The Hungarian Labour Market
Review and Analysis
2002

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FOREWORD BY THE EDITORS

The goal of our labour market yearbooks is to review the main developments in the Hungarian labour market and to give an in-depth analysis of key issues. The subsequent chapters present "stylised facts" and recent research results together with their shortcomings. Our further intention is to guide readers in finding other relevant publications and reliable statistical sources. The contributions related to the selected themes: wages and incomes support to the jobless give analyses on institutions, rules and market forces that shape wages, or unemployment benefits and look at resulting costs and revenue changes that have occurred over a decade. Last but not least we consider some open questions, and review problems of interpretation and methodology.

The variety of subjects precludes a work with a uniform theoretical framework organised around one (or even several) contentious issues. However, if it fails to offer competing attempts to explain the various problems or the struggling efforts to interpret facts – in other words, if it does not help in figuring out what to do with the data presented – that is because of shortcomings in Hungarian research itself. Often there are only one or two researchers working on a subject area, and empirical investigations have sometimes had to do without the control of theory, while theoretical analyses have sometimes been developed in the absence of a fact-based hinterland.

We do not intend to offer any economic or social policy recommendations but would instead prefer to promote dialogue between science and policy, by re-wording research findings in a manner that is comprehensible to a broader audience – and by underlining the areas still to be researched.

The closing chapter presenting selected statistical data gives comprehensive information on the main economic developments, demographic trends, labour market participation, employment and unemployment, inactivity, wages, education, labour demand and supply, spatial disparities, migration, commuting, labour relations, together with some international comparisons. Data series are presented on wage and income differentials as well as on the territorial dimension of labour market developments at lower levels of governments and spatial units.

LABOUR MARKET IN HUNGARY

BY TERÉZ LAKY

INTRODUCTION*

Despite its growing integration into the global economy, in 2000 the Hungarian economy has not yet felt the effects of decelerating global growth. The economy indeed showed dynamic development. The Hungarian gross national product increased by 5.2 percent, which exceeded the growth rates of many developed countries, implying gradual recovery from the substantial decline and losses incurred at the beginning of the decade, at the time of the collapse of the COMECON market. Gross earnings increased somewhat faster than inflation, by 13.5 percent, and the monthly average earnings of those employed in companies with 5 or more employees and in public companies – representing the large majority of earners – was HUF 87,645 on average (HUF 61,930 for blue collar and HUF 121,779 for white collar workers) in 2000. However, with inflation being just below 10 percent, real earnings increased by 1.5 percent only, that is, at a slower pace than in any of the preceding three years.

Despite healthy growth in the economy total employment showed little improvement in 2000. Although the unemployment rate declined, the share of the economically inactive, that is, those not in employment, not looking for a job nor registered as unemployed, remained very high. In European comparison, despite the growth of total employment by some 37 thousand and the decline in registered unemployment by some 19 thousand, the Hungarian labour market is still closer to the less developed countries of the European Union.

In what follows, we shall review two aspects of the Hungarian labour market in 2000: a) domestic trends and b) adjustment to international trends, with special regard to those within the European Union.

As in many other countries, there are two systems of labour force accounting in Hungary: one based on national legislation and another one conforming to requirements of international comparison.[1] We shall assess the labour market situation by both measures, focusing on demographic and economic conditions in 1999 and 2000, and, wherever possible, compare data to long-term trends. Though important, we shall only make a

* At the time when writing this chapter comprehensive data were available up to year 2000.

1 National regulations are essentially acts and legal regulations passed by Parliament reflecting the traditions and prevailing norms of a country. These cover many factors: the definition of working age in the given country (as well as the conditions offered by the pension system); rules codified by labour law (such as daily, weekly, and annual hours of working); employee benefits (ranging from a leave to look after children to rules of giving notice). The factors that are commonly considered in international comparisons tend to be those that are applicable to most of the national regulations. To date, it is the recommendations of the International Labour Organisation (ILO), based on the (so-called tripartite) agreement of employers, employees and governments, that represent the common standards which the community of nations accept and use for international comparisons all over the world.

passing reference to some recent organisational and legislative changes which are expected to have a marked influence on the labour market over the coming years (such as changes in the management of employment policy taking effect from mid-2000; the transfer of employment policy development and decision-making competencies concerning the allocation of the Unemployment Insurance Fund from the Ministry of Social and Family Affairs to the Ministry of Economic Affairs; and new regulations coming into force with the amendment of the Employment Act, with special regard to the reduction of the entitlement period of the Unemployment Insurance Benefit and the abolition of the means-tested Unemployment Assistance), as these are discussed and assessed in detail later in the present volume. Other measures introduced in 2001 and 2002 (e.g., the government initiated spectacular rise of the minimum wage or the reform of government structures) related to the labour market remain out of the scope of this review.

1. LABOUR FORCE PARTICIPATION – A EUROPEAN COMPARISON

In developed countries all over the world, raising participation and restoring full employment has become a prime political, social and economic objective. On 1 January 2000, the total population in Hungary approached ten million, out of which 6.2 million were of working age – some 90 thousand more than one year earlier. The working age population continued to increase during the year by 60 thousand (according to the CSO Labour Account) and reached 6,267 thousand (annual average based on the CSO Labour Force Survey). The increase was due, in addition to demographic developments, to successive increases in the retirement age started in 1997, as a result of which women aged 57 and men aged 61 remained in the working-age category in 2000. (Despite the recent extensions, current Hungarian working-age limits – 61 for men and 57 for women – are still low compared to those in Europe, where the upper age limit is generally 64 years for both men and women. International comparisons are based on the 15–64 year age group, irrespective of national regulations.)[2]

It is commonly observed that, with few exceptions, participation rates tend to be higher in richer and more developed economies. This is what high levels of employment suggest in the US (74 percent) and in most EU member states as well, as in Denmark (76 percent), in the Netherlands, in Sweden and in the United Kingdom (above 70 percent) and in Austria (near 70 percent). (One exception is Portugal, which, though not one of the richest countries, still boasts a level of employment on a par with Austria.) The other extreme is represented by the less developed countries of the European Union, where the level of total employment barely exceeds

2 The ILO recommendation is that 74 should be the upper limit, because in many countries of the world, as a result of the increase in life expectancy, a significant proportion of the population would like to work after reaching pension age. Therefore, labour force surveys (LFS) carried out for the purpose of international comparison by uniform principles and methods in all countries, consider as potential labour supply the population aged 15–74. The CSO Labour Force Survey conforms to these principles in every respect. Data pertaining to the 15–64 year-old are derived from this larger population. In Hungary, in 2000, the population aged 15–74 numbered almost 7.8 million (7,785.9 thousand); however, only 23.4 thousand among those aged over 64 were employed.

50 percent of the working age population: as in Greece (56.6 percent), in Italy (53.5 percent) and in Spain (55.0 percent). In 2000, on average, 63.3 percent of people aged 15–64 were in work in the European Union. In Hungary, according to the CSO Labour Force Survey, 56.4 percent of those aged 15–64, a total of 3.85 million men and women, were earners in 2000. Using the Hungarian definition of working age would produce the somewhat better figure of 60.5 percent, but that is still is below the EU average.

The economically active population includes both those employed and also job seekers. Unemployment continued to decline in Hungary on both national and international measures. Though there is a sizeable gap (of almost 130 thousand) between unemployment figures counted in the national register of the unemployed (390.5 thousand) and in the LFS (262.5 thousand),[3] the two systems of accounting show a decline in unemployment of similar magnitude for 2000 (with registered unemployment approaching 19 thousand, and LFS unemployment around 22.2 thousand).

The 6.4 percent unemployment rate calculated on the basis of LFS data is lower than the 8.2 percent average of the EU member states. (However, the rate was lower than 6 percent in eight of the fifteen EU member states – all of which recorded a decline in unemployment – while it remained above 10 percent in three.)

Already in 1999, the EU concluded that in low unemployment countries, the increasingly shorter period of job search could be accounted for by transitions between jobs. In Hungary, similar developments are observed in certain regions, and in certain occupations and skill groups, but in 2000 a significant proportion of the unemployed (44 percent) had been out of work for more than twelve months.

Workers and job-seekers (that is, the labour force) represented 64.6 percent of the working-age population as defined by current Hungarian regulations and 60.2 percent of the population aged 15–64. This in itself is indicative of the lamentably low participation rate of the Hungarian adult population, which could not be raised significantly in spite of the general improvement of the past few years. Consequently, the proportion of those out of work and not actively seeking work, that is, of the economically inactive, has remained high. More than one in three (35 percent) of those below the Hungarian retirement age were out of the labour market in 2000. Inactivity is higher among women: more than 40 percent of those aged 15–57, that is, one in three or one in four women, decided to, or was compelled to, be out of work and to relinquish their job search.

The absence of around three in four of the economically inactive (1.7 million men and women) can be explained by demographic or social phenomena, such as schooling, child-care, illness, disability, or retirement. More than half a million people, however, are out of the labour force due to

3 However, the Labour Force Survey also reports a total of more than a 100 thousand (107 thousand in 2000) discouraged workers, who are willing to work but are not actively looking for a job.

personal reasons, or other reasons related to their families or to labour market conditions, and have no (visible) source of income.

The economic activity of the population has shown significant regional variation throughout the decade but, as indicated by research monitoring the changes, the initial differences between the groups of developed, less-developed and backward regions, have slowly decreased.[4]

The group of developed regions (including Central Hungary, Central Transdanubia and Western Transdanubia) is characterised by above average total employment; over 66 percent of the working-age population are employed, and the unemployment rate is below 5 percent. In the group of less-developed regions (Southern Transdanubia, Southern Great Plain), total employment exceeds 60 percent and the unemployment rate is below 8 percent. In backward regions (Northern Hungary, Northern Great Plain), total employment falls below 60 percent, and in Northern Hungary, the unemployment rate still exceeds 10 percent.

According to LFS statistics, regional variations, despite the declining trend, have not changed significantly in the past two years: the ratio of the highest and lowest unemployment rates was 2.6 in 1999, and 2.4 in 2000.

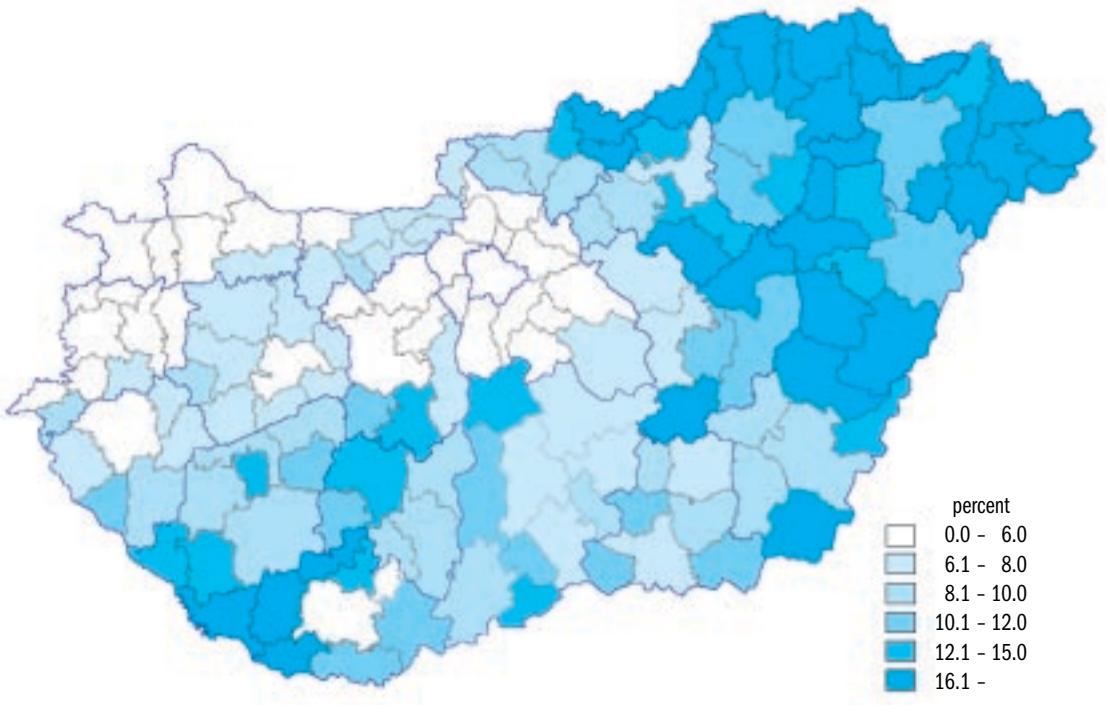
The above cited regional data conceal significant differences at the level of smaller, closed, and segmented local labour markets. Data from the register of small-regions and settlements administered by the National Centre for Labour Research and Methodology (now called National Employment Office, NEO), show significant variations in unemployment rates within large regions (Figure 1.). Moreover, differences in the unemployment rates across small regions have steadily increased in recent years. As can be seen in Figure 2., this was due first and foremost to the steady deterioration of the relative position of small regions characterised by high unemployment. Regions initially in a better position tended to retain their relative advantage, while those that started as crisis zones in the early 1990s, have mostly remained among the most deprived.

Regional disadvantages tend to accumulate. Above-average unemployment rates are usually concurrent with relatively high inactivity rates, indicative of the fact that the lack of work opportunities is often conducive to an increase in inactivity. In disadvantaged regions, the composition of the unemployed pool tends to be unfavourable: the proportions of those with primary education, of the long-term unemployed, and hence, of those receiving Unemployment Assistance or regular income support are all higher than the national average (see Tables 1. and 2.).

Isolated small regions characterised by poor labour market conditions tend to lie outside the main investment and development areas (which offer high quality infrastructure and skilled labour, etc.); investors are reluctant to move to remote and underdeveloped regions. And although many

4 See Károly Fazekas: Regional Differences of the Labour Market. In: *Labour Market Report, 2000, Main Trends in Labour Demand and Supply*. National Employment Office, 2001.

FIGURE 1: REGISTERED UNEMPLOYMENT BY SMALL REGION, MARCH 2001

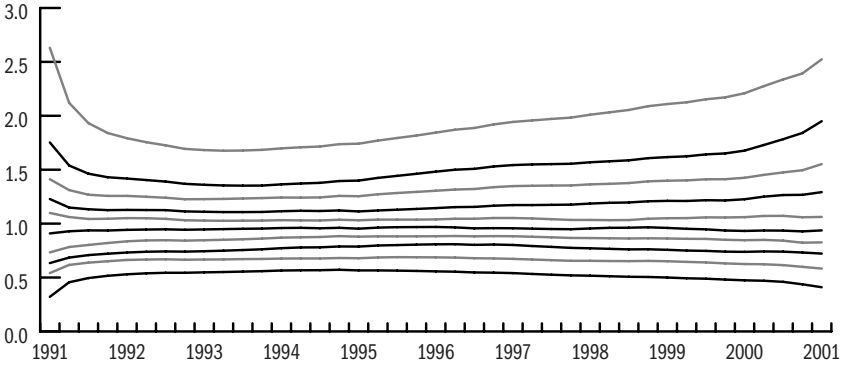


Source: Károly Fazekas: Regional Differences in the Labour Market. In: Labour Market Report, 2001, Main Trends in Labour Demand and Supply. National Employment Office, 2002.

residents in these regions are ready to commute, most of them are still restrained by the poor transport infrastructure and high transportation costs. Measures introduced to offset the disadvantages of underdeveloped settlements have not been very effective so far.

It is an increasingly pressing objective to substantially increase the level of employment and hence reduce unemployment and economic inactivity. It is in the essential interest of the individual, of society and of the economy that the largest possible number of citizens be able to work, and earn an income. This objective coincides with the joint effort of EU member states to raise the EU average of labour force participation to 70 percent by 2010. In order to do so, however, most member states will have to make a serious effort and, working in co-operation with social partners, prepare measures in legislation, taxation, social security contributions, and education in order to encourage job creation and help people to return to work. Similar measures are needed in Hungary, too.

FIGURE 2: CHANGE IN THE REGIONAL VARIATION OF REGISTERED UNEMPLOYMENT BY CSO SMALL REGION, 1991–2001



Note: The average unemployment rate for each unemployment decile divided by the median.

Source: Károly Fazekas: Regional Differences in the Labour Market. In: Labour Market Report, 2000, Main Trends in Labour Demand and Supply. National Employment Office, 2001.

TABLE 1: THE PROPORTION OF THE REGISTERED UNEMPLOYED IN THE WORKING-AGE POPULATION, BY SETTLEMENT TYPE AND SIZE, 1999

	Average	Number of Settlements	Standard Deviation	Minimum	Maximum	Range
Type of settlement						
Capital	2.5	1	0	2.5	2.5	0.0
City with county status	7.7	22	4.52	1.8	20.9	19.1
City	11.2	199	6.77	1.1	33.9	32.8
Village	14.8	2,909	11.30	0.0	79.8	79.8
Size of settlements according to their population in 1999						
-500	17.2	1,032	13.17	0.0	77.5	77.5
501-2,000	14.4	1,337	10.47	1.0	79.8	78.8
2,001-5,000	11.8	483	7.97	0.9	51.0	50.1
5,001-50,000	10.7	253	7.05	0.9	38.7	37.8
50,000+	6.7	21	3.50	1.8	16.6	14.8
Total	14.6	3,126	11.09	0.0	79.8	79.8

Source: HAS-IE Regional Database.

Table 2: Characteristics of the Registered Unemployed by Unemployment Quartile, December 2000 (percent)

Quartiles	Max. 8 completed class in elementary school	Registered unemployed more than 180 days	Unemployment assistance	Regular income support
Bottom	36.4	43.6	15.8	3.5
Second	38.7	45.0	21.1	6.3
Third	44.8	50.4	27.1	8.0
Top	50.5	55.6	35.9	14.6

Source: HAS-IE Regional Database

Table 3: Main Labour Market Indicators in Hungary and in the EU, 2000

	Employment ratio	Unemployment rate	Activity rate	Inactivity ratio[a]
EU average	63.3	8.2	69.0	31.0
Hungary:				
– According to the national regulation[b]	60.5	9.3	64.6	35.4
– According to the ILO initiative[c]	56.4	6.4	60.2	39.8

a Population aged 15–64; calculation based on Employment in Europe,
b Employment: men aged 15–61 and women aged 15–57; unemployed: 390.5 thousand, rate calculated on the basis of the data from the National Employment Office.
c Population aged 15–64, annual average.
Source: EU: Employment in Europe 2000; Hungary: LFS, Time Series, 1992–2000, CSO, 2001; Employment and Earnings Proportions, 1998–2000, CSO 2001; Time Series of the Unemployment Register, 1995–2000, National Employment Office, 2001.

2. MAIN LABOUR MARKET TRENDS, 1999–2000

Economic and labour market processes have brought some significant changes in the Hungarian labour market in 2000. The following survey of major trends in employment, unemployment and inactivity is based primarily on data from the CSO Labour Force Survey.

2.1 Total Employment

As mentioned already, total employment continued to increase in 2000, but slower than expected. The level of employment at 3,849.1 thousand representing an increase by 37,6 thousand from 1999, is nevertheless still far below the 5 million (5,084.1 thousand according to the Labour Account) recorded ten years earlier. Total employment had declined until 1997 when it reached a 3,646.3 thousand low (LFS).

Employment growth calculated by the Labour Force Survey includes those employed through public employment schemes and those meeting genuine demand for labour. On annual average, a total of 83 thousand persons in 1999, and nearly 92 thousand in 2000 were employed in public works or subsidised employment schemes (e.g. public works or subsidised employment). The number of workers benefiting from some form of subsidised employment during the year exceeded 200 thousand.

Seeking to encourage job creation in the economy, the government granted investment subsidies in return for hiring from the unemployment register in 2000, paid from the unemployment insurance fund (Labour Market Fund), but the effects of these investments on job creation will take some time to materialise. During the year 2000, some 3000 new jobs were created with the help of subsidies granted in the preceding years.

The increase of employment of 200 thousand over three years since 1998 tended to favour women: female employment grew by 123.9 thousand, while male employment expanded by a modest 78.9 thousand. Men nevertheless still represent the majority of the employed: 55 percent of the workforce are men. Moreover, almost two in three (63.3 percent) among the 3 million men aged 15–64 were in employment compared to one in two (49.7 percent) among the 3.5 million women aged 15–64, in part due to the lower female retirement age. The same factor explains why the gender gap in employment is smaller (65.3 percent versus 55.4 percent) when using the Hungarian definition (with lower retirement age limits) of working age.

Whether considering the higher or lower upper limit of working age, as in most European countries, participation was highest among prime age workers, that is, among those aged 25–54. The level of employment was 69.7 percent for the 25–29 year-old, 75.4 percent for the 30–39 year-old, and 72.7 percent for the 40–54 year-old, and it was over 80 percent for among men aged 25–39 and 75 percent for men aged 40–59. This amounts to nearly full employment of men in the above age groups. [These apparently high rates are nevertheless still relatively low in European comparison. In the member states of the European Union, at least 84.7 percent (Italy), and in several countries over 90 percent (Luxembourg, the Netherlands and Austria) of the male population in corresponding age groups are employed.] But, above the age of 55, men and women alike seem to disappear from the world of work: in the 55–64 age group, only 33 percent of men and just over 10 percent of women had a job. The employment opportunities have always been scarcer for young people, and the year 2000 brought no improvement, even though the 15–24 cohort has become slightly smaller. Less than 10 percent of those aged 15–19 were in employment (80 percent were still in school) and just over 50 percent of those aged 20–24

were working (with a much lower proportion in full time education). There are significant resources of labour in both the young and the old generations.

There is little to be known as yet about changes in the effect of education on employment. However, some available data appear to lend support to the common argument that education improves chances of employment. First is the steady growth in the number and proportion of white collar workers, and especially of highly qualified workers among the employed, and the corresponding contraction of the manual (unskilled) workforce. This is in fact a long-term trend which continued in 2000. The second proof lies in the comparison of the educational composition of those employed and unemployed. The proportion of those who completed eight years or less in primary education is below 20 percent among the employed, and exceeds 30 percent among the unemployed, while the proportion of skilled workers is by and large identical in the two groups. The difference is largest in the proportion of college and university graduates, which is almost 20 percent among the employed and only 4 percent among the unemployed.[5]

It is worth noting in connection with employed population that the Labour Force Survey recorded 71.3 thousand persons having a second job (in 1999, the corresponding number was 65 thousand). They represented a modest proportion (below 2 percent) of total employment. Two in three among them were men. Only 9 thousand (13 percent) among second job holders worked in agriculture, 12.5 thousand in manufacturing and construction and all others worked in repairs, education (!) and trade – unsurprisingly, since one in two second job holders are registered small entrepreneurs.

According to popular belief, there are several hundred thousand unrecorded workers beside those covered by the LFS. These people are typically recorded as economically inactive, and are principally working in agriculture. Pensioners cultivating family farms, smaller or bigger plots of land, petty farmers and those selling the (occasionally modest) surplus do not appear in employment statistics, even though they may be engaged in farming at least 90 days in a year – as was found by a CSO micro census in 1996 in the case of 355 thousand persons otherwise recorded as inactive. There are several others among the economically inactive who take on casual or regular jobs (students in or outside school co-operatives, young people who are no longer in school but still living at home as dependent members of the household, housewives looking after their children, or ailing members of the family, etc.). Most of these would be employed by the ILO definition: they performed some work for at least one hour for profit or family gain, in cash or in kind. Such work, however, can only be recorded if those

5 A true comparison would have to take into account the inactive as well, especially in the case of those of working age as defined in Hungary. Presumably, inadequate qualifications are the reason why many do not even attempt to look for a job.

concerned could be absolutely certain that they could continue their activity without paying taxes.

2.2 Sectors and Branches

The sectoral composition of employment continued to change in 2000. Agriculture, which had accounted for the largest part of employment until the middle of the 20th century (employing one in two earners even in 1949), now employs an increasingly smaller number of (full-time) workers. In 1999, 7.1 percent of earners and in 2000 only 6.5 percent worked in the organised (recorded and taxed) agricultural sector. The drop in the share of agriculture in total employment and the increase in the proportion of those employed first in industry and then in services is commonly used as a basic indicator of the modernisation of the economy. One should mention that the above cited share of agricultural workers is relatively high in European comparison.

Employment in agriculture, forestry and fishing decreased by a total of 19 thousand, and by 14 thousand for men. Only about one in two jobs in agriculture are strictly connected to farming or forestry. About 33 percent of the decrease in employment concerned such jobs, and the rest affected other occupations (managers, office clerks, machine operators, drivers, and unskilled staff). (The number of jobs strictly connected to agriculture and forestry was in the range of 130 thousand in the course of the decade.)

As in previous years, officially recorded average earnings in agriculture were among the lowest in 2000 (monthly earnings came to HUF 59,246 for all employees, HUF 50,256 for blue collar and HUF 92,018 for white collar workers), though there were lower earnings recorded in several occupations (both manual and non-manual) in other branches of the economy, principally in services.

The future employment capacity of agriculture and its demand for main job holders, depends on the pace of subsequent development (e.g., the size of agricultural investments, the respective shares of extensive production and of special plants and animal husbandry, the size structure of farms, the division of labour between large and small firms, etc.). The modernisation of agricultural enterprises leads to a steady decline in the demand for manual labour – thus the pace of modernisation will determine future levels of employment in agriculture. (At the same time, smallholder farming will continue to provide a modest but essential supplement to the subsistence of hundreds of thousands, mainly inactive families – a phenomenon typical in poorer countries.)

The share of industry and construction in total employment came to 33.8 percent, or almost 1.3 million in 2000, about 2 thousand more than

in the preceding year. The distribution of employment across industrial branches changed considerably during the year. The scheduled dismantling of coal-mining, which started several years ago, was by and large completed in 2000. The mines of the Borsod area were closed down in 1999 and 2000, and thousands of miners lost their jobs. The future of the mines supplying power plants has not been decided, but downsizing continues. (Technological investments following privatisation led to job cuts of around 30 thousand in electricity, gas and water supply.)

In the eight main manufacturing branches, which include a wide range of industrial activity, the shocks experienced at the beginning of the decade are now replaced by slow but persistent shifts.

Mainly as a result of foreign capital inflows,[6] the Hungarian industry, too, is increasingly subject to constant renewal and modernisation, i.e. the gradual upgrading of inputs, technology and products. The most modern branches (manufacture of motor vehicles, computing machinery, or microelectronics components) are expanding in Hungary as well; while once important branches (such as textiles or food processing) have tended to contract. The transformation, implying many advantages and no doubt short-term disadvantages as well, affects various branches to a different extent depending, among others, on prevailing economic trends. In 2000, employment dropped in four of the eight manufacturing branches (food products and beverages, textiles, wood and basic metals) from 1999 levels by a total of 15.1 thousand, while it increased in the other four branches (chemicals, non-metallic mineral products, machinery and equipment, and manufacturing) by 17.5 thousand. That is, total employment in manufacturing remained by and large unchanged, despite significant increases in some branches and significant, at firm level often grave, losses in others. Within industrial branches, net job creation was largest in construction, employing nearly 15 thousand more than one year earlier.

At the level of broad sectors, the earnings of industrial workers were the highest, exceeding the average of the national economy, and they also increased somewhat faster (by 15 percent) than average during the year. Average wages came to HUF 91,108 for employees, HUF 71,728 for blue collar workers, and HUF 159,913 for white collar workers. Earnings were highest in the chemical industry (HUF 128,787, with HUF 91,347 for blue collar, and HUF 205,479 for white collar workers) and lowest in textiles, leather, and footwear (HUF 53,450 with HUF 47,097 for blue collar, and HUF 102,779 for white collar workers).

The ranking by earnings of branches remained essentially unchanged. Branch-level averages, however, conceal some important persistent features such as the significant earnings gap between small and large organisations. According to CSO calculations, in 2000, wages paid by firms employing

6 In contrast with the frequent assumption, foreign capital investments have a relatively modest share in total employment. In 1999 (the latest data available to us), foreign-owned companies employed a total of 584 thousand workers, corresponding to 15 percent of the total workforce. They have a much larger share though in manufacturing, where 63 percent of all earners were employed by foreign-owned companies. (Foreign direct investment in Hungary, 1998–1999., CSO, 2001.)

more than 1,000 workers were 2.3 times higher than wages in organisations that employ 5–9 workers. Within that framework, as shown by the papers published in Labour Market Report 2000, companies in majority foreign ownership for diverse reasons pay higher wages, than Hungarian-owned firms. This distribution persists despite the fact that in some branches job cuts occurred in large companies which tend to react to declining orders and negative economic trends by cutting the workforce rather than wages. (There have been layoffs for example in electricity, gas, and water supply, where earnings are the second highest within industry, coming after the chemical industry.)

Employment increased definitively in services, by 54 thousand, to approximate 2.3 million. It dropped by a total of almost 10 thousand in two of the nine broad services branches that cover a wide range of activities, and increased by a total of 64 thousand in the other seven branches. A decline by nearly 3 thousand in national defence, grouped within public administration, is a consequence of the restructuring of the armed forces. The country's accession to NATO induced changes in the size and organisation of the armed forces: some 15 thousand were to leave army ranks by June 2001. Employment also declined in other community, social, and personal services, which include, as indicated by the heading, a variety of services from sports clubs to hairdressers. Since the number of sole proprietors and limited partnerships, who are typically active in these branches, *increased* compared to 1999, the decline in employment in this branch may indicate a shift in activities.

Employment increased significantly in three services branches.[7] The first is the wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods. The second is real estate and business services (e.g. accounting, business consultancy, and advertising). These two branches accounted for 44 thousand out of the total increase of 54 thousand in employment in services.

Although both branches include large organisations, these activities are typically operated by sole proprietors and small enterprises. The bulk of services that require vocational skills and a minimal amount of capital are concentrated in these two branches, which account for almost 70 percent of the 650 thousand enterprises active in services – typically sole proprietors and limited partnerships. Presumably, the large majority of new sole proprietors (1000 as a first job and 10,000 thousand as pensioners) registered in 2000 also started up activities belonging in these two branches.

Beside these two branches, employment in education also increased significantly (by over ten thousand), while the other branches recorded modest growth.

7 The abbreviations used for the long description of activities grouped together in the standard international classification of activities are often misleading. For example, activities grouped into trade and real estate, include many other activities not implied by this abbreviation, but more important from the point of view of employment. Therefore, we shall use the more detailed names here.

Table 4: Level and Share of Employment by Activity, 1999–2000

Branches	1999		2000		Change
	1000 persons	percent	1000 persons	percent	1000 persons
A–B Agriculture	270.4	7.1	251.7	6.5	–18.7
Industry – construction	1,296.1	34.0	1,298.4	33.8	+2.3
C – Mining and quarrying	24.4	0.6	19.2	0.5	–5.2
D – Manufacturing	928.9	24.4	931.3	24.2	+2.4
E – Electricity, gas, steam	89.8	2.4	80.1	2.1	–9.7
F – Construction	253.0	6.6	267.8	7.0	+14.8
Services	2,245.0	58.9	2,299.0	59.7	+54.0
G – Trade and repairing	517.5	13.6	540.9	14.1	+23.4
H – Hotels, restaurant	133.2	3.5	133.3	3.5	+0.1
I – Transport, storage	308.3	8.1	311.8	8.1	+3.5
J – Financial intermediation	80.9	2.1	83.7	2.2	+2.8
K – Real estate, renting	183.9	4.8	204.6	5.3	+20.7
L – Public administration, Defence	301.9	7.9	299.0	7.8	–2.9
M – Education	306.9	8.1	317.8	8.3	+10.9
N – Health and social work	239.2	6.3	241.7	6.3	+2.5
O–Q Other services	173.2	4.5	166.2	4.3	–7.0
Total:	3,811.5	100.0	3,849.1	100.0	

Source: Employment and Earnings, 1989–2000. CSO, 2001.

Earnings differ greatly across service branches, reflecting the diversity of activities grouped into services. One source of variation is ownership structure: in the three major services branches (employing almost 40 percent of those working in the tertiary sector), the bulk of activities is operated by public organisations. Except for public administration, where earnings are slightly above the national average, the level of earnings is among the lowest in both manual and non-manual jobs in education and health care. Although earnings in health and social work increased somewhat faster than average in 2000, the disadvantage accumulated over several decades was not significantly reduced. Earnings in the business sector are closer to competitive wage levels despite the predominance of public ownership in some activities, such as transport, storage, and communications.

The predominance of large organisations in some branches and of smaller ones in others is a branch-specific feature. The average firm size is small in real estate, renting and business activities and also in trade and repairs and in hotels and restaurants (the latter reporting the lowest earnings for blue

collar workers) which may partly explain why earnings fall well below the average in these branches. (Moreover, firms that employ fewer than 5 workers, and many of which operate in these branches, are not obliged to report on earnings to the CSO.) In services, and also in the economy overall, financial intermediation (including banking) comes at the top of the earnings distribution, with an average monthly net pay of HUF 189,444 (with HUF 80,054 for blue collar, and HUF 192,129 for white collar workers and professionals).

As for the level of employment in services, it is worth noting that the demand for services increases in proportion with prosperity, i.e. with changes in consumer tastes and increasing public expenditure on public goods (such as education, health care, environmental protection and defence). New services jobs are created in response to growth and changes in demand. In the most developed countries, more than 70 percent of earners are employed in the service sector. The corresponding figure in Hungary is 60 percent, but the level of employment in services in 2000 was still some 200 thousand below the level which existed at the beginning of the 1990s.

To sum up the recent changes: net job creation came to a total of 37 thousand amidst marked structural changes in the economy. Jobs cuts (of 43.5 thousand in total) affected several branches, but were balanced by job creation (of 81.1 thousand in total) in other branches, mostly in services.

3. UNEMPLOYMENT

Despite its strong performance in 2000, the economy, as mentioned already, could not fully absorb slack labour. In 1998–2000, parallel with the growth of employment by 200 thousand, despite a 79.6 thousand drop in registered unemployment and the 86.3 thousand drop recorded by the LFS, registered unemployment still amounted to 390.5 thousand, and ILO unemployment came to 262.5 thousand (excluding more than 100 thousand discouraged workers, who would like to work but make no job search effort). Annual averages apparently conceal substantial flows between employment and unemployment.

According to data collected by the public employment service, which cover working age individuals (of the Hungarian definition) who had been previously employed or are school-leavers and have claimed some form of unemployment benefit, a total of nearly 650 thousand, and a monthly average of 54 thousand, entered registered unemployment (c.f. a total of 686.6 thousand, and a monthly 57.2 thousand in 1999). The persistently high, though declining, inflow into unemployment may appear less worrying in the light of the fact that 70–80 percent of the inflow are not newly unemployed, but had already been on the register some time in the preceding

twelve months. However, the majority of these individuals are in fact long-term unemployed, whose registered status was suspended for a few days or months to work, usually in subsidised jobs.

In the course of the year, some 150 thousand (a monthly average of 12.5 thousand) persons entered registered unemployment, somewhat less than one year earlier (153.8 thousand). (As is well-known, not all those losing their job register with the employment services, as some workers do hope to receive assistance in their placement or living expenses for the period of job-search.) The proportion of men was higher than that of women among the newly registered unemployed (53.7 percent and 46.3 percent, respectively).

Despite their considerable efforts, the public employment service can offer employment mostly in subsidised jobs (public works, subsidised fixed-term employment for young persons, etc.). Although some employers (a growing proportion, currently some 40 percent, of firms reporting vacancies) look to hire workers through the public employment service as well (especially multinational companies launching new investments, who may want to hire dozens, or occasionally hundreds of workers), but such requests are not very frequent. More often, employers report vacancies to the public employment service in shortage vocations, in jobs characterised by poor working conditions and low pay, or sometimes if they could not find a suitable candidate through other channels. There is no guarantee that such demands can be met by the available unemployed pool; the same applies to labour shortages in certain regions or occupations.[8]

Under the given circumstances, relatively few of the registered unemployed can find a job with the assistance of the public employment service. It must be noted though that the public employment service has no reliable information on placements other than in subsidised jobs. Accordingly, in 2000, 91.5 thousand, or 1.9 percent of the registered unemployed, were placed in subsidised or unsubsidised jobs (c.f. 83.2 thousand, or 2 percent in 1999.) Participants of training courses of different lengths (in 2000 amounting to a total of 88 thousand and on average 26.3 thousand at any time during the year) are also temporarily taken off the unemployment register. (The number of those on training schemes was somewhat higher, while the average duration of courses was somewhat shorter than in 1999.) Each month a few thousand persons are transferred to other forms of welfare provision (e.g. child-care allowance or pension). The large majority, however, remain registered unemployed, at least for the period of receiving Unemployment Benefit or, once exhausting benefit entitlement, the means-tested Unemployment Assistance.

8. In the biannual short-term prognosis prepared by the National Labour Centre (currently NEO) based on the expectations of company executives, several companies indicated labour shortages as the reason for the under-utilisation of production capacities in the second half of 2000.

In 2000, 33.7 percent of the registered unemployed received Unemployment Benefit of HUF 22,826 per month on average and 36.8 percent received Unemployment Assistance (a monthly HUF 13,280 Ft on average). Recipients of regular income support, which replaced unemployment assistant from 1 May 2000, numbered a total of 32.7 thousand persons by the end of the year, and were granted a monthly HUF 11,620 on average.

The shortened period of eligibility to Unemployment Benefit and the abolition of the Unemployment Assistance is likely to accelerate the decrease in the number of the registered unemployed. In practice, those who had little trust in the efficiency of placement services provided by the public employment service, discontinued registration following the exhaustion of eligibility for benefits. During the year, 210 thousand individuals (a monthly 17.5 thousand on average) left the register; 32.1 thousand more than the new entrants. On average, the 54.1 thousand monthly inflow was opposed to a total monthly outflow of 56.8 thousand (c.f. the positive net monthly inflow of 34 persons in 1999). The pool of the long-term unemployed, some of whom had been out of work for several years, still remains very large, though their unemployed status may be occasionally interrupted by short spells of employment in public works or other temporary jobs.

In 2000, there were three schemes targeted at the long term unemployed, financed by the Unemployment Insurance Fund (Labour Market Fund) and/or the central budget: traditional public works under local governments, or on government projects (such as flood prevention), and mandatory public employment of at least 30 days for those receiving regular income support (replacing the means tested Unemployment Assistance). The above, variously defined and funded, three schemes provided temporary employment to large numbers. (In 2000, over 93 thousand were employed on public works, though on some occasions, for a few days only. An average of 23.7 thousand were on public works at any one time during the year. Local councils responsible for the management of these schemes usually merge them in order to improve efficiency.) The casual workers scheme represents another opportunity for short term employment, whereby the registered unemployed can suspend benefit entitlement and work for private employers in temporary jobs, recording the dates of employment in a booklet issued by the public employment service. This scheme however has not been very popular, despite several reforms to ease the conditions of application over the years (some 9 thousand used it in 1999 and 12 thousand in 2000).

The majority of the long-term unemployed are men and women subject to some disadvantage (poorly qualified, too young or too old to be employable, sick or caring for a sick relative, residing in a small village far away from urban centres, belonging to the Roma minority, etc.). They also tend

to be over-represented in the economically deprived regions of the country, in villages and small settlements with less than 500 inhabitants, that are characterised by permanently high rates of unemployment.

The real problem with the registered unemployed today is not so much the rate of unemployment (although that, too, is still high), but the high proportion of the long-term unemployed. Local communities and government organisations will need to find further, and more effective ways to help the most disadvantaged groups. The unemployment figures indicated by the CSO Labour Force Survey are somewhat different, but the overall picture is the same. The definition of unemployment used for international comparisons covers individuals out of work, but – and this is the main criterion – actively looking for work, irrespective of national retirement age limits and previous employment. Those counted among the unemployed in the LFS may or may not be registered unemployed.

On the one hand, those registered unemployed who rely exclusively on placement services of the public employment service are not considered to meet the job search criterion. (At best, they may be included among discouraged workers, separately reported, who want to work but are not looking for a job actively.) On the other hand, persons with no previous employment experience and those past retirement age may be regarded as unemployed. Using this definition, unemployment reached 284.7 thousand in 1999, and 262.5 thousand in 2000. According to the survey introduced in 1992, unemployment stood at 444.2 thousand in 1992, increased until 1993 (to 518.9 thousand); and has gradually declined from then on.

The proportion of men among the unemployed has been essentially stable at 60 percent since 1992. In the age group of the youngest, those aged 15–19, there are relatively few active job seekers; and there are even fewer among those aged 55 or above, the great majority of whom have given up hope of finding a job. 38 thousand among the unemployed (14.5 percent) have never worked; 20 thousand (7.3 percent) have been out of work for over 8 years. The majority (56 percent) lost their jobs or started their job search within the preceding twelve months. The rest are long-term unemployed; 60 thousand (23 percent) have been looking for a job for 1–2 years, another 23 thousand for three years, and almost 29 thousand for more than 3 years.

The majority of the unemployed pool in 2000, lost their jobs due to plant liquidation or reorganisation, or due to job cuts. This was the reason in the case of 52 percent of those who lost their job within twelve months. Those with a previous employment experience were employed in manufacturing (30.5 percent), trade and repairs (14 percent) or construction (10.7 percent), that is, in the course of the years, these three branches of the economy released 55 percent of those looking for a job in 2000. Job-seek-

ers include a relatively high proportion (16 percent) of school-leavers, and persons intending to re-enter the labour market after compulsory military service or maternity leave. The large majority (83 percent) of those with a previous employment experience are blue-collar workers, with 34 percent skilled, 28 percent semi-skilled, and 28 percent unskilled. Of the 17 percent of white collar workers, 5 percent were in office and administrative jobs. Despite the growing demand for highly qualified labour, 23 thousand (12 percent) had been employed in jobs requiring higher qualifications or in executive positions; with the share of long term and recent unemployed among them being more or less the same.

The 262.5 thousand unemployed made genuine efforts to job search: they monitored advertisements, asked for the help of relatives, friends and acquaintances, called on the public employment service (20 percent contacted private job exchange agencies as well); 65 percent visited employers personally, some 33 percent placed advertisements, and less than 2 percent relied exclusively on the public employment service. However, in the course of the year, only 1,200 indicated that, although they were still unemployed, they had been promised a job starting within 30 days. Around 54 percent of the unemployed would like to have a full-time job – the others would accept part-time employment as well (but only 4 percent looked exclusively for the latter).

In most cases, wage expectations are quite modest: average net earnings calculated on the basis of expectations are around HUF 41 thousand, with HUF 43.3 thousand for men and 37.5 thousand for women. Within that, 10 percent would be satisfied with the minimum wage in effect in 2000 (with a few hundred willing to work for as little as HUF 10,000 a month). Another 58 percent considered the HUF 40,000 minimum wage in effect from 2001 as the target figure, and the 26 percent expecting higher wages also stopped at HUF 60,000. (Let us note that in 2000 average monthly gross earnings came to HUF 61,930 for blue collar workers.)

In summary, although the two types of unemployment statistics differ in many respects, they both show that the Hungarian unemployment rate – relatively low in European comparison – did not decrease considerably in 2000. In the economy which showed a healthy performance, but was still in a state of transition and increasingly exposed to international economic trends, gross inflow into unemployment neared 150 thousand in the course of the year (149.3 thousand recorded by the public employment service and 145.7 thousand recorded in the LFS).

Table 5: Selected Unemployment Statistics

	1999		2000	
	No. of persons	percent	No. of persons	percent
Based on National Employment Office database[a]				
Number of registered unemployed	409,519		390,492	
– Male	221,155	54.1	209,710	53.7
– Female	187,969	45.9	180,782	46.3
– Under 25 year	85,400	20.9	79,091	20.3
– Manual worker	336,832	82.2	321,178	82.2
– Non-manual worker	72,687	17.8	69,314	17.8
– Received Unemployment Benefit	128,184	31.3	131,665	33.7
– Received Unemployment Assistance	159,825	39.0	143,515	36.8
– Received Regular Social Assistance			36,139[b]	
Entrants (monthly average)	57,214		4,136	
– New entrants	12,813		12,445	
Leavers (monthly average)	57,179		56,811	
Based on CSO Labour Force Survey[a]				
Active job seakers (1000 persons)	284.7		262.5	
– Male	170.7	60.0	159.5	60.8
– Female	114.0	40.0	103.0	39.2
– 15–24 age	78.6	27.6	70.0	26.9
– Manual workers	234.7	81.4	217.9	83.0
– Non-manual worker	53.0	18.6	44.6	17.0
– Seeking for job in the last 1–12 months	156.1	55.1	145.7	55.8
– Seeking for job more than 12 months	127.0	44.9	115.6	44.2

a Annual averages.
b November – December, 2000.

The decline in the level of unemployment in spite of the high entry rates is mostly explained by exits timed at exhausting eligibility for benefit and by the abolition of the Unemployment Assistance. (According to the public employment service this is the cause of 70–80 percent of the monthly outflow from registered unemployed. The LFS reports of the level of unemployment but not of entries or exits between labour market states.) Presumably, a (small) fraction of those leaving unemployment may have returned to work, especially those who with a short unemployment spell.

The expansion in total employment however is more likely to have favoured formerly inactive persons returning to the labour market.

4. ECONOMIC INACTIVITY

The goal of raising the level of employment highlights the importance of inactivity, i.e. the potential labour supply of individuals not in employment and not actively looking for work. In Hungary, despite the modest though steady growth of employment and the steady decline in unemployment, the low level of participation proved slow to increase, which places a severe burden on individuals, families and society alike: 35.4 percent of the working-age population was inactive in 2000. (In international comparison, the situation is, of course, even worse: almost 40 percent of those aged 15–64 are inactive.)

In the course of the last decade, in parallel with the deteriorating state of the economy, the number of those leaving the labour market voluntarily or under some constraint has increased. (In the years when unemployment was at its highest, this tendency was encouraged by early retirement schemes.) Although the improvement of the economic situation halted the increase in inactivity, it has not succeeded in reversing the process: beside the 700 thousand persons in education, more than 1.5 million working-age men and women were inactive in 2000. There was little change compared to 1999: the inactive pool decreased by some 51 thousand among those aged 15–19 or 40–59, and it increased by around 15 thousand among the 20–39 year group; that is, the number of the inactive dropped and that of the employed increased by approximately the same number.

The inactivity rate, calculated as the inverse of the participation rate (employed + unemployed), exhibits marked variation by age group and sex. The 15–19 year-old (mostly still in education) apart, the inactivity rate is 40 percent (slightly up from 1999) for those aged 20–24, lowest at around 20–25 percent for those aged 25–54, and as high as 65 percent for those aged 55–59 (and 95 percent of those aged over 59). The female inactivity rate is higher in every age group than the corresponding rate for men; in 2000, 29.7 percent of working age men and 41.3 percent of working-age women were inactive.

Employment, job-search and withdrawal from the labour market may be voluntary or involuntary. Inactivity may be a voluntary choice for those past the age of 15 who continue their studies or for those choosing to stay home looking after their children, and for those choosing to retire when reaching a pensionable age. This choice, however, may be dictated by necessity if the 15–16 year-old leaving school with no specific skills stays at home and does not even try to find a job, if a baby is born so that the

mother may receive a modest allowance relieving her, for some years at least, of a hopeless job search; or if pensions represent a safe alternative to unemployment. Individual choices are made by assessing individual and family circumstances as well as economic conditions and available opportunities in the locality.

Of a plethora of considerations, statistics only record a selection of typical factors, which may socially justify and explain absence from the labour market. In what follows, we shall review such reasons for inactivity in the working age population as reported in the LFS.

Table 6: Composition of the Economically Inactive Working-Age Population, 2000

	Total		Women	
	1000 persons	percent	1000 persons	percent
Economically inactive	2,216.5		1,260.7	
As a percentage of the working age population	35.4	100.0	41.3	100.0
From this:				
– Student	710.2	32.0	357.7	28.4
– On child care allowances	283.7	12.8	279.6	22.2
– On pension	714.1	32.2	329.5	26.1
– Other purposes	508.5	23.0	293.9	23.3

Source: LFS, Time Series, 1992–2000, CSO, 2001.

Students represent a significant group among those absent from the labour market. The number of youngsters staying in education after completing the eight-year elementary school is steadily increasing. Their proportion among the 15–24 year group was 27.4 percent in the school-year of 1969/70; 25.4 percent in 1979/80; it rose to 43.9 percent in 1998/99 and was 46.4 percent in 1999/2000. More than three in four among those aged 15–19 are in education, the majority staying until the age of 18. Within the age-groups concerned, a small proportion (8 percent) is inactive for other reasons. This 8 percent numbers 54 thousand and includes young women on maternity leave, school dropouts, youngsters waiting for admission into higher education or for starting compulsory military service, or waiting for a job opportunity. Since they have no income of their own, they must rely on support from their families. In the age-group of the 20–24 year-old, only 20 percent are in education; their proportion decreasing with age (only 9 percent of the 24 year-old are on full time courses.) Together with those

in education, as mentioned above, 40.7 percent of those aged 15–24 were inactive, partly for observed reasons (such as child care) and partly for other, unknown reasons.

There is no data available for other age groups to distinguish reasons for inactivity. Beside students (concentrated mostly in the age groups of 19–24), the second large group among the inactive, already larger than that of students, is that of those pensioned off for diverse reasons. Retirement due to disability or accident may occur in practically any age group. Workers in some occupations subject to a reduced retirement age may retire earlier. In the course of the past decade, until 1998 essentially, some 40–45 thousand were pensioned off prior to reaching retirement age as part of a government initiative to curb unemployment. (Since the gradual tightening of eligibility rules and the introduction of pre-pension unemployment benefits, individuals aged 3 years below the retirement age are more likely to be unemployed, i.e., economically active.) Although those who retired earlier are transferred to the old-age pension scheme once they reach the regular pensionable age, their group was still growing in 2000, by a total of 33 thousand during the year.

The various forms of child-care provision tend to keep young women out of the labour market. Despite the steady decline in the number of births, the number of persons – mainly women – benefiting from one of the three forms of child-care provision (child-care fee, child-care allowance, child-care support) has increased, with minor fluctuations, during the 1990s. In 2000, the number of persons inactive due to child care decreased by some 13.5 thousand compared to Labour Account data for 1 January, but it still stayed in the range of around 300 thousand.

Apart from the above well-identified reasons, more than 500 thousand men and women stayed away from the labour market for other reasons. Inactive individuals are naturally present in every economy. Even in countries characterised by high levels of employment, there are people who do not want to or cannot engage in work for personal reasons (e.g. looking after a sick relative, lack of jobs matching their qualifications, or a well-paid spouse). However, in Hungary, especially in certain age groups, too high a proportion stay away from the labour market for unknown reasons (50 percent for the 35–39 year-old, 47 percent among the 40–44 year-old; and 39.2 percent among the 30–34 year-old). Men are over-represented in this group of the inactive (66.8 percent are men among the 30–34 year-old; 63 percent among the 25–29 year-old; and 57.6 percent among the 35–39 year-old). More than one in two women aged 40–44 (51.5 percent) were inactive for unknown reasons.

One may assume that, given the traditional pattern of labour division in families, the majority of women inactive for unknown reasons, and with-

out any guaranteed visible income, however modest, who are regarded as dependants, are indeed supported by their families (or households). Of course, the same may apply to some men as well, but it seems more likely that neither the men, nor the women concerned are really inactive, but that they earn their living outside the official (registered and taxed) economy. A significant part of the inactive population would probably enter the official economy if it offered them jobs and if taxes and social security contributions would be at a reasonable level for both employers and employees. Taxes on employment and on wage incomes are considered the largest obstacle to job creation in Europe, too. In the European Union, tax burdens imposed on employers and employees are taken into account together. In Hungary, the sum of both taxes exceeds 80 percent! Consequently, the reduction of wage-related taxes, for both employers and employees, is a crucial issue of employment policies in Europe.

A significant proportion of the inactive – just as the unemployed – would like to work, especially if they could work in the official economy. According to LFS data, some 454 thousand inactive persons would be willing to work. (Almost twice as many as the number of unemployed persons actively looking for work.) One group of the inactive waiting for a job opportunity is discouraged workers, already mentioned above, who numbered 109 thousand in 1999 and 106 thousand in 2000. Another 336 thousand wanted to work on a regular basis, but did not look for a job for diverse (mostly personal and family) reasons. Another 10 thousand did look for a job, but not actively, or they would not have been ready to start in a job.

In every age-group of the working-age population, some 20–40 percent of the inactive would be willing to work, whatever the reason for their inactivity. Hence, the inactive represent significant reserves of labour supply. Those reaching retirement age in the years to come will soon join them. Each year about a 100 thousand women and men enter the age groups of 57–62 and 61–62 respectively, still being in the working age population but already eligible for the old-age pension. Another 196.5 thousand men and women are aged between 63 and 65, that is, below the retirement age typical in Western Europe. In the beginning of the last decade, 488.4 thousand among those of retirement age were still active and, presumably, at least the same proportion would be willing to work today. The primary condition for using this reserve is further, steady growth in the economy. The chances for employment growth, are not the same in the three broad sectors of the economy. Irrespective of further restructuring, agriculture is unlikely to demand more labour (except in seasonal peaks). Labour demand in industry, and especially in manufacturing, will increase mainly in proportion with capital investments, although advanced technologies tend to require relatively little labour. Prospects are best in the extensive range of

the service activities where the growing demand of business organisations and of the population may generate some further demand for labour. The government can also influence the pace of growth of the service sector through wage policies shaped by a centralised bargaining process. Income and tax policies are likely to be most effective in achieving a faster growth of employment, and the spreading of flexible forms of employment (such as part time employment) that are likely to encourage the re-employment of those currently inactive.

IN FOCUS
I. WAGES:
A DECADE OF TRANSFORMATION

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INTRODUCTION

This analysis of wages gives a first insight into the metamorphosis of the labour market's "price system" from the political regime change to the turn of the century. It gets underway by concluding that 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. Then, during the time when stabilisation measures were introduced in 1995–96, 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 beginning in 1997. Another definitive development of the transformation decade was a steady widening of inequalities in earnings, extremely rapid in international comparison. The gap grew particularly large within industries – between groups with different education levels and between different types of companies tempered to some extent by the movement of individuals from one income level to the next, quite an intensive flow by international comparison. At the same time, the equalising effect of earnings mobility was strongest at the start of the transitional period and with time the correlation between occupation and position, and annual earnings grew stronger. Circular patterns also became more frequent, when people surveyed returned to the earnings decile from which they had temporarily departed.

Looking behind the transformation of relative wages, the study argues that – as the legal framework for collective bargaining evolved – 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. By the end of the 1990s, the pure difference in male and female earnings (controlled for differences by industry and education) had declined significantly, and according to analyses of wage offers, had essentially disappeared. The differentiation between individuals occurred essentially in the realms of education and age (labour market experience). Education-related earnings yields increased. Within this, the market value of the single year of education

separating skilled workers from secondary school graduates grew the most. The difference in wages between unqualified and qualified labour is larger in the private than in the public sector, and – indicated by a small number of observations – is larger in the informal economy than in the formal one. Age-related earnings differentials suggest that work-experience accumulated under socialism has been devalued. A decline in the relative earnings of older college graduates was particularly acute. Research on big businesses has shown that well-capitalised and productive firms have relied increasingly on young and qualified labour, while productivity yields have gradually gone down where there is a higher ratio of older and qualified labour. Based on available data, we cannot preclude the possibility that "statistical" discrimination projected to specific cases has increased the differences between the average young person and the average older one.

As far as the difference between sectors is concerned, earnings in the public sector (public administration, education, health care etc.) deteriorated over the course of the transition – and particularly in the years when the austerity measures of the "Bokros Package" were in effect. This was particularly true for occupations that precluded a mass shift from the public to the business sector. Within the business sector, the sharpest drop in wages occurred in areas where competition was keen and labour was comparatively unqualified. Examples are light industry, construction, farming, and some services.

Within the various sectors, the connection between earnings and the ability to pay of companies grew closer – in line with the predictions of firm level bargaining models. This, along with differences in industry and size, is the basic reason for earnings differences between companies in foreign and domestic ownership. By the end of the decade, the wage gap between foreign and domestic businesses had declined significantly, when all other factors, such as type of labour employed, industry, size, and productivity levels were similar.

Another gauge of the significance of local conditions is that differences in the bargaining positions of labour directly affected earnings. In international comparison, the influence of (local) joblessness on earnings is still strong (though it has weakened in the years following the transformation backslide).

Without the flexible transformation of the labour market's "price system," the shift to a market economy would no doubt have been more sluggish, but the changes effected do not necessary hold the promise of a pleasant future. If the intensive inflow of FDI continues and the growth rate of capital intensity and productivity remains higher than in Western Europe (and if the forint, the local currency, continues to appreciate in real terms), then autonomous market forces will eventually lead to a long term conver-

gence in the domestic and western wage levels. There is no need for government intervention in this area. In fact, attempting to limit the freedom of the market would probably cut back on the most important engines driving the convergence – FDI, expansion of the service sector, and the rapid re-allocation of resources.

At the same time, we have to realise that market forces – given the limits to wage differentiation, which cannot be expanded forever – do not necessarily lead to a "good" equilibrium (one with a high employment level). Data suggest that earnings continued to have a fundamental influence on household incomes at the turn of the century, but some studies have found a slowdown in income differentiation despite increased differences in earnings. This can have a negative influence on the supply of low-income labour. Despite comparatively large earning differentials, regional wage differences are modest, and this foreshadows a slow decline in regional employment differences. Finally, while flexible changes in relative wages signal market disequilibrium quickly and accurately, in some cases it will take a long time to resolve the imbalance, assuming that it can be resolved at all. One type of imbalance of concern is disequilibrium in the labour supply and demand, brought about by the re-valuation of human capital.

When analysing company and individual wage data, the authors briefly touch on methodological problems that need to be considered when interpreting change. Notes on data sources and on methods of analysis conclude the section.

1. BASIC FACTS

In the years following the regime change the legal and political tools used by the socialist state to keep wages in line more or less successfully for the "sake of the national economy" were gradually eliminated. As the private sector became dominant, resistance to upward wage pressures evolved at the company level and the former wage conflict between company management and government gave way to various forms of bargaining between employees and employers or their representatives. Market pressure changed the structure of demand for labour, triggering an interactive restratification of employment and earnings. Workers now had access to formerly banned "voice and exit" bargaining tools, such as strikes, demonstrations, and voluntary quitting. A truly free labour market evolved, and the wages setting process changed fundamentally.

Until quite recently Hungarian economic thinking treated the spontaneous forces influencing wage levels and ratios as a marginal issue. Evidence of this is easy to come by. All we need to do is leaf through the economics journals of the early and mid-1990s or look at reports on business condi-

tions issued over those years. Hardly any even mention the market forces shaping wages. Instead, research focused principally on the *consequences* of the changes – income differences and impoverishment.

Today, there is no longer any need to explain the fundamental macroeconomic significance of the micro-flows that define wages. It appears that information on the issue has also attained critical mass, making it possible to look at it in perspective. However, our study would like to do more than just give a picture of the transformation of the labour market "price system." It also is an attempt to point out information gaps. At the moment of wording this text there has not been any accomplished research in Hungary on such very important questions, as the effectiveness of tripartite wage agreements or the relationship between inflationary expectations and nominal wage demands. Another problem at least as serious is that the researchers have not monitored one another. Rarely have several researchers focused on the same issue, analysing the same data using different methods.

The first part of this chapter offers a brief reminder of real wage trends and earnings inequalities, and points out distortions in wage data based on both official records and self-reporting. The second chapter reports on changes in the institutional conditions for setting wages, and on the clear signals that decentralised wage bargaining is getting stronger. Other chapters focus on differences in earnings related to gender, education, age, and region, and on relative wage trends in the different branches. The study includes the income consequences of earnings differentiation. The final chapter analyses the ways European integration is expected to affect earnings.

A set of end-notes numbered J1–J5 is attached to the end of the study. They discuss technical issues to be considered when applying the data and the research results.

