	46.2
2001	3,859.5	94.5	...
2001[a]	3,883.3	95.1	45.6
2002[a]	3,883.7	95.1	45.6
2003[a]	3,921.9	96.1	46.2
2004[a]	3,900.4	95.5	45.8
2005[a]	3,901.5	95.6	45.7

[1] Per cent of the population above 15 year.
[a] See: Table 3.7.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

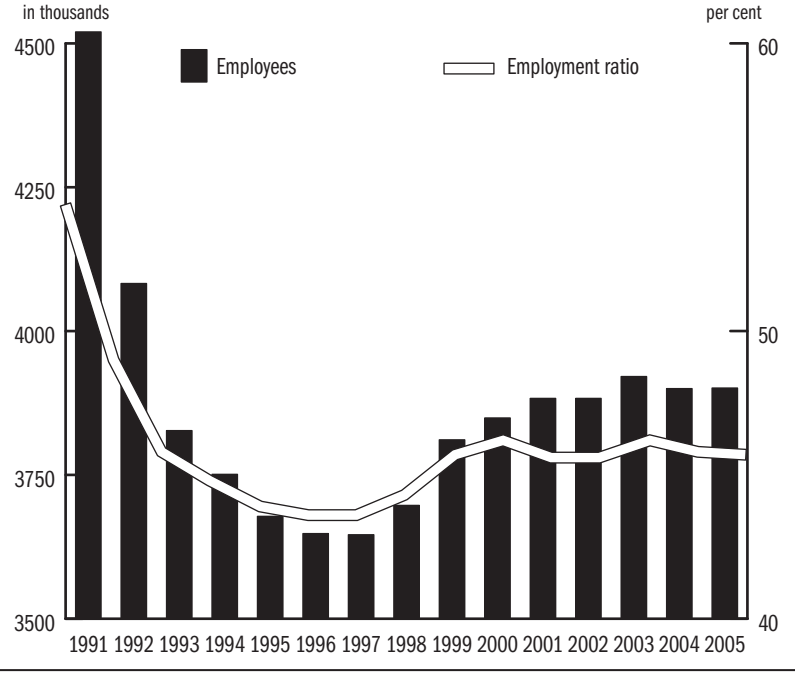


Figure 4.1: Employed

Table 4.2: Employed by gender

Year	Males		Females		Share of females (%)
	1000 prs	1992 = 100	1000 prs	1992 = 100	
1980	3,015.8	136.0	2,442.4	131.0	44.7
1990	2,648.0	119.4	2,232.0	119.7	45.7
1991	2,442.0	110.1	2,078.0	111.5	46.0
1992	2,218.2	100.0	1,864.5	100.0	45.7
1993	2,077.0	93.6	1,750.0	93.9	45.7
1994	2,055.0	92.6	1,696.5	91.0	45.2
1995	2,049.6	92.4	1,629.2	87.4	44.3
1996	2,036.3	91.8	1,611.9	86.5	44.2
1997	2,043.5	92.1	1,602.9	86.0	44.0
1998	2,041.7	92.0	1,656.1	88.8	44.8
1999	2,103.1	94.8	1,708.4	91.6	44.8
2000	2,122.4	95.7	1,726.7	92.6	44.9
2001	2,130.6	96.1	1,728.9	92.7	44.8
2001[a]	2,128.7	96.0	1,754.6	94.1	45.2
2002[a]	2,125.6	95.8	1,758.1	94.3	45.3
2003[a]	2,126.5	95.6	1,795.4	96.2	45.8
2004[a]	2,117.3	95.5	1,783.1	95.6	45.7
2005[a]	2,116.1	95.4	1,785.4	95.8	45.8

[a] See: Table 3.7.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

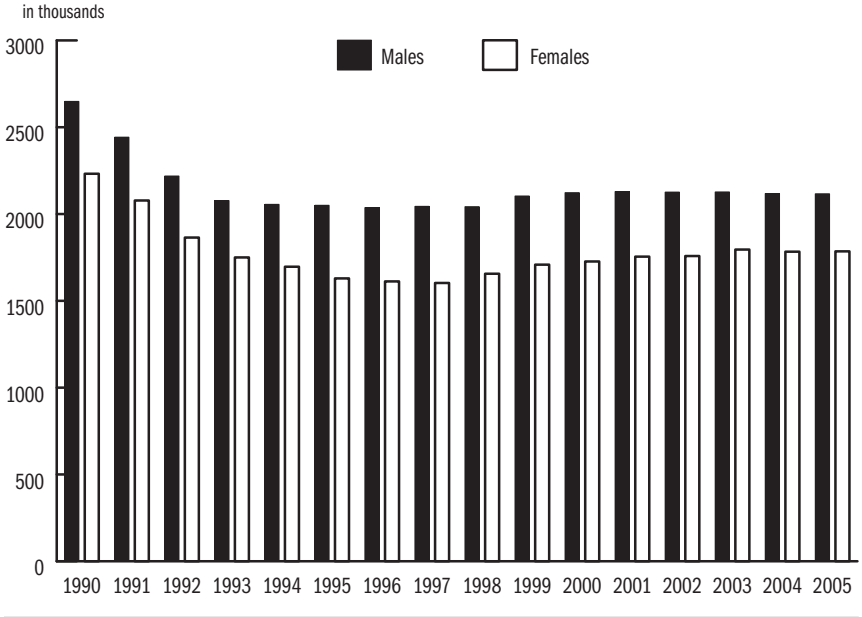


Figure 4.2: Employed by gender

Table 4.3: Composition of the employed by age groups – males, per cent

Year	15–19	20–24	25–49	50–54	55–59	60+	Total
	years old						
1980	5.1	12.6	55.4	10.2	8.0	8.7	100.0
1990	5.0	10.8	64.1	8.6	6.8	4.7	100.0
1991	4.5	10.9	65.3	8.9	6.7	3.7	100.0
1992	3.3	10.9	67.2	9.1	6.5	2.9	100.0
1993	2.9	11.1	68.3	9.2	6.1	2.3	100.0
1994	2.9	11.3	68.7	9.5	5.5	2.0	100.0
1995	2.8	11.3	68.8	9.7	5.6	1.8	100.0
1996	2.5	11.6	69.3	9.6	5.6	1.4	100.0
1997	2.3	12.3	68.9	9.9	5.4	1.2	100.0
1998	2.3	13.4	67.6	10.3	5.1	1.3	100.0
1999	1.9	13.2	67.1	10.5	5.6	1.6	100.0
2000	1.5	12.4	67.3	10.6	6.4	1.8	100.0
2001	1.1	10.9	68.3	11.0	6.9	1.8	100.0
2001[a]	1.2	10.4	68.6	11.1	6.7	2.0	100.0
2002[a]	0.9	9.4	69.4	11.3	6.9	2.1	100.0
2003[a]	0.7	8.6	69.1	11.8	7.3	2.5	100.0
2004[a]	0.7	7.4	69.5	12.0	7.3	3.0	100.0
2005[a]	0.6	6.8	68.9	12.7	7.9	3.1	100.0

[a] See: Table 3.7.
Source: 1980–91: Census based estimates. 1992– : KSH MEF.

Table 4.4: Composition of the employed by age groups – females, per cent

Year	15–19	20–24	25–49	50–54	55+	Total
	years old					
1980	5.3	9.7	61.8	10.7	12.5	100.0
1990	5.2	8.6	66.2	10.0	10.0	100.0
1993	3.3	9.9	71.4	10.3	5.1	100.0
1994	3.2	10.2	71.8	10.4	4.5	100.0
1995	2.7	10.2	72.2	10.6	4.3	100.0
1996	2.4	9.9	72.2	11.0	4.5	100.0
1997	2.0	10.8	72.2	10.5	4.5	100.0
1998	2.3	12.2	71.2	10.5	3.8	100.0
1999	1.7	12.1	70.2	11.6	4.4	100.0
2000	1.4	11.1	69.6	12.7	5.2	100.0
2001	1.1	10.1	70.0	13.0	5.8	100.0
2001[a]	1.1	9.6	70.5	13.1	5.7	100.0
2002[a]	0.8	9.2	69.4	13.8	6.8	100.0
2003[a]	0.5	8.2	68.8	14.0	8.5	100.0
2004[a]	0.5	7.1	68.2	14.6	9.7	100.0
2005[a]	0.4	6.4	67.6	15.4	10.2	100.0

[a] See: Table 3.7.
Source: 1980–91: Census based estimates. 1992– : KSH MEF.

Table 4.5: Composition of the employed by level of education – males, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1980	40.8	32.3	18.2	8.7	100.0
1990	37.6	30.5	20.1	11.8	100.0
1995	21.3	38.5	25.5	14.7	100.0
1996	20.2	39.3	25.3	15.2	100.0
1997	20.1	39.4	26.5	14.1	100.0
1998	20.3	39.4	25.7	14.7	100.0
1999	16.8	41.5	26.8	14.9	100.0
2000	16.1	41.6	26.7	15.6	100.0
2001	15.7	42.7	26.0	15.6	100.0
2001[a]	15.6	42.8	26.0	15.6	100.0
2002[a]	14.6	43.2	26.4	15.8	100.0
2003[a]	14.0	41.3	27.7	17.0	100.0
2004[a]	13.0	40.4	28.0	18.6	100.0
2005[a]	13.0	40.8	27.7	18.5	100.0

[a] See: Table 3.7.

Source: 1980–91: Census based estimates. 1992– : KSH MEF. Since 1999 slight changes carried out in the categorisation system.

Table 4.6: Composition of the employed by level of education – females, per cent

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1980	53.1	12.3	27.5	7.2	100.0
1990	43.4	13.4	31.4	11.8	100.0
1995	26.5	20.1	37.1	16.3	100.0
1996	25.6	19.6	37.3	17.6	100.0
1997	25.1	20.6	37.9	16.4	100.0
1998	23.6	20.2	38.2	18.0	100.0
1999	20.6	20.3	40.6	18.5	100.0
2000	19.1	20.9	40.8	19.2	100.0
2001	19.0	21.2	40.4	19.4	100.0
2001[a]	19.1	21.3	40.3	19.3	100.0
2002[a]	18.5	21.5	40.2	19.8	100.0
2003[a]	16.4	21.5	40.9	21.2	100.0
2004[a]	15.9	20.5	40.2	23.4	100.0
2005[a]	15.4	20.2	40.0	24.4	100.0

[a] See: Table 3.7.

Source: 1980–91: Census based estimates. 1992– : KSH MEF.

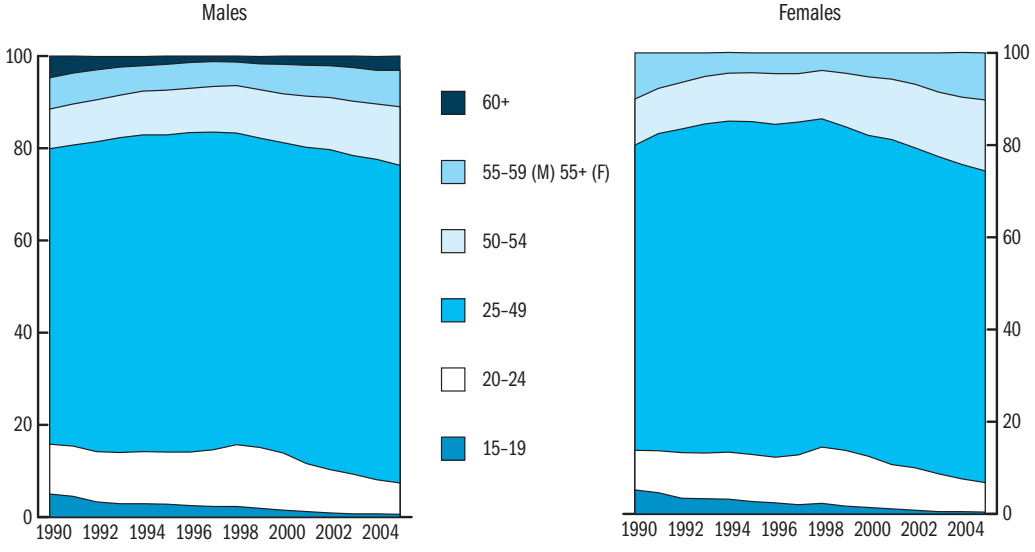


Figure 4.3: Employed by age, per cent

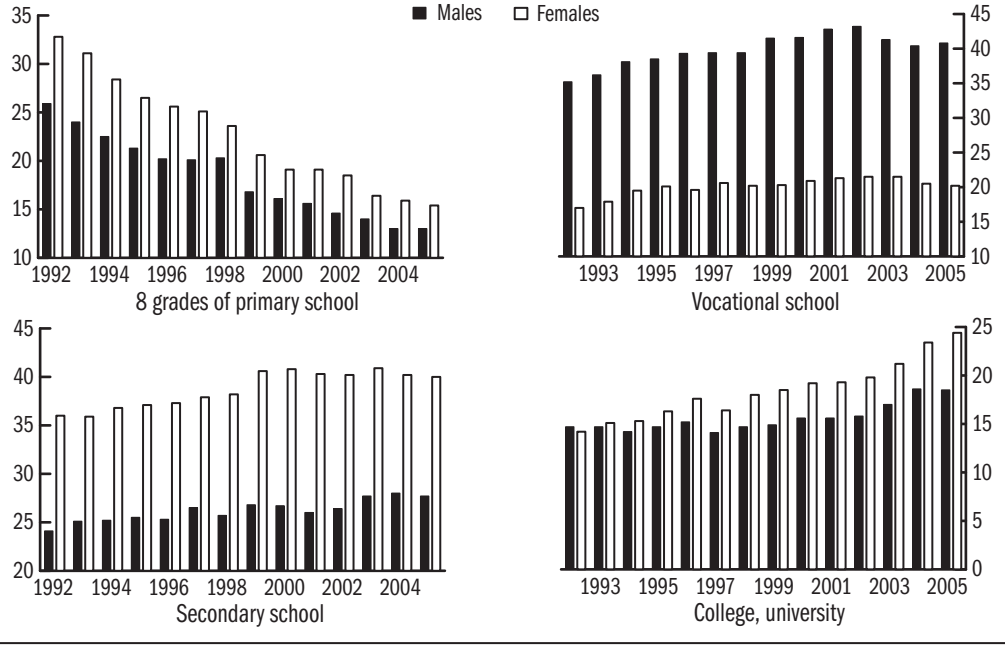


Figure 4.4: Employed by highest educational attainment and gender, per cent

Table 4.7: Employed by status in employment

Year	Employees	Member of cooperatives	Member of other partnerships	Self-employed and assisting family members	Total
1994	3,045.2	103.3	174.7	369.3	3,692.5
1995	2,978.9	84.2	167.9	391.8	3,622.8
1996	2,961.2	79.0	151.8	413.1	3,605.1
1997	2,989.7	68.9	137.4	414.3	3,610.3
1998	3,088.5	55.8	132.5	397.9	3,674.7
1999	3,201.3	42.5	111.8	435.9	3,791.5
2000	3,255.5	37.1	129.4	407.1	3,829.1
2001	3,296.3	30.7	119.1	398.4	3,844.5
2001[a]	3,313.6	31.4	118.9	404.4	3,868.3
2002[a]	3,337.2	22.5	109.9	401.0	3,870.6
2003[a]	3,399.2	8.6	114.7	399.4	3,921.9
2004[a]	3,347.8	8.1	136.6	407.8	3,900.3
2005[a]	3,367.3	5.8	146.7	381.7	3,901.5

[a] See: Table 3.7.
Note: Conscripts are excluded.
Source: KSH MEF.

Table 4.8: Composition by status in employment – per cent

Year	Employees	Member of cooperatives	Member of other partnerships	Self-employed and assisting family members	Total
1994	82.5	2.8	4.7	10.0	100.0
1995	82.2	2.3	4.6	10.8	100.0
1996	82.1	2.2	4.2	11.5	100.0
1997	82.8	1.9	3.8	11.5	100.0
1998	84.0	1.5	3.6	10.8	100.0
1999	84.4	1.1	2.9	11.5	100.0
2000	85.0	1.0	3.4	10.6	100.0
2001	85.7	0.8	3.1	10.4	100.0
2001[a]	85.7	0.8	3.1	10.5	100.0
2002[a]	86.2	0.6	2.8	10.4	100.0
2003[a]	86.7	0.2	2.8	10.3	100.0
2004[a]	85.8	0.2	3.5	10.5	100.0
2005[a]	86.3	0.1	3.8	9.8	100.0

[a] See: Table 3.7.
Note: Conscripts are excluded.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

Table 4.9: Employees* by industry, per cent

Industry	1980	1990	2000	2001[a]	2002[a]	2003[a]	2004[a]	2005[a]
Agriculture	18.0	15.8	5.2	4.9	4.8	4.4	4.1	3.8
Mining and quarrying	2.2	1.8	0.7	0.4	0.4	0.4	0.4	0.4
Manufacturing	29.2	29.5	25.9	26.5	26.4	25.2	24.4	23.6
Electricity; gas; steam; water supply	2.9	3.0	2.3	2.3	2.1	1.9	1.8	1.8
Construction	7.0	5.9	6.4	6.5	6.4	7.0	7.3	7.6
Wholesale and retail trade	8.7	8.9	13.0	13.1	13.1	13.2	13.1	14.3
Hotels and restaurants	2.3	2.4	3.2	3.5	3.4	3.4	3.6	3.9
Transport; storage; communication	7.4	6.7	8.3	8.3	8.1	7.8	7.7	7.4
Financial intermediation	1.1	1.4	2.2	2.1	2.0	1.9	2.1	2.1
Real estate; renting; business activities	3.2	2.9	5.0	5.4	5.5	6.1	6.5	6.6
Public administration and defence; compulsory social security	4.0	5.6	8.1	7.9	8.1	8.4	8.5	8.4
Education	6.0	7.1	9.1	8.9	9.1	9.2	9.4	9.0
Health and social work	5.3	5.5	6.8	6.6	6.7	7.3	7.4	7.2
Other	2.7	3.4	3.9	3.7	3.7	3.8	3.7	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Includes members of cooperatives and partnerships.
[a] See: Table 3.7.
Source: 1980 –1990: Census based estimates.; 1992–: KSH MEF.

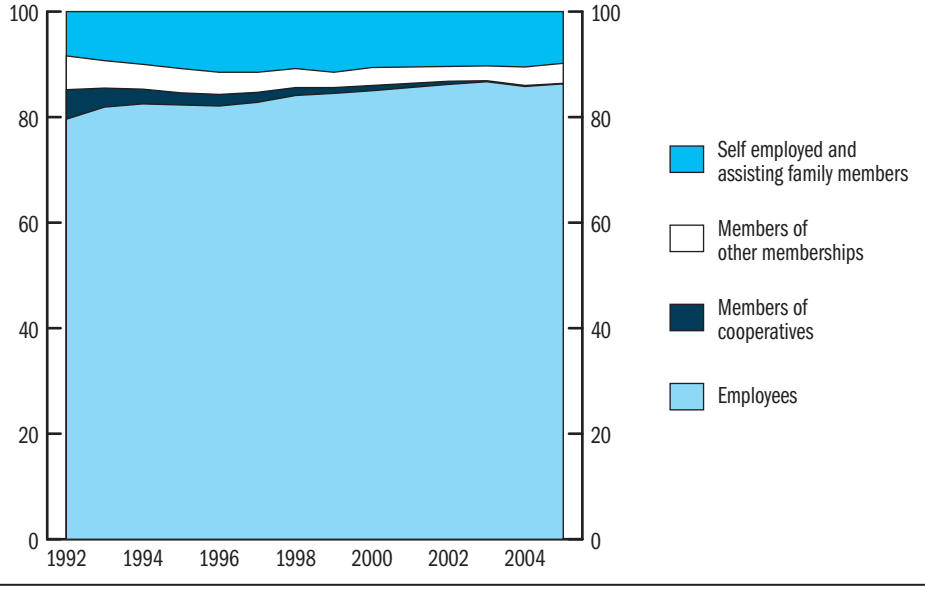


Figure 4.5: Ratio of employees, members of cooperatives, members of other partnerships, self-employed and assisting family members, per cent

Table 4.10: Employees of the corporate sector by firm size, per cent

Year	Less than 20	20–49	50–249	250–999	More than 1000
	number of employees				
1998	8.2	5.8	25.1	26.4	34.4
2000	20.2	7.0	23.5	22.5	26.8
2002	21.6	14.0	21.5	20.1	22.9
2003	23.0	15.3	20.5	19.3	21.8
2004	23.6	14.8	21.3	18.3	22.0
2005	27.0	15.0	20.5	17.5	20.0

Note: –1999: firms employing 10 or more workers; 2000–2001: firms employing 5 or more workers.
Source: FH BT.

Table 4.11: Employees of the corporate sector by the share of foreign ownership, per cent

Foreign Ownership	1997	1998	1999	2000	2001	2002	2003	2004	2005
100 %	12.2	14.4	17.1	17.5	19.0	17.7	16.5	17.7	18.6
Majority	12.3	13.9	13.5	11.7	11.0	9.2	8.8	7.8	8.5
Minority	7.3	7.6	6.0	5.3	4.9	3.6	3.9	3.8	3.1
0 %	68.2	64.1	63.4	65.5	65.1	69.5	70.8	70.7	69.8

Note: –1999: firms employing 10 or more workers; 2000–2001: firms employing 5 or more workers.
Source: FH BT.