1.1 Real Wages and Earnings Inequalities

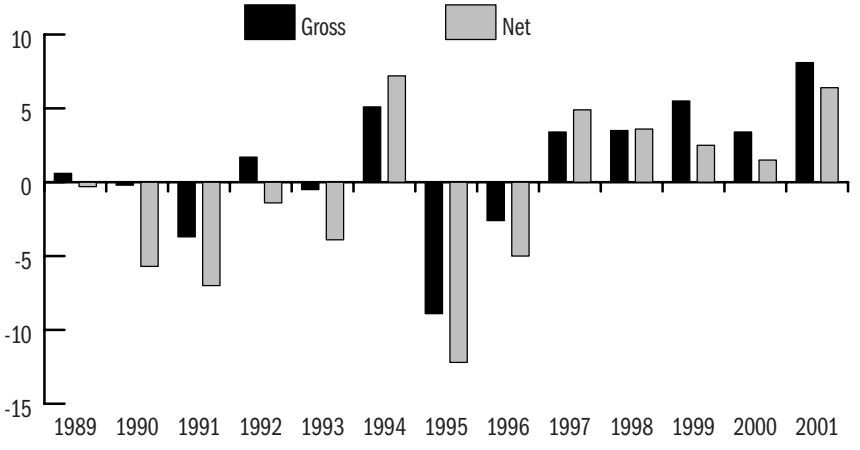
János Köllő, Erzsébet Eperjesi Lindner

Real earnings dropped amidst the economic crisis that followed the collapse of the socialist system, although not to the extent seen in those former socialist countries (Bulgaria, Czechoslovakia, Romania) where one-time shock-therapy adjustments were made. Hungary did not need to drastically devalue its national currency, as it was less dependent on COMECON trade, and in general its trade had become increasingly liberalised in the final years of the state-socialist system. Companies that lost their liquidity rapidly reduced their staffs, so pressure on wages was less than in Czechoslovakia, Romania, or particularly, Russia. Nevertheless, net real earnings dropped every year between 1988 and 1994, and gross real earnings increased only in one of those years (1992). (Figure 1.1)

A peculiar feature of the transformation crisis period was that while net earnings significantly dropped in value (by 13.5 percent in 1989–92), for employers the actual costs of labour increased. *Godfrey (1994)* estimates that in 1989–92 unit labour costs in industry increased by 26 percent in USD. The following factors contributed to this anomaly:

(a) differences in consumer and producer price indices leading to a significant decline in real wages deflated by consumer prices and a 5 percent increase in wages deflated by industrial sales prices, (b) a 25 percent rise in non-wage labour costs (taxes, contributions) calculated with the above index, (c) a 13 percent hike in the real exchange rate, and (d) a 1 percent drop in productivity.

FIGURE 1.1: THE RATE OF ANNUAL CHANGES IN GROSS AND NET REAL EARNINGS, 1980–2001



Source:: Central Statistical Office

Hungary's situation among post-socialist countries is unique in that real wages were hit by a second shock, stronger than the first, in 1995–96 when a stabilisation package bearing the name of the then, Finance Minister Lajos Bokros, was introduced. At this time, real earnings were increasing in all other countries within the Visegrád Group (Poland, Czech and Slovak Republic), by 3–5 percent in 1994–96, while they sank by 17 percent in Hungary.

This decline was different from the earlier one in that it ran parallel to a rise in productivity and the disappearance of the gap between producer and consumer price indices, while contributions on wages stopped growing. A price index gap that had been 8–11 percent in 1992–94 dropped to

1–2 percent in 1995–97, and within that, in 1995 and 1997 producer prices were the faster-growing of the two. In 1998 the consumer price index was again higher than the producer one, but only by 3 percent. In 1992, the ratio of mandatory contributions amounted to 28.9 percent of total wage costs, while it came to 27.8 percent in 1998. Other non-wage elements amounted to 14.3 percent in 1992 and 13.7 percent in 1998 according to the Labour Cost Surveys of the Central Statistical Office. These factors brought about a rise in profits as a result of the drop in real wages, which became a foundation stone for the economic growth that began in the latter part of the 1990s, and which has been pulling real wages upwards since 1997.

From the start of the regime change through the end of the 1990s – the entire period for which we have data – we see a major increase in *earnings inequalities.* All data sources clearly show the broadening of the earnings gap though there are minor deviations in details because of differences in samples or data recording methods, or different ways of calculating the inequality indices. Table 1.1 shows the values of the Gini-coefficient using the Wage Tariff Survey of the National Labour Research and Methodology Centre, the Household Budget Survey (HBS), and the Hungarian Household Panel (HHP). (The Gini value is zero if income is distributed equally among income recipients and approaches one if there is only a single recipient of the total income. In advanced countries the Gini index of earnings ranges from 0.2 to 0.4).

The Gini calculated on gross earnings data reported by firms grew from 0.27 to 0.37 between 1989 and 1998. Net earnings calculated from the gross data – using tax tables and therefore inaccurately – show a somewhat larger growth with smaller inequality, thanks to the equalising effects of personal income tax progressivity. HBS gross earnings data show a similar growth. These data are based on self-reporting which distorts the Gini index downwards (See sub-section 1.2), but they also contain earnings from part-time work and periods of employment interspaced with joblessness or inactivity, which increase inequalities. It appears that the latter effect is the dominant one, because, at least up until 1998, HBS indices are generally higher than the ones from the Wage Tariff Survey. The last column in the table shows the Gini-coefficient of the net annual household income from full-time job earnings per unit of consumption. The inequalities here are larger than for individual net earnings because of multiple occurrences of high and low earnings within families, and correlations between numbers of earners, earnings levels, and family size. According to this index, the distribution of earnings in the period under observation became increasingly unequal not only from the point of view of employers and individuals but also from that of families.

The Gini indices in the table suggest a continuous growth in inequalities, rising somewhat slower between 1992 and 1995 than before or after that time. Studies by *Éltető (1996)* and *Galasi (1995)* go as far as to show a certain equalisation of net earnings between 1992 and 1994. One possible explanation for the difference between Table 1.1 and Galasi's results is that the latter used a HHP that included earnings in the smallest companies, of individual ventures, mom and pop producers, and day labour. Éltető's analysis used a sample similar to the Wage Tariff Survey, focused on businesses employing more than ten people. But it relies on data that has been grouped, so it is not able to reflect earnings differences between extreme open categories, though they have a significant effect on overall inequalities. A study by *Kertesi and Köllő (1997)* for the period – using individual Wage Tariff Survey data – found a significant further differentiation precisely in the highest and lowest earnings ranges.

TABLE 1.1: EARNINGS INEQUALITIES IN THE TRANSITION YEARS: GINI-COEFFICIENTS

Earnings indicator	Gross monthly earnings	Net monthly earnings	Gross monthly /yearly earnings	Net yearly earnings[c]
Data from	Firms	Firms	Individual tax returns	Individual tax returns
Data source	Wage Tariff Records	Wage Tariff Records[a]	HBS[b]	HHP[b]
1989	0.27	0.21	0.29	..
1990	..	..	..	..
1991			0.30	
1992	0.30	0.25	..	0.33
1993	..	..	0.36	..
1994	0.33	0.26	0.36	0.36
1995	0.33	0.26	0.37	..
1996	0.34	0.29	0.37	0.36
1997	0.36	0.32	0.38	..
1998	0.37	0.33	0.37	0.37

a Earnings for May in businesses employing more than 20 people (more than 10 after 1994) and in public institutions, plus one twelfth of additional job income for the previous year. Net earnings are the value calculated on the basis of the tax tables for the given year.

b Gross earnings from a full-time job for people with earnings during the reference period, based on HBS. Monthly for 1989–91 and transposed from CSO annual data for 1993–98. CSO weighting. Gini for 1987 calculated from HBS is 0.24.

c Data shows net annual equivalent household income concentration from full-time job based on HHP and TÁRKI (Social Research Institute) Monitor. For more details see Section 5.1 of study.

Table 1.2 is an attempt to point out that the growth in earnings inequalities was quite high in international comparison. The comparison includes advanced countries that underwent exceptional increases in inequalities in the 1980s: Thatcher's Britain, Reagan's US, and Japan in transformation. The index, changes in which the table presents using *Katz et al (1995),* is the logarithm of the ratio of the first net earnings decile.[1] *Rutkowski (1996a, 1997)* reports similar data for the East European countries, based on gross earnings. The table includes supplementary indices calculated from the Wage Tariff Survey which include the post-1992 period and are partly based on net earnings. Since the observations for the various countries are for different periods of time, the sizes of the changes have been projected to uniform five-year periods, and are presented in the final column.

TABLE 1.2: GROWTH IN EARNINGS INEQUALITIES IN VARIOUS COUNTRIES (CHANGES IN THE LOGARITHM OF THE DECILE RATIO PROJECTED TO A FIVE-YEAR TIME FRAME)

Country		Period	Beginning	End	Five year change
United Kingdom – male	N	1979–90	0.88	1.16	0.121
United Kingdom – female	N	1979–90	0.84	1.11	0.123
United States – male	N	1979–90	1.23	1.40	0.077
United states – female	n	1979–90	0.96	1.27	0.141
Japan – male	n	1979–90	0.95	1.04	0.041
Japan – female	n	1979–90	0.78	0.83	0.023
Czech Rep.	b	1988–95	0.88	1.31	0.358
Poland	b	1988–95	0.96	1.22	0.186
Romania	b	1989–95	0.67	1.12	0.375
Hungary[a]	b	1988–93	1.14	1.30	0.158
Hungary[b]	b	1989–92	1.13	1.30	0.283
Hungary[b]	b	1992–98	1.30	1.57	0.225
Hungary[b]	b	1989–98	1.13	1.57	0.244
Hungary[b]	n	1989–98	0.93	1.39	0.255

N = net earnings, B = gross earnings.

a Czech, Polish, Romanian, and Hungarian data from Rutkowski (1996a), p. 27., and Rutkowski (1997), p. 108.

b Hungarian data: own calculations based on Wage Tariff Survey.

Sources: US, British and Japanese data from Katz et. al (1995) p. 58.

We can see that when viewed through the western gauge, the earnings differentiation took place extremely rapidly in the East European countries and these changes were deeper-reaching that the noted British and American "extreme growth in inequalities" of the 1980s.[2] In Hungary, the growth

1 The first (tenth) earnings decile contains the median earnings of the worst (best) 20 percent. The advantage of the index is that if there is even-paced growth, the logarithm of the dependent variable changes linearly as a function of time.

2 From this point of view it is not particularly significant that the western data refer to net earnings and most of the eastern ones are on gross earnings. As the last two rows on Hungary show, the gross and net indices changed to essentially the same extent. Of course, from the point of view of the *level* of the decile rate, which of the wage data we calculate with certainly does make a difference.

in inequality between 1989 and 1998 was approximately double the one that took place in the two Anglo-Saxon countries between 1979 and 1990. (Compare the last line on net earnings data with the British and American data!) Not only was the rate of the changes expressly high, but so was the level. The inequality between net earnings in 1998 was roughly as large as it was in the United States after the period of deregulation, much higher than in Britain at the end of the Thatcher era, and a full order of magnitude higher than in Japan.

The indices in Tables 1.1 and 1.2 measure cross-sectional inequalities – valid for a given moment in time or for a comparatively short period – and their growth. In parallel, however, long term inequality might even decline. (Let's assume that A earned twice as much as B the year before last, and four times as much last year, but this year things turned around and B earned four times as much as A. While cross-sectional inequalities increased – the earnings differentiation range doubled – when measured along a two-year time frame the difference between A and B disappears completely!) From the point of view of the societal effect, it definitely matters whether the increase in the distance between the highest and lowest wages leads to long-term poverty and affluence, or whether people can move up and down a steeper earnings slope. In Hungary, research based on the HHP 1992–97 waves showed intensive income and earnings mobility. *Rutkowski (1999)* estimated that the Gini calculated on the average earnings of the five-year time frame was 8.2 percent lower than the average Gini calculated from one-year income data. The effects of earnings mobility on reducing inequality in Hungary were significantly stronger than in the United States (4.8 percent in 1986–91) or the United Kingdom (5.7 percent for the same period). At the same time, Rutkowski's analysis points out that the equalising effect of earnings mobility was strongest in 1992–93, and as time went on the correlation between annual earnings categories grew stronger. "Going full circle", when the persons studied returned to the same earnings decile that they had left for a time, also occurred more frequently (op. cit. p. 16–18). *Galasi (1998)* also demonstrated an *income* mobility that was significant, but which declined in intensity.

1.2 Factors Distorting Observations

This part will basically investigate the forces behind the differentiation in earnings because we believe it has much to tell us on power relations and market trends that are important to macro-level wage development. We do have to realise though, that we are analysing an area of the economy where all information available has been distorted by mistrust and conflicting interests. Neither researchers nor official data-collecting bodies should op-

erate under the illusion that what they are measuring as "wages" or "earnings" accurately reflects reality. The job of data collectors and analysts is (should be) to learn as much as they can about the direction and amount of the distortion, and to make that public. Unfortunately, in Eastern Europe there is no deep-rooted recognition of the fact that statistical data are themselves generated in a societal process, which can be studied and learned in much the same way as the phenomena they wish to analyse with the data they collect. Scientific publications are also reticent to report on the distortions stemming from the nature of the data they use. Therefore, it appears expedient to comment on the specifics of wage data and the systematic distortions they contain.

Average Wage Hikes and Wage Inflation: What Published Wage Indices (Don't) Measure

Barnabás Ferenczi

In light of the attention focused on wage data published by the Central Statistical Office (CSO), it appears that analysts view average earnings indices as important indicators of domestic economic flows. Aggregate data plays two roles. On the one hand it can supply information on general incomes and overall living standard trends, and on the other it can offer information to the economy on labour costs.

There are at least three problems that come up when handling aggregate wage data as *income indices.* (Not to mention the fact that the basis for projection of an income index should not be the employee but the household. First of all, the source of wage data is the set of institutional labour statistics issued by the CSO, which is not representative of the whole of the population, since the probability of inclusion in the sphere measured by institutional statistics is itself dependent on income. Another problem in calculating net wages is the Hungarian personal income tax table, where rates are progressive by bracket, the personal income tax is still a tax on the entire income. That means net incomes cannot be calculated from gross *overall wage* data, because there is no way of determining the tax rate valid for a given earnings component – monthly wage, bonus, or other. Calculating net average wages from gross *average wages* raises similar problems because of the non-linearity of the tax system.

Considering that none of the advanced countries regularly publish net wage categories, we need to ask why we report it in Hungary. Today, the pension system is the factor that has the strongest interest in net wage indices. Using what we call Swiss indexing, pensions granted and distributed by the system are partly pegged to changes in net wages. The factor behind this is that when the personal income tax was introduced wages were "grossed up" (increased to compensate for the new tax levy). Pensions were left at

net value on the one hand, and on the other, as a measure of social solidarity it was thought that pensions also should follow the rise in income that exceeded the inflation rate.

Wage costs on the employer side are made up of several components. There are significant add-on costs to employers in addition to wages they actually pay employees in the form of fringe benefits and other costs (for instance, cash or in-kind support to employees for travel, meals, holidays, or cultural activity). Although international experience suggests that changes in direct wages and other items of remuneration are often closely correlated, meaning that we will not make a systematic error by only monitoring wage indices instead of total labour costs, that is not necessarily true on short term. In the 1990s, directly paid gross wages in Hungary were augmented by an additional 44–53 percent in wage-related payments to make up the total cost of employment. There was one year, 1992, when the ratio of these ancillary costs to actual wages shot up by 7 percent. At times like this, using gross wage indices as labour cost indices can be misleading, as is shown in Table 1.3.

TABLE 1.3: GROSS WAGE INDICES AS LABOUR-COST INDICATORS: LEVELS OF DISTORTION

	Yearly Growth Rates(percent)	
	Gross wages	Wage costs
1991	20.6	20.6
1992	29.8	36.6
1993	24.8	25.7
1994	24.9	24.9
1995	21.5	19.1
1996	21.5	20.3
1997	21.9	19.1
1998	16.9	16.9

Source: CSO data

By introducing the concept of *wage inflation* we can set up a clearly defined framework for interpreting and calculating gross average wages and their indices. Wage inflation is interpreted to mean the net changes in the price of a unit of work – set by pricing decisions. In addition, average wage trends are affected by alterations in the composition or quality of staff. The methodology of wage inflation can be derived from the definition. When calculating wage inflation indices, our goal is to discover the net pricing changes and separate them from the other influences reflected in average wages. One "disturbing" factor that moves average wages is the change in

the employment pattern. When, for instance, it shifts toward a group with higher wages or wage indices, the composition effect distorts the average wage and the growth indices in an upward direction. Table 1.4 quantifies the distortions caused by the composition effect in manufacturing in 1995–98. Both the rise in the significance of low wage index sectors – particularly the engineering industry – and the decline in the ratio of high wage index professionals distorted wage growth to below what it really was. We also can see that most of the distortion was the result of employment ratios that shifted from one sector to the other.

TABLE 1.4: THE LEVEL OF DISTORTION CAUSED BY THE COMPOSITION EFFECT IN MANUFACTURING (1995–98)[a]

Blue collar/White collar	Structure by sectors	
Ratio	Pre-set	May change
Pre-set	0.0	-1.0
May change	-0.3	-1.3

a Total deviation of annual average wage indices between 1995 and 1997 from a set (1995) weighted index, in percentage points.

Source: CSO data, own calculations.

To filter out the composition effect, statistics generally use standardised indices, where the weighting used as a basis (the consumption basket for the consumer price index or the employment pattern for wage indices) is identical for both the base period and the period under investigation.[3] What are the consequences of this when measuring wage inflation? Measuring wage inflation with standardised and particularly with set weight indices ignores three mechanisms that establish a systematic relationship between relative wages and changes in the employment pattern. The pure *substitution* effect enters a negative correlation between the relative wage of various labour market groups and the employment weight, while *relative productivity* and *relative product demand* changes introduce a positive one.

Looking at these factors one by one, first of all we know that when calculating price inflation, the fact that standardised indices ignore the negative relationship between changes in price and demand – in other words, the pure substitution effect – is a major disadvantage.[4] On short term (as long as the weighting is fixed), these price indices ignore the fact that for most products a price increase that exceeds average reduces consumption.[5] Above and beyond the labour demand reaction manifest in substitution, under the mechanism of relative productivity changes in the supply side, if the relative productivity of certain labour market groups suddenly jumps –

3 The basic types of standardised indices are the Laspeyres index that relies on past weighting and the Paasche index that relies on current (time of the investigation) weighting. The weighting used as a basis in the price index can be set for all time periods or can be variable. When using a set weight Laspeyres wage index, we weight the "individual" wages measured in the period under investigation for each month or each quarter with a set employment pattern from a past period, generally a calendar year. This is similar to the way domestic consumer price indices are calculated, when we weight individual price changes for every month with the consumption basket of an earlier year. When using fixed weighting, we also change the weights from time to time, once a year for instance for domestic price indices, while the US Bureau of Labor Statistics changes the weighting of its ECI index every five years. For the economic significance and consequences of selecting the type of weighting, see *Lettau et al (1997)*.

4 For the USA, see the Boskin Report, the essence of which is reviewed by the *National Bank of Hungary (1999b)*.

5 This was observed when the system of subsidies on pharmaceuticals was changed in the summer of 1999, and demand for certain medications soared. Consumers – who are quite aware of expected price changes and, most likely, also know the relative prices – ended up with a lower inflation rate on pharmaceuticals than the nearly 65 percent appearing in the CSO consumer price index for July and August, presumably because they shifted to relatively less expensive pharmaceuticals after the price increase, in other words, they chose substitutes.

which includes relatively higher wages – it will trigger a labour supply reaction that increases the employment significance of the given segment. Under the relative product demand mechanism, the motor of the rising relative productivity of the given segment is increased demand for the product involved, manifest in a rise in the product price. In other words, these mechanisms imply that there is a positive correlation between relative wages and changes in the significance of the employment segment.

Standardised wage indices ignore all three mechanisms that result in substitutions of one segment of the labour market for another, at least on short term. However – in contrast with price inflation – the regularly published aggregate level wage data published in Hungary do not consider this a problem. As far as the labour market is concerned, the ability of one employment group to substitute for another can be ignored on short term for all practical purposes. That is because technological constraints do not make it possible to effect any rapid changes in the blue-collar/white-collar ratio, and there is even less chance of altering the inter-sectoral pattern of economic activity. When using an index of wage inflation revised from time to time, but based on fixed weights between revisions, ignoring short-term substitution does not cause any harm.

If properly standardised – essentially by simple weighting – the gross wage data and wage indices, which are published regularly, could be shaped into wage inflation indicators. Under our theoretical definition, or in the light of practices in certain advanced countries, interpreting the wage indices calculated in this way have problems of their own.[6] Nevertheless, use of a wage inflation index based on gross wages – in contrast with simple net or gross average wages – will ensure consistency between methodology and the interpretation framework.

Differences in Company-Supplied and Self-Reported Earnings Data

Gábor Kézdi

There are significant systematic differences between earnings data based on self-reporting (on individual tax returns) as opposed to the data coming from company sources. To measure the distortions we need to have both types of data available at the same time, but they are almost never available in one and the same survey. One exception is an income survey conducted by the Central Statistical Office in 1988, which offers an opportunity to study the direction and nature of the differences *(Kézdi 1998)*. The conclusions drawn from the data only can be considered valid under today's conditions with strong reservations, but the current mission is not fact-finding, but to present the problems stemming from the differences.

Self-reported data on average earnings is about 20 percent lower than company-reported figures. In addition, self-reporting tends to "shrink" earn-

6 One shortcoming on basic data level that needs to be remedied, for instance, is that wages for blue-collar labour are not projected to number of hours worked. For more on this see *National Bank of Hungary (1999a)*. Another problem is interpreting annual indices that are used instead of seasonally adjusted ones, since as long term base indices, they do not illustrate actual processes. For more information on wage statistic practices employed in the advanced countries, see, for example, Chambers and *Holmes (1998)* for Great Britain or *Ritter (1996)* for the United States.

ings data differences. It makes dispersion appear to be only half as large – despite the lower average – yielding about 10 percent lower values of relative standard deviation. Other relative gauges of dispersion show similar differences. For instance, based on company data the value of the Gini coefficient is 0.233, while it is 0.207 for the individual (self-reported) data. One factor in the differences is systematic. The higher the earnings shown by company statistics, the lower the ratio of self-reported and company reported earnings. There also are significant distortions triggered by gender, age, and education level, though they are far weaker than the one connected to the earnings level. It is hard to decide whether the earnings data reported by the company or the individual should be considered valid. The former is accurate in the accounting sense, but for reasons discussed in the previous sub-section, it does not always coincide with the amount actually received by the employee as remuneration for work. The latter can be distorted by uncertainty or mistrust on the part of the respondent, but it also may contain items that do not appear in official accounting. (One suggestion that this may be the case is that a more than negligible portion of respondents self-reported a higher income than the figure given by the company.) Even if everyone agrees on how to define earnings in theory, available data really comes from imperfect observation of a *latent variable.* In this subsection we would like to briefly discuss some of the consequences of this, which influence research results.

We know that a given person earns a clearly definable amount (x* latent variable) but we have no way of observing it directly. Instead of that, we have an observed earning amount available: x. This amount is dependent on the latent variable and possibly on other variables, but for systematic reasons and for "random" reasons independent of them it differs from x*. If there is no systematic deviation (and if the random component is independent of every other element in the model we wish to estimate) then we can say that the difference between x and x* is pure measurement error. Depending on the direction of the investigation, the data used for the empirical analysis and the model, both systematic deviation and pure random error can distort the results.

Estimates of *mean* earnings become distorted if the measurement error contains any systematic elements. As the previous subsection noted, company earnings data are systematically distorted, while self-report data systematically deviate from company data (and, it is believed, also from actual wages although that cannot be observed directly.) Even pure measurement error distorts estimates of the earnings *deviation*, as shown in Note J1.1, formulas (2) and (3). In statistical analyses *conditional expected values* are generally more important than means and deviation, which in our case means determining how one unit of change in a factor influences earnings.

The method used most often to analyse this is a linear regression estimate of conditional expected value.[7]

If earnings are the *dependent* variable of the regression model, estimates of the coefficients of a model using the x earnings variable actually observed will only be distorted if there is a systematic measurement error. At the same time, the estimate is less efficient and less certain than if we could measure the latent variable without error. (See Note J1.1, formulas [6] and [7].) However, earnings observed with the different methods deviate from one another in a systematic way. In the survey mentioned for instance, we can demonstrate that if we use an earnings variable measured through self-reporting in the univariate linear regression model instead of the company data, we receive only 0.65 of the estimated affect of the explanatory variable. If our earnings figure based on self-reporting *is* the *explanatory* variable, then, in the case of a pure measurement error we get a biased result that pulls toward zero. (Note J1.1, formula [13].) If we consider both random and the systematic deviations already discussed and look at the sample studied by *Kézdi (1998)*, we should expect the model based on self-reported earnings to show a roughly 20 percent steeper curve than the function based on company wage data (Note J1.1, formula [12]).

These results demonstrate that in a given case, imperfect measurement of earnings as a latent variable can lead to very significant distortions. In multivariable models, imperfect measurement of a single explanatory variable also will distort estimates of the parameters of all the other variables *(Greene 1993, Chapter 9.5)*.

In most cases we cannot estimate measurement error, but when interpreting the results it is always expedient to remember that earnings is a latent variable and when estimating it we only can rely on observations, some of which are better and some of which are worse. If the research is focused on trends in overall budget revenues from earnings, data coming from administrative sources (tax returns, social security contributions) will probably be satisfactory. Workplace data is appropriate for analysing gross earnings from full-time jobs. If the goal is to analyse net wages, it is worth investigating the effects of not knowing the other variables that determine taxes. Earnings data from household questionnaires based on self-reporting also contain non-negligible errors. Means and deviation are smaller, and for a more circumspect analysis we also need to consider the degressive (non-linear) relations between declared and official earnings.

7 In the following we have assumed that our model was estimated with the least squares method and that the random factor is independent of the model's explanatory variables.

2. WAGE SETTING: INSTITUTIONS AND PRACTICES

While the regime change restored the principle of bargaining freedom, the actual system of wage setting has changed but gradually. New institutions evolved over a decade, along with practices and procedures that are still taking shape. First we try to evaluate the new institutional set-up and the emergence of collective bargaining, and then we attempt to assess its impact on the evolution of earnings in the light of available data.

2.1 The wage setting system

Jenő Koltay

State controls on wages and employer-employee relations had already been somewhat loosened in the 1980s, but wages still evolved in a force field of a Tax-based Incomes Policy (TIP)-type central control,[8] wage-increase rounds, intermittent corrective wage measures, and informal bargaining *(Kővári, Szirászki, 1985, Koltay, 1986).* Formal collective agreements did not play a substantive role in setting wages. Any wage outflow that exceeded central intentions was controlled indirectly by taxing enterprises, in order to set an effective wage ceiling, except for a widening market-oriented segment escaping hierarchical coordination. Meanwhile, with no real wage floor in operation to guarantee at least somewhat of a wage increase, the official wage minimum got lost between the very infrequent adjustments, considered, at most, a by-product of the system.

The transition to a market economy, implementing parliamentary democracy and redistributing property rights, opened up the perspective of collective bargaining and social partnership. A brand new body, the National Interest Reconciliation Council (OÉT), was set up to run tripartite (government-unions-employers) negotiations. It was given the right to negotiate and fix an economy-wide, uniform, statutory minimum wage, subsequently announced in a government decree as a monthly or hourly basic wage or salary for a full-time employment. By contrast, central wage control was even tightened up.[9]

The OÉT, set up in late 1988 as a concession of the outgoing regime, initially was much more an organ of government administration *(Ladó, Tóth, 1999)*. Slightly re-modelled and re-named the Interest Coordination Council (ÉT) after the regime change, it was also charged to negotiate guidelines for average, minimum, and last but certainly not least, maximum wage increases, and on the scope of "tax-exempt" wage increases.[10] In other words, the government held onto central control, but shared the responsibility for macro-level wage setting with its old/new partners. At the same time, it did recognise the growing *de facto* wage-setting autonomy of employers in a private sector starting to flex its muscles.

8 The recipes for a TIP (taxed based income policy) proposed by certain western economists, originally for home consumption, but which had remained untested, suggested a procedure that was quite similar to Hungary's parametric wage regulation, which other economies undergoing transformation saw as a tool in transforming a centralised wage regulation system into a market one. (For features of this, see Flanagan, 1998)

9 In 1989, the nominal wage increase was kept to three percent below the hike in consumer prices, since, if it exceeded the centrally fix level businesses had to pay a profit tax on the full amount of their wage increment.

10 Extended to all businesses where the wage increment was below the growth in value added, where the overall to wage bill was less than 20 million (HUF), and where the share of foreign capital amounted to at least 20 percent. Even agriculture and the railways were included up to a 3 percent wage increment.

Removing all constraints on wage evolution appeared risky. Then, the transformational recession, market loss, deficits, and growing wage costs cut back on firms' willingness and ability to pay. Jobs were lost on a mass scale and union membership eroded, weakening any potential wage demands while galloping inflation made decision-makers cautious. Encouraged by the decelerating trend of wage increases, the government agreed to eliminate definitely the tax threat in case of excessive pay increases and took the risk of relying exclusively on negotiated wage guidelines from 1993 onwards.[11]

Central Level: Tripartite Agreements Replace Wage Control

Once the new legal frameworks – from trade union freedom and strike law to employers/owners autonomy – was in place, the abandonment of wage control removed the last formal obstacle to free bargaining. Nevertheless, problems of the ongoing economic transformation and the asymmetry in industrial relations – with a still powerful state, weak unions and only emerging employers' associations – did not favour large-scale collective bargaining.

The logic of collective bargaining, with the need to set a strict floor on wages and wage increases in employer-employee negotiations, first appeared with the tripartite negotiation on the minimum wage and then with guidelines representing somehow a minima for wage increases, even if not effectively. In a market economy however, unless in exceptional circumstances, the wage-setting power of mostly consultative tripartite negotiations is minimal.

The case of the minimum wage is special in a certain sense. It is statutory, directly sets wages in a confined segment of the labour market, and through bargaining it exerts an influence on attainable increases along the whole wage scale. The (ab)use of the minimum wage as a universal bargaining tool was one reason why it played a prominent role in tripartite negotiations from the very beginning.[12] It became important to the social partners, especially to the unions and the government, to fill the legitimacy gap by regular agreements on minimum wage rise. Minimum wage negotiations using social arguments (in terms of rising subsistence minimum) addressed to a government still deeply involved, served as an *ersatz* to wage negotiations based on market position and bargaining power of employers and unions.[13] In an effort to demonstrate social sensitivity, governments showed more empathy for the employee position than for the employers. The latter, becoming more and more (wage)cost-sensitive, feared the ripple effect, and had a vested interest in not only maintaining but also in widening differentiation along the wage scale. Employers argued that increases should be kept to the ability to pay of the weakest employer and warned of the hazard of killing low-wage jobs. Their attempts to fight excessive minimum wage increases or to get compensation in the form of sinking levies

11 For doubts voiced at that time on just how lasting changes in company wage paying behaviour would be, see *Köllő (1993).*

12 For more details on the function of the minimum wage and the role it played in Hungary, see *Koltay (1998).* For more on the minimum wage in Eastern Europe, see *Vaughan-Whitehead (1995).*

13 The fragmented labour union arm took its cue from the largest union umbrella group, the National Association of Hungarian Trade Unions (MSZOSZ), and only one of the smaller union confederations, the League (LIGA) voiced the possibility of the minimum wage increase having negative effects (on employment levels and on prices).

on wages were more or less unsuccessful, in some sectors they managed to introduce the new minimum with a time lag. Some employers "went on the defensive" by simply not raising wages to comply with the minimum wage.[14]

TABLE 2.1.1: MINIMUM WAGE TRENDS

Year	GMW	NMW	GMW/GAE	NMW/NAE	GMW/SM	NMW/SM
1989	100.0	100.0	34.6	40.3		87.6
1990	137.1	137.1	37.3	44.7	90.1	84.4
1991	133.5	132.6	37.4	46.3	89.9	83.8
1992	119.4	118.9	35.9	45.6	90.2	82.7
1993	114.5	110.2	32.8	42.7	76.0	70.2
1994	116.4	117.0	31.2	39.9	72.2	69.0/93.8
1995	116.2	116.3	31.0	41.2	94.5	89.6
1996	118.7	116.0	30.5	40.9	95.5	89.0
1997	117.2		32.5	39.0	91.4	
1998	114.7	114.7	28.8	37.7	94.1	
1999	115.4	103.6	31.2	34.2	98.3	
2000	113.3	113.3	29.1	35.4	101.3	
2001	157.8	151.9	41.4	49.7	144.7	
2002	125.0	121.8				

Key to abbreviations:
GMW, NMW = Annual gross and net minimum wage as percentage of previous year.
GMW/GAE = Gross minimum wage as percentage of gross average earnings.
NMW/NAE = Net minimum wage as percentage of net average earnings.
NMW/SM = Net minimum wage as percentage of subsistence minimum.
SM = Per capita amounts calculated by the Central Statistical Office for households with two wage earners and two children, with the amounts yielded by the old and the new method of calculation given for 1994, the year the change was introduced.
Source: Central Statistical Office, Ministry of Labour.

Not much is known about how widespread underpayment was or how far under the line it went *(see Koltay, 1998)*. There is, however, more detailed information on people actually paid the minimum wage. It turns out that the share of minimum wage earners was comparatively low and showed a declining trend, at least within the sphere covered by the data.[15] A reversal of trends was brought about by the government-initiated "unilateral" (without prior consultation with the social partners) minimum wage explosion in 2001 and 2002, when the resulting instant wage-convergence automatically increased the share of minimum wage earners. Before, paradoxically enough, unions' achievements in minimum wage bargaining were limited. The increases came regularly, but the amount stayed below the rise in aver-

14 Meanwhile, the government voiced its understanding for problems of all sides. As a public sphere employer, however, it exempted the public services from minimum wage requirements, despite the fact that the original public sector wage scale had been based on it.

15 Data focused on wage payments showed a decline in the ratio of private sector recipients of minimum or near-minimum wages, dropping from 10 percent in 1991 to 2 percent in 1995. The figures themselves are similar to, or lower than the corresponding ratios in advanced economies.

age wages with the difference being more or less offset by the personal income tax treatment of low-wage earners. The minimum wage clearly declined in value compared to the cost of living, with the gap reduced only by changing the method of calculating subsistence minimum.[16]

Central wage agreements had become institutionalised, guidelines for annual wage increases were regularly agreed upon, along with the minimum wage. Repeated – government or trade union initiated – attempts of longer term agreements, engaging unions to a voluntary constraint on wage demands in exchange of government and employers' commitments failed.[17]

16 If the old method is used to run minimum subsistence level calculations for 1995, the year that followed the introduction of the new method, the drop in value turns out to be a significant, 15 percent *(ILO-CEET, 1997)*.

17 For more information on the attempt to reach a socio-economic agreement, see *Héthy (1995)* and *Kőhegyi (1995)*.

TABLE 2.1.2: WAGE GUIDELINES AND THE EVOLUTION OF AVERAGE EARNINGS AND CONSUMER PRICES (AS PERCENTAGE OF PREVIOUS YEAR)

	Wage guidelines			Anticipated	Actual trends				
	Gross rise in average earnings			Consumer price rise	Gross increase in average earnings		Consumer price increase	Net increase in average earnings	
Year	average	min.	max.		Business sector	National economy		Business sector	National economy
1992	123	113	128	120–125	126.6	125.1	123.0	99.8	98.6
1993	118	110–113	125	114–117	125.1	121.9	122.5	98.6	96.1
1994	117–119	113–115	121–123	116–122	123.4	124.7	118.8	105.9	107.2
1995	118[a]			120	119.7	116.8	128.1	89.6	87.8
1996	119.5	113	124	120	123.2	120.4	123.6	96.5	95.0
1997	117.5	114	122	117–119	121.8	122.3	118.3	104.7	104.9
1998	114.8	113	116	113–114	118.9	118.6	114.3	103.9	103.8
1999	113.5	112	115	110–111	115.2	116.2	110.0		102.5
2000	109.8[b]	108.5	111.0		114.2	113.5	109.8	111.4	
2001						118.0	109.2	116.2	

a Government recommendation, no agreement.
b Bipartite agreement of employers' and employees representatives.
Source: Central Statistical Office, Ministry of Labour, National Labour Centre.

Since agreements on wage guidelines actually were reached for every year save 1995 and 2000, the annual "wage-rounds" can be interpreted as a kind of success story for all social partners, except for the government of the 1998–2002 term.[18] A success indicator, from another point of view, is that the overall wage rises in the business sector fluctuated at around the maximum recommended level throughout the whole period. The close match between wage guideline figures and actual wage trends can be interpreted as fulfilment of the agreements, and is an incentive for the partners to conclude future agreements, even if no cause and effect relationship is as-

18 In the year that the stabilisation package was introduced (1995), employers called for a 17 percent wage hike, employees for an 18–20 percent one and the government asked for 18 percent. Despite the fact that the figures appear to be rather close to one another, no agreement had been reached by February, at which point the State Holding Corporation set the maximum income hike for companies where the government was a majority stakeholder at 15 percent. By June, the annual inflation rate had shot up to 31 percent and real incomes sank by nearly 10 percent.

sumed. The third factor, generally considered as a result of tripartite negotiations, is their assumed influence in orienting lower level wage bargaining.

Clearly, the central agreements did not honour union efforts to avoid real wage fall. In the period of the transformational recession and in the decisive years of the shift to a market economy, net real earnings dropped regularly every single year except the 1994 election year, a trend that only turned around in 1997–1998. Obviously, the reason why employees got the worst of the situation was not the "calculation error" made by the social partners, who regularly underestimated inflation when negotiating wage guidelines. Central agreements could not influence the earnings' inequalities either. The growing earning differentials really only could have been influenced by lower level, primarily sectoral, bargaining.

Intermediate Level: Unfounded Expectations

Branch level bargaining, which generally has a more powerful and direct impact on wage evolution, by granting a minimum across-the-board wage increase to large numbers of workers and tending to balance out wage hikes, never really caught on in Hungary. Despite union efforts, government encouragement, and international attention, the wave of collective agreements concluded in 1992[19] in anticipation of free wage bargaining never became a catalyst for establishing widespread mid-level bargaining which remains sporadic and irregular.

Under socialism, the traditional branch level bargaining was eliminated, despite the strong branch orientation of the convoluted planned economy. The only thing retained from the past had been the branch principle of union organisation. Though union coverage is shrinking, weaker or stronger unions are continuously present in branches of the business sector, but most often employers' federations simply do not have the necessary branch organisation to conduct negotiations and the authority to conclude and enforce agreements. The relevant legal frameworks are in place, but when branch agreements come about, generally each of the joining employers signs it separately, because joint committees with equal representation of both sides are still lacking.

Given these conditions, sectoral collective bargaining agreements at that level are reached in cases where unions are comparatively strong, and where there are only few employers (such as in public utilities or in the chemical industry). The actual agreements are few in number, which in itself doesn't tell us much since in the more advanced part of Europe the majority of employees are covered by just a few agreements. In Hungary, however, only about one-tenth of labour in the business sector is covered by collective agreements at that level. The term "multi-employer agreement" (introduced to the Labour Code in 1992) means just that. Most of the agreements thus

19 At this time, responding to an appeal by the ÉT and advice coming from the ILO, the parties to negotiation were guided to the bargaining table *(see Berki, Ladó, 1998)* and by legal incentives (in the new Labour Code) in lieu of any contract.

reached tend to cover groups of companies or specialised sectors (such as the baking industry or water supply), giving them a narrow sphere of influence, not increased significantly even when the, to date rarely used, tool of extension is used.[20] At the same time, there is no "model" agreement in some leading industry (like metalworking), that might influence agreements and wage evolution throughout the economy by its mere existence as opposed to extension.[21]

The potential wage-setting power of mid-level agreements is further weakened in Hungary by their contents which, for the most part, refer only to average wage increase when they include wages at all. In fact, these recommendations tend to follow the central guidelines not binding employers to give a corresponding rise for each employee concerned. Far fewer of the agreements contain a sectoral wage minimum above the statutory minimum wage, and only a few include the extent to which basic wage rates are to be increased and even fewer update wage scales. As they currently stand, wage increases agreed upon do not function as an effective wage floor when setting individual wages in companies within the branch. This means they do not serve as a generally accepted point of departure in company wage bargaining (perhaps they are more used as a selectively applied point of reference).

20 In Hungary, relevant rules allow the Minister of Labour to extend agreements in a way corresponding to accepted practices of advanced countries in which the validity of a branch level collective bargaining agreement is extended to all employers and employees of the branch, whether or not they were represented in the joint committee or in the signing of the agreement. *Neumann (1998)* offers a detailed analysis of the extension of the baking industry and power industry collective bargaining agreements.

21 In the advanced countries ranging from Germany to Australia and Austria to the Netherlands, and most recently including Sweden, this role is played by the metalworking or engineering trades' collective agreement. In Hungary's engineering industry, for instance, the employer organisation does not even cover the multinationals, having a decisive share in production and employment.

TABLE 2.1.3: COVERAGE AND CONTENT OF INDUSTRY/BRANCH LEVEL WAGE AGREEMENTS IN THE BUSINESS SECTOR[a]

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Number of industry/branch level collective agreements	24	12	12	7	10	11	31	41	
Coverage (in percent of employees)	41.9	12.7	11.0	5.0	12.4	13.2	13.5	12.8	11.5
Number of agreements									
– On average earnings' growth	17	6	6	3					
– On wage minima	6	7	7	2					
– On increasing basic wage rates	..	3	2	0					
– On wage scale	12	1	8	50					

a Businesses with more than 10 employees (more than 20 in 1992–1993).
Source: Central Statistical Office, National Labour Centre, Ministry of Labour.

Company Level: Wage Bargaining and Employers' Wage Decisions

Collective bargaining on wages at company level was supposed to replace smoothly the widespread informal bargaining after the regime change, with open negotiations and binding agreements instead of informal and/or hidden bargaining, lawful work stoppages instead of illicit slowdowns, etc.

But, enterprise restructuring, labour market change and asymmetrical industrial relations – with a still oversized state, weak or only emerging employers' associations and unions – did not really favour company-level collective bargaining on wages.

As usual, collective agreements are generally concluded in large(r) companies. Three-quarters of firms employing over 500 people have a valid collective agreement, as do more than half the companies with staffs of 300–500. (Neumann 2000) These agreements are to be found mostly in manufacturing (nearly half of all collective agreements have been concluded there for quite a number of years, Berki, 1996), public utilities (energy, water supply), and commerce. The three prerequisites for keeping the agreements alive are employer willingness, employee organisation, and company size. Initially, the state-owned sector met these conditions, while all three were lacking in the early private sector. As private property became dominant, big firms appeared in the private sector, but the time when some employers began to express willingness to sign agreements meshed with the weakening or absence of the unions. As the process ran, there was little change in the coverage, or in the contents of the agreements. Company wage agreements with a longer lifetime cover roughly 30 percent of private sector employees. It appears that collective bargaining agreements declined among the small(er) firms that were privatised, while they were more or less retained by the large(r) companies that were partly or wholly privatised, even when the new owner was foreign (such as in the telecom and public utilities). However, opposed to takeovers, most new foreign companies remained uncovered.

TABLE 2.1.4: COVERAGE AND CONTENTS OF COMPANY WAGE AGREEMENTS IN THE BUSINESS SECTOR[a]

	1992	1993	1994	1995	1996	1997	1998	1999
Number of company collective agreements, overall:	391	394	490	816	594	598	843	827
Manufacturing industry only	190	179	212	357				
Coverage (in percent of employees)	25.6	32.4	28.5	27.8	31.6	30.5	38.5	24.7
Number of agreements on average income hikes	292	291	293	447				
– On wage minima	71	198	183	253				
– On increasing basic wage rates	255	388	419	664				
– On wage scale	118	177	219	210				

a Businesses with more than 10 employees (more than 20 in 1992–1993).
Source: Central Statistical Office, National Labour Centre, Ministry of Labour, Tóth (1995), Berki (1996).

The potentially strong wage-setting power of the company level collective agreements can not prevail in many cases where they remained a remake of relevant legislation as before the regime change. Some of them do not even include an agreement on wages. Most do, but limit themselves to average wage increase at company level, generally in keeping with central guidelines, or, where it exists, with sectoral recommendations. About half of the agreements called for wage increases slightly in excess of the above. For the employee they have only the value of a recommendation, while for the company, they can orient individual wage decisions. From the point of view of wage-setting, agreements on increasing basic wage rates are more important. Two-thirds to three-quarters of the wage agreements did contain a clause on this, but we have no comprehensive image of how the various agreements grasp basic wage increases. The registry of collective agreements only became complete in 1998 and prior to that it contained no information on the actual contents of the agreements on wages. From *Neumann (2000)* we can learn that nearly two-thirds of the more than 1,200 agreements in force in 1998 included a wage settlement. Eighty percent referred to increases in basic wage rates, sixty percent had passages on average earnings, about sixty percent set the wage minimum that the company could afford, and one-third had some sort of wage-scale settlement.

Even in the areas they covered, Hungarian wage agreements did not guarantee all employees a minimum of increase in wages, binding employers as in developed market economies. Strict wage floors do appear only with company wage minima. Where there are no collective agreements or where they do not include a wage settlement, which is the case for the majority of firms, wages for most employees are determined by unilateral employer's decisions. Often, the labour market and its asymmetric power relations turn even the wage agreements into unilateral ones. In fact, very often employer's wage decisions reflect results of informal on-the-job bargaining still going strong, either in its familiar old form, or in a new type, linked to recent global tendencies of job and wage individualisation.

Hungarian Peculiarities: Decentralised Wage Setting with Signs of Corporatism and Paternalism

The new Hungarian system of wage setting is based on the principle of bargaining freedom, but actual wage evolution is far more dependent on employers' decisions and the immediate impact of market forces than on collective agreements with low coverage and poor contents. The ensuing system is very decentralised where the company level is decisive since employer's wage decisions are made here. This is the level where informal bargaining or individual settlements come into play, and it is also the scene of real but limited collective bargaining, which can have a more or less direct

influence on wages. The central level, which sets the statutory minimum wage and wage guidelines, institutionalised a tripartism of varying shape, where the government-union-employer co-operation can go far beyond the world of labour.[22] Intermediate level tripartism, advocated by some experts and union representatives, failed to establish itself and bipartite collective bargaining remained underdeveloped at that level. The social partners, especially governments and unions, have found it easier and more productive to push central minimum wage negotiations to the forefront of the bargaining scene, even if they had diverging views on the extent and frequency of minimum wage adjustments. Divergences culminated in 2001–2002, when the government embarrassed all partners with its "surprise" minimum wage rise.

Radical economic transformation and a drastic decline in demand for labour, together with just emerging institutions and the absence of routines of collective bargaining explain the peculiarities of the Hungarian system. Under specific circumstances, a mix of minimum wage fixing and wage guideline negotiations on the macro level, and marked-based employers' wage decisions, with some bargaining on the micro level worked probably better than shifting wage-setting to underdeveloped and inefficient institutions of branch level bargaining. In a broader context, what happened, seems to fit the hypothesis *(Calmfors, Drifill, 1988)* that both highly centralised and very decentralised systems are likely to do better from the point of view of macroeconomic performance than intermediate ones. As, what is taking shape in Hungary, is by no means a system somewhere in between, but much more a mix of both extremes.

The wage setting process and the resulting wage evolution did not conflict with economic policy goals, and didn't lead to either exaggerated wage growth or unbearable labour conflict. The frequency and intensity of labour conflicts in Hungary remained extremely low by international comparison throughout the whole period.[23] They did not prevent the internal restructuring of companies, the introduction of new management schemes and the import of new technology, the shift to more flexibility and individualisation in wages, or the establishment of direct employer-employee relations (without union mediation). At the same time, however, this wage setting system could not hamper real wage fall, or set any obstacle to wage competition, or prevent the growth of inter-company, inter-regional or hierarchical wage differentials.[24] It did not facilitate to conclude employment maintenance against wage moderation type agreements known from Western practices. At the same time, flexibility on the wage side of the labour market relaxed somewhat the rigidity caused by the limited mobility of labour.

22 An answer to the question of exactly how corporatist the Hungarian system is can be approximated by measuring the centralisation of wage negotiations, the significance of government participation, the concentration of labour union presence on the various levels, the dispersion of wages, and other factors. For a concise review on the subject see *Cörvers, van Veen (1995).*

23 Strike activity remained (under the) threshold. Between 1991 and 1995 there were a maximum of five work stoppages a year, lasting an average of less than two days each. The number of participants was less than one percent of the total labour force *(OECD, 1996–1997, Berki, 1999).*

24 One sign of the absence of higher level collective bargaining agreements and of weak unions is the sharp rise of wage differentials by educational level, though they had been compressed during socialism, that took place in the business sector. This did not occur in the public sector where the unions are much stronger.

In advanced market economies, where company level wage bargaining is important, the point of departure is always the higher level sectoral agreement. Historically, however, everything developed on the lowest level, and only later did higher level bargaining appear. Hungary's experience suggests that it cannot work the other way around here either. No matter what "incentives" are given, sectoral wage agreements of high coverage simply cannot be built without a company-level foundation. (According to *Berki and Ladó [1998]*, there is another, an "interventionist approach" to building sectoral wage bargaining, which would be desirable in many respects for both economic and welfare considerations. Still others claim that the tripartite central agreements could create the incentives needed for company-level wage bargaining to develop *[ILO, 1997]*). Central agreements only can gain a real wage setting power if lower level agreements cover a sufficiently wide area.

What remains an open question is when company level wage bargaining can gain definitive strength, and when can it spread to the next level. Will the time come when increasingly vigorous unions and organised employers shift their bargaining positions to branch level and reach binding agreements that result in coordinated wage evolution? Will there be central agreements that define wage trends for the entire economy? Or will decentralised wage setting, individual bargaining, company agreements and directly market-guided wage fixing, that fit into the global trend of individualisation and flexibility, remain decisive, with pale unionism and loose employer organisation? Will Hungarian practices approach the traditionally higher level wage setting still dominant in continental Europe, or will wage decisions be kept at the company level, following further the Anglo-Saxon line.

2.2 Wage-Setting Practices – Some Indirect Observations

János Köllő

Without convincing research evidence on the real effects of wage setting – minimum wage fixing and collective bargaining on various levels – at the moment of writing we cannot answer questions such as how the offers made during negotiations evolve or whether the agreed guidelines really influence employers or workers' representatives in their decisions. Case studies on collective bargaining are no substitute for broad-scale quantitative analysis since the main issue does not appear to be whether there are segments of the labour market regulated by collective bargaining (there are), but the size and share of sectors covered.

The sporadic data and research results reviewed in this chapter cannot substitute for methodical analyses of bargaining and at most they offer a

basis for wording conjectures and spurring us on to research the issue. The data (also) suggest that company-level factors have shown the strongest growth in influence over the past decade. In some cases – the railways and the energy sector, for instance – industry-level agreements continue to play an important role but this cannot be said on a general scale. Negotiations and agreements at national level unquestionably influence wage setting by determining the minimum wage but it would be hard to go any further in conclusions.

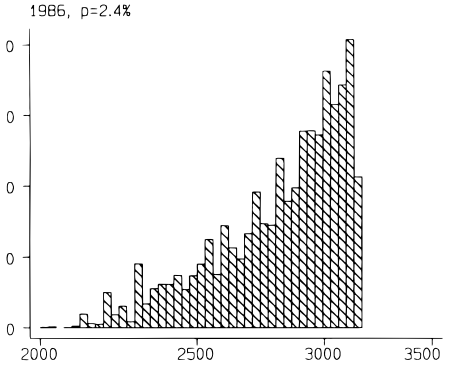
In a top-down look at bargaining levels, the marks left by setting the *national* minimum wage are easily demonstrable in earnings distribution. Figure 2.1 shows this, giving the distribution of low earnings (lower than half of the median) in various years. In 1986, when there was no legally defined minimum wage, we see what is essentially the lower end of a lognormal distribution. The number of persons on the various earnings levels declines gradually as we move towards the lowest salary in the sample. In 1989 – when the minimum wage was already mandatory – there was no substantive change in the situation, but a group of people earning close to the minimum wage did become visible. This trend grew stronger year by year. By 1998 the share of labour earning less than minimum wage had become rather small and so had the group earning more than minimum wage but less than half of the median. The lower end of the distribution was clearly dominated by people paid minimum wage (reported as receiving minimum wage). Kernel density functions of earnings support this. The 1996 data chosen as an example clearly show the comparatively high number of people with earnings in the vicinity of the minimum wage.[25] (Minimum wage is depicted with a vertical line and the lognormal density function is a continuous curve.)

Though true that there were very few people whose gross earnings were below minimum wage (fewer than 2 percent), in itself that doesn't mean that the minimum wage operates as an effective lower limit in setting wages. It is conceivable that the number of persons paid at the lower limit is high because employers are forced to raise wage offers on any level lower than this. But the low number of workers earning a little *more* than minimum wage makes one suspect that the number of wage offers (accepted) at around the legal minimum is really very low. What it may really mean is that employers are practising the well-known method of just reporting workers at minimum wage.[26] Nevertheless, it is beyond doubt that the minimum wage – at least in the latter sense – does serve as a reference point in the lowest salary range. Role and scope of the minimum wage was put in a new context by the government-initiated radical rise of its rate (to 40,000 HUF in 2001 and 50,000 HUF in 2002). Ongoing research should measure and evaluate the economic and social impact of this change.

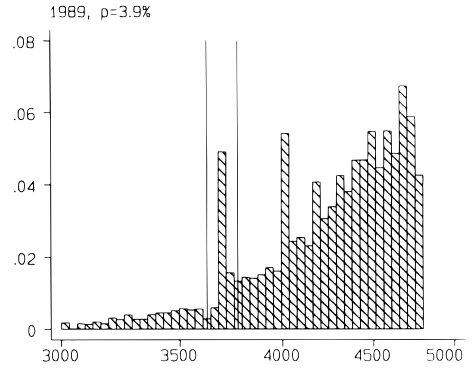
25 When estimating a kernel (core) density function, we slide a "window" of given width along the range being interpreted, in tiny increments. The estimated function values in the centre of the windows give the continuous curve in the figure. Descriptions of the process can be found in manuals of major statistical program packages.

26 It is worth noting that in the latter half of the 1990s only 1.5–2 percent of people were earning 95–105 percent of minimum wage. In other words, there is no *en masse* registration of workers at minimum wage (in companies employing more than 10 people). All this is valid before the government initiated minimum wage explosion in 2001–2002.

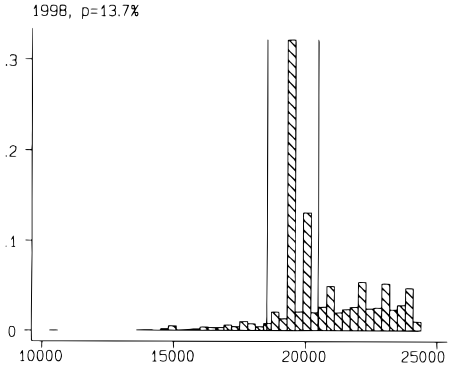
FIGURE 2.1: DISTRIBUTION OF (GROSS) EARNINGS BELOW HALF OF THE MEDIAN IN VARIOUS YEARS FULL-TIME WORKERS AT COMPANIES EMPLOYING MORE THAN 20 PEOPLE (MORE THAN 10 AFTER 1995)



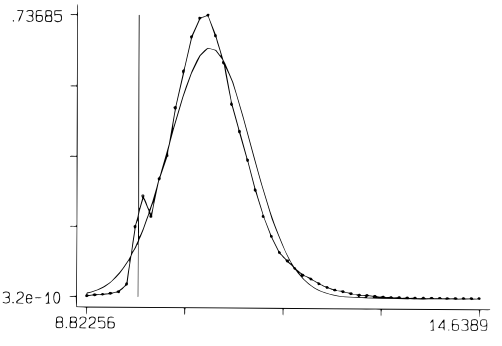
Earnings below half of the median, 1986



Earnings below half of the median, 1989



Earnings below half of the median, 1998



Kernel density function of earnings, 1996

P = Ratio of persons earning less than half of the median.
Vertical lines mark the vicinity of 5 percent of current minimum wage.
Source: Wage Tariff Surveys.

Until recently there has been no research and since there is no appropriate data, there cannot be any either, on whether the wage guidelines centrally agreed influence companies in decisions to raise wages.[27] Researching this requires information on company abilities to increase wages and on actual wage hikes, but company-line earnings data collected by the CSO on the former and input/output records collected by the Ministry of Finance on the latter lack (reliable) information.

A major constraint in analysing the possible effects of *branch level* wage bargaining is that the industry code systems used prior to and after 1993 cannot be compared. *Kertesi and Köllő (1997)* made an attempt to produce

27 The first investigation based on micro-data was recently begun at the Labour Research Institute under the leadership of László Neumann.

a classification that can be monitored through time – though with many errors – which they used to analyse the role played by the industry/branch level in shaping overall earnings dispersion in 1986–96.

When breaking down the growth in the variance of individual earnings into factors they found that approximately 40 percent of total growth was derived from changes in the *employment share* of branches Most of the effect was caused by a growth in the employment share of branches where there always have been large earning differentials (from one company and from one person to the next), such as commerce and services, and – within industry – the engineering industry. Differentiation among sectoral earnings level explains less than 10 percent of the entire growth in wage differentiation. A far more significant role is played by earnings differences *within branches*, which explain 50 percent of the entire growth in variance.

Section 4. of the study returns to the problems of sectoral level wage evolution. It shows that in some cases branch-specific changes in wages were significant, but in light of the above it appears that, on the whole, changes in sectoral rent played a subordinate role in evolving earnings differences. We reach a similar conclusion whether we investigate the power of being within a given sector to explain earnings levels with ANOVAs or with multi-variable linear regression functions. The explanatory power of models using individual (gender, age, education) and sectoral variables declined significantly between 1986 and 1996, while that of models including company variables (size, productivity, capitalisation, ownership) improved spectacularly *(Kézdi and Köllő 1999)*.

There are a number of signs that the significance of *company level* formal and informal bargaining has grown. First of all, as signalled by basic bargaining models (see, for example *Blanchflower and Oswald 1994, Moene and Wallerstein 1993*) during the period of transition, the relationship between earnings and company productivity (distributable company income) became stronger. At the same time, a robust relationship evolved between wages and local unemployment (the expected "punishment" for unsuccessful bargaining).

The upper curve in Figure 2.2 shows the elasticity of individual earnings *vis-à-vis* company productivity, in other words, the percentage of the probable earnings growth in the business sector triggered by a one percent growth in productivity in 1989–98.[28] Using data from the Wage Tariff Survey, elasticity, estimated with a multivariate regression model, grew by nearly fivefold between 1989 and 1998. From the point of view of the productivity of the employer company, the pure difference – implied by differences in company productivity – between the wages of employees in the first and the fourth quartile was 18 percent in 1989, 35 percent in 1993, and over 40 percent in 1998.[29]

28 In 1986 unemployment was not yet measured.

29 In 1986 the difference between the top and bottom quartiles was still only 11.6 percent and elasticity was only 0.062 in value.

FIGURE 2.2: THE FLEXIBILITY OF INDIVIDUAL EARNINGS BY COMPANY PRODUCTIVITY AND SUB-REGIONAL UNEMPLOYMENT RATES, 1986–98

Values are estimated with the regression model reviewed in Note J3.1. Companies employing more than 20 persons (more than 10 after 1994), excluding banks and insurance companies.

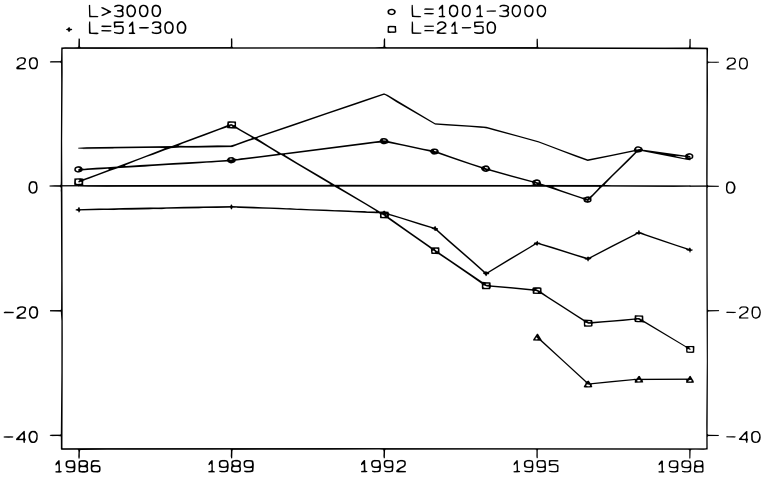
It is worth making a few interpretative comments on the increasingly strong relationship between earnings and productivity. The relationship grew closer at the company level. Inclusion of the variable for sectoral productivity leaves the estimated elasticity values essentially unchanged. Investigations within the various sectors suggest that construction was the only area where the correlation between individual and company income did not become stronger, but there it was already quite high before the changeover (elasticity was around 0.15). The change cannot have been caused by the growing share of small businesses either, since the correlation between the two variables became stronger in all size categories. When evaluating the connection between company and worker income it might be postulated that the relationship is not cause and effect but the outcome of a third, common factor, the uneven distribution of the quality of the workforce. (If some businesses employ more productive workers that leads to both higher company incomes and higher wages.) This factor really did play a role in evolving simultaneously high or low productivity and wages (as will be discussed in Section 3.).

Another sign of the growth in the influence of the immediate environment is that the affects of unemployment on holding down wages became stronger. The elasticity of individual earnings to sub-regional (registered)

unemployment rates "grew" from –0.015 of 1989 to –0.1, the figure cited as typical in international literature, by 1995–96 (where a one percent rise in joblessness made meant a probability of a 1/10 percent lower wage, with all other factors taken as given). In 1997–98, the correlation between the two variables became a bit more lax. (We shall return to this issue in Section 3, too.)

The third sign of company influences on earnings was the growth in the difference between the wages of small and large companies, shown by the curves in Figure 2.3. The differences were insignificant until 1989, and then gradually increased. They kept growing in the last years observed.

FIGURE 2.3: EARNINGS DIFFERENCES BASED ON COMPANY SIZE, 1986–98
(COMPARED TO COMPANIES EMPLOYING 301–1,000 PEOPLE)



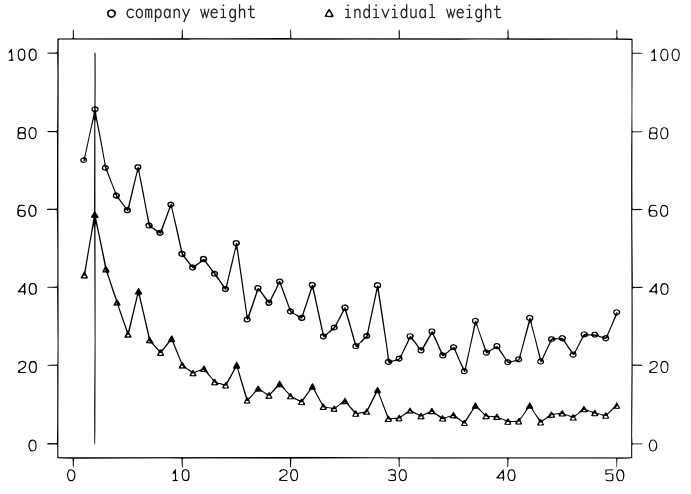
Values are estimated with the regression model reviewed in Note J3.1. Company level for businesses employing fewer than 20 persons (fewer than 10 after 1994), excluding banks and insurance companies.

The lower curve, marked with triangles, is for businesses employing 11–20 people.

As was noted in Chapter 1.2 (which pointed out that in businesses larger than the very smallest, the relationship between the ratio of salaries close to minimum wage and company size is not as close as many believed) Wage Tariff Survey data suggest that the phenomenon of "reporting workers at minimum wage" is not a satisfactory explanation for the low wage level of small businesses. Using a 1998 survey, Figure 2.4 shows how the ratio of employees in small businesses changed within the various wage-level categories. (In the row on earnings, the sample of company employees was broken down into 50 categories. The curves show the ratio of employees in the various earnings groups for businesses employing fewer than 50 people,

using two types of weighting.[30] The vertical line shows Group 2., which was earning an average of HUF 19,500, around the level of the, then, minimum wage.) It is clear that as we move from Category 50 with the highest earnings down towards Category 1, there is a *continuous* increase in the ratio of workers in small businesses, which contradicts the contention that the small business gap is caused by the frequent occurrence of very low earnings.

FIGURE 2.4: RATIO OF SMALL BUSINESS EMPLOYEES BY PROGRESSIONS IN EARNING LEVELS (50 GROUPS, 101,600 INDIVIDUALS)



Source: Wage Tariff Survey, 1998. Companies.

Finally, firms in foreign ownership have also had a powerful effect on (company-specific) wages, for they – at least initially – paid higher wages than firms in domestic ownership having similar size, sector, location, productivity, and continue to pay higher wages than the average domestic firms.[31]

To sum up: at the moment of wording this chapter, we have no empirical results on the regulating power of centrally agreed wage guidelines. Sectoral bargaining – as confirmed by data on the number of collective agreements – played a secondary role in shaping earnings differences through the transition period. The growth in inter-company (as well as intra-company) wage differences according to productivity, location, size and ownership has been the deepest-reaching change following the regime change, a sign of the dominance of decentralised (and typically informal) wage bargaining.

30 The Wage Tariff Survey sets weights to individuals determined by the ratio of the sample within the company. The authors designed the weights correcting company refusals to respond as set forth by *Kertesi and Köllő (1997)*. Since there is a high level of no answers from small businesses, the ratio of small business employees calculated with individual weights differs significantly from those calculated with corrected weights (lower and upper curve). Clearly, this does not effect the correlation investigated.

31 Section 4. discusses foreign businesses.

3. EVOLUTION OF WAGES BY MAJOR GROUPS OF LABOUR

We begin a more detailed discussion of trends in income inequality by examining factors that the individual can change only at exorbitant cost, if at all. Changes along this dimension are not only of special importance from the aspect of societal effects, but also with respect to the social costs of shifting to a market economy. Sudden and major changes in earnings (or from the point of view of the employer: in relative prices) by education, age, or region, indicates disequilibrium in supply and demand that can be eliminated only over a long period of time, only at high individual and social costs, with losses stemming from market frictions. With the male or female dominance that has evolved in different occupations, gender-based differences in earnings also might indicate market oversupply or overdemand.

3.1 Earnings Differences by Gender

János Köllő

In the first three years after the political regime change, differences between male and female earnings declined significantly. For business and public sector labour included in the Wage Tariff Surveys, the data suggest that the gap between male and female earnings dropped by half between 1989 and 1992. No change of similar scale occurred after that: the raw gap was stabilised at about 20 percent (Table 3.1).

Table 3.1: The Gap Between Male and Female Earnings (percent)

	All sectors[a]	Business sector[a]
1986	136	137
1989	134	136
1992	121	119
1995	123	121
1998	118	119

a Excluding businesses employing fewer than 20 persons (fewer than 10 in 1995 and 1998).
Source: Wage Tariff Surveys, Gross Earnings.

When breaking down the factors of the change in the early period of the transition (1986–1994), *Kertesi and Köllő (1996)* found that three major factors were involved in reducing the earnings gap between the genders. These were: the rise in the relative wages of white collar occupations ; a drop in the gender wage-gap primarily in the low-wage sectors (farming,

food processing, construction, commerce, services, healthcare) and among middle aged workers (age 35–55). At the same time, there was an increase in the gender wage-gap in occupations requiring a high education level. Another factor operating to increase the gap was that drops in wages in regions of high unemployment hit females harder than males.

Background flow, not directly related to setting the value of female and male labour, which affected the raw difference in wages between the two, continued to operate after 1992. There were two contradictory forces in operation to produce an essentially unchanged difference.

Table 3.2 calls attention to two important trends. The gap continued to close in the low earning range, while it continued to grow between males and females with higher education.[32] The wage gap for females with a primary education continued to decline after 1995. Following 1992, earnings for qualified female labour (vocational school or secondary school graduates) grew more slowly than they did for females with at most a primary education. The gap between their earnings and those of unqualified female labour was only a shade higher in 1998 than it had been in 1989. In this category, however, male earnings grew even more slowly and the result was that the gap between the average earnings of the two genders dropped by nearly 10 percent. Among non-college-graduate white-collar workers, the relative wage increase for females was particularly fast – even after 1992 – and in this category the male-female earnings gap declined by nearly 30 percent in the ten years following the political changeover. Among college graduates, however, the gap increased somewhat in 1992–95, then became significantly wider in 1995–98. In the final year, the wage gap between college-graduate males and females was as much as 50 percent.

The row of data for *business sector* employees suggests an even stronger approach in male and female earnings for unqualified labour (with a maximum of a primary education). For skilled workers and non-college-graduate white-collar workers, data for the whole of the economy and the business sector are close to one another. Among college graduates the difference between male and female earnings grow after 1992, but a comparison with data for the whole of the economy clearly shows that the drop in the relative wage level of the public sector bears primary responsibility for the overall increase in the gap. (We return to this issue in a separate section.) In the business sector, college graduate females earned only 18 percent less than males in 1998 – in contrast with the 50 percent measured for all employees.

We analyses the evolution of relative wages using individual wage data, and the contribution of skills to productivity using firm-level information from Hungary, 1986–99.

32 We have ignored 1986 – and will continue to ignore it when comparing groups with sharply different wage levels – because wages between 1986 and 1989 were influenced by increases to establish a "gross wage" in 1988 when the personal income tax was introduced.

Table 3.2: Male and Female Gross Earnings, 1989–98

	1989	1992	1995	1998
All sectors				
Blue-collar workers with primary education				
Female	100	100	100	100
Male	139	128	131	123
Male/female	139	128	131	124
Blue-collar skilled workers				
Female	109	115	112	111
Male	152	148	149	145
Male/female	140	129	133	131
White-collar labour with maximum secondary education				
Female	136	160	163	169
Male	214	216	222	217
Male/female	157	135	136	129
White-collar labour with high level education				
Female	204	219	247	250
Male	285	313	344	374
Male/female	140	143	139	150
Business sector				
Blue-collar workers with primary education				
Female	100	100	100	100
Male	137	125	127	117
Male/female	137	125	127	117
Blue-collar labour skilled workers				
Female	105	111	106	105
Male	150	144	144	139
Male/female	143	130	136	133
White-collar labour with maximum secondary education				
Female	134	162	156	162
Male	212	213	215	212
Male/female	158	132	138	131
White-collar labour with high level education				
Female	240	296	308	340
Male	303	342	362	402
Male/female	126	115	118	118

Earnings of Blue-Collar Females with a Maximum Primary Education = 100.
Source: Wage Tariff Surveys.

3.2 Differences by Education and Age: The Revaluation of Human Capital

Earnings functions estmated for the post-1989 period reveal two stages of different character in the revaluation of human capital. The first stage starting in 1989 and lasting until the low point of the "transformational recession" brought about a widening wage gap between skilled and unskilled labour and falling returns to experience.

The second stage characterised by rising real wages for high-wage workers and massive skilled job creation had rather different implications for the relative differences. While the skill premium of older workers failed to increase the general devaluation of experience and the appreciation of *new* skills (rising returns to education in young cohorts) got impetus and continued until recently. In the early stage changes were driven by the collapse of demand for unskilled labour rather than technological renewal or permanent systemic change, however. When new technologies actually appeared and the demand for qualified workers began to rise the "appreciation of skills" was restricted to the younger generation.

Kertesi and Köllő (1999) apply two different specifications of earnings regressions. The *benchmark* Mincer-type specification comprises the key variables (schooling and experience) as educational grade dummies and linear, quadratic, cubic and quartic terms of experience.[33] Second, they apply an *augmented interactive* model with group dummies for interactions of gender, education and experience.

The benchmark regressions controlled for a large number of wage determinants suggest a marked increase in the wage returns to schooling, from the onset of transition. Figure 3.1, depicting the time paths of returns to educational grades, suggests that wages relative to the primary school grade grew by 25 percent in the category of higher education, and about 10 percent in the case of secondary school background. The value of apprentice-based vocational training did not change during the transition. Most of these changes took place during the "transformational recession" i.e. between 1989 and 1992/3. The rates of return to education *seem* to be stabilised after 1993.

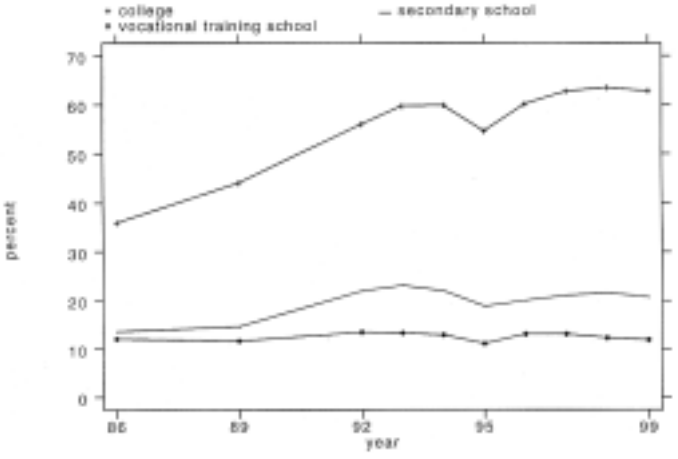
The numbers presented in Figure 3.1 can be interpreted as lower bound estimates of the "true" change in relative wages because the observed earnings of the unskilled are upward biased by the sorting effect of unemployment.

The rise in return to formal education was accompanied by the devaluation of market experience acquired under socialism. Changes in the rates of return are measured by the formula $\hat{y}_t - \hat{y}_{t-1}$, with the predictions defined as

$$\hat{y} = \hat{\beta}_1 \times \exp + \hat{\beta}_2 \times \exp^2 + \hat{\beta}_3 \times \exp^3 + \hat{\beta}_4 \times \exp^4.$$

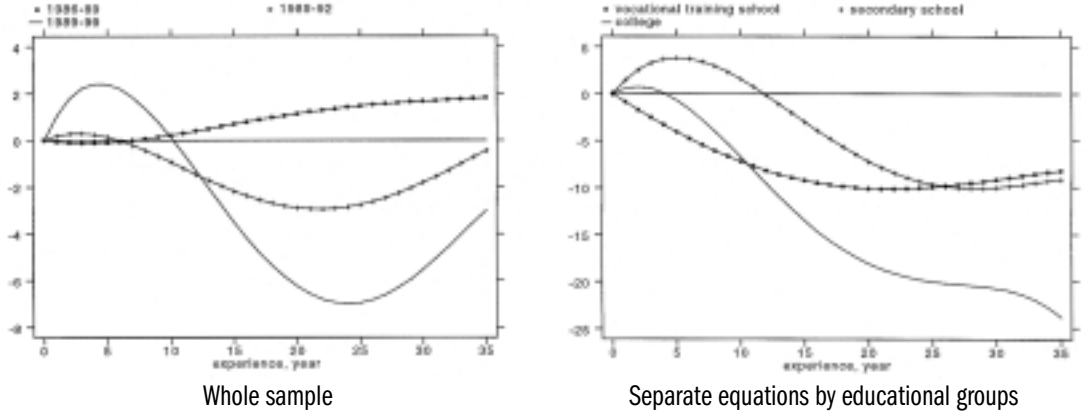
33 Higher than second order experience terms are used in order to be able to follow cohort specific changes in the earnings profiles over time.

FIGURE 3.1: RETURNS TO SCHOOLING (BASE: PRIMARY SCHOOL), 1986–99



The predicted change in the returns to experience is plotted against the years of experience in Figure 3. 2. Panel *a* suggests that the value of labour market experience slightly increased in the last years of state socialism. The trend reversed in 1989 when experience started to lose its value, especially in older cohorts of the labour force. The relative premium on 20 (or more) years of labour market experience dropped by 4 percent in 1989–92, and 7 percent between 1989 and 1999.

FIGURE 3.2: CHANGES IN THE PREDICTED RETURNS TO EXPERIENCE, 1986–99 (PERCENT)



Whole sample | Separate equations by educational groups

As suggested by panel *b* of Figure 3.2 (separate equations for each educational group), the obsolescence of experience-based skills was stronger in

the educated part of the labour force, with workers of university or college background suffering the largest losses. A person with a university diploma and 15–25 years of experience lost about 20 percent of his/her former experience-related wage premium.

Panel *b* calls attention to the relevance of an interactive model which allows for the fact that different educational and experience groups were exposed to skills obsolescence to a highly different degree. The main results in *Kertesi and Köllő (1999)* can be summarized as follows.

(i) Workers with college or university background, both males and females, improved their position across *all* experience groups but the value of education increased at substantially higher rates in the young cohorts. As a result, the experience-related wage gap between the oldest and the youngest college cohorts decreased by 20–25 percent by 1999.

(ii) The returns to secondary school increased in, and only in, the younger cohorts of men and (particularly) women. The youngest female cohort managed to improve its position by almost 20 percent, followed by workers with 6–10 years of experience with a 15 percent increase, and older females whose market skills kept their modest value without any further appreciation. This kind of imbalance can be a sign of change in the patterns of demand for non-manual female employees resulting from the expansion of the tertiary sector.

(iii) Workers who completed vocational training school did not get ahead *in general* (neither the females nor the males improved their position relative to the reference category of unqualified workers) but the wages of young skilled workers grew by about 10 percent compared to their older counterparts. Again, we observe that the age-specific changes were taking place *after* 1992.

With the passing of the transformational recession, which brought about the collapse of demand for unskilled labour, substantial changes took place in the evaluation of human capital. As shown by the estimates the skill premium of older workers failed to increase further while the appreciation of new skills got impetus and has continued until recently. *Kertesi and Köllő (1999)* present evidence suggesting that the widening gap between the value of old and new skills are consistent with differences in their relative productivity. These differences began to bear importance when the market for skilled labour started to grow and new technologies appeared in the economy.

They estimate productivity equations (derived from Cobb-Douglas production functions with heterogeneous labour input) of the form:

$$\log y = \alpha + \sum_{i=2}^{3} \beta_i \log l_i + \gamma \log k + \varepsilon. \qquad (1)$$

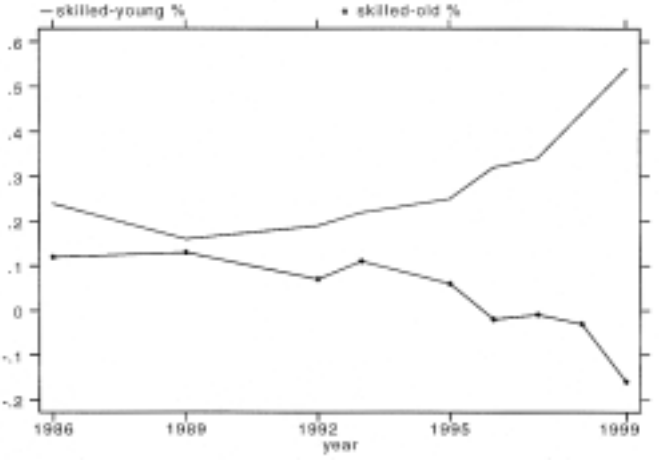
y being firm level productivity (value added per worker), l_i the share of the different types of skilled labour within the firm (skilled-young (l_2) and skilled-old (l_3), the base category being the share of unskilled labour: l_1),[34] k stands for the capital-labour ratio approximated with the net value of fixed assets per worker. Parameters of particular interest are the productivity elasticities with respect to l_2 and l_3, that is, the differences between skill groups defined on the basis of educational background and experience.[35]

The equations are estimated for a restricted sample of medium-sized and large firms. *Figure 3.3* shows the time paths of the productivity yields attributed to young and old skilled labour:

$$\beta_i(t) = \partial \log y(t) / \partial \log l_i(t) . \qquad (2)$$

The results suggest that the changes in the skill-related wage differentials at least partly reflect changes in relative productivity levels. The productivity yield that is attributed by the model to young-skilled labour input was rapidly growing in 1986–99 while the productivity of skilled-old labour input was declining in 1992–99, to a point that in the latter year it did not differ significantly from the productivity yield of unskilled labour (that was chosen as the base category).[36]

FIGURE 3.3: PRODUCTIVITY ELASTICITIES OF SHARES OF DIFFERENT TYPES OF SKILLED LABOUR (RELATIVE TO THE UNSKILLED LABOUR), 1986–99



Regression coefficients from equation 1.
Dependent: log of value added per worker.

34 "Skilled" means completed secondary school or incompleted or completed college or university, "unskilled" means incompleted or completed primary or incompleted secondary school. "Young" means experience less than the median experience, "old" means median experience or more.

35 The functional form chosen for the productivity function assumes separability of inputs which may be evaluated as a strong assumption. In a recent study *(Kertesi and Köllő 2001),* estimating multi-factor demand models derived from the translog cost function, using the same firm sample and the same definition of inputs, we got results supportive of the conclusions drawn here.

36 Different specifications of the model (cross-section ordinary least squares versus fixed and random effects panels using instrumental variables) provide similar qualitative results, and suggest that the productivity gap between young and old skilled workers is wider in foreign owned firms.

3.3 Regional Differences in Earnings and Wage Costs

János Köllő

As already mentioned in Chapter 2, the most important (though not the only) factor shaping regional earning differences following 1989 was the rise in unemployment. In 1989 a one percent increase in the jobless rate reduced earnings by 1/60th of a percent, while in 1996 it cut earnings by 1/7th percent, with the other factors that defined wages remaining constant.

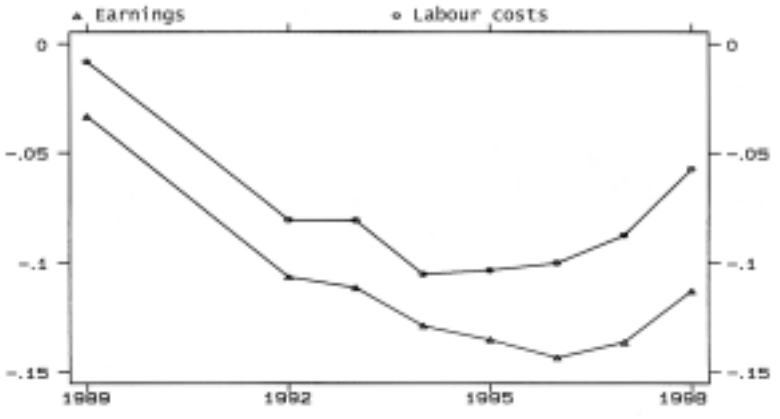
Each year, unemployment-related wage cost differences were lower than earnings differences, which was an outcome of the lower productivity level of regions hit by high unemployment. Identical earnings in a "poor" region gobbled up a larger portion of company revenue per unit of production than it did in a "good" one. According to the estimate, in 1994–96 with a one percent rise in unit of production were about 1/10th of a percent lower, with all other factors remaining the same.[37] The unemployment-elasticity of wages began to decline following 1996. Earnings elasticity remained in the vicinity of the –0.1 value described in literature *(Blanchflower and Oswald 1994)* as typical, but the correlation between wage costs and joblessness relaxed. We are not seeking the causes of that outcome in this study, and will only list some possible explanations. The pressure of unemployment on wages can be reduced by the accumulation of long-term unemployment and inactivity in the "poor" regions if the persons affected are unable or unwilling to compete for jobs. This can happen if people with jobs increase their wage demands when business improves and the risk of job loss is reduced, even if the unemployment rate is high *(Nickell 1995)*. The factor increasing the difference between wage costs and earnings could be a growing productivity superiority of regions qualifying as "good" from the point of view of unemployment, as against the "poor" ones (Figure 3.4).[38]

One possibility that needs to be mentioned is that the variable measuring sub-regional joblessness (registered unemployed divided by the economically active population of 1990) becomes less accurate in approximating the real number of competing job seekers as time goes on. This measurement error alone pushes the estimate elasticity coefficient towards zero. This is one reason why we have not used the unemployment rate in studying regional earnings and cost differences below. The other, more important, reason is that although exposing the relationship between unemployment and wages is an important step towards understanding the mechanism of regional earnings differentiation, if we are interested in the consequences of the given situation it is better to examine the total difference of wage and labour costs between regions because that is what is important to employers or investors considering a move, and not the joblessness-specific portion of total wage differences.

37 Wage cost and earnings differences were estimated with the model reviewed in Endnote J3.1. For the latter we did not include the company productivity variable.

38 It should be noted that the correlation between joblessness and the productivity level raises specification issues (discussed by *Kertesi and Köllő* 1998b), but they are not as serious as to affect the conclusions drawn here.

FIGURE 3.4: ELASTICITY OF EARNINGS AND LABOUR COSTS AGAINST THE SUB-REGIONAL UNEMPLOYMENT RATE, 1989–98



Estimate from Wage Tariff Surveys. Business sector without banks and insurance. (Endnote J3.1.)

We investigated regional differences with wage functions such as the one shown in Endnote J3.1, that do not include the sub-regional unemployment rate. Instead, we have included regional effects with variables that distinguish between three settlement levels (Budapest, other urban area, village) and major regions. The six are: 1) Budapest, 2) Central (Pest, Fejér and Komárom-Esztergom Counties), 3) North-West (Győr-Moson-Sopron, Veszprém, Vas, Zala Counties), 4) South-West (Baranya, Somogy, Tolna Counties), 5) South-East (Bács-Kiskun, Csongrád, Békés, Jász-Nagykun-Szolnok Counties) and North-East (Hajdú-Bihar, Szabolcs-Szatmár-Bereg, Borsod-Abaúj-Zemplén, Neves and Nógrád Counties). Figure 3.5 shows that earnings and wage cost differences between the settlement levels grew significantly between 1986 and 1992. Then the trend turned around. The 12 percent higher wage in Budapest compared to other urban areas in 1992 dropped to 6 percent, and the difference between urban area and villages also declined. When studying wage costs (comparing earnings levels of companies with identical productivity), we see an even more radical change in direction. Using this measure, by 1998, differences between settlement levels had disappeared for all practical purposes. The difference between earnings and wage-cost trends suggests that an increase in the productivity advantage of Budapest companies compared to other urban areas (and of other urban areas compared to villages) has played an important role in the process.[39]

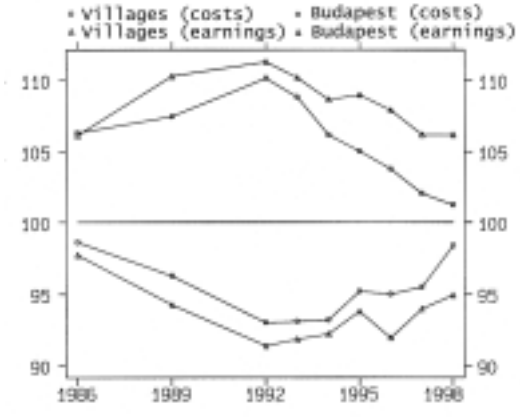
A similar flow occurred on a regional basis, too. In 1992 estimates suggested 8 percent lower wage costs in the central region and 13–17 percent

39 The Wage Tariff Survey lists the location of the given production unit and not company headquarters as the place of employment. For this reason, it would be more accurate to speak of "companies employing people in Budapest, other urban areas, and villages."

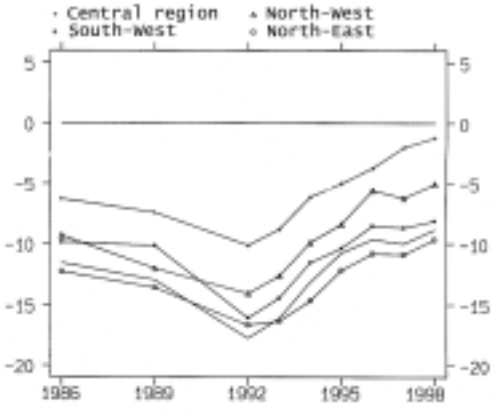
lower ones in the others. We might say that a business moving from Budapest would have found labour similar in gender, age, and education level for that much less if

a) the move didn't entail a drop in productivity,
b) the quality of rural labour with the same education level, and of the same gender and age was no different from Budapest, for instance regarding factors not included in the estimate such as foreign languages or computer skills. (See Figure 3.5, right-hand panel.)

FIGURE 3.5: REGIONAL EARNINGS AND WAGE COSTS COMPARED TO BUDAPEST



Earnings and wage costs in Budapest and villages (non-Budapest urban areas = 100)

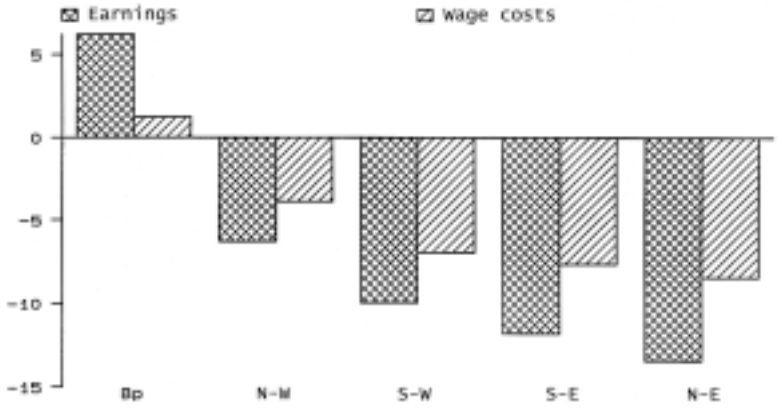


Estimated wage-cost savings if company moves from Budapest to other region, but retains its productivity level (percent)

Estimate from Wage Tariff Surveys: see text. Strict company sphere.

However, it is probable that neither assumption (a) nor (b) are true. Better infrastructure, higher business density, the proximity of government decision-makers and financing sources – all other things being equal – puts Budapest businesses at an advantage, and the relatively rich metropolis with its broader opening upon the world is an advantage to the workforce. For that reason the savings in labour costs actually realisable are likely to be below the level shown in Figure 3.5. The wage-cost equations indicate a savings opportunity of only around 5–10 percent by the end of the 1990s (even less for the central region), and it was then already doubtful whether the business moving to a rural region in our conjecture would find cheaper labour at all. This is true despite the fact that earnings differences have stayed comparatively significant (Figure 3.6).

FIGURE 3.6: EARNINGS AND WAGE COSTS DIFFERENCES COMPARED TO THE CENTRAL REGION, 1998 (PERCENT)



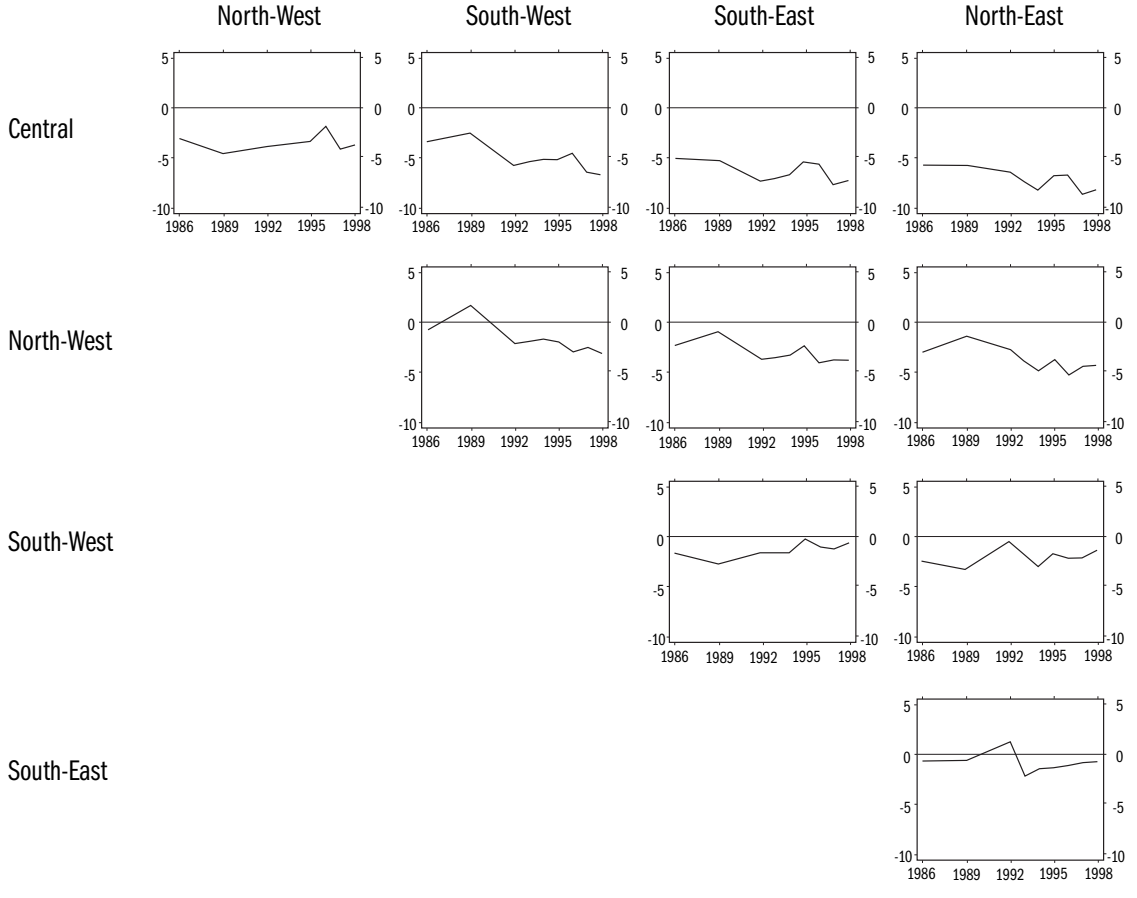
Estimate from 1998 Wage Tariff Survey: see text. Strict company sphere.

In several cases wage-cost differences between rural regions increased, Though they have remained quite modest, as shown in Figure 3.7. Estimated differences between the South-West, South-East and North-East regions are barely 1–2 percent, and in most cases are statistically insignificant. There was a slight increase in differences in the Central Region (Pest,Fejér, Komárom-Esztergom Counties) and the south-west and eastern counties, but even at the end of the period they had not exceeded 7–8 percent. A company (imaginary) moving from the advanced counties of western Hungary to the east-central or northern regions might hope for increasingly large savings, but we estimate that by the end of the decade even those would not exceed 5 percent.

The data suggest that regional differences in wage costs within the country were moderate (or returned to moderate) at the turn of the century and that differences between settlements have disappeared for all practical purposes after a transitional and significant increase. In itself, this does not put the more backward regions competing for investments in a hopeless situation. Since recruitment and filtering costs are lower because of a comparative wealth of available labour, moving an industry to the region can pay off, even if wages are identical and externalities are negative. At the same time, the fact that savings in wage costs attainable through relocation are almost negligible is important when considering rural development. It should be considered, for example, that motorway construction (which Hungarian regional policy has assumed will reduce inequalities though no real study has been made) might not lead to rural job creation considering modest

relocation profits (or even relocation losses). Instead, reduced transport costs might increase shipments of finished products from the centre to the periphery, as discussed in theory by *Krugman (1991, 1994), Kilkenny (1998),* and *Nerlove and Sadka (1991),* and supported by *Markusen (1994)* using the example of Brazil.

FIGURE 3.7: ESTIMATED CHANGES IN WAGE COSTS IF A BUSINESS MOVES FROM A REGION, 1986–98



Source: Estimated from Wage Tariff Survey, in manner reviewed in text.

4. WAGE EVOLUTION BY ECONOMIC SECTOR

This Chapter first discusses changes in earning and wage-cost differences within the business sector, and then looks at the sectors by ownership in greater detail (particularly at foreign-owned companies.) This is followed by a comparison of the public (defined later) and private sectors. The last item is a sub-section on wages in the informal economy.

4.1 Business Sector

János Köllő

Attempts to monitor industry development of relative earnings at branch level in a decade of transformation are very inaccurate, because in 1993 the Central Statistical Office introduced a new industry code system that corresponds to western norms. The old and new labels and codes encompass different groups of businesses. *Kertesi and Köllő (1997)* designed a uniform two-digit classification for the businesses based on real shifts when moving from the old codes to the new ones, which gives roughly the same groups the same label, both prior to and following 1993. (The article contains an itemised list of the errors.) Using this classification, we will now show trends in industry-specific earnings differences. This code system is not suited for a more refined analysis (nor are any of the others), so we only can give a brief overview of the most radical changes. To do this we have applied the industry parameters of the regression model discussed in Note J3.1, reviewed in an earlier part of this study. We measure differences in earnings resulting purely from the industry in which they operate, workers being identical in gender, age, and education level, and working for firms of similar size, regional location, and ownership configuration. We identify this difference as a "industry-specific rent".

This changed rapidly prior to and during the political regime change, and to a lesser extent following the transformational recession as shown in Figure 4.1, where the points marking the various years show how strong the correlation was between the estimated rents for the given year and the 1986 and 1998 rents. We can see that by 1992, the economy had bridged most of the distance between the rent patterns prior to the regime change and following it. This was the time sectoral differentials moved away from the initial position at high speed, and approached the "final state," the one valid at the time of the last observation.

Table 4.1 shows changes in the positions of the various industries between 1986 and 1997 (in 1998 the industry code system was changed again, and the reliability of "uniform" industry codes became even more doubtful than before.)

Figure 4.1: Linear Correlation Between Industry-specific Rents in Year (t) and Between Rents for 1986 (vertical axis) and 1998 (horizontal axis)

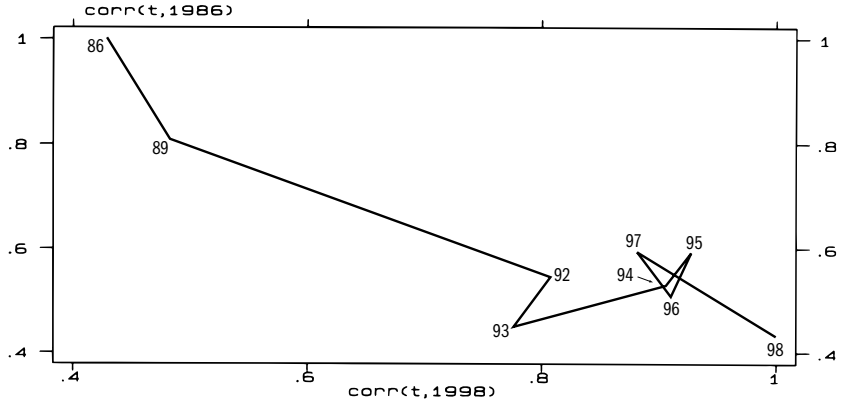


Table 4.1: Changes in Sectoral Rents Between 1986 and 1997 (changes in the engineering industry = 0)

Industry/Branch	Earnings	Labour costs
Local transport and communication	25.1	26.1
Energy production and distribution	17.2	6.9
Foreign trade	16.2	11.4
Iron and steel	15.8	1.3
Post and telecommunication	15.2	7.4
Mining and quarrying (excluding coal and petrol)	9.7	–0.6
Non-ferrous metal products	8.7	7.3
Coal-mining	6.0	1.3
Transport and communication (excl. railway and local trans.)	5.6	–1.5
Paper industries	1.5	–0.1
Chemical industries	–0.4	–6.5
Water supply	–0.9	–7.5
Agriculture and food processing	–4.4	–4.2
Trade	–6.3	–6.4
Forestry and wood processing	–7.6	–5.1
Construction	–8.4	–9.8
Furniture and metallic products	–8.9	–0.4
Textiles, clothing, leather and fur products, shoe making	–11.2	–6.6
Other services	–11.8	–7.7
Restaurants and hotels	–15.2	–14.3
Printing and publishing	–15.6	–13.4
Data processing and computer services	–17.9	–19.9

Table 4.1 estimates using the Wage Tariff Survey waves of 1986 and 1997, as specified in J3.1, including the company productivity variable (wage costs) and excluding it (earnings). Strict business sector without railway transport and the petroleum industry.

Limiting our attention to significant changes, we can observe a significant decline in earnings in light industry and the part of the tertiary sector with keen competition. There was also a decline in wages, though to far less of an extent, in agriculture, forestry, and construction. Compared to the engineering industry, used as a reference in the estimates, rents increased in the extracting industries, the energy sector, in postal and telecommunication services, in local transport and in foreign trade. (We need to note that railway transportation and petroleum industry data have not been included in the table for data protection reasons.)

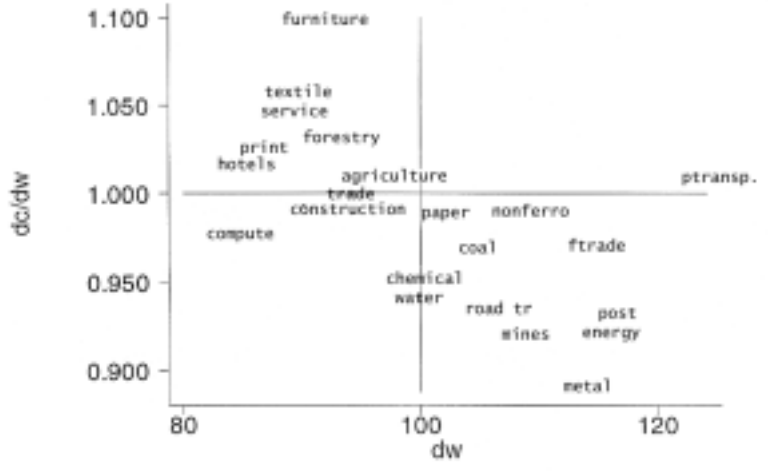
In many cases changes in earnings and labour costs differ from one another. For instance, in the textile industry, relative wage costs dropped by only 6.6 percent despite an 11.2 percent decline in relative earnings, while in the energy sector a 17.2 percent increase in wages increased unit labour costs by only 6.9 percent. Figure 4.2 shows the location of the industries based on the relationship between the two indices. The horizontal axis shows changes in relative earnings between 1986–97 ($dw=w^{97}/w^{86}$, where w is the earnings for workers in a given sector compared to earnings for workers in the engineering industry, assuming similar gender, age, etc.).[40] and where the vertical axis contains the dc/dw values of relative wage cost changes (dc) that are a concomitant of the earnings change.[41] Lines indicate the constancy of relative earnings (dw=1) and cost changes proportionate to wage changes (dc/dw=1). Most of the industries are located in the upper left or lower right corners of the plane divided by the lines. The earnings for light industries and the services that are in the left upper quadrant of the space had to drop radically for labour costs to decline by a unit. For the sectors in the lower right corner, mainly extraction industries – and the telecom, energy sectors, foreign trade, and transportation – the rise in wages partly (in some cases completely) offset the rapid rise in company revenue compared to the engineering industry, thanks to which relative wage costs per unit showed little if any increase. In other words, the industries/branches in the upper left quadrant, all of which were subjected to keen competition, were unable to increase company revenues – prices and/or productivity – sufficiently to reduce labour costs without an extraordinarily large cut in earnings.

Local transport companies hiding on the right side of the figure are the "odd men out", for here both wages and labour costs increased significantly (meaning a major drop in profit), as are computer services in the lower right corner, where exactly the opposite occurred.

40 To put it another way, $w=e^b$, where b is the coefficient of the given industry parameter in the J3.1 regression model.

41 $dc=c^{97}/c^{86}$, where c is the earnings of workers of similar gender, age, etc. in a given industry compared to that of workers in the engineering industry, in a comparison of companies with identical productivity.

FIGURE 4.2: LOCATION OF INDUSTRIES COMPARED TO ENGINEERING REGARDING EARNINGS CHANGES AND THE RELATIONSHIP BETWEEN LABOUR COST CHANGES AND EARNINGS CHANGES, 1986–97[a]



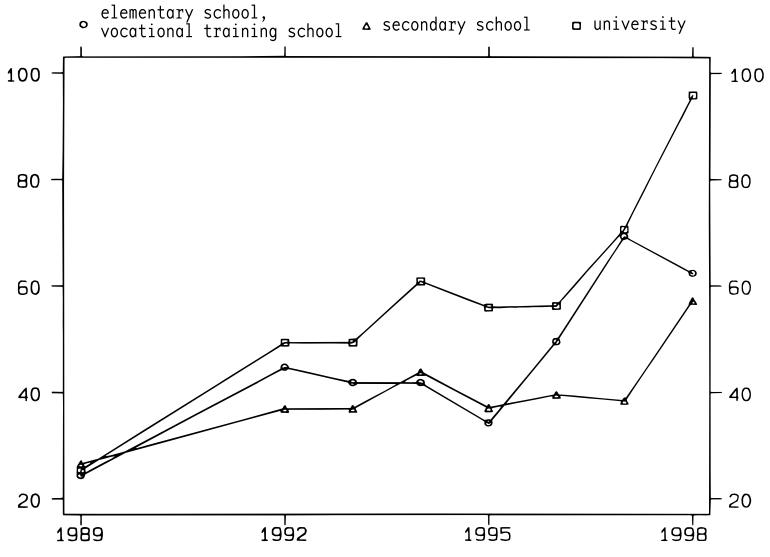
a Excluding petroleum extraction and processing, and railway transport
Estimate using Wage Tariff Survey, 1986 and 1997 waves, as specified in J3.1, including the company productivity variable (wage costs) and excluding it (earnings).

This is where we will discuss banks and insurance companies which we have ignored in earlier calculations. Based on the Wage Tariff Surveys it is hard to glean an image of the earnings position of insurance companies. There have been drastic changes in the industry rent from one year to the next in the period under observation, presumably depending on how many of the insurance firms operating with an agent system were included in the sample. (The "earnings" slot for agents generally contains an amount near to minimum wage, with the rest of their income coming from commissions.)

Changes in the situation of bank employees are easier to follow. Using the model discussed in Note J3.1 from which we excluded the productivity variable, and introduced a dual value sectoral variable called "bank employee – non-bank employee", we ran an estimate by education groups which gave us the curves in Figure 4.3 for 1989–98. (In 1986, banks and insurance companies were not included in the Wage Tariff Surveys.)

The industry-specific rent of secondary school graduates, who made up the backbone of bank employees, rose from 20 percent to 50 percent. Employees with a maximum vocational education (maintenance staff, guards, reception personnel, cleaning staff) had a slightly higher increase. Bank employees with college decrees were earning about 20 percent more than college graduates similar in gender, age, and place of residence in 1989, while in 1998 they were earning nearly 100 percent more.

FIGURE 4.3: WAGE ADVANTAGE OF WORKERS WITH VARIOUS EDUCATION LEVELS EMPLOYED BY FINANCIAL INSTITUTIONS COMPARED TO WORKERS WITH SIMILAR EDUCATION LEVELS IN ALL OTHER INDUSTRIES, 1989–1998 (PERCENT)



Estimate based on Wage Tariff Surveys, as described in text. Company sector.

4.2 Effects of Ownership

JÁNOS KÖLLŐ

The rapid spread of foreign-owned business was one of the most spectacular (and most hotly debated issues) of the Hungarian transformation, playing an important role in the transformation of the "price system" of the Hungarian labour market. Wages paid by foreign-owned business significantly exceeded – by over 50 percent in 1998, for instance – the average for business where the majority ownership was domestic. However, if the differences in the averages are broken down into their components we notice structural differences (compositional effects) on the one hand, and differences in the capitalisation and solvency of typical domestic and foreign businesses on the other.

Table 4.2 shows the results of breaking down the difference in average earnings into its factors, using 1998 data from the Wage Tariff Survey. This was a two-step procedure. First, we estimated earnings functions for businesses with a majority foreign ownership, and for other (hereinafter: domestic) businesses. In other words, we estimated the extent to which wages in the two sectors were influenced by education and age, the sector and region in which they operated, productivity, and capitalisation.[42] The sec-

42 For specifications, see Endnote J4.1.

ond step was to break down the differences in estimated average earnings into three components (equal to $b^K X^K – b^H X^H$) on the basis of the estimated coefficients for "foreign" and "domestic" employees (b^K and b^H), in keeping with the explanatory variables of employment (X^K and X^H). The $(X^K–X^H)b^H$ component measures the effects of the differing *compositions* of employment, the multiple $(b^K–b^H)X^H$ measures the *parametric effect* that would result from sectoral allowances that might be different or from the accumulation of human capital, while the $(b^K–b^H)(X^K–X^H)$ factor measures the *interactive affect* derived from intra-sectoral relations that are different in compositional and parametric effects. By projecting these components to logarithmic wage differences in the two sectors, we can determine the percentage of the total earnings differences made up by each effect.

TABLE 4.2: FACTORS SHAPING EARNING DIFFERENCES BETWEEN MAJORITY FOREIGN AND DOMESTIC OWNED COMPANIES, 1998

Kind of effect	Different structure	Different valuation	Interactions
Male-female	-2.4	7.7	-0.8
Schooling and age	0.7	4.5	2.1
Region	1.9	-0.6	1.6
Sector	4.4	25.8	-5.4
Size	20.3	3.3	-7.4
Productivity, capital intensity	47.9	4.1	6.8
Constant	-	-14.5	-
Total[a]	72.9	30.3	-3.2

a Since figures are rounded, the total of the columns may differ from the Total line. The latter was rounded out from components worked out to 8 decimals. Source: Wage Tariff Survey, 1998. Strict business sector For details, see Note J4.1.

Mean earnings in domestic firms: HUF 59,232, in foreign firms: HUF 90,470.
The difference in the logarithm of average earnings = 0.4189 = 100 percent.

Table 4.2, which contains the results, shows that the most important factor shaping earnings differences is the significantly higher *productivity* of the foreign businesses, which pushes up the foreign-domestic difference by nearly half (47.9 percent) of the total average wage difference. The positive relationship between productivity and wages deviates only slightly between the two sectors. In other words, given similar productivity levels, labour in domestic businesses could count on proportionately higher salaries. Other important roles are played by

(a) the composition effect of company size, in other words low-wage small businesses are essentially absent from the foreign-owned sector;

(b) economic sector-related relative earnings differ for the two ownership sectors (sectoral parameter effect),
(c) a non-negligible though far more modest influence is exerted by sector-specific differences in gender, education, and age-related wage ratios, and
(d) there is a constant element of foreign-domestic wage differences which operates as a reducing factor (which we will interpret a bit later).

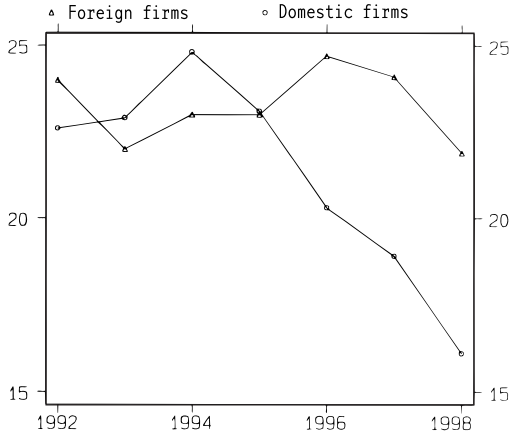
The difference in industry rent is not random. It would appear that foreign businesses pay comparatively high wages in the low-wage sectors, or in other words, within the foreign-owned sector differences by industry/branch are much smaller than for domestic companies. We can see this in the left upper panel of Figure 4.4, where we measure the average earnings for domestic businesses in various branches on the horizontal axis, while on the vertical axis we have shown the wage advantage of foreign businesses for the various economic sectors. The economic sector circles show the ones that are proportionate in size to the ratio of employment in foreign firms within the branch. We clearly see that as we move towards the high-wage, the difference between foreign and domestic wages declines (especially if we restrict our attention to the sectors where there is a significant foreign presence).

Most likely it is not a question of foreign businesses not paying the rent that evolved historically on the Hungarian labour market, since with the exception of some branches, they tend to pay more than the domestic firms. Instead, it is simply that the foreign businesses operate in the top segment of the lower-wage branches (catering, commerce, some services, farming, and the food processing). In these areas Hungarian capital tended to bring about small businesses: mom and pop stores compete with foreign department store chains, bed and breakfasts with hotels, and village butchers with meat combines. This makes it very likely that what we estimated as a "parameter effect" through an extensive data survey with simple variables is really also the result of differences in composition.

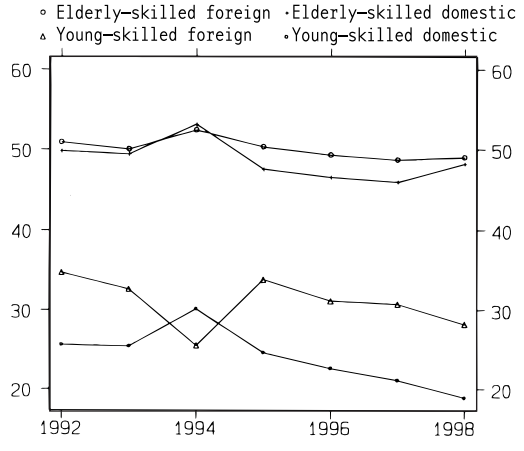
The upper right panel shows trends in male and female earnings differences from 1992 to 1998. Throughout the period, the male wage advantage stayed in the 22–24 percent range in foreign companies (despite the fact that during this time the number of foreign firms increased and changed in composition.) Meanwhile, in domestic companies, the difference dropped from 22 percent to 16 percent. We can do no more than guess at the reasons, keeping in mind the possibility that here too it is a composition effect (this one being temporal). Many activities in which the difference between male and female earnings were comparatively large to start with (such as industry, where the two genders were employed in quite different types of activity) shifted gradually from domestically owned to foreign owned businesses. Further research is needed to clarify this.

FIGURE 4.4: THE DIFFERENCE BETWEEN "FOREIGN" AND "DOMESTIC" WAGES BROKEN DOWN BY VARIABLES

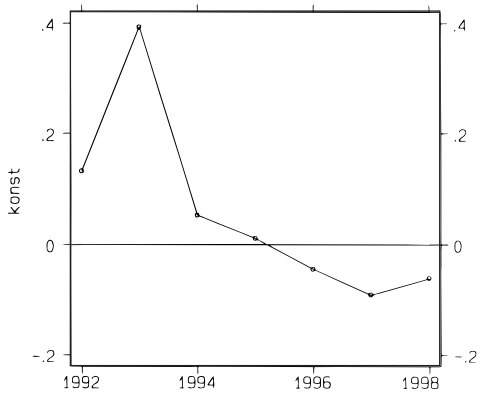
Earnings ratio by industry, 1998



Male-female wage differences, 1992–98



Relative wages of educated labour, 1992–98



Constant difference, 1992–98

Estimates are from Wage Tariff Surveys in accordance with Note J4.1, except figure for sectors which is based on raw data of 1998 survey. Also see text.

Different evaluations of age-dependent education levels appear in the lower left part of the figure. The curves show how much more old educated and young educated employees made than "uneducated" (with a maximum of a vocational education) workers, with all other earnings-shaping factors given, and separate examinations of the issue for foreign and domestic businesses.[43] The relative earnings of old educated workers were not different in the two sectors, but with time the earnings of young educated workers became significantly higher in the foreign companies than in the domestic ones. The

43 We used the same classification as the one introduced in subsection 3.2: a person was considered "young" with less than 22 years of experience, and high school and college graduates were considered educated.

figure showing the high remuneration corresponds to observations that foreign businesses are more effective in combining young, qualified labour and modern technology. Estimates by *Kertesi and Köllő (1999a)* for 1992–96 brought out higher productivity yields for young educated workers employed by foreign businesses than for domestic ones. In fact, they found that the general growth in the productivity of this part of the workforce – as noted in Chapter 3.2 – was basically the result of the growth of foreign business. Neither with respect to domestic nor to foreign business can it be demonstrated that productivity yields connected to young educated labour had increased, but they always were higher among the foreign businesses. It would appear that there really was a fortunate meeting between the portion of the workforce with more modern qualifications and the inflow of foreign capital, which in 1998 employed 28 percent of the young, educated workforce, 32 percent of college graduates with less than 22 years of employment, and 41 percent of the college graduates with a maximum of 10 years of employment.[44] At this point – in connection with the issue of productivity and wages – we need to say that it appears hopeless to try to discover any causal relationship between the quality of labour, earnings, and company productivity. We simply do not have sufficient information on the demand side of the labour market and on the specialised knowledge of workers. Causes might range from up-to-date technology through higher productivity to higher ability to pay, but it also is conceivable that new companies offer higher than market prices in wages to cream the workforce, which then bears fruit in higher yields.

The lower right panel in Figure 4.4 offers a type of crutch if not a sure support in trying to decide on the matter. It shows the constant difference between the earnings of people employed by foreign and domestic businesses from 1992 to 1998. The constants measure wages evolving at the zero level of all explanatory variables for the two types of ownership.[45] In our case, the constant measures the difference for a female with a maximum of a vocational education working for a medium sized engineering company in a south-eastern small town when comparing businesses in which HUF 1 million per capita capitalisation produces a value HUF 1 million per capita value added. The figure for this situation has no particular significance in itself, but its field of reference can be expanded (at the expense of accuracy). Considering that the earnings effect of productivity and capitalisation are only slightly different for the two ownership categories, and that the regional parameter effect is insignificantly small – as decomposition results have shown – the constant difference can be accepted as a gauge that measures the difference in earnings between *females employed in medium sized engineering companies* independently of productivity, capitalisation, and regional differences.[46] This is one of the most typical group of

44 The data is for businesses with a majority foreign ownership, and show ratios within the strict company sector.

45 The b^K and b^H parameter vectors differ and for that reason, if we subtract the two w=bX+c shaped functions from one another assuming identical X values, we only receive the difference in the c^K- c^H constant computed from regression estimates if $X^K=X^H=0$.

46 In this case, the parameters of the dummy variables of productivity, capitalisation, and region are treated as identical.

workers employed by foreign-owned businesses, whose wages most likely make up the floor of the point of reference when shaping the earnings hierarchy.

The constant difference interpreted as above, as can be seen in the diagram on the lower right part of the Figure, was quite high in 1992–93 when large numbers of foreign firms first appeared, but later it gradually dropped and from 1995 on it essentially can be considered zero in value. (In 1998 the estimated value for females working in the engineering industry would be –7.6 percent and for males it would be –1.6 percent, considering that males working for foreign firms earn 22 percent more than females while males working for domestic ones earn only 16 percent more. The estimate also tends to approach zero if we consider a branch sector other than the engineering industry, since the difference between foreign and domestic firms is comparatively low in the engineering industry itself.)

One reason behind the constant difference that cannot be explained by other factors (with models similar to the above) and for that reason, which appears to be rent-like in nature, could be that foreign businesses were willing to pay a risk surcharge when they first entered the unknown Hungarian labour market. This gave them an opportunity to pick and choose during the tricky time when they had to build up their staff from scratch. The disappearance of the surcharge – if it was more than just an apparition brought about by changes in complex composition – can suggest that this special situation has come to an end and that wages have dropped to market level.

What does appear certain is that today foreign businesses really do not pay their blue-collar labour better than domestic firms with the same productivity level. When evaluating the high wages of comparatively young educated workers, the over-average productivity of the foreign-owned businesses needs to be considered. It also is probable that a part of the productivity advantage of the foreign businesses is the result of the higher quality labour that evolved as a result of their initial high- wage policy.

We will be brief in comparing the wages of the *domestic private sector* and other firms in domestic ownership. In Table 4.3 the two groups are broken down into the same factors as Table 4.2, showing a 23.9 percent earnings differentials (in 1998).

Most of the differences are explained by company size, economic sector, and productivity. Among private businesses the male-female wage gap is lower (15 percent as opposed to 21 percent), and young educated labour has less of a wage advantage (16 percent as opposed to 29 percent), but these differences correspond to no more than 4–5 percent of the difference between the two sectors. The higher ratio of small businesses and lower productivity play a more significant role, and earnings differences related

to company size are greater in the private sector. The sectoral parametric effect – or what appears to be that effect – probably stems from differences in internal structure of the same sort as already discussed in connection with the foreign-domestic wage difference. The constant differences reduce the private sector gap to 4.5 percent, probably because in the lowest earnings range there isn't enough room for additional wage differentiation. When evaluating these numbers, Section 1.2 needs to be kept in mind. In other words, data for businesses with a majority domestic ownership are distorted downwards by wage and accounting practices employed to avoid taxes.

TABLE 4.3: FACTORS SHAPING EARNINGS DIFFERENTIALS BETWEEN FIRMS IN MAJORITY PRIVATE OWNERSHIP AND OTHER FIRMS IN DOMESTIC OWNERSHIP, 1998

Kind of effect:	Different structure	Different valuation	Interactions
Male-female	2.1	14.7	-0.7
Schooling and age	5.3	14.2	-0.2
Region	1.0	-0.1	0.2
Sector	5.5	17.9	16.8
Size	32.1	17.9	20.7
Productivity, capital intensity	22.4	-5.4	-6.2
Constant	-	-20.5	-
Total[a]	68.3	1.1	30.7

a Since figures are rounded, the total of the columns may differ from the Total line. The latter was rounded out from components worked out to 8 decimals. Source: Wage Tariff Survey, 1998. Strict company sphere. For details, see Note J4.1.

Mean earnings in domestic firms: HUF 43,403, in foreign firms: HUF 56,970.
The difference in the logarithm of average earnings = 0.272 = 100 percent.

4.3 Business Sector and Budgetary Institutions[47]

GÁBOR KÉZDI

During a decade from 1987 to 1996, the size of labour employed in public administration, healthcare and education changed very little. It has ranged from 750,000–800,000 throughout the period. Over this same time, employment in the other economic sectors dropped by one-third, from 4 million to 2.7 million. Meanwhile, the average earnings in the public sector dropped moderately, by 5–10 percent, compared to the average earnings in other sectors. The changes in average earnings are probably covering up the really important developments that determine how much one and the same person might earn in the public and in the business sector.