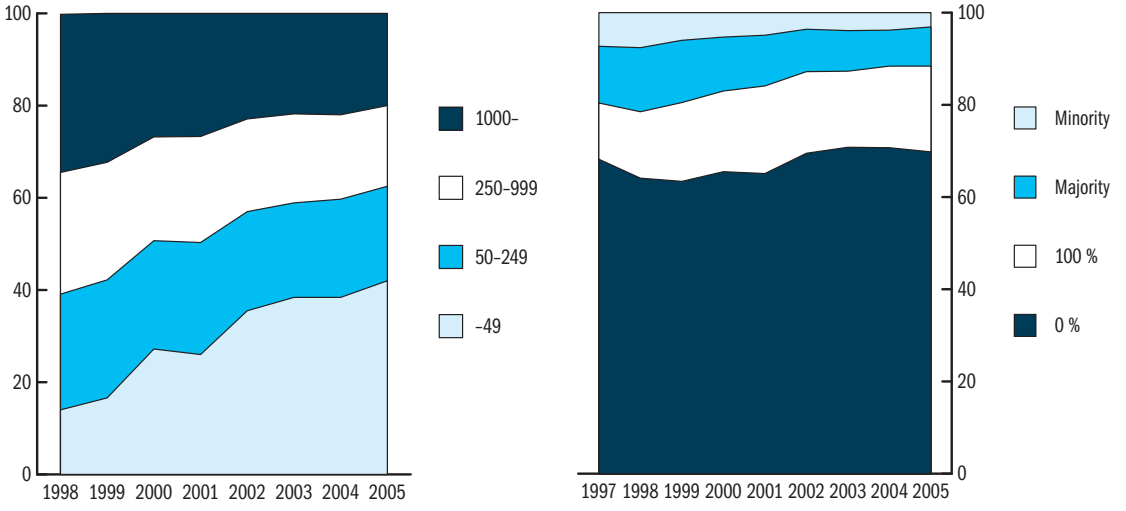


Figure 4.6: Employees of the corporate sector by firm size and by the share of foreign ownership

Table 4.12: Employment rate of population aged 15–74 , by age group, males

Year	15–19	20–24	25–49	50–54	55–59	60–74	Total
1992	14.6	64.7	82.8	71.8	48.7	13.0	58.9
1998	11.4	59.9	78.8	66.0	38.3	5.7	54.4
1999	10.6	60.3	80.5	69.0	44.0	6.1	56.2
2000	8.4	58.9	80.9	69.6	49.6	6.7	56.8
2001[a]	7.9	56.7	81.6	68.2	51.3	7.0	57.1
2002[a]	5.6	53.1	81.9	68.6	52.8	7.6	57.1
2003[a]	4.8	51.8	82.2	69.7	55.2	8.9	57.6
2004[a]	4.5	46.5	82.7	69.7	54.0	10.8	57.5
2005[a]	4.0	43.6	82.5	70.1	56.6	10.9	57.4

[a] See: Table 3.7.
Source: KSH MEF.

Table 4.13: Employment rate of population aged 15–74 by age group, females

Year	15–19	20–24	25–49	50–54	55–59	60–74	Total
1992	16.0	54.0	72.2	58.4	18.2	7.5	46.6
1998	10.7	47.5	66.3	52.3	13.6	2.5	41.0
1999	8.7	48.1	67.3	59.4	16.2	2.8	42.3
2000	8.0	45.9	67.8	62.5	20.0	2.8	43.0
2001[a]	6.3	44.2	68.0	62.1	23.2	2.8	43.1
2002[a]	4.3	44.2	67.0	64.0	28.3	3.1	43.3
2003[a]	3.1	41.9	67.8	65.8	35.1	3.9	44.3
2004[a]	2.7	37.4	67.2	66.0	39.8	4.5	44.1
2005[a]	2.6	34.7	67.4	66.6	41.7	4.3	44.2

[a] See: Table 3.7.
Source: KSH MEF.

Table 4.14: Employment rate of population aged 15–74 by level of education, males

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	30.4	75.6	68.0	79.6	54.9
1998	28.2	75.1	63.4	75.7	54.4
1999	26.7	76.4	64.9	77.4	56.2
2000	26.5	77.0	64.5	77.5	56.8
2001[a]	26.4	77.3	63.8	78.4	57.1
2002[a]	25.4	77.1	63.6	78.2	57.1
2003[a]	25.8	76.1	64.0	78.4	57.6
2004[a]	24.8	75.2	63.6	79.2	57.5
2005[a]	25.1	74.1	63.3	78.9	57.4

[a] See: Table 3.7.
Source: KSH MEF.

Table 4.15: Employment rate of population aged 15–74 by level of education, females

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	24.9	64.9	61.8	76.7	43.5
1998	20.2	60.4	55.2	73.1	41.0
1999	19.6	60.8	56.3	73.1	42.3
2000	19.2	60.8	56.3	73.5	43.0
2001[a]	19.4	60.5	56.0	74.4	43.1
2002[a]	19.3	60.1	55.2	74.3	43.3
2003[a]	18.8	59.0	55.8	74.4	44.3
2004[a]	18.4	58.1	54.5	74.3	44.1
2005[a]	18.3	57.0	54.0	74.8	44.2

[a] See: Table 3.7.
Source: KSH MEF.

Table 5.1: Registered and LFS unemployment

Year	Registered unemployed		LFS unemployed	
	in thousands	rate in %	in thousands	rate in %
1990	47.7	–	...	...
1991	227.3	4.1	...	...
1992	557.0	10.3	444.2	9.8
1993	671.8	12.9	518.9	11.9
1994	568.4	11.3	451.2	10.7
1995	507.7	10.6	416.5	10.2
1996	500.6	11.0	400.1	9.9
1997	470.1	10.5	348.8	8.7
1998	423.1	9.5	313.0	7.8
1999	409.5	9.7	284.7	7.0
2000	390.5	9.3	262.5	6.4
2001	364.1	8.5	232.9	5.7
2002	344.7	8.0	238.8	5.8
2003	357.2	8.3	244.5	5.9
2004	375.9	8.7	252.9	6.1
2005	409.9	9.4	303.9	7.2

Note: The denominator of the unemployment rate is the economically active population on 1st January of the previous year.
Source: Registered unemployed: FH REG; LFS unemployed: KSH MEF.

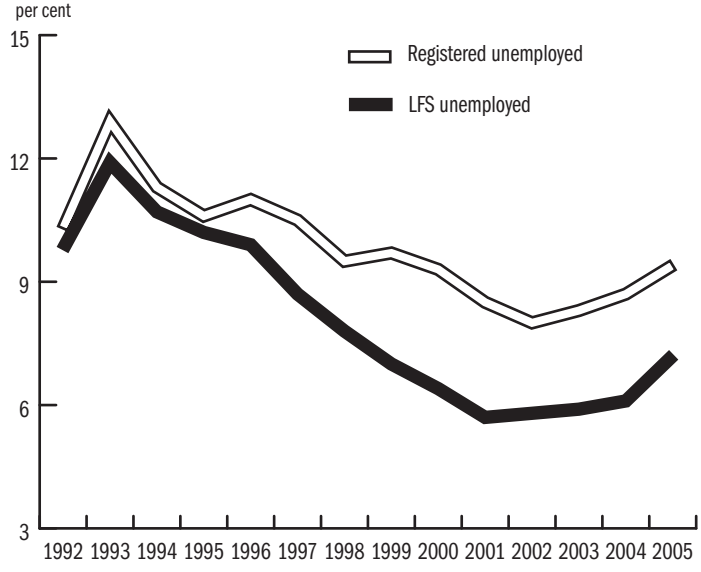


Figure 5.1: Registered and LFS, LFS unemployment rates

Table 5.2: Unemployment rate by age and gender and % of long term unemployed

Year	Unemployment rate			Of which: 15–24 ages	Share of long term unemployed[1]
	Males	Females	Together		
1992	10.7	8.7	9.8	17.5	...
1993	13.2	10.4	11.9	21.3	...
1994	11.8	9.4	10.7	19.4	43.2
1995	11.3	8.7	10.2	18.6	50.6
1996	10.7	8.8	9.9	17.9	54.4
1997	9.5	7.8	8.7	15.9	51.3
1998	8.5	7.0	7.8	13.4	48.8
1999	7.5	6.3	7.0	12.4	49.5
2000	7.0	5.6	6.4	12.1	49.1
2001	6.3	5.0	5.7	10.8	46.7
2001[a]	6.3	5.0	5.7	10.9	46.7
2002[a]	6.1	5.4	5.8	12.3	44.9
2003[a]	6.1	5.6	5.9	13.4	43.9
2004[a]	6.1	6.1	6.1	15.5	45.0
2005[a]	7.0	7.5	7.2	19.4	46.2

[1] Long term unemployed = 12 or more months without job.
[a] See: Table 3.7.
Source: KSH MEF.

Table 5.3: Composition of the unemployed by level of education, males

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	39.0	40.8	17.3	2.8	100.0
1998	37.4	42.0	17.2	3.4	100.0
1999	34.5	45.3	17.4	2.8	100.0
2000	32.9	45.8	17.9	3.4	100.0
2001[a]	36.5	43.2	17.5	2.8	100.0
2002[a]	36.7	43.3	16.7	3.3	100.0
2003[a]	34.0	44.7	17.2	4.1	100.0
2004[a]	33.9	42.6	18.6	4.9	100.0
2005[a]	32.1	43.1	19.0	5.8	100.0

[a] See: Table 3.7.
Source: 1993–: KSH LFS. Since 1999 slight changes carried out in the categorisation system.

Table 5.4: Composition of the unemployed by level of education, females

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	45.8	22.6	27.4	4.2	100.0
1994	44.4	23.1	29.4	3.1	100.0
1995	41.0	24.3	29.7	5.0	100.0
1996	38.2	24.9	31.6	5.4	100.0
1997	44.2	23.2	28.4	4.2	100.0
1998	41.6	22.7	31.4	4.3	100.0
1999	36.2	26.2	33.8	3.8	100.0
2000	31.8	28.2	35.0	5.0	100.0
2001	33.3	28.2	32.5	6.1	100.0
2001[a]	33.7	28.0	32.2	6.1	100.0
2002[a]	33.2	26.0	32.2	8.5	100.0
2003[a]	32.7	28.3	32.0	7.0	100.0
2004[a]	27.8	27.4	34.2	10.6	100.0
2005[a]	28.2	27.1	35.2	9.5	100.0

[a] See: Table 3.7.

Source: 1993–: KSH LFS. Since 1999 slight changes carried out in the categorisation system.

Table 5.5: Unemployment rate of population aged 15–74 by level of education, males

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	20.3	15.0	9.7	2.9	13.5
1998	14.6	9.1	5.9	2.2	8.5
1999	14.3	8.2	5.0	1.5	7.5
2000	13.4	7.7	4.8	1.6	7.0
2001[a]	13.6	6.4	4.3	1.2	6.3
2002[a]	14.1	6.2	4.0	1.4	6.1
2003[a]	13.6	6.6	3.9	1.6	6.1
2004[a]	14.3	6.4	4.1	1.7	6.1
2005[a]	15.6	7.4	4.9	2.3	7.0

[a] See: Table 3.7.

Source: 1993–: KSH LFS. Since 1999 slight changes carried out in the categorisation system.

Table 5.6: Unemployment rate of population aged 15–74 by level of education, females

Year	8 grades of primary school or less	Vocational school	Secondary school	College, University	Total
1993	14.6	12.8	8.1	3.2	10.4
1998	11.6	7.8	5.8	1.8	7.0
1999	10.5	8.0	5.2	1.3	6.3
2000	9.1	7.4	4.9	1.5	5.6
2001[a]	8.4	6.4	4.0	1.6	5.0
2002[a]	9.3	6.5	4.4	2.4	5.4
2003[a]	10.5	7.2	4.4	1.9	5.6
2004[a]	10.3	8.0	5.3	2.9	6.1
2005[a]	13.0	9.8	6.7	3.1	7.5

[a] See: Table 3.7.

Source: 1993–: KSH LFS. Since 1999 slight changes carried out in the categorisation system.

Table 5.7: The number of unemployed by duration of job search, in thousands

Year	1–4 [<1]	5–14 [1–3]	15–26 [4–6]	27–51 [7–11]	52 [12]	53–78 [13–18]	79–104 [19–24]	105– [>24]	Total
	Length of job search, weeks [month]								
1992	43.9	90.9	96.4	110.7	10.6	41.7	38.4	–	432.6
1993	36.2	74.8	87.9	120.5	14.7	75.1	83.7	–	492.9
1994	30.5	56.5	65.0	91.9	8.4	63.0	73.8	40.4	429.5
1995	23.0	51.0	56.5	69.4	20.2	57.2	34.3	93.2	404.8
1996	19.9	46.4	49.3	61.5	18.2	56.1	37.1	100.2	388.7
1997	16.1	43.7	45.9	54.4	15.7	44.5	31.1	77.3	328.7
1998	12.9	44.2	44.5	45.7	16.0	39.0	27.6	63.5	293.4
1999	15.4	44.1	38.8	46.0	13.2	38.1	26.8	62.3	284.7
2000	16.7	38.5	35.1	42.8	12.7	36.9	23.6	55.4	261.3
2001	14.7	36.9	33.1	38.3	11.3	31.4	20.9	44.1	230.7
2001[a]	14.9	37.0	33.2	38.6	11.5	31.6	20.9	44.2	231.9
2002[a]	15.5	39.4	34.8	40.7	11.6	32.7	19.8	42.5	237.0
2003[a]	15.9	42.1	38.9	42.0	14.5	27.6	17.6	43.0	241.6
2004[a]	13.0	42.0	39.9	41.8	13.5	33.4	19.6	47.2	250.4
2005[a]	14.8	48.9	44.1	51.3	14.1	41.0	27.4	54.3	295.9

* Without those unemployed who will get a new job within 30 days; since 2003: within 90 days.
[a] See: Table 3.7.
Source: KSH MEF.

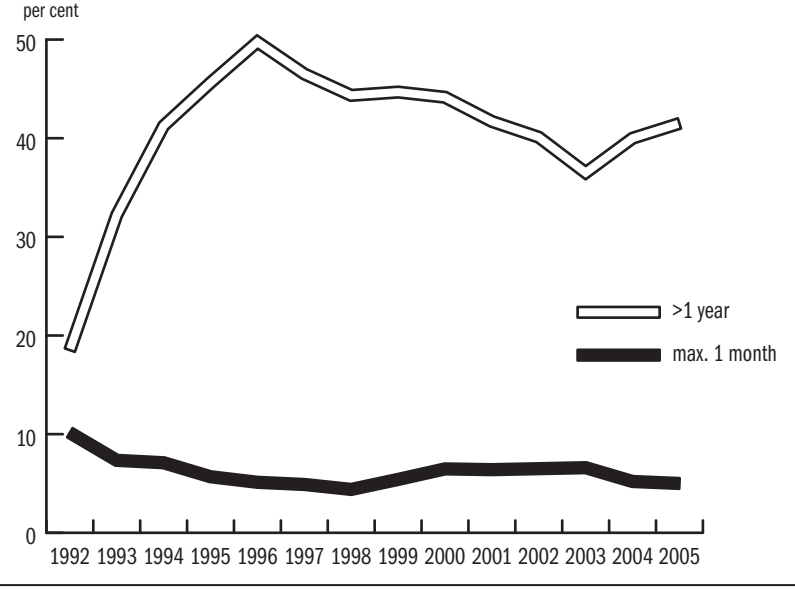
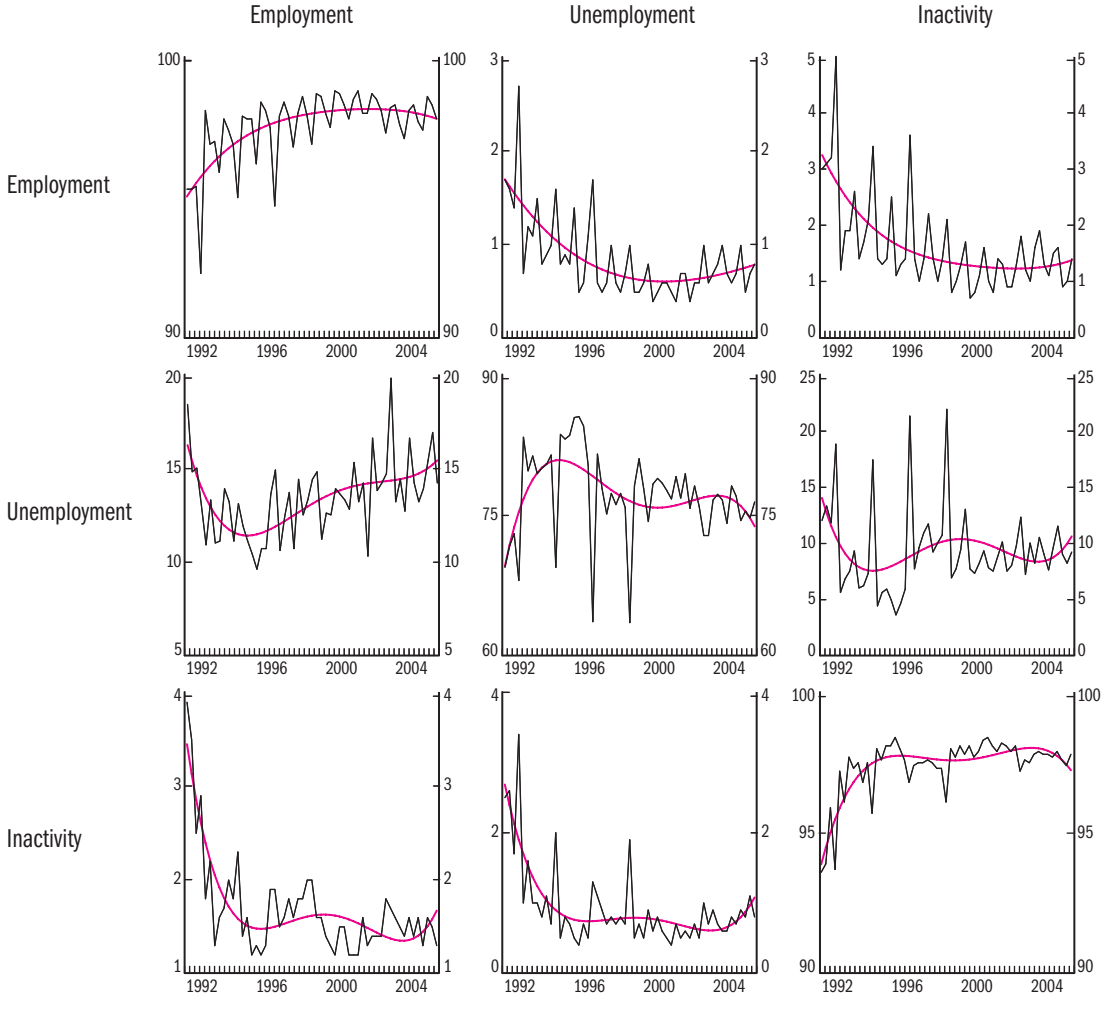


Figure 5.2: The distribution of unemployed by duration of job search, per cent

Figure 5.3: Quarterly flows between labour market states, population between 15–74 years



The data refer to 15–74 aged cohorts observed in the LFS in two consecutive quarters.
Red curves: smoothed with fourth degree polinomial.
Source: KSH MEF.

Table 5.8: Registered unemployed by economic activity as observed in the LFS

Year	Employed	Unemployed	Inactive	Total
1992	5.1	71.6	23.3	100.0
1993	10.0	63.6	26.4	100.0
1994	14.4	54.5	31.1	100.0
1995	11.8	53.7	34.5	100.0
1996	13.7	51.8	34.5	100.0
1997	18.7	44.1	37.2	100.0
1998	24.8	35.1	40.1	100.0
1999	6.7	55.8	37.5	100.0
2000	4.7	54.3	41.0	100.0
2001	6.5	45.2	48.3	100.0
2002[a]	4.4	47.4	48.2	100.0
2003[a]	9.4	44.1	46.5	100.0
2004[a]	3.0	53.5	43.5	100.0
2005[a]	2.3	59.7	38.0	100.0

[a] See: Table 3.7.

Note: The data refer to the population observed as registered unemployed in the LFS. Since 1999 serious methodology changes: people whose last contact with employment office was more then two months before the interview were excluded.

Source: KSH MEF.

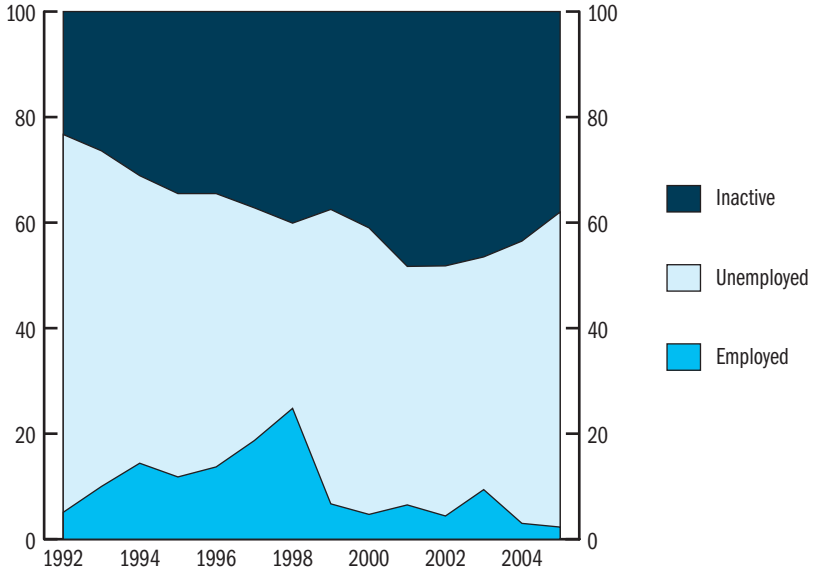


Figure 5.4: Registered unemployed by economic activity

Table 5.9: Selected time series of registered unemployment, yearly average, in thousands, per cent

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered unemployment	671.7	568.4	507.7	500.6	470.1	423.1	409.5	390.5	364.1	344.7	357.2	375.9	409.9
Of which:													
School-leavers	59.7	62.1	54.5	46.2	42.4	32.5	29.9	26.0	26.8	28.5	31.3	33.8	40.9
Non school-leavers	612.0	506.2	453.2	454.4	427.7	390.6	379.6	364.4	337.4	316.2	325.9	342.2	369.1
Male	395.3	333.0	293.8	284.1	267.1	233.4	221.4	209.7	196.4	184.6	188.0	193.3	210.4
Female	276.4	235.3	213.8	216.5	203.0	189.7	188.1	180.8	167.7	160.1	169.2	182.6	199.5
25 years old and younger	174.8	153.3	134.2	124.0	105.8	89.9	85.4	79.1	75.6	71.1	71.6	71.4	78.9
Manual workers	556.0	467.6	414.3	407.4	386.3	349.0	336.8	321.2	302.0	286.3	296.2	308.5	336.2
Non Manual workers	115.8	100.7	93.4	93.2	83.8	74.1	72.7	69.3	62.1	58.4	61.0	67.4	73.7
Unemployment benefit recipients	404.8	228.9	182.8	171.7	141.7	130.7	140.7	131.7	119.2	114.9	120.0[a]	124.0	134.4
Unemployment assistance recipients[b]	89.3	190.3	210.0	211.3	201.3	182.2	148.6	143.5	131.2	113.4	116.2	120.4	133.4
Shares within registered unemployed	12.9	11.3	10.6	11.0	10.5	9.5	9.7	9.3	8.5	8.0	8.3	8.7	9.4
Unemployment rate													
School-leavers	8.9	10.9	10.7	9.2	9.0	7.7	7.3	6.7	7.3	8.3	8.8	9.0	10.0
Male	58.8	58.6	57.9	56.7	56.8	55.2	54.1	53.7	53.9	53.5	52.6	51.4	51.3
25 years old and younger	26.0	27.0	26.4	24.8	22.5	21.3	20.9	20.3	20.8	20.6	20.0	19.0	19.2
Manual workers	82.8	82.3	81.6	81.4	82.2	82.5	82.3	82.2	82.9	83.1	82.9	82.1	82.0
Inflow to the Register	48.6	42.3	45.7	52.8	56.1	55.4	57.2	54.1	57.0	56.0	54.8	57.8	60.7
Of which: school-leavers	7.6	7.8	8.0	7.5	9.2	9.8	9.3	8.0	7.8	7.8	7.7	7.6	8.2
Outflow from the Register	51.2	51.7	47.6	54.3	57.3	60.4	57.2	56.8	59.4	55.8	53.5	54.4	59.8
Of which: school-leavers	6.6	7.9	8.5	8.9	9.0	11.0	9.4	8.2	7.7	7.5	7.6	7.1	7.9

[a] Recipients of job search assistance benefit included.
[b] From 2001 together with regular social allowance recipients.
Source: FH REG.

Table 5.10: First-time entrants and re-entrants to the unemployment register, in thousands

Year	First-time entrants	Re-entrants	Total number of entrants
1995	17.0	28.7	45.7
1996	19.2	33.6	52.8
1997	17.0	39.2	56.1
1998	13.4	42.0	55.4
1999	12.8	44.4	57.2
2000	11.2	42.9	54.1
2001	11.2	45.8	57.0
2002	10.4	45.6	56.0
2003	10.0	44.8	54.8
2004	10.5	47.4	57.8
2005	10.8	50.0	60.7

Source: FH REG.

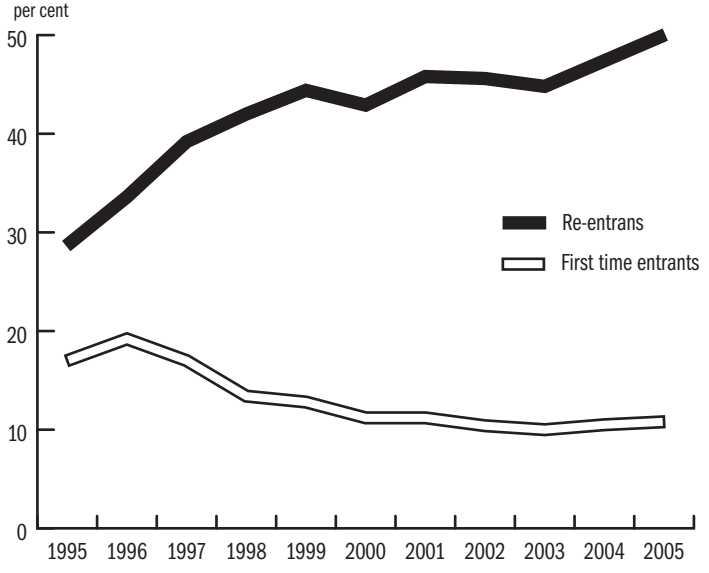


Figure 5.5: Entrants to the unemployment register, in thousands

Table 5.11: Benefit receipt and participation in active labour market programs

Year	Unemployment benefit	Unemployment assistance	UA for school-leavers	Do not receive provision	Public work	Re-training	Wage subsidy	Other programmes	Total
1990									
In thousands	42.5	–	–	18.6	...	...	...	...	61.0
Per cent	69.6			30.4					100.0
1994									
In thousands	160.3	202.4	24.5	142.4	28.7	31.2	23.9	61.7	675.1
Per cent	23.7	30.0	3.6	21.1	4.3	4.6	3.5	9.1	100.0
1995									
In thousands	150.8	192.9	26.3	109.1	21.7	20.4	10.9	64.7	596.8
Per cent	25.3	32.3	4.4	18.3	3.6	3.4	1.8	10.8	100.0
1996									
In thousands	145.4	218.5	2.6	127.8	38.5	20.6	16.4	74.5	644.3
Per cent	22.6	33.9	0.4	19.8	6.0	3.2	2.5	11.6	100.0
1997									
In thousands	134.1	193.5	0.1	121.8	38.9	25.1	29.7	95.7	638.9
Per cent	21.0	30.3	0.0	19.1	6.1	3.9	4.6	15.0	100.0
1998									
In thousands	123.9	158.6	0.1	109.4	37.4	24.5	30.9	86.7	571.5
Per cent	21.7	27.7	0.0	19.1	6.5	4.3	5.4	15.2	100.0
1999									
In thousands	135.5	146.7	0.0	107.1	35.7	28.0	31.1	60.6	544.7
Per cent	24.9	26.9	0.0	19.7	6.6	5.1	5.7	11.1	100.0
2000									
In thousands	117.0	139.7[a]	0.0	106.5	26.7	25.3	27.5	73.5	516.2
Per cent	22.7	27.1	0.0	20.6	5.2	4.9	5.3	14.2	100.0
2001									
In thousands	111.8	113.2	0.0	105.2	29.0	30.0	25.8	37.2	452.2
Per cent	247.0	25.0	0.0	23.3	6.4	6.6	5.7	8.2	100.0
2002									
In thousands	104.8	107.6	–	115.3	21.6	23.5	21.2	32.8	426.8
Per cent	24.6	25.2		27.0	5.1	5.5	5.0	7.7	100.0
2003									
In thousands	105.1[b]	109.5	–	125.0	21.2	22.5	20.1	36.6	440.0
Per cent	23.9	24.9		28.4	4.8	5.1	4.6	8.3	100.0
2004									
In thousands	117.4	118.4	–	132.3	16.8	12.6	16.8	28.5	442.8
Per cent	26.5	26.7		29.9	3.8	2.8	3.8	6.4	100.0
2005									
In thousands	125.6	127.8	–	140.2	21.5	14.7	20.8	31.0	481.6
Per cent	26.1	26.5		29.1	4.5	3.1	4.3	6.4	100.0

[a] Together with the number of regular social allowance recipients.
[b] Recipients of job search assistance benefit included.
Note: October. The percentage ratios refer to the combined number of the registered unemployed and program participants.
Source: FH.

Table 5.12: Distribution of registered unemployed by educational attainment

Educational attainment	1995	1998	2001	2004	2005	2006
8 classes of primary school or less	43.6	40.9	42.3	42.7	41.8	41.5
Vocational school	34.5	36.0	34.2	32.2	32.6	32.3
Vocational secondary school	11.7	12.8	13.0	13.4	13.6	13.6
Grammar school	7.9	7.8	7.7	7.8	8.0	8.2
College diplom; BA	1.5	1.8	2.1	2.8	2.9	3.2
University diplom; MA	0.7	0.6	0.7	1.0	1.0	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	482.7	406.4	359.6	350.7	388.1	359.6

Note: On the closing date of June in every year.
Source: FH.

Table 5.13: Distribution of unemployment benefit recipients by educational attainment

Educational attainment	1995	1998	2001	2004	2005	2006
8 classes of primary school or less	36.9	32.0	29.7	28.9	28.2	25.4
Vocational school	36.6	39.5	40.7	39.2	39.3	39.5
Vocational secondary school	14.9	16.0	16.7	17.7	17.9	18.7
Grammar school	8.3	9.0	9.0	9.3	9.5	10.1
College diplom; BA	2.2	2.6	2.9	3.6	3.7	4.5
University diplom; MA	1.0	0.9	1.0	1.3	1.4	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	164.1	121.3	110.3	100.3	104.9	91.5

[a] Recipients of unemployment allowance before retirement are excluded.
Note: On the closing date of June in every year.
Source: FH.

Table 5.14: Distribution of unemployment assistance[1] by educational attainment

Educational attainment	1995	1998	2001	2004	2005	2006
8 classes of primary school or less	56.8	50.0	55.5	61.1	60.4	60.1
Vocational school	30.6	34.3	30.0	27.6	27.8	27.7
Vocational secondary school	6.9	8.7	7.4	6.1	6.4	6.5
Grammar school	4.5	5.7	5.1	4.2	4.3	4.5
College diplom; BA	0.8	1.0	0.9	0.8	0.9	1.0
University diplom; MA	0.3	0.3	0.3	0.2	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
N	220.7	186.6	136.9	114.6	127.8	116.5

[1] Recipients of regular social assistance are included since 2001.
Note: On the closing date of June in every year.
Source: FH.

Table 5.15: The ratio of those who are employed among the former participants of ALMPs*

Active labour market programmes	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Suggested training programmes	44.5	46.3	46.8	46.8	48.4	45.4	43.3	43.0	45.5	43.8
Accepted training programmes	50.2	51.1	51.5	50.0	52.0	49.3	45.8	46.0	45.6	51.4
Retrainig of those who are employed	92.8	90.4	94.7	94.8	94.9	94.2	92.7	93.3	92.1	90.4
Support for self-employment	90.2	88.1	91.7	90.5	89.4	89.2	90.7	89.6	90.7	89.6
Wage subsidy programmes	70.1	66.3	59.1	59.7	62.3	59.7	62.9	62.0	64.6	62.6
Work experience programmes	–	65.7	59.1	55.8	57.9	64.5	66.9	66.1	66.5	66.8
Further employment programme	–	72.1	75.1	68.5	73.8	71.6	78.4	78.2	71.5	70.9

* Three months after the end of programmes.
Source: FH.

Table 5.16: Employment ratio of former participants of ALMPs* by sex, age and education for the programmes finished in 2005

	Non-employed participants			Supported self-employ-ment[1]	Wage subsidy programme	School leavers	
	suggested training	accepted training	together			work experience programme	further employ-ment programme
By gender							
Male	45.8	57.5	49.5	90.8	59.4	67.9	65.5
Female	42.5	47.4	44.0	88.2	65.6	65.9	85.7
By age groups							
–20	35.6	43.3	37.6	100.0	50.0	59.7	70.6
20–24	48.5	52.7	49.8	86.8	59.9	67.9	71.4
25–29	45.8	54.6	48.9	91.7	61.6	69.7	
–29 together	45.4	52.3	47.6	90.3	60.7	66.8	70.9
30–34	42.6	48.2	44.6	88.0	63.9		
35–39	46.0	48.3	46.7	88.0	64.3		
40–44	42.3	55.6	46.4	91.3	61.3		
45–49	40.4	52.2	44.0	91.4	63.0		
50–54	39.7	52.7	43.1	88.3	67.7		
55+	26.3	53.3	33.7	100.0	55.7		
By educational level							
Less than primary school	22.3	72.7	26.2		37.9	41.2	
Primary school	41.0	49.5	43.0	84.4	54.4	52.5	50.0
Vocational school for skilled workers	46.8	53.5	49.0	91.8	62.2	66.3	73.6
Vocational school	39.2	53.2	43.3	81.6	57.4	63.8	61.1
Special vocational school	50.0		50.0	100.0	60.0	80.0	50.0
Vocational secondary school	46.0	50.4	47.6	91.1	67.9	64.3	66.7
Technicians secondary school	47.1	51.0	48.4	88.5	67.0	70.3	
Grammar school	37.3	47.2	40.6	86.1	69.5	62.8	
College diploma	50.2	56.2	52.2	86.7	67.7	71.3	
University diploma	48.7	64.7	52.4	92.3	64.9	75.1	
Total	43.8	51.4	46.2	89.6	62.6	66.8	70.9

* 3 months after the end of each programme.
[1] Survival rate.
Source: FH.

Table 5.17: The distribution of the total number of labour market training participants

Groups of labour market training participants	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Participants in suggested training	49.3	59.2	61.0	61.4	59.2	58.4	56.5	54.6	55.1	66.9
Participants in accepted training	43.3	34.9	33.8	33.4	35.1	35.7	38.5	34.5	32.4	22.0
Non-employed participants together	92.7	94.1	94.8	94.8	94.3	94.2	95	89.1	87.5	88.9
Of which: school-leavers	23.4	28.5	30.6	29.8	25.1	22.5	23.5	22.1	20.3	21.3
Employees	7.3	5.9	5.2	5.2	5.7	5.8	5.0	10.9	12.5	11.1
Participants of labour market training total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FH.

Table 5.18: The distribution of non-employed labour market training participants by the type of training

Types of training	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Approved qualification	80.4	77.9	79.8	79.6	78.8	78.7	77.6	78.3	75.1	72.9
Non-approved qualification	15.8	16.0	14.4	14.7	14.7	14.0	13.6	12.6	15.0	14.5
Foreign language learning	3.8	6.1	5.7	5.7	6.5	7.3	8.8	9.1	9.9	12.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FH.

Table 5.19: The distribution of those entering into the training programmes by age groups and educational level for male and female participants

	2002			2003			2004			2005		
	Male	Female	Together	Male	Female	Together	Male	Female	Together	Male	Female	Together
Total number of entrants	18901	27088	45989	17901	27191	45092	11077	14683	25760	12565	15162	27727
Entrants by gender	41.1	58.9	100.0	39.7	60.3	100.0	43.0	57.0	100.0	45.3	54.7	100.0
Distribution by age groups												
–20	12.9	10.0	11.2	12.9	8.7	10.4	11.2	7.3	9.0	12.5	7.3	9.7
20–24	28.5	23.1	25.3	28.1	21.5	24.1	25.5	20.0	22.3	26.5	20.3	23.1
–25	41.4	33.0	36.5	41.0	30.2	34.5	36.6	27.3	31.3	39.0	27.6	32.8
25–44	47.0	57.7	53.3	47.6	59.3	54.7	48.7	59.6	54.9	46.4	57.2	52.3
45–49	6.6	6.4	6.4	6.2	6.7	6.5	8.0	7.9	7.9	6.8	8.6	7.8
50+	5.0	2.9	3.8	5.2	3.7	4.3	6.7	5.2	5.9	7.8	6.6	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By educational level												
Less than primary school	0.9	0.4	0.6	1.9	0.8	1.3	2.3	1.2	1.7	3.1	1.6	2.3
Primary school	27.5	17.7	21.7	29.0	19.2	23.1	30.0	19.2	23.8	32.6	21.1	26.3
Vocational schools	36.7	23.1	28.7	33.5	22.5	26.9	32.9	21.8	26.6	31.3	21.1	25.7
Vocational and technical secondary schools	21.3	29.5	26.1	21.1	28.7	25.7	20.2	27.7	24.5	19.0	26.8	23.3
Grammar school	8.9	20.9	15.9	8.8	19.9	15.5	8.3	18.7	14.2	8.7	19.0	14.4
College; university	4.8	8.5	6.9	5.6	8.9	7.6	6.3	11.4	9.2	5.3	10.4	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.1

Source: FH.

Table 5.20: The distribution of registered unemployment by educational attainment, yearly averages

Educational level	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary school or less	41.2	40.8	40.6	40.4	41.0	42.0	42.4	42.7	42.3	41.9
Vocational schools	35.1	35.6	36.0	35.7	34.9	34.1	33.5	32.9	32.3	32.4
Vocational secondary schools	12.7	12.8	12.9	13.2	13.2	13.1	13.2	13.1	13.4	13.5
Grammar school	8.3	8.0	7.9	8.0	8.0	7.7	7.6	7.5	7.7	7.9
College	2.0	2.0	1.9	2.0	2.1	2.2	2.4	2.7	3.1	3.2
University	0.8	0.7	0.7	0.7	0.7	0.8	0.9	1.0	1.1	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FH.

Table 5.21: The distribution of registered unemployed school-leavers by educational attainment, yearly averages

Educational level	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary school or less	4.6	20.2	23.4	25.3	26.8	31.1	33.7	34.7	35.2	36.1
Vocational schools	41.9	35.7	34.1	30.9	27.8	23.7	20.6	20.4	20.2	20.5
Vocational secondary schools	27.0	23.9	24.2	25.0	25.4	25.3	25.5	23.2	22.1	21.5
Grammar school	21.8	15.5	14.0	13.6	13.7	12.6	11.6	10.8	10.7	10.8
College	3.6	3.5	3.4	4.0	4.8	5.5	6.2	7.7	8.1	7.8
University	1.1	1.1	1.0	1.2	1.5	1.8	2.4	3.3	3.6	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: FH.

Table 5.22: The number of registered unemployed by educational attainment, yearly averages

Educational level	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary school or less	206,078	191,772	171,882	165,465	160,099	153,085	146,260	152,395	159,089	171,646
Vocational schools	175,650	167,585	152,164	146,226	136,291	124,078	115,323	117,620	121,588	132,824
Vocational secondary schools	63,470	60,332	54,765	54,034	51,702	47,845	45,614	46,927	50,344	55,369
Grammar school	41,751	37,376	33,458	32,768	31,164	28,219	26,223	26,960	29,093	32,277
College	9,887	9,529	8,061	8,194	8,360	8,149	8,324	9,740	11,538	13,025
University	3,786	3,519	2,792	2,832	2,876	2,764	2,971	3,570	4,298	4,788
Total	500,622	470,112	423,121	409,519	390,492	364,140	344,715	357,212	375,950	409,929

Source: FH.

Table 5.23: The number of registered unemployed school-leavers by educational attainment, yearly averages

Educational level	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Primary school or less	2,125	8,583	7,612	7,568	6,979	8,332	9,606	10,853	11,896	14,731
Vocational schools	19,361	15,147	11,111	9,241	7,249	6,355	5,894	6,372	6,833	8,362
Vocational secondary schools	12,489	10,129	7,864	7,468	6,625	6,778	7,271	7,270	7,461	8,779
Grammar school	10,086	6,590	4,548	4,078	3,566	3,366	3,310	3,375	3,606	4,428
College	1,656	1,491	1,099	1,211	1,247	1,463	1,766	2,401	2,749	3,179
University	516	461	318	361	378	469	697	1,020	1,218	1,381
Total	46,233	42,401	32,551	29,927	26,044	26,763	28,542	31,292	33,763	40,861

Source: FH.

Table 6.1: Nominal and real earnings

Year	Gross earnings	Net earnings	Gross earnings index	Net earnings index	Consumer price index	Real earnings index
	HUF		previous year = 100%			
1989	10,571	8,165	117.9	116.9	117.2	99.7
1990	13,446	10,108	128.6	121.6	128.9	94.3
1991	17,934	12,948	130.0	125.5	135.0	93.0
1992	22,294	15,628	125.1	121.3	123.0	98.6
1993	27,173	18,397	121.9	117.7	122.5	96.1
1994	33,939	23,424	124.9	127.3	118.8	107.2
1995	38,900	25,891	116.8	112.6	128.2	87.8
1996	46,837	30,544	120.4	117.4	123.6	95.0
1997	57,270	38,145	122.3	124.1	118.3	104.9
1998	67,764	45,162	118.3	118.4	114.3	103.6
1999	77,187	50,076	116.1	112.7	110.0	102.5
2000	87,645	55,785	113.5	111.4	109.8	101.5
2001	103,553	64,913	118.0	116.2	109.2	106.4
2002	122,482	77,622	118.3	119.6	105.3	113.6
2003	137,187	88,751	112.0	114.3	104.7	109.2
2004	145,675	93,783	106.0	105.6	106.8	98.9
2005	158,315	103,134	108.8	110.1	103.6	106.3

Source: KSH IMS.

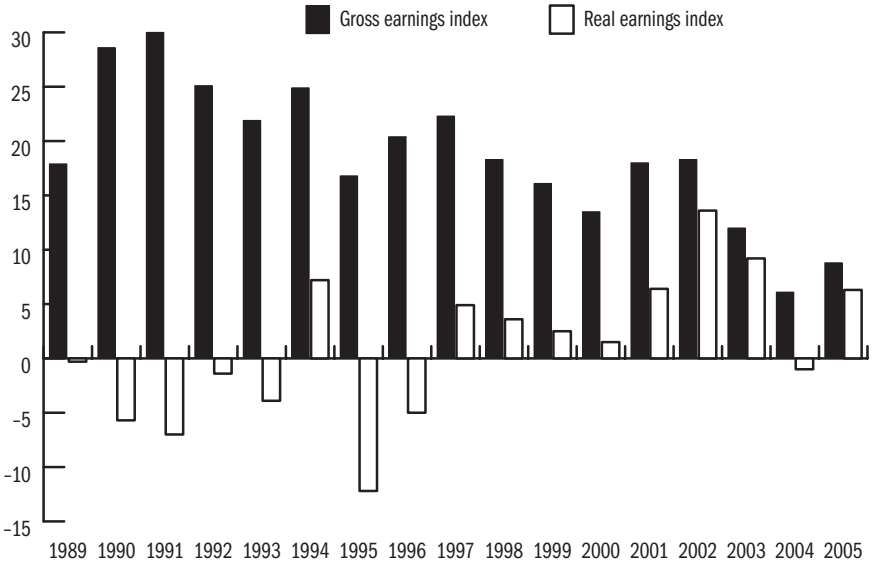


Figure 6.1: Change of gross earnings and net earnings

Table 6.2: Gross average earnings by industry – total*

Industry	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	72.6	76.8	74.9	73.7	72.0	69.3	67.6	69.6	68.8	65.1	66.6	67.7
Mining and quarrying	127.4	130.5	128.3	134.4	125.4	124.1	128.8	122.9	113.2	108.7	111.3	117.9
Manufacturing	95.8	99.7	100.7	100.6	99.1	98.9	100.6	97.7	92.8	90.4	93.7	93.2
Electricity; gas; steam and water supply	123.6	130.6	133.5	132.2	133.3	135.4	136.4	131.0	126.9	127.0	132.1	142.9
Construction	89.3	83.7	82.0	81.9	79.9	73.5	73.3	77.0	70.4	68.4	68.5	69.2
Wholesale and retail trade	97.0	93.3	97.1	93.8	92.5	86.7	88.7	87.5	87.0	84.2	83.9	81.7
Hotels and restaurants	82.6	75.5	75.3	71.6	68.5	64.9	64.6	65.8	66.2	63.8	61.9	58.9
Transport; storage and communication	104.6	106.5	110.0	110.5	112.3	114.3	112.7	110.5	106.6	103.9	108.4	109.0
Financial intermediation	184.6	183.0	189.5	199.2	210.2	214.2	216.1	208.6	197.0	199.6	222.6	230.4
Real estate; renting; business activities	112.8	107.2	110.5	106.8	119.7	115.8	115.3	117.6	109.2	105.8	106.0	103.8
Public administration and defence; compulsory social security	118.0	117.9	114.3	114.1	111.7	120.3	118.0	127.2	137.1	131.8	126.7	130.2
Education	94.0	89.6	83.3	86.4	88.3	94.4	92.7	94.3	105.1	118.4	110.2	109.1
Health and social work	86.8	83.4	80.1	79.2	77.9	76.6	77.9	76.1	84.3	94.7	90.2	85.5
Other	102.1	102.5	102.2	95.2	94.3	92.2	91.1	88.5	91.1	94.2	94.6	95.0

* See: Table 7.2.
Note: National average = 100.
Source: KHS, IMS.