47 For a longer and somewhat different version, see Kézdi 1998c.

The section below explores earnings flows for the 1986–1996 time frame in somewhat greater detail. It is essentially descriptive in nature. It does no more than mention issues that are interesting from the economic and social policy point of view, such as what motivates people when choosing an occupation (or sector in which to work), how those decisions affected the changes that accompanied the transition, and what were the consequences of all this on the quantity and quality of work in the public and business sector. The study consists of three parts. First, we investigate trends in employment and average earnings sector by sector. Then we attempt to break down earnings differentials into observable components, concluding with a brief discussion of the probable consequences.

Employment and Average Earnings

For purposes of this study, we consider public administration, healthcare, and education as the public sector, or budgetary institutions. This definition is clearly oversimplified on the one hand (for it excludes cultural institutions and the state-owned railways). On the other, it is more extensive than, for instance, the Anglo-Saxon definition (which includes only public administration). For more information on definition problems, see *Kézdi (1998c)*. When analysing earnings we conducted a separate study of higher education, while we use the term public education to cover the rest of the education sector and the term business sector to cover the rest of the economy even though it is clearly inaccurate when describing the former socialist economy.

TABLE 4.4: NUMBERS OF PERSONS EMPLOYED IN THE PUBLIC SECTOR AND THE BUSINESS SECTOR, 1987–96 (IN THOUSANDS)

Year	Public admin.	Health care	Education	Public sector (total)	Business sector	All sectors
1987	245	217	282	744	4,094	4,838
1996	257	218	312	786	2,719	3,505
Change (percent)	+5	+0	+11	+6	-34	-28

Source: Central Statistical Office data

Between 1987 and 1996 employment rose slightly, by a total of 6 percent, in the public sector, while it dropped by 34 percent in the business sector. The largest rise in employment was in education. Healthcare remained essentially unchanged. *Kézdi (1998c)* shows that changes in employment in budgetary institutions were quite mixed but not very different when looked at from the point of view of groups with various education levels. In the business sector, however, there are systematic differences. Employment

of persons with less than secondary education dropped by 43 percent, of secondary school graduates by 14 percent, and of college graduates by only 4 percent.

Table 4.5 shows average net real and relative earnings trends for 1986–96. The data contains only the wage and other cash benefit components, but not the other elements of compensation. The significance of these components probably grew to a greater extent in the business sector than in the public sector over the period of economic transition, so real differences probably increased to a greater extent than shown by the data.[48]

TABLE 4.5: REAL AND RELATIVE EARNINGS OF PERSONS EMPLOYED IN THE PUBLIC AND THE BUSINESS SECTOR, 1986–96 (HUF OF YEAR 1989, BUSINESS SECTOR = 100)

Year	Public admin.	Health care	Education	Higher education	Business sector	All sectors
1986	9,972	9,073	9,336	10,292	9,898	9,829
1996	6,046	5,220	5,294	6,102	6,337	6,150
Change (percent)	-39	-42	-43	-41	-36	-37
Relative Earnings						
1986	101	92	94	104	100	-
1996	95	82	84	96	100	-
Change (percent)	-5	-9	-11	-8	-	-

Real earnings declined significantly in all sectors. The important thing to us is that this drop differed to a slight but not negligible extent from one sector to the next. The relative earnings in the public sector were down by 5–11 percent compared to the average for the business sector.

Components of Earnings Differentials

As mentioned in the introduction, changes in average earnings probably cover up the really interesting developments because of significant differences in the employment pattern. There is a far higher ratio of highly qualified labour in the public sector, because of its very nature . So, if the wages of highly qualified labour in the business sector showed a relative increase, average changes would reflect only part of this because average earnings in the business sector are pulled down by the wages of labour with lower qualifications. We can control for this in a comparatively simple manner by comparing the (observable) earnings of employees whose observable characteristics are similar for the various sectors. Figure 4.5 shows the relative earnings of employees that are similar in this sense, in other words, it gives a picture of how the earnings in a given area of the public sector relate to earnings of similar employees in the business sector.[49] The figures show ten

48 Earnings data refers to annual net earnings from an employers and includes all cash payments for full time employees. The personal income tax had not yet been introduced in 1986. Data for 1996 net earnings are estimated and the base data contain gross earnings components. The net earnings derived from them probably contain systematic and random deviations from unobservable "real" earnings data. The two collections of data differ only in minor factors. For more information see *Kézdi (1998c)*. The analysis of earnings has been limited to employees as opposed to all working people, which probably affects non-public employees to the greater degree. In the 1980s about 20 percent of people in the "competitive" sphere worked part time, while in the mid-1990s roughly 25 percent were part-time workers. The structure of self-employment also changed. For somewhat more detail on this see *Kézdi (1998c)*. All these issues are likely to show wage differences that evolved in the 1990s as smaller than they really are.

49 I have estimated relative earnings according to gender, three education categories, and age divided into 5-year periods. These assumptions yield expected non-parametric values.

groups of employees put together on the basis of their earnings in the business sector. They range from the 10 percent with the lowest earnings to the 10 percent with the highest.

If earnings depended only on observable features of people, the figures would tell us how much more labour in a given area of the public sector could be expected to earn if they changed jobs and went to work in the business sector. In addition, if working conditions were the same everywhere, these differences could not be maintained on long term. But, we know that people in the compared sectors work under very different conditions, and that this is probably to the advantage of labour in the public sector – with shorter real working hours, foreseeable advances, and greater job security – as targeted by laws for public employees and public servants. In addition, we know that there are non-observable features alongside the observable ones that also play a significant role, particularly in the business sector. Table 4.6 shows that in 1996 earnings dispersion related to non-observable features in the business sector were double the level of dispersion based on observable features, which is principally the result of the transformation. These features play less of a role in the public sector, and the direction of the change is also unclear, with the exception of public administration. This is either a sign that the role of individual performance has increased in the business sector (and to a lesser extent, in public administration), or suggests that differences between positions, jobs, or the various (specialised) sectors of operation have grown, and not necessarily in conformity with performance. For public administration, the latter is suggested by the fact that it is far more diverse than healthcare or education (for more details, see *Kézdi 1998c*).

We see from the figures that changes in average earnings as observed in Table 4.5 cover up very significant differences. Based on observable characteristics, earnings in (almost) all groups within the public sector declined. Even more important, the higher the earnings category the greater the decline.

The relative earnings of the lower third of public administration went down to only a very slight degree if at all, while in the upper third, they dropped from 0.9 tenths of the business sector to 0.7 tenths. The same was true for healthcare though to an even greater degree. Prior to the political regime change, relative earnings of the upper third roughly coincided with workers in the business sector but by 1996 they had dropped to 0.6 tenths. In public education and higher education, the lower third also suffered a tangible loss while the relative earnings of the middle and upper third dropped to roughly the same extent (from 0.85–0.95 hundreds to 0.50–0.65 hundreds in public education and from 0.75–0.85 hundreds to 0.50–0.65 hundreds in higher education). By 1996 it was typical of all budgetary

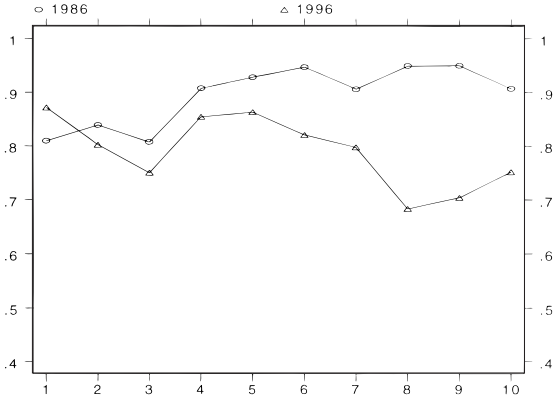
institutions that *the higher the potential productivity of a public employee or public servant (estimated on the basis of observable characteristics) the lower the ratio of her/his earnings compared to similar labour in the business sector.*[50]

Table 4.6: Relative Standard Deviation of Earnings in the Public and Business Sector, Broken Down into External (Gender, Age, Education) and Internal (Not Explainable by These) Components, 1986–96

Year	Public admin.	Health care	Education	Higher education	Business sector	All sectors
Coefficient of variation (total)						
1986	0.48	0.49	0.39	0.39	0.42	0.42
1996	0.60	0.46	0.40	0.42	0.75	0.72
Change	+0.13	–0.03	+0.01	+0.03	+0.33	+0.29
Coefficient of variation (external)						
1986	0.29	0.27	0.26	0.24	0.14	0.16
1996	0.25	0.21	0.22	0.28	0.21	0.22
Change	–0.03	–0.07	–0.04	+0.04	+0.07	+0.06
Coefficient of variation (internal)						
1986	0.19	0.21	0.13	0.15	0.28	0.27
1996	0.35	0.25	0.18	0.14	0.54	0.50
Change	+0.16	+0.04	+0.05	–0.01	+0.27	+0.24

Source: Wage Tariff Surveys

Figure 4.5: Relative Earnings of Persons Similar in Observable Characteristics (business sector = 1) in Ten Hierarchical Earnings Categories of the Business Sector



50 When speaking of the lower, middle, and upper earnings thirds, we clearly mean a comparison to see whether the earnings of persons similar in gender, age, and education level to people in the public sector are in the lower, middle, or upper third of the *business sector.*

We can see some very interesting objective factors through a close look at these flows. The lower third of the potential business sector earnings distribution contains a majority of ancillary staff (maintenance, drivers, administrative staff), who would probably be doing similar work in the two sectors. Similarly, the work done by people in public administration is probably more similar to the work done by people in the business sector than that of doctors or teachers. Therefore, in the former case, the public sector tends to "compete" more with the business one than in the latter, where people would not really be able to sell their specialised knowledge. On short term, therefore, it suggests rational government behaviour that the wages of the former group declined to far less of an extent than those of the latter. Even though doctors, qualified nurses, and teachers have suffered substantial wage cuts, they simply have no place else to go. On long term, however, this is not the case, because though they may not be able to find work elsewhere, the public sector is competing for valuable labour when career decisions are made.

Consequences

The growth of the public sector's employment share was higher than the decline of relative average earnings there. With a rough estimate, we might say that the total *gross* earnings paid in public administration, healthcare, and education represented 19 percent of the amount paid in the business sector in 1986, and 22 percent in 1996.[51] In other words, these changes increased the burden of those working in the business sector.

At the same time, earnings for employees in the public sector declined significantly compared to similar labour in the business sector, and the higher the (competitive sector) earnings, the bigger the decline for public sector workers. This – together with differences that increased dramatically within the competitive sphere – demonstrates what we already knew based on day to day experience: that earnings opportunities for really good labour increased significantly outside the public sector. Among people with knowledge and experience that is more convertible (lawyers, teachers in higher education) this will certainly lead to a shift in valuable labour out of the public sector. Among the less flexible occupations (doctor, nurse) it is harder to shift, but the results will be the same on long term because of career decisions. All this is, of course, only valid if there are no major changes in working conditions compared to the business sector, changes that would keep the public sphere attractive despite the increased earnings differences. We know that demands on labour in the business sector have increased quite significantly, and that laws on public employees and public servants were designed precisely to provide attractive conditions. It is essentially an empirical matter to decide the extent to which this modifies the above

51 Total earnings paid are easiest to estimate by multiplying (*gross)* average earnings per sector by the number of persons employed in the sector. In 1986 this amounted to HUF 5,309 billion at current prices, while in 1996 it totalled HUF 30,949 billion. The estimated figures for the business sector were HUF 28,670 billion and HUF 141,024 billion. The estimates are probably distorted upwards since earnings data includes only full time employees and the growth was probably more than estimated. For more information, see *Kézdi (1999).*

conclusions. However, it does appear that some of these circumstances are making life for public employees more pleasant precisely at the expense of performance.

4.4 Informal Economy

Endre Sik

Work in the informal (or as it was called under socialism: the second) economy has always been of interest to income and labour market regulation. Nonetheless, prior to 1995 wage trends in the informal economy were never investigated. In fact 1995 was the first time when monitors in supervisory organisations investigated the minimum and maximum wages in the occupations typical of the informal economy. (See Note J4.2 and *Sik and Tóth 1998*) The investigation was repeated in 1997 and 1998. In 1998, the third wave of the TÁRKI Social Research Institute Local Government Data Bank had specialists in various mayors' offices to estimate the minimum and maximum wages of the three areas of the informal economy typical of the given settlement. (Note J4.3) Based on these estimates it appears that in the mid-1990s wage trends in the most typical informal economy occupations reflected a deteriorating labour market situation (Table 4.7). From 1995 to 1998, the largest growth in minimum and maximum wages was for bricklayers. For this group, the wage increase was 50–60 percent, which resulted in a maintenance of the real value of the wages. The wages of persons handling loading and unloading at markets and of street vendors showed an opposite trend, increasing by 10–20 percent only over the entire period. Unskilled labour in farming and building was somewhere in the middle with a growth of 33–40 percent.

Table 4.7: Lowest and Highest Hourly Wages* for the Most Typical Occupations of the Informal Economy (HUF)

	Bricklayers		Loading and unloading		Day labourers in agriculture		Unskilled workers in building		Street vendors	
	min	max	min	max	min	max	min	max	min	max
1995	170	325	136	229	110	189	127	218	131	220
1997	222	427	131	225	122	207	141	233	123	211
1998	258	524	143	270	147	262	170	306	152	271

Source: Monitor research, 1995–97. (Note J4.2). *Inquiries into wages included hourly and day wages. The latter were transformed into hourly wages by assuming a six-hour workday, which is probably shorter than the real one, so in these cases hourly wages have been overestimated.

Between 1995 and 1997, even the nominal average minimum and maximum hourly wages of loaders at markets and street vendors declined. Wages of unskilled workers (both in construction and farming) went up by 10 percent, which was below the annual growth rate of inflation. The wage increase for clandestine work by stonemasons showed a different trend in the informal sector, with a roughly 30 percent growth rate, even between 1995 and 1997.

The increase in the case of wage minima was lower than the rise in the maximum rate, suggesting that wage differences are growing in all employment groups within the informal economy. The growth rates of the wage increases exceeded the inflation rate in all cases, excepting minimum wages for stonemasons and vehicle loaders. The highest increases were in the maximum wages of unskilled labour in construction and street vendors.

Comparing wages in the informal economy with average wages in identical occupations of the formal economy would be misleading, since it is impossible to compare either working hours or taxes and social security contributions on wages.[52] It does appear possible however, to compare wage trends for people in similar occupations within the two sectors as well as wage ratios from one occupation to the next. An analysis of the gross monthly wages of persons working in crop growing, of unskilled workers, and of stonemasons in 1996–1998, using the Wage Tariff Survey, seemed to be the best way of doing this.

The first conclusion is that within the formal economy the wage advantage of stonemasons compared to crop growers and unskilled workers was lower than in the informal economy. In 1996, stonemasons were making 25 percent and 14 percent more than crop growers and unskilled workers. In 1997 and 1998 the gap declined slightly (to 21 percent and 12 percent in 1998). In contrast, the data in Table 4.7 shows that in 1995 the minimum and maximum hourly wages of stonemasons were 55 percent and 72 percent higher than those of day labourers, and 34 percent to 49 percent higher than those of unskilled labour in construction. This gap, which was significantly higher than wage differentials in the formal economy, increased in 1998. At that time, the minimum hourly wage of a stonemason in the informal economy was 100 percent higher than the minimum hourly wage of a crop grower. The corresponding ratio for maximum hourly wages was 71 percent. The wage gap between stonemasons and unskilled labour in construction was also much higher than in the formal economy (34 percent and 49 percent in 1995, and 75 percent and 52 percent in 1998).

The rate at which wages increased in the formal economy in 1996 and 1997 was 13–15 percent, and from 1996 to 1998 it was 20–22 percent for stonemasons, day labourers and unskilled workers. So, in this respect there was no significant difference between the formal and informal economies, at least as far as trends were concerned.

52 The wage level of the informal economy for 1998 can be estimated for three types of "clandestine" labour, using TÁRKI's Local Government Database. If we assume that people working in the informal economy work 14 days/month, calculating with an average daily wage received by taking the mean of the minimum and maximum daily wage, the stonemason would be earning HUF 36,400/month, the day labourer HUF 16,800/month, and the building industry unskilled worker in construction HUF 21,000/month. All groups are below the gross income level of the formal economy, but the net might be higher.

Table 4.8: Factors Influencing Maximum Day Wages in the Most Typical Informal Occupations (multivariate linear regression[a,b])

	Bricklayers	Day labourers in agriculture	Unskilled workers in building
Town and village	–	–	–
Small village	+	+	+
Northern Trans-Danubia	+	+	+
Southern Trans-Danubia	+	+	–
Northern Region	–	+	+
Northern Great Plain	+	+	–
Southern Great Plain	–	–	–
Border Region (to Austria)	0.17	0.28	
	(2.0)	(4.4)	
	0.05	0.000	
Border Region (to ex-Yugoslavia)	+	0.19	0.23
		(3.1)	(3.3)
		0.002	0.001
Border Region (to Ukraine)	–	–	–
Border Region (to Romania)	+	+	+
Border Region (to Slovakia)	–	–	–
Labour working at the location	0.18	+	0.38
	(2.0)		(4.0)
	0.05		0.000
Is there foreign labour?	+	–	+
Is there labour commuting abroad	–	–	+
Share of inland commuters	–	+	+
Registered unemployed (percent)	+	+	+
Unemployment assistance (percent)	–	–	–
Without unemployment assistance (percent)	–	–	–
Adjusted R-square	0.03	0.13	0.12

a The analysis refers only to those settlements where local government specialists believe there is extensive work being done in the informal economy. That includes approximately 200 settlements for stonemasons, and about 300 for day labourers in farming and for building industry unskilled labour. Using the CSO T-star database for weighting does not guarantee nationwide representation for sub-samples this small.

b We only have used a plus/minus sign to indicate non-significant variables. For significant variables we have given the beta value, the T value in brackets, and the level of significance.

We analysed regional differences along three cross-sections: type of settlement (towns and villages – with the latter distinguished by size), regions (six major regions), and border regions (shaped from the sub-regions set up by the CSO in its T-star survey of 1996, see *Sik 1997a*). In addition, we designed approximation variables to characterise the labour market situation of the given settlements. The dependent variable was the maximum wage for the three occupations in the informal economy. Explained variance is small, suggesting that wage trends in the informal economy are not primarily a function of settlement specifics. As far as the effects of the different variables are concerned.

Type of settlement and region was not found to be significant for any occupation. The effects of border regions appeared stronger than the other two regional configurations. Working close to the Austrian and Yugoslav borders increases wages for work in the informal economy *(Sik 1999a)*. In contrast, working near the Ukrainian and Slovak borders (slightly) reduces the wage level in the informal economy.

The number of people working in a given area expresses *the size of the local labour market*. We can see that the larger the number of people working in a given area, the higher the wages in the informal economy, particularly in construction. This relationship can be interpreted on the supply side (more people working in a given place mean more people willing and able to do occasional jobs) and on the demand side (a local economy able to create [maintain] jobs has the same demands and abilities regarding informal work).

The existence and larger ratio of foreign labour and registered jobless people slightly increased the wage maximum, while a larger ratio of people receiving unemployment assistance or not even that slightly pushed down the maximum, but for the given sample size, these effects were not statistically significant.

5. INEQUALITIES IN EARNINGS AND INCOME

Péter Szivós, Márton Medgyesi

Public thinking has come to accept a view that the role of full-time job earnings in defining income inequalities declined during the transition period because of a growing income from capital, social transfers, and extra incomes. A variable like this might affect decisions to participate in the labour market and can influence the incentive force of wages. This chapter based on relevant publications and calculations by various authors investigates trends in the relationship between employee earnings and overall income in the 1990s.

The effect of a given income component on the inequalities in total income depends on its share, on the extent to which the given component is unequal, and on how it is correlated to the other income components and to total income.[53] This chapter discusses the relationship between earnings and household income. First, we investigate inequalities in incomes and earnings and other income components during the transition period. Then we discuss income patterns, investigating trends in the ratios of the various components that make up total income, stressing the role of earnings. Finally, we will focus on the relationship between the size of earnings and of household income and study the demographic factors that determine the relationship between earnings and household income.

The most important sources on this subject are *Kattuman and Redmond (1997),* and *Milanovic (1998, 1999),* who investigate the effects of the various types of income – including earnings – on inequalities in total household income in Hungary over the transition period, by breaking down the inequality indices into components. The authors used data from the Central Statistical Office Household Budget Surveys (hereinafter: HBS) as their bases. *Flemming and Micklewright (1999)* and *Milanovic (1998, 1998)* do not delve into the issue to quite the same depth, but they do give a detailed overview in an attempt to offer a comprehensive picture of income inequality trends in the former socialist countries. Studies analysing income inequalities and poverty have been completed using Hungarian Household Panel (hereinafter: HHP) data (such as *Förster and Tóth 1997, Galasi 1998, Kolosi, Bedekovics, and Szivós 1998, Medgyesi, Szivós and Tóth 1998b, Szivós and Tóth 1998, Habich and Spéder 1999*), as have analyses on earnings dynamics *(Tóth 1997, Szivós and Tóth 1998a, Rutkowski 1999),* but none were focused primarily on analysing the relationship between earnings and income.

We put the results of the analysis of the two surveys side by side, and attempt to add a picture of the relationship between earnings and income during the transition period. Using available data from the HBS for the late

53 For instance, social benefits can reduce inequalities of income for, although they are quite unevenly distributed among the various social sectors, they are targeted at groups with no earnings or low earnings in keeping with welfare policy goals (negative correlation to earnings and total income). Generally, though, their role in reducing inequalities is not particularly significant because the sharer of social benefits in total income is low.

1980s and HHP and the Household Monitor which succeeded it, we can follow changes all the way through to the mid or late 1990s. With respect to the HHP and the Household Monitor surveys, we have investigated 1991/92 and 1997/98 data and also have taken a closer look at 1993/94 and 1995/96. The former was significant because that was when unemployment peaked and the latter is significant because it marked the start of the austerity measures of the "Bokros Package". We also need to point out that investigations of income using questionnaires generally are unable to give an accurate picture of the bottom and top categories in the distribution. This must be kept in mind when evaluating all results. (For sources, see Endnote J5.1)

Inequalities of Earnings and Incomes

All studies on income distribution[54] during the transition period conclude that inequalities grew. The following tables show the income inequality indices calculated from the two surveys suitable for investigating household income. Table 5.1, with indices estimated from the HBS, shows that the distribution of household incomes was less equal in 1993 than in 1987, but that the process of differentiation was not continuous. Between 1987 and 1989 the value of the Gini[55] coefficient increased by 1.2 percent, while between 1991 and 1993 it grew by 3 percent, and in the two-year period in between there was a slight decline.

The P90/P10 index, which expresses the ratio of the 90th to the 10th percentile follows the same course. The percentile indices also allow us to observe that while in both 1987 and 1993, the median was 1.61 times the value of the tenth percentile, inequalities on the upper portion of the distribution increased.[56] Data from the HHP also show a rise in the Gini coefficient in the first half of the 1990s (see Table 5.2), although this rise appears to be stronger in the Household Budget Survey.[57]

During this same period, the inequality of earnings[58] showed a continuous growth and exceeded the rise in the inequality of total income throughout. Using HHP data the value of the Gini-coefficient for full-time jobs rose from 0.33 in 1991/92 to 0.36 in 1995. For this same period various income transfers also showed an increasing inequality that corresponded to earnings by order of magnitude. Meanwhile, the inequalities of entrepreneurial incomes dropped slightly by the middle of the decade, and then

54 Various concepts may be applied to measure income. One question is whether we are looking at net available income or gross, pre-tax income. Another issue that has to be decided is whether we want to present annual or monthly incomes. Two other matters requiring decisions are related to number of persons in a household. When calculating the index characterising the welfare level of an individual within a household based on total household income, we can include economies of scale resulting from number of persons in the household. To do this, we give the second, third, etc. household member progressively lower weight. We calculate the equivalent income measuring individual welfare with the equation $Y_e = Y/S^e$, where Y is total household income, S is number of persons in the household, and e is the elasticity coefficient. We also need to decide whether to include every household once in the analysis or to study the person-by-person breakdown of incomes, which means attaching household incomes to every single household member. (For more on this, see *Burniaux et al. 1998.*)

55 Gini = $\{(2/\mu n^2)\ \Sigma_i y_i \times i\} - \{(n+1)/n)\}$, where n equals the population and i = 1.....n, where yi equals the income of the i-th person, and where m equals the average income. The Gini can take values between 0 and 1, and the larger the value the greater the inequality. The coefficient is less sensitive to changes on the perimeters of the distribution than the other indices, meaning that it is relatively sensitive to the centre of the distribution *(Burniaux et al. 1998).*

56 When estimating their income distribution density functions, *Kattuman and Redmond (1997)* and *Spéder (1999)* also demonstrated the importance of increasing differences along the top of the distribution.

57 It also can be seen that research based on the Household Budget Survey estimated a Gini-coefficient fluctuating between 0.20 and 0.24, while the Household Panel yielded a higher. 0.28–0.29, value. This might be because representation at the top of the distribution in the HHP is better than in the HBS *(Andorka-Ferge-Tóth 1997).*

58 *Earnings (Milanovic 1999):* wages at full-time job, fringe benefits (meals, car use, other), earnings from part-time job. *Earnings (Kattuman and Richmond 1997)*: wages at full-time job, fringe benefits (meals, car use, other) tips, earnings at part-time job, wages and profits from businesses that were and were not legal entitlements, earnings from occasional work. *Earnings (HHP)*: wages at full-time job, fringe benefits (meals, car use, other), irregular incomes connected to full-time job (bonuses, per diems, travel fees, severance pay, other).

rose again, significantly. The distribution of income from capital varied, at times showing a more concentrated and at times a more even distribution.

TABLE 5.1: PERSON-BY-PERSON DISTRIBUTION OF EQUIVALENT HOUSEHOLD INCOME: GINI-COEFFICIENTS AND PERCENTILE INDICES

	Gini[1]	Gini[2]	P90/P10	P90/P50	P50/P10
1987	0.22		2.61	1.62	1.61
1989	0.23	0.225	2.69	1.64	1.64
1991	0.21	0.209	2.45	1.58	1.55
1993	0.24	0.231	2.75	1.70	1.61
1995		0.242			
1997		0.254			

Source: Gini[1]: percentile indices: CSO HBS, equivalent (e=0.73) based on person-by-person distribution of monthly net income (Kattuman and Redmond 1997) Gini[2]: based on per capita household income (Flemming and Micklewright 1999).

TABLE 5.2: GINI-COEFFICIENTS OF VARIOUS TYPES OF INCOME

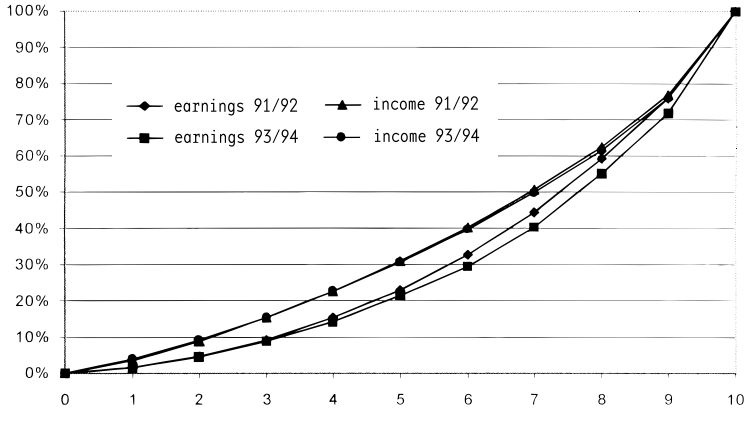
	1991/92	1993/94	1995/96	1997/98
Total household income	0.29	0.30	0.29	0.28
Earnings from main job	0.33	0.36	0.36	0.37
Capital income	0.67	0.71	0.64	0.71
Entrepreneurial income, earnings from secondary job and occasional work	0.65	0.66	0.64	0.72
Social security and other social transfers	0.36	0.36	0.39	0.37

Source: own calculations based on HHP and Household Monitor. Gini-coefficients are based on the equivalent annual net comes (e=0.73) for persons with the given type of income.

A study of total household income and earnings *in a stratum by stratum distribution*, in addition to the aggregate inequality statistics, is also very informative. Using HHP data as a basis, we set up personal deciles of equivalent household income and used them to study the distribution of total income and the various types of income. In the first wave of the Panel study, 15.4 percent of income was concentrated in the three lower deciles, 35.2 percent were in the middle four deciles, and nearly half was in the uppermost three deciles. In 1993/94, the Lorenz curve illustrating the deciles showed somewhat of a shift from the conditions of two years earlier, beginning with the fourth decile, which illustrates the growth in income inequality mentioned earlier. At this time the people in the upper three income deciles received over half (50.3 percent) of the total income, meaning that their share had increased somewhat.

The shift in household incomes was even sharper in a distribution based on the earnings deciles of full-time jobs. The uppermost three income deciles received 55.5 percent of total earnings in 1991/92, a ratio which climbed to 59.8 percent in 1993/94. The 1993/94 quasi-Lorenz curve was below the 1991/92 one throughout this range, and from the fifth income decile upwards, the deviation between the two curves appears to be significant. However, later investigations do not show this significant a difference. The quasi-Lorenz curves are quite close to one another and even intersect. In other words, on the whole it would appear that from 1987 to 1993, the inequality in earnings grew in a definite and continuous manner, while after 1993, it continued growing to a lesser extent.

FIGURE 5.1: STRATUM-BY-STRATUM DISTRIBUTION OF INCOMES AND EARNINGS, 1991/92 AND 1993/94



Source: own calculations based on HHP. Note: equivalent household incomes and earnings (e=0.73). Deciles were set up on basis of household incomes not equivalent to zero.

Income Patterns

HBS data show a decline in the share of earnings. According to *Kattuman and Redmond (1997),* the share of earnings made up nearly seven tenths of net income at the end of the 1980s, while in 1991 it had dropped to 63.9 percent, and to 56.2 percent by 1993. *Milanovic (1999)* reports lower ratios, also using the HBS data. In 1993 he reports a 50 percent ratio, very similar to the HHP.[59] According to HHP data, in the early 1990s 48.8 percent of household income came from earnings at a full-time job, and the ratio dropped still further by the middle of the decade.

The share of social and welfare payments grew in parallel. In 1991/92 it amounted to 30 percent of income, and two years later it made up 36.2 percent. The share of capital income and profits was about 6–8 percent throughout this time and it did not change significantly.

59 The likely reason for the difference is that *Kattuman and Redmond (1997)* included wages or profits from business ventures founded by individuals in their earnings data.

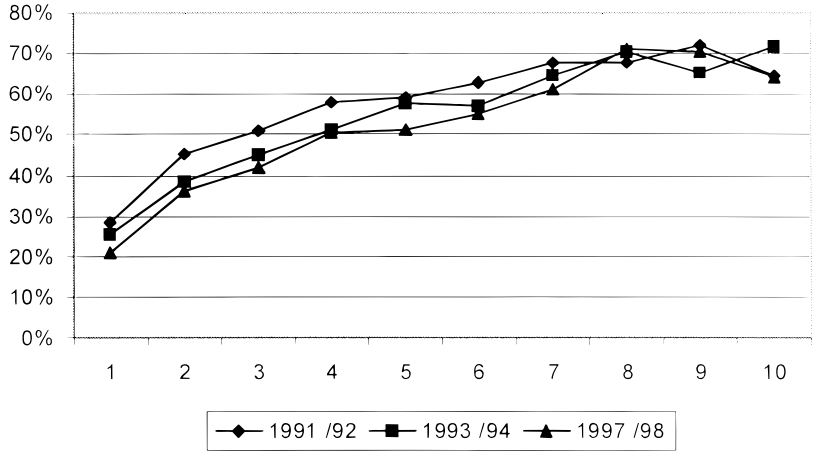
TABLE 5.3: PATTERN OF HOUSEHOLD INCOMES (AT CURRENT PRICES)

	1991/92		1993/94		1995/96	
	HUF	percent	HUF	percent	HUF	percent
Income from main job	160,443	48.8	195,744	45.9	270,721	46.3
Income from secondary work	23,151	7.0	29,037	6.8	49,012	8.3
Small-scale agricultural activities	21,462	6.5	16,110	3.7	23,294	4.0
Capital income. profits	21,352	6.5	28,156	6.6	49,904	8.5
Social security payment	78,498	23.9	123,357	28.9	150,710	25.8
Social transfers	22,709	6.9	31,052	7.3	37,664	6.5
Private transfer income	1,460	0.4	2,710	0.6	3,376	0.6
Total income	329,075	100.0	426,166	100.0	584,681	100.0

Source: Kolosi, Bedekovics, and Szivós (1998) Annual Net Household Incomes.

Using HHP data, we also investigated the share of earnings within household income *for the various income deciles.* Looking at the whole of household income, the ratio of earnings for the portion between the fourth and the eighth decile dropped between the beginning and end of the 1990s. Looking at only the households with a head who was of economically active age (see Figure 5.2), the ratio of earnings dropped for every decile up to the eighth, and it also appears that the decline was about the same for every decile. The curves in Figure 5.2 are parallel for all practical purposes.

FIGURE 5.2: SHARE OF EARNINGS FROM FULL-TIME JOBS WITHIN TOTAL INCOME OF POPULATION OF ECONOMICALLY ACTIVE AGE (BETWEEN 18 AND 60)



Source: HHP, own calculations. Note: equivalent household incomes and earnings (e=0.73). Deciles were set up on basis of household incomes not equivalent to zero.

The decline in the share of earnings could be the result of a double impact. It could depend on the relationship between earnings and total income or on the number of persons with earnings. Employment dropped significantly in Hungary during the transition period. This could amplify the income differentiation effect of a widening gap between earnings, in which the earnings gap most strongly affected the group at the bottom of the earnings distribution. The situation is even more serious if there is a concentration of job loss or inactivity by persons of active age within a household *(Flemming, Micklewright 1999).* The result is a growth in the ratio of households that do not have a single employed person. In other words, the distribution of employment between households becomes polarised. Table 5.4 shows the distribution of households according to number of persons with jobs in the 1990s, using HHP data. Compared to the 42.1 percent of total households in 1991/92, the ratio of households without an employed person had increased by 5 percent at the end of the decade. It also is clear that this is not only the result of an ageing population, since the process occurred among households with a head of economically active age too.

TABLE 5.4: BREAKDOWN OF HOUSEHOLDS BY NUMBER OF EMPLOYED (PERCENT)

	1991/92		1993/94		1995/96		1997/98	
Number of persons employed	With a head of econ. active age	All households	With a head of econ. active age	All households	With a head of econ. active age	All households	With a head of econ. active age	All households
Zero	21.4	42.1	24.0	44.4	25.6	44.8	29.0	47.5
One	42.3	32.3	40.7	30.7	42.6	32.5	38.2	28.9
Two	31.0	22.1	30.5	21.3	27.4	19.5	26.0	18.9
Three or more	5.0	4.0	4.9	3.6	4.5	3.2	6.7	4.8
N	1,356	2,047	1,311	1,961	1,275	1,858	1,329	1,922

Source: Own calculations based on HHP and Household Monitor.

This shows that at the start of the decade there was no employed household member in 21.4 percent of households where the head was of economically active age (18–60) at the start of the decade, with a continuous increase in this ratio until it was 29.0 percent in 1997/98. In parallel, the share of single earner and dual-earner households both dropped by 4–5 percent. In other words, the number of persons employed became more and more unevenly distributed between the households. On person-by-person level, this means that the share of people residing in households without a single employed person rose from 31.5 percent of the total population to 35.3 percent, while it increased from 20.1 percent to 24.5 percent among the population of economically active age. Table 5.5 shows the relative income

status of households grouped by the number of people in them with jobs. It is clear that although the ratio increased within the total number of households, the relative income position of households without an employee did not deteriorate, and in fact improved when compared to both total households and households with a head of economically active age.

TABLE 5.5: RELATIVE INCOME IN CATEGORIES BASED ON NUMBER OF EMPLOYED

	1991/92		1993/94		1995/96		1997/98	
Number of persons employed	With a head of econ. active age	All house-holds	With a head of econ. active age	All house-holds	With a head of econ. active age	All house-holds	With a head of econ. active age	All house-holds
Zero	0.73	0.77	0.71	0.78	0.74	0.78	0.77	0.81
One	0.99	1.08	0.99	1.07	1.00	1.08	0.98	1.05
Two or more	1.17	1.27	1.19	1.28	1.16	1.25	1.16	1.24
Total	1.00	1.00	0.99	0.99	0.98	0.98	0.98	0.98

Source: own research based on HHP and Household Monitor. Note: based on equivalent household income (e=0.73) with composition affects filtered out.[60]

The effects of the polarisation of persons within a household who were employed was determined by breaking down the inequality by number of persons employed. If the population investigated were ordered into groups using some characteristic, then an MLD[61] income inequality index is the sum of inequality between population groups (deviation in the average incomes of the groups) and the weighted mean of inequalities within the group. The portion of inter-group inequality within total inequality is considered the portion explained by the given factor. As Table 5.6 shows, the inequality of groups based on number of employed persons in the households measured with the MLD index explains about one-tenth of the inequality in income. The largest part was measured in the 1993/94 survey, when the ratio of inequality between the groups based on number of persons employed was about 12 percent. Table 5.6 shows that each year, the power to explain the difference was stronger for number of children than number of persons employed, while that of education level of the head of household was less strong.

Kattuman and Redmond (1997) note that when we explore the effects of only one characteristic, we are ignoring the fact that the various characteristics of the households (individuals) are not independent of one another. For instance, when, in the above we calculated the portion explained by education level, we ignored the fact that people with higher education levels have a higher probability of working. In other words, the ratios given in Table 5.6 cover up the effects of education level and employment (and

60 The effect of changes in the distribution of households by number of persons employed was filtered out by assuming the distribution of the 1991/92 study as constant.

61 To calculate the MLD (mean log deviation) index: $MLD = (1/n)\ \Sigma_i\ l_n(\mu/y_i)$, where n is the population number, $i=1....n$, y_i is the income of the i-th individual and μ, is the mean of incomes. This index is more sensitive than others to changes at the bottom of the income distribution *(Burniaux et al 1998)*.

many other factors). Therefore, we have employed the method proposed by *Kattuman and Redmond (1997)* and *Fields (1997)* based on a multivariable regression model to explain income, which allows us to quantify the effects of the explanatory factors in a manner that is independent of the other factors.[62] On this basis we find that the share of inactive household members explains a growing portion of the inequality. In 1987, 40 percent of the explained dispersion in the regression model was caused by the education level of the head of household, and the labour market status and age of the head of household gave a better explanation of the variation in incomes than the ratio of dependants. The role of the latter factor grew by 1993, and by then the ratio of dependants was equal in explanatory power to education level and labour market status of the head of household. When analysing changes in the inequality, we found that the ratio of dependants strongly increased the inequality between 1987 and 1993, though it was compensated for by the effects of education level and age *(Kattuman and Redmond 1997).*

TABLE 5.6: PORTION OF THE MLD INDEX EXPLAINED BY VARIOUS FACTORS (PERCENT)

	Number of employed	Number of child(ren)	Schooling of the head of household
1991/92	11	1	16
1993/94	12	3	25
1995/96	11	4	25
1997/98	10	6	18

Source: own calculations based on HHP and Household Monitor. Based on annual, net equivalent household incomes in person-by-person breakdown. (e=0.73)

Relationship Between Earnings Level and Household Incomes

As explained earlier, the effect of a given type of income on the inequality depends partly on the inequality of its own distribution, and partly on its weight within total income. From the above we can see that the distribution of earnings became more unequal, which had the effect of increasing income inequality, while at the same time it was observed that the ratio of income from work declined within household income. The question is, what is the combined effect of the two processes. This chapter discusses how big a portion of the overall inequalities in income are the result of earnings *at a given moment in time*, and how *changes* in the earnings distribution affected *changes* in inequalities of income. We are using decomposition processes to answer this question, which, however break down the total inequality of income into types of income rather than population

62 This distribution is based on a regression model with various individual and household characteristics of incomes (Y) (or rather, their logarithms). The affect of an explanatory variable (x_j) is $s_j = \beta_j \sigma(x_j) cor(x_j, lnY) / \sigma(lnY)$, where β_j is the regression coefficient of the j-th explanatory variable, σ is the deviation, and *cor* is the correlation *(Fields 1997).*

categories. The Gini-coefficient[63] and relative dispersion[64] are used most often to break down income into types. *Milanovic (1999)* has used the former in a study on Hungary, while *Redmond and Kattuman (1997)* have used the latter.

TABLE 5.7: BREAKDOWN OF GINI-COEFFICIENT AND CHANGES IN IT (PERCENT)

	1987	1993	Change 1987–1993
Change in composition	–	–	-117
Earnings	72	75	239
Non-earned private income	20	18	-26
Pension	13	17	61
Other transfers	-4	-10	-9
Interaction	–	–	-48
Total	100.0	100.0	100.0
Gini	20.7	23.0	2.3

Source: own calculations based on Milanovic. Per capita net household income.
Note: non-earned private income = entrepreneurial income, profit, capital income, private transfers (Milanovic 1999).

Using HBS data, both analyses show that earnings play a decisive role in income inequalities. As Table 5.7 shows, on the basis of the breakdown of the Gini-coefficient, in 1987 the earnings distribution made up 72 percent of the inequality in income, and in 1993 it accounted for 75 percent. Based on the breakdown of relative dispersion (Table 5.8) the role of gross income on generating inequalities of income is even stronger. At the start and end of the period under investigation, gross earnings made up 100 percent of the total inequality, while in 1980 and 1991 it was even higher than that. If, however, we look at net earnings, meaning that we subtract the value of social insurance contributions and income tax from gross earnings, it becomes lower, similar to the values received with the Gini distribution. However, the two studies draw different conclusions on trends in the share of net earnings. While the Gini observed only small changes through the period under investigation, the relative dispersion showed a definitely declining trend. From 1991 to 1993, the role of net earnings in determining inequalities of household income dropped from 82 percent to 69 percent *(Kattuman and Redmond 1997)*. The reason for the difference might be the differing definitions of earnings already mentioned, since in principle the method used by the studies discussed to break down the inequality into portions of income is independent of the inequality index applied *(Shorrocks 1982)*.

63 The Gini-coefficient of household income can be described as the weighted average of the concentration coefficients of the various portions of income, where the weights are the ratios of the given types of income within total income *(see Shorrocks 1982, Milanovic 1999)*. The concentration coefficient is also the multiple of a member of the Gini-coefficient that expresses the correlation between portion of income and total income. The problem with this method of distribution is that the concentration coefficients are not indices of inequality, and without further assumptions they cannot fully explain the role of the various types of income *(Cowell 1998)*.

64 The method of calculating CV^2 (coefficient of variation) is: $CV^2=0.5var(y_i)/\mu^2$,where *var* is variation, and the rest of the symbols are as above. This means that the CV^2 coefficient equals one half of the relative deviation. For the sake of simplicity, we will use CV^2 for relative deviation. Compared to other inequality indices, this index tends to be more sensitive to changes at the top of the income distribution. The relative deviation of the various portions of income can be described by the relative deviation of total income based on the well-known characteristics of variance distribution, and as the sum of the member expressing the correlation of the various portions of income. If we want to attach a number to each portion of income showing the portion of its responsibility for the total inequality, we have to divide the correlation member among the components of income, which can be done using the method proposed by *Shorrocks (1982)*, when k is the contribution of the portion of total income equality, calculated as follows: $S_k=cov(Y, Y_k)/\mu^2$, where *cov* is covariance, Y_k is the given portion of the income, and μ is the mean of the incomes *(Burniaux et al 1998)*.

Table 5.8: Breakdown of the Relative Dispersion and Changes in It (percent)

	1987	1989	1991	1993	Change: 1987–1993
Gross earnings	98	111	124	96	89
Earnings from agriculture	7	3	3	5	–2
Entrepreneurial income	n.a.	5	3	7	32
Social security and other social income	–5	–5	–5	–2	9
Other incomes	11	11	13	27	83
Social security contributions					
Personal income tax	–11	–26	–38	–33	–110
Net earnings	100.0	100.0	100.0	100.0	100.0
CV^2	0.098	0.115	0.087	0.126	0.028

Source: Kattuman and Redmond (1997), a: own calculations based on Kattuman and Redmond (1997). Based on equivalent household income in person-by-person breakdown (e=0.73).Other income: interest and dividends, private transfers, etc. (Kattuman and Redmond 1997)

In the breakdown of the Gini-coefficient we see that alongside earnings inequalities, non-earnings private income makes up roughly one-fifth of total income inequality. Pensions played a steadily increasing role in the total inequality. It was only the other transfers, made up decisively of social benefits, which reduced inequalities, and they did so to an increasingly dominant degree. A breakdown of the relative dispersion also indicates the role of transfers in reducing inequalities, but it shows the role of taxes to be even more important than this. While transfer incomes reduced income inequalities by only 5 percent in 1991, taxes reduced them by 38 percent.

We also investigated the role of *changes* in earnings on income inequalities. We see from the breakdown of the Gini-coefficient that in itself the rise in the earnings concentration coefficient should have caused more than double the rise in the Gini-coefficient than the amount that actually occurred. The differentiation effect was reduced by a decline in the ratio of earnings, a more even distribution of non-earnings-type private incomes and other transfers, as well as by the interaction term.[65]

It can be seen from calculations on relative dispersion that earnings are responsible for nine-tenths of the growth in the inequality of income that actually occurred. At the same time, other income also played a significant role in increasing inequality of incomes, while the role of entrepreneurial income was somewhat weaker. However, taxes and social insurance contributions significantly reduced the growth in the inequality.

We also investigated the relationship between earnings of employed persons and total household income on individual level. The correlation coef-

65 The decomposition of the variables in the Gini-coefficient breaks down the change in the index to three types of factors. First, modifications in the income pattern with a constant inequality of portions of incomes influences changes in the index. The second affect is the change in the inequality of the various portions of income, if the ratios of the various income components are taken as constant. However, it is possible that both the ratio and the inequality of the various types of income change, in which case the change in inequality per change in ratio of components has to be portrayed with a third factor, the interaction member *(Milanovic 1999).*

ficient for quintiles set up on the bases of earnings and household income for 1991/92 was 0.36, and beginning with 1993/94 it was somewhat stronger at 0.41. We studied employees who were in a lower income quintile compared to their earnings position. They made up about one-fifth of employed persons throughout the period under investigation. Table 5.9 shows that for all four years under investigation, households with two or more children were significantly over-represented within this group. Among earners with relatively low equivalent household incomes, the ratio of households with two or more dependant children was over 20 percent higher than average in all four years studied, and even the ratio of households with one child within this group grew. Other groups that were over-represented among household incomes that were low compared to earnings were the 30–40-year-old age group, and the group with a maximum of a vocational education.

TABLE 5.9: BREAKDOWN OF PERSONS WITH LOW HOUSEHOLD INCOMES COMPARED TO EARNINGS BASED ON NUMBER OF CHILDREN IN HOUSEHOLD (PERCENT)

	1992		1994		1996		1998	
Number of children in the household	Relatively low income	Total	Relatively low income	Total	Relatively low income	Total	Relatively low income	Total
No children	15.3	43.6	16.8	45.7	13.2	46.1	22.4	54.2
One	29.3	26.0	26.7	23.9	28.8	22.1	34.7	25.3
Two or more	55.5	30.4	56.5	30.4	58.0	31.8	43.0	20.5
Total	100.1	100.0	100.0	100.0	100.0	100.0	100.1	100.0
N	458	2,021	352	1,669	319	1,522	277	1,357

Source: own calculations based on HHP and Household Monitor
Note: based on equivalent household income (e=0.73)

Studies investigating the distribution of incomes agreed that between 1987 and 1993 the distribution of earnings became increasingly unequal, and that incomes became more concentrated. However, the distribution of income was less unequal than that of earnings, and the inequalities did not grow during all parts of the period under investigation. No further increase in inequalities of income was observed between 1993 and 1997 though the inequalities of earnings continued to grow slightly. In the first half of the period under investigation, the rise in income inequality for the total of households was not less than it was found to be, partly because the share of earnings within income declined, and partly because the effects of certain types of income (non-pension-type transfers, non-earnings-type private incomes) on increasing inequalities also declined. An analysis of gross in-

comes showed that taxes had a significant impact on reducing inequalities. On the whole however, the earnings distribution was the income factor with the strongest influence on income-inequality. Nevertheless, the studies discussed have offered different evaluations of the effects of earnings trends over the period of time discussed.

6. WAGES – CLOSING THE GAP BETWEEN HUNGARY AND EUROPE

Barnabás Ferenczi

With the deepening of European integration and the approaching of Hungary's accession, more and more frequently the question is raised: how the gap between the domestic and European wage levels will reduce or how should it be reduced. The question becomes one of whether there will be an "autonomous", essentially market driven adjustment, and if so, what will make it happen, and what are the mechanisms through which it will occur. To try to come up with possible answers we take a look at some possible triggers and the possible courses the gap reduction might follow.[66] We study expected trends in consumer price-based real wages that are relevant to general welfare and production price-based real wages – real wage costs – of interest to competitiveness. Since economic flows in Hungary through the 1990s were dominated by one-time transition shocks and major structural change, data from the past – often incomplete and loaded with methodological problems – yield little useful information on future flows. So, instead of investigating available data, we concentrate on presenting a general, stylised theoretical model of the triggers and mechanisms behind the gap-reduction flows.[67]

The Point of Departure

Data shows that during the 1990s, *at the official exchange rate* the Hungarian wage level in manufacturing dropped from one-fourth of the Austrian level to one-seventh. Roughly the same is true for hourly wage costs. By the end of the 1990s the domestic processing industry wage-cost level had risen to about USD 3, which was roughly one-tenth of the Austrian one. Distortions caused by official exchange rates can be sidestepped by using *exchange rate indices calculated at purchasing power parity.* Using purchasing power parity exchange rates published by the World Bank, the difference between the Hungarian and Austrian wage levels is smaller: dropping from 60 percent of the Austrian level in the late 1980s to about 20 percent in the 90s. See Figure 6.1. Table 6.1. shows Hungary's relative position from other aspects important to the subject.

Expectations

What are the mechanisms that can lead to wage convergence? There are two possible approaches to this issue. Our point of departure might be that Hungary will completely integrate into a huge European free trade zone in the near future. The process of joining the European Union might be treated as a powerful commercial opening toward these regions. In that case, the

66 Special thanks to Mihály András Kovács (National Bank of Hungary) for his critique of the analyses in this section.

67 Studies in *Commander and Coricelli (1995)* give a good picture of labour market flows through the 1990s transition period. For issues of wage convergence, see *Havlik (1996)* and *Godfrey (1994).*

convergence of wage levels would be defined by trade, fundamentally by commodity movement. Or, we might start off from the assumption that by the end of the 1990s Hungary's international trade integration into the advanced European countries had already attained its "equilibrium" level – based on the dominant role of the advanced European countries in Hungary's trade as calculated by some economic models *(Jakab et al 2000)*. If we use this assumption, wage convergence will not be based on an international trade opening but on other factors – economic growth, technological convergence and capital inflow.

TABLE 6.1: HUNGARY'S ECONOMIC INDICATORS COMPARED TO AUSTRIA IN THE 1990S

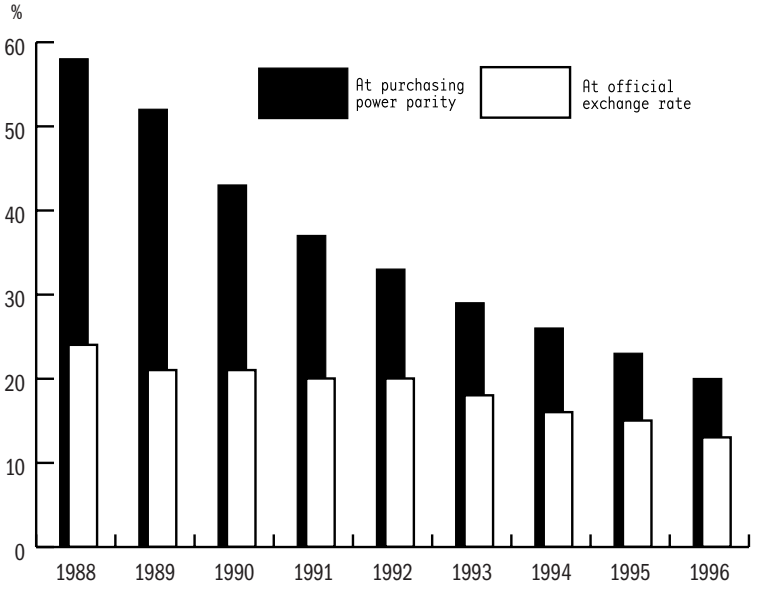
	Period	Hungary's relative position (percent)
GDP per capita[a]	1988–1998	44
Capital stock/GDP	1998	49
Undervaluation of the Forint[b]	1989–1997	49
Wage level[a,c]	1988–1996	36
Indirect wage cost / gross wages[a,d]	1990–95	26
Value per employee[c]	1988–1996	30
Total factor-productivity[c]	1998	67
Unit labour cost[a,c]	1991–1996	21

a At purchasing power parity exchange rates.
b Ratio of official and purchasing power parity schilling/forint exchange rate: the official exchange rate of the forint was an average of 49 percent undervalued compared to the purchasing power parity rate.
c Data are for manufacturing.
d Difference in percentages. Indirect wage costs over and above the direct ones. In Hungary this amounts to 44–53 percent. In Austria they fluctuated at around 23–24 percent, so the mean difference was 26 percent.
Source: Darvas-Simon (1999) and OECD and World Bank data.

Let's take a brief look at various theoretical considerations behind wage level convergency. Traditional international trade reasoning says that wage levels will converge as a factor of increasing trade integration, through the free flow of commodities and/or labour. First, we'll look at the flow of *commodities.* It follows from the tenets of *comparative advantage* known since Ricardo that free trade can substitute for the international mobility of production factors, including labour. According to the tenet of comparative advantage, when free trade is established, every country specialises in products that it can produce with a greater relative efficiency than any other country. In the modern version (Hecksher-Ohlin model) of the Ricardo model, the intensification of integration in international trade leads to wage

convergency. The relatively low wage level in an undeveloped county is related to a relative poverty of capital, while free trade makes it advantageous to use relatively cheap labour to increase production of labour-intensive products, which increases the wage level by pushing up demand for labour. Using the same argument, in countries with a wealth of capital and a high wage level, the wage level will decline. Thus, convergence is ensured, even if the workforce is internationally immobile. When adding *the free flow of labour* we have to see that it directly results in a convergence of wages, since when labour flows from a lower-wage country to a higher-wage one it increases the capital intensity of production in the home country that was poor in capital and reduces the capital intensity of production in the target country that was rich in capital, leading to the disappearance of wage differences.

FIGURE 6.1: HUNGARIAN HOURLY WAGES IN MANUFACTURING COMPARED TO AUSTRIAN ONES (AT OFFICIAL AND PURCHASING POWER PARITY EXCHANGE RATES)



Source: International Statistical Yearbook, 1999, UN-UNIDO data base

However, the traditional international trade argument does not really mesh with certain phenomena observed in the real world. Wage convergence realised through product prices assumes that production factors are immobile. The assumption that the convergence will take place through the free flow of labour is based on the postulates that capital is immobile and that labour is internationally mobile. In contrast, Hungary's integration into the advanced world is typified by an internationally immobile labour and

the free flow of capital. Therefore, we cannot expect the mechanisms discussed above to accurately describe the possible course of wage convergence.[68]

If the international trade reasoning does not yield the information we need on expected wage-convergency mechanisms, let's take a look at neoclassic growth considerations as they related to open economies and real exchange rate factors discussed in literature.[69] We are interpreting the international convergence of wages for nominal wage levels expressed in a common currency, which coincides with a multiple of the real exchange rate of the domestic real wage level:

$$(1) \qquad \frac{W/CPI}{W^*/CPI^*} \times \frac{CPI}{eCPI^*} = \frac{W}{eW^*} \quad ,$$

where *W* is the nominal wage level, *CPI* is the consumer price index, *e* is the nominal exchange rate, and the asterisks on the variables refer to the foreign country. This formula compares domestic and foreign *consumer* real wages, which corresponds to the welfare approach of wage convergency. In addition, we can study *product price (PPI) based real wages* which make it possible to compare competitivity, as in the formula

$$(2) \qquad \frac{W/PPI}{W^*/PPI^*} \times \frac{PPI}{ePPI^*} = \frac{W}{eW^*} \quad .$$

We see that by choosing appropriate real exchange rate indices, in the final analysis the international comparison of both consumer and producer real wages are ratios of the same numerator – on the right side of the formula. Thus, after some assumptions to simplify, wage convergence is a function of three factors. If we assume that the relationship between producer price levels expressed in a common currency, that is that the *(PPI/ePPI*)* ratio is constant in value,[70] then the three factors left to investigate are expected trends in real consumption wages, real producer wages, and consumer price-based real exchange rates.

Let's begin with a general stylised model that distinguishes traded and non-traded goods, and assumes only domestically mobile (between regions and economic sectors) labour and completely (both domestically and internationally) mobile capital.[71] To simplify, let us name two types of products or more precisely, sectors: manufactured goods and services.

(a) The Convergence of Producer Wage Costs

In this world, the convergence of producer real wages (real wage costs) is determined by the technology used to manufacture goods. Convergence is

68 We cannot, of course, preclude a large scale migration from Hungary when integrated in the European Union. However, empiric literature reports that in itself this does not always contribute to wage-level convergence. According to research summarised by *Rappaport (1999),* the flow of labour explains only a small portion of regional wage differences. And vice versa, it also is true that the speed of income convergence was similar in rate between regions with very different labour mobility, which suggests that the mobility of labour is not the key to understanding income convergence.

69 See *Obstfeld and Rogoff (1996), Halpern and Wyplosz (1996),* and *Krajnyák and Zettelmeyer (1997).*

70 We assume that the weakened, i.e. the relative form of purchasing power parity is valid for the producer price levels, which describes the convergence in price changes on the long term and not the price levels themselves ("principle of one price").

71 For derivation, see *Obstatfeld and Rogoff (1996),* Chapter 4.

expected trends in *total factor productivity*[72] and technological *capital intensity* (the capital/labour ratio:

$$(3) \qquad \frac{W/PPI}{W^*/PPI^*} = f\{TFP^T, TFP^{T^*}, k^T, k^{T^*}\} \ ,$$

where *TFP* is total factor productivity, *k* is the capital/labour ratio, and *T* refers to the goods (Traded). In the model, convergence is reinforced if the rate of productivity improvement in Hungary is higher than the foreign one or if the capital intensity of domestic technology increases. What can we say about expected trends in these flows? Let's use *Darvas and Simon's (1999)* estimates on a possible gap-reduction course between the Hungarian and Austrian per capita national incomes as our basis. In the initial state, according to their estimate, at the end of the 1990s, Hungarian *total factor productivity* was only two-thirds of Austria's, while the per capita GDP – at purchasing power parity – was less than half. According to their calculations, for the per capita GDP to climb to 70 percent of the Austrian level by 2030, in the next two decades the domestic total factor productivity will have to exceed the Austrian level by 0.8–1 percent/annum. In the next 20 years this would be equivalent to an annual efficiency improvement of 2.2–2.4 percent (given certain expectations on expected Austrian developments). In light of the fact that the domestic improvement in efficiency is estimated to have climbed at an annual rate of about 3.4 percent, and knowing that emerging countries are able to achieve higher productivity improvements than advanced countries for longer periods of time, this appears to be a realistic assumption.

In addition to a growth rate in total factor productivity that exceeds the foreign one, a rise in the *capital/labour ratio* of domestic output leads to the convergence of the productivity of labour, which is followed by wages. Studies on economic growth in various countries and regions have led to acceptance of the fact that a rise in the capital intensity of production is combined with a reduction in the economic gap. All indices show that in Hungary the capital input/labour input ratio in production is below the level customary in advanced countries. According to 1996 data, in manufacturing the share of capital input in production of the GDP was less than 27 percent, a ratio that was 33 percent for the rest of the economy. This calls attention to the surprising fact that while in the non-manufacturing sector the share of capital corresponds to the one-third ratio found in literature, in manufacturing the value of the index is lower. In other words manufacturing uses a less capital-intensive technology than the other sectors. We believe this to be a transitional factor since in every country in the world, manufacturing uses more capital-intensive technology than serv-

72 Total factor productivity is a "pure" index which filters out apparent improvements in efficiency coming from increased use of labour or capital inputs. Since it is difficult to measure in practice, most often the labour productivity index – which also includes the positive effects of a rise in the capital/labour ratio – is used in publications and analyses.

ices. An investigation of the *capital stock/GDP* ratio confirms the belief that the capital intensity of domestic production technologies will increase as a trend. According to research cited in *Darvas and Simon (1999),* the capital stock/GDP ratio in the advanced countries is about 3–4, while in Hungary the authors estimate that the index is less than 2.

In other words, we see that there is a major gap between Hungary and the advanced countries in capital intensity, so we expect that the supply of capital to the country will increase significantly while converging. In a closed economy the only mechanism that would trigger this is a sharp rise in domestic accumulation, but in an open country it is possible to use foreign resources. According to all indices, there has been a significant inflow of foreign capital to Hungary in the past decade. Our data shows, for instance, that between 1993 and 1997, almost one-fourth of all foreign direct investment (FDI) that came into East-Central Europe was invested in Hungary. The influence of the FDI on the production pattern can be seen in that according to World Bank data the share of high-tech products within manufacturing exports climbed from less than 20 percent to nearly 40 percent by 1997, a figure above the Austrian level. According to another index, between 1993 and 1998, foreign ownership in Hungarian ventures doubled. As far as the overall national economy is concerned, the share of foreign capital in equity went up from 15 percent to 40 percent, while in manufacturing it climbed from 30 percent to nearly 60 percent. As a result, the capital and R&D intensity of the domestic export-oriented sectors grew dynamically between 1988 and 1995 *(Oszlay 1999).* On long term the sharp inflow of capital will lead to a powerful increase in the capital intensity of production. This will appear in a further improvement in the productivity of labour, which will see to it that the domestic real wage level and real wage costs will gradually approach the western levels.

(b) Convergence of Real Exchange Rates and Consumer Real Wages

From the formulas given above, we can see that the convergence of consumer real wages is derived from the convergence of producer real wages and trends in real exchange rates. The convergence of consumer real wages will occur through a higher rate of productivity growth than abroad and the rise in capital intensity. Expected trends in the real exchange rate can be outlined knowing the *Ballasa-Samuelson effect.* According to the Balassa-Samuelson effect, if the growth in productivity is higher for manufactured goods sold internationally than for services, this will lead to a systematic increase in the relative price of services compared to manufactured goods, assuming that wages are equalised domestically and capital yields internationally. Since the consumer price index contains both manufactures and services, the services will become more expensive than the manufactures

whose prices are determined by international trade, which will raise the domestic price level. If the difference in productivity between manufactures and services (to the benefit of the manufactures) is higher domestically than internationally, the real exchange rate of the domestic currency will show a rising trend. The Balassa-Samuelson effect on the real exchange rate can be defined in the following way on a general model.[73]

$$(4) \qquad \frac{CPI}{eCPI^*} = (1-\gamma)\left[\frac{\mu^N}{\mu^T}\left(TFP^T - TFP^{T^*}\right) - \left(TFP^N - TFP^{N^*}\right)\right],$$

where γ is the weight of goods not entering foreign trade within the consumer price index, and μ is the level of labour intensity in two sectors of production (T and N). The long-term conclusion that can be drawn regarding the expected values of the parameters[74] – with imaginary differentiation between the formula – is that real exchange rates will firm if the *growth surplus* of total factor productivity in Hungary compared to the advanced countries is at least as high for manufactures as for services. This indicates that as far as closing the gap between Hungary and the advanced world insofar as national income indices are concerned, it will depend primarily on an improvement in the productivity of goods sold in foreign trade. Transition literature on real exchange rates[75] mention other factors with implications on a lasting real revaluation, in addition to the Balassa-Samuelson effect. These include significantly overestimating the consumer price index because of new products and improving quality of old ones, the expansion of services that had previously been held down artificially, which results in a higher-than-average growth in wages, a "surplus wage component" that exceeds the marginal product of labour, rapidly disappearing, sooner in marketable services, and price liberalisation. Although there is no agreement on the precise mechanisms and size of the real revaluation, in other words, on equilibrium real exchange rates, both general models – based on the Balassa-Samuelson effect in rapidly advancing countries – and models which treat the specifics of the transitional countries in an explicit manner, project a revaluation of the Hungarian exchange rate on long term. In fact, since 1989, consumer price-based real exchange rates have gone up by about 40 percent compared to Austria, and have done so by rising steadily in every single year except 1995.

According to the formula given earlier, as a result of the relative purchasing power parity assumed of producer prices, if producer real wages converge and real exchange rates go up, then consumption real wages also will converge. Therefore, according to our analysis, the consumption real wage level of Hungary is expected to converge towards that of the advanced countries. The potential channels of convergence are an expected more rapid

73 Derivation of the formula can be found in *Obstfeld and Rogoff (1996)* pp. 210–212.

74 The value of goods not entering foreign trade is (1-g) within the consumption basket, and by definition is actually less than this (in Hungary it was around 0.7 at the end of the 1990s). The key regarding relative labour intensity is to assume that on longer term services will apply more labour intensive technologies in Hungary, too, in other words, that the value of relative intensity in the formula will become greater than one (and not 0.91 as it currently stands as shown by domestic data).

75 Primarily *Halpern and Wyplosz (1996)* and *(1998), Grafe and Wyplosz (1997),* and *Krajnyák and Zettelmeyer (1997).*

increase in productivity than abroad and the continued revaluation of the real exchange rate, triggered by a rise in total factor productivity and capital intensity.

According to our overall stylised model, in themselves, autonomous economic flows also show an approach between the domestic wage level and that of the advanced countries. The inflow of foreign capital, the rise in productivity, the increase in capital intensity, the approach in price levels, and economic growth in general all lead to being able to count on a decline in the enormous difference between the domestic and the western wage levels on longer term. The process has already begun with a strong inflow of FDI, an industrial boom and the steady firming of the real exchange rate. There is no need for government or any other intervention to promote the convergence – the market itself will close the gap for wages and earnings.

7. ENDNOTES

J1.1 The measurement error can be approached most easily as follows:

$$x=\gamma+\delta x^*+v, \text{ where } E[v|x^*]=0 \text{ és } Var[v|x^*]=\sigma_v^2 \quad (1)$$

For pure measurement error $\gamma=0$ and $\delta=1$. In general, expected value and variance

$$E[x]=\gamma+\delta E[x^*] \quad (2)$$

$$Var[x]=\delta^2 Var[x^*]+\delta_v^2 \quad (3)$$

The assumed expected value if x is a dependent variable: $E[x|z]$ és $E[x^*|z]$. To simplify, we are considering a linear approach to the conditional expected value. The theoretical model:

$$x^*=\alpha+\beta z+u, \text{ where } E[u|z]=0 \text{ and } Var[u|z]=\sigma^2 \quad (4)$$

In this case, instead of $E[\beta] = Cov(x^*,z)/Var(z)$. (4), we estimate the following model if we consider the linear regression of x and z:

$$x=a+bz+w \quad (5)$$

Our goal is to investigate the relationship between E[b] and $E[\beta]$. The result of an OLS estimate is $E[b] = Cov(x,z)/Var(z)$.

$$\begin{aligned} Cov(x,z)=Cov(\gamma+\delta x^*+v,z)=E[(\gamma+\delta x^*+v)z]-E[\gamma+\delta x^*+v]E[z]= \\ = \delta E[x^*z]+E[vz]-\delta E[x^*]E[z]=\delta Cov(x^*z)+E[vz] \end{aligned} \quad (6)$$

If $E[vz] = 0$, in other words if the random (independent of x) component of the measurement error is independent of z,

$$E[b]=\delta Cov(x^*z)/Var(z)=\delta E[\beta] \quad (7)$$

The conditional expected value if x is an independent variable is $E[y|x]$ and $E[y|x^*]$. The theoretical model:

$$y=\alpha+\beta x^*+u, \text{ where } E[u|x^*]=0 \text{ és } Var[u|x^*]=\sigma^2 \quad (8)$$

In that case $E[\beta] = Cov(y,x^*)/Var(x^*)$. Instead of (8) however, we estimate the following model if we consider the linear regression of *y* and x:

$$y=a+bx^*+w \quad (9)$$

Our goal is to investigate the relationship between E[b] and $E[\beta]$. The result of an OLS estimate is $E[b] = Cov(y,x)/Var(x)$.

$$\begin{aligned} Cov(y,x^*)=Cov(y,\gamma+\beta x^*+v)=E[y(\gamma+\delta x^*+v)]-E[y]E[\gamma+\delta x^*+v]= \\ =\delta E[yx^*]+E[yv]-\delta E[y]E[x^*]=\delta Cov(y,x^*)+E[(\alpha+\beta x^*+u)v]= \\ =\delta Cov(y,x^*)+E[uv] \end{aligned} \quad (10)$$

Based on (3) we know that $Var(x)= \delta^2 Var(x^*) + \sigma v^2$. So, the OLS estimate of (9) is:

$$\begin{aligned} E[b]=\{\delta Cov(y,x^*)+E[uv]\}/\{\delta^2 Var(x^*)+\sigma_v^2\} \neq E[\beta]= \\ =Cov(y, x^*)/Var(x^*) \end{aligned} \quad (11)$$

If E[vu] = 0:

$$E[b]=\delta Cov(y,x^*)/\{\delta^2 Var(x^*)+\sigma_v^2\}=\delta E[\beta]Var(x^*)/\{\delta^2 Var(x^*)+\sigma_v^2\} \quad (12)$$

If E[vu] = 0 and $\delta = 1$, in other words in the case of a purely random error:

$$E[b]=Cov(y,x^*)/\{Var(x^*)+\sigma_v^2\}=E[\beta]Var(x^*)/\{Var(x^*)+\sigma_v^2\} \quad (13)$$

Estimating the approximate measurement error in the 1998 income survey sample. There is a more detailed analysis in Kézdi (1998), although the subject of the investigation is not the consequences of measurement error, but the immediate causes of standard deviations in self-reports. The latent variable itself cannot, of course, be observed, and in the estimate it is replaced with data provided by the workplace. As the study shows, we cannot consider the linear specifications of (1) to be correct, since estimation with Ordinary Least Squares only makes it possible to draw approximate conclusions on orders of magnitude. The number of cases in the estimate: 17,263, R^2=0.78. Estimates of the most important parameters: γ=1096, δ=0,65, σ_v=1106, Std(x*)=3190. Therefore, $Var(x^*)/\{\delta^2 Var(x^*)+\sigma_v^2\} \approx 1{,}85$.

J3.1 The National Labour Research and Methodology Centre issued its Wage Tariff Survey data once every three years up to 1992, and since then it has been publishing it annually, generally in May. The sample includes all businesses employing more than 20 people (more than 10 since 1994), and public sector employees. It is done by taking approximately 10 percent random samples of full time employees in the companies selected on the basis of the quota and within public sector institutions. In addition to the personal and earnings data of the employees in question, there is also a great deal of information available on the location of the facility, and on the company. The samples are regularly analysed by the Institute of Economics, Hungarian Academy of Sciences. They are weighted to account for companies refusing to participate, and the weighted samples include 150,000–160,000 cases.

The significant part of the tables and figures shown in the study are for the strict business sector excluding banks and insurance companies, principally because some company-level data in the financial sector (for instance, productivity) cannot be measured in the same way that it can be for other companies. We have noted all differences. We had only business sector data available from the 1993 wave. Unless otherwise indicated, the regression results are derived from the following specifications. Gross earnings in May and 1/12th of all bonus of the previous year, in a logarithm, is a dependent variable. Dependent variables:

- male
- years on the labour market (estimated on the basis of age and education level) and the square of that number
- skilled worker, secondary school graduate, university or college graduate (reference: elementary school graduate)
- unemployment rate for the second quarter of the year in the local labour office-region where the company is located, in logarithmic form. The numerator of the rate is the active population in the regions of the 170 local offices, as of 1990.
- Budapest, village (reference: location is in a town)
- 27 sectoral dummy variables

• company size (11–20 workers, 21–50, 51–300, 1001–3000, and more than 3001. Reference is 301–1000)
• productivity: logarithm of net revenue per worker excluding costs of materials and procurement price of goods sold
• ownership: predominantly private, predominantly foreign or jointly owned based on registered equity (reference: majority government, local government or co-operatively owned)
Estimates were made with the Ordinary Least Squares method. The parameters in the study are significant at 0.0001 based on standard error resistant to heteroscedasticity. The small number of deviations are indicated. For results of specifications similar to the estimates referred to here see, e.g. Kertesi and Köllő (1997, 1998a, 1999a, 1999b).

J4.1 The estimates were made with the following model. The logarithm of gross earnings in May plus 1/12th of bonuses paid the previous year is a dependent variable. Dependent variables:
• male
• young-educated (at least secondary school graduate with a maximum of 22 years work experience)
• old-educated (at least secondary school graduate with a minimum of 22 years work experience)
• 16 region dummy (6 regions x 3 settlement levels + Budapest)
• 27 sectoral dummy variables
• company size (11–20 employees, 21–50, 51–300, 1001–3000, and more than 3,000; reference is 301–1000).
• productivity: net revenue per worker minus costs of materials and procurement price of goods sold (HUF m), in logarithm
• capitalisation: value of net assets per worker (HUF m), in logarithm
Prior to 1992 there is no information on the breakdown of company ownership. Three considerations were behind the deviation from the model reviewed in J3.1:
(1) the major difference in the capitalisation of domestic and foreign businesses,
(2) when considering education level and age, the effort to produce a classification similar to the productivity estimates in sub-section 3.2,
(3) more precise consideration of regional location.
Detailed results of similar estimates with similar specifications are reported in Kertesi and Köllő (1999a).

J4.2 Monitor research. The organisations participating in the research were the ones charged with monitoring some segment of the informal economy. In 1995 it was the Public Space Authority, the Budapest Indoor and Outdoor Market Management, and the groups of the county Labour Centres charged with monitoring. In 1997, in addition to the above, monitoring was done by the Consumer Protection Authority, the Hungarian Betting and Gaming Board, the National Health Insurance Fund Administration and the Tax and Finances Supervisory Office. In 1998 the Betting and Gaming Authority did not participate, but the group was joined by the Customs and Excise Authority, the National Police Force, and the Pension Insurance Monitoring Organisation. We

considered the field staff of these monitoring organisations to be experts with more information on the informal economy than an average Hungarian – and not only within the area where they actually worked. The biggest constraint on the validity of the research is that the 1,500 questionnaires returned by the monitoring organisations participating in the research was far greater than the number of questionnaires filled out in the previous two waves (about 500–600 each), but despite that, the questionnaires do not represent the opinions of all the monitors, since we did not weight the data with the number of organisations that did not respond, or to "correct" regional distribution.

J4.3 Mayor research. In the spring of 1998, at the request of the Coordination Committee for Economic Protection and the Working Group for Integration Strategy we sent out questionnaires to be filled in to the more than 3,000 mayors' offices in the country. We had two targets: to learn whether there was a "Comecon market" or a "man market" (hiring fairs for casual labour) in the areas of the local governments, and if so, what were the characteristics of these institutions of the informal economy.

The questionnaire was simple and appropriate for filling in by a respondent. It was quite similar to ones we had already used in 1995 and 1997. In 1995 about 800 mayors' offices returned the questionnaire, in 1997 it was returned by 1,200 offices, and in 1998 by 1,000 offices. Breaking down the returned questionnaires by region, type of settlement, and, for the villages, by number of permanent residents, and comparing them to 1995 (the latest available) official data, we found that we had information on 32 percent of the local governments (within that, on 48 percent of the towns, 38 percent of the large villages, on 35 percent of the medium sized villages and 27 percent of the small villages). In itself, the 32 percent return rate was not a bad result, but what was even more important was the high return rate from the towns and larger villages, since these are the places where "Comecon" and "man markets" are most likely to occur. As our first step in the analysis, we prepared a weighted sample from the responses, which was representative of all Hungarian settlements in 1995.

J4.4 Moscow Square (Moszkva tér) man market research. The research technique was non-participant observation. The same two qualified observers observed the man market all year long, after prior participation in preparing the observation and designing the technique.

The dates of the observations (84 observations) were divided from April 1995 to March 1996, in such a way that they were representative of the day of observation, of the season, and of the time of day. We broke down the latter into three groups: dawn (around 6 a.m.), morning (around 8 a.m.), and forenoon (around 10 a.m.). Each period of observation lasted for two hours. At the start and termination of each observation period (using a maximum of 5–10 minutes) they registered the number of people seeking work who were at Moscow Square, and the observation conditions (weather, presence or absence of police).

For the rest of the time (over an hour-and-a-half) the observers had two additional tasks: (a) to make a random selection of 20 job-seekers each, and to record their observable characteristics, and (b) to observe as many transactions as possi-

ble (offer, bargaining, agreement, observable characteristics of participants in the transaction).

J5.1 The Household Budget Survey (HBS) included 12,000 households from 1987 to 1991, and 8,000 starting in 1993. It does a detailed investigation of household incomes and consumption. Between 1987 and 1991, proportionate selection was not made and this was not properly corrected by weighting. For this reason Kattuman and Redmond (1997) re-weighted the sample. Milanovic (1998, 1999), however, used the data published by the Central Statistical Office for those years. In 1993, though, he corrected the weights used by the CSO to filter out distortions for refusals to respond. The households in the survey were required to prepare a detailed journal of their consumption and income (for two months between 1987 and 1991, and for one month from 1993 on). Beginning in 1989, at the start of the year following the survey, all respondents were required to total their annual incomes and the personal income tax paid along with social security contributions, which made it possible to investigate both gross and net incomes on the basis of the survey.

The main goal of the Hungarian Household Panel (HHP) organised by the TÁRKI Social Research Institute and the Sociology Faculty of the Budapest University of Economics was to monitor the change of the labour market and income, and to observe poverty trends during the years of transition. The initial sample included 2,600 households, a representative sample of households in Hungary. The initial panel sample was established using a four-tiered stratified sample. The first period of questioning was in April-May 1992, and income questions were for the prior month and/or year. The size of the sample declined steadily because of dropouts, and thus, the investigation had to be concluded in 1997. Beginning with the following year another project was begun using similar questionnaires and a methodology that was similar to the Panel, with the (not-negligible) difference that it was cross-sectional and not panel research. Respondents to the individual questionnaires of the HHP and the Household Monitor which followed, had to fill in a detailed income table, and then the most competent member of the household responded to a household questionnaire which included separate questions on household-level incomes. All questions referred to the after-tax, net income.

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IN FOCUS
II. INCOME SUPPORT TO THE JOBLESS

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INTRODUCTION

In the first five years following the change of the political system, unemployment in Hungary was much more significant in scope and far more persistent than had been expected when laws on unemployment assistance and eligibility were passed. Though unemployment eventually declined significantly and by the end of the decade stabilised at a level acceptable in developed market economies, and also a great deal was learned about the operation of income support systems - the provisions for the unemployed have not evolved into a stable and sustainable system in terms of eligibility conditions and benefit levels. Neither have researchers and political decision-makers managed to reach a consensus on the criteria for operating the support system or on the changes that might improve it. The lessons and research findings below offer information which can help in reaching that consensus and in laying the groundwork for appropriate decisions.

The first chapter offers an overview of the theoretical issues related to unemployment benefits and examines current practice in both advanced and post-socialist economies. The other four focus on developments in Hungary since 1989. Three of these explore developments in the 1990s, while the last one concentrates on responses to and implications of a tightening of entitlement conditions in 2000. The second chapter tracks changes in the rules governing benefit entitlement, benefit levels, and financing. The third examines the effects of benefit receipt and exclusion. The fourth analyses the empirical effects of benefit payments on labour market processes and household incomes.

1. UNEMPLOYMENT BENEFIT SYSTEMS IN ADVANCED MARKET ECONOMIES AND IN THE POST-SOCIALIST PERIOD OF TRANSITION

1.1 The Economic Principles of Income Support for the Unemployed

János Köllő

In advanced market economies unemployed persons may receive benefits based either on insurance or need. Though forms of benefit used in practice are often difficult to put into one or the other of the above categories as

they contain elements of both insurance and need-based benefits, still, generally speaking, insurance tends to cover the first year following job loss, and after that benefits tends to be need-based.[1] Below, we outline the basic economic arguments concerning insurance type unemployment benefits.

If the individual earns a wage equivalent to w while employed, and devotes the entire amount to consumption, and then becomes unemployed with a probability of p, which means that the person no longer has an income, then the utility he derives from consumption is:

$$H^1 = pU(0) + (1-p)U(w). \quad (1)$$

If he is risk averse (i.e. attaches a lower value to the expected utility of an outcome of a given probability than to the utility of the expected value of the same outcome), he would be better off saving p proportion of his wage, in order to maintain an unaltered living standard when unemployed. In this case the expected utility is

$$H^2 = U[(1-p)w], \quad (2)$$

which is higher than H^1.[2]

However, even if a worker were to know exactly the value of p, he could not be certain that periods of employment and unemployment were going to alternate with a precision that allowed savings from salaries to cover expenses during periods of unemployment. He certainly would not be able to count on free credit to cover a transitional deficit. So, the individual would have to save more than pw to prevent income fluctuation. However, under favourable conditions (a large pool of insured persons, independent events of damage, low overhead costs, absence of concerns of moral hazard or adverse selection) the insurer would be solvent with incoming premiums of pw and outgoing benefit payments near $(1-p)w$.

This suggests that insurance is a cheaper and more attractive option for workers than private savings. But, this type of insurance market cannot evolve on a pure business bases because of factors such as moral hazard, adverse selection, and time correlation in the occurrence of events of damage.

Moral hazard occurs when the insured party is able to induce job loss resulting in benefit payments while the insurer is unable to identify clients who abuse the payment system. Insurers combat this partly by running checks on individuals and partly by not paying full compensation.[3]

Even though in the case of moral hazard optimum insurance offers partial compensation to insured individuals for loss of income, the expected utility of clients might still increase. Assuming that there is no insurance (or savings) and that the probability of unemployment is p^0, the individual's expected utility is

1 In the early 1990s, insurance-based benefits were paid for the first six months following job loss in 19 of the 20 OECD, for another six months in 13 countries, for the third as well in 7 countries, for the fourth six months in 6 of them, and for altogether ten times six months in one country (Belgium) *(OECD, 1991).* Two countries offered a need-based benefit targeted expressly towards the unemployed for the first six months of unemployment and six countries offered this type of benefit in the fourth six months depending on incomes, the unemployed were also entitled to various types of general welfare-type assistance. It should be noted that in Hungary not only has the Unemployment Benefit been partly based on insurance but so was the Unemployment Assistance available between 1994 and 2000, entitlement for which depended on prior entitlement to unemployment insurance benefits. This is in contrast with the recently introduced Regular Social Assistance for unemployed persons of economically active age, which does not require prior contribution to the unemployment insurance fund.

2 E.g.: see *Varian (1991),* pp. 278–280.

3 Unemployment insurance premiums are quite high. Benefits cover only one-half to two-thirds of the wages lost in the first year of unemployment, and even less later on. In addition, unemployment insurance often excludes short (one or two-week) periods of unemployment or voluntary quit. (For OECD practices, see *Köllő–Semjén [1995],* p. 50)

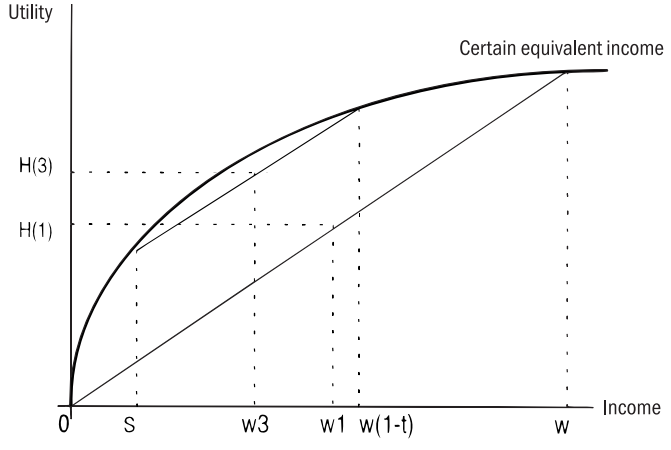
(3') $$H^1 = p^0U(0) + (1-p^0)\,U(w),$$

while, if there is insurance and if t is the premium, S the unemployment benefit, and p^S is the probability of unemployment in the case of insurance, utility is

(3") $$H^3 = p^SU(S) + (1-p^S)\,U[w(1-t)].$$

If there is insurance, since $p^S > p^0$, expected income is lower than without insurance, but the expected value of *utility* might still be higher, if the utility of unemployment benefit is significantly above the utility of zero income. Figure 1.1 illustrates such a situation, with U(0) = 0 and $p^S = p^0 = 0.5$ for the sake of simplicity.[4]

FIGURE 1.1: EXPECTED UTILITY, IN THE ABSENCE OF INSURANCE AND SAVINGS, AND WITH PARTIALLY COMPENSATING UNEMPLOYMENT INSURANCE



Without insurance or savings, the income of the individual varies between zero and w. Average income ($w1$) is higher than in the case of insurance, when the average ($w3$) is given by alternations of S and w(1-t). Despite this, utility $H(1)$ is lower than $H(3)$. (If benefit levels and premiums are too high and disincentives are strong, that is, when p^0 significantly exceeds p^S; the reverse is also conceivable, but this type of insurance is unlikely to survive.) The worker would of course be better off if he always had an income of $(1-p^0)w$ irrespective of his labour market status, in which case his situation would be illustrated by the point on the concave curve above $w1$, marking the utility of guaranteed income, but the insurer would not offer full compensation because of moral hazard.

4 E.g.: *Burtles (1995),* p. 80 analyses this issue using a similar diagram.

Another factor that could lead to the failure of market-based insurance occurs when it is impossible to identify low-risk and high-risk clients. Of course, the amount of the optimal insurance for the individual increases with the risk that he faces. In principle, this could be a signal for the insurer of the size of the risk of the particular client, and could be used to adjust individual premiums accordingly, as a second-best solution. The problem is that people at a high risk of unemployment could take advantage of the fact that each insurer knows only the amount of the policy taken out with his own company. So a client may achieve the lowest premium level per unit of insurance by taking insurance for X units of insurance with X different companies. Under these conditions, the best thing an insurance company can do is to calculate with a uniform *average* probability of unemployment when setting premiums. Mandatory insurance may yield favourable solution than the market optimum attainable in the above case.[5]

As far as the labour market is concerned, two factors make mandatory insurance almost impossible to avoid. One is that, since the risk of unemployment, for a significant part of the labour market, is very close to zero,[6] the average worker is far less likely to buy an unemployment insurance policy than one covering the expenses of an illness or household damage. The other is that adverse events on the labour market (loss of income resulting from layoffs) are so tightly correlated with fluctuation in the business cycle, that the premiums required for reinsurance would be so high that a clientele of sufficient size and diversity to make the insurance viable would never evolve.[7]

If insurance is mandatory, who covers the costs, which for all practical purposes are *taxes?* In the United States, where employers pay the entire contribution, can one say that businesses are paying for the entire unemployment burden? And can it be said about Germany or Hungary, where both employers and employees are obliged to pay: are costs more fairly distributed there?

It's easy to see[8] that the distribution of the costs of unemployment contributions does not really depend on who pays what proportion, but on how flexibly labour supply and demand react to changes in labour costs and net wages. For instance, if labour supply were perfectly flexible no matter which side was obliged to pay the tax, the result would be a drop in employment and a rise in the cost of labour, since net wages cannot decrease. By contrast, given fixed labour supply, whether the contribution were to come from the company or the worker, net wages would decrease by the amount of the tax. In other words, supply, and demand flexibility have to be known before the effects of a mandatory contribution can be predicted. (Prediction is further complicated by the fact that firms also have the option of transferring the cost of contributions to customers by raising prices.)

5 A number of seminar papers point this out, including *Akerlof (1970), Arrow (1970),* and *Pauly (1974),* whose argument is included in Note J.1.1.

6 Data issued by the Hungarian Central Statistical Office on Labour (Q1, 1998) show that 76 percent of Hungary's adult population have never been unemployed, that 79 percent never received unemployment benefit, and most of them will not need to rely on benefits in the future either (See Chapter 6.1).

7 It is conceivable in principle that employers might offer their workers insurance as part of a benefit package. But such practice has its limits because, though it might be more attractive than salary increases to risk averse employees, it may be too expensive, since, to make it worthwhile for employees to stay on the job, it would entail a general rise in wages. See *Shapiro–Stiglitz (1984)* and *Weiss (1990).*

8 See, e.g. *Varian (1991),* p.367.

The above effects can be empirically examined by measuring the influence of employer and employee contributions on profits and net wages respectively. *Hamermesh (1979)* finds that, in a cross section of member states of the United States, every extra dollar that employers were obliged to contribute cut net wages by thirty-five cents over a single year, and by thirty-seven cents over a five-year period. In other words, a significant proportion of employers almost immediately shifted a large part of the contribution burden to workers. Results reported by *Nickell and Bell (1995)* and *Euzéby (1995)* are also indicative of the adjustment of net wages (and/or levels of employment). *Nickell and Bell (1995)* claim that a 10 percent point increase in the payroll tax in OECD countries increased wage costs per product unit by only fourteen cents.

In many respects, unemployment benefit systems simulate insurance markets. They require the unemployed individual to bear a certain proportion of the costs, they impose an upper limit on benefits and/or on the amount of wages covered by insurance and they substantiate claims. At the same time, an unemployment insurance fund cannot follow a commercial insurance model that makes smokers or overweight persons pay a higher premium for life insurance. It cannot argue that certain *groups of occupations,* such as unskilled workers or miners are more prone to unemployment and therefore, they should pay higher premiums.[9] In another method, used in the United States, the premium paid by *employers* can be adjusted to the risk they pose (using the credit point system common to car insurance). Employers open accounts with the public employment service, which record not only the amount they pay but also payments to the workers dismissed by the particular firm. Within specific limits, premiums are determined by the balance of accumulated payments and contributions or by their ratio.[10] This practice, called "experience rating" is well suited to a special feature of the American labour market, i.e., that firms often resort to temporary layoffs, and later re-hire a significant proportion of their former employees.

Feldstein (1976), (1978) shows that in such a market, adjustment to risks yields a welfare gain. His models investigate the magnitude of short-term fluctuations in the optimum employment level (assuming that capital stays constant) induced by periodic declines in product demand, under the assumption that firms maximise the utility of their permanent workforce and are price taking. A further assumption is that when a company consistently responds with layoffs to decreasing demand, workers adjust and become risk neutral to resulting unemployment. The analysis concludes that fluctuations in the optimum level of employment are larger in the case of a state-imposed unemployment insurance system with uniform contributions than in the absence of unemployment benefits or when benefits are paid by

9 Imposing a ceiling on the amount of wage that can be insured, which is common practice, tends to lower the proportion of contributions and wages – and the benefit/wage ratio as well.

10 For details see e.g. *Vroman (1990)* pp. 28–39, or *Brechling (1981).*

firms. This is because a public unemployment insurance system with uniform contributions effectively functions as a covert subsidy to firms, encouraging them to adjust to fluctuating demand with layoffs. *Topol (1986)* estimates that increasing unemployment assistance in the United States does not raise definitive dismissals, nor voluntary quits, while it substantially increases the frequency of temporary layoffs. If contribution rates were perfectly (i.e. proportionately and immediately) adjusted to the number of dismissals, unemployment could have been reduced by nearly one-third.

Opponents of risk adjustment argue that such a system is practically impossible to work if its principles are strictly applied, since firms resorting to mass dismissals are often insolvent and not credit-worthy. Moreover, it may not even be desirable, since strongly competitive businesses would be at a disadvantage *vis-à-vis* monopolies, which can more easily pass on increased costs of dismissals.[11] A compromise is offered in a proposal by *Feldstein (1978)* of fully adjusting to risks benefit payments in the first month of unemployment, thus making typically short-term layoffs sufficiently costly.

Except for a few countries (Denmark, Sweden) temporary layoffs have not become common practice in Europe, mainly due to rules that make dismissals difficult. However, temporary layoffs are quite common in Hungary, so it would be worth considering the introduction of risk-adjusted contribution rates.

1.2 Unemployment Benefits in Advanced Countries: Eligibility Rules and Benefit Levels

Mária Frey

Unemployment insurance, as a means of compensating for the loss of earnings in the event of involuntary job loss, is a more recent provision than old age or health insurance. In 1911, Great Britain was the first to introduce nation-wide mandatory unemployment insurance, serving as a model to other advanced European countries, which introduced similar systems during the post-World War II economic boom. In the past decade the countries of Central and Eastern Europe and several middle-income developing countries also followed suit. Nevertheless, only about a quarter of the roughly 150 million unemployed of the world receive some sort of unemployment assistance (*ILO, 2000).* This study focuses on the major features of unemployment benefit systems in advanced countries.

Types of income support for the unemployed

Income support for unemployed individuals may take the form of *unemployment insurance* and/or *means-tested unemployment assistance.*

11 See *Hamermesh's (1979)* comments on *Brechling (1981).*

The insurance type unemployment benefit (UI) is intended to (partially) compensate for lost earnings. To be entitled to receiving the benefit, the claimant must have contributed to the insurance fund for a given amount of time, must be involuntarily unemployed, must be available to take up a suitable job and he must also be actively looking for work. The benefit level is generally related to previous earnings (replacement rate), the benefit is usually limited in duration (often dependent on employment record) and payments may not start immediately upon becoming unemployed but start after a short "waiting period". The conditions of entitlement are established by law, so that insured persons are aware of exactly how much support they are entitled to, and for how long. In most countries, unemployment insurance is subject to income tax.

The means-tested unemployment assistance (UA) is a form of income support financed by public revenues. Unemployed persons may be entitled to assistance subject to family income and asset tests, for an unlimited period conditional on proven need and unemployed status. Compared to insurance, the conditions for receiving support are more fluid, since any favourable change in family incomes can lead to exclusion.

In 60 percent of the OECD countries, unemployment benefits are based solely on insurance. Two countries (Australia and New Zealand) operate a purely means-tested system where claimants do not need to have an employment record but are required to look for work. In the other OECD countries unemployment assistance of a limited duration is offered beside unemployment insurance as a last resort for people who have exhausted their insurance entitlements. Those who qualify for neither UI nor UA may receive *social assistance* (SA), usually with the same conditions as other, not unemployed, recipients. Since the unemployment assistance is below subsistence minimum levels in many countries, some unemployed recipients need additional income support (as a general welfare provision), the amount of which depends on the funds available to local governments (*OECD, 1991).*

In developing countries, job loss was uncommon at the time when unemployment insurance was introduced. Spells of unemployment tended to be short, youth unemployment was low, and single-parent families were rare. For these reasons, unemployment benefits were handled separately from other social policy areas such as housing, family, and disability benefits *(OECD, 1996).* By now, the situation has changed considerably:

– unemployment rates are far higher than during the recovery after World War II;
– in half the member countries at least one-third of the unemployed have been out of work for over a year;

– many of the unemployed have exhausted their entitlements and do not receive a benefit;
– in most OECD countries, unemployment is high among young people, who do not have sufficient employment record entitling them to benefit;
– male participation rates have declined, but many of the men no longer on the market receive some sort of assistance (sick-pay, disability benefits, early retirement, etc.);
– female participation is increasing and, at the expense of the traditional family model in which the husband supports the wife and children, two-earner and single parent households have become more common.

When an increasing number of working age household members are economically inactive, this lowers the efficiency of protecting the *individual* worker from loss of earnings, in terms of ensuring the subsistence needs of the *family*. In this case, the unemployment benefit system must be augmented with other forms of support that guarantee a minimum standard of living (Table 1.1).

In most OECD countries low-income households with *high housing costs* are entitled to assistance, and almost everywhere there is a *family benefit* to which all families with dependent children are entitled. The exceptions are Australia, the United States, and Italy, where the amount of family benefits available to households depends on family income. In some countries, *single parents* are entitled to special assistance or to *employment-conditional benefits* if they take a job or already have a job, but the family income is low. Support to people with jobs is intended to encourage people to work and to protect working families from poverty. In addition, a working parent of small children or a parent who wants to work is entitled to a child-care benefit that fully or partially covers child care centre fees. In some countries this benefit is centrally administered, but in most cases it is locally based.

Conditions of entitlement for unemployment benefits, and benefit levels

Unemployment insurance is generally mandatory for all wage and salary earners who work regularly. It is part of the general social insurance system in the United Kingdom, Ireland, and Norway, while elsewhere it is administered separately. In Denmark, Sweden, and Finland, trade union unemployment insurance funds provide the unemployment benefits. Contribution to these funds is generally voluntary, except for union members, who are obliged to contribute in some cases. Union funds also receive state support, as do non-union members and unemployed individuals who have exhausted their entitlement to benefits (*OECD, 1991).*

TABLE 1.1: MAIN ELEMENTS OF UNEMPLOYMENT BENEFIT SYSTEMS

Country	Unemployment insurance	Income tax treatment of UI benefit[a]	Unemployment assistance	Social assistance[b]	Housing benefits	Universal family benefits	Means-tested family benefits	Single-parent benefits	Employment conditional benefits[c]	Child-care benefits
Austria	Y	*	Y	Y	N	Y	N	N	N	Y
Ausztralia[d]	N	*	Y	N	Y	N	Y	Y	Y	Y
Belgium	Y	taxable	N	Y	N	Y	N	N	N	N
Canada	Y	taxable	N	Y	Y	N	N	N	Y	N
Czech Republic	Y	*	N	N	N	Y	N	N	N	N
Denmark	Y	taxable	N	Y	Y	Y	N	N	N	Y
Finland	Y	taxable	Y	Y	Y	Y	N	N	Y	Y
France	Y	taxable	Y	Y	Y	Y	N	Y	N	N
Germany	Y	*	Y	Y	Y	Y	N	N	N	N
Greece	Y	taxable	N	N	N	Y	N	N	N	N
Hungary	Y	taxable	N	Y	Y	Y	N	N	N	N
Iceland	Y	taxable	N	Y	Y	Y	N	N	N	N
Ireland	Y	taxable	Y	Y	Y	Y	N	Y	Y	N
Italy[e]	Y	taxable	N	Y	N	Y	Y	N	N	N
Japan	Y	*	N	Y	Y	Y	N	Y	N	Y
(South-)Korea	Y	*	N	Y	N	N	N	N	N	N
Luxembourg	Y	taxable	N	Y	Y	Y	N	N	N	N
Netherlands	Y	taxable	Y	Y	Y	Y	N	N	N	N
Norway	Y	taxable	Y	Y	Y	Y	N	N	N	Y
Poland	Y	taxable	N	N	Y	Y	N	N	N	Y
Portugal	Y	*	N	Y	Y	N	N	N	N	N
Spain	Y	taxable	N	Y	N	Y	N	N	N	N
Sweden	Y	taxable	Y	Y	Y	Y	N	Y	N	Y
Switzerland	Y	taxable	N	Y	Y	Y	N	N	N	N
United Kingdom	Y	*	Y	Y	Y	Y	N	N	Y	N
United States	Y	taxable	N	Y	N	N	Y	N	Y	N

"Y" indicates that the specific benefit is available in this country; "N" otherwise.

a "Taxable" indicates that personal income tax and/or a social insurance contribution must be paid; *indicates that they do not pay tax, either because their benefits are not taxable or because the tax system is structured such that full-year recipients do not pay tax.

b The unemployment assistance and the social assistance may both be taxable, but were not included in the table.

c Employment-conditional benefits may take the form of a tax credit.

d Australia provides an unemployment benefit with characteristics of both UA and SA.

e Italy: a tax credit for house-rent is available in Italy.

Source: OECD (1999) p. 12.

From the 1960s to the 1990s, trends in unemployment benefit payment conditions evolved as follows *(OECD, 1994).* Unemployed workers in all countries except in Austria, New Zealand, and the European Union (except for the southern members) were offered generous benefits as far back as 1961, and between 1965 and 1973 these benefits were expanded everywhere except for France, Germany, and New Zealand. Between 1975 and 1985, some countries (Denmark, the Netherlands, Ireland, and France) further extended entitlement, while others (Belgium, and the United Kingdom) restricted it. After the mid-1980s, France was the only country to ease entitlement conditions.

In Southern Europe, conditions of entitlement were rather basic at the beginning of the three decades between 1961 and 1991. They remained so in Italy, while Spain adjusted conditions to conform to the Northern and Western European EU members around the end of the 1980s, and Greece and Portugal also improved entitlement conditions.

In Finland, Norway, and Sweden, a narrowly defined group of wage and salary earners were entitled to benefits in the early 1960s, which was later on gradually extended (in the form of voluntary insurance in Finland and Sweden).

In Switzerland, entitlement was significantly expanded in 1977, when mandatory unemployment insurance was introduced.

In the United States and Japan entitlement is comparatively limited, and benefits are comparatively small. In the former, the maximum duration of entitlement was increased slightly in the 1970s, then reduced in the 1980s, while Japan reduced the maximum duration applicable to a 40-year-old insured worker in 1975.

Under the pressure of limited national budgets and insurance funds on the one hand, and aware of the correlation between extensive benefits and levels of unemployment *(OECD, 1994)* on the other, almost all OECD countries reduced the coverage of unemployment insurance in the 1990s. *(ILO, 2000)* Table 1.2 gives an overview of conditions in 1997.[12]

To qualify for unemployment benefits, the unemployed worker must have been employed in *insured employment* for a specific period, as indicated in column 2 and benefit payments do not start immediately upon becoming unemployed but start after a *waiting period,* shown in column 3. (In Iceland the waiting period is extended for those who previously had high earnings.) The *level of benefits* (Column 4) is generally adjusted to previous earnings, but other factors, such as employment record, age and family situation, may also have an influence. A few countries (Iceland, Ireland, and the United Kingdom) administer *flat rate benefits.* Elsewhere, they set the minimum and maximum benefit (Columns 5 and 6), and it also is common that *replacement rates* (Column 4) decrease over time.[13]

12 The data is for 40-year-old single males with a long employment record, previously earning an average income.

13 In Belgium, for instance, the benefit is reduced from 60 percent to 42 percent of previous gross earnings over time, and payments may be suspended altogether if the period of unemployment last longer than 150 percent of the regional average. However, for couples with small children, if need is demonstrated, payments remain at 60 percent throughout the entire unemployment spell.

Table 1.2: Main Entitlement Conditions of Unemployment Insurance Benefits

Country	Employment conditions	Waiting period (days)	Payment rate (percent)[a]	Yearly minimum benefit (USD)[b]	Yearly maximum benefit (USD)[b]	Duration (months)
Austria	20 weeks in 1 year. Maximum duration if 156 weeks in 5 years	0 days	57 percent	1,519	11,975	12
Belgium[c]	312 days in 18 months, rising to 624 days in last 3 years depending on age	0 days	60 percent	7,167	11,405	No limit
Canada	420 hours of work in last year	2 weeks	55 percent	–	18,355	10
Czech Republic	12 months in last 3 years	7 days	60 percent	–	4,485	6
Denmark[d]	52 weeks in last 3 years	0 days	90 percent	–	16,387	60
Finland[d,e]	43 weeks in last 2 years	7 days	90 percent	5,191	12,094	23
France	4 months in 8 months	8 days	75 percent	8,293	57,978	60
Germany[f]	360 days	0 days	60 percent	–	29,520	12
Greece	125 days in 14 months	6 days	40 percent	2,800	6,150	12
Hungary	12 months in last 4 years	0 days	65 percent	1,472	2,943	12
Iceland	10 weeks in last year	0 days	flat	2,208	8,831	60
Ireland	39 weeks in last year	3 days	flat	5,200	–	15
Italy	52 weeks in last 2 years	7 days	80 percent	–	11,285	12
Japan[g]	6 months in last year	7 days	80 percent	–	18,067	10
(South-)Korea	12 weeks in last 18 months	14 days	flat	3,384	19,937	7
Luxembourg	26 weeks in last year	0 days	80 percent	–	34,378	12
Netherlands	26 weeks in 39 weeks	0 days	70 percent	9,878	26,139	60
Norway[d]	–	3 days	62.4 percent	–	17,296	36
Poland	365 days in 18 months	1 days	flat	2,536	–	18
Portugal	540 days in last 2 years	0 days	65 percent	5,532	10,787	30
Spain	12 months in last 6 years	–	70 percent	5,758	13,052	24
Sweden	6 months in last year	5 days	75 percent	6,216	15,243	10
Switzerland	6 months in last 2 years	5 days	70 percent	–	33,851	5
United Kingdom	–	3 days	flat	–	3,944	6
United States	6 months, regionally: minimum earnings requirement	–	50 percent	4,524	15,600	6

a The payment rate is expressed as a percentage of gross earnings, unless indicated "Flat" which means a fixed rate.
b Minimum and maximum benefits are based upon yearly earnings ceilings when countries have not provided specific values. 1997 purchasing parities are used to calculate USD values.
c Belgium: the payment rates for single persons is reduced to 42 percent in the 2nd year (see Section 2 a in the text).
d Denmark, Finland and Norway have a voluntary UI scheme.
e Finland: daily payments: FIM 118 + 42 percent of earnings below FIM 494, plus 20 percent of earnings exceeding FIM 494. The benefit is restricted to 80 percent of previous earnings.
f Japan: the payment rate depends on age and previous earnings level.
g German payment rates are expressed as a percentage of net income.
Source: OECD (1999), p. 14.

Finally, the *duration of benefit payments* in Column 7 may depend on the employment record (Belgium, France, Greece, Hungary, Japan, the Netherlands, Poland, Spain, and Switzerland) and/or on age (Austria, Germany, France, the Netherlands, Portugal, Sweden, and Switzerland).

If unemployment insurance entitlements are exhausted or absent, in many countries (Austria, the United Kingdom, Finland, France, Greece, the Netherlands, Ireland, Germany, Portugal, and Spain) unemployed persons can apply for *unemployment assistance,* the conditions for which are set forth in Table 1.3.[14]

14 The data concerns the same group as in the unemployment insurance benefits table.

TABLE 1.3: ENTITLEMENT CONDITIONS OF UNEMPLOYMENT ASSISTANCE

Country	Employment conditions	Waiting period (days)	Payment rate (percent)[a]	Yearly minimum benefit (USD)[b]	Yearly maximum benefit (USD)[b]	Duration (months)
Australia	–	7 days	flat	–	6,430	No limit
Austria	to have received UI	–	92 percent of UI	1,398	11,017	No limit
Finland	–	7 days	flat	5,191	–	No limit
France	5 years in the last 10 years	–	flat	–	4,419	No limit
Germany[c]	6 months in last year	–	53	–	26,076	No limit
Greece	60 days in the last 2 years	–	17 percent of UI	474	1,046	–
Hungary	to have received UI	–	80 percent of old age pension	142	1,308	24
Ireland	–	3 days	flat	5,038	–	No limit
Netherlands	to have received UI	0 days	flat	9,098	–	24
Portugal[d]	180 days in last year	–	flat	3,872	–	10.5
Spain	to have exhausted UI or to have worked 6 months	–	flat	5,758	–	6
Sweden	75 days in last 5 months	5 days	flat	6,216	–	5
United Kingdom	–	–	flat	3,944	–	No limit

a The payment rate is expressed as a percentage of gross earnings, unless indicated "Flat" which means a flat rate equal to the value in the minimum benefit column or "percent of UI" which means that the UA benefit is calculated as a percentage of the previous or theoretical UI benefit.

b Minimum and maximum benefits are if necessary recalculated from yearly earnings ceilings. 1997 purchasing power parities are used to calculate USD values.

c Germany: the payment rate is expressed as a percentage of net income and is higher when dependants are present.

d Portugal: first-time job seekers with dependants do not need to meet the employment conditions; duration is 18 months if claimant was not entitled to UI.

Source: OECD (1999). page 15.

In some countries entitlement is linked to employment prior to job loss, while elsewhere everyone is entitled to assistance. In some countries there is

a waiting period, but only for persons who are not entitled to insurance benefits and apply directly for assistance. In most cases the duration of payment is unlimited, but some countries do impose a limit. The determination of benefit levels varies by country. In some countries there is a flat rate, while in others it is a percentage of preceding UI payments or earnings. Entitlement is often means tested, either in relation to the individual or the household. In addition, the assistance may vary by region since welfare offices providing it are more or less free to establish their own conditions.

Comparing Entitlement Conditions

A composite index designed by OECD analysts *(OECD, 1994)* expresses the generosity of unemployment benefits in a single figure. To calculate the index for a 40-year-old unemployed person,[15] they use separate calculations:

- for the first, second-third, and fourth-fifth years of unemployment (following a long employment record);
- for single unemployed persons, unemployed persons living with a dependent spouse, and unemployed persons with a working spouse;
- for unemployed persons with previous earnings between average and two-thirds of average earnings.[16]

Table 1.4, which contains the results of these calculations, shows unexpectedly large cross country variation in replacement rates. A person who has been unemployed for 4 or 5 years and has a working spouse, has no recourse to legally guaranteed unemployment assistance in 18 of 26 countries. (The three East-Central European transition countries are among the remaining eight which have positive replacement rates.) The case for single unemployed persons or ones with dependent spouses is exactly the reverse. In eight of 26 countries (including the United States, where assistance takes the form of food stamps) the replacement rate is zero, while in 18 it is positive. At the same time, in the countries where the rate is positive for the long-term unemployed, it is also quite high. As a composite index of the generosity of unemployment benefits, the figures in the last column of the table indicate mean values of the replacement rates shown in the previous columns. Although the index includes numerous aspects of the assistance, it has certain shortcomings *(OECD, 1999).*

The generosity of benefits would be reflected more accurately by an index that also took the effects of taxes into account. The after-tax replacement rates would be 20–33 percent higher than the gross rates, which would improve the ranking especially of those countries where benefits are not taxed (see Table 1.1, Column 3). Other benefits to the unemployed also should be included, such as housing benefits, which are a significant source

15 In several countries there is a general improvement in eligibility conditions as persons become older. In this respect, age 40 is more or less the average.

16 Since more than half of working people earn below the average, and since unemployment is highest among low qualified workers, their replacement rate is more representative of the situation of unemployed people than that of people with above-average previous earnings.

of income to households without earnings, as this would also increase the net replacement rate. In addition, since the calculations did not include households with children, the indices do not reflect family benefits either. Social assistance was omitted as well, except where a set amount is guaranteed by law. It is, however, currently impossible to eliminate these shortcomings because comparable international data are not fully available.

TABLE 1.4: GROSS REPLACEMENT RATES FOR THREE FAMILY TYPES, OVER A FIVE YEAR PERIOD AND TWO EARNINGS LEVELS (PERCENT)

	First year of unemployment			Second and third year			Fourth and fifth year			
Country	Single	With dependent spouse	With earning spouse	Single	With dependent spouse	With earning spouse	Single	With dependent spouse	With earning spouse	Average
Australia	28	50	0	28	51	0	28	51	0	26
Austria	42	47	21	40	45	0	40	45	0	31
Belgium	48	48	44	34	48	28	34	48	28	40
Canada	49	52	45	23	39	0	23	39	0	30
Czech Republic	40	60	48	32	57	34	32	57	34	44
Denmark	66	66	66	66	66	66	66	66	66	66
Finland	54	54	54	39	39	25	27	27	0	36
France	58	58	58	32	37	24	27	34	0	36
Germany	34	34	34	32	32	0	32	32	0	26
Greece	42	45	23	0	0	0	0	0	0	12
Hungary	55	55	55	55	55	55	16	16	16	42
Iceland	54	54	54	0	0	0	0	0	0	18
Ireland	30	48	30	30	49	4	30	49	0	30
Italy	22	29	24	0	0	0	0	0	0	8
Japan	32	32	32	0	0	0	0	0	0	11
(South-)Korea	33	33	30	16	16	9	16	16	9	20
Luxembourg	80	85	85	53	74	45	53	74	45	66
Netherlands	70	70	70	45	57	28	34	48	0	47
Norway	62	62	62	59	59	59	14	14	14	45
Poland	46	46	46	32	32	24	28	28	17	33
Portugal	65	65	65	35	38	33	0	0	0	33
Spain	66	63	63	32	32	29	0	0	0	32
Sweden	72	72	72	10	10	10	0	0	0	28
Switzerland	69	69	69	18	18	18	0	0	0	29
United Kingdom	19	30	19	20	31	0	20	31	0	19
United States	28	32	25	7	12	0	7	12	0	14

Source: OECD (1999), page 43.

1.3 Eligibility Criteria for Unemployment Benefits in Developed Countries

Ágota Scharle

In most OECD countries both entitlement and eligibility criteria must be met before a person may receive unemployment benefit. One purpose of eligibility criteria is to preclude persons unable or unwilling to work, or ones who are entitled to other benefits (such as pensions) from the benefits targeted towards unemployed persons. Another is to offset the disincentive effects of unemployment benefits on reducing job-search efforts and attempts to return to the workforce as quickly as possible. This section explores unemployment benefit eligibility criteria and benefit receipt in the advanced countries.

Cross-country Variation in Eligibility Requirements

Eligibility conditions for unemployment benefits vary considerably across countries. They differ, for example, in rules applied to intermittent and seasonal workers (for instance, regarding whether they may receive benefits if they have little chance of finding jobs out of season), to unpaid household work (such as home improvement and farming), or to individuals clearly unable to take jobs (due to, for example, looking after children or other family members). One reason for the differences is the understanding that permissive rules damage the reputation of the placement service (e.g., if they refer to vacant jobs persons who are unavailable or unwilling to take a job), while very restrictive rules may exclude from benefits some people who are seriously looking for work.

Rules also differ in defining "suitable work" (in other words, what kind of offer can be refused without terminating entitlement to benefit). Norway has the strictest rules. There, any job offer in any part of the country, including shift or night-work, irrespective of the former position or earnings of the unemployed person, qualifies as suitable.

Not every country requires independent steps of job search. In the United States an unemployed person must prove that s/he has applied for two jobs a week in order to remain eligible. But in most other countries, cooperation with the public employment service (attending interviews and training programmes, etc.) is sufficient, and the absence of this rarely leads to a benefit stop. In most countries, benefits are suspended or stopped for some period following a voluntary quit, (repeated) refusal of a job or placement in an active labour market programme, see Table 1.5.

Table 1.5: Periods of Benefit Sanction Following a Voluntary Quit and Refusal of Work or ALMP Placement

Country	First voluntary quit or dismissal for fault	Refusal of work or ALMP placement: first refusal	second refusal	subsequent refusals
Australia	4–5 weeks[a]	4–5 weeks[a]	6 weeks[b]	8 weeks
Belgium	8–52 weeks[c]	26–52 weeks	exclusion	
Czech Republic	exclusion[d]	3 months[e]	exclusion	
Denmark	5 weeks	1 weeks (job), exclusion (ALMP)[f]	exclusion	
Finland	3 months[g] 0–2 months (ALMP)	2 months (job)[g], 2 months or exclusion[h]	2 months or exclusion[h]	
France	4 months[i]	temporary or definitive exclusion[j]	temporary or definitive exclusion[j]	temporary or definitive exclusion[j]
Germany	12 weeks[m]	12 weeks[m]	exclusion[n]	
Japan	1–3 months[k]	1 months[l]	no change	no change
New-Zealand	13 weeks[q]	1 week (job) until re-compliance (ALMP)[r]	13 weeks (job) until recompliance,[18] but minimum 1 week (ALMP)	13 weeks
Norway	8 weeks	8 weeks	12 weeks	26 weeks
Spain	exclusion[o]	exclusion		
Switzerland	6–12 weeks	6–12 weeks or exclusion[p]	6–12 weeks or exclusion[p]	6–12 weeks
United Kingdom	1–26 weeks	1–26 weeks (job), 2 weeks (ALMP)	1–26 weeks (job), 4 weeks (ALMP)	1–26 weeks (job), 4 weeks (ALMP)

[a] Full-time equivalent of an 18 percent reduction in benefit level that lasts 26 weeks. [b] Full-time equivalent of a 24 percent reduction in benefit level that lasts 26 weeks. [c] weeks in cases of dismissal for fault, 26–52 weeks in cases of voluntary quit. [d] May apply only in cases of repeated quits during a 6-month period. [e] Exclusion is also possible. [f] A first refusal of an ALMP placement leads to exclusion only during the "active period" (after 12 months of unemployment). [g] Reduced to 1 month if the job in question is for less than 5 days. [h] Legislation specifies exclusion for repeated refusals, which are not defined, but in practice a second refusal within a year is a repeat refusal. However, the sanction for people with wage-related benefits who repeatedly refuse ALMP placements is limited to 2 months. [i] Admission to benefit after 4 months of unemployment is conditional on proving active job search during these four months. [j] The word "exclusion" in this table generally implies an indefinite benefit stop or definitive loss of remaining benefit entitlement. In France, legislation also provides for temporary exclusions. When an attitude of refusal of work is observed, exclusion is in principle definitive. [k] Typically 3 months. [l] One month in case of refusal of work, but up to 1 month in case of refusal of training. [m] Reduced in some circumstances. [n] Exclusion follows when sanctions totalling 24 weeks have been pronounced. [o] Exclusion in cases of a quit, but a 3-month waiting period in cases of dismissal for fault. [p] A second refusal of an ALMP place leads to exclusion, and a second or third refusal of a job might lead to exclusion. [q] Under a "clean slate" provision, benefit payments can resume after 4 weeks on a provisional basis if the person is participating satisfactorily in community work, employment-related training or another organised activity. If the person obtains full- or part-time short-term employment for at least 6 weeks, the remaining stand down can be waived. [r] Re-compliance means attending an interview following the failure to attend one: in a case of refusal of "community" work or training, etc., it could mean participation in an activity as under the "clean slate" provisions.
Source: OECD (2000), p. 135.

It is quite difficult to compare national practices in terms of "strictness". First of all, legislation is often obscure. Secondly, certain behaviours can be strictly sanctioned while others are handled much more leniently in one and the same country. Thirdly, there can be differences in the severity of rules and their enforcement, with enforcement significantly influenced by the level of unemployment. Therefore, when investigating the influence of rules on the level of unemployment, it is important to consider indicators of implementation and sanction statistics beside formal eligibility rules. Also, it must be remembered that a low sanction rate may indicate high compliance with eligibility requirements as a result of consistently applied strict sanctions.

The Effects of Strict Eligibility Requirements on Unemployment

Data collected by public employment services generally suggest that tight controls on eligibility directly limit the number of beneficiaries and that a drop in the number of persons registered usually means a small decline in the number of people unemployed under the ILO definition. For example, requiring attendance at intensive interviews resulted in a 5–10 percent drop in applicants. After introducing the job-search requirement there was a significant drop in benefit expenditure in the United States. The requirement to participate in long-term labour-market programmes (such as 4–6 week courses) reduced unemployment, if for no other reason than because attendees are technically not unemployed during the courses. But the real effect of mandatory participation on unemployment is unclear.

Most of the few studies on the effects of tighter rules on benefit sanctions suggest a sharp drop in unemployment. For example, based on Dutch data, *Abbring et al. (1999)* and *Van den Berg et al. (1999)* demonstrate a 77–140 percent growth in the transition rate to employment. It should be kept in mind however, that sanctions may have been successfully targeted on people for whom they are likely to have an impact; the impact at the margin, if sanctions were used more widely, might be much smaller.

A recent study by the Danish Finance Ministry *(DMOF, 1999)* used a composite index of strictness of eligibility criteria and other explanatory variables to study cross-country variation in unemployment. They found that their strictness index has a strong negative effect on the unemployment rate (especially on long-term unemployment), strong enough to offset the impact of a high replacement rate in some countries. Worth noting is that, as *Auer (2000)* points out, all countries with successful employment policies in the 1990s had applied stricter enforcement of job search and suitable work provisions. The focus was, however, on the operational implementation of eligibility criteria, rather than on tightening legislation. The efficiency of tightening rules also depends on the functional integra-

tion between benefit and placement work in the public employment service. These studies suggest that it is possible to avoid recession stalemates in which rising unemployment and increasingly lax application of eligibility rules reinforce one another.

1.4 Problems with Unemployment Benefits in the Post-socialist Transition

János Köllő

Unemployment, which reappeared after an interval of several decades, forced Hungary's political officials to introduce a comparatively generous benefit system in 1990–91, as was pointed out by numerous international comparisons.