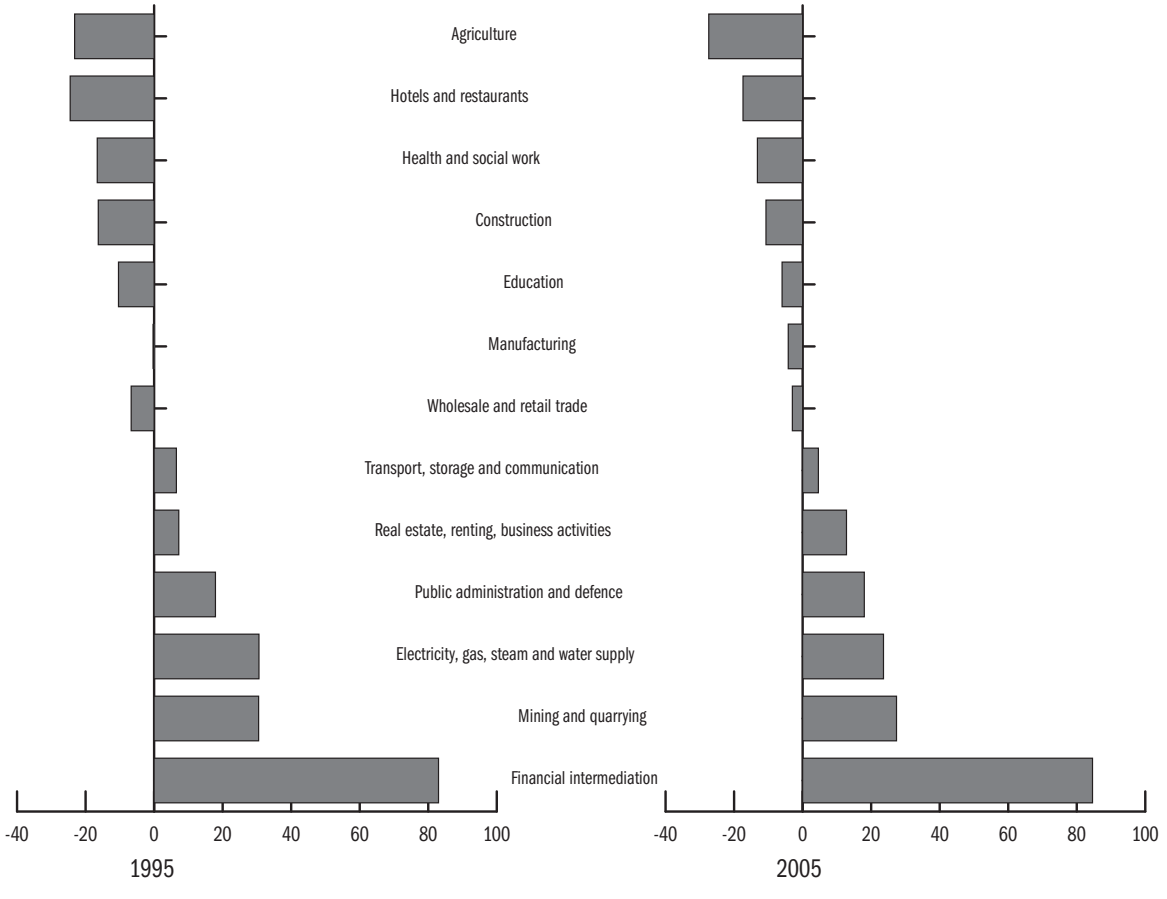


Figure 6.2: Gross earnings as a percentage of national average, by industry, 1995, 2005

Table 6.3: The composition of full-time employees and average earnings by gender in major branches of the economy in 2005

Industries	Males		Females		Together		Female/ male earnings ratio
	Composition %	Average earning HUF/person, month	Composition %	Average earning HUF/person, month	Composition %	Average earning HUF/person, month	
Agriculture	5.3	110,450	1.6	98,870	3.5	107,798	89.5
Fishing	0.1	95,674	0.0	92,858	0.1	95,165	97.1
Mining and quarrying	0.6	161,271	0.1	146,027	0.3	159,139	90.5
Manufacturing	29.0	172,141	19.8	123,559	24.5	152,879	71.8
Electricity; gas; steam and water supply	4.4	208,199	1.5	180,057	3.0	201,460	86.5
Construction	8.4	112,798	1.1	133,314	4.8	115,016	118.2
Wholesale and retail trade	13.8	137,758	12.9	115,361	13.4	127,136	83.7
Hotels and restaurants	1.7	112,584	2.4	85,178	2.0	96,822	75.7
Transport; storage and communication	11.9	182,795	5.1	171,904	8.6	179,591	94.0
Financial intermediation	1.3	468,917	3.4	264,312	2.3	321,989	56.4
Real estate; renting; business activities	6.5	183,530	5.4	149,962	6.0	168,712	81.7
Public administration and defence; compulsory social security	5.4	231,707	14.2	178,955	9.7	193,852	77.2
Education	4.5	188,729	16.5	158,078	10.4	164,776	83.8
Health and social work	3.7	163,000	13.1	136,632	8.3	142,643	83.8
Other	3.4	154,722	2.9	145,845	3.2	150,718	94.3
Total	100.0	168,390	100.0	146,740	100.0	157,770	87.1
Agriculture	5.3	110,450	1.6	98,870	3.5	107,798	89.5
Fishing	0.1	95,674	0.0	92,858	0.1	95,165	97.1
Mining and quarrying	0.6	161,271	0.1	146,027	0.3	159,139	90.5
Manufacturing	29.0	172,141	19.8	123,559	24.5	152,879	71.8
Electricity; gas; steam; water supply	4.4	208,199	1.5	180,057	3.0	201,460	86.5
Construction	8.4	112,798	1.1	133,314	4.8	115,016	118.2
Wholesale and retail trade	13.8	137,758	12.9	115,361	13.4	127,136	83.7
Hotels and restaurants	1.7	112,584	2.4	85,178	2.0	96,822	75.7
Transport; storage a nd communication	11.9	182,795	5.1	171,904	8.6	179,591	94.0
Financial intermediation	1.3	468,917	3.4	264,312	2.3	321,989	56.4

Source: FH-BT.

Table 6.4: The composition of full-time employees and average earnings in the economy by gender and level of education in 2005

Level of education	Males		Females		Together		Female/ male earnings ratio
	Composition	Average earning	Composition	Average earning	Composition	Average earning	
	%	HUF/person, month	%	HUF/person, month	%	HUF/person, month	
Primary school: 0–7 classes	0.5	88,963	0.5	91,427	0.5	90,164	102.8
Finished primary school: 8 classes	12.8	103,039	16.6	89,645	14.7	95,611	87.0
Vocational school: 2 years	2.7	103,565	2.4	99,588	2.6	101,705	96.2
Vocational school: 3 years	38.2	117,346	15.1	91,024	26.9	110,086	77.6
Vocational secondary school	16.6	154,219	24.0	137,945	20.2	144,752	89.4
Technical secondary school	6.1	154,755	14.4	136,194	10.1	141,849	88.0
Grammar school	4.7	184,255	1.9	160,469	3.4	177,520	87.1
College	9.6	298,150	18.1	210,426	13.8	241,653	70.6
University	8.7	396,902	7.0	306,875	7.9	357,800	77.3
Total	100.0	168,390	100.0	146,740	100.0	157,770	87.1

Source: FH-BT.

Table 6.5: The composition of full-time employees and average earnings in the budgetary sector by gender and level of education in 2005

Level of education	Males		Females		Together		Female/ male earnings ratio
	Composition	Average earning	Composition	Average earning	Composition	Average earning	
	%	HUF/person, month	%	HUF/person, month	%	HUF/person, month	
Primary school: 0–7 classes	0.5	114,157	0.6	105,614	0.6	107,524	92.5
Finished primary school: 8 classes	10.2	107,096	13.5	92,875	12.6	95,742	86.7
Vocational school: 2 years	1.3	121,781	1.7	115,991	1.6	117,153	95.2
Vocational school: 3 years	15.9	112,582	6.2	103,537	8.6	107,713	92.0
Vocational secondary school	13.9	159,504	22.8	139,067	20.6	142,537	87.2
Technical secondary school	7.9	147,143	13.9	133,977	12.4	136,067	91.1
Grammar school	1.8	156,423	0.7	156,075	1.0	156,235	99.8
College	23.0	240,611	30.8	194,839	28.8	203,987	81.0
University	25.6	313,541	9.8	276,260	13.8	293,585	88.1
Total	100.0	202,995	100.0	160,146	100.0	170,883	78.9

Source: FH-BT.

Table 6.6: The composition of full-time employees and average earnings in the competitive sector by gender and level of education in 2005

Level of education	Males		Females		Together		Female/ male earnings ratio
	Composition %	Average earning HUF/person, month	Composition %	Average earning HUF/person, month	Composition %	Average earning HUF/person, month	
Primary school: 0–7 classes	0.5	85,054	0.5	77,789	0.5	82,445	91.5
Finished primary school: 8 classes	13.3	102,525	19.0	87,846	15.5	95,567	85.7
Vocational school: 2 years	2.9	102,270	3.0	92,532	3.0	98,404	90.5
Vocational school: 3 years	41.9	117,645	22.1	88,265	34.3	110,328	75.0
Vocational secondary school	17.0	153,506	24.9	137,140	20.1	145,670	89.3
Technical secondary school	5.8	156,472	14.7	137,849	9.2	145,006	88.1
Grammar school	5.2	185,817	2.9	161,299	4.3	179,449	86.8
College	7.4	327,593	8.1	256,951	7.7	298,841	78.4
University	6.0	455,822	4.7	357,090	5.5	423,071	78.3
Total	100.0	162,679	100.0	136,204	100.0	152,465	83.7

Source: FH-BT.

Table 6.7: Percentage of low paid workers* by gender, age groups, level of education and industries

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
By gender													
Males	16.9	16.1	15.2	15.6	18.1	18.1	18.8	22.1	20.7	22.3	24.8	25.1	25.4
Females	21.3	25.6	24.8	26.5	25.7	25.9	26.4	26.8	25.0	22.5	21.6	22.8	22.9
By age groups													
–24	39.6	42.4	40.2	37.8	39.1	37.7	37.9	37.0	35.5	37.6	39.9	43.9	44.2
25–54	16.9	18.7	18.0	19.4	20.2	20.6	21.3	22.8	21.9	21.8	22.3	23.6	24.0
55+	12.7	11.4	10.3	11.0	11.8	12.7	17.2	19.8	18.1	16.2	15.3	16.5	16.5
By level of education													
1–8 classes of primary school	...	40.4	37.6	40.1	40.6	42.9	43.9	43.4	40.4	38.3	37.1	39.6	41.2
Vocational school	...	25.9	24.7	23.7	27.0	26.9	28.6	31.2	29.4	32.1	35.4	35.7	36.8
Secondary school	...	12.0	12.9	13.1	14.0	14.2	15.4	18.8	18.0	16.5	17.7	18.6	18.6
Higher education	...	1.9	3.1	3.2	3.0	3.4	3.2	4.7	4.7	3.6	3.5	3.9	3.8
By industries													
Agriculture	31.9	38.4	32.1	30.1	36.7	36.7	38.1	38.0	34.3	37.9	37.3	37.1	37.5
Manufacturing	16.4	18.9	16.4	15.8	18.5	18.9	18.9	20.0	19.1	19.4	25.4	24.7	22.1
Construction	15.7	23.3	23.5	26.7	32.7	32.6	36.7	42.9	41.7	44.8	49.8	51.2	50.2
Trade	25.1	30.4	31.9	31.7	36.0	37.7	36.8	42.8	41.3	44.0	49.0	49.3	51.5
Transport and communication	8.6	10.3	8.6	8.5	8.8	8.8	9.0	11.3	10.6	10.5	13.6	12.6	13.8
Finance and business services	14.2	16.4	17.9	17.0	19.9	19.9	21.1	25.3	22.6	20.7	23.1	23.9	24.6
Public administration	17.5	16.4	17.0	25.9	19.0	15.5	16.0	13.7	13.8	9.3	6.6	8.2	6.0
Education	21.2	19.0	20.6	25.6	21.7	23.2	23.8	21.5	22.6	16.0	4.8	6.9	8.8
Health	28.9	21.6	25.2	25.9	24.1	25.8	28.0	26.7	19.9	16.1	6.3	8.4	10.3
Total	19.2	20.8	19.9	21.0	21.9	22.0	22.7	24.4	22.8	22.4	23.2	24.0	24.2

* Percentage of those who earn less than 2/3 of the median earning.
Source: FH-BT.

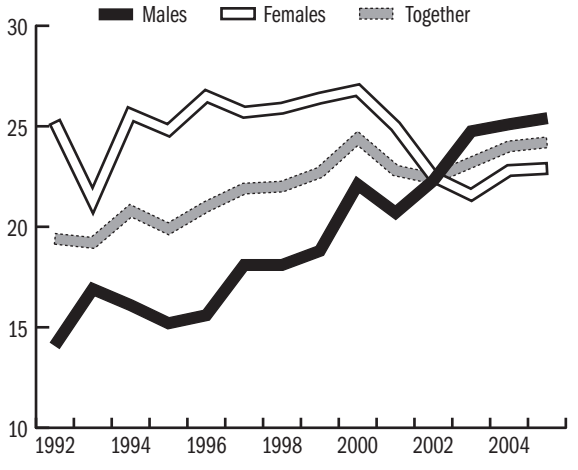


Figure 6.3: The composition of low paid workers by gender

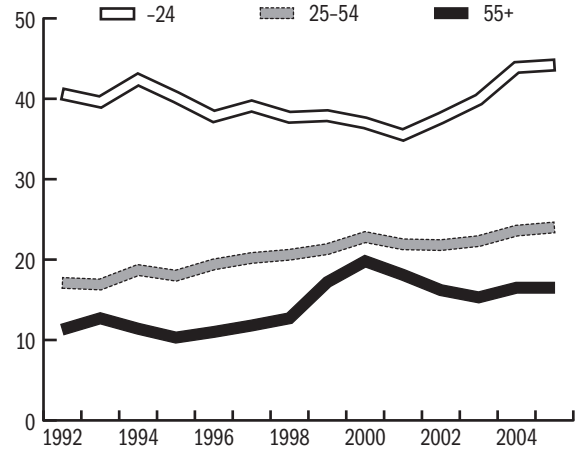


Figure 6.4: The composition of low paid workers by age groups

Table 6.8: The differentiation of gross monthly earnings by gender, ratios of decile

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Males and females together														
D9/D5	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.6
D5/D1	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.2	1.9	1.8	2.0	2.0	2.1
D9/D1	3.6	3.6	3.9	3.9	4.0	4.2	4.2	4.4	4.9	4.2	4.1	4.6	4.8	5.4
Males														
D9/D5	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.1	2.4	2.5	2.5	2.6	2.1
D5/D1	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.4	2.0	1.8	2.1	2.1	1.9
D9/D1	3.6	3.7	4.0	3.9	4.0	4.5	4.5	4.8	5.1	4.9	4.5	5.2	5.4	4.0
Females														
D9/D5	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.1	2.2	2.4
D5/D1	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.8	1.7	1.9	1.9	2.0
D9/D1	3.3	3.5	3.6	3.6	3.7	3.7	3.7	3.8	4.1	3.6	3.7	4.0	4.2	4.7

Source: FH-BT.

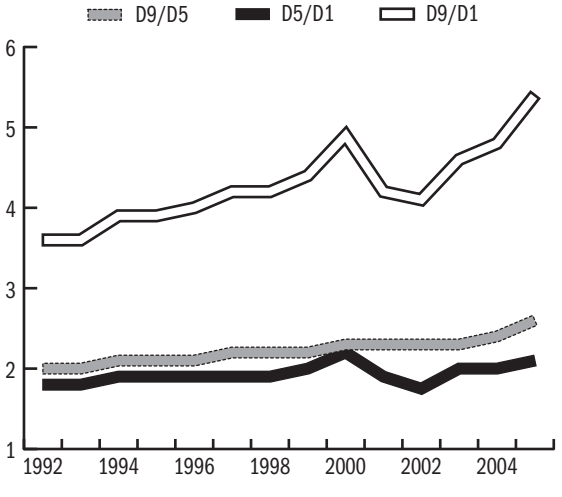


Figure 6.5: The dispersion of gross average earnings

Table 6.9: Average earnings in the national economy by forms of control, broken down to manual and non-manual workers, by genders, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Forms of control	male	female	together	male	female	together	male	female	together
Enterprise	75,797	69,220	71,605	111,000	105,002	108,831	82,993	71,957	76,346
Joint stock company	147,111	100,383	134,520	361,039	221,966	282,125	212,185	174,376	197,212
Company limited	118,418	91,133	109,398	281,095	184,903	234,919	155,993	124,852	144,401
Cooperative	101,623	75,790	94,211	219,856	160,058	174,039	122,646	129,543	125,939
Other	85,517	73,675	81,680	225,320	154,766	185,679	113,200	105,932	110,368
Budgetary institutions	109,742	87,834	96,256	246,803	175,067	190,515	202,955	160,122	170,856
Total	117,618	88,386	107,504	283,327	182,675	216,856	168,390	146,740	157,770

Source: FH-BT.

Table 6.10: Average earnings in the national economy by staff size-categories, broken down to manual and non-manual workers, by gender, HUF/capita, month, 2005

	Average earnings								
Categories by the	Manual			Non-manual			Together		
number of workers	male	female	together	male	female	together	male	female	together
1000+	98,842	78,377	92,529	228,744	150,409	188,478	129,915	109,143	122,188
301–1000	83,367	73,266	80,375	198,108	151,138	168,462	111,861	117,912	114,436
51–300	97,707	78,546	91,740	245,183	169,692	193,102	133,912	134,642	134,255
21–50	119,847	87,121	107,049	285,687	187,722	218,549	177,717	152,019	163,817
10–20	141,940	96,662	124,797	338,195	195,798	245,793	202,745	153,821	178,367
5–9	153,752	106,131	137,222	324,790	194,200	236,687	218,275	168,010	191,794
Total	117,618	88,386	107,504	283,327	182,675	216,856	168,390	146,740	157,770

Source: FH-BT.

Table 6.11: Average earnings in the competitive sector by wage categories, broken down to manual and non-manual workers and by gender, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Wage categories	male	female	together	male	female	together	male	female	together
01 Directors	0	0	0	375,510	283,507	355,716	375,510	283,507	355,716
02 Deputy directors	0	0	0	381,335	295,737	347,734	381,335	295,737	347,734
11 Manager I: higher middle managers	0	0	0	522,753	489,116	512,876	522,753	489,116	512,876
12 Manager II: lower middle managers	0	0	0	438,161	336,655	397,115	438,161	336,655	397,115
21 Production manager I	0	0	0	348,371	241,364	331,135	348,371	241,364	331,135
22 Production manager II	0	0	0	217,639	157,057	198,032	217,639	157,057	198,032
23 Production manager III	0	0	0	200,861	123,312	155,589	200,861	123,312	155,589
31 Tranee with 0–1 year of experience; with secondary qualification	0	0	0	199,278	128,586	151,594	199,278	128,586	151,594
32 Fellow worker with experience over 1 year: with secondary qualification	0	0	0	180,169	155,117	164,030	180,169	155,117	164,030
33 Fellow worker with experience over 1 year: with secondary qualification	0	0	0	246,415	173,722	206,476	246,415	173,722	206,476
34 Fellow worker with experience over 1 year: with secondary qualification +	0	0	0	212,970	179,832	189,459	212,970	179,832	189,459
35 Senior fellow worker: with secondary qualification +	0	0	0	282,315	225,955	243,608	282,315	225,955	243,608
36 Tranee with 0–1 year of experience: with tertiary qualifications	0	0	0	269,473	204,138	236,253	269,473	204,138	236,253
37 Fellow worker with experience over 1 year: with tertiary qualifications	0	0	0	319,810	262,169	295,632	319,810	262,169	295,632
38 Senior fellow worker with tertiary qualifications	0	0	0	418,314	359,884	395,020	418,314	359,884	395,020
41 Junior clerk with 0–0.5 year of experience	0	0	0	218,581	113,935	126,805	218,581	113,935	126,805
42 Administrative fellow worker with more than 0.5 years experience	0	0	0	155,856	128,157	131973	155,856	128,157	131,973
51 Unskilled worker: ordinary working conditions	80,657	74,385	78,275	0	0	0	80,657	74,385	78,275
52 Unskilled worker: unfavourable working conditions	95,358	86,848	92,293	0	0	0	95,358	86,848	92,293
53 Semi-skilled worker: ordinary working conditions	108,093	92,199	100,107	0	0	0	108,093	92,199	100,107
54 Semi-skilled worker: unfavourable working conditions	132,687	111,099	127,917	0	0	0	132,687	111,099	127,917
55 Skilled worker: ordinary working conditions	113,132	82,341	105,630	0	0	0	113,132	82,341	105,630
56 Skilled worker: unfavourable working conditions	163,335	130,968	160,816	0	0	0	163,335	130,968	160,816
57 Master: ordinary working conditions	197,449	153,015	193,371	0	0	0	197,449	153,015	193,371
58 Master: unfavourable working conditions	245,769	190,605	236,973	0	0	0	245,769	190,605	236,973
Total	118,169	88,522	108,911	300,090	193,597	242,787	162,683	136,217	152,474

Note: secondary qualification + = secondary qualification plus high level training course.
Source: FH-BT.

Table 6.12: Average monthly earnings in the national economy by age groups and sectors broken down to manual and non-manual workers by gender, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Age groups, sector	male	female	together	male	female	together	male	female	together
Competitive sector									
–20	83,667	77,301	81,294	98,641	88,092	91,123	84,116	78,534	81,916
21–30	105,113	85,049	99,120	225,348	175,990	197,682	133,898	129,176	132,074
31–40	119,915	87,158	110,227	328,616	201,052	264,793	172,428	137,832	159,920
41–50	124,489	90,973	113,084	319,817	193,857	247,210	167,640	135,003	154,173
51–55	127,147	92,090	115,336	316,653	201,942	249,998	174,154	144,142	161,529
56+	122,334	90,035	113,776	328,077	216,791	281,838	187,807	150,788	175,937
Total	118,169	88,522	108,911	300,090	193,597	242,787	162,683	136,217	152,474
Budgetary sector									
–20	79,200	73,316	76,627	89,203	80,378	83,125	82,594	77,510	79,755
21–30	94,324	82,019	89,549	162,522	138,262	144,109	145,489	134,729	137,785
31–40	106,880	82,075	92,903	218,609	155,127	167,721	185,297	146,398	155,614
41–50	110,894	87,220	95,012	256,170	179,941	193,051	204,939	162,565	171,328
51–55	115,823	90,721	98,670	282,260	200,244	216,146	219,885	174,256	184,607
56+	115,389	92,305	101,978	313,643	221,460	253,732	252,006	188,908	212,188
Total	109,742	87,834	96,256	246,803	175,067	190,515	202,955	160,122	170,856
National economy									
–20	83,572	77,191	81,184	96,144	86,217	89,129	84,069	78,474	81,825
21–30	104,751	84,901	98,754	209,727	159,025	177,521	135,005	130,827	133,135
31–40	119,276	86,463	108,896	299,436	173,820	218,563	173,903	141,464	158,807
41–50	123,517	90,097	110,668	298,646	184,977	217,364	173,062	148,275	159,761
51–55	126,070	91,668	112,330	304,718	200,899	231,904	182,117	159,121	169,606
56+	121,310	90,942	111,029	321,568	219,975	265,585	205,461	172,854	190,844
Total	117,618	88,386	107,504	283,327	182,675	216,856	168,390	146,740	157,770

Source: FH-BT.

Table 6.13: Average monthly earnings in the national economy by counties and regions broken down to manual and non-manual workers, by gender, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Counties, regions	male	female	together	male	female	together	male	female	together
Budapest	128,096	94,041	117,237	333,215	221,426	264,645	222,370	188,616	205,645
Pest	115,492	89,954	106,267	297,168	181,057	221,604	163,692	139,459	152,147
Central Hungary	124,254	92,626	113,742	327,558	214,182	257,290	208,061	177,308	192,962
Fejér	129,842	94,702	117,366	299,838	177,529	217,194	169,018	138,707	154,628
Komárom-Esztergom	137,014	106,061	124,151	282,988	164,603	203,686	169,331	132,284	150,781
Veszprém	113,707	89,814	104,945	241,167	159,669	185,220	143,942	127,566	135,916
Central Transdanubia	127,212	97,468	115,946	276,234	167,895	202,835	161,442	133,157	147,646
Győr-Moson-Sopron	134,254	90,204	119,857	269,080	165,831	200,018	167,775	134,011	152,095
Vas	120,285	88,738	108,414	246,127	160,078	189,773	149,676	123,651	137,308
Zala	124,939	89,345	111,653	270,940	169,421	202,754	158,500	129,881	144,718
Western Transdanubia	127,558	89,479	114,018	263,543	165,465	198,210	160,031	129,864	145,771
Baranya	107,124	80,920	97,805	235,294	160,946	184,377	146,625	131,887	139,070
Somogy	100,983	79,048	93,091	220,343	154,291	175,136	132,267	122,551	127,450
Tolna	125,984	84,086	112,008	260,487	163,816	194,770	157,478	129,104	144,193
Southern Transdanubia	110,049	81,024	99,851	235,840	159,338	183,542	144,414	128,006	136,276
Borod-Abaúj-Zemplén	114,779	83,624	104,723	247,854	160,153	186,268	149,274	132,135	140,860
Heves	124,235	83,118	109,616	246,767	161,401	186,136	154,592	129,619	141,968
Nógrád	102,788	86,075	96,844	226,220	162,040	178,873	131,688	132,341	132,027
Northern Hungary	115,454	83,890	104,814	244,519	160,787	185,080	148,022	131,480	139,761
Hajdú-Bihar	102,792	79,857	95,362	237,124	162,457	185,500	136,519	130,285	133,530
Szabolcs-Szatmár-Bereg	101,374	77,810	93,334	202,867	156,501	169,308	128,349	128,710	128,536
Jász-Nagykun-Szolnok	107,349	81,778	98,378	234,206	158,883	181,134	136,299	125,434	130,974
Northern Great Plain	103,780	79,850	95,694	224,690	159,271	178,457	133,858	128,290	131,098
Bács-Kiskun	99,028	87,319	94,740	221,631	155,476	175,819	129,185	125,467	127,336
Békés	103,757	79,847	95,647	199,664	155,190	168,090	126,584	124,926	125,766
Csongrád	108,750	85,422	101,150	224,517	164,971	184,036	140,431	135,019	137,820
Souther Great Plain	103,544	84,742	97,041	217,097	158,677	176,627	132,298	128,448	130,406
Total	117,618	88,386	107,504	283,327	182,675	216,856	168,390	146,740	157,770

Source: FH-BT.

Table 6.14: Average earnings in the competitive sector by ownership ratios broken down to manual and non-manual workers and gender, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Ownership ratio	male	female	together	male	female	together	male	female	together
100 % foreign ownership	159,993	104,220	135,481	453,539	279,491	363,856	257,186	174,603	218,613
Foreign majority	162,554	101,594	141,067	387,799	238,165	310,422	240,376	171,168	211,259
Domestic majority	143,973	95,977	129,295	360,881	265,610	301,139	212,302	204,045	208,554
100% domestic ownership	102,794	79,484	96,355	223,249	154,174	185,462	128,344	113,842	123,156
Unknown	147,619	97,349	131,275	344,671	200,492	273,407	195,264	137,865	173,704
Total	118,169	88,522	108,911	300,090	193,597	242,787	162,683	136,217	152,474

Source: FH-BT.

Table 6.15: Average monthly earnings in the competitive sector by ownership ratios and staff-size categories, HUF/capita, month, 2005 – manual workers

	Average earnings						
Ownership ratio	Over 1000	Between 301–100	Between 51–300	Between 21–50	Between 10–20	Between 5–9	Total
100 % foreign ownership	136,914	139,067	133,492	130,998	118,476	126,410	135,481
Foreign majority	151,342	146,939	132,587	118,074	122,403	96,254	141,067
Domestic majority	165,107	139,168	113,953	116,963	92,157	67,128	129,295
100% domestic ownership	137,004	115,976	101,064	87,719	77,463	69,688	96,355
Unknown	145,433	106,034	112,191	113,077	79,268	136,946	131,275
Total	140,581	127,124	110,072	92,415	80,032	92,529	108,911

Source: FH-BT.

Table 6.16: Average monthly earnings in the competitive sector by ownership ratios and staff-size categories, HUF/capita, month, 2005 – non manual workers

	Average earnings						
Ownership ratio	Over 1000	Between 301–100	Between 51–300	Between 21–50	Between 10–20	Between 5–9	Total
100 % foreign ownership	341,880	349,437	375,166	411,156	376,314	398,128	363,856
Foreign majority	323,445	285,425	319,896	273,822	334,799	216,369	310,422
Domestic majority	333,928	266,616	306,257	337,656	153,526	146,460	301,139
100% domestic ownership	220,332	250,368	206,554	164,349	139,939	130,188	185,462
Unknown	286,581	232,665	280,191	249,857	216,403	281,400	273,407
Total	278,798	288,536	261,875	211,387	171,175	188,478	242,787

Source: FH-BT.

Table 6.17: Average monthly earnings in the competitive sector by ownership ratios and staff-size categories, HUF/capita, month, 2005 – manual and non-manual together

	Average earnings						
Ownership ratio	Over 1000	Between 301–100	Between 51–300	Between 21–50	Between 10–20	Between 5–9	Total
100 % foreign ownership	215,131	200,772	220,782	269,119	255,050	244,299	218,613
Foreign majority	231,519	195,669	200,105	158,737	225,094	159,805	211,259
Domestic majority	272,547	173,457	182,998	228,987	118,746	105,331	208,554
100% domestic ownership	170,384	152,840	131,895	107,361	95,033	88,516	123,156
Unknown	202,474	147,910	202,197	152,749	130,544	174,723	173,704
Total	198,623	173,824	158,234	125,946	107,718	122,188	152,474

Source: FH-BT.

Table 6.18: Average monthly earnings by age in the national economy, broken down to manual and non-manual workers, by gender, HUF/capita, month, 2005

	Average earnings								
	Manual			Non-manual			Together		
Age	male	female	together	male	female	together	male	female	together
17	66,628	70,370	68,475	0	104,487	104,487	66,628	71,376	69,008
18	72,583	70,443	71,604	110,000	160,554	139,058	74,258	76,744	75,411
19	81,785	75,501	79,379	117,934	82,772	95,399	82,966	76,145	80,258
20	85,002	78,509	82,640	89,677	84,507	85,934	85,199	79,514	82,943
21	92,062	82,090	88,798	115,380	96,988	102,963	93,787	85,880	90,809
22	93,783	84,091	90,480	120,963	105,875	110,134	96,722	92,227	94,816
23	94,584	84,533	91,094	141,509	116,320	123,248	102,069	99,938	101,079
24	96,948	85,052	93,142	148,861	130,345	136,184	109,614	112,151	110,806
25	99,731	82,878	94,412	170,350	139,033	149,691	121,107	119,151	120,176
26	105,151	85,222	98,834	185,020	154,198	165,188	131,162	130,231	130,721
27	105,191	85,985	99,445	205,119	167,295	181,661	139,259	139,996	139,595
28	109,896	86,586	103,296	224,540	174,785	193,532	147,883	146,105	147,086
29	113,682	85,219	105,603	243,946	180,693	205,855	157,044	147,839	153,044
30	112,567	85,171	105,546	262,702	180,333	213,162	158,888	148,117	154,439
31	112,774	85,147	105,194	271,174	182,022	218,911	164,881	147,873	157,763
32	116,516	87,357	108,410	290,319	175,304	219,774	168,839	143,605	158,052
33	116,629	87,622	107,914	287,215	175,232	217,962	167,348	141,491	155,988
34	118,596	84,744	108,274	288,652	171,609	216,307	170,735	138,597	156,447
35	117,988	86,155	108,279	315,341	171,465	224,642	178,974	140,309	161,434
36	120,686	85,726	109,554	328,625	167,610	225,166	185,664	137,820	163,229
37	126,216	85,282	111,648	310,406	165,840	213,433	181,683	134,725	158,207
38	122,521	85,985	110,506	313,849	173,662	218,928	177,241	141,359	159,764
39	121,280	87,667	109,737	277,433	182,312	211,855	166,042	147,330	156,642
40	121,761	89,107	109,934	321,745	173,338	218,083	180,223	141,970	160,369
41	124,434	88,447	111,770	291,220	178,428	212,035	171,922	145,437	158,299
42	122,734	88,415	110,316	322,348	182,136	223,217	178,009	146,497	161,660
43	120,393	88,867	108,693	291,494	180,614	212,913	168,862	145,722	156,678
44	123,555	90,169	110,814	310,346	182,693	218,001	176,512	148,130	161,127

	Average earnings								
	Manual			Non-manual			Together		
Age	male	female	together	male	female	together	male	female	together
45	123,036	88,924	110,023	291,463	183,209	213,492	169,468	146,789	157,305
46	123,164	89,950	110,000	295,116	182,593	213,630	171,574	146,501	157,842
47	120,769	90,274	108,744	298,319	185,413	216,661	170,707	148,404	158,528
48	127,089	91,173	113,249	295,835	186,264	217,333	174,106	149,070	160,681
49	122,370	89,973	109,398	289,679	187,935	216,755	170,053	148,910	158,526
50	126,705	93,106	113,085	302,646	195,850	227,063	178,671	154,568	165,546
51	126,013	91,726	112,517	313,493	194,735	228,439	179,263	154,214	165,697
52	125,689	90,849	111,707	292,613	202,001	228,819	177,888	159,487	167,834
53	127,544	91,673	113,203	301,608	202,231	232,352	183,248	160,105	170,678
54	124,237	91,810	110,992	305,777	203,469	234,092	183,413	161,166	171,150
55	126,948	92,470	113,314	310,205	203,701	237,310	188,634	162,236	174,435
56	128,174	93,036	114,149	294,422	204,447	233,267	184,259	162,026	172,338
57	124,582	94,239	113,044	301,638	209,923	242,259	189,253	167,425	178,020
58	124,571	90,145	114,913	332,709	229,576	276,870	206,781	182,736	196,861
59	123,598	89,927	115,064	311,648	232,896	273,705	204,162	186,061	197,428
60	124,970	86,483	115,044	313,653	239,110	280,808	209,725	185,527	201,187
61	110,555	88,871	103,627	346,072	235,770	300,085	249,545	189,760	226,792
62	109,790	83,967	100,268	357,895	240,518	306,693	253,042	184,796	225,092
63	101,326	86,445	96,401	360,381	237,646	309,921	235,364	177,484	213,659
64	103,757	84,606	99,314	377,125	254,395	328,051	239,611	200,979	227,028
65	96,820	88,116	93,385	331,916	242,944	299,522	230,311	171,062	207,935
66	91,167	81,285	87,659	316,626	236,722	286,443	211,644	168,125	195,658
67	92,065	81,719	89,327	338,259	227,925	292,601	196,234	167,965	186,732
68	97,624	80,591	90,757	373,704	376,860	374,833	222,113	200,240	213,724
69	85,040	79,663	82,684	316,258	201,002	269,754	193,109	132,106	167,338
70	99,261	90,417	94,782	331,870	198,420	276,435	224,370	138,616	184,810
71	96,266	81,853	92,823	304,128	193,157	262,405	180,023	144,677	169,392
72	92,118	87,645	89,723	311,937	126,484	244,815	203,771	100,729	156,269
73	75,596	89,780	78,530	273,862	170,125	238,642	155,042	135,458	149,834
74	89,741	126,574	107,697	496,597	125,155	355,729	374,692	125,722	271,073
75	72,955	75,611	73,939	180,722	225,005	200,667	120,538	153,865	134,155
76	90,079	74,460	85,847	244,755	105,711	198,011	151,066	89,151	132,607
77	101,169	67,234	85,945	173,714	191,884	177,415	143,164	104,849	130,551
78	79,376	64,237	70,621	162,355	220,391	190,053	129,242	142,414	136,129
79	84,458	131,548	104,790	254,193	187,532	243,258	198,870	151,038	185,701
80	69,927	74,737	72,739	350,047	188,814	249,095	283,761	165,246	210,631
Total	117,618	88,386	107,504	283,327	182,675	216,856	168,390	146,740	157,770

Source: FH-BT.

Table 7.1: School leavers by level of education

Year	Primary school	Vocational school	Secondary school	College and university
1980	119,809	49,232	43,167	14,859
1989	170,891	53,724	52,573	15,699
1990	164,614	54,933	53,039	15,963
1991	158,907	59,302	54,248	16,458
1992	151,287	66,261	59,646	16,201
1993	144,200	66,342	68,607	16,223
1994	136,857	62,902	68,604	18,041
1995	122,333	57,057	70,265	20,024
1996	120,529	54,209	73,413	22,128
1997	116,708	46,868	75,564	24,411
1998	113,651	42,866	77,660	25,338
1999	114,302	38,822	73,965	27,049
2000	114,250	35,500[a]	72,200[a]	28,300[a]
2001	114,200[a]	33,500[a]	70,441	29,746
2002	113,923	26,941	69,612	30,785
2003	111,747	26,472	71,944	31,911
2004	113,179	26,620	76,669	31,633
2005	115,626	25,519	77,025	32,732

[a] Estimated data.
Note: Primary school: completed the 8th grade. Other levels: received certificate. Excludes special schools.
Source: OM STAT.

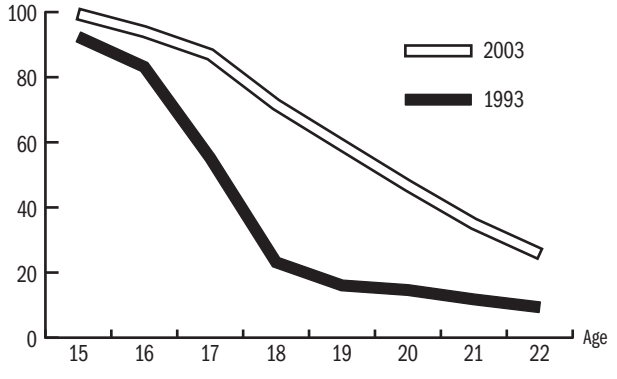


Figure 7.1: Full time studens as a percentage of the different age groups

Table 7.2: Pupils/students entering the school system, by level of education

Year	Primary school	Vocational school	Secondary school	College and university
1980	171,347	60,865	57,213	17,886
1989	128,542	91,767	84,140	20,704
1990	125,665	87,932	83,939	22,662
1993	125,679	76,977	87,657	35,005
1994	126,032	77,146	87,392	37,934
1995	123,997	65,352	82,665	42,433
1996	124,554	58,822	84,773	44,698
1997	127,214	53,083	84,395	45,669
1998	125,875	39,965	86,868	48,886
1999	121,424	33,570	89,184	51,586
2000	117,000	33,900[a]	90,800[a]	52,578
2001	112,144	34,210	92,393	56,709
2002	112,345	33,497	94,256	57,763
2003	104,020	33,394	92,817	59,699
2004	101,021	32,645	93,469	59,783
2005	97,810	33,114	96,181	61,898

[a] Estimated data.
Note: Excludes special schools.
Source: OM STAT.

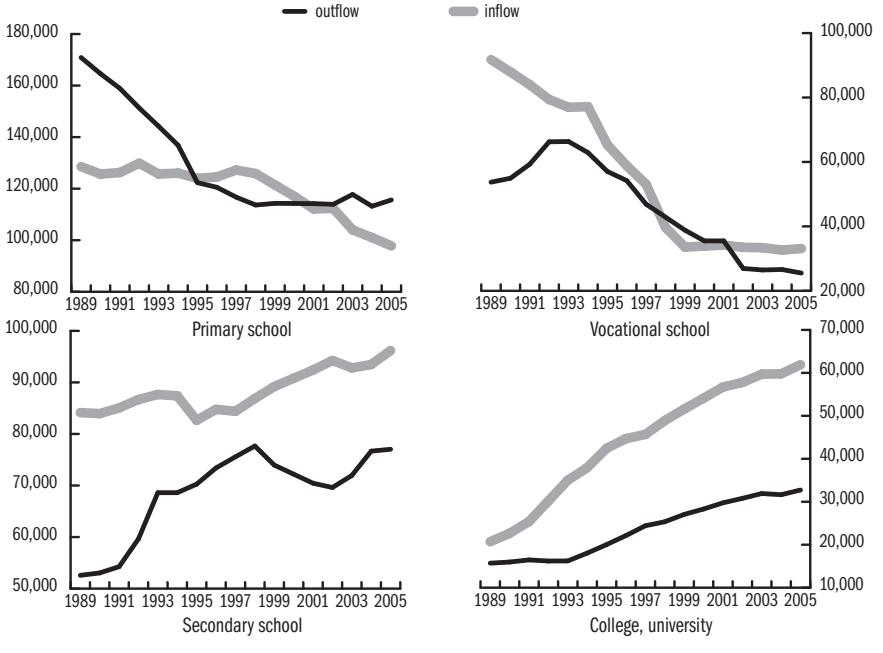


Figure 7.2: Flows of the educational system by level

Table 7.3: The number of full time pupils/students by level of education

Year	Primary school	Vocational school	Secondary school	College and university
1980/81	1,162,203	162,709	203,238	64,057
1989/90	1,183,573	213,697	273,511	72,381
1990/91	1,130,656	222,204	291,872	76,601
1993/94	1,009,416	198,859	330,586	103,713
1994/95	985,291	185,751	337,317	116,370
1995/96	974,806	172,599	349,299	129,541
1996/97	965,998	158,407	361,395	142,113
1997/98	963,997	143,911	368,645	152,889
1998/99	964,248	128,203	376,626	163,100
1999/00	960,601	117,038	386,579	171,516
2000/01	957,850[a]	120,330[a]	417,800[a]	176,046
2001/02	905,932	123,954	420,889	184,071
2002/03	893,261	123,341	426,384	193,155
2003/04	874,296	123,206	437,909	204,910
2004/05	854,930	123,008	438,496	212,292
2005/06	828,594	121,815	441,002	217,245

[a] Estimated data.
Note: Excludes special schools.
Source: OM STAT.

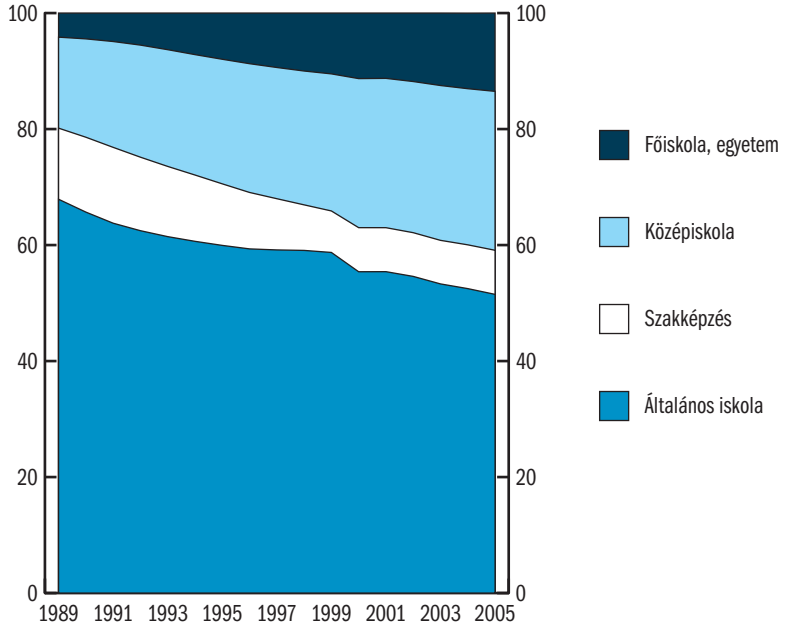


Figure 7.3: The percentage of sharing the pupils/students in the educational system

Table 7.4: The number of pupils/students not in full time by level

Year	Primary school	Vocational school	Secondary school	College and university
1980/81	15,627	–	130,332	37,109
1989/90	13,199	–	75,581	28,487
1990/91	11,536	–	68,162	25,786
1991/92	11,724	–	66,204	23,888
1992/93	10,944	–	70,303	25,078
1993/94	8,982	–	76,335	30,243
1994/95	6,558	–	81,204	38,290
1995/96	5,205	–	75,891	50,024
1996/97	4,099	–	74,653	56,919
1997/98	3,165	–	78,292	80,768
1998/99	3,016	–	84,862	95,215
1999/00	3,146	–	88,462	107,385
2000/01	2,940	–	91,700	118,994
2001/02	2,793	2,453	95,231	129,167
2002/03	2,785	3,427	93,172	148,032
2003/04	3,190	3,216	93,322	162,037
2004/05	2,766	3,505	90,321	166,174
2005/06	2,543	4,049	89,950	163,387

Source: OM STAT.

Table 7.5: Number of high school applicants, full time

Year	Applied	Admitted	Admitted as a percentage of applied	Applied as a percentage of the secondary school graduates in the given year	Admitted as a percentage of the secondary school graduates in the given year
1980	33,339	14,796	44.4	77.2	34.3
1989	44,138	15,420	34.9	84.0	29.3
1990	46,767	16,818	36.0	88.2	31.7
1991	48,911	20,338	41.6	90.2	37.5
1992	59,119	24,022	40.6	99.1	40.3
1993	71,741	28,217	39.3	104.6	41.1
1994	79,805	29,901	37.5	116.3	43.6
1995	86,548	35,081	40.5	123.2	49.9
1996	79,369	38,382	48.4	108.1	52.3
1997	81,924	40,355	49.3	108.4	53.4
1998	81,065	43,629	53.8	104.4	56.2
1999	82,815	44,538	53.8	112.0	60.2
2000	82,957	45,546	54.9	114.9	63.1
2001	84,380	49,874	59.1	119.8	70.8
2002	88,978	52,552	59.1	127.8	75.5
2003	87,110	52,703	60.5	121.1	73.3
2004	95,871	55,179	57.6	125.0	72.0
2005	91,583	52,863	57.7	118.9	68.6

Source: OM STAT.