Based on the main attributes of unemployment benefits (probability of benefit receipt, duration of payments, proportion to average earnings) and assuming a maximum duration of entitlement, *Burda (1993)* worked out the present value of the benefit packages in several post-socialist countries in proportion to gross monthly earnings. Hungary scored highest (3388), and the Czech Republic and Slovakia the lowest (522); Bulgaria was fairly high (671), while Romania (1286) and Poland (1240) were somewhere in the middle on this scale. The Hungarian index was excessively high, mostly due to the rather long, 18 month entitlement period, and when this was cut to one year (in 1993), the score dropped by half *(Burda, 1995)*.[17]

A report by the Blue Ribbon Committee *(Blue Ribbon, 1993)* examined public expenditure on unemployment and drew the same conclusions. In proportion to the GDP, these expenditures were significantly higher in Hungary (by 30–100 percent) than in Czechoslovakia, Bulgaria, or Poland between 1990 and 1992. This can be explained by the combination of two factors: expenses per unemployed reached the level of those Western European countries various indices describe as strongly corporative,[18] while the number of benefit recipients in Hungary was well over the numbers usually recorded in these countries.

Bardasi et al. (2001) use micro-data to compare Hungary with the other four Visegrad countries,[19] and with Spain and the United Kingdom. They find that between 1993 and 1995, in Hungary, a higher proportion of job-seekers received assistance, including insurance based benefits, than in the other four East European and the two West European countries. The probability of receipt reached a similar level only for British male job-seekers. In later years however, this initially high proportion tended to decline.[20]

In general terms, benefit systems established after 1989 in former socialist countries were not generous (in many of the Soviet successor states, for example, the benefits were merely symbolic). By contrast, Hungary intro-

17 Had 1990 data been used, Poland would have been the curve-breaker, for at that time there was no time limit to entitlement to benefits.

18 The reference is to the corporative indices calculated by *Tarantelli (1986)* and *Calmfors and Friffill (1988)*, and to the UNCD and EMCD indices defined by *Layard et al. (1991)*.

19 These include the Czech Republic, Slovakia, Poland and Slovenia.

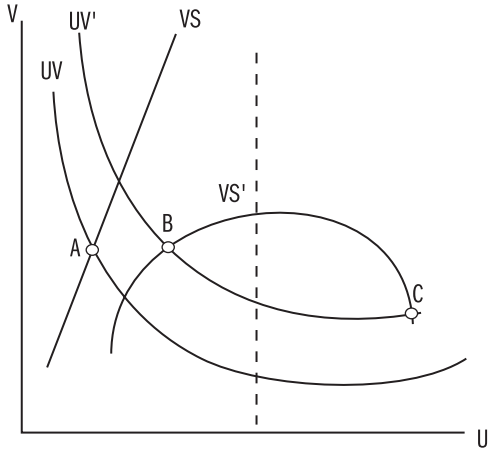
20 Also investigated was the proportion of benefit-recipients who were actively seeking jobs (the targets of the assistance), and here, Hungary was somewhat below midpoint.

duced a benefit system which may have been regarded as rather liberal by international comparison, and this was subsequently trimmed by a series of measures.

Claims concerning unemployment benefits in studies on the transition are often not more than extensions of popular wisdom which argues that equilibrium unemployment is generally higher when benefits are more generous. The following analysis applies theoretical models to investigate the consequences of an initial high level of unemployment benefits followed by gradual cuts under the specific conditions of the post-socialist transition. The results of this model-based inquiry can serve as a point of departure for the future discussion and assessment of empirical processes.

The most general argument, which summarises various labour-market processes, can be outlined on the basis of the above mentioned study by Burda, using Figure 1.2, which displays the two curves UV and VS.

FIGURE 1.2: SHIFTS IN MARKET EQUILIBRIUM



If an x number of people become unemployed in the course of a year, it stands to reason that, for the unemployment rate to remain constant, an x number of unemployed people would need to return to work. When unemployment is high (low), it becomes easier (harder) to fill a vacancy, and thus, compared to the unemployed pool, fewer (more) jobs have to be created in order to keep flows in balance. If the rate of job destruction is fixed, and the factors determining market friction are given, there is an inverse relationship between the stationary values of the U unemployment rate and the V vacancy rate: this is why UV curves exhibit a downward slope to the right in the above figure.[21] Higher rate of job destruction, or a more serious structural mismatch between jobs and job-seekers, are repre-

21 In other words, the UV curve is the geometric location of the points at which the equation $s\,(1-u) = x(u,v)$ is valid, where s is the separation rate and x is the matching function describing the number of successful job seekers, for which $x^i > 0$, $x^{ij} > 0$. The unemployment rate is u, while v is the proportion of jobs created in the given period to the total workforce.

sented by higher UV curves. However, the upward slope to the right of the VS curve illustrates that, when unemployment is higher, the corresponding lower real wages and lower recruitment costs act as incentives for job-creation.

Let us ignore for the moment the area to the right of the dotted line in the figure. The area to the left shows what is certain to happen during a transition: the influx of unemployed labour pushes up the UV curve. Meanwhile, demand for labour becomes more selective, resulting in a widening mismatch between jobs and job seekers, which bends the VS curve to the right. At the same time, the introduction of unemployment benefits makes job seekers more picky, which pushes the VS curve further down, leading to a less favourable equilibrium: B, instead of A.

Generous income support schemes can have additional consequences. The taxes required to finance them, (which have to increase exponentially with the unemployment rate if the insurance fund or the government cannot accommodate a significant deficit) and the weakening pressure on wages exerted by unemployment may together encourage further job cuts, rather than job creation, as is illustrated by the downward bend in the VS' curve to the right of the dotted line. This may lead to an even less favourable outcome, such as point C in the figure.

After this brief look at general considerations, let us turn to the studies that go beyond the simple, one-time-shock interpretation of the transition process. Following the collapse of socialism, a significant number of firms had no chance of survival, irrespective of wages, taxes, recruitment costs or any of the other factors commonly considered in labour market analyses.

Aghion and Blanchard's (1993) two-sector model distinguishing between the state and the private sectors, which is a benchmark for analyses investigating the optimum speed of transitions,[22] defines the value of being employed in the state sector jobs in terms of the wage, the appropriation of quasi-rents, and unemployment insurance contributions (taxes). Private sector employment creation depends on profit per worker, which in turn depends on the average product of labour (assumed to be higher than in the state-owned sector), the market wage, and taxes, where wages are determined by the generosity of unemployment benefits and the exit rate out of unemployment. In other words, job creation is linked recursively to the rate of expansion of the private sector. In this model, all movement between the two sectors is through unemployment, and new jobs are created only in the private sector.[23] The rate at which employment in the state sector declines is basically determined by workers in the sector, as a function of the difference between incomes attainable in the two sectors and in unemployment. The state also can influence worker decisions through setting the level of unemployment benefits, and through quasi-rents (*a*), by

22 This set of models is generally known as OST (optimal speed of transition). (Also see *Atkeson and Kehoe (1996), Castanheira and Roland (2000), Chadha and Coricelli (1994), Brixiová (1997), Jurajda and Terrell (2000).*

23 At a later, the model allows restructuring in the state sector, but this has no bearing on the above discussed effects.

allowing or restricting access. Aghion and Blanchard study (among other things) the effects of the size of benefits when *a* is exogenous and the state is assumed to choose *a* to maximise the present value of total output during the transition.[24]

Solving the model is equivalent to finding the point of equilibrium at which the rate of job destruction equals the rate of job creation, i.e. where the unemployment rate is in equilibrium, with the given rate of job deterioration. This is not always possible. Job destruction may be too fast for a successful transition. The fiscal burden of unemployment may have a stronger influence on reducing demand than the positive effect of lower wages on job creation, which may impede or stop the development of the private sector.

In the former case (when *a* is exogenous), Aghion and Blanchard find, as expected, that the more generous benefits are, the higher is the equilibrium level of unemployment. At the same time, the effect on the expansion of the private sector is small. This is because the generosity of benefits slows down private sector expansion (taxes increase labour costs, while benefits moderate the adjustment of wages to the level of unemployment), but, through its "positive" contribution to job destruction and the growth of unemployment, it also has a positive influence on the growth rate of the private sector.

In the latter case (when *a* is set to maximise the present value of output), more generous support to the unemployed leads to a lower optimal transition rate and lower equilibrium unemployment, at least with the particular set of parameter values chosen for the simulation. Insofar as relationships in a complex system of differential equations can be verbalised, the explanation is that, when benefits are low, it is worthwhile for the state to choose a policy of fast job destruction and higher unemployment. In this case benefits are small and thus unemployment reduces wages, which accelerates job creation and faster growth in the private sector, which in turn increases the present value of output produced during the transition.

The smaller unemployment benefits are, the greater is the difference between the outcomes of the two policies. If restructuring is a determined by workers (with given *a*), a low benefit level is likely to lead to a slow transition and comparatively low equilibrium unemployment. The strategy to optimise output leads to a fast transition and high unemployment in the case of low benefit levels. Given generous benefits, the effects of policies in the state sector are weaker and workers more readily decide to accelerate the transition (job destruction).

The policy chosen for the Hungarian transition, which encouraged fast job destruction (drastically hardening budget constraints for state-owned companies and supporting "spontaneous privatisation") but also provided

24 The "state sector" in the model refers to all declining activities, and not to the state-owned sector as determined by the firms' ownership structure, and the "unemployed" include all the people out of work.

generous unemployment benefits, would be considered a peculiar mixed strategy in the Aghion-Blanchard model. In the simulations, low benefits and high quasi-rents yielded the lowest equilibrium level of unemployment and slowest transition, while the combination of low benefits and low *a* led to the highest equilibrium unemployment and fastest transition.

Unemployment benefits and the attitude of state sector employees to job destruction is where the Aghion-Blanchard model overlaps with analyses of the dynamics of political support for the system change, which serve some interesting lessons about the optimum evolution of benefit systems. *Dewatripont and Roland (1992), (1996)* recommend generous assistance at the *start* of the transition, to "buy" the support of state sector workers for initiating market reforms. *Freeman (1994)*, on the other hand, concludes that *maintaining* political confidence is the real problem, and thus more generous support should be held back until halfway into the transition.

In Freeman's model, workers leaving the declining sector have a p probability of moving to the expanding sector of the economy, which will then offer them an N gain, either in higher wages or in job security. Meanwhile, $(1-p)$ workers stay with the obsolete sector, incurring a V loss, e.g. because, as long as the reforms continue, or until they move into a secure job in the new sector, they are in danger of becoming redundant. In the t-th year of the transition the proportion of people in the winning group is $1-(1-p)^t$, which will grow continuously until it equals 1.

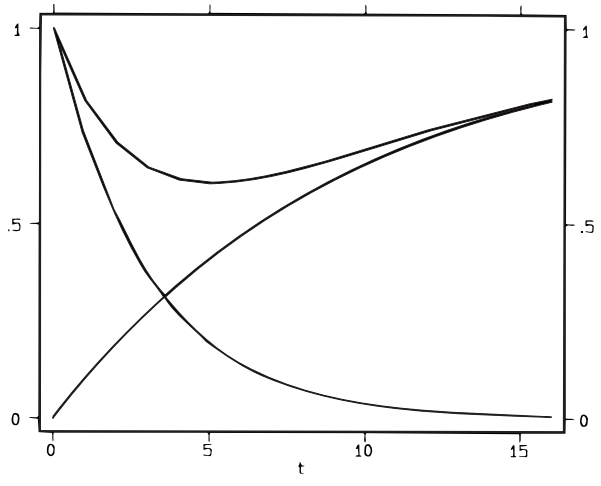
At any given time, the support of losers for the reforms depends on their discounted gains expected from the transition. That, in turn, depends on p, the discount rate, and the number of years through which they enjoy an income augmented by N once they have joined the group of winners. Since the period in which they can realise gains is increasingly shorter with the passage of time, expected gains from continued reform gradually decrease during the transition, and eventually become negative. Therefore, *within* the shrinking camp of losers, the proportion of supporters of reforms will steadily decline, while the *total* number of supporters will decrease initially, and then start increasing. This is illustrated in Figure 1.3, where the rising curve shows support by winners, the descending curve shows support by losers, and the U-shaped upper curve shows total support (in the labour force) for reforms.[25]

Though based on different considerations, *Boeri (1999)* reaches a more or less similar conclusion. In investigating transitions between sectors, he relaxes two of the Aghion-Blanchard assumptions. (1) A direct transition from the old sector to the new one is possible. Firms may profit from hiring workers from the state sector, depending on the number of workers in the old sector, the number of the unemployed, and reservation wages. (2) Unemployed people can choose between job search and inactivity (petty farm-

25 See note J. 1.2 for more information on interpreting the figure.

ing or black work), while receiving unemployment benefits in either case. Benefits influence the value of all labour market states and affect demand through taxes.

FIGURE 1.3: CHANGES IN THE PROPORTION OF POLITICAL SUPPORT FOR REFORMS IN FREEMAN'S (1994) MODEL



Freeman's model, based on simple but realistic assumptions, warns that even in the fortunate case when the reform process is unbroken (p is constant), sooner or later, the process reaches a certain stage crucial in the success of the post-socialist transition, when political support for the transition declines. This is the time when the social safety net becomes important in reducing V in order to maintain confidence in market reforms. In this model, the reduction of unemployment benefits in the years following the systemic change is obviously misguided.

Calculations with the model, assuming a high benefits level, forecast a slow transition, low output and employment, which in time become even lower because of rising taxes, and that the proportion of job seekers would be comparatively high among the people who are out of work. Boeri also looked at the case when initially generous benefits were reduced within a year or two, which could prevent taxes from rising and output and employment from dropping. Reducing benefits pushes the equilibrium level of unemployment upwards because it increases the relative value of finding a job compared to petty farming or informal activities. However, while the effect of cutting benefits is hardly noticeable with the chosen (plausible) parameters, the initial level of benefits has a major influence on the speed of the transition and on employment. Why is that?

The initially high level of benefits at first acts as an incentive to many people to change jobs. But, there are not many vacancies, so many job seekers become inactive. Then, the low level of active job search encourages employers to look for workers among those already employed, which further reduces the value of unemployment, as compared to inactivity. When the government introduces restrictive measures, it is already too late. Their impact is muted by the fact that the tax burden (compared to what it would have been in the case of a low initial benefit level) is spread over a lower level of production and a smaller total wage bill. This means that the tax rate is higher, and an economy that is already lagging behind cannot shift to the path of faster transition and lower unemployment. Be smart at the start, suggest Boeri's model, because corrections introduced later on will reduce the welfare of the unemployed without significantly accelerating the pace of economic growth.

Well then, should the unemployment benefits be high or low and should they be increased or decreased (or perhaps first increased and then decreased) during the post-socialist transition? Clearly, the studies quoted are not cookery books offering ready-to-use recipes. But, they highlight the issues that need to be clarified empirically before a country can see how the mechanisms investigated in the above models feature in their concrete situations.

There are four basic issues that we need to see clearly before we can evaluate Hungarian practices of unemployment assistance.

The *first* is the labour cost elasticity of labour demand, which it is essential to know for the assessment of the effects of the unemployment-related *tax burden*. In Hungary, the wage elasticity estimates of *Kőrösi (1997), (2000)* can be a point of departure for such investigations (to date there has been no effort made to measure demand effects of tax changes.)

The *second* issue is the unemployment elasticity of wages. In this area, research by *Galasi (1996)* is noteworthy for its analysis of the effects of unemployment benefits on job seekers' reservation wages. *Kertesi and Köllő (1998)* examine the elasticity of earnings to regional variations in unemployment.

The *third* issue is the role of income support when the unemployed choose between job search or inactivity. *Galasi (1995)* was the only one in Hungary to analyse this question directly, and some indirect information is offered by work on the relationship between benefit receipt and the probability of finding a job, such as *Micklewright-Nagy (1994), Köllő-Nagy (1995),* and *Galasi (1996)*.

Finally, the *fourth* important issue is what really motivates decision-makers, other than cost and incentive considerations, when they set the parameters of the benefit system. Do they consider the opportunity cost of unemployment benefit payments (the value decision-makers put on other pro-

grammes that have to be put aside because of these expenditures), or the preferences of particular groups of society, and if so, what weight do they attach to such considerations? Available research has so far uncovered only stylised facts, which may at best serve as starting points to objective debates. Principal studies here include a description of employment policy institutions *(Frey, 1998),* an investigation of the probability of benefit receipt and the evolution of the replacement rate over time *(Nagy, 2000)*, and an analysis of public opinion on unemployment benefits *(Köllő, 2001)*.

Until we can clarify these issues the most we can say, based on the main parameters of the Hungarian benefit system and economic policy (and the wage elasticity of supply and demand), is that all OST models predict initially fast transition, and a relatively high equilibrium level of unemployment. Freeman's analysis projects temporarily weakening political support for reforms, and Boeri's model predicts persistently low employment and high inactivity.[26] Even if predictions hit home, the explanations may still be flawed. They could serve well though, by pointing out the directions for empirical research.

26 Total employment in Hungary is still quite low. Hungarian males have the lowest participation rate in Europe *(KILM, 2000).* The low unemployment rates reported by the Central Statistical Office using job-search criteria tell us principally that the inactivity rate is extremely high among those out of work.

2. THE REGULATION AND FINANCING OF UNEMPLOYMENT BENEFIT SYSTEMS IN HUNGARY

2.1 Unemployment Benefits: Forms, Entitlement Criteria and Amounts

Gyula Nagy

There have been many changes in the system of unemployment benefits since its introduction in 1989. Some new forms have been introduced while others were phased out after brief trials, and the regulations governing entitlement, duration, and amounts have been repeatedly amended, sometimes significantly.

In the beginning, there were four types of unemployment assistance. These were: unemployment insurance benefits, unemployment assistance for the long-term unemployed (recently replaced by regular social assistance to unemployed people of economically active age), career beginners assistance, and pre-pension or pre-retirement unemployment assistance for those close to retirement age. The following is a review of the most important regulations governing entitlement and benefit levels.[27]

The Unemployment Insurance Benefit

Table 2.1 summarises changes in the rules of entitlement to the Unemployment Insurance Benefit (UI) between 1989 and 1990. Benefit schemes are referred to by the date of their introduction, shown in column one.

27 For a detailed review of the legal regulations on assistance, see *Bánsági (2000).*

Table 2.1: Main Regulations Governing Entitlement to Insurance Benefit

Benefit scheme	Employment condition	Duration of entitlement		Waiting period in the case of	
		minimum	maximum	voluntary quit	severance pay
1989	18 month/3 years	2 years	2 years	none (smaller benefit)	none
1991	12 months/4 years	180 days		3 months	
1992		135 days	1.5 years		same as months of severance pay
1993		90 days	1 year	6 months	
1997				3 months	in 1997: same as months of severance pay; none since 1998
2000	200 days/4 years	40 days	270 days		none

The only one of the rules governing entitlement for this benefit that has not been tightened (in fact, it was even relaxed somewhat on two occasions) is the one setting a minimum requirement for the claimant's employment record. In 1989–1990 a person needed to have worked for at least 18 months over the preceding three years to become entitled to benefit. As of 1991, this was changed to 12 months in the previous four years, and was further reduced in 2000, to 200 days, or just over six months.[28]

Meanwhile, the maximum duration of benefit payments was cut significantly. In 1989–90 it was two years[29] for all unemployed persons, but a caveat requiring a continuous employment record in the preceding four years was introduced in 1991. This was combined with a rule that the period of entitlement to benefit is a step function of the employment record, with 11 different entitlement periods including a minimum and maximum. The minimum time of entitlement to benefits after one year of work was six months. The duration of benefit payments was later reduced twice: by one-fourth in 1992, and by one-third in 1993 (for all eligible categories). This meant that as of 1993, people who lost their jobs were entitled to insurance benefit for only half as long as they would have been in 1991, assuming the same employment record. In 2000, the duration of entitlement to benefits was again reduced for most of the unemployed, when the above mentioned 11 periods were abolished and replaced by a general rule which limits entitlement to equal one-fifth of the time spent at work over the preceding four years. This reduction was largest for those with a long employment record, while it hardly affected people who had worked for shorter periods. (For more information on how changes in 2000 affected entitlement for people with different work histories, see Section 5.2.)

The last two columns in Table 2.1 show the waiting periods prescribed after voluntary quit and severance pay. These are the periods of time that have to elapse before the unemployed person begins to receive insurance benefit. Although the waiting periods do not affect the duration of entitlement, they do reduce the duration of receipt for people who are quicker to find new jobs. In 1991, a three-month waiting period was imposed for voluntary quits. This was increased to six months in 1993, then, four years later in 1997, it was cut again to three months. From 1992 to 1997, people who received severance pay also had to wait before they became entitled to insurance benefit. Although the waiting period clearly reduced chances of actually receiving unemployment benefits, the extent to which this affected the system depended strongly on how high a proportion of the new unemployed actually had to wait, and on their probability of finding new jobs in the interim.

Table 2.2 summarises the most important rules governing the *amount* of unemployment insurance benefits.

28 Six months, i.e. 180 days, in work was sufficient for entitlement between 1997 and 1999, but only for people who had previously exhausted insurance benefit.

29 Maximum duration was one year in 1989, but was increased to two years in 1990, which also applied to people already receiving benefits.

Table 2.2: Main Rules of Setting the Amounts of Insurance Benefit

Benefit scheme	Benefit in proportion of previous wage		Proportion of phase 1	Calculation of average earnings	Benefit	
	phase 1.	phase 2.			minimum	maximum
1989	70 percent for 6 months 60 percent for 6–12 months 45 percent in the second year		–	base wage in last month + monthly average of additional earnings in last year	1989: none; 1990: 0.8*minimum wage	1. year: 3*minimum wage; 2. year: 2*minimum wage
1991	70 percent	50 percent	50 percent		minimum wage	3*minimum wage
1992	70 percent	50 percent	50 percent	average earnings in 4 calendar quarters preceding job loss	minimum wage	2*minimum wage
1993	75 percent	60 percent	33 percent		8,600 forints	phase 1: 18,000 forints; phase 2: 15,000 forints
1997, 2000	65 percent (no phases)		–		90 percent of minimum old age pension	180 percent of minimum old age pension

One point on which all rules coincide is the pegging of insurance benefits to wages. They specify the percentage of the previous wage an unemployed person is entitled to as an insurance benefit, known as the nominal benefit-wage ratio. When the period of entitlement is divided into sections (as it was prior to 1997) this rate differs by section. In addition, due to benefit floors and ceilings, different ratios apply to the lowest and the highest earnings groups. Another important feature of the insurance benefit rules was that they did not peg either the wages on which the benefits were calculated or the insurance benefits themselves, to any other index.[30] So, at a time of significant price and wage inflation, the longer the time lapse is between job loss and the award of insurance benefit, and receipt of benefit, the lower is its value.

Four basic situations are considered when calculating the amount of insurance benefit:

1. People who earned less than the minimum benefit get benefits equal to their previous wage.

30 Except for minimum or below-minimum benefits set according to pre-1992 rules, which were raised in proportion to minimum wage increases.

2. The minimum level of benefit is granted to an unemployed person who would not get the minimum benefit using the nominal benefit-wage ratio, if their wage was higher than the minimum benefit.
3. A claimant whose benefit amounted to more than the minimum but less than the maximum receives benefits calculated using the nominal benefit-wage ratio.
4. A person whose benefits would have exceeded the maximum if calculated with the nominal benefit-wage ratio gets the maximum benefit.

When the Employment Law was introduced in 1991, several rules about benefit amounts were changed. The nominal benefit-wage ratio was increased for the second half-year of receipt (from 60 percent to 70 percent); while the minimum benefit and, in the second year of receipt, the maximum, were also increased (from 45 percent to 50 percent).

Other rule changes in 1992 did not affect the nominal benefit-wage ratio, but the maximum benefit was reduced from three times the minimum wage to double, and the method of calculating the average wage, the basis for setting benefits, was changed. The initial method had been to use the basic wage of the final month of employment as the chief component of the average wage. As of 1992, the new average was calculated using the basic wage of the last four calendar quarters of employment, which sharply reduced the average wage and the ensuing amount of benefits, since nominal wages were growing quite steeply over this period of time. A calculation using the data of persons receiving insurance benefits in March 1992 showed an 11–12 percent drop in the average wage used for the calculation (*Nagy and Micklewright, 1995).*

Rules on the amount of benefit provided changed again in 1993. The nominal benefit-wage ratio was increased for both phases of benefit receipt, but the duration of phase one, where the benefit rate was higher, was reduced to one-third of the total entitlement period as opposed to one-half. Under 1993 rules, the nominal benefit-wage ratio in phase two (65 percent) was lower than the phase one ratio had been in 1992 (70 percent). So, the boost in the nominal benefit-wage ratio only improved conditions for people who needed the benefit in the short run, provided that their benefits were set by the nominal benefit-wage ratio. At the same time, the minimum and maximum benefit that had been initially pegged to the minimum wage were now set as fixed amounts, in force until 1997. In the beginning the new limits were only slightly lower than the old ones based on the minimum wage. (The minimum benefit was set at HUF 8,600, or 96 percent of the HUF 9,000 minimum wage, and the HUF 18,000 phase-one maximum was exactly double the minimum wage set in 1992, though the HUF 15,000 phase-two maximum was only 83 percent of the maximum as set under the 1992 rules.) But then, the huge rise in wage and price inflation between 1993 and 1996 gradually reduced their real values.

In 1997, the two phases of benefit payments were eliminated, and the nominal benefit-wage ratio was now set at 65 percent for the entire period of entitlement. Compared to earlier rules, this was a 10 percentage point cutback in benefits for the first third of the entitlement period and a 5 percentage point increase for the remaining two-thirds, assuming that benefits were paid using the nominal benefit-wage ratio. At this time the benefit limits were again pegged to an automatically indexed value, this time the minimum old-age pension, with the benefit floor set at 90 percent of the minimum pension and the ceiling set at 180 percent. This change was sufficient to guarantee that benefit floors and ceilings maintained their values, though at a significantly lower level than the one prior to 1993. (The minimum benefit, at 90 percent of the minimum old-age pension, was HUF 10,350 in early 1997, which was only 61 percent of the minimum wage at the time.)

Changes introduced to the benefit system in early 2000 did not alter the amount of benefits paid, as can be seen in Table 2.2.

Unemployment Assistance

Between 1992 and 2000, local governments provided non-insurance type *Unemployment Assistance* (UA)[31] for persons who had exhausted their insurance benefit. Entitlement was means-tested. The per capita family income could be no more than 80 percent of the minimum old-age pension. Irrespective of previous wages, the assistance was set as a flat rate equal to 80 percent of the minimum old-age pension. Initially, duration was unlimited, but in 1995 it was maximised at two years.

In May 2000, the Unemployment Assistance was replaced by the *Regular Social Assistance for Unemployed Persons of Economically Active Age* (RSA).[32] Entitlement is conditional on per capita family income not exceeding 80 percent of the minimum old-age pension, but the amount receivable is capped at 70 percent of the minimum pension. The exhaustion of all prior entitlement to benefits is not a prerequisite, but claimants are required to cooperate with the public employment service or the local government in their job search for at least one year, or to spend at least thirty days on public works.

From 1991 to 1996, first-time job seekers could also receive unemployment assistance, the *Career Beginners Assistance,* if they had completed at least the two-year vocational secondary school. They were entitled to 75 percent of the minimum wage for a maximum of six months until 1995, when the amount was changed to 80 percent of the minimum old-age pension.

From 1991 to 1997, unemployed persons who had an employment record long enough to entitle them to old-age pensions were entitled to receive a *pre-pension*, and after 1998, a *pre-retirement unemployment assistance.* A per-

31 In 1992, this particular form of assistance was labelled "transitional social assistance to the unemployed", and the rules governing entitlement differed from those in effect after 1993.

32 The social assistance for unemployed persons of economically active age was introduced in 1996, but until the Unemployment Assistance was abolished, it played no significant role in assisting the unemployed. Before 2000, it was available to persons who had exhausted their UA entitlement, and to unemployed persons who had been continuously cooperating with the employment centres for at least three years prior to applying for this form of assistance, independently of their prior status as benefit recipients.

son was entitled to a pre-pension in the three years preceding retirement age, after 180 days spent on unemployment insurance benefit. The amount of the pension was calculated according to general social insurance rules. Pre-retirement Unemployment Assistance was available in the five years prior to retirement age, following a set period of receiving insurance benefit (180 days prior to 2000, and 140 days since then), or after benefit entitlement was exhausted. The amount is a uniform 80 percent of the minimum old-age pension.

2.2 Financing Unemployment Benefits

Mária Frey

Under the original concept, unemployment benefits (and the maintenance costs of the public employment service) were covered by the Solidarity Fund for the Unemployed. This fund financed unemployment benefits, career beginners assistance, pre-pensions, Unemployment Assistance, social insurance contributions for persons on training schemes, and travel-cost reimbursement for people going to job interviews. The Solidarity Fund was set up as an insurance fund that relied on mandatory contributions by employers and employees (deductible from personal income tax), and a government obligation to cover a maximum 10 percent deficit. It was completely separate financially from the Employment Fund, which had been established to cover the expenditure of active labour market policies and was maintained purely by the central budget.

Starting with July 1, 1991, the mandatory contribution was equivalent to 1.5 percent of gross earnings for employers and 0.5 percent for employees, as shown in Table 2.3. However, since there was a sudden growth in unemployment, the contributions thus collected (as shown in Table 2.4) were barely sufficient to cover half the expenditure, so the central budget was forced to add far more than the 10 percent set as the maximum to finance the deficit.

Table 2.3: Contribution Rates (percent)

	1991	1992	1993	1994		1995[a]
	01/07-31/12	01/01-31/12	01/01-31/12	01/01-31/03	01/04-31/12	01/01-
Employers contribution	1.5	5.0	7.0	7.2	5.0	4.5
Employees contribution	0.5	1.0	2.0	1.5	1.5	1.5

a These rates were valid until January 31, 1998. As of February 1, 1988, the employers contribution was reduced to 4.2 percent, to 4 percent on July 1, 1998, and to 3 percent on January 1, 1999.

Table 2.4: Solidarity Fund and Employment Fund Revenues and Outlays (billion HUF)

	1991	1992	1993	1994	1995
Solidarity Fund					
Revenues					
Employers contributions	3.0	27.9	47.6	49.3	42.1
Employees contributions	1.4	7.4	16.8	17.4	18.5
Contributions by public inst.	4.0	10.4	17.9	12.0	9.0
Other revenues	0.1	0.2	0.1	0.8	2.1
Total	8.5	45.9	82.4	79.5	71.7
Outlays					
Unemployment benefits	19.1	64.7	74.6	50.0	42.7
Pre-pension		0.7	2.8	5.7	9.3
Running costs and development of public employment service	1.6	4.3	5.3	6.4	7.1
Total	20.7	69.7	82.7	62.1	59.1
Balance of outlays and revenues	–12.2	–23.8	–0.3	+17.4	+12.6
Correction items					
Government subsidies	+13.7	+24.1	+13.7	–	–
Transfers to central budget					
– to the EF	–	–	–	–7.9	–11.0
– for the Unemployment Assistance	–	–	–	–2.1	–
Current account	1.5	0.3	13.4	7.4	1.6
Closing account	1.5	1.8	15.2	22.6	24.2
Employment Fund					
Opening account	2.7	4.6	5.9	3.7	2.0
Revenues					
Government subsidies	11.0	13.5	11.6	–	2.0
From privatisation revenues	–	–	1.9	7.6	–
Transfer from SF	–	–	–	7.9	11.0
Other	0.4	0.9	0.6	0.6	2.3
Total revenues	14.1	19.0	20.0	19.8	17.3
Total outlays	9.5	13.1	16.3	17.8	14.9
Closing account	4.6	5.9	3.7	2.0	2.4

Source: Ministry of Labour documents

In 1992, even though the amount employers were mandated to pay was increased to 5 percent and employee contributions were pushed up to 1 percent as of January 1, the government was forced to play a steadily increasing role in financing it because of the rapid rise in unemployment. For

that reason, starting in early 1993, contribution was further raised, to 7 percent for employers and to 2 percent for employees.

The surplus of revenues and the first wave of persons exhausting their benefits allowed the fund to break even at the end of 1993. That made it possible to bring down the employee contribution to 1.5 percent as of 1 January, 1994. For employers, the contribution was pushed up to 7.2 percent for the first three months of the year, and then, as of 1 April, it was reduced to 5 percent. This was a precondition made by employers at a meeting of the Conciliation Council (made up of representatives of the government, employers, and employees) on 28 January, 1994 for accepting a government proposal on the 1993 surplus in the Solidarity Fund. That surplus was the result of a sizeable government fund transfer (of the same amount they paid into the fund two years earlier). The proposal involved transferring HUF 7.9 billion to the Employment Fund and moving another HUF 2.1 billion into a fund for the non-insurance type Unemployment Assistance (which was thus not covered by the Solidarity Fund). From then until 1 February, 1998 the employers contribution was left unchanged. Then it was reduced to 4.2 percent, followed by a cut to 4 percent in the latter half of the year, and to 3 percent as of 1 January, 1999.

To determine the actual amount that the central budget contributed to the Solidarity Fund's 1991–1995 expenditure, the first step is to subtract HUF 1.5 billion from the overall payment of HUF 51.5 billion. That is the amount the public sector was required to pay as an employer. Then, we need to subtract the funds regrouped to cover expenses which the central budget was legally required to meet. That includes transfers from the Solidarity Fund to the Employment Fund, and funds moved to partly cover the 50 percent of Unemployed Assistance the central budget was mandated to pay. That comes to HUF 21 billion in all. So, in the five-year average, the government contributed HUF 29 billion, or barely 10 percent to unemployment insurance benefits. If we also subtract the roughly HUF 10 billion that was used to support first-time job seekers, since it was not an insurance-type benefit, the contribution of the central budget goes down to 6.5 percent.

There were significant surplus revenues in the Solidarity Fund (initially because of subsidies, later because of contributions kept high despite the large outflows from insured benefit entitlement), while the Employment Fund had very limited and uncertain revenues (because of a large deficit in the state budget). The contradiction led to the merging of the Solidarity Fund and the Employment Fund (as well as other funds: the Wage Guarantee Fund, the Rehabilitation Fund, and the Vocational Training Fund) on 1 January, 1996. As a result, three-quarters of the funding for Unemployed Assistance could be covered by employer and employee contribu-

tions. The resulting fund, called the Labour Market Fund, was a separated fund of the national budget managed by the Treasury, which included solidarity, job creation, and income support components. (The tax credit, allowing employees to deduct their contribution from their personal income tax, was phased out at the same time.) Unemployment insurance benefits are covered by the solidarity component of the fund. However, the contributions are not paid directly into this component but into the Labour Market Fund's general budget and the services to which payers are entitled have never been made clear.

Table 2.5 contains information on inputs to manage unemployment from 1991 to 2000, by major expenditure categories. The various expenditure items have been divided into active tools and passive support as they were actually used, irrespective of the fund which financed them. (The two do not necessarily coincide: for instance, early retirement is not an active tool even though it was covered by the Employment Fund.)

Clearly, few resources were used for active labour market policies in the first six years. Three-quarters of the total labour market budget was devoted to keeping the unemployed away from the labour market. Then, from 1996 to 1997, expenditure on active policies was increased by over 60 percent and its 16.7 percent share of the labour market budget went up to 22.4 percent. On the one hand, active policies took over the role of certain passive forms of support (for instance, the Career Beginners Assistance was replaced by a programme helping them to find jobs). On the other hand, new active policies (assistance to the self-employed, subsidies for job-related contribution payments, etc.) and centrally administered programmes (special assistance to the long-term unemployed, programmes promoting the rehabilitation of unemployed persons with disabilities, job retention support to businesses hard-hit by the introduction of the healthcare contribution) were introduced.

By 1993, the labour market budget was nearly 3 percent of the GDP (the amount generally spent by a middle income market economy) due to the initial sudden jump in unemployment and to extensive benefits, but since then it has steadily declined. One reason for the drop is that entitlement conditions for insurance benefits have been tightened, while the benefit system shifted towards means-tested forms of assistance, which are far less generous than insurance benefits. (For instance, from 1993 to 1995, funding for Unemployment Insurance Benefit dropped from HUF 68 billion to HUF 35 billion, while expenditure on Unemployment Assistance grew from HUF 5 billion to HUF 25 billion.) At the same time, following a fallback in 1994 and 1995, the absolute value of expenses has risen steadily.

TABLE 2.5: COSTS OF MANAGING UNEMPLOYMENT (BILLION HUF)

Outlays	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000[f]
Unemployment benefits										
UI benefit + social security + healthcare contribution[a]	n.a.	62.6	68.3	42.4	34.9	37.4	40.5	46.8	52.5	55.2
Career beginners assistance + social security[b]	n.a.	..	2.2	3.2	3.7	2.7	–	–	–	–
Retraining allowance + social security[c]	n.a.	1.3	2.8	3.3	3.0	1.9	–	–	–	–
Pre-retirement unemployment assistance + social security + healthcare contrib.	–	–	–	–	–	–	–	0.1	0.6	1.3
Social security on severance pay	n.a.	0.7	1.2	1.0	0.8	0.9	0.8	0.2	–	–
Other[d]	n.a.	0.1	0.1	0.1	0.3	0.5	0.5	0.6	0.6	0.6
A. Total	20.0	64.7	74.6	50.0	42.7	43.4	41.8	47.7	53.7	57.1
B. Pre-pensions	n.a.	0.7	2.8	5.7	9.3	10.0	14.0	16.4	10.6	4.6
C. Early retirement	0.4	0.9	1.0	0.8	1.3	0.7	0.7	0.2	0.1	–
D. Public employment service	2.3	4.3	5.3	6.4	7.1	7.1	11.0	11.6	12.7	12.8
E. Active labour market programmes	7.3	12.2	15.3	17.0	13.6	16.1	26.6	28.7	31.4	34.2
Labour market budget (A+B+C+D+E=F)	30.0	82.8	99.0	79.9	74.0	77.3	94.1	104.6	108.5	108.7
G. Unemployment Assistance[e]	–	–	5.4	13.3	16.9	19.2	24.8	28.1	29.9	25.2
Total Outlays (F+G=H)	30.0	82.8	104.4	93.2	90.9	96.5	118.9	132.7	138.4	133.9
Proportion of H in GDP (percent)	1.20	2.81	2.94	2.14	1.65	1.41	1.42	1.31	1.21	1.02
Total outlays (=100) by main provisions										
Total benefit payments (A+B+C+G)	68.0	80.1	80.3	74.9	77.2	75.9	68.4	69.6	68.1	64.9
Public employment service (D)	7.7	5.2	5.1	6.9	7.8	7.4	9.2	8.7	9.2	9.6
Active labour market programmes (E)	24.3	14.7	14.6	18.2	15.0	16.7	22.4	21.7	22.7	25.5

a The per capita amount of the healthcare contribution introduced on 1 January 1 1997 was HUF 1,800, and was raised to 2,100 in 1998, to 3,600 in 1999, and to 3,900 in 2000.

b Included in the total of unemployed insurance benefits in 1991–1992; this support was terminated on 1 July, 1996.

c One part of the income support provided to participants in labour market training, up to the amount of the insurance benefit, was covered by the Solidarity Fund until 1996. Since January 1, 1997 it has to be covered (together with the healthcare contribution) by the decentralised part of the employment component of the Labour Market Fund.

d Includes reimbursement of travel costs to unemployed persons attending mandatory interviews.

e Includes both local government and central budget support. In 1993, this amounted to 29.5 percent of local government welfare expenditure, going up to 43.2 percent in 1994, and to 49 percent in 1995. Originally, local governments covered 50 percent from normative welfare assistance received from the central budget and could request repayment for the other 50 percent from the central budget. Then, when the labour market budget showed a surplus, the ratio covered by this fund increased. In 1994 HUF 2.1 billion was subtracted from the Solidarity Fund for this purpose, and in 1996 the Labour Market Fund covered the entire 50 percent for which the central budget was responsible (HUF 9.6 billion). As of 1997, the Labour Market Fund covered 75 percent of the Unemployment Assistance (including healthcare contributions), amounting to HUF 18.6 billion in 1997, 21.1 billion in 1998, and 22.4 billion in 1999, with the local governments covering only 25 percent.

f Data from 2000 cannot be fully compared with earlier numbers because of changes in the benefit system. Passive forms of assistance do not include the HUF 3.8 billion transferred to the Labour Market Fund to support public works organised

by local governments which were made responsible for assisting persons exhausting their benefits. Neither does it include HUF 1.8 billion transferred to fund Social Assistance for unemployed persons of economically active age, nor HUF 1.2 billion also handed over to local governments to manage the extended administrative workload. The expenditure on Active labour market policies do not include HUF 2.6 billion transferred by the Labour Market Fund and the Ministry of Economic Affairs, earmarked for active policies, and used to support job creation and retention.

Sources: Documents issued by the Ministry of Labour, Ministry of Social and Family Affairs, and Ministry of Economic Affairs

One factor in this is that there has been a moderate increase in the Unemployment Insurance Benefit since 1997, but the primary difference is that the benefit floors and ceilings have been pegged to inflation. The Labour Market Fund also incurred significant extra expenses as social insurance contributions grew, particularly after the healthcare contribution was introduced. Another cost was the steady rise in people applying for pre-pensions up until 1998. Applications were accepted until the end of 1997. In addition, until the end of 1997, the fund had to cope with the expenses of social insurance contribution payments for persons already registered as unemployed, but not receiving benefits for the period covered by severance pay. Factors that kept down the increase in expenditure included a ban on accepting new applications for early retirement from 1 July, 1995, and the new pre-retirement unemployment assistance introduced on 1 January 1998 requires much smaller, though increasing, funds.

Expenditure on passive forms of assistance reflects the chronology of events: the explosive increase in the number of claimants in the early 1990s, the halving of the duration of entitlement, the drop in the replacement rate, the tightening of entitlement conditions for Unemployment Assistance, the introduction of the healthcare contribution, and most recently, the decline in the inflow to unemployment. The combination of these factors increased the proportion of expenditure on passive forms of assistance to 80 percent of the total labour-market budget in 1992 and 1993, and then allowed it to drop to 68 percent by 1999, where it had been at the start of the decade.

In 2000, significant changes in the unemployment benefit system and in active policies were introduced, affecting 300,000–350,000 unemployed people and significantly changing the structure of expenditure. The new Regular Social Assistance to unemployed persons of economically active age, new public works schemes and other new unemployment related functions administered by local governments were all partially financed from the Labour Market Fund.

With these changes and the termination of Unemployment Assistance and pre-pension payments, the labour market budget shrank to 1 percent

of the GDP in 2000, and the income support component dropped to 65 percent of total expenditure.

However, the Labour Market Fund transferred nearly HUF 7 billion to the local governments to manage the additional tasks they have been charged with, and this amount was not included as a labour market budgetary expenditure. Other funds, transferred from the Labour Market Fund to the Ministry of Economic Affairs to create and maintain jobs as part of an active employment programme were also excluded. Meanwhile, the Ministry of Social and Family Affairs maintains a fund to support public works, which is also outside the Labour Market Fund. As of 2000, these gaps and inconsistencies in accounting, which reflect the institutional disintegration of employment policy, may render it impossible to assess and account for all the funds devoted to unemployment related policies.

3. TARGETING INCOME SUPPORT FOR THE UNEMPLOYED

3.1 The Number and Characteristics of Benefit Recipients

György Lázár

Unemployment first appeared in Hungary in the latter half of the 1980s, but affected only a few thousand people until the very end of the decade. Prior to 1989, people losing their jobs could count on a six month "prolonged period of notice" paid by their employer and another six months of publicly financed "re-employment allowance". Genuine unemployment benefits, were not introduced until 1 January 1989. Entitlement conditions and amounts are discussed in Section 2.1.

Table 3.1 covers the years between 1990 and 2001 and shows the annual average number of persons receiving the various types of support, and their proportions within the registered unemployed.

Table 3.1: Unemployment Benefit Recipients, and Their Proportions Among the Registered Unemployed

	UI benefit, CB assistance and pre-retirement unemployment assistance[a]		Unemployment assistance and regular social assistance[b]		No benefit		Registered unemployed	
	thousands	percent	thousands	percent	thousands	percent	thousands	percent
1990	30.3	63.5	–	–	17.4	36.5	47.7	100.0
1991	174.6	76.8	–	–	52.7	23.2	227.3	100.0
1992	412.9	74.1	18.4	3.3	125.7	22.6	557.0	100.0
1993	404.8	60.3	89.3	13.3	177.6	26.4	671.7	100.0
1994	228.9	40.3	190.3	33.5	149.3	26.3	568.4	100.0
1995	184.8	36.0	210.0	41.4	114.9	22.6	507.7	100.0
1996	171.7	34.3	211.3	42.2	117.6	23.5	500.6	100.0
1997	141.7	30.1	201.1	42.8	127.3	27.1	470.1	100.0
1998	130.7	30.9	182.1	43.0	110.3	26.1	423.1	100.0
1999	140.7	34.4	148.6	36.3	120.2	29.4	409.5	100.0
2000	131.7	33.7	153.5	39.4	105.3	27.0	390.5	100.0
2001[c]	119.7	31.7	139.7	36.9	118.6	31.4	378.0	100.0

a Numbers include those on Career Beginners Assistance in 1993–1997, and those on pre-retirement unemployment assistance after 1998.

b Up to 1993, number of recipients of a similar, means-tested allowance. Data do not include recipients of Regular Social Assistance prior to 2000.

c Data for 2001 refer to average numbers for the first eight months of the year.

In the beginning, over three-quarters of all registered unemployed received insurance benefits. From 1991 to 1997, this proportion dropped from 76.8 percent to 30.1 percent, then went up slightly and temporarily, and in 2000 and 2001, took another downward turn. The main reason behind the enormous drop between 1992 and 1994 was a reduction in the duration of entitlement, and the resulting exhaustion of benefits.

Following 1992, there was a rapid rise in the number of persons receiving Unemployment Assistance as well as in the proportion of this group within the total number of registered unemployed. The number was highest in 1996, and the proportion was highest in 1998 (211,000 persons, and 43 percent), since many people exhausting the Unemployment Insurance Benefit qualified for the Unemployment Assistance. Later, when the duration of entitlement was limited to two years, the number of people getting this type of assistance began a slow decline. As of May 2000, the Unemployment Assistance was replaced with the Regular Social Assistance for unemployed persons of economically active age, and new applications for the Unemployment Assistance were no longer accepted. As a result, by the end of May 2001 numbers on RSA exceeded those on Unemployment Assistance.

Despite frequent changes in the system, each year about three-quarters of the registered unemployed received some form of support between 1992 and 1998. The first time during the decade that the proportion of recipients dropped below 70 percent was in the first eight months of 2001, primarily because the fast decrease in the number of Unemployment Assistance recipients was not offset by the slower increase in the numbers receiving social assistance.

When evaluating the number and proportion of non-recipients, one should remember that the statistics cover all persons who have not yet qualified or no longer receive assistance. This includes persons waiting for their benefit claims to be evaluated, and people who have exhausted their benefits and are not entitled to social assistance but continue to cooperate with the employment service in the hope of a job offer or participation in an active labour market programme. Registered first-time job seekers are also included, though they are not entitled to any form of income support since 1 July 1996, and there are also people obliged to wait for some time for benefit payments to start, because they received severance pay at the termination of their last job.

Both stock and flow data are important when looking at benefit recipients. The inflow and outflow of unemployment insurance benefit recipients are the easiest to observe. These benefits are paid by the public employment service, while the Unemployment Assistance and the Regular Social Assistance are administered by local governments. In addition, in-

surance benefit accounts include the exact dates of inflows and outflows, and the reason for the termination of insurance benefit payments.

Table 3.2 contains inflow and outflow data for Unemployment Insurance Benefit recipients.[33] The decline in inflows is principally caused by labour market conditions, while lower outflows reflect a drop in the number of insurance benefit recipients.

TABLE 3.2: AVERAGE MONTHLY INFLOWS AND OUTFLOWS (THOUSANDS)

Annual flows	1995	1996	1997	1998	1999	2000
Inflows	31.5	29.1	27.1	27.3	27.4	24.8
Outflows	30.9	34.1	27.3	26.9	26.7	27.1
Of which:						
– found a job[1]	8.6	8.2	7.3	7.1	6.9	7.6
– exhausted benefit	15.8	18.6	14.8	17.3	18.0	17.5
Outflow rate[2] percent	14.3	17.0	16.2	17.0	15.9	17.3

a Includes persons in various forms of subsidised employment.
b Monthly mean outflow as a percentage of the average number of persons receiving benefit.

The roughly 17 percent monthly outflow (calculated by dividing the number of persons leaving the register during the month by the total number of insurance benefit recipients in the given month) is not particularly low. But, as the table shows, fewer than one-third of these people find jobs. The majority (55–65 percent) exhaust their benefits, and are unemployed when they leave the system. Most of the others only leave the register temporarily for short-term employment (casual or seasonal work, public works, etc.) after which they return to the register (and are back among the unemployed). Thus, the proportion of insurance benefit recipients who permanently leave unemployment by taking non-subsidised jobs, is in fact quite low.

In addition to studying stock and flow data on recipients of various forms of assistance, it is also worth comparing the composition of these groups (i.e. those receiving Unemployment Insurance Benefit, Unemployment Assistance, or Regular Social Assistance) across groups and compared to the pool of the registered unemployed. The statistical appendix to this volume presents data on gender, age, and education, for three years (1995, 1998, and 2001), of which we shall concentrate on the most recent. When interpreting the data, one must remember that, since about 70 percent of all registered persons receive some form of assistance, the composition of the two groups of recipients dominates the overall composition of the unemployed pool.

33 Detailed inflow and outflow data are available in annual publications of the National Centre for Labour Research and Methodology (OMKMK) (now the Employment Office), see *Demkó (2001)*.

Unemployment Insurance Benefit recipients (this time excluding pre-retirement unemployment assistance recipients) are somewhat younger than the recipients of the Unemployment Assistance or the Regular Social Assistance (60.2 percent of the former are less than 40, as opposed to 53.6 percent of the latter). The proportion of males among them is also somewhat lower (52 percent as against 55.2 percent), and they are better qualified. (Only 29.7 percent of them have completed or incomplete elementary qualifications as opposed to 55.5 percent of those receiving means-tested assistance. 57.4 percent of them completed some vocational secondary school as opposed to 38.3 percent in the other groups, and 12.9 percent attended general secondary school, college or university, against 6.3 percent in the other groups.)

Males outnumber females in all the different age groups of Unemployment Assistance recipients (less so in the group of those aged 25–34), while females make up the majority in all age groups between 35 and 54 among insurance benefit recipients. Over the age of 55, due to the higher male retirement age, males make up 74–75 percent of all recipients (or 78.9 percent of all persons registered).

First-time job seekers may account for the fact that the proportion of those under 25 (17 percent) is much higher among non-recipients, than either among insurance benefit recipients (13.9 percent) or means-tested assistance recipients (8.4 percent).

As far as education and gender are concerned, females make up the majority of general secondary school and college graduates in all three groups of recipients (72–76 percent and 52–58 percent respectively). The proportion of males is higher among those who attended vocational secondary schools (63–64 percent) and, to a lesser degree, among college and university graduates as well (52–55 percent). Among people with complete or incomplete primary education, males make up the majority of the registered unemployed and of the recipients of means-tested assistance (58.3 and 55.2 percent) while females are over-represented (51 percent) among insurance benefit recipients.

It is disconcerting that young people make up a high proportion of recipients of means-tested forms of assistance, most of whom have been unemployed for at least two or three years. Nearly 70 percent (95,300 persons) are below the age of 45, and nearly 40 percent (53,600 persons) are below 35 (with over 28 years to go before reaching retirement age). This calls for more effective measures in assisting the long-term unemployed and most importantly, in preventing long-term unemployment.

3.2 The Generosity and Targeting of Unemployment Benefits

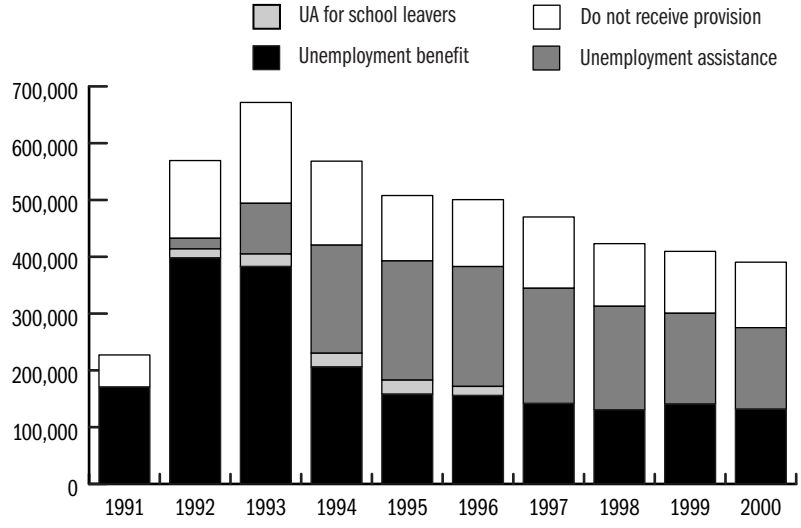
Gyula Nagy

This section seeks answers to three questions. 1. What is the probability of receiving unemployment benefit for an unemployed person actively seeking work? 2. To what extent does unemployment benefit replace wages for a person who formerly had a job? 3. What proportion of benefit recipients actively seek work? The first two questions explore the generosity of the unemployment benefit system, while the third concerns targeting, i.e., whether benefits reach those who are genuinely looking for work.

Chances of receiving benefit

Figure 3.1 summarises the evolution of registered unemployment, and average numbers on various benefit schemes between 1991 and 2000, using data from the unemployment register of the Employment Office (formerly the National Centre for Labour Research and Methodology).

Figure 3.1: Registered Unemployment 1991–2000, by Benefit Scheme, Annual Average Numbers



Source: Employment Office.

In 1991, the number of registered unemployed persons receiving benefits was well under 200,000. By 1993, it had risen to nearly 500,000, and by 2000 it was below 300,000. There was a simultaneous and significant regrouping between the Unemployment Insurance Benefit and the Unemployment Assistance (and from 2000, the Regular Social Assistance). Ini-

tially, most recipients (in 1991 all of them, since this was the only form of assistance) received insurance benefits. This was followed by a gradual increase in the numbers on Unemployment Assistance, so that by 1995, their group was larger than the group of insurance benefit recipients. In the meantime, the proportion of the registered unemployed receiving some form of assistance remained more or less the same at three-quarters (73–77 percent), throughout the decade.

The probability of receiving unemployment benefits is clearly lower than that, since, registration being a pre-requisite to receiving assistance, those entitled to assistance are more likely to register than those who do not meet entitlement conditions. Therefore, when determining chances of benefit receipt, it is better to use data on benefit receipt by those unemployed under the ILO definition, rather than on registration records. These are presented in Table 3.3.

TABLE 3.3: BENEFIT RECEIPT BY THE ILO UNEMPLOYED (PERCENT)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
UI benefit	61.9	53.9	36.0	26.7	23.8	25.2	22.4	22.2	17.2
CB assistance		3.0	3.0	2.8	2.0				
Unemployment Assistance		6.5	16.0	21.4	21.9	22.7	22.8	20.9	16.5
Some form of assistance	61.9	63.4	55.0	50.9	47.7	47.9	45.2	43.1	33.7

Source: Central Statistical Office Labour Force Surveys

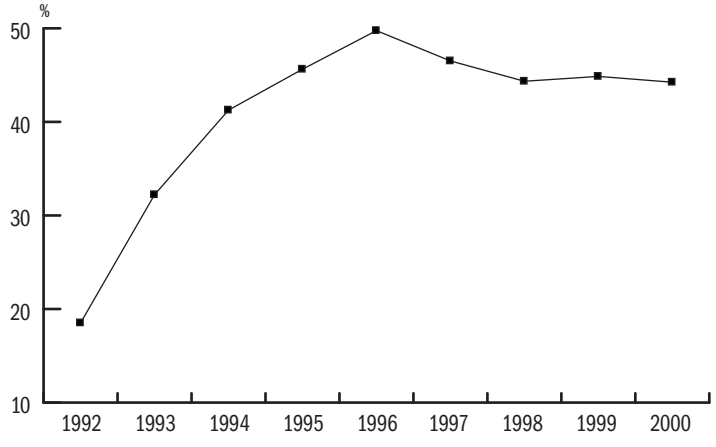
The last row in the table shows that while in 1992 and 1993, nearly two-thirds of unemployed persons received assistance, barely one-third did so in 2000. The number of insurance benefit recipients dropped sharply between 1992 and 1995, from 61.9 percent to 26.7 percent, then continued to decline to 17.2 percent by the end of the decade. From 1993 on, assistance increasingly took the form of Unemployment Assistance, and in the second half of the decade, nearly as many people received Unemployment Assistance as insurance benefits.

The declining proportion of recipients among the unemployed since the early 1990s, and the decline in the proportion of recipients getting the more favourable Unemployment Insurance Benefit are obviously related to successive measures aimed at tightening the conditions of entitlement. As shown in Section 2.1, a person losing a job in 2000 was entitled to insurance benefits for less than half the time of a person losing a job in the early 1990s. The introduction of the Unemployment Assistance in 1992 to assist people who had exhausted their insurance benefits did not fully offset the tightening of insurance benefit entitlement rules, since the Unemployment Assistance was made conditional on a very low level of income.

Not only have rules changed, so has the composition of the unemployed.

As Figure 3.2 shows, in the early 1990s there was a rapid increase in the proportion of people who had been unemployed for more than a year. The growing proportion of the long-term unemployed would result in a rising proportion of people exhausting their benefits, and thus a decline in the proportion of people receiving insurance benefits, without any change in entitlement rules. However, the increase in long-term unemployment came to a halt in 1996, and thus cannot explain the later decline in the number of insurance benefit recipients.

FIGURE 3.2: PROPORTION OF PERSONS UNEMPLOYED FOR MORE THAN A YEAR

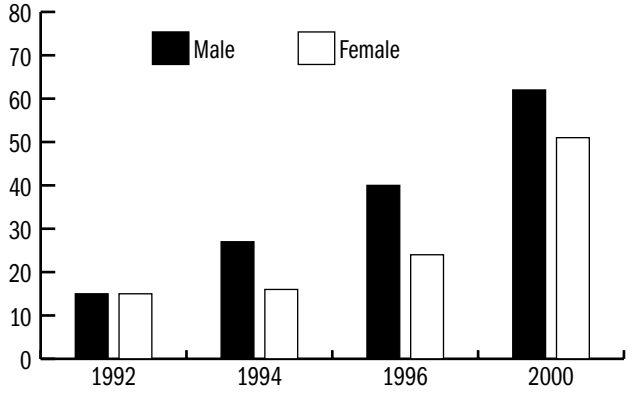


Source: Central Statistical Office Labour Force Surveys.

At the same time, most of the people who lost their jobs in the early 1990s had a continuous employment record, since there had been no mass unemployment in Hungary in the preceding decades. However, with time, a growing number of people experienced work loss and became entitled to insurance benefits. As shown in Figure 3.3, the number of people who had received insurance benefits at one time and then re-applied at a later date increased at a steadily accelerating rate between 1992 and 2000, and by 2000 they made up over 50 percent of all applicants.

Based on a multivariate analysis of the probability of benefit receipt, *Nagy* (2000) concludes that the drop in the proportion of benefit recipients in the 1990s was principally due to tighter rules and the worsening employment records of claimants (longer periods spent out of work), and not so much to the rise in the duration of unemployment or to changes in the personal or household characteristics of the unemployed (age, education, residence, composition of household, number of children, etc.).

Figure 3.3: Benefit Recipients Re-entering the Register, as a Proportion of All New Recipients



Note: Ratios were calculated using data on benefits awarded in the spring (March-May) of the given year.
Source: Unemployment Insurance Register,

The benefit-wage ratio

Table 3.4 shows trends in amounts paid in the Unemployment Insurance Benefit (UI) and the Unemployment Assistance (UA) schemes using data for March or April in each year, using a sample of registered unemployed people in the two schemes.[34]

34 The samples contain several tens of thousands of people each and include at least 10 percent of the registered unemployed people receiving these forms of assistance.