Table 8.1: Registered vacancies*

Year	Number of vacancies at closing day	Number of registered unemployed at closing date	Vacancies per 100 unemployed
1989	60,429	23,760	254.3
1990	31,228	47,739	65.4
1991	14,343	227,270	6.3
1992	21,793	556,965	3.9
1993	34,375	671,745	5.1
1994	35,569	568,366	6.3
1995	28,680	507,695	5.6
1996	38,297	500,622	7.6
1997	42,544	470,112	9.0
1998	46,624	423,121	11.0
1999	51,438	409,519	12.6
2000	50,000	390,492	12.8
2001	45,194	364,140	12.4
2002	44,603	344,715	12.9
2003	47,239	357,212	13.2
2004	48,223	375,950	12.8
2005	41,615	409,929	10.2

* Monthly average stock figures.
Source: FH.

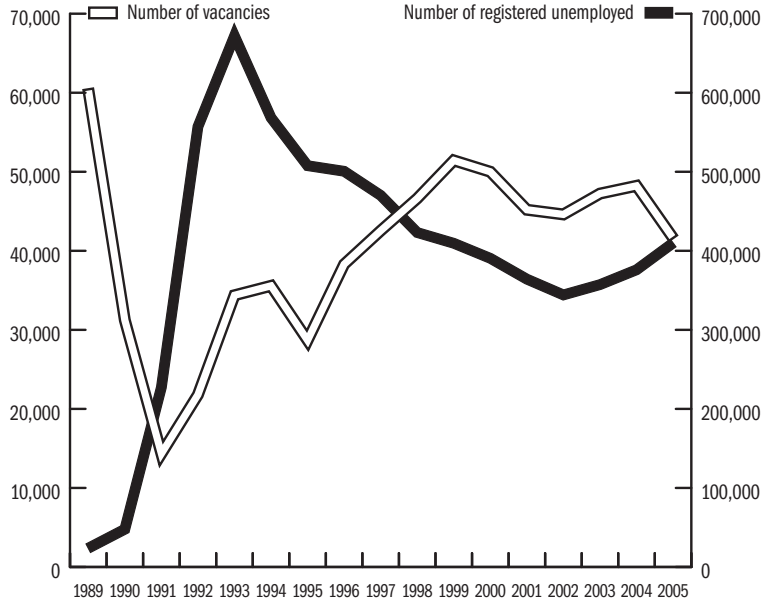


Figure 8.1: Number of registered vacancies and registered unemployed

Table 8.2: Firms intending to increase/decrease their staff*

Year	Intending to decrease	Intending to increase
1993	28.5	22.3
1994	21.0	29.7
1995	30.9	27.5
1996	29.4	30.4
1997	30.7	36.8
1998	28.9	37.1
1999	28.8	35.8
2000	27.2	36.5
2001	28.6	32.6
2002	27.9	35.4
2003	32.1	34.3
2004	30.0	39.8
2005	25.3	35.0

* In the period of the next half year after the interview date, in the sample of FH PROG.
Source: FH PROG.

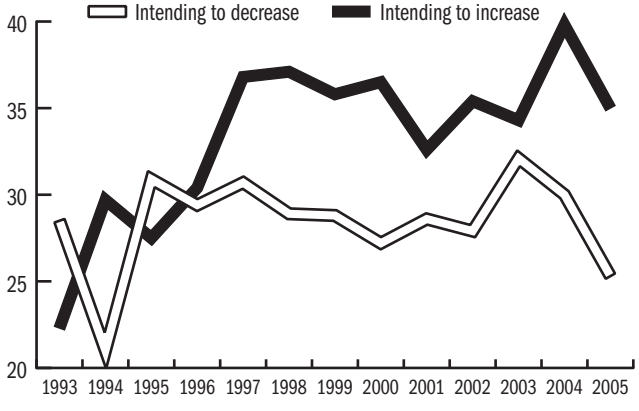


Figure 8.2: Firms intending to increase/decrease their staff

Table 8.3: Firms expecting increasing/decreasing orders*

	Orders	
Year	increasing	decreasing
1993	35.9	33.0
1994	45.6	21.7
1995	47.2	20.7
1996	45.5	21.0
1997	47.5	16.7
1998	47.5	18.0
1999	42.2	20.2
2000	49.1	14.9
2001	44.4	19.1
2002	40.2	19.5
2003	49.0	13.8
2004	38.2	20.5
2005	n.a.	n.a.

* In the period of the next half year after the interview date, in the sample of FH PROG.
Source: FH PROG.

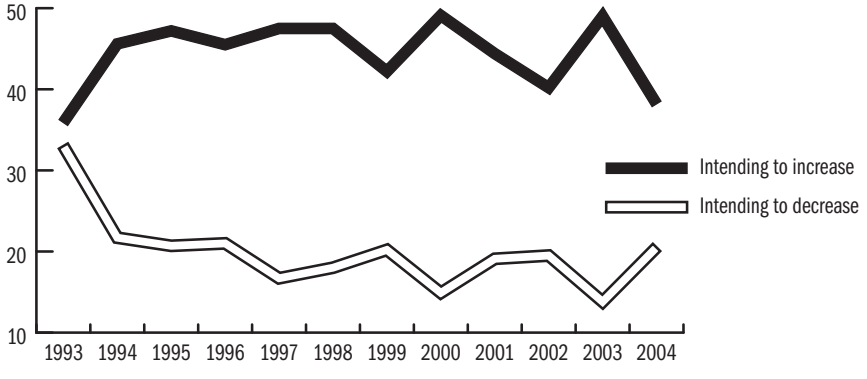


Figure 8.3: Firms expecting increasing/decreasing orders

Table 8.4: Firms activating new capacities*

Year	Building only	Building and/or machinery	Total
1992	3.0	11.4	14.4
1993	3.0	14.7	17.7
1994	4.1	17.4	21.5
1995	4.4	18.8	23.2
1996	4.2	19.5	23.7
1997	4.7	21.1	25.8
1998	5.4	23.6	29.0
1999	5.2	20.9	26.1
2000	4.4	23.9	28.3
2001	4.7	22.9	27.6
2002	3.3	22.8	26.1
2003	...	...	...
2004	5.3	30.2	35.5
2005	n.a.	n.a.	n.a.

* In the period of the next half year after the interview date, in the sample of FH PROG.
Source: FH PROG.

Table 9.1: Regional inequalities: Labour force participation rates

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1992	62.3	57.7	62.0	57.2	52.2	52.5	57.9	58.0
1993	58.4	55.2	60.5	52.9	49.3	48.4	53.4	54.5
1994	57.2	54.4	59.9	52.4	47.7	47.5	53.0	53.5
1995	57.1	53.1	58.5	48.8	46.3	46.4	53.0	52.5
1996	56.8	52.7	59.3	50.3	45.7	45.6	52.8	52.4
1997	56.8	53.6	59.8	50.0	45.7	45.2	53.6	52.5
1998	57.7	56.0	61.6	51.5	46.2	46.4	54.2	53.7
1999	59.7	58.5	63.1	52.8	48.1	48.8	55.3	55.6
2000	60.5	59.2	63.4	53.5	49.4	49.0	56.0	56.3
2001	60.8	59.8	63.2	52.5	49.6	49.6	56.2	56.5
2001[a]	60.6	59.3	63.1	52.3	49.7	49.5	55.8	56.2
2002[a]	60.9	60.0	63.7	51.6	50.3	49.3	54.2	56.2
2003[a]	61.7	62.3	61.9	53.4	51.2	51.6	53.2	57.0
2004[a]	62.9	60.3	61.4	52.3	50.6	50.4	53.6	56.8
2005[a]	63.3	60.2	62.0	53.4	49.5	50.2	53.8	56.9

* Age: 15–64.
[a] See: Table 3.7.
Source: KSH MEF.

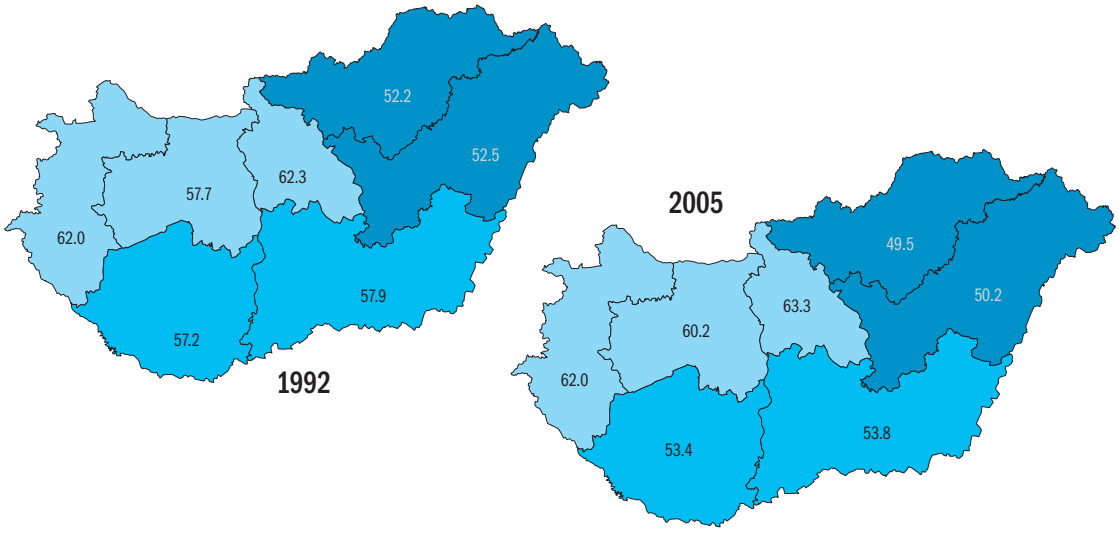


Figure 9.1: Regional inequalities: Labour force participation rates in NUTS-2 level regions

Table 9.2: Regional inequalities: Unemployment rate*

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1992	7.4	11.7	7.3	9.6	14.0	12.5	10.2	9.9
1993	9.9	12.6	9.0	12.8	16.1	14.8	12.4	12.1
1994	8.8	10.7	7.7	12.0	15.2	13.8	10.5	10.8
1995	7.4	11.0	6.9	12.1	16.0	13.8	9.3	10.3
1996	8.2	10.4	7.1	9.4	15.5	13.2	8.4	10.0
1997	7.0	8.1	6.0	9.9	14.0	12.0	7.3	8.8
1998	5.7	6.8	6.1	9.4	12.2	11.1	7.1	7.8
1999	5.2	6.1	4.4	8.3	11.6	10.2	5.8	7.0
2000	5.3	4.9	4.2	7.8	10.1	9.3	5.1	6.4
2001	4.3	4.3	4.2	7.8	8.5	7.8	5.4	5.7
2001[a]	4.3	4.3	4.1	7.7	8.5	7.8	5.4	5.7
2002[a]	3.9	5.0	4.0	7.9	8.8	7.8	6.2	5.8
2003[a]	4.0	4.6	4.6	7.9	9.7	6.8	6.5	5.9
2004[a]	4.5	5.6	4.6	7.3	9.7	7.2	6.3	6.1
2005[a]	5.2	6.3	5.9	8.8	10.6	9.1	8.2	7.2

* Age: 15–64. Excluding conscript.
[a] See: Table 3.7.
Source: KSH MEF.

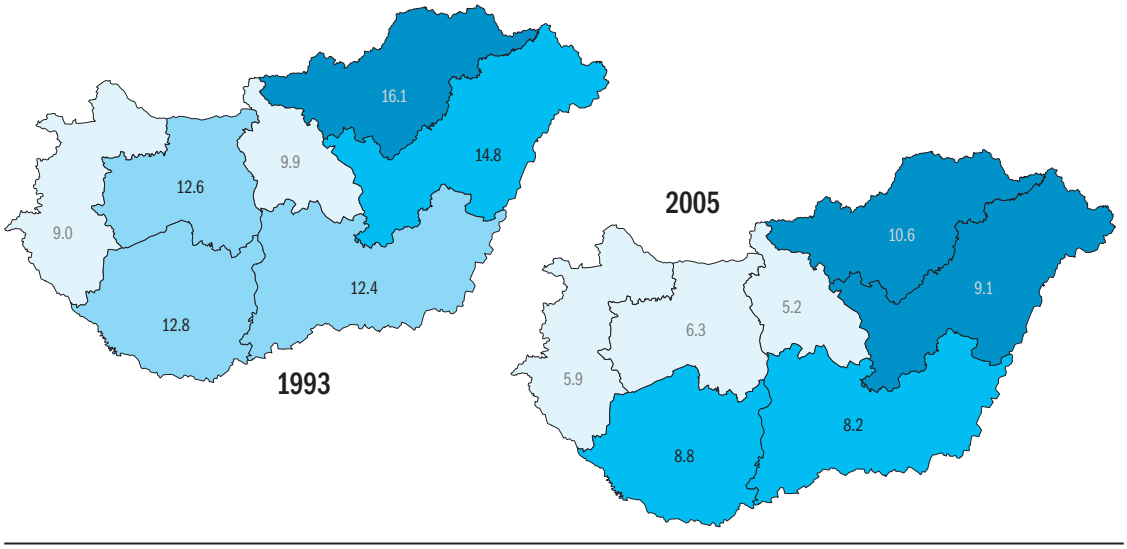


Figure 9.2: Regional inequalities: LFS-based unemployment rates in NUTS-2 level regions

Table 9.3: Regional inequalities: Registered unemployment rate*

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1991	1.7	3.7	2.8	4.8	7.0	6.5	5.2	4.1
1992	5.7	10.4	7.2	10.8	15.7	15.0	12.2	10.3
1993	8.0	12.8	9.1	13.1	19.1	18.2	14.7	12.9
1994	6.6	11.5	8.5	11.9	16.6	16.9	12.9	11.3
1995	6.3	10.6	7.6	11.7	15.6	16.1	11.5	10.6
1996	6.4	10.7	8.0	12.6	16.7	16.8	11.3	11.0
1997	5.6	9.9	7.3	13.1	16.8	16.4	11.0	10.5
1998	4.7	8.6	6.1	11.8	16.0	15.0	10.1	9.5
1999	4.5	8.7	5.9	12.1	17.1	16.1	10.4	9.7
2000	3.8	7.5	5.6	11.8	17.2	16.0	10.4	9.3
2001	3.2	6.7	5.0	11.2	16.0	14.5	9.7	8.5
2002	2.8	6.6	4.9	11.0	15.6	13.3	9.2	8.0
2003	2.8	6.7	5.2	11.7	16.2	14.1	9.7	8.3
2004	3.2	6.9	5.8	12.2	15.7	14.1	10.4	8.7
2005	3.4	7.4	6.9	13.4	16.5	15.1	11.2	9.4

* The denominator of the ratio is the active population on January 1st of the previous year.
Source: FH REG.

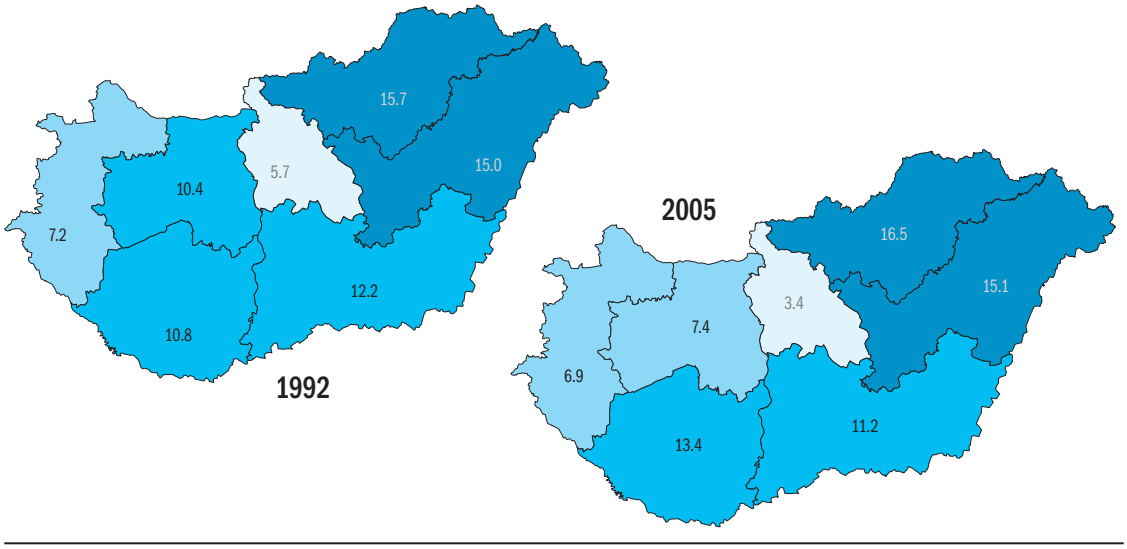


Figure 9.3: Regional inequalities: Registered unemployment rate in NUTS-2 level regions

Table 9.4: Annual average registered unemployment rate by counties

County	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Budapest	0.1	4.6	6.6	5.9	5.7	5.7	4.8	4.0	3.7	3.0	2.6	2.2	2.4	2.8	2.9
Baranya	1.1	11.2	13.2	11.7	11.8	12.2	13.3	11.8	11.6	11.6	11.1	11.2	11.9	11.6	13.4
Bács-Kiskun	1.1	13.4	16.0	13.1	11.0	10.9	10.7	9.7	10.0	10.0	9.3	8.8	9.4	9.9	10.4
Békés	1.1	13.3	16.3	15.1	14.0	14.0	13.5	13.0	13.0	13.1	11.9	11.2	11.5	12.0	13.0
Borsod-Abaúj-Zemplén	2.3	16.7	20.2	17.5	16.7	18.0	19.0	17.9	19.5	20.3	19.0	19.1	19.6	18.3	18.9
Csongrád	1.0	9.8	11.7	10.8	9.9	9.3	9.2	8.1	8.5	8.6	8.3	8.1	8.5	9.7	10.7
Fejér	1.0	10.1	12.5	11.3	10.6	10.4	9.4	8.4	8.3	7.2	6.4	6.4	7.1	7.3	7.4
Győr-Moson-Sopron	0.5	6.9	8.2	7.7	6.8	7.4	6.4	5.1	4.8	4.6	4.1	4.0	4.1	4.6	5.4
Hajdú-Bihar	0.9	11.5	16.6	15.3	14.2	15.6	15.0	14.0	15.6	14.7	13.6	12.8	13.1	12.9	14.0
Heves	1.6	12.7	15.2	13.9	12.5	13.6	12.1	11.7	12.3	12.0	10.6	9.8	10.0	10.6	11.3
Jász-Nagykun-Szolnok	1.6	14.4	17.1	15.8	14.6	14.8	14.8	13.5	13.7	13.4	11.5	10.2	10.7	11.2	12.0
Komárom-Esztergom	1.0	11.5	14.4	12.6	11.3	12.0	11.4	9.8	10.1	8.3	7.0	6.7	6.0	5.8	6.8
Nógrád	2.4	16.8	21.3	17.2	16.3	17.0	16.3	15.6	16.2	14.9	14.3	13.8	14.6	14.6	16.1
Pest	0.5	8.1	11.0	8.1	7.6	7.8	7.3	6.3	6.0	5.2	4.4	3.7	3.7	3.8	4.2
Somogy	1.4	9.2	11.6	10.9	11.2	12.5	12.7	11.3	12.2	11.9	11.6	11.5	12.2	13.4	14.5
Szabolcs-Szatmár-Bereg	2.6	18.9	20.6	19.3	19.3	19.7	18.9	17.2	18.7	19.5	17.8	16.7	17.7	17.5	18.6
Tolna	1.6	12.1	14.7	13.4	12.2	13.4	13.5	12.3	12.9	11.8	11.0	10.0	10.7	11.6	11.8
Vas	0.4	7.3	9.1	8.3	7.2	7.2	6.7	5.6	5.6	5.2	4.9	4.5	5.0	6.0	6.8
Veszprém	0.9	9.9	11.9	10.9	10.0	9.9	9.2	7.9	8.2	7.2	6.9	6.6	7.0	7.3	8.0
Zala	0.8	7.7	10.3	9.8	9.2	9.8	9.2	8.1	7.7	7.2	6.5	6.4	7.0	7.4	9.3
Total	1.0	10.3	12.9	11.3	10.6	11.0	10.5	9.5	9.7	9.3	8.5	8.0	8.3	8.7	9.4

Source: FH REG.