Table 3.4: UI and UA Benefit Amounts Compared to the Average Wages and Minimum Wages, 1992–2000

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Average monthly UI benefit, forints[a]	8,583	9,472	10,798	12,222	13,213	14,340	17,278	20,258	22,892
Annual average of gross monthly earnings, employed population, forints	22,290	27,170	33,940	38,900	46,840	57,270	67,760	70,540	87,650
Monthly minimum wage, forints	8,000	8,917	10,375	12,058	14,500	17,500	19,500	22,500	25,500
Average benefit/average wage, %	38.5	34.9	31.8	31.4	28.2	25	25.5	28.7	26.1
Average benefit/minimum wage, %	107.3	106.2	104.1	101.4	91.1	81.9	88.6	90.0	89.8
Monthly UA benefit, forint[b]	4,000	5,120	5,893	6,720	7,680	9,200	10,960	12,280	13,280
UA benefit/average wage, percent	17.9	18.8	17.4	17.3	16.4	16.1	16.2	17.4	15.2
UA benefit/minimum wage, percent	50.0	57.4	56.8	55.7	53.0	52.6	56.2	54.6	52.1

a Persons receiving unemployment benefits in March or April, according to the Unemployment Register,
b A time-proportional weighted average, where the flat rate of UA changed during the year.
Source: Central Statistical Office and Unemployment Benefit Register,

Since 1992, UI benefits have clearly lost a great deal of their value, compared to both the average and the minimum wage. In 1992, the average benefit was nearly 40 percent, while after 1997 it has been less than 30

percent of the average wage. Compared to the minimum wage, the value of benefits dropped from 107 percent in 1992 to 90 percent by the end of the decade. Meanwhile, the value of the Unemployment Assistance, which has always been significantly lower than the average insurance benefit, has hardly declined in comparison to the average wage, and has even increased somewhat compared to the minimum wage. This relative stability is because the amount was pegged to the minimum pension (80 percent), which is regularly adjusted to follow inflation.

However, a comparison with the average wage may be misleading for the measurement of the replacement rate in the benefit system. Most unemployed people had worked in poorly paid occupations. (In 1994, for example, as demonstrated by *Köllő and Nagy (1995),* insurance benefit recipients had earned only 60 percent of the average employee wage.) It is better to look at the proportion of benefits compared to actual previous wages, as shown in Table 3.5, based on the same samples from the register used in Table 3.4. As previous wages, used by the public employment service in calculating the amount of benefit, come from different periods depending on the date of job loss, we have indexed the wage of each unemployed person to the average wage increase occurring between job loss and the date of sampling and used these indexed wages to calculate the benefit-wage ratio. The benefit-wage ratio thus calculated shows how benefits relate to the wages that the unemployed person would have received had he not lost his job, assuming that his wage followed average wage increases.[35]

TABLE 3.5: AVERAGE BENEFIT-WAGE RATIOS, USING INDEXED WAGES (PERCENT)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Men	68.5	56.0	50.7	53.5	44.8	46.3	49.4	49.4	49.4
Women	77.9	63.6	56.3	57.4	48.3	48.2	51.3	51.3	51.3
Both sexes together	72.3	59.1	53.0	53.5	46.4	47.1	50.2	50.2	50.2

Source: Unemployment Benefit Register,

These replacement rates are clearly much higher than the ones in Table 3.2; for instance, in 1992, we get 72.3 percent as opposed to 38.5 percent. (It is also evident that in the early 1990s, the wage-earnings ratio was far lower for men than for women, but the difference, which was no doubt caused by the prevailing rules on benefit floors and ceilings, gradually diminished.) The table also shows that the benefit system became increasingly frugal over the decade. The 72.3 percent replacement rate of 1992 was down to about 50 percent in 1994.

The swift decline in the value of unemployment benefits in the first half of the 1990s is connected to the changes in regulations reviewed in Section

35 In the early 1990s, the rate at which wages rose in employment groups at a higher risk of job loss was somewhat below average (*Köllő–Nagy, 1995),* so the benefit-wage ratios indexed to the average wage increase are slightly underestimated.

2.1. When examining their effects, it is important to observe that new rules introduced in the benefit system always apply to new claimants only. Persons whose entitlement was determined before the new regulations, continue to receive benefits under the old rules. This means that for quite some time after new rules are introduced, benefit recipients continue to include people receiving benefit under the previous scheme, or an even earlier one.[36] This means that the effect of amendments in early 1993 and the delayed effect of the rules changes of 1992 both contributed to the drop in the benefit-wage ratio in 1992 and 1993, as in early 1992 and 1993 many people still received benefits under the 1991 or 1992 regulations respectively.

While the 1992 rule changes did not affect the nominal replacement rate, a lower benefit ceiling (twice instead of three times the minimum wage) and a change in the method of calculating the average wage on which the benefit was based, reduced the *actual* replacement rate. The rate went further down from 1993 to 1996 as the benefit floor and ceiling depreciated. The benefit floor dropped by 40 percentage points compared to the minimum wage between 1992 and 1996, while the ceiling for phase one sank by 76 percentage points and for phase two by 65 percentage points. (In 1996, the phase-two benefit ceiling was equivalent to the 1992 benefit floor, in proportion to the prevailing minimum wage.) The real depreciation of the benefit floor meant that the minimum rule granted wage replacements above the nominal replacement rate to an increasingly smaller number of claimants, while, due to the maximum rule, a growing number of people received benefits at or below the nominal benefit-wage ratio.

Table 3.6 shows the breakdown of benefit recipients according to benefit regimes between 1992 and 2000. In 1992–1993, most benefit recipients received benefits calculated according to the low-benefit regimes, which paid above the nominal benefit-wage ratio and was equal to or below the minimum benefit, and few people were affected by the ceiling. When the benefit floor was nominally frozen in 1993 the importance of the minimum rule quickly diminished, and a rising number of recipients received benefits at or below the nominal replacement rate, as they hit the ceiling.[37] As a result, the respective weights of the various benefit regimes were fully changed to the reverse by 1997, compared to the initial state at the beginning of the decade. After 1997, when the indexing of the floor and the ceiling was restored, there were no more such significant shifts in the weights.

36 For instance, in April 1993, 17 percent of UI benefit recipients were receiving benefits under the 1991 regulations, and 64 percent under the 1992 regulations. Only 19 percent of recipients had their entitlement determined according to the 1993 regulations introduced three months earlier. In April 1994, 16 percent of people were still receiving benefits under the 1992 regulations, which had been repealed a year and a quarter earlier. (Proportions were calculated using samples from the benefit records of the National Centre for Labour Research and Methodology.)

37 Even if the benefit floor remains constant in real value, the benefit-wage ratio can deteriorate if more people with comparatively higher wages become unemployed, since the minimum rule, which grants a replacement rate above the nominal benefit-wage ratio, would rarely be used in their case. In reality, however, the income loss for the unemployed continued to grow from 1992 to 1997, going from 65.1 percent to 52.7 percent.

TABLE 3.6: BENEFIT RECIPIENTS BY OF PAYMENT REGIME (PERCENT)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Below benefit minimum	23.1	17.0	6.3	2.8	2.0	1.9	1.9	2.0	2.2
By the minimum rule	43.3	41.4	37.1	24.7	15.4	12.8	12.2	11.4	7.0
Below nominal benefit-wage ratio	31.7	36.6	45.0	48.6	45.7	48.4	52.5	54.1	55.4
By the maximum rule	1.9	5.0	11.6	23.9	36.9	36.9	33.4	32.5	35.4

Source: Unemployment Benefit Register,

Targeting Benefits

As we have seen, from the mid-1990s onward, unemployment benefits granted an increasingly smaller replacement rate. In addition, the number of UI benefit recipients dropped, and an increasing number received UA, which maintained its real value but was less than UI benefits. To what extent did this serve as an incentive to the unemployed to increase their job-search efforts in order to find a job sooner?

Table 3.7 shows the proportion of job-seekers among the unemployed people receiving UI or UA benefit. Far from an increase in the proportion of job-seekers, there was in fact a marked decline: while over two-thirds searched for a job in 1992, only about half did so in 1999–2000.

TABLE 3.7: THE PROPORTION OF JOB-SEEKERS (ILO UNEMPLOYED) AMONG BENEFIT RECIPIENTS (PERCENT)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
UI benefit recipients	71.7	68.8	63.8	65.1	63.2	59.2	44.5	53.8	54.5
UA recipients		52.3	56.2	55.9	53.5	50.1	45.2	47.6	45.4
UI or UA benefit recipients	71.7	66.6	61.3	60.6	58.2	54.5	44.8	50.6	49.6

Source: Central Statistical Office Labour Force Surveys,

The decline in the proportion of job seekers is partly explained by the growing proportion of UA recipients among benefit recipients, who typically have a longer unemployment record and are thus less likely to look for work. But the proportion of job seekers decreased both among UA and UI recipients. This suggests that the targeting of benefits deteriorated in the sense that while income support is provided to fewer job seekers, a growing proportion of support is going to people who are not looking for work.

3.3 Eligibility Requirements for the Unemployment Insurance Benefit

Tünde Kóródi Koltay

Beside meeting entitlement criteria, an unemployed person can only receive the Unemployment Insurance Benefit if he meets eligibility conditions as well, by cooperating with the public employment service.[38]

The first condition is to register at a local office of the public employment service (job centre). Then the claimant must attend regular interviews as required by the job centre, and must accept a suitable job offer, i.e. provided that it matches his qualifications or the qualifications required by his last job held for at least six months, that he is fit to do the job, the daily commute does not exceed three hours (two hours if there are small children in the household), and expected earnings are at least as much as the insurance benefit. In addition, the unemployed person is required to take independent steps in the job search. To monitor this, the job centre may require an agreement that the benefit recipient report to them from time to time on his job search efforts. If the person takes a job or finds temporary work, he must report it to the centre in advance (or, under the casual workers scheme, he may have it recorded in the booklet issued by the employment service). Temporary work is allowed up to a certain level of earnings, while insurance benefit payments are suspended.

The following is a review of the sanctions for non-compliance and the practices of applying sanctions.

Sanctions for non-compliance

Failure to comply with the requirements of attending regular interviews at the employment service, actively looking for work, or reporting on employment can lead to a suspension of or exclusion from benefit receipt.

The suspension of benefits is applied in minor cases of non-compliance. If the unemployed person fails to attend an interview at the employment service without good reason such as illness or, as of 2000, a change in some circumstance related to the benefits, benefit payment is suspended until recompliance. Repeated failure to cooperate leads to a benefit stop, which implies a reduction in the entitlement period.

In more severe cases, when the claimant's behaviour leads to the loss of a job opportunity, benefits payment is stopped permanently. Such cases may include the rejection of a job offer without an acceptable reason, failure to attend an interview with a prospective employer or attending in an state unsuited to work (for instance, under the influence of alcohol), behaving in such a manner that leads to a rejection by the employer, or failure to participate in training for a job provided that it matches the applicant's

38 For a detailed review of the legal regulations on assistance, see *Bánsági (2000).*

qualifications. Taking up a temporary job without reporting it to the employment service, or engaging in unauthorised (black) work also leads to exclusion.

Current practice in applying sanctions

Table 3.8 shows the number of exclusions compared to the total outflow from benefit and to the pool of benefit recipients between 1992 and 2000.

TABLE 3.8: EXCLUSIONS FROM BENEFIT, 1992–2000

Year	Monthly average outflow from unemployment benefit (persons)		Exclusions[a]/ total outflow (percent)	Average number of benefit recipients[b] (persons)	Exclusions/number of recipients (percent)
	total	exclusions			
1992	31,548	1,084	3.44	444,827	0.24
1993	48,353	929	1.92	371,188	0.25
1994	40,420	591	1.46	219,433	0.27
1995	29,873	472	1.58	227,767	0.21
1996	33,104	311	0.94	168,536	0.18
1997	26,747	236	0.88	169,034	0.14
1998	26,344	267	1.01	157,599	0.17
1999	28,393	305	1.07	167,394	0.18
2000	26,607	354	1.33	158,777	0.22

a Excluded from benefit by the employment service due to failure to cooperate.
b "All recipients": all persons receiving benefits and the Career Beginners Assistance, who received assistance for at least one day during the period.
Source: Employment Office.

In 1992, exclusions made up 3 percent of the total outflow, but by 1996 this proportion dropped to 1 percent, and has remained essentially unchanged since. However, the proportion of persons who were excluded compared to all benefit recipients did not decline in the first half of the 1990s, because there was a significant rise in the outflow rate (the proportion of all exits compared to all benefit recipients). On the whole, the number of persons excluded from benefits is low (1.4–2.7 percent of all benefit recipients) either because unemployed persons give little cause for severe sanctions or because administrators were lenient.

By contrast, the suspension of benefit payments, as shown in Table 3.9 (shown by county in Table 3.10.) has been used with increasing frequency. (The suspension of benefits occurs not only for disciplinary reasons, but also in the case of those working in reported temporary jobs, receiving child care benefits, or those on compulsory military service.)

Table 3.9: Incidence of Benefit Suspensions, 1992–2000

Year	Monthly average number of suspensions (persons)	Monthly average number of suspensions due to non-compliance (persons)	Proportion of suspensions due to non-compliance (%)	Average monthly number of benefit recipients (persons)	Suspensions due to non-compliance/ average monthly number of recipients (%)
1996	23,299	458	1.97	168,536	0.27
1997	16,343	302	1.85	169,034	0.18
1998	14,689	1,462	9.95	157,599	0.93
1999	13,645	1,362	9.98	167,394	0.81
2000	13,749	2,027	14.74	158,777	1.28

Source: Employment Office,

Table 3.10: Incidence of Benefit Sanctions by County, 2000 (percent)

Counties and the capital	Exclusions/total outflow	Exclusions/average number of recipients	Suspensions due to non-compliance/average number of recipients
Budapest	1.69	0.26	1.0
Baranya	1.31	0.23	0.5
Bács-Kiskun	0.76	0.12	0.9
Békés	0.88	0.16	1.0
Borsod-Abaúj-Zemplén	0.29	0.05	0.7
Csongrád	0.22	0.03	1.6
Fejér	2.48	0.41	1.1
Győr-Moson-Sopron	1.27	0.21	1.5
Hajdú-Bihar	0.82	0.14	2.6
Heves	0.67	0.11	0.7
Jász-Nagykun-Szolnok	1.25	0.22	0.9
Komárom-Esztergom	0.74	0.13	1.3
Nógrád	0.73	0.13	1.1
Pest	3.61	0.54	1.1
Somogy	2.31	0.42	0.8
Szabolcs-Szatmár-Bereg	1.58	0.32	2.3
Tolna	0.52	0.09	0.6
Vas	2.73	0.46	1.7
Veszprém	1.40	0.24	1.0
Zala	0.87	0.14	1.0
National average	1.33	0.22	1.2

Source: Employment Office,

One reason for the increase in benefit suspensions may be an increase in non-compliance, either because claimants are not properly informed, or because their composition has changed. Another possible reason is that as the demand for labour picks up, there are more job offers and non-compliance can be treated more severely.

Variation across counties is significant with respect to both sanction types. It is hard to explain these differences with local labour market conditions, as there is no clear correlation between the incidence of sanctions and labour market conditions. Differences in procedural practices are likely to have a significant influence.

Monitoring and Sanctioning in Vas County

There are seven local labour offices in Vas County. Tasks are divided up among two groups: client services, and job exchange services. Within their division of labour, all staff play some role in monitoring compliance with behavioural requirements of eligibility. On their regular visits to sign on at the labour office, job seekers meet the client services staff, and when jobs are offered, staff at the job exchange services make appointments for interviews at the labour office or with the prospective employer. All the labour offices apply sanctions set forth in the law in cases of unjustified failure to sign on at the requested date, but they tend to be lenient if the person is only a day or two late.

Availability to work is monitored by requiring the unemployed person to report all illnesses rendering them unable to work. Being ill does not influence their entitlement to benefits, but failure to report it is sanctioned. The employment law does not specify any measures regarding other obstacles to taking up work (for instance, family reasons). Despite this, on each visit, staff inquire about all circumstances that might prevent a claimant from working, and record them in the computer system. This information is of special significance for staff on the job exchange service. Usually, clients only report factors that would prevent them from working if they occur around the time they would be required to visit the labour office, or if they receive a job offer. In the latter case, the "delayed" reporting (in fact a failure to report) of the obstacle generally thwarts the placement. Despite this, in most cases the labour office does not apply sanctions when this happens.

The Employment Law includes the requirement of active job search, but does not specify the means of monitoring compliance. Labour office staff ask claimants about job search efforts at regular interviews but only require proof of such efforts if they present travel invoices for reimbursement.

Though an administrator may suspect that a client does not want to work, suggestive behaviour cannot lead to sanctions. Job exchange services provide an opportunity to directly investigate the intent to work. Labour

offices tend to brief about opportunities those clients who want to find a job, and before sending them to an employer the offices call in claimants for personal consultation. In the process of choosing a claimant for a prospective job, and until the actual document containing the appointment is printed, staff are able to investigate circumstances not described in the law when defining a suitable job. In a typical case, they examine family obligations. Where there are small children, they compare the working hours for the job with the opening hours of the local day-care centre, and also with the working hours of the spouse, although neither are specified by the law. Looking after a sick family member is another family obligation (in principle, a nursing fee would be due in such cases, but local governments tend to delay payment until unemployment insurance benefits are exhausted). Practices vary by labour office regarding the issues for which they demand written proof. When a claimant refers to family obligations as a reason for not wanting to take a job, staff usually try to take this into consideration, but they cannot guarantee that such a person will be exempted from sanctions. If they manage to find a suitable job, they expect the claimant to take it or be sanctioned.

Labour market programmes also offer opportunities to investigate intent to work. Participation in these programmes is voluntary, but willingness to take part can reflect the intentions of the unemployed person. No centre in Vas County mandates unemployed persons to attend job-training sessions, although in some cases the rules make this possible. The staff believe that the unemployed people must be sufficiently motivated to request this assistance, otherwise they would probably drop out of the programme.

People who are seasonally unemployed and people who are close to retirement are considered a special group for the job exchange services. In the case of seasonal unemployment, if the former employer gives a written statement of intent to rehire the worker, and with the agreement of the worker, the labour office may abstain from offering other jobs. For claimants who intend to retire once their entitlement to unemployment insurance benefit expires, the labour office will again comply with the unemployed person's wishes. Although, they do provide them with information on job opportunities, they do not send them to investigate jobs unless the client specifically requests it.

All unemployed persons citing health problems are sent for medical check-ups to determine whether their ability to work is impaired, or whether there are specific factors that would limit employment. They consider the hospital's recommendations when making job offers. If the claimant mentions the health problem upon receiving a concrete job offer, he is sent for a check-up specific to the particular job. In general terms, in the initial phases of job-search, staff are lenient and understanding, but if a suitable job is rejected, that is severely sanctioned.

The staff rarely learn of unreported work. If they know where the person is working, they call for a monitor. When this happens, they initiate a discussion with the claimant, who usually requests a suspension of benefits. If they cannot prove that the person is working, the only action they can take is to offer the unemployed person a suitable job. Several years ago, some of the staff would require people suspected of unreported work to sign up at the centre almost every day, but they are currently so overloaded with work that they are unable to do so.

Strictly interpreted, the law defines as unreported work all cases when an unemployed person finds a job and does not report it before beginning work. However, staff at the labour offices are willing to consider the fact that a job seeker is often notified by telephone of a job that begins the following day, and that working hours, or out-of-town work often render it impossible for them to immediately visit the centre. In such cases, some of the offices expect the claimant to telephone them to report the job, and then allow another week or two for the client to submit their report in writing.

3.4 The Career Beginners Assistance

György Lázár

In the early 1990s, the labour market conditions rapidly deteriorated, and many first-time job seekers were unable to find work. So, the 1991 Employment Act introduced the Career Beginners Assistance, providing a benefit for a limited duration, but not subject to means-testing, to people who

– completed secondary school (at least two years of vocational training),
– were 25 years old or younger,
– did not have an employment record (of at least one year) entitling them to unemployed insurance benefits,
– were unable to find a jobs in the three months following their registration, either independently or with the assistance of the public employment service.

Young people meeting the above conditions were entitled to six months of benefit payments starting three months after registration with the public employment service. Until 1995, the assistance amounted to 75 percent of the prevailing minimum wage, and in mid-1995 it was indexed to the minimum old age pension, and similarly to the Unemployment Assistance, was set at 80 percent of the prevailing minimum.

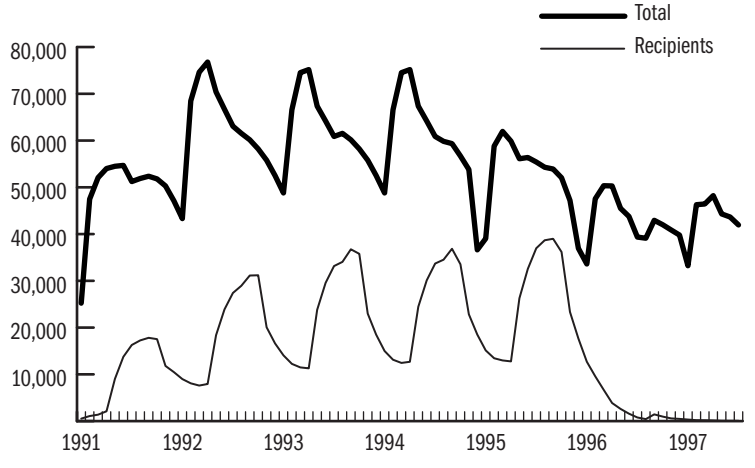
As in the case of unemployment insurance benefits, this form of assistance was suspended for the duration of compulsory military service or during the receipt of child care allowance. When the reason for the suspension no longer existed, entitlement to the assistance was resumed for the re-

maining part of the six months, with the amount of the assistance calculated according to the regulations that had been in effect at the time of the first claim.

Since poorly qualified first-time job seekers (who had the least chance of finding a job) were not entitled to assistance, very few registered with the public employment service. As a result, many of them received no help in finding a job.

As illustrated by Figure 3.4, there were marked fluctuations in the numbers of people receiving the Career Beginners Assistance. Each year, new school-leavers started to sign up in the unemployment register in June, with tens of thousands registering in July, August, and September. Benefit payments for them started three months later, because of the waiting period. After the three-month waiting period and the six-month period of assistance, most of the first-time job seekers disappeared from the records, starting in March in the following year.

FIGURE 3.4: REGISTERED CAREER BEGINNERS AND RECIPIENTS OF CB ASSISTANCE, 1991–1997



Source: Employment Office,

Between 1992 and 1995, several studies were conducted among career beginners who had exhausted their benefit entitlement (for example: *Lázár and Székely [1995]* and *]1996])*. The results suggested that many career beginners only registered to receive the assistance, but did not really want a job. Looking at career beginners who had exhausted their benefits, also revealed that a smaller proportion of people who participated in active labour market programmes actually took jobs than did the people who had not participated in these programmes. Typically, first-time job seekers were

referred to training programmes rather than to subsidised employment providing work experience. Thus, many young people used the assistance and the training programmes to prepare for college or university entry examinations. These findings contributed to the decision to phase out the Career Beginners Assistance, implemented in the middle of 1996, and to the introduction of new active programmes for first-time job seekers.

Table 3.11. summarises changes in the number of persons registered as unemployed career beginners and in the number of CB assistance recipients. To properly interpret post-1996 data, it must be made clear that not only was the Career Beginners Assistance abolished in July 1996, but the definition of a registered first-time job seeker was changed as well. From this time on, young people with low qualifications (primary or incomplete primary) were also included. However, registration is clearly affected by the fact that the abolition of the assistance removes a considerable part of the motivation to register for young people who would have been entitled to assistance prior to 1996.

TABLE 3.11: THE ANNUAL AVERAGE NUMBER OF REGISTERED CAREER BEGINNERS AND CB ASSISTANCE RECIPIENTS, 1992–2000

Year	Registered unemployed career beginners	Benefit recipient career beginners[a]
1992	39,600	14,762
1993	59,733	21,963
1994	62,141	24,113
1995	54,490	24,700
1996	46,233	16,055
1997	42,402	417
1998	32,551	66
1999	29,927	50
2000	26,023	14

a The 12 month average of the numbers receiving CB Assistance on the last day the each month.

The decline in the number of career beginners after 1994 was clearly not just the result of the abolition of financial assistance and the introduction of active labour market programmes. It was also connected to a gradual improvement in labour market conditions, since the total pool of the registered unemployed also contracted between 1993 and 2000.

3.5 Change of Labour Market Status Following the Exhaustion of UI Entitlement

György Lázár

In the early 1990s there was a steep rise in registered unemployment: already 227,000 at the end of 1991, their numbers further increased to 663,000 by the end of 1992, and peaked at 705,000 in February 1993. The number of persons receiving unemployment assistance followed a similar course, reaching half a million by the spring of 1993.

Starting in 1993, a steadily growing number of people exhausted their insurance benefits. This was partly the result of a low re-employment rate, and partly a result of the repeated cutbacks in the duration of entitlement.[39] It was expected that some of these people would disappear from the unemployment register, and their subsequent labour market status would no longer be observable through the register. So, in spring 1993, a follow-up survey was initiated to investigate the labour-market status of persons who had exhausted their benefits. One issue to be clarified was the extent to which the decline in the number of registered unemployed, which has continued since, could be explained by people leaving the register after the exhaustion of benefit entitlement, but remaining unemployed. Another goal was to learn what former benefit recipients expected of the public employment service, and to use this feedback to plan and improve its operation. The study was of particular importance at a time when benefit exhaustion affected a rapidly increasing number of people: between 1992 and 1995 a total of 772,000 people exhausted their benefits and nearly half of them left the register leaving no information on their labour market status.

The sampling stock for the follow-up surveys included persons who had exhausted their benefits during the calendar year preceding the survey, were not registered as unemployed at the time of the survey, and whose labour market status was not known by the public employment service. Some 42–45 percent of all the people exhausting their benefits met these criteria. (The surveys did not include the 55–58 percent of people who had exhausted their benefits but stayed in the register.)

A brief questionnaire was sent by mail to a random sample of this population. The response rate was 30–40 percent, which is high for a mailed questionnaire. There was no significant difference in basic characteristics (gender, level of education, and age) between respondents and the sampling population, so results may be regarded to hold for the total population.[40]

Table 3.12 summarises the results of four follow-up surveys on labour market status, conducted between 1992 and 1995. The data suggest an

39 For more information on changes in the duration of entitlement, see Section 2.1.

40 To check the reliability of data, two sets of personal interviews were subsequently conducted with people who had not responded to the questionnaire. This investigation revealed that the composition of non-respondents by labour market status differed only slightly from that of the respondents.

improvement in labour market conditions. Among people who exhausted their benefits in 1994–1995 (persons included in the 1995 and 1996 surveys), the proportion of those who found work was 17 percentage points higher, of those unemployed it was 10 percentage points lower, and of people who became inactive it was 6 percentage points lower than in the previous two surveys.

TABLE 3.12: LABOUR MARKET STATUS FOLLOWING THE EXHAUSTION OF BENEFIT ENTITLEMENT (PERCENT)

Labour market status[a]	1992	1993	1994	1995
Employed	26.9	28.0	42.0	44.0
Unemployed	40.7	35.7	28.2	29.7
Of which:				
– registered	13.1	7.7	3.8	3.4
– not registered	27.6	28.0	24.4	26.3
Inactive	32.4	36.3	29.7	26.4
Total	100.0	100.0	100.0	100.0

a At time of survey (summer following the year when benefits were exhausted).

Some 25–28 percent of the sample were not registered unemployed, but this does not imply that the same proportion of those who exhausted their benefits have left the register. If proportions are adjusted to account for persons whose labour market status was known from the register at the time of the survey (and were therefore excluded from the survey) the figure drops to 11 percent.

The investigations conducted in successive years reveal another important change. While in 1993, nearly two-thirds (65.5 percent) of all people who exhausted their benefits the preceding year stayed in the register, in 1995 and 1996 their proportion was down to 40 and 43 percent. The large majority remained registered because, besides the means test, this was a prerequisite to receiving the Unemployment Assistance. The declining proportion of persons remaining in the register is related to the fact that an increasingly small proportion of people exhausting their benefits the previous year were entitled to the Unemployment Assistance. The proportion of recipients was 58 percent in 1993, 44 percent in 1994, dropped further to 37 percent in 1995, and was 39 percent in 1996.

Table 3.13. shows labour market status by gender. After 1994, the labour market status of males improved to a greater degree than of females. In addition to the gender differences in employment ratios, differences in the gender ratios of persons who became inactive are particularly noteworthy. Even though there was a significant drop in the proportion of females who

became inactive over the four-year period, it was still significantly higher than of males in 1996.

Table 3.13: Labour Market Status Following the Exhaustion of Benefit Entitlement by Gender (percent)

Labour market status[a]	1993	1994	1995	1996
Men				
Employed	27.4	29.0	45.7	49.6
Unemployed	48.4	37.4	23.0	20.6
Inactive	24.3	33.6	23.0	20.6
Total	100.0	100.0	100.0	100.0
Women				
Employed	26.3	29.0	37.6	37.4
Unemployed	32.2	30.1	24.6	29.5
Inactive	41.5	40.9	37.8	33.1
Total	100.0	100.0	100.0	100.0

a At time of survey (summer following the year when benefits were exhausted).

Table 3.14 shows the composition of those who found a job, by gender and education level, based on the 1996 survey. It is clear that the proportion of the poorly qualified is far below that of the highly qualified among those in employment.

Table 3.14: Those Employed at the Time of the 1996 Survey, by Education and Gender (percent)

Education	Men	Women	Total
Complete or incomplete primary	41.8	28.6	35.1
Two or three year vocational secondary	53.6	41.3	49.5
Four year secondary	55.5	42.8	47.9
College or university	58.0	39.4	49.5
Total	49.6	37.4	44.0

Table 3.15. gives the age composition of those in employment at the time of the survey. It is worth noting that under age 20, re-employment is much more common among women than men. Re-employment is less likely over 40 years of age.

There were four nation-wide follow-up surveys in four consecutive years, and another one in 1998, conducted in four counties (Fejér, Pest, Tolna, and Szabolcs-Szatmár-Bereg). In 1997, a total of 176,600 people, and 39,500 in the four counties, exhausted their insurance benefits. The majority of

the people who exhausted their benefits (55.9 percent in the total population, and 53.6 percent in the four counties) remained registered unemployed. According to public employment service records 5.7 percent (4.5 percent in the four counties) of the people who exhausted their benefits were working, 3.5 percent (3.3 percent in the four counties) were participating in some active labour market programme at the time of the survey, and 2 percent (1.8 percent in the four countries) were inactive. There was no information available for 32.9 percent (36.9 percent in the four counties) of this population.

TABLE 3.15: THOSE EMPLOYED AT THE TIME OF THE 1996 SURVEY, BY AGE AND GENDER (PERCENT)

Age group	Men	Women	Total
–19	25.2	35.2	29.3
20–29	58.1	40.9	50.5
30–39	58.2	37.4	47.8
40–49	46.7	38.0	42.2
50–54	33.2	13.1	26.0
55+	16.1	0.0	16.1
Total	49.6	37.4	44.0

The proportion of those who left no information with the labour office regarding their labour market status among those who exhausted UI benefit entitlement in 1997 came to 30 percent in Tolna County, only 20.3 percent in Szabolcs-Szatmár-Bereg, 39 percent in Fejér, and 53.7 percent in Pest County. The main reason for the regional variation is that there were significant differences in the proportions of people becoming entitled to the Unemployment Assistance, primarily due to prevailing labour market conditions. The proportion of persons entitled to continued assistance was 33.3 percent in Pest County, 42.2 percent in Fejér County, 53.4 percent in Tolna, and 68.9 percent in Szabolcs-Szatmár-Bereg.

On average 60.6 percent of all respondents (together in the four counties), or 68.4 percent of the males and 52.5 percent of the females were employed at the time of the survey.

The variation in the proportion of those employed at the time of the survey across counties, shown in Table 3.16, reflect differences in labour market conditions.

The main findings of the 1998 study, compared to the results of the previous investigations, were as follows:

– the proportion of people exhausting their benefits who became entitled to the Unemployment Assistance rose again, reaching 50 percent,

– closely related to this, the proportion of people exhausting their benefits who remained registered unemployed was again over 50 percent,
– there was a significant rise in the proportion (of the population who left no record of their labour market status after exhausting their benefits) of those who had a job (60.6 percent as against 44.0 percent in 1996), which is clearly a sign of a growing demand for labour,
– re-employment rates for males were significantly better than for females in all the four counties, and poor labour market conditions had a much worse effect on the female rates.

TABLE 3.16: THE PROPORTION OF THOSE EMPLOYED AT THE TIME OF THE 1998 SURVEY, BY GENDER AND COUNTY (PERCENT)

Gender	Fejér	Pest	Szabolcs	Tolna	Together
Men	69.9	72.6	56.8	67.2	68.4
Women	54.7	58.4	37.9	42.0	52.5
Total	63.3	65.0	47.9	56.1	60.6

The last follow-up survey was conducted in November 2000, when about 5,000 people who had exhausted their benefits were approached for a face-to-face interview. The results of this latest investigation are reviewed in Section 5.2.

3.6 Pre-retirement Allowance Schemes

Ágota Scharle

Beyond the general rules, special provisions apply to workers close to retirement age, helping them to survive or avoid unemployment. One consideration likely to have been behind these regulations is that when these people lose their jobs they have less of a chance to find another one than younger people.[41] Another was probably the expectation that, if older people were to find it easier to leave the workforce, unemployment among the young might decline, and this would increase welfare in the short run and/or in the long run. These were probably the reasons behind the two special provisions for older workers introduced by the 1991 employment law: early retirement, and pre-pensions.

Early retirement was made possible as of 1991 for persons no more than five years below retirement age. Men were required to have an employment record of at least 30 years and women needed 25 years.[42] Until the individual reached retirement age, the Employment Fund covered up to 50 percent of pension expenditure, while the worker's employer had to cover the rest.

41 According to data by the National Centre for Labour Research and Methodology, older people are over-represented among the registered long-term unemployed, and as *Galasi–Nagy (1999)* demonstrated, between 1992 and 1996, the re-employment probability for men close to retirement was barely 10 percent of the re-employment probability for those aged 21–25, and the corresponding figure for women was around 10–15 percent.

42 Early retirement has been available since 1987, with slight variations in the conditions. For more information see *Bánsági (2000).*

Pre-pensions were available from 1991 to 1997. They could be applied for by a person who had no more than three years to go to reach retirement age, who had the required employment record, and who had received unemployment insurance benefits for at least 180 days. Alternately, they were available to persons who had received the Unemployment Insurance Benefit (UI) for at least 180 days, had no more than four years to go to retirement age when the benefits expired, and were not legally entitled to any other form of unemployment assistance.

In 1998 the pre-pension scheme was replaced by the Pre-retirement Unemployment Assistance, available five (as opposed to three or four) years before retirement age, but only after exhaustion of unemployment insurance benefits, and subject to cooperation with the public employment service throughout the period of payment. Another difference is that, while the pre-pension was calculated using the rules governing pensions, this new benefit is a uniform 80 percent of the minimum pension, irrespective of years of employment and prior earnings.

The amount of pensions under the early retirement and the pre-pension scheme was calculated according to the general rules of old-age pensions, but early pensioners enjoyed two advantages over others in their age cohort. One was that the pre-pension was not universally available to all persons prior to retirement age, but only to people working for certain employers and only to certain unemployed people, depending on the resources of their former employer, and of the Employment Fund. The other was that, with early retirement, the years they still had to go until retirement age were ignored in the calculation of their pensions. As a result, over the years these people receive a larger total amount of pension payments than those who retire only after reaching retirement age, which, as pointed out by the *OECD (1994),* is unfair and reduces cost efficiency.[43] The Pre-retirement Unemployment Assistance eliminated the above mentioned advantage of the unemployed in that the new assistance is not any more favourable than the UI benefit either in amount or in payment conditions.

In the mid 1990s, about 4–5 percent of the population aged 40–59 participated in early retirement schemes. Tables 3.17 and 3.18 summarises information on the recipients of the various forms of benefit.

43 In international practice, a person opting for early retirement receives only a certain proportion of the pension that would be due at retirement age until s/he reaches regular retirement age. This is fairer to people choosing not to retire early, and is less of an incentive to older people to leave the labour force.

Table 3.17: Participants in Pre-retirement Schemes for the Unemployed (thousands)

	New entrants during the year		Receiving payments during the year		
Year	early retirement (1)	pre-pension (2)	early retirement (average numbers) (3)	pre-pension (total) (4)	PUA (December stock) (5)
1990	27.0	–	n.a.	–	–
1991	43.3	0.4	n.a.	n.a.	–
1992	28.2	17.8	63	n.a.	–
1993	17.1	25.9	63	47.1	–
1994	11.6	29.4	56	65.1	–
1995	11.2	22.9	45	78.9	–
1996	15.0	29.0	44	88.5	–
1997	13.0	29.5	39	94.7	–
1998	6.0	10.6	32	72.5	1.8
1999	3.3	–	23	45.8	4.8
2000	3.3	–	16	21.0	7.9

Source: Hungarian Statistical Yearbook, 1998, Central Statistical Office, 1999, p. 154. and Central Statistical Office Statistical Database, 1996 nationwide data – Columns (1) and (2); National Pension Insurance Fund, Statistical Division – Column (3); National Centre for Labour Research and Methodology – Columns (4) and (5).

Table 3.18: Public Transfer Recipients as a Proportion of the Working Age (15–74) Population (percent)

	1995	1996	1997
Disability pension	9.7	10.1	10.4
Early retirement and pre-pension	1.3	1.3	1.3
UI benefit	2.6	2.8	1.9
Unemployment allowance	2.8	2.6	2.7
active labour market programmes	1.7	1.0	1.2
Total	18.2	17.8	17.5

Source: OECD (1999), p. 65 (Based on Central Statistical Office and Welfare Ministry data).

The number of people opting for pre-pensions grew until 1994, while the number of people enjoying them grew steadily until 1997 (the final year that it was available).[44] (In 1997, nearly 6 percent of the people registered as unemployed at the start of the year applied for this benefit.) The number of people applying for early retirement in any single year was far smaller,

44 The drop in new applications in 1995 followed a tightening of regulations on benefits: see *Bánsági (2000).*

but the difference between the numbers of people enjoying the two types of benefit reduces when we consider the longer period of time during which the early retirement pension was paid. Significantly fewer people have applied for the Pre-retirement Unemployment Assistance, and most applicants (90–95 percent) are men. The reason for this is that women need a shorter employment record to qualify for early retirement, which offers significantly more favourable conditions.

4. THE DISINCENTIVE AND INCOME EFFECTS OF UNEMPLOYMENT BENEFITS

4.1 The Disincentive and Re-employment Effects of Unemployment Benefits

Péter Galasi, János Köllő

The level of unemployment benefits can influence job seekers, those who work, and also the inactive, regarding both their intention to work, and their chances of re-employment. In this section, we shall first outline the most important possible effects of benefits on the above groups.[45] Then we provide a brief overview of research on the issue in Hungary, and then discuss the results of two attempts at the empirical analysis of the effects.

Most of the literature on the subject focuses on the effects on *job seekers.* When a job seeker is considering whether to accept an offer, he compares the difference between prospective wages and lost benefits (and leisure time) to the present value of expected incomes resulting from further job search. The reservation wage refers to the wage level where the job seeker is indifferent between accepting the job and continuing the search. If benefits are large, gains from stopping the search are smaller: hence, benefits tend to raise the reservation wage and reduce the probability of re-employment. (See, for example, *Atkinson and Micklewright, 1991*). At the same time, having a higher income while unemployed may increase or reduce the time and money devoted to job search, depending on how the unemployed person evaluates the respective utilities of job search (as a peculiar earning activity) and increased consumption. This decision hinges on the relative size of the income and substitution effects as well as on preferences regarding present and future consumption, and theory cannot predict the outcome.

It should be noted that an increase in unemployment (job seekers) induced by more generous benefits is not necessarily a "social ill". As *Burtless (1990)* points out, on average a longer search can yield a better job, as it helps people to find the most suitable job[46] and offers information about the markets for people who are not looking for jobs. In addition, if more generous benefits increase the reservation wages of benefit recipients and thus, the number of job offers they reject, this increases the number of vacancies available to those who are not receiving a benefit,[47] which in turn increases the probability of re-employment for the latter (*Atkinson, 1981).* In this argument, more generous benefits can reduce unemployment among persons not receiving a benefit and, if this reduction exceeds the increase in the number of benefit recipients induced by the benefit rise, the aggregate number of benefit recipients and non-recipients as well.

45 We will follow this division though we are aware that changes in benefits simultaneously alters the present value of all conceivable paths of labour market states.

46 Burtless applies this externality to explain why benefit systems for the unemployed have only evolved in countries where the educational composition of the labour force shows a high degree of heterogeneity.

47 A significant proportion of people actively looking for work do not receive unemployment benefits. (In Hungary, according to the CSO labour survey, for instance, in the second quarter of 1997, only 47 percent of active job seekers received UI or UA benefit).

Entitlement to benefits is generally conditional on prior employment and contribution payments. Therefore, raising the amount of benefit increases the value of both unemployment and employment, since the increased value of on-the-dole unemployment can only be "consumed" if it is preceded by an employment spell. Meanwhile, there is a particularly sharp increase in the value of registered unemployment as opposed to *inactivity*, the effects of which have been observed in many empirical studies.[48]

Research on the effects of unemployment benefits in Hungary, except for *Galasi (1995)* and *(1996)* reviewed in this volume, has tended to focus exclusively on the probability of re-employment.

Micklewright and Nagy (1994) analyse the effects of reductions in the duration of entitlement to insurance benefits in 1993, by comparing two cohorts, one of which received the benefits under the old rules, while the other received them under the new ones. They find that the cutback had no significant influence on the length of time spent unemployed prior to re-employment. *Köllö and Nagy (1995)* investigate the re-employment of benefit recipients in March and April of 1994, and conclude that the ratio of benefit to prior wages did not have a statistically significant influence on the probability of re-employment (except for a weak correlation among people who had been unemployed for 3–6 months). In addition, there was no discernible relationship between re-employment probabilities and the length of the entitlement period until exhaustion of benefit.

In a follow-up survey of people who had exhausted their benefits, *Micklewright and Nagy (1998)* find a sudden rise in re-employment rates in the week following the exhaustion of benefit. This suggests that a minority of about 2–3 percent of the cohort, were using benefits as a "paid unemployment holiday". Using a similar sample, *Köllö et al (1997)* analyse the speed at which people receiving Unemployment Assistance and non-recipients find a job. Controlling for the effects of other variables, the re-employment rate was 8–14 percent lower for UA recipients than for non-recipients. The authors argue that unobserved differences between the two samples are unlikely to be the only reason for this gap. They note, however, that a reliable separation of incentive and selection effects would require an analysis extended to the probability of benefit receipt as well.

Galasi et al.(1999) examine unemployed people leaving active labour market programmes to find that those entitled to benefit are slower to find a job. It should be noted though that the sample may have suffered from distortion if some of the persons entering active programmes did so in order to prolong the period of entitlement.

Let us now discuss in greater detail the results of two investigations that were not limited to a particular group of the unemployed, but covered all

48 *Clark and Summers (1982)*, for instance, observe the movement between labour market states and draw the conclusion that the complete abolition of unemployment benefits in the United States in the late 1970s would have reduced unemployment by 0.65 percent while increasing the inactive population by 1.1 percent. (This entitlement effect was at work in the movement of large numbers of inactive persons into the ranks of the unemployed, for example, in Poland and Romania, in the first two years of the transition.)

unemployed or non-employed persons, and attempted to separate effects as much as possible, given the available data.

The first investigation endeavoured to clarify interactions between the amount of benefits and chances of re-employment, using a job-search model. In this model, the amount of benefits influences re-employment chances through two factors, as already explained above: reservation wages and job-search intensity. To recap, an increase in benefits raises reservation wages and thus (with a given distribution of wage offers) reduces the probability of re-employment, while at the same time it may increase or reduce the intensity of job search, and the combination of the two effects may, in theory, reduce or increase re-employment chances. The study sought an empirical answer to this question, using a combined sample of the ILO/OECD unemployed in the first four waves of the TÁRKI (Social Research Institute) Household Panel for 1992–1995.

The income of the unemployed was defined in terms of the reservation wage, the unemployment insurance benefit and non-work income as compared to the market wage, where the market wage expected in re-employment, being unobservable, was projected from wage equations estimated for employed persons and interpreted as the expected median wage. Following *Greenwald (1986)* and *Gibbons and Katz (1991)*, we assumed that, if re-employed, the unemployed would on average receive a lower wage than similar workers already employed in the same locality. To control for such selection effects, we used *Heckman's (1979)* two-stage procedure.[49] The equation was estimated for the entire sample, and also separately for males and females.

For both males and females we found that a higher unemployment insurance benefit compared to estimated market wages, that is, a higher replacement rate, does in fact increase the reservation wage ratio[50] (as does a larger non-work income), in other words, people become more choosy. They will reject wage offers that they would accept, were benefits lower. At the same time, in the equation of job-search intensity[51] a higher replacement rate results in more intensive job search by males. As for effects on re-employment chances,[52] the conclusion was that on the whole an increase in reservation wages (together for males and females) reduces job-search intensity. However, job-search intensity does not significantly influence the probability of re-employment, and a higher replacement rate (higher benefits) has no significant (within conventional confidence intervals) direct effect either.

The other investigation sought to clarify the effect of benefits on the labour supply of unemployed individuals, defining supply along traditional labour supply models, as the number of hours the individual wishes to work.

49 Independent variables in the participation probit estimation used to control for selection effects included: an indicator of head of household, married, level of education level (years of schooling); age; age squared; family size; and family size squared. The wage equation is OLS corrected for the selection effect. The dependent variable is the natural logarithm of net monthly earnings in the first job. Explanatory variables include the selection variable; sex; potential labour-market experience (age * [6 years + number of years required for attained qualifications + time spent in the current unemployment spell]; level of education (years of schooling); married; and resident of Budapest.

50 We used OLS with a White estimator to estimate reservation wages. The dependent variable was the reservation wage and the independent variables were the unemployment benefit and non-work incomes compared to the estimated market wage, the duration of unemployment (using three dummy variables), age, age squared, and age cubed.

51 The job-search intensity equation was estimated in a logit model. The dependent variable was defined as intensive job search work = 1, no intensive job search = 0. The explanatory variables were the same as used in the reservation wage equation (see footnote above), and level of educational (years of schooling completed).

52 Here we ran two logit regressions of a dichotomous dependent variable (not re-employed = 0, re-employed = 1) for each sex and for the whole population. The explanatory variables in the first equation were the reservation wage ratio, the intensity of job search (intensive job search = 1, no intensive job search = 0), the duration of unemployment, three dummy variables for level of education, and one age dummy: the unemployed person is aged 50 or over. The explanatory variables in the second equation were the level of unemployment benefits and non-work income compared to estimated market wages, the duration of unemployment, three dummy variables for level of education, and one age dummy indicating if the unemployed person is aged 50 or over.

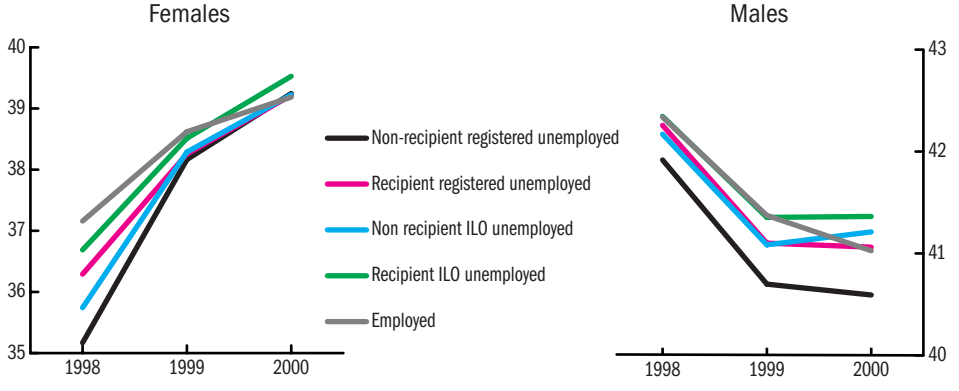
Preferred hours of work time cannot be directly observed. Even for currently employed persons, only the number of hours actually worked can be measured directly (which equals zero for unemployed people). With *Heckman's (1979)* method, however, the labour supply of both employed and unemployed persons can be estimated.[53] In the estimations we used the Labour Force Surveys of the Central Statistical Office for 1998, 1999, and the first quarter of 2000.

We distinguish the following four groups of non-employed persons: the registered unemployed, the ILO/OECD unemployed, and benefit recipients and non-recipients within each of the two groups. (The amount of benefits received are not available in the survey.) All persons included in the four groups have done less than one hour of paid work during the week preceding the survey. In addition, the ILO unemployed, presumably due to their stronger attachment to the labour market, actively look for paid work and are available to start work at short notice. The registered unemployed meet none, or no more than one, of these criteria, and were registered as unemployed with the public employment service at the time of the survey. Meeting the ILO/OECD criteria, and the receipt of unemployment benefit may both signal a stronger attachment to the labour market, and a larger labour supply, for example because benefit recipients are more likely to have a shorter unemployment spell (which is why they are still entitled to benefit).

Figure 4.1 is a summary of results for the various groups of males and females. There is a remarkable difference in the time paths of male and female labour supply: among females there is a clear rise in labour supply, while for males there is a decline or stagnation. The differences between the groups that are of particular concern to us are as follows.

53 The essence of the method is to first construct a correction variable using a participation probit estimate, and then to estimate labour supply equations containing this correction variable for persons who are employed. Finally, assuming that the labour supply of persons with and without jobs can be described by the same labour supply equation, we define the labour supply of the unemployed using the coefficients of the labour supply equation estimated for persons with jobs and the observed characteristics of the unemployed.

FIGURE 4.1: LABOUR SUPPLY OF FEMALES AND MALES, 1998–2000 (HOURS OF WORK/WEEK)



The ranking of groups among females conforms to all our expectations in the first year: labour supply is highest for the employed, followed by ILO unemployed benefit recipients, the ILO unemployed who are non-recipients, non-ILO benefit recipients, and lastly by non-recipient registered unemployed. However, in the second and third year, benefit recipient ILO unemployed are the only group to stand out with their labour supply higher than in the other three groups of the unemployed, and, in the third year, even higher than for the employed. At this point no difference can be observed in the labour supply of the other three groups. Among males, the labour supply of the employed is never larger, and in the third year it is clearly lower, than the ILO unemployed receiving benefits. Comparing the four unemployed groups however, as expected, ILO unemployed benefit recipients have the highest, and the non-recipient registered unemployed have the lowest labour supply. There is hardly any difference between the non-recipient ILO unemployed and registered unemployed benefit recipients in terms of their labour supply.

The above finding that both male and female labour supply is higher for the ILO unemployed who receive benefits and lower for males who are registered as unemployed but do not receive benefits, suggests, with certain caveats, a positive relationship between unemployment benefits and labour supply.

4.2 Selected Characteristics of Unemployment Assistance Recipients in 1994

Péter Szivós

Commencing in 1992, unemployed people who exhausted their benefits and whose per capita household income did not exceed 80 percent of the minimum old-age pension were entitled to Unemployment Assistance. Following the introduction of this assistance, the number of recipients rose rapidly, and then dropped slightly, as of 1995. The following is a review of the demographic and socio-economic characteristics of the households that received this assistance in 1994, based on the Central Statistical Office's Family Budget Survey in 1994.[54] The data was collected in 7,900 households, on 21,000 people including 534 who received the Unemployment Assistance.

Based on the survey (using frequency weights) the number of persons thus supported was estimated at 215,000, and total annual payments at HUF 11.3 billion, which seems a good approximation of actual numbers, corresponding to an 81–82 percent reporting rate. Average per capita payments come to HUF 45,854, the median is HUF 47,944, and the mode is HUF 71,888. In other words, the distribution of the assistance is sharply skewed to the left.

54 For details on the results, see *Szivós (1996).*

Table 4.1 shows that in 1994 some 5.8 percent of households received Unemployment Assistance. Within that, support went to 6.5 percent of households with a male head of household, and to 3.4 percent where there was a female head. Among households receiving support, 86 percent of the heads of household were male.

Clearly, households with a middle-aged head (30–49) were most likely to receive this support. About 56 percent of households receiving support were headed by a person in that age group, while only 38 percent of households not receiving support were headed by a person of that age. With households where the head exceeded age 60 the ratio was the opposite. Far fewer (16 percent) were among the support recipients than among the non-recipients (36 percent).

TABLE 4.1: THE COMPOSITION OF HOUSEHOLDS

	Households receiving					
	No assistance			Unemployment Assistance		
	number	percent	share	number	percent	share
Gender of main earner						
Men	2,653,048	93.51	75.57	184,153	6.49	85.76
Women	857,523	96.56	24.43	30,578	3.44	14.24
Occupation of main earner						
Executive, managerial	163,707	95.18	4.66	8,296	4.82	3.86
Professional	139,245	97.86	3.97	3,051	2.14	1.42
Clerical	165,405	96.96	4.71	5,192	3.04	2.42
Entrepreneur	137,976	93.76	3.93	9,177	6.24	4.27
Skilled worker	704,681	96.38	20.07	26,501	3.62	12.34
Semi-skilled worker	293,538	96.77	8.36	9,791	3.23	4.56
Unskilled worker	78,499	85.58	2.24	13,226	14.42	6.16
Family help	3,953	100.00	0.11	0	–	–
Pensioner	1,581,325	96.45	45.04	58,258	3.55	27.13
Unemployed	176,381	70.09	5.02	75,258	29.91	35.05
On child care leave	18,446	95.64	0.53	841	4.36	0.39
Other	47,415	90.22	1.35	5,140	9.78	2.39
Education of main earner						
Incomplete primary	574,945	95.84	16.38	24,930	4.16	11.61
Completed primary	929,150	92.55	26.47	74,843	7.45	34.85
2–3 year vocational secondary	876,147	92.88	24.96	67,117	7.12	31.26
4 year vocational secondary	486,935	96.79	13.87	16,152	3.21	7.52
Grammar school	241,235	95.39	6.87	11,663	4.61	5.43
College or university	402,159	95.26	11.46	20,026	4.74	9.33

	Households receiving					
	No assistance			Unemployment Assistance		
	number	percent	share	number	percent	share
Age of main earner (years)						
15–20	4,623	90.06	0.13	510	9.94	0.24
20–29	260,402	94.70	7.42	14,561	5.30	6.78
30–39	583,227	91.25	16.61	55,912	8.75	26.04
40–49	760,456	92.17	21.66	64,626	7.83	30.10
50–59	631,065	93.40	17.98	44,584	6.60	20.76
60–69	625,205	97.81	17.81	14,026	2.19	6.53
70–	645,593	96.92	18.39	20,512	3.08	9.55
Unemployed persons in household						
None	3,084,253	97.62	87.86	75,075	2.38	34.96
1	373,367	78.31	10.64	103,390	21.69	48.15
2	47,982	58.88	1.37	33,515	41.12	15.61
3 or more	4,969	64.37	0.14	2,751	35.63	1.28
Settlement type						
Budapest	738,071	95.63	21.02	33,716	4.37	15.70
Town	1,544,977	95.10	44.01	79,604	4.90	37.07
Village	1,227,523	92.37	34.97	101,411	7.63	47.23
Region						
Budapest	738,071	95.63	21.02	33,716	4.37	15.70
Pest county	330,490	97.88	9.41	7,153	2.12	3.33
Northern Hungary	416,560	90.12	11.87	45,687	9.88	21.28
Northern Great Plain	492,475	90.60	14.03	51,098	9.40	23.80
Southern Great Plain	480,838	94.03	13.70	30,541	5.97	14.22
Western Trans-Danubia	347,426	97.05	9.90	10,553	2.95	4.91
Northern Trans-Danubia	368,461	94.00	10.50	23,499	6.00	10.94
Southern Trans-Danubia	336,250	96.42	9.58	12,484	3.58	5.81
All households	3,510,571	94.24	100.00	214,731	5.76	100.00

Note: Figures below 5,000 (frequency weighted) in this and the following table cannot be considered reliable, because of the small numbers of observations.

The proportion of those receiving Unemployment Assistance was highest (7 percent) among households where the head of the household had primary or two or three-year vocational secondary education, and lowest (3.2 percent) where the head completed four-year vocational secondary school. The proportion of recipients among households with a head who completed only 1–7 grades of primary school was comparatively low (4.2 per-

cent) probably because such households tended to have an older head, who, in most cases, was economically inactive due to old age.

The proportion of households receiving Unemployment Assistance was particularly high (30 percent and 41 percent) where the head of household was unemployed, and where there were two unemployed people in the household. (Data on households with two or more unemployed persons is not considered reliable because of the small sample size.)

7.6 percent of rural households and 4–5 percent of urban residents including those in Budapest received Unemployment Assistance. Nearly half of the recipients (45 percent) lived in the northern part of the country or in the northern Great Plain, where nearly one in ten households were receiving assistance. In Pest County and the western counties only 2–3 percent received UA benefit.

Table 4.2 shows that in 1994, the households receiving Unemployment Assistance had a per capita income of HUF 130,000 inclusive of the support, 22 percent lower than non-recipient households, and the average household size was 3.3, compared to 2.7 for non-recipients. This also means that the Unemployment Assistance directly affected the living conditions of 709,000 people.

TABLE 4.2: SAMPLE MEANS FOR RECIPIENT AND NON-RECIPIENT HOUSEHOLDS

	Households receiving				
	No assistance		Unemployment Assistance		
	average stock	per capita income	average stock	per capita income	UA/income ratio
Gender of main earner					
Men	3.02	166,382	3.46	128,644	11.72
Women	1.58	166,103	2.32	138,318	12.10
Occupation of main earner					
Executive, managerial	3.39	222,464	3.67	252,153	3.55
Professional	3.02	219,824	3.35	257,604	6.20
Clerical	2.70	194,583	2.98	184,662	4.33
Entrepreneur	3.37	146,531	2.82	150,597	6.17
Skilled worker	3.47	165,630	3.59	145,766	9.34
Semi-skilled worker	3.23	147,736	3.89	125,612	8.20
Unskilled worker	3.27	124,344	3.63	122,739	11.98
Family help	4.00	149,588	–	–	–
Pensioner	1.91	169,867	2.85	143,707	10.94
Unemployed	3.31	116,279	3.45	94,637	19.01
On child care leave	3.70	103,537	2.96	133,594	16.02
Other	3.04	140,667	3.29	84,732	19.04

	Households receiving				
	No assistance		Unemployment Assistance		
	average stock	per capita income	average stock	per capita income	UA/income ratio
Education of main earner					
Incomplete primary	1.81	151,552	3.41	97,927	15.13
Completed primary	2.47	153,188	3.42	120,779	13.35
2–3 year vocational secondary	3.36	152,411	3.44	118,896	12.72
4 year vocational secondary	2.84	181,002	3.04	150,910	10.98
Grammar school	2.56	170,833	2.82	147,307	8.73
College or university	2.71	224,723	2.71	236,432	5.31
Age of main earner (years)					
15–20	1.75	200,141	5.00	67,807	1.68
20–29	2.99	146,989	3.28	100,637	13.24
30–39	3.55	151,499	3.82	115,450	13.28
40–49	3.46	157,966	3.48	123,410	12.23
50–59	2.63	191,632	3.08	147,580	11.15
60–69	1.90	183,232	2.71	176,202	8.44
70–	1.58	171,737	2.16	168,506	8.97
Unemployed persons in household					
None	2.55	173,624	2.99	172,303	6.46
1	3.48	131,607	3.31	115,904	14.67
2	3.67	105,841	3.82	96,794	18.44
3 or more	5.03	105,376	5.14	79,814	18.65
Settlement type					
Budapest	2.45	184,762	2.68	166,740	9.05
Town	2.70	165,061	3.23	136,161	10.85
Village	2.76	158,115	3.56	115,683	13.51
Region					
Budapest	2.45	184,762	2.68	166,740	9.05
Pest county	2.82	158,487	3.39	109,554	10.40
Northern Hungary	2.70	164,087	3.35	117,049	13.74
Northern Great Plain	2.72	153,830	3.59	112,285	13.87
Southern Great Plain	2.61	156,478	3.27	134,054	11.98
Western Trans-Danubia	2.74	175,912	3.15	161,425	7.05
Northern Trans-Danubia	2.76	166,999	3.50	136,092	10.31
Southern Trans-Danubia	2.80	162,060	3.40	134,305	12.52
All households	2.67	166,342	3.30	129,611	11.76

In 1994, Unemployment Assistance made up 11–12 percent of the total income of recipient households. There are no significant differences between groups of households with respect to the gender or age of the head of household, but differences do emerge in other characteristics.