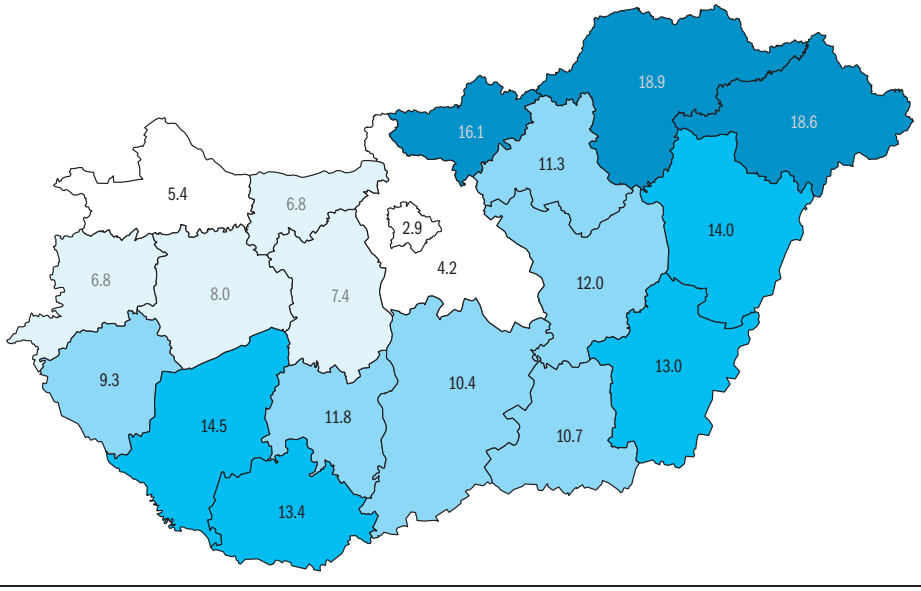


Figure 9.4: Regional inequalities: Registered unemployment rates in the counties, 2005

Table 9.5: Average monthly earnings in Budapest and the counties

	1994		2000		2001		2002		2003		2004		2005	
County	HUF/ month	%	HUF/ month	%	HUF/ month	%	HUF/ month	%	HUF/ month	%	HUF/ month	%	HUF/ month	%
Budapest	45180	126.8	121450	134.4	140312	135.4	157624	134.0	180811	133.2	194981	132.5	205645	130.3
Baranya	32445	91.1	76243	84.4	89479	86.4	100142	85.1	118218	87.1	128500	87.3	139070	88.1
Bács-Kiskun	30124	84.6	71141	78.8	83432	80.5	97645	83.0	113129	83.3	119468	81.2	127336	80.7
Békés	30725	86.3	69552	77.0	79718	76.9	93643	79.6	108338	79.8	118545	80.6	125766	79.7
Borsod-Abaúj-Zemplén	32260	90.6	78136	86.5	89223	86.1	102497	87.1	119033	87.7	128793	87.5	140860	89.3
Csongrád	33057	92.8	79857	88.4	90367	87.2	100371	85.3	118308	87.2	126550	86.0	137820	87.4
Fejér	37068	104.1	94758	104.9	108290	104.5	119613	101.7	137704	101.4	146057	99.3	154628	98.0
Győr-Moson-Sopron	34666	97.3	87334	96.7	103371	99.8	116470	99.0	128681	94.8	139888	95.1	152095	96.4
Hajdú-Bihar	31978	89.8	74922	82.9	87352	84.3	98118	83.4	117859	86.8	125891	85.6	133530	84.6
Heves	33033	92.7	83440	92.4	92861	89.6	106287	90.3	119423	88.0	130589	88.8	141968	90.0
Jász-Nagykun-Szolnok	30554	85.8	75121	83.2	89393	84.3	100761	85.6	115301	84.9	123627	84.0	150781	95.6
Komárom-Esztergom	33648	94.5	84382	93.4	98494	95.1	109108	92.7	125579	92.5	136754	93.0	132027	83.7
Nógrád	29023	81.5	67368	74.6	80158	77.4	94603	80.4	110666	81.5	123329	83.8	152147	96.4
Pest	32417	91.0	87311	96.6	103871	100.3	117276	99.7	130325	96.0	143689	97.7	127450	80.8
Somogy	29791	83.6	68725	76.1	80440	77.6	90561	77.0	111752	82.3	116852	79.4	128536	81.5
Szabolcs-Szatmár-Bereg	30675	86.1	71403	79.0	79937	77.2	95491	81.2	112163	82.6	122342	83.2	130974	83.0
Tolna	33729	94.7	78544	86.9	90583	87.4	106992	90.9	122549	90.3	121340	82.5	144193	91.4
Vas	30443	85.5	83040	91.9	92492	89.3	101461	86.2	116429	85.8	128347	87.2	137308	87.0
Veszprém	33142	93.0	79868	88.4	91189	88.0	100040	85.0	117553	86.6	126816	86.2	135916	86.1
Zala	32307	90.7	78237	86.6	89252	86.1	97372	82.7	114811	84.6	123491	83.9	144718	91.7
Total	35620	100.0	90338	100.0	103610	100.0	117672	100.0	135742	100.0	147111	100.0	157770	100.0

Source: FH BT.

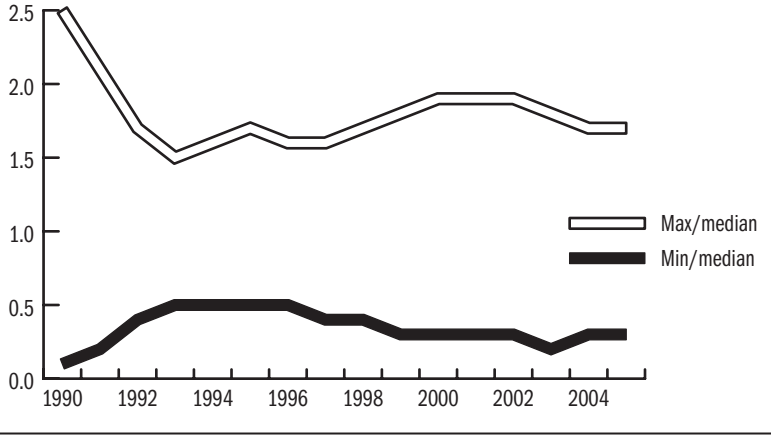


Figure 9.5: The dispersion of county level registered unemployment rates

Table 9.6: Regional inequalities: gross monthly earnings*

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
HUF/person/month								
1989	11,719	10,880	10,108	10,484	10,472	9,675	9,841	10,822
1992	27,172	22,174	20,975	19,899	20,704	19,563	20,047	22,465
1993	32,450	26,207	24,627	25,733	24,011	24,025	23,898	26,992
1994	43,010	34,788	32,797	31,929	31,937	31,131	31,325	35,620
1995	46,992	38,492	36,394	35,383	35,995	34,704	33,633	40,190
1996	58,154	46,632	44,569	43,015	41,439	41,222	41,208	47,559
1997	70,967	56,753	52,934	51,279	51,797	50,021	50,245	58,022
1998	86,440	68,297	64,602	60,736	60,361	58,208	58,506	69,415
1999	101,427	77,656	74,808	70,195	70,961	68,738	68,339	81,067
2000	114,637	87,078	83,668	74,412	77,714	73,858	73,591	90,338
2001	132,136	100,358	96,216	86,489	88,735	84,930	84,710	103,610
2002	149,119	110,602	106,809	98,662	102,263	98,033	97,432	117,672
2003	170,280	127,819	121,464	117,149	117,847	115,278	113,532	135,472
2004	184,039	137,168	131,943	122,868	128,435	124,075	121,661	147,111
2005	192,962	147,646	145,771	136,276	139,761	131,098	130,406	157,770
Per cent								
1989	108.3	100.5	93.4	96.9	96.8	89.4	90.9	100.0
1992	121.0	98.7	93.4	88.6	92.2	87.1	89.2	100.0
1993	120.2	97.1	91.2	95.3	89.0	89.0	88.5	100.0
1994	120.7	97.7	92.1	89.6	89.7	87.4	87.9	100.0
1995	116.9	95.8	90.6	88.0	89.6	86.4	83.7	100.0
1996	122.3	98.1	93.7	90.4	87.1	86.7	86.6	100.0
1997	122.3	97.8	91.2	88.4	89.3	86.2	86.6	100.0
1998	124.5	98.4	93.1	87.5	87.0	83.9	84.3	100.0
1999	125.1	95.8	92.3	86.6	87.5	84.8	84.3	100.0
2000	126.9	96.4	92.6	82.4	86.0	81.8	81.5	100.0
2001	127.5	96.9	92.9	83.8	85.6	82.0	81.8	100.0
2002	126.7	94.0	90.8	83.8	86.9	83.3	82.8	100.0
2003	125.4	94.2	89.5	86.3	86.8	84.9	83.6	100.0
2004	125.1	93.2	89.7	83.5	87.3	84.3	82.7	100.0
2005	122.3	93.6	92.4	86.4	88.6	83.1	82.7	100.0

* Gross monthly earnings, May.

Note: The data refer to full-time employees in the budget sector and firms employing at least 20 workers (1992–94), 10 workers (1995–99) and 5 workers (2000–), respectively.

Source: FH BT.

Table 9.7: Regional inequalities: gross domestic product

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
HUF/person/month								
1994	619	365	424	353	292	311	350	422
1995	792	494	559	442	394	386	449	544
1996	993	617	701	532	459	468	539	669
1997	1,254	801	871	641	554	569	640	830
1998	1,474	969	1,083	754	662	660	742	983
1999	1,710	1,051	1,275	859	731	707	819	1,113
2000	2,014	1,255	1,468	957	827	815	918	1,290
2001	2,311	1,372	1,539	1,074	947	965	1,031	1,458
2002	2,701	1,462	1,703	1,204	1,050	1,062	1,136	1,648
2003	2,940	1,719	2,001	1,321	1,186	1,213	1,254	1,841
2004	3,210	1,933	2,111	1,442	1,343	1,323	1,395	2,021
Per cent								
1994	145.6	86.4	100.7	84.0	69.6	73.9	83.3	100.0
1995	144.3	90.5	102.9	81.6	72.9	71.2	83.2	100.0
1996	146.9	91.9	105.0	80.0	69.1	70.4	81.2	100.0
1997	149.1	96.0	105.2	77.6	67.3	69.1	77.9	100.0
1998	147.8	98.1	110.5	77.2	68.0	67.7	76.3	100.0
1999	151.1	93.7	114.9	77.7	66.3	64.1	74.5	100.0
2000	152.2	97.3	113.9	74.8	64.6	63.4	71.8	100.0
2001	158.5	94.1	105.6	73.7	64.9	66.2	70.7	100.0
2002	163.9	88.7	103.4	73.0	63.7	64.4	68.9	100.0
2003	161.1	92.4	107.6	71.6	64.0	65.3	68.0	100.0
2004	158.8	95.6	104.4	71.3	66.4	65.5	69.0	100.0

Source: KSH.

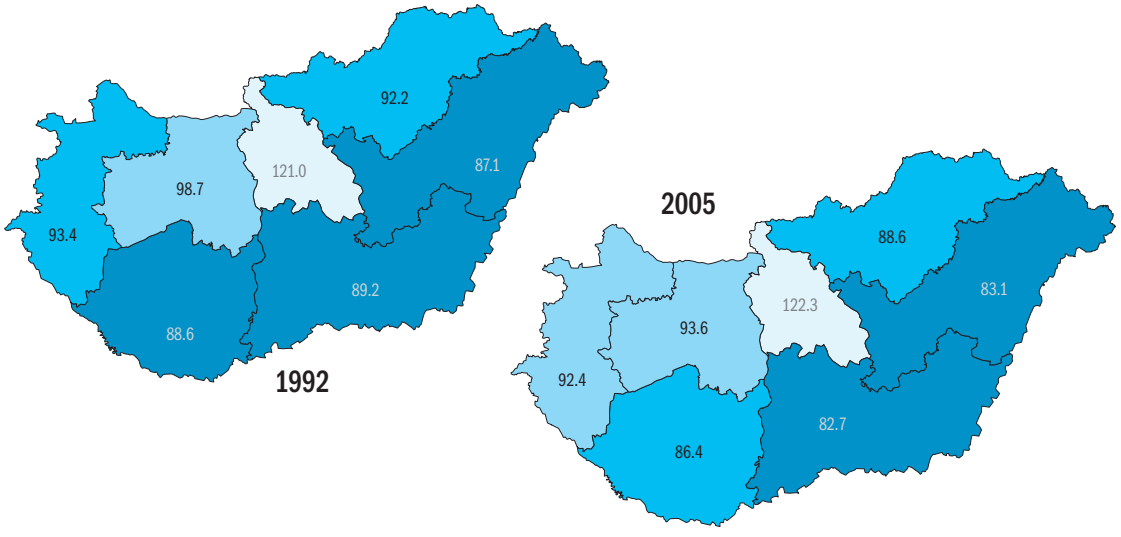


Figure 9.6: Regional inequalities: gross monthly earnings

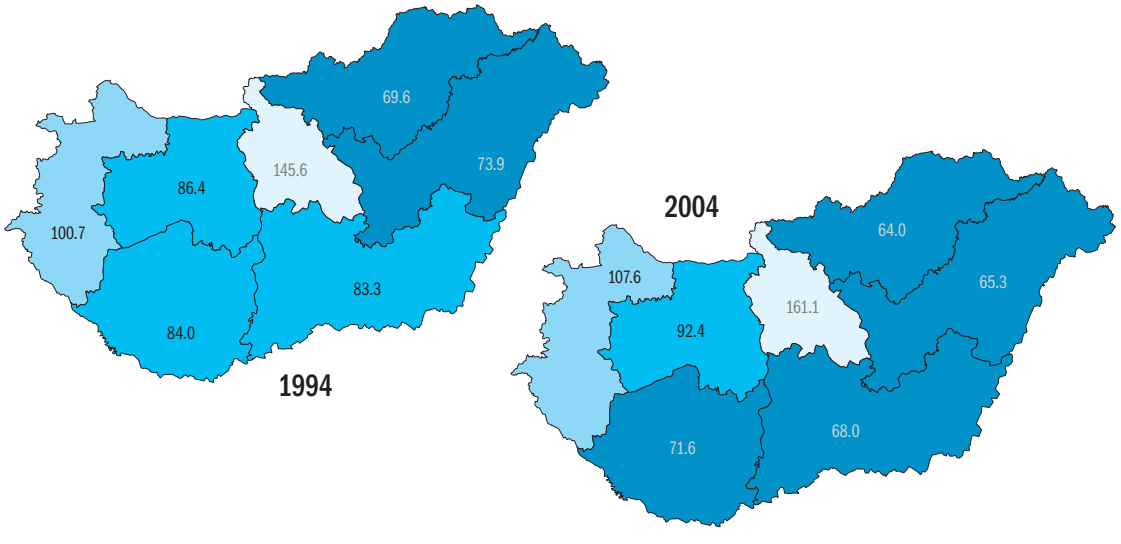


Figure 9.7: Regional inequalities: gross domestic product

Table 10.1: Work permits issued to foreign citizens

Year	Number of workpermits issued during the year	Number of work permits valid at the last day of the year
1989	25,259	...
1990	51,946	...
1991	41,724	33,352
1992	24,621	15,727
1993	19,532	17,620
1994	24,756	20,090
1995	26,085	21,009
1996	20,296	18,763
1997	24,244	20,382
1998	26,310	22,466
1999	34,138	28,469
2000	40,203	35,014
2001	47,269	38,623
2002	49,779	42,700
2003	57,383	48,651
2004[a]	64,695	55,136
Number of registration	14,253	10,711
Number of green card certificates	285	285
2005[a]	53,324	46,391
Number of registration	18,907	15,954
Number of green card certificates	331	509

[a] After the accession of Hungary to the EU (01.05.2004.) their is no need to ask for work permits for the citizens (and their family members) from the Czech Republic, Estonia, Poland, Latvia, Lithuania, Slovakia and Slovenia, but their is a reporting obligation of the employers for registration when they start to work. The reporting obligation doesn't refer to the employment of the citizens of the UK, Ireland, Sweden, Cyprus and Malta. The citizens of the other member states of EU-15 in case of certain conditions may obtain „green card" certificate which entitles them to undertake any job in Hungary without work permissions.

Source: FH, based on the reports of the county Labour Centres.

Table 10.2: Employees since 0–6 months

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Hungary	8.2	8.5	7.1	6.9	6.3	6.6	6.4	6.8	7.0

Source: MEF, IV. quarterly waves.

Table 10.3: Employees living and working in the residence and daily commuters by main demographic indicators, 1980–2001; in thousands, per cent

	1980			1990			2001		
	Total	Living and working in the residence	Daily commuters	Total	Living and working in the residence	Daily commuters	Total	Living and working in the residence	Daily commuters
Gender									
Male	2,865.8	2,037.1	828.7	2,512.9	1,768.8	744.1	2,003.0	1,309.7	693.2
Female	2,199.8	1,811.4	388.4	2,012.1	1,611.4	400.7	1,687.3	1,278.5	408.8
Age groups									
15–29	1,650.9	1,152.1	498.8	1,230.6	843.7	387.0	988.9	642.3	346.5
30–39	1,337.0	1,052.2	284.8	1,422.0	1,082.1	339.9	925.6	633.1	292.5
40–49	1,164.4	911.4	253.1	1,218.8	950.9	267.9	1,095.0	788.9	306.1
50–59	821.8	648.8	173.1	628.6	481.1	147.5	622.0	473.2	148.8
60+	91.5	84.0	7.5	24.9	22.4	2.5	58.9	50.7	8.1
Educational level									
Less than primary school	936.4	702.2	234.2	235.3	159.2	76.2	29.5	22.3	7.2
Primary school	1,791.6	1,338.7	452.8	1,509.2	1,094.1	415.2	723.0	487.8	235.2
Vocational school	854.3	584.4	269.9	1,103.0	755.7	347.4	1,064.4	671.3	393.1
Grammar school	1,071.2	867.3	203.8	1,122.5	897.3	225.2	1,197.6	878.8	318.8
University; college	412.2	355.8	56.4	554.8	474.0	80.9	675.8	528.1	147.7
Total	5,065.7	3,848.5	1,217.1	4,525.0	3,380.2	1,144.8	3,690.3	2,588.3	1,102.0
Percentages									
Gender									
Male	100.0	71.1	28.9	100.0	70.4	29.6	100.0	65.4	34.6
Female	100.0	82.3	17.7	100.0	80.0	20.0	100.0	75.8	24.2
Age groups									
15–29	100.0	69.8	30.2	100.0	68.6	31.4	100.0	65.0	35.0
30–39	100.0	78.7	21.3	100.0	76.1	23.9	100.0	68.4	31.6
40–49	100.0	78.3	21.7	100.0	78.0	22.0	100.0	72.0	28.0
50–59	100.0	78.9	21.1	100.0	76.5	23.5	100.0	76.1	23.9
60+	100.0	91.8	8.2	100.0	89.9	10.1	100.0	86.2	13.8
Educational level									
Less than primary school	100.0	75.0	25.0	100.0	67.6	32.4	100.0	75.6	24.4
Primary school	100.0	74.7	25.3	100.0	72.5	27.5	100.0	67.5	32.5
Vocational school	100.0	68.4	31.6	100.0	68.5	31.5	100.0	63.1	36.9
Grammar school	100.0	81.0	19.0	100.0	80.0	20.0	100.0	73.4	26.6
University; college	100.0	86.3	13.7	100.0	85.4	14.6	100.0	78.1	21.9
Total	100.0	76.0	24.0	100.0	74.7	25.3	100.0	70.1	29.9

Source: KSH Census.

Table 11.1: Minimum wage

Date	Monthly amount(HUF)	Average gross earnings = 100
1992. I. 1.	8,000	35.8
1993. II. 1.	9,000	33.1
1994. II. 1.	10,500	30.9
1995. III. 1.	12,200	31.4
1996. II. 1.	14,500	31.0
1997. I. 1.	17,000	29.7
1998. I. 1.	19,500	28.8
1999. I. 1.	22,500	29.1
2000. I. 1.	25,500	29.1
2001. I. 1.	40,000	38.6
2002. I. 1.	50,000	40.8
2003. I. 1.	50,000	36.4
2004. I. 1.	53,000	36.4
2005. I. 1.	57,000	33.6
2006. I. 1.	62,500	37.2[a]

[a] January-September monthly averages.
Note: As of September 2002, minimum wage earners do not pay personal income tax. As a result of this measure, the net minimum wage increased by 15.9 per cent.
Source: KSH.

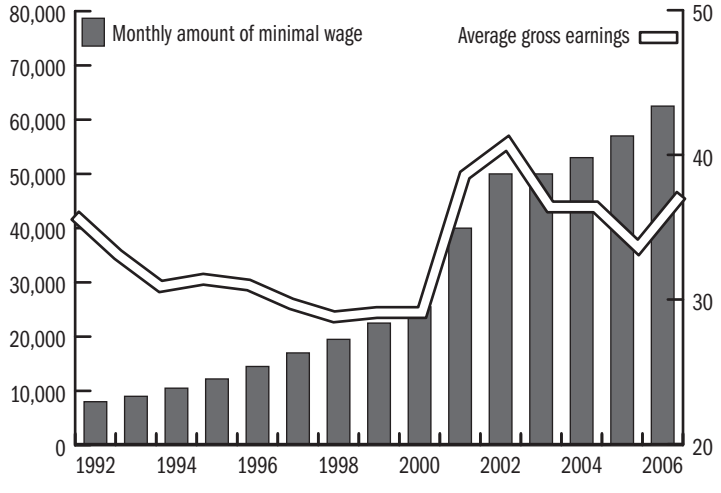


Figure 11.1: Minimum wage, average gross earnings = 100

Table 11.2: National agreements on wage guidelines, previous year = 100*

Year	ÉT Recommendation		Actual indexes	
	Minimum	Maximum	Public sector	Corporate sector
1992	113.0	128.0	120.1	126.6
1993	110.0–113.0	125.0	114.4	125.1
1994	113.0–115.0	121.0–123.0	127.0	123.4
1995	–	–	110.7	119.7
1996	113.0	124.0	114.6	123.2
1997	114.0	122.0	123.2	121.8
1998	113.5	116.0	118.0	118.5
1999	112.0	115.0	119.2	114.8
2000	108.5	111.0	112.3	114.2
2001	...	...	122.9	116.3
2002	108.0	110.5	129.2	113.3
2003	4.5[1]		117.5	108.9
2004	107.0	108.0	100.4	109.3
2005	106.0		112.8	106.9
2006	104.0	105.0		

[1] Real wage growth.

* Gross average wage increase: actual rates and recommendations by the Interest Reconciliation Council.

Source: KSH, Ministry of Employment and Labour.

Table 11.3: Strikes

Year	Number of strikes	Number of involved persons	Hours lost (in thousands)
1991	3	24,148	76
1992	4	1,010	33
1993	5	2,574	42
1994	4	31,529	229
1995	7	172,048[a]	1,708[a]
1996	8	4,491	19
1997	5	853	15
1998	7	1,447	3
1999	5	16,685	242
2000	5	26,978	1,192
2001	6	21,128	61
2002	4	4,573	9
2003	7	10,831	19
2004	8	6,276	116
2005	11	1,425	8

[a] Teachers strikes number partly estimated.

Source: KSH.

Table 12.1: Employment and unemployment rate of population aged 15–64 by sex in the EU–15 and EU–25, 2005

	Employment rate			Unemployment rate[1]		
Country	Men	Women	Total	Men	Women	Total
Austria	75.4	62.0	68.6	5.2	5.4	5.3
Belgium	68.3	53.8	61.1	7.4	9.0	8.1
Denmark	79.8	71.9	75.9	4.2	5.6	4.9
United Kingdom	77.6	65.9	71.7	5.0	4.1	4.6
Finland	70.3	66.5	68.4	9.7	9.7	9.7
France	68.8	57.6	63.1	7.9	9.5	8.6
Greece	74.2	46.1	60.1	5.9	15.3	9.8
Netherlands	79.9	66.4	73.2	4.6	5.1	4.8
Ireland	76.9	58.3	67.6	4.7	3.8	4.3
Luxembourg	73.3	53.7	63.6	3.5	5.8	4.5
Germany	71.2	59.6	65.4	11.7	11.1	11.4
Italy	69.9	45.3	57.6	6.2	9.7	7.6
Portugal	73.4	61.7	67.5	6.9	8.5	7.7
Spain	75.2	51.2	63.3	7.3	12.3	9.4
Sweden	74.4	70.4	72.5	8.9	8.7	8.8
EU-15	72.9	57.4	65.2	7.7	9.0	8.3
Hungary	63.1	51.0	56.9	7.0	7.4	7.2
Cyprus	79.2	58.4	68.5	4.5	6.7	5.5
Czech Republic	73.3	56.3	64.8	6.3	9.8	7.8
Estonia	67.0	62.1	64.4	10.1	6.5	8.3
Poland	58.9	46.8	52.8	17.4	19.4	18.3
Latvia	67.6	59.3	63.3	9.6	8.7	9.2
Lithuania	66.1	59.4	62.6	8.6	8.6	8.6
Malta	73.8	33.7	53.9	7.2	9.3	7.9
Slovakia	64.6	50.9	57.7	15.7	17.1	16.3
Slovenia	70.4	61.3	66.0	5.6	6.2	5.9
EU-25	71.3	56.3	63.8	8.5	9.9	9.1

[1] 2nd Quarterly.
Source: Employment in Europe, 2006.

Table 12.2: Employment composition, 2005

Country	Self employed	Part time	Fix term contr.	Service	Industry	Agriculture
Austria	19.9	21.1	9.1	n.a.	n.a.	n.a.
Belgium	16.2	22.0	8.9	77.6	20.5	1.9
Denmark	6.3	22.1	9.8	75.7	21.2	3.1
United Kingdom	12.7	25.4	5.7	81.3	17.9	0.9
Finland	11.5	13.7	16.5	69.4	25.8	4.9
France	8.9	17.2	13.3	75.9	20.5	3.6
Greece	40.8	5.0	11.8	62.7	22.9	14.4
Netherlands	13.7	46.1	15.5	79.5	17.3	3.3
Ireland	17.0	n.a.	3.7	66.6	27.6	5.9
Luxembourg	6.6	17.4	5.3	77.9	20.9	1.3
Germany	11.2	24.0	14.2	71.9	25.9	2.2
Italy1	24.5	12.8	12.3	67.4	28.6	4.0
Portugal	24.1	11.2	19.5	n.a.	n.a.	n.a.
Spain	14.4	12.4	33.3	64.3	30.1	5.6
Sweden	4.8	24.7	16.0	75.4	22.3	2.3
EU-15	14.7	20.2	14.3	72.5	23.8	3.7
Hungary	13.8	4.1	7.0	62.7	32.4	4.9
Cyprus	23.6	8.9	14.0	n.a.	n.a.	n.a.
Czech Republic	18.0	4.9	8.6	57.9	38.3	3.8
Estonia	8.1	7.8	2.7	61.0	33.7	5.3
Poland	28.8	10.8	25.7	n.a.	n.a.	n.a.
Latvia	11.6	8.3	8.4	62.3	26.5	11.2
Lithuania	16.9	7.1	5.5	57.0	29.0	14.0
Malta	11.7	9.6	4.5	n.a.	n.a.	n.a.
Slovakia	13.0	2.5	5.0	62.6	33.7	3.7
Slovenia	17.1	9.0	17.4	54.5	35.2	10.2
EU-25	15.6	18.4	14.5	70.4	24.7	4.9

Source: Employment in Europe, 2004.

Table 12.3: Monthly statutory minimum wage rates, Full-time adult employees, aged 23+*

Country	2004			2005			2006		
	In local currency	In euros	Date effective[1]	In local currency	In euros	Date effective[1]	In local currency	In euros	Date effective[1]
Belgium		1,317.5	2004.02.		1,234	2005.06.		1,234.21	2005.06.
Bulgaria	120 leva	61	2004.01.	150	77	2005.01.	160	81.80	2006.01.
Croatia	kuna	–	–	2,080	285	2005.01.	2,080	282.23	2005.01.
Cyprus[2]	350 Cyprus pound	600	2004.06.	362	631	2005.04.	362	631.44	2005.04.
Czech Republic	6,700 koruna	211	2004.01.	7,185	238	2005.01.	7,660	263.93	2006.01.
Estonia	2,480 kroon	159	2004.01.	2,690	172	2005.01.	3,000	191.73	2006.01.
France[3]		1,154.13	2004.06.		1,217	2005.07.		1,254.28	2006.07.
Greece[4]		559	2004.09.		560	2004.09.		658.00	2006.04.
Hungary	53,000 forint	212	2004.01.	57,000	232	2005.01.	65,500	240.14	2007.01.
Ireland		1,213.33	2004.02.		1,326	2005.05.		1,326.00	2005.05.
Latvia	80 lats	121	2004.01.	80d	121	2004.01.	90	128.06	2006.01.
Lithuania	450 lita	130	2003.09.	550	159	2005.07.	600	173.77	2006.07.
Luxembourg[5]		1,403	2003.08.		1,467	2005.01.		1,541.00	2006.12.
Malta	233.48 lira	543	2004.01.	241.06	557	2005.01.	250.8	584.19	2006.01.
Moldova	340 leu	23	2003.07.	440	26	2004.02.	550	32.72	2005.02.
Netherlands		1,264.8	2003.07.		1,264	2003.07.		1,284.60	2006.07.
Poland	824 zloty	183	2004.01.	849	208	2005.01.	899	233.01	2006.01.
Portugal[3]		365.6	2004.01.		374	2005.01.		385.90	2006.01.
Romania	2,800,000 lei	68	2004.01.	3,300,000	91	2005.01.	338 new lei	97.07	2006.01.
Russia	600 rubles	17	2003.10.	720	19	2005.01.	1,100	32.2	2006.05.
Serbia	5,395 new dinars	73	2004.02.	5,395	73	2004.02.	8,004	96.44	2006.05.
Slovakia	6,500 koruna	163	2004.10.	6,500	163	2004.10.	7,600	205.22	2006.10.
Slovenia	117,500 tolar	484	2004.08.	122,600	514	2005.08.	125,052	521.86	2006.08.
Spain[3]		490.8	2004.06.		513	2005.01.		540.90	2006.01.
Turkey	444,150,000 lira	250	2004.07.	489 new lira	266	2005.01.	530.73	332.26	2006.01.
Ukraine	205 hryvnia	31	2003.12.	262	36	2005.01.	400	58.75	2006.09.
United Kingdom	pounds sterling						927.32	1,380.54	2006.10.

* Where official rates are expressed by the hour or week, they have been converted to monthly rates on the basis of a 40-hour week or 52-week year. Minimum wage figures exclude any 13th or 14th month payments that may be due under national legislation, custom or practice.

[1] Minimum wage levels last updated.

[2] Unmarried white collar workers only.

[3] The terms of this wage order entitle a worker to 13 or 14 monthly payments per year.

[4] Starting salary in non-unionised sectors. Iincreases after six months' service. Rates apply only in six occupations.

[5] Unskilled workers only.

Source: FedEE review of minimum wage rates (2004, 2005, 2006): http://www.fedee.com/minwage.html

DESCRIPTION OF THE MAIN DATA SOURCES

1. CSO Labour Force Survey

The Hungarian Central Statistical Office has been conducting a new statistical survey since January 1992 – using the experience of the pilot survey carried out in 1991 – to obtain ongoing information on the labour force status of the Hungarian population. The Labour Force Survey (LFS) is a household survey which provides quarterly information on the non-institutional population aged 15–74. The aim of the survey is to observe employment and unemployment according to the international statistical recommendation based on the concepts and definitions recommended by the ILO independently from the existing national labour regulations or their changes.

In international practice, the labour force survey is a widely used statistical tool to provide simultaneous, comprehensive and systematic monitoring of employment, unemployment and underemployment. The survey techniques minimise the subjective bias in classification (since people surveyed are classified by strict criteria) and provide freedom to also consider national characteristics.

In the LFS the population surveyed is divided into two main groups according to the economic activity performed by them during the reference week (the week running from Monday to Sunday which contains the 12th day of the month):
– economically active persons (labour force) and
– economically inactive persons.

The group of economically active persons consists of those being in the labour market either as employed or unemployed during the reference week.

The definitions used in the survey follow the ILO recommendations. According to this those designated employed are persons aged 15–74 who, during the reference week:
– worked one hour or more for pay, profit or payment in kind in a job or in a business (including on a farm),
– worked one hour or more without payment in a family business or on a farm (i.e. unpaid family workers),
– had a job from which they were temporarily absent during the survey week.

Persons on child-care leave are classified according to their activity. Conscripts are considered as economically active persons, exceptions are marked in the footnotes of the table.

From the survey's point of view the activities below are not considered as work:
– work done without payment for another household or institute (voluntary work),
– building or renovating of an own house or flat,
– housework,
– work in the garden or on own land for self-consumption.

Unemployed persons are persons aged 15–74 who:
– were without work, i.e. neither had a job nor were at work (for one hour or more) in paid employment or self-employment during the reference week
– had actively looked for work at any time in the four weeks up to the end of the reference week,
– were available for work within two weeks following the reference week or were waiting to start a new job within 30 days.

Active job search includes: contacting a public or private employment office to find a job, applying to an employer directly, inserting or answering advertisements, asking friends, relatives or other methods.

The labour force (i.e. economically active population) comprises employed and unemployed persons.

Persons are defined economically inactive (i.e. not in the labour force) if they were neither employed nor unemployed, as defined.

Passive unemployed (known as "discouraged persons" according to the ILO concepts) are persons aged 15–74 who desire a job but have given up any active search for work, because they do not believe that they are able to find any.

The Labour Force Survey is based on a multi-stage stratified sample design. The stages of sampling are

defined as follows: primary sampling units (PSUs) are enumeration districts (EDs) and secondary sampling units (SSUs) are dwellings in settlements with 15,000 or more inhabitants, while PSUs are settlements, SSUs are EDs and ultimate sampling units are dwellings in all other cases.

The sampling frame or address register of the LFS consists of 12,775 sample units (SUs), covers 751 settle-ments of the country, and contains about 626,000 addresses. The quarterly sample of the LFS is selected from the address register. From each of the 12,775 SU's, three addresses are selected by simple random sampling. The interviewers visit one address in each SU during one month. The main indicators of the labour market are representative for regions.

The LFS sample is basically a sample of dwellings, and in each sampled dwelling, labour market information is collected from each household and from each person aged 15–74 living there. For 1998, the quarterly sample contains about 32,000 households and 65,000 persons. The sample has a simple rotation pattern: any household entering the sample at some time is expected to provide labour market information for six consecutive quarters, then leaves the sample permanently. The samples of two consecutive periods tend to be less than 5/6, which would be obtained at a 100 per cent response rate.

In the LFS sample design strata are defined in terms of geographic units, size categories of settlements and area types such as city centres, outskirts, etc.

2. CSO Labour Force Accounting Census

Before the publication of the Labour Force Survey the annual Labour Force Account gave a view of the total labour force in the period between the two census.

The Labour Force Account, as its name shows, is a balance-like account which compares the labour supply (human resources) to the labour demand at an ideal moment (1 January). Population is taken into account by economic activity with a differentiation between those of working age and the population outside of the working age.

Source of data: Annual labour survey on employment on 1th January of enterprises with more than 20 employees and of all government institutions, labour force survey, census, tax records and social security records, and company registry. The number of persons employed in small enterprises having a legal entity is based on estimation. Data on unemployment comes from the registration system of the National Employment Service.

Source of the labour force: working age population, active earners out of working age and employed pensioners.

3. CSO Institution-Based Labour Statistics

The source of data is the monthly (annual) institutional labour statistical survey. The survey range covers enterprises with at least 5 employees, and public and social insurance and non-profit institutions irrespective of the staff numbers of employees.

The earnings relate to the full-time employees on every occasion. The potential elements of the prevailing monthly average earnings are: basic wages, bonuses, allowances (including miner's loyalty bonus, any Széchenyi-grant), payments for time not worked, bonuses, premiums, wages and salaries for the 13th and more months.

Net average earnings are calculated by deducting from the gross average earnings the actual personal income tax, employee's social security contributions , etc., according to the actual rates (i.e. taking into account the threshold concerning the social security contribution).It does not take into account the impact of the new tax allowance related to the number of children. The personal income tax is calculated by the actual withholding rate applied by the employers when paying out monthly earnings.

The difference between the gross and the net (after-tax) income indexes depends on eventual annual changes in the tax table (tax brackets) and in the tax allowances .

The change of net earnings is estimated as the ratio of net income index and the consumer price index above 100 per cent in the same period.

Non-manual workers are persons with occupations classified by the ISCO-88 in major groups 1-4., manual workers are persons with occupations classified in major groups 5-9. since 1st January 1994. Census data were used for the estimation of the employment data in 1980 and 1990. The aggregate economic data are based on national account statistics,

the consumer's and producer's price statistics and industrial surveys. A detailed description of the data sources are to be found in the relevant publications of the Statistics Office.

4. Unemployment Register Database

The other main source of unemployment data in Hungary – and in most of the developed countries – is the huge database containing so called administrative records which are collected monthly and include the individual data of the registered unemployed.

The register actually contains all job seekers, but out of them, at a given point of time, only those are regarded as registered unemployed who:

- had themselves registered with a local office of the National Employment Office as unemployed (i. e. he/she has got no job but wishes to work, for which they seek assistance from the labour market organisation).
- at the point of time in question (on the closing days of the individual months), the person is not a pensioner or a full-time student, and is ready to co-operate with the local employment office in order to become employed (i. e. he/she accepts the job or training offered to him/her, and keeps the appointments made with the local employment office's placement officer/counsellor).

If a person included in the register is working under any subsidised employment programme on the closing day, or is a participant of a labour market training programme, or has a short-term, temporary job her/his unemployed status is suspended.

If the client is not willing to co-operate with the local office he/she is removed from the register of the unemployed.

The data – i. e. the administrative records of the register – allow not only for the identification of date related data but also for monitoring flows: inflow as well as outflow.

Based on the records of the labour force needs reported to the Employment Office, the stock and flow data of vacancies are statistically processed each month.

Furthermore, detailed monthly statistics of participation in the different active programmes, number of participants and their inflow and outflow are prepared monthly, based on the support amounts actually paid.

The very detailed monthly statistics – in a breakdown of country, region, county, local employment office service delivery area and community – build on the secondary processing of administrative records that are generated virtually as the rather important and useful "by-products" of the accomplishment of the National Employment Office's main functions (such as placement services, payment of benefits, active programme support, etc.).

The Employment Office (and its predecessors, i. e. OMK (National Labour Centre), OMMK and OMKMK) has published the key figures of these statistics on a monthly basis since 1989. The more detailed reports which also contain data by local office service delivery area are published by the County/Metropolitan (Budapest) Labour Centres.

The denominators of the unemployment rates calculated for the registered unemployed are the economically active population data published by the Central Statistical Office's labour market account, and its breakdown by region and county.

The number of the registered unemployed and the registered unemployment rate are obviously different from the figures of the Central Statistical Office's labour force survey. It is mainly the different conceptual approach and the fundamentally different monitoring/measuring methods that account for this variance.

5. Short-Term Labour Market Forecast Database

At the initiative and under the co-ordination of the Employment Office (and its legal predecessors), the employment organisation has conducted the so called short prognosis survey since 1991, twice a year, in March and September. The survey uses an enormous sample obtained by interviewing over 4,500 employers.

The interview focuses on the companies' projections of their material and financial processes, their development and human resource plans, and they are also asked about their concrete lay-off or recruitment plans as well as their expected need for any active labour market programmes.

The surveys are processed in a breakdown of service delivery area, county and country, providing use-

ful information at all levels for the planning activities of the employment organisation.

The prognosis survey provides an opportunity and possibility for the counties and Budapest to analyse in greater depth (also using information from other sources) the major trends in their respective labour markets, to make preparations for tackling problems that are likely to occur in the short term, and to effectively meet the ever-changing needs of their clients.

The forecast is only one of the outputs of the short term prognosis. Further very important "by-products" include regular and personal liaison with companies, the upgraded skills of the placement officers and other administrative personnel, enhanced awareness of the local circumstances, and the adequate orientation of labour market training programmes in view of the needs identified by the surveys.

The prognosis surveys are occasionally supplemented with supplementary surveys to obtain some further useful information that is used by researchers and the decision-makers of employment and education/training policy.

6. Wage Survey Database

The Employment Office (and its legal predecessors) has conducted since 1992, once a year, a representative survey to investigate individual wages and earnings. The survey uses an enormous sample and is conducted at the request of the Ministry of Economic Affairs (formerly: Ministry of Labour and Ministry of Social and Family Affairs).

The reference month of data collection is the month of May every year, but for the calculation of the monthly average of irregularly paid benefits (beyond the base wage/salary), the total amount of such benefits received during the previous year is used.

In the competitive sector, initially data collection only covered companies of over 20 persons; in this group it is incumbent on all companies to provide information, but the sample only includes employees born on certain days.

Data collection has covered companies of 10-19 since 1996, and companies of 5-9 have been covered since 1999, where the companies actually involved in data collection are selected at random (ca. 20 per cent) and the selected ones have to provide information about all their full-time employees.

Data on basic wages and earnings structure can only be retrieved from these surveys in Hungary, thus it is practically these huge, annually generated databases that can serve as the basis of the wage reconciliation negotiations conducted by the social partners.

In the budgetary sector all budgetary institutions provide information, regardless of their size, in a way that the decisive majority of the local budgetary institutions – the ones that are included in the TAKEH central payroll accounting system - provide fully comprehensive information, and the remaining budgetary institutions provide information only about their employees who were born on certain days (regarded as the sample).

Data has only been collected on the professional members of the armed forces since 1999.

Prior to 1992, such data collection took place every three years, thus we are in possession of an enormous data base of the years of 1983, 1986 and 1989.

Of the employees included in the sample, the following data are available:

– the sector the employer operates in, headcount, employer's local unit, type of entity, ownership structure
– employee's wage category, job, male/female, age, educational background.

Based on the huge databases which include the data by individual, the data is analysed every year in the following way:

Standard data analysis, as agreed upon by the social partners, used for wage reconciliation negotiations (which is received by every confederation participating in the negotiations)

Model calculations to determine the expected impact of the rise of the minimum wage

Analyses to meet the needs of the Wage Policy Department, Ministry of Economic Affairs, for the comparison and presentation of wage ratios (total national economy, competitive sector, budgetary sector, regional volume)

The entire database is adopted every year by the Central Statistical Office, which enables the Office to also provide data for certain international or-

ganisations, (e. g. ILO and OECD). The Employment Office also provides regularly special analyses for the OECD.

The database containing the data by individual allows for a.) the analysis of data for groups of people determined by any combination of pre-set criteria, b.) the comparison of real basic wage and earnings, with special regard to the composition of the different groups analysed, as well as c.) the analysis of the spread and differentiation level of the basic wages and earnings.

7. Unemployment Benefit Register

The recipients' fully comprehensive registry is made up, on the one hand, of the accounting records containing the disbursed unemployment benefits (unemployment benefit, school leavers' unemployment benefit and pre-retirement unemployment benefit) and, on the other hand, of the so-called master records containing the particulars of benefit recipients. This register allows for the accurate tracking of the recipients' benefit related events, the exact date of their inclusion in and removal from the system, as well as why they have been removed from it (e. g. got a job, eligibility period expired, were excluded, joined an active labour market programme, etc.)

This huge database allows for reporting for any point of time the detailed data of persons who received benefits on a given day, in a breakdown of country, region, county and local office service delivery area. In order to align these data with the closing day statistics of the registered unemployed, these monthly statistics are also completed by the 20th of each month.

In addition, the monthly statistics also contain information of the so-called temporary recipients, e.g. the number of those who have received benefits on any day of the month between the previous month's and the given month's closing day. Of course, data indicating inflows and outflows are reported here.

It is an important and rather useful aspect from a research perspective that, in addition to the standard closing day statistics, groups defined by any criteria can be tracked in the benefit register, e. g. inflow samples can be taken of newly registered persons for different periods, and through tracking them in the registry system the benefit allocation patterns of different cohorts can be compared.

The detailed data of unemployment benefit recipients have been available from the benefit register since January 1989. The first two years had a different benefit allocation system, and the current system, which has been modified several times since then, was implemented by the Employment of 1991 (Act IV).

For the period of between 1991 and 1996, the register also contains the stock and flow data of the recipients of school leavers' unemployment benefit. Since 1997 the system has also contained the recipients of pre-retirement unemployment benefit.

In addition to headcount data, the benefit register can also monitor the average duration of the period of benefit allocation and the average monthly amount of the benefits allocated.

The key data regarding benefits are published by the Employment Office in the monthly periodical Labour Market Situation. In addition, time series data is published annually in the Time Series of the Unemployment Register, always covering the last six years in the form of a monthly breakdown.

8. HCSO Census Data

The largest data collection of the Central Statistical Office is the population and housing census, covering the entire population of the country. The reference date of the last census was 0 o'clock on February 1, 2001. The census data published refer to this survey, though regarding the most important characteristics, with the help of the data of the 1980 and the 1990 census respectively, it is possible to study the changes occurred in the last decades. The data of the previous censuses – within certain limits – have been adjusted according to the concepts of the last census (e.g. the data on employment, employers of the 1980 and the 1990 census are reflecting to the definitions, registers of 2001).

The data refer to the resident population of the census in general, while in some cases to the respective groups of population (e.g. persons in employment, engaged in non-agricultural activities, aged 15 years and older). Resident population of the census means the group of persons staying in fact on the place of

the enumeration, those who live their everyday life there, can be contacted on the given address, spend most of their night-rests on that place, go to work or to school from that place. This grouping is basically in line with the concept of resident population of the 1980 and 1990 censuses, where the intent for the official registration had been regarded as a matter of fact of a valid official registration. The census 1990 defined the resident population on the basis of the registered addresses (of the population).

As far as the economic activity of the population is concerned, the census applies the concepts of the International Labour Organization (ILO), while – due to the limits in the size and time of the enumeration – the issue of unemployment cannot be studied as deeply as the continuous labour survey does it. In the frame of the labour force survey the unemployment rate is based on a well-defined set of data, by putting on several related questions. A person for example, spending the term of notice at his employer is regarded as person in employment even if he declares himself as unemployed. This correction cannot be made in the case of the census, as – due to the limits in scope – the subject of the notice have not been raised. As the information on unemployment in case of the census is based on the biased judgement of the individuals, there might be some differences against the findings of the labour survey.

The grouping system of the occupations at the census 2001 is based on the nomenclature of the Hungarian Standard Classification of Occupations (further FEOR-93), being in force as from 1997. As to basic principles and structure, it follows the international classification of occupations, ISCO-88 (Rev. 3.), and classifies the occupations into the same 10 major groups. In some tables "legislators, senior government officials, leaders of interest groups and managers of firms" and "professionals" are grouped together as "leaders, intellectuals", "technicians and associate professionals" and "office and management (customer service) clerks" are grouped together as "other non-manual workers". In the same tables the group of "craft and related trades workers" include "plant and machine operators and assemblers, vehicle drivers" too, while the group "other occupations" contains elementary occupations and armed forces together.

The classification of the employers or economic activities corresponds to the Hungarian Standard Industrial Classification (TEÁOR) of 1998.

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