The higher is the educational level of the head of household, the lower is the proportion UA benefit in household incomes. Benefit payments account for 15 percent of the income of households headed by people with primary education, and only 5 percent of the income of college graduates. The proportion of benefit payments in household incomes is above the average where the head is an unskilled worker, a pensioner, or on maternity leave, and is particularly high when the head is unemployed, or when there is more than one unemployed person in the household.

Just as in the proportion of households receiving support, the importance of Unemployment Assistance in total incomes is lowest for Budapest recipients (9 percent), and highest in villages and in the north and northwest (13–14 percent).

4.3 The Share of Unemployment Benefits within Household Incomes

Péter Szivós, András Gábos

Unemployment benefits are intended to temporarily replace a proportion of the income lost when people lose their job, and help them to find another one. The following is an investigation of the importance of unemployment benefit in household incomes, using data from the TÁRKI (Social Research Institute) Household Panel and Household Monitor for 1993–94 and 1999–2000.[55] First, we survey some characteristics of the income structure of households, and the relative living standards of households with an unemployed member. Then, we look at the proportion of unemployment benefits within household incomes and investigate what other types of income such households may have.

55 The data refer to the period between the April of the year preceding the survey and the March of the year when the data was collected. The data reported here may differ slightly from other analyses using the same source, because we included *ex post* corrections, excluded individuals and households where the data were imputed to substitute for missing income data, and did not include revenues from winnings or real estate sales as income.

The structure of household incomes

As Table 4.3 shows, throughout the observed period, earnings from full-time jobs were the largest item in household incomes. In 1999–2000, they made up nearly half (49.1 percent) of the total income, slightly (0.9 percent) less than in 1993–94. Meanwhile, there was a 5 percent increase in the proportion of social insurance payments and a marked drop in the proportion of social transfers.

Table 4.3: Total Household Income by Source

	1993/1994	1999/2000
Income from main job	50.0	49.1
Income from other jobs	7.4	7.2
Dividends and interest	0.8	0.8
Income from agriculture	3.8	3.4
Income from social insurance	28.5	32.7
Income from social transfers	7.9	5.3
Other transfers	1.4	1.6
Total	100.0	100.0
Number of households	1885	1956

Table 4.4 shows the distribution of households by the various sources of income. In the 1990s there was a 10 percent decline in the proportion of households having an income from a full-time job, mainly because of a rise in pensioner households (households made up exclusively of pensioners). There was also a drop in the proportion of households drawing an income from social insurance, principally because of the decline in the number of employed persons. The proportion of households receiving social transfers also decreased. At the same time, a growing proportion of households draw incomes from interest and dividend payments and from second jobs.

Table 4.4: The Proportion of Households Receiving Various Types of Income (percent)

	1993/1994		1999/2000	
	All households	Non-pensioner households	All households	Non-pensioner households
Income from main job	60.5	70.7	54.0	77.7
Income from other jobs	20.2	23.2	38.6	52.9
Dividends and interest	3.5	3.9	6.2	6.2
Income from agriculture	42.8	45.3	34.6	34.4
Income from social insurance	75.5	71.4	65.8	50.7
Income from social transfers	45.3	50.9	34.7	46.8
Other transfers	8.1	8.6	9.0	11.1
Total number of households	1885	1609	1956	1349

The relative living standards of households with an unemployed member

Using self-reported status for the definition of unemployment, a household is defined as "unemployed" when there is at least one person in it who is unemployed. Some 11 percent of households had an unemployed member in 1993–94, and 18.8 percent in 1999–2000, even though under the official definition of unemployment there was a significant decline in unemployment.

Table 4.5 shows the average total income for households with one, two or more unemployed members, compared to the rest of the households. Clearly, proportions hardly changed over the observed period. The relative income of households with one unemployed person dropped by 2 percentage points within the total income for households, and remained unchanged for non-pensioner households. The position of households with more than one unemployed member even improved in this respect, by 2–3 percentage points.

TABLE 4.5: THE TOTAL INCOME OF UNEMPLOYED HOUSEHOLDS AS A PROPORTION OF TOTAL INCOME IN OTHER HOUSEHOLDS

	1993/1994		1999/2000	
	All households	Non-pensioner households	All households	Non-pensioner households
One unemployed person in household	70	68	68	68
More than one unemployed person in household	49	48	51	51
Total number of households	1884	1609	1956	1349

Another way of investigating the relative living standards of unemployed households in terms of the overall income distribution is to look at their proportions within income groups categorised according to per capita income (Figure 4.2), and their distribution across these income categories (Figure 4.3).

Figure 4.3 shows a significant deterioration in the position of unemployed households in the overall income distribution. Their proportion in the lowest household income decile nearly doubled from 22.6 percent to 42.3 percent, a significantly higher growth than the rise in their proportion among all households, and there was a similar rise in their proportions among the next two lowest income deciles. There was hardly any change at all in the middle deciles. However, it is worth mentioning that in 1999–2000, households with an unemployed member can even be found in the highest income decile.

FIGURE 4.2: UNEMPLOYED HOUSEHOLDS WITHIN PER CAPITA HOUSEHOLD INCOME DECILES (PERCENT)

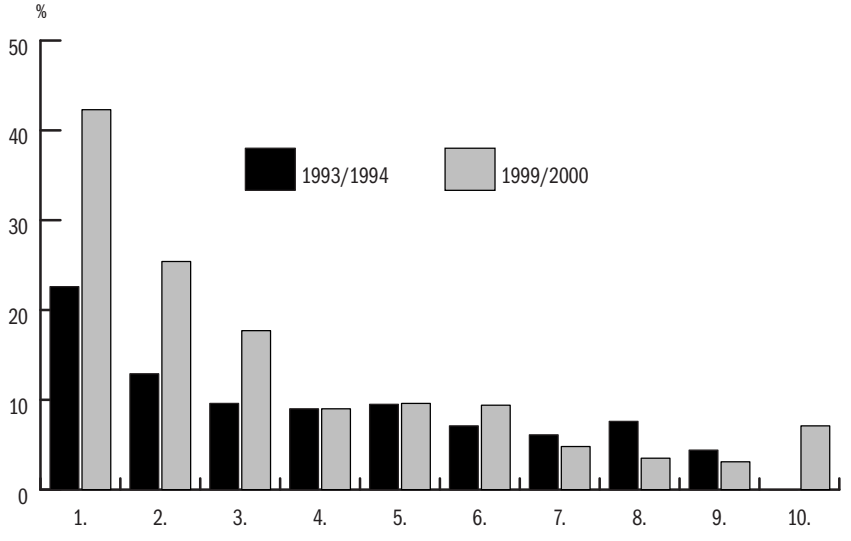


FIGURE 4.3: THE DISTRIBUTION OF UNEMPLOYED HOUSEHOLDS ACROSS PER CAPITA HOUSEHOLD INCOME DECILES (PERCENT)

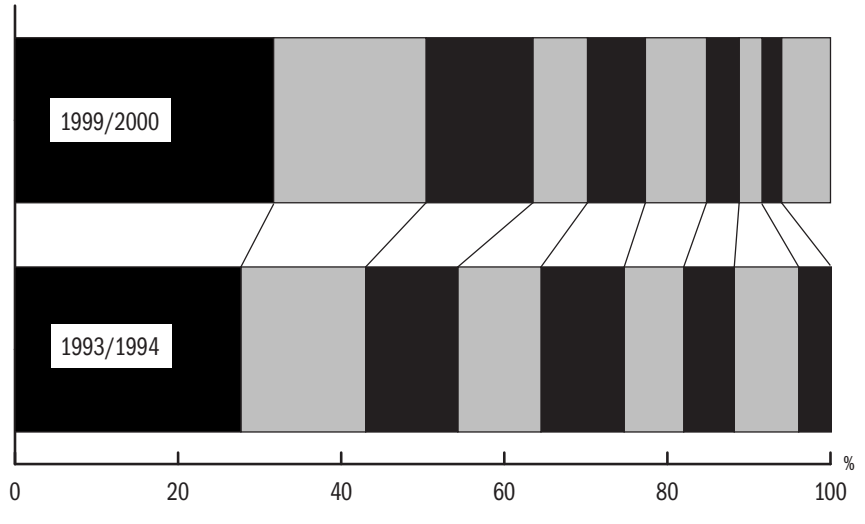


Figure 4.3, which shows the distribution of unemployed households across income deciles, also suggests a deterioration in their income position. A far higher proportion of these households were in the bottom three income deciles in 1999–2000 than six years earlier.

The share of unemployment benefits in household income

Table 4.6 shows the importance of main types of income source in unemployed households. About two-thirds of unemployed households had an income from a full-time job, but the figure for 1999–2000 is 5.4 percentage points lower compared to 1993–1994. The proportions receiving social insurance and social transfer payments dropped far more significantly, by 19 and 25 percentage points respectively. The proportion of households with an income from agriculture dropped by over 6 percentage points during the same period. Meanwhile, among households with an unemployed member, the proportion with an income from a part-time job more than doubled. The sudden rise in the proportion of households with an income from interests and dividends should be treated with care because of the small sample size, as well as the 2.7 percent increase in gifts from other households.

TABLE 4.6: THE PROPORTION OF UNEMPLOYED HOUSEHOLDS RECEIVING VARIOUS TYPES OF INCOME (PERCENT)

	1993/1994	1999/2000
Income from main job	68.5	63.1
Income from other jobs	18.4	41.7
Dividends and interest	1.9	6.0
Income from agriculture	47.4	40.9
Income from social insurance[a]	54.5	44.3
Income from social transfers[b]	66.2	49.7
Income from unemployment benefits	88.1	53.1
Other transfers	9.2	11.9
Total number of households	178	253

a Excluding unemployment insurance benefits.

b Excluding Unemployment Assistance, re-training assistance and in 1993–94, career beginners assistance.

Beside second jobs, the largest change in the frequency of incomes, was the change in the importance of incomes from unemployment benefits,[56] but in the opposing direction. In 1993–94, 88.1 percent of unemployed households received this type of income, a figure that dropped to 53.1 percent in 1999–2000. Along with gradually increasing restrictions in the unemployment benefit system, this significant drop may in part reflect the fact that many people who are no longer entitled to benefits continue to consider themselves unemployed.

56 See Section 2.1 for details on unemployment insurance benefit regulations.

The occurrence of the various types of income give us only approximate information on their role in the maintenance of unemployed households. Table 4.7, which shows the income structure of households with and without an unemployed member, offers more precise information.[57]

Table 4.7: The Income Structure of Non-pensioner Households With and Without an Unemployed Member

	1993/1994		1999/2000	
	No unemployed member	At least one unemployed member	No unemployed member	At least one unemployed member
Income from main job	53.8	41.7	63.7	45.9
Income from other jobs	8.0	5.2	7.9	9.5
Dividends and interest	0.9	0.6	0.7	0.3
Income from agriculture	3.6	6.3	3.0	5.6
Income from social insurance	23.8	15.8	17.2	18.6
Income from social transfers	7.2	12.3	5.3	9.0
Income from unemployment benefits	1.2	16.7	0.5	9.4
Other transfers	1.4	1.3	1.7	1.7
Total	100.0	100.0	100.0	100.0
Total number of households	1431	178	1096	253

Note: Pensioner households are not included among households with an unemployed member.

While there was a drop in the proportion of unemployed households with an income from a full-time job, the proportion of incomes from full-time jobs within total incomes grew from 41.7 percent to 45.9 percent. However, the significance of full-time job incomes grew at an even higher pace among households without an unemployed member, from 53.8 percent to 63.7 percent. There was also an increase in the proportion of incomes from second jobs in households with an unemployed member, from 5.2 percent to 9.5 percent. In the meantime, there was no change in the role of second jobs within the income structure of households without an unemployed member, even though there was a significant increase in second job incomes among these households, too. There was no significant change in the proportion of incomes from farming in either type of household, while changes in the proportion of interest and dividend payments cannot be evaluated with any certainty, because of the small sample size.

In households without an unemployed member, the proportion of income from social insurance continued to be the second most important

57 We investigated annual incomes, but the labour market status of individuals in the sample, as noted, reflects the situation at the time of the interview. This explains why households reporting no unemployed member (at the time), may still receive an income from unemployment support (at some time in the previous year).

part of total income, but it was lower in 1999–2000 than in 1993–94. By contrast, the significance of this source of income increased among households with an unemployed member, its proportion rising from 15.8 percent to 18.6 percent. The proportion of social transfer payments dropped in both types of households. In 1993–94 it was significantly higher than the proportion of incomes from second jobs in households with an unemployed member, but by 1999–2000 the two were about equal.

The share of unemployment benefits in the total income of unemployed households suffered the largest drop, from 16.7 percent to 9.4 percent. Table 4.8 also shows changes in the share of the various types of unemployment benefit within the main categories of total household income: of unemployment insurance benefits within social insurance payments, and of other unemployment benefits within social transfer payments.

TABLE 4.8: THE PROPORTION OF UNEMPLOYMENT BENEFITS IN SOCIAL INSURANCE AND SOCIAL TRANSFER PAYMENTS

	1993/1994	1999/2000
Average monthly amount of UI benefit (HUF)	8,520	16,099
Share of UI benefit in total household income from social insurance (annual, percent)	12.1	7.7
Monthly amount of Unemployment Assistance (HUF)	5,958	12,378
Share of UA benefit in total household income from social transfers (annual, %)	5.0	7.2
Share of UA and other means-tested benefits in total household income from social transfers (annual, %t)	7.2	8.0
Share of all unemployment benefits in total household income from social insurance and transfers (annual, %)	8.6	6.5

The share of unemployment insurance benefits within total social insurance payments received by households dropped by about 36 percent from 1993–94 to 1999–2000. The decline in the real value of the average unemployment insurance benefit was the main reason for the drop, but an increase in the proportion of other social insurance payments within total household income, the basis for the comparison, also played a role.

At the same time, there was a significant increase in the proportion of other unemployment benefits within social transfers, rising from 5 percent to 7.2 percent. This was however largely the result of a decline in the importance of transfer payments within total income, as the average transfer payment lost about one-third of its real value. The picture would not change significantly even if we were to include among transfers the re-training assistance and the career beginners assistance (abolished by 1999).

All in all, the proportion of unemployment benefits within transfers financed by taxes and contributions dropped by about 25 percent in this six-year period.

Typical combinations of unemployment benefits with other source of income

Table 4.9 offers additional information on the importance of unemployment benefits in household incomes, showing the proportion of benefit recipients drawing on their sources of income.

TABLE 4.9: PROPORTIONS OF UNEMPLOYMENT BENEFIT RECIPIENTS AMONG THOSE WITH OTHER SOURCES OF INCOME (PERCENT)

	1993/1994	1999/2000
Income from main job	41.6	54.5
Family allowance	18.5	18.5
Social transfers	7.9	6.5
Income from other jobs	7.8	16.4
Income from casual unskilled work	2.4	5.6
Income from casual work in agriculture	0.3	4.3
Number of households	375	244

Note: Casual unskilled work and farming are included in second job incomes, as well as a separate category.

Unemployment benefits are most commonly combined with incomes from a full-time job: for two-thirds of unemployed households in 1993–94 and for the majority in 1999–2000. In addition, over the six-year period, there was a significant increase in the proportion of households where the income from unemployment benefit was combined with earnings from a second job or casual work.

The second most typical combination is with income from family allowance, received by 18.5 percent of unemployed households at both dates. This suggests a very high probability of job loss for adult members of households with dependent children. Combinations with social transfers were almost as common as combinations with second job incomes in 1993–94, but this was no longer the case in 1999–2000.

5. RECENT CHANGES IN THE UNEMPLOYMENT BENEFIT SYSTEM: RESPONSES AND IMPLICATIONS

5.1 Public Opinions on Changes in the Unemployment Benefit System in 2000

János Köllő

In November of 1999, prior to the parliamentary debate on government proposals for changes in the unemployment benefit system TÁRKI (Social Research Institute) conducted a poll on public opinions about the proposed restrictions in a representative sample of 1,522 persons.[58]

As Table 5.1 shows, some two-thirds of the sample were aware of plans to reduce the duration of unemployment insurance benefit payments. Slightly fewer had heard of the plan to make social assistance conditional on participation in public works, and of the abolition of the Unemployment Assistance. One third of the respondents approved of the cut in the duration of insurance benefits and of the abolition of the Unemployment Assistance, while two-thirds supported the introduction of the public works condition.

Table 5.1: Awareness and Opinions of the Reform Package and its Components (percent)

	Aware of the reforms			Agrees with reforms		
	Yes	Partly[a]	No	Yes	Don't know	No
Maximum UI entitlement reduced to 9 months	68.1	5.7	25.1	33.7	13.8	52.5
Abolition of Unemployed Assistance	54.5	7.6	36.6	32.1	15.7	52.2
RSA conditional on participation in public works	59.3	5.3	34.8	66.5	9.0	24.5
On the whole agrees with reforms	..	..	..	64.9	10.4	24.7

a Aware of reforms but not of details. Number of respondents: 1,522. The proportion of refused answers (1–2 percent per question) is not included; therefore the sum total is less than 100 percent.

Two-thirds (three-quarters including passive supporters who voiced no opinion) of the sample approved of the reform package, which, as can be seen in Table 5.2, is likely to have been a result of the widespread acceptance of mandatory community work. 90.2 percent of those supporting the public works condition approved of the reform package (making up 89.9 percent of all supporters), while only 31.2 percent of those opposing mandated public works approved the package as a whole.

58 The survey was commissioned by the Office of the Prime Minister, and was done using a block of questions included in TÁRKI's comprehensive survey. *Gábos (1999)* gives the details of the survey and the main results. (The original questionnaire and research report are available at www.tarki.hu.) For more detail on the above discussed results see *Köllő (2001).*

TABLE 5.2: SUPPORT FOR THE INDIVIDUAL MEASURES AND THE WHOLE REFORM PACKAGE

Approves[a] (+), or disapproves (–) of the measure			Approves of the reform package[a]	
Public works condition	Cut in benefit duration	Abolition of UA	proportion	composition
–	–	–	21.7	4.3
–	+	–	35.4	1.5
–	–	+	36.8	1.2
–	+	+	64.3	3.1
+	–	–	80.8	24.0
+	–	+	88.0	11.5
+	+	–	94.7	14.0
+	+	+	95.9	40.4
		Total:	75.3	100.0

a Approval includes approval and no opinion.

The following is a brief investigation of the most significant factors that influenced the opinion of respondents. Regarding *unemployment insurance benefits,* we expected that the reform would be evaluated in terms of financial costs and benefits. The cost and benefit implications of the tightening of rules are relatively easy to assess, and the problem of opportunity costs does not arise, since there is no real alternative to financial assistance in the months immediately following job loss. The expected benefit declines with the individual risk of job loss, and it also depends on whether the individual expects taxes to increase or decline as a result of the reform. People who benefit from state transfers (such as child care assistance or pensions) have a stronger interest in tightening the rules, as they may expect to benefit from increased public savings. The weight given to expectations of cost cutting declines with the individual risk of job loss.

In the case of the *Unemployment Assistance* (and the social assistance conditional on public works), costs and benefits are more difficult to evaluate. In these schemes the relationship between contributions and benefit payments is not as clear-cut as it is for insurance benefits. Opportunity costs may be significant and difficult to forecast: the advantage of the various active labour market programmes (re-training, public works) is that they may prevent disengagement from the workforce, while the disadvantage is that they are costly and keep participants from active job search.[59] Due to the negative externalities attached to long-term unemployment, people facing the same risk of unemployment may disagree about how much to spend

59 In the Czech Republic (a front-runner in active labour market policies in Eastern Europe) 31 percent of the 1991 labour market policy budget was spent on the 3 percent of the unemployed who participated in the programmes. The corresponding figures for 1992–1994 were: 55 percent on 7 percent, 35 percent on 2 percent, and 28 percent on 2 percent. (*Terrell and Storm*, 1999)

on benefits or active programmes. Last but not least, many of the long-term unemployed get used to unemployment, which makes incentive effects an important factor in the assessment of the reform. While basic cost-benefit calculations might influence opinions on the Unemployment Assistance and public works, this influence will not be as powerful or as direct as in the case of unemployed insurance benefits, due to the above reasons.

Table 5.3 reports the estimated effects of variables that more or less capture the above factors on the probability that the respondent (a) had no opinion, or (b) expressed support for reducing the duration of entitlement to insurance benefits and for the abolition of the Unemployment Assistance.

TABLE 5.3: THE EFFECT OF SELECTED FACTORS ON OPINIONS OF THE REFORM OF THE UNEMPLOYMENT BENEFIT SYSTEM

	Cut in benefit duration		Abolition of UA	
	No opinion	Approves	No opinion	Approves
Projected risk of unemployment	-0.50[b]	-0.68[b]	-0.50[b]	-0.13
Respondent was unemployed				
– at time of survey	-9.8[b]	-23.4[b]	-6.7[a]	-14.8[b]
– some time before survey	-1.7	-5.6[a]	-1.3	-3.0
Unemployed acquaintance or relative	-2.8[a]	-14.1[b]	-4.1[b]	-8.3[b]
Expects that due to the reforms, public expenditure on unemployment				
– will increase	-3.4	-13.7[b]	-6.9[b]	-11.1[b]
– will not change	–	–	–	–
– will decrease	-2.0	1.6	-3.5	8.9[b]
– can't predict change	11.1[b]	-14.3[b]	11.5[b]	-2.7
Labour market status of respondent				
– civil servant	-3.2	4.9	-3.2	-3.9
– employee of private firm	–	–	–	–
– self-employed	5.4	9.8	6.6	15.6[b]
– pensioner, or child care leave	1.8	2.6	-1.1	1.8
– other inactive	8.6[b]	-7.2	0.1	-5.0
Voting preferences				
– ruling parties	-6.2[b]	8.7[b]	-8.7[b]	10.1[b]
– don't know, won't say	–	–	–	–
– opposition	-8.4[b]	-10.8[b]	-8.6[b]	-8.3[b]
Number of respondents:	1519	1307	1519	1272
Pseudo-R^2	0.128	0.089	0.110	0.059
Mean of dependent variable	13.8	39.0	15.7	38.2

a Not significant at the 5 percent level, but significant at or below the 10 percent level.
b Significant at the 5 percent level.

Figures in the table show the percentage point increase or decrease in the probability of a given outcome in response to an increase (of the amount of the standard deviation above the average, in the case of the risk of unemployment variable) with other explanatory variables in the model taking their mean values.[60] (In the second column, the second value from the top, shows, for example, that the proportion of those supporting the cut in benefit duration among a group of unemployed people with average characteristics in all other respects, was 23.4 percentage points smaller than among a group of company employees with average characteristics.) To correctly interpret the results, it should be noted that marginal effects differ for all value combinations of explanatory variables, and therefore, *they cannot be added up.*

People *not voicing an opinion* on cutting back the duration of entitlement to insurance benefits and on the abolition of the Unemployment Assistance (passive supporters) are more likely to be employed or inactive, and less likely to be unemployed. This group also included a particularly large number of people who were uncertain in their evaluation of the costs of the reform, or who were unable or unwilling to indicate a preference for any political party.

A lower risk of unemployment (because of gender, age, education, place of residence and/or attachment to the workforce) increases support for cutting *unemployed insurance benefits.*[61] The gap in the support rates for the highest and the lowest risk of unemployment was 14–15 percent. Even if their risk of job loss was the same, the proportion of supporters was smaller among those who were actually unemployed at the time of the survey, and those who had an unemployed acquaintance. Expectations regarding costs strongly influenced support for changing benefit regulations. People expecting a rise in costs, and people who were uncertain about the costs were 14 percent less likely to approve of the tighter benefit regulations than people who expected the costs to go down or stay constant. Compared to people who said they were uncertain about party preferences, people supporting a party in the ruling coalition were 8.7 percent more in favour of the benefit reform, and people supporting the opposition were 10.8 percent less eager about the reform.

Views on the abolition of the *Unemployment Assistance* were influenced to a far smaller extent by the estimated individual risk of job loss. The difference between the highest and the lowest risk groups was only 2–3 percent and not statistically significant. At the same time, people who were unemployed were 14.8 percent less likely to support this measure, and those who had an unemployed acquaintance were 8.3 percent less likely to support it. There was a huge gap (of 20 and 18 percentage points) between people expecting a rise or a decline in costs, and between people supporting the ruling parties and the opposition.

60 Estimations were done using a Stata 5.0 dprobit, in which marginal effects are calculated at the *mean* values of the explanatory variables. However, in reality, a person cannot be 25 percent unemployed and 75 percent employed. Therefore, it is best to interpret the estimated coefficients as describing *groups* of a similar composition. We estimated the "estimated risk of unemployment" variable in the equation in a probit model using data from the CSO Labour Force Survey, using the individual characteristics observed in the TÁRKI survey (age, gender, education, residence, student status, pension receipt, child care allowance receipt), and the effect of these characteristics on the risk of unemployment estimated from data in the CSO survey. The probit estimates the probability that an adult (over age 14) is out of work and would like to have a paid job. Since we cannot identify full-time students from the 1999 CSO Labour Force Surveys, we used the survey of 1998 Q4 in the estimate. It is unlikely that the relative risks of unemployment changed significantly between the autumns of 1998 and 1999.

61 The results would be the same if we used the probability of benefit receipt variable, or an indicator of previous receipt of unemployment benefit.

The estimates in Table 5.4, obtained by a similar process and interpreted in a similar way, suggest that the personal experience of unemployment reduces support for making benefit payments *conditional on public works,* too.

TABLE 5.4: THE EFFECT OF SELECTED FACTORS ON OPINIONS OF THE PUBLIC WORKS CONDITION

	Public works condition	
	No opinion	Approves
Projected risk of unemployment		
– related to individual characteristics	–0.48[b]	–0.54[a]
– related to regional unemployment	–0.62[b]	0.72[b]
Lives in a village	0.8	10.8[b]
Respondent was unemployed		
– at time of survey	–2.7	–22.0[b]
– some time before survey	1.2	–8.7[b]
Unemployed acquaintance or relative	–1.0	1.0
Expects that due to the reforms, public expenditure on unemployment		
– will increase	–2.8	–2.3
– will not change	–	–
– will decrease	–2.7	10.0[b]
– can't predict change	7.7[b]	2.9
Labour market status of respondent		
– civil servant	–2.7	–1.2
– employee of private firm	–	–
– self-employed	10.7[b]	–3.4
– pensioner, or child care leave	–4.6[b]	–1.7
– other inactive	2.7	–14.3[b]
Voting preferences		
– ruling parties	–5.2[b]	2.1
– don't know, won't say	–	–
– opposition	–2.9[b]	–4.1
Number of respondents:	1519	1382
Pseudo-R^2	0.124	0.060
Mean of dependent variable	9.1	72.4

a Not significant at the 5 percent level, but significant at or below the 10 percent level.
b Significant at the 5 percent level.

People unemployed at the time of the survey were 22 percent less likely to support the reform, people who had been unemployed in the past were 8.7

percent less supportive, and other inactive people (many of whom were likely to have permanently left the labour market) were 14.3 percent less likely to approve of this measure.[62] Expectations regarding costs had a smaller, though significant, effect than in the case of the other two measures of the reform, and political party preference was insignificant.

As for the effect of the projected individual risk of unemployment, as the first two lines of the table show, the risk of unemployment related to individual characteristics, and the risk of unemployment related to regional conditions are included as two distinct variables.[63] Had we employed the same procedure as earlier, the effect of the individual risk of unemployment would have been weakly *positive*. By separating the two variables, we find that the risk related to personal characteristics reduces the probability of support for reforms, while higher regional unemployment increases it. To assess the relative size of the two effects one may consider that, moving above the average by an amount equal to the standard deviation reduces support for mandatory public works by 5–6 percentage points in the case of the risk of unemployment related to personal characteristics, while it increases support by some 7–8 percentage points in the case of risk related to regional conditions.

Another interesting result is that, in addition to the given rate of regional unemployment, residing in a village (not included when modelling support for the other two reform measures) increased approval by 10.8 percentage points. According to more detailed calculations not presented here, support was particularly high among village residents in the eastern part of the country. Controlling for other factors, approval was 15 percentage points higher than in towns in the region and 5 percentage points higher than among residents of villages in western and central Hungary (while there was no significant difference between the eastern and western towns).[64]

Is there any evidence to confirm the expectation that other factors play a greater role in shaping opinions when the risk of unemployment is small? Separate calculations for terciles of the risk of unemployment yielded the results shown in Table 5.5. The low risk of unemployment is clearly associated with a stronger influence of other considerations (expectations regarding costs and party preferences) affecting opinions of the cutback in benefit duration. The same relationship does not apply in the case of opinions on abolishing the Unemployment Assistance and on mandatory public works.

The most important lesson to learn from the above analysis is that public opinions on abolishing the Unemployment Assistance, and particularly on cutting the duration of insurance benefits, were most strongly influenced by the perceived risk of being personally affected by the reform and by financial expectations, which were also influenced by political preference.

62 At the time of the survey, 7.4 percent of the sample was unemployed, and a further 22.4 percent had been unemployed at least once in the preceding ten years. (These proportions correspond to those found in the CSO Labour Survey.)

63 In this case the risk of unemployment (s_{ik}) related to individual characteristics is defined for the i-th individual as: $s_{ik} = p_{ik} - E_k(p_{ik})$ where p_{ik} is the predicted individual risk and E_k is the expected value in the sample in the k-th region.

64 Nógrád, Heves, Borsod-Abaúj-Zemplén, Szabolcs-Szatmár-Bereg, Hajdú-Bihar, Békés, Bács-Kiskun, and Szolnok counties were considered part of the eastern region.

Table 5.5: The Importance of Cost Expectations and Party Preferences at Three Levels of the Risk of Unemployment

	Marginal effects,[a] if the projected risk of unemployment is		
	low	average	high
Cut in benefit duration			
Reforms will decrease public expenses (reference group: expenses will rise)	31.2	14.4	10.4
If the election was today, would vote for ruling parties (reference: would vote for opposition)	30.0	27.3	8.5
Abolition of Unemployment Assistance			
Reforms will decrease public expenses (reference group: expenses will rise)	25.6	15.2	20.0
If the election was today, would vote for ruling parties (reference: would vote for opposition)	21.3	24.4	12.4
Public works condition			
Reforms will decrease public expenses (reference group: expenses will rise)	19.8	0.0	10.5
If the election was today, would vote for ruling parties (reference: would vote for opposition)	9.1	11.3	0.0

a All estimates over 9 percent were significant at or below the 5 percent level, while those below 9 percent were not significant at the 10 percent level.

The data makes it clear that had a separate decision been taken on the Unemployment Insurance Benefits, by members of Parliament truly representing voter preferences, the duration of benefit entitlement would not have been trimmed. However, requiring the long-term unemployed to participate in public works proved so popular that it won support for the entire package.

A higher than average proportion of supporters of mandatory public works expected that the reform would reduce the costs of unemployment benefits. Support for this component of the reform was negatively affected by the risk of unemployment related to individual characteristics and by an actual experience of unemployment, while regional unemployment had a positive effect, particularly in the villages of the eastern region where unemployment is high. This may be explained by the growing impatience with the unemployed, many of whom belong to the Gypsy minority, and also by the fact that in these villages there is a high demand for job opportunities of all types, ranging from "genuine" jobs, public works, or "community service".

Over one-third of respondents supported the introduction of mandatory public works, but opposed the abolition of the Unemployment Assistance, even though the difference between the latter and UI insurance is precisely the requirement to participate in a public works scheme organised by the local government. One possible explanation for this inconsistency is that respondents accepted the principle of making benefit receipt conditional on a willingness to work in "community service", but did not perceive the Unemployment Assistance to be an obstacle to implementing it. (Accepting a job offer was in fact also a criterion for awarding the Unemployment Assistance.) Another possible explanation may be the *status-quo* effect (*Csontos and Tóth, 1998)* known from analyses of fiscal illusion. People are willing to give up a social transfer only if they receive a larger amount of compensation than they themselves would have been ready to spend on the same purpose. Therefore, they oppose reforms that take something away, even if it is returned in a different form.

Interestingly enough, labour market experts were more divided about the public works requirement than about the cut in benefit duration. It will be a task for empirical research to decide if optimistic public opinions, or rather, professionals concerns were justified.

5.2 Criteria for Benefit Entitlement and Chances of Re-employment

Péter Galasi, Gyula Nagy

In order to encourage re-employment, in February 2000, the government reduced the period of unemployment insurance benefit payments affecting a large number of persons entitled to UI benefit. Has this induced an increase in the re-employment rates of the unemployed? This is the question we sought to answer using data from the unemployment insurance benefit register.

First, we shall review the changes in the rules governing duration of entitlement. Then we shall discuss the sampling method and the characteristics of the sample. Last, we shall compare the outflows from unemployment under the old scheme introduced in 1997, to the outflows under the new scheme.

Changes in insurance benefit entitlement conditions as of February 2000[65]

Under the regulations that took effect in 1997, one year of employment over the four years preceding job loss was needed for the award of three months of UI benefit payments, and continuous employment over the entire four-year period was necessary to receive benefits for 12 months, which was the maximum duration. Entitlement was a step function of the employment record, with eleven different entitlement periods including the

65 For more detail on the regulations governing unemployment insurance benefits and changes in them, see section 2.1, based on *Nagy (2001)*. For changes in laws, see *Bánsági (2000)*.

minimum and the maximum. Separate rules applied to those who had once exhausted their benefits in a previous unemployment spell: they were entitled to benefit payments for a month and a half, conditional on six months of prior employment.

Under the new regulations that took effect in February 2000, the duration of entitlement is still conditional on the employment record of the preceding four years, but the minimum benefit was cut to 50 days and the maximum to nine months. The minimum is conditional on 200 days of prior employment, and the maximum requires 45 months. Duration bands were eliminated so that between the two limits, the duration of entitlement now equals one-fifth of the time spent in employment.

Although the changes are clearly disadvantageous to the vast majority of unemployed people, Table 5.6 shows that the disadvantages differ according to the length of previous employment. People who had been employed for a longer period during the four years preceding unemployment clearly lose more, while people who had worked for a shorter period lose less in the duration of benefit payments, if at all.

TABLE 5.6: CHANGES IN ENTITLEMENT TO THE UNEMPLOYMENT INSURANCE BENEFIT

Employment in preceding four years		Duration of benefit, days			Benefit durations in 2000, in proportion of durations in 1997		
		1997	2000				
months	days		minimum	maximum	minimum	maximum	mean
6.5–11	200–359	45	40	72	89	160	124
12–15	360–479	90	72	96	80	107	93
16–19	480–599	120	96	120	80	100	90
20–23	600–719	150	120	144	80	96	88
24–27	720–839	180	144	168	80	93	87
28–31	840–959	210	168	192	80	91	86
32–35	960–1079	240	192	216	80	90	85
36–39	1080–1199	270	216	240	80	89	84
40–43	1200–1319	300	240	264	80	88	84
44–47	1320–1439	330	264	270	80	82	81
48	1440–1460	360	270	270	75	75	75

Note: In 1997 people who worked for less than one year could gain entitlement if they had already exhausted their benefits in prior unemployment spell. In that case they were granted 45 days of payments following 180 days of employment.

The loss in benefit duration was largest for people who had worked continuously or almost continuously (for at least 44 months) in the four years prior to losing their jobs. Benefit entitlement shrank to three-quarters and

four-fifths of the former durations respectively for these two groups, who made up 30 percent of new claimants in the first two months of 2000. People who had worked for 32–43 and 20–31 months (together making up 27 percent of new claimants in these two months), lost 10–20 percent and 4–20 percent respectively of their benefits. Benefits to persons with an employment record of 12–15 months or 16–19 months, went down by 10 percent and 7 percent, compared to the mean of lower and upper limits in 1997, but the loss could be as high as 20 percent. For people with 450–479 and 598–599 days of prior employment, the duration of benefit payments is the same or slightly longer than under the old regulations.

Most of the people with less than one year of employment are entitled to a longer duration of benefits under the new rules, but the minimum condition regarding the employment record has been increased slightly, from 180 days to 200. People who worked for 200 days were entitled to 45 days of benefits under the 1997 regulations, whereas under the 2000 regulations their benefit entitlement can range from 40 to 72 days. The duration of benefit entitlement for 72 percent of new claimants in February and March 2000 with less than one year of employment was longer than the 45 days set in the 1997 rules.

Another new rule is that unemployed people attending training programmes offered by the public employment service are entitled to benefit until the end of the programme even if their UI benefit entitlement expires at an earlier date.

The sample

We investigated the effects of unemployment insurance benefit entitlement rules using the records of the electronic register of the National Centre for Labour Research and Methodology, which records all benefit payments. We concentrated on persons who began receiving their benefits between January 1, and March 15, 2000. The benefit register contains information needed to calculate the benefit as well as the duration of entitlement for payments and the amount of benefits paid. In addition, it has information on the gender, age, educational level and place of residence of the recipients.

Benefit payments started for a total of 74,888 people in the first two and a half months of 2000. People who applied in January were awarded a benefit in accordance with the 1997 regulations, while the 2000 regulations were first applied to people claiming benefit in February and March. People who quit their jobs voluntarily receive benefits after a three-month waiting period, so for them, the old rules applied until mid-March. To minimise the difference in the composition of the two sub-samples of recipients under the 1997 and the 2000 regulations, voluntary quits and those who claimed benefit more than two months after job loss, were ex-

cluded from the analysis. Of the remaining 58,978 people, 31,031 received their benefits under the 1997 regulations and 27,947 got them in accordance with the 2000 regulations.

Since the composition of the sub-samples are very similar, we have reason to assume that any significant difference that we may find in outflows and re-employment rates under the two schemes, can be related to the changes in regulations.

Outflows and the probability of re-employment

A person may leave the UI register because he finds a job, exhausts benefit entitlement, enters an active labour market programme, retires, or loses benefit entitlement due to non-compliance.

Nearly two-thirds of the people in our sample left the system upon exhaustion of benefit entitlement, and one-third found a job. Within that, there were more people who exhausted their benefits and fewer who found jobs among recipients under the 2000 regulations than under the 1997 ones. However, since the average duration of entitlement was shorter under the 2000 regulations and hence the observed period was shorter for the 2000 sub-sample, the above difference says nothing definitive about re-employment rates.

Compared to benefit exhaustion and re-employment, which account for 90 percent of outflows, few people leave the register for other reasons (re-employment in a subsidised job, start-up assistance for entrepreneurs, public works, retirement, exclusion from benefits for non-compliance, or other). For about 5 percent of the benefit spells in both samples, we have no information on duration of benefits or reason for leaving the system.

The register does not contain information on attendance at training programmes offered by the public employment service. Therefore, we follow all the unemployed people in both sub-samples through the end of their original entitlement periods, irrespective of whether or not the duration of benefits was prolonged until the end of that training period under the 2000 regulations. On the whole, a very small fraction of benefit recipients participated in training programmes[66] and it is very unlikely that there was a sudden and drastic increase in this proportion among new claimants in February. So, it seems safe to assume that participation in training had no significant influence on the outflow rates discussed below.

People who worked 44–48 months in the preceding four years

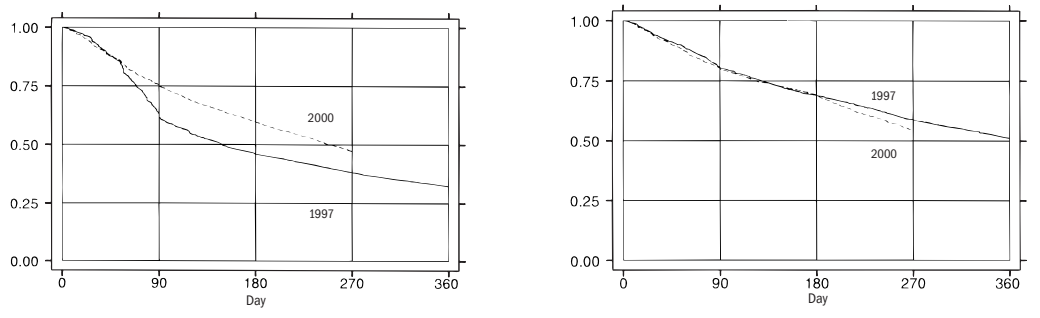
As Table 5.6 illustrates, the largest benefit loss (of 18–25 percent) was incurred by people who had worked continuously or nearly continuously over the preceding four years. Their survival functions in Figure 5.1 show the proportion of the initial population still receiving benefits at various

66 In 1994–96, when the duration of entitlement was the same as under the 1997 system, only 2–3 percent participated *(Galasi and Nagy, 1999)*.

points in time.[67] By definition, they are censored at the end of the maximum duration of entitlement: on the 360th day for people beginning their entitlement under the 1997 regulations and on the 270th day for people under the 2000 rules.

67 Spells of benefit payment ending by exhaustion or for unknown reasons were censored, i.e, treated as payments that had been effected over *at least* that period.

FIGURE 5.1: SURVIVAL FUNCTIONS OF PEOPLE WHO WORKED 44–48 MONTHS IN THE PRECEDING FOUR YEARS



For men, survival schedules follow the same course for the recipients of the 1997 and the 2000 scheme in the first two months, but diverge significantly in the third month, when the outflow from the 1997 sub-sample markedly increases. From the fourth to the sixth months, the two schedules move together again, and in the seventh they slightly converge. At the expiration of the maximum duration of benefit receipt under the 2000 regulations, which was 270 days, the survival rate was 47 percent in the 2000 sub-sample, in other words, this was the proportion still receiving benefits. For the 1997 group, however, because of the larger outflow rate in the third month, the survival rate was only 38 percent.

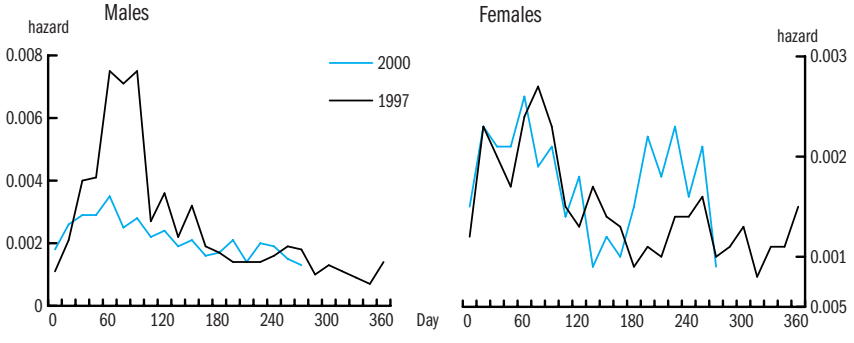
The survival schedules for female recipients are completely identical for the first six months, and then the survival rate declines faster in the 2000 sub-sample. By the end of the third quarter, survival is at 55 percent in the 2000 sub-sample and 59 percent in the 1997 sub-sample.

Comparing the two parts of the figure reveals that in both sub-samples, males leave the system more rapidly than females. At the end of the third quarter, their survival rate was 8 percentage points lower than for females in the 2000 sample, and 11 percentage points lower in the 1997 sample.

Figure 5.2 shows the conditional probability (hazard) of re-employment, estimated in two-week periods. It indicates the proportion of persons finding a job in a two-week period compared to the total remaining in the register up to the start of the given period. In period five, the re-employment probability of males receiving benefits under the 1997 rules, as seen in the left part of the figure, is five-times higher than in the initial weeks

and later, around the sixth month. In the group receiving benefits under the 2000 regulations, though re-employment probability initially increases, there is no sudden rise in the hazard rate. From months four and five on, there is no significant difference in the two groups' re-employment probability at any time. This suggests that the faster outflow of benefit recipients under the 1997 rules indicated in their survival schedule was because of the jump in their re-employment probability in March and April.

FIGURE 5.2: HAZARD FUNCTIONS FOR PEOPLE WHO WORKED 44–48 MONTHS IN THE PRECEDING FOUR YEARS



What caused the jump? A seasonal pick-up in demand for labour is unlikely to have been the reason since that would have triggered a similar effect on both samples. (Benefit recipients under the 2000 regulations began receiving benefits about six weeks later than the 1997 group, so the same calendar period would come that much earlier on their hazard curve.) The most likely reason is that a large number of people starting to receive benefits in January had been temporarily laid off at the end of the year and re-hired in March and April. *Köllő (2001)* provides further evidence supporting this explanation showing that 40–60 percent of people receiving benefits who became re-employed between March 18th and April 7th returned to their former workplaces. Just as people in our January sub-sample who found jobs in March and April, most of these returnees had lost their jobs after many years of employment and they generally spent three months on unemployment benefits. Since temporary layoffs are likely to be much more common at the end of a year than at the beginning or in the middle, the people temporarily laid off tend to be concentrated in the January sub-sample. (December 31st was the date of job termination for nearly half of the people in the January sub-sample.)

In contrast with the male re-employment rates, there is only a slight increase in the re-employment rates for females in the 1997 sub-sample in the second and third months, probably because females are far less likely to

return to a former employer than males (Köllő, 2001). The re-employment probabilities of the two female sub-samples do not really differ in the first six months. After that, the re-employment rate for the 2000 sample (corresponding to the last third of the maximum benefit duration) was generally higher in each of the two-week periods. However, the difference is only significant in one of the seven periods (between days 168 and 182),[68] which is insufficient evidence for an incentive effect of the reduced duration of entitlement.

People who worked 24–43 months in the preceding four years

For this group, comprising one-fifth of the entire sample, entitlement to benefits was 180–300 days under the 1997 regulations and only 144–264 days in the new scheme. Depending on individual employment records, the cut could be between 10 and 20 percent. The survival and hazard functions, treating periods ending with benefit exhaustion as censored, are similar to the schedules of the previous group with a longer employment record.

The survival functions of males entitled to benefits under the 1997 and 2000 rules shown in the left part of Figure 5.3, move closely together for a while and diverge in the third month. The survival functions for females in the two schemes, shown in the right side of the figure, as in the previous group, exhibit a smaller difference than male survival curves. Also, males outflows are again larger: at the end of half a year, the survival rate of males under the 2000 regulations was 7 percentage points lower than that of females, while under the 1997 regulations the rate was 17 percentage points lower. At the same time, we see that in both sub-samples of this group, both males and females are faster to leave the register than people who worked 44–48 months over the preceding four years.

68 The sample size decreases monotonously due to exits, so error margins increase with time spent on benefit.

FIGURE 5.3: SURVIVAL FUNCTIONS OF PEOPLE WHO WORKED 24–43 MONTHS IN THE PRECEDING FOUR YEARS

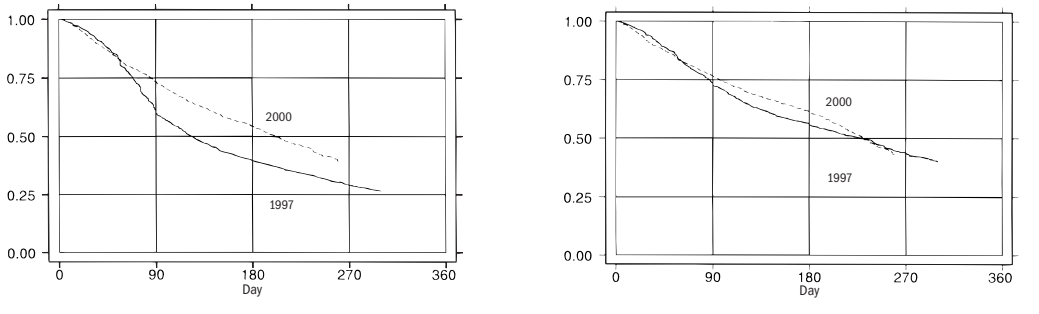
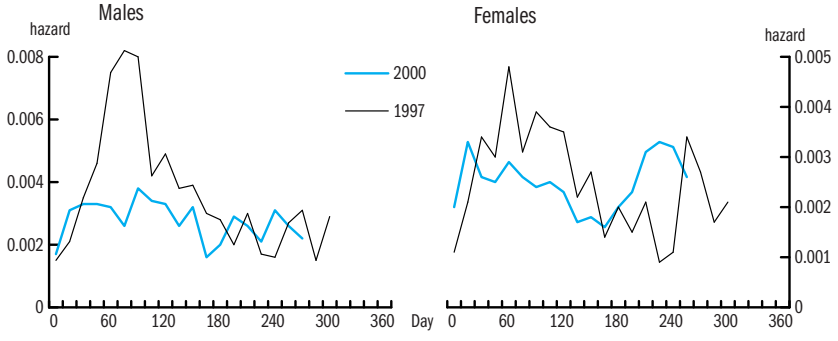


Figure 5.4 presents hazard curves for the group. For males receiving benefits under the 1997 regulations, shown in the left side of the figure, there is again a jump in exit rates in March and April, but there is no similar increase for males receiving benefits under the 2000 regulations. Then, six months after the start of benefit receipt, just about all discernible difference between the two male subgroups disappears. For females, shown in the right side of the figure, benefit recipients under the 1997 regulations have a higher probability of finding a job throughout the period from the second to the fifth months. After six months, there are several two-week periods when the recipients under the 2000 regulations show a higher probability of re-employment, but the difference is never significant.

FIGURE 5.4: HAZARD FUNCTIONS OF PEOPLE WHO WORKED 24–43 MONTHS IN THE PRECEDING FOUR YEARS



People who worked 12–13 months or less in the preceding four years

The outflow of people who had worked *12–13 months* supplies no evidence either, that the new regulations would encourage faster re-employment. Males receiving benefits under the 1997 regulations leave the system somewhat more rapidly, and there is no difference between survival rates in the two female sub-samples.

With regard to people *who had worked less than one year*, we expected people in the 1997 sub-sample to leave the register faster since in this group the 2000 regulations generally increased the duration of benefit receipt. In reality, the reverse was the case: people receiving benefits under the 2000 regulations were faster to leave the system and showed a higher probability of re-employment. Nevertheless, differences were small, and in part may be explained by the more favourable composition of the 2000 sub-sample (they were younger and better educated).[69]

69 For a detailed analysis of the outflow of people who had worked 12–23 months, and less than 12 months before becoming unemployed, see *Galasi and Nagy (2001).*

*

As of February 2000, most of the people becoming unemployed were entitled to a shorter duration of benefits than they would have been under the 1997 regulations in effect until the end of January. The cut in the duration of entitlement was largest for people who had worked continuously or almost continuously over the preceding four years. The only group that may have benefited from the new regulations was that of people who had worked a maximum of one year in the four years prior to their job loss.

The government's declared purpose of changing the regulations was to encourage re-employment. But, just as the research on the 1993 cut in benefit entitlement (*Micklewright and Nagy, 1995)* found, we discovered that the shortened period of entitlement did not lead to faster re-employment for people who became unemployed, irrespective of their employment record.

Our conclusions of course only hold for the duration of benefit entitlement, since our data source does not allow us to follow unemployed people in our sample once they have exhausted their benefits. If there is an increase in the re-employment rate following exhaustion of benefits, then the shorter duration of entitlement may have an incentive effect on re-employment purely due to the fact that benefit exhaustion occurs sooner. However, a 1995 investigation of people who had exhausted their benefits (*Micklewright and Nagy, 1998)* found that this effect could not have been significant, since re-employment rates are indeed slightly higher immediately after benefit exhaustion but they return to their pre-exhaustion levels within a few weeks.

5.3 The Effect of the Unemployment Insurance Benefit on Individual Chances of Re-employment

János Köllő

While the previous section examined how changes in the benefit system parameters in early 2000 changed *average* re-employment chances for benefit recipients, this will be an analysis of individual *differences in chances* depending on the amount of benefit payments. The data come from a survey conducted in March and April 2000, similar to a survey taken in 1994 (*Köllő and Nagy, 1995)*.[70]

The sample consists of 105,924 benefit recipients, 9,474 of whom began working during the observed period between 18 March and 7 April 2001. The analysis focuses on people who got new jobs, that is, who were not re-employed by the firms that had dismissed them. Some 45 percent of the

70 Concentrating on the results that are important from the point of view of the benefit effect, we do not discuss other questions investigated in the survey, such as the characteristics of firms hiring the unemployed, and the gains and losses in earnings. For a complete analysis of survey results, see *Köllő (2001).*

group entered new jobs and 37 percent were returned to their former employer. There is no information on the remaining 18 percent.

We investigated the factors influencing the individual chances of re-employment in a logit model interpreted as a second best alternative to a discrete time duration model. Our aim was to measure the effect of benefit amounts on the probability that an unemployment spell of t duration would be terminated during the (t, t+1) period. As *Jenkins (1995)* shows, in a stock sample, the duration model can be transformed into a standard binary logit regression by choosing the unit of analysis to be the periods spent in unemployment rather than the individual.

$$[1] \qquad \ln[h(t)/(1-h(t))] = f(t) + b'(S, X, Z_t),$$

where h(t) is the conditional probability of re-employment after t periods of unemployment, S is the benefit, and X and Z_t are other variables affecting re-employment chances (those included in Z may vary with time). Function f(t) describes the duration dependence of re-employment chances. It may follow some parametric distribution (linear, for instance) or it may be entered in the model in the form of dummy variables indicating particular months of unemployment. The individuals observed remain in the model until they get jobs or leave the risk group in some other way.

Observations on the unemployed individuals are available for a single period after taking the sample. (By breaking down the observed period into smaller units such as weeks, we could produce a sample of shorter periods but this transformation would be purely formal.) There was nothing we could do about that, but we can maintain identity with the discrete-time duration model in writing the logit model, which, keeping the above in mind, we specify as follows:

$$[2] \qquad \textit{Prob}[\text{re-employed in period } (t, t+1)] = \\ = \ln[h(t)/(1-h(t))] = a'[t1,t2,...,tK] + b'(S,X),$$

where t is the number of months from the time unemployment began until the time of the survey, and $f(t) = a'[t_1,t_2,...,t_K]$ describes the duration dependence of exits, where $t_k = 1$, if t = k, and 0 otherwise.[71] (It is worth noting that in practical applications of discrete duration models, the duration preceding the sampling proves to be definitive, because the observed period tends to be short compared to the length of time elapsed between the start of the longest unemployment spell and the time of sampling.) Following the logic of the duration model, we excluded unemployed people who had exhausted their benefits during the time under investigation since we do not know their status at the end of the period. We do not know whether they found a job after exhausting their benefits but prior to end of the observed period.[72]

71 In the 1994 sample, periods of 16 months and longer were pooled, and in the 2001 sample, we pooled periods of 12 months and longer.

72 What we do know from the *Mickleweight and Nagy (1994)* analysis is that the re-employment rate jumps in the week after benefits are exhausted.

The variables we expect to influence re-employment chances and which were entered in the model beside benefits included length of unemployment spell, gender, actual work experience (years), education level, local unemployment rate, preferred occupation (dummies for construction and agriculture), voluntary quit, previous real earnings below the minimum wage, lost job between December and March,[73] lost job earlier, repeated benefit claim.

Before considering the effect of benefit amounts, we need briefly to mention the variables determining whether the real value of the respondent's prior wages (gross earnings in the four quarters preceding job loss) reached the minimum wage in effect at the time of the investigation. Assuming that prior wages signal individual potential (e.g. productivity), a sharp rise in the minimum wage, as occurred in January 2001, reduces demand for workers who had been valued less than that. However, raising the wage threshold affects the supply side, as well, increasing the utility of finding a job. (It is worth distinguishing between people who lost their jobs before and after the announcement of the new minimum wage, since in the latter case the increased costs of the higher wage may have already played a role in the dismissal.) Our database does not allow us to measure supply and demand effects separately, only the net effect of the two, still, we cannot omit these variables because of the unprecedented steep rise in minimum wages.

Alternative methods for measuring benefit amounts

We have attempted to measure the relative amount of the unemployment insurance benefit by considering expected benefit payments[74] explicitly and expected wages implicitly, rather than using the replacement rate (the ratio of benefits to previous wages) or the ratio of benefits to estimated wage expectations.

Our point of departure was the theoretical notion in job-search models: the utility of continued unemployment benefit receipt as compared to the expected utility of accepting a job offer. The rational job seeker compares the present value of expected income flows in the two alternatives. This does not mean that we cannot describe alternatives available to the job-seeker based solely on the amount of benefits and of expected monthly wages. If the unemployed were to continuously search for jobs and received job offers relatively frequently, say once a week, or once a month, it would be sufficient to consider that accepting a job offer would yield w wage while rejecting it would yield $S<w$ benefit until the next job offer, a week or a month down the road, and we could ignore the remaining period of entitlement to benefits. In this case only the period immediately preceding the exhaustion of benefit would merit closer analysis.

73 Earnings were transformed into March 2001 values using the national monthly gross wage index.

74 By total expected benefit payments we mean the cumulated sum of payments that the recipient can expect to receive during the remaining period of entitlement. In the estimates we use the logarithm of total expected payments.

The situation is different if we do not assume that an unemployed person begins his job search from the moment he becomes unemployed, but consider the job search to be endogenous. The unemployed person begins looking for a new job with the hope of finding one when the alternative of being a discouraged worker yields a lower utility than the uncertain but positive expected utility of finding a job. In this case, we must consider the duration of entitlement to benefits. While expected wages upon finding a job can be more or less predicted based on personal characteristics such as education, age, and place of residence, the utility of remaining a discouraged worker can be best captured by expected benefit payments.

Whether it is more accurate to choose the logic of active or discouraged unemployment, depends on the interpretation of an interesting observation in the Hungarian literature on the subject. When analysing the labour force data of the Central Statistical Office, both *Micklewright and Nagy (1999)* and *Köllő (2000)* draw the same conclusion that people looking for a job and people not looking for a job had exactly the same chances of finding one, at least for men. Excluding the possibility of finding a job without looking (i.e. that the individual makes absolutely no effort to collect information on job offers), the above observation may be interpreted in two ways. One is that a significant proportion of the people counted by the CSO among the inactive on the basis of ILO/OECD criteria, are in fact looking for jobs. But instead of an active job search, they use indirect methods, e.g. informing their friends and relatives about their desire to find work, passing on the burden of active search.[75] Another interpretation may be that, after a spell of discouraged unemployment, people begin looking for a job *between* two interviews in the labour force survey, and often find one in less than three months. This interpretation suggests that when modelling the benefit affect, carefully considered waiting is a better point of departure than an assumption of continuous job search.

We have applied the second interpretation in the present study, using expected benefit payments as an indicator. To be more precise, we shall discuss in detail the model that used expected total benefit payments, but will also refer to the key parameters of the model estimated with the benefit-wage ratio. Since the remaining duration of entitlement is correlated with the duration of unemployment since job loss, and expected total benefit payments are related to personal characteristics through prior wages and the amount of benefits, we shall need to examine if estimated coefficients are sensitive to changes in model specifications.

The factors we have considered in our investigation might have different effects on the re-employment chances of people who find new jobs and of those who return to a former employer after a temporary layoff. Therefore, we have estimated model [2] with a *multinomial* logit function that allows

75 A substantial proportion of job offers received by unemployed people come through friends and acquaintances who are working.

more than one outcome. The interpretation of results is the same as in a binary logit model, treating all other outcomes as "failures". The four outcomes are (1) the respondent remains a benefit recipient, (2) the respondent finds a new job, (3) the respondent returns to a previous job, (4) the respondent finds an unspecified job.[76] We ran regressions for the whole sample and separately for various levels of education. For detailed results of the estimates, see Appendix 2 in *Köllő (2001)*. The following will be a brief non-technical summary, with a few figures and tables.

Before discussing the variables that are directly or indirectly related to the benefit effect (benefit, previous wages, duration of unemployment), we shall briefly touch upon differences in re-employment chances connected to gender, age, educational level, and region of residence.

The advantage of males in finding a job significantly decreased among the poorly qualified, and to a smaller extent among all benefit recipients between 1994 and 2001, but remained significant even in 2001 for all education levels. (The male re-employment rate was 1.2 in 2001 and 1.4 in 1994.) In 1994, a return to a previous job was already much more typical of males, a feature that became stronger in 2001. (In 1994, the re-employment rate of males was 1.3, and in 2001 it was 2.1).

Exit rates continue to be high for younger people. In 1994, a young person with five years of work experience stood a 34 percent higher chance of finding a new job, while in 2001 the probability of re-employment was 31 percent higher, controlling for other factors (in the neighbourhood of the sample mean), than someone with 25 years of experience. While in the earlier study a return to a previous job was independent of age, in 2001, more older workers returned to previous jobs. A middle-aged person with 25 years of experience stood a 30 percent higher chance of returning to a former employer than a worker with 5 years of experience.

Differences in exit probabilities across educational levels changed slightly compared to the spring of 1994. Then, two-three year vocational training granted the highest probability of re-employment, while today it is a college degree. In 2001, re-employment chances for people with incomplete primary education were only half of those for people with completed primary education, and slightly over one-third of those for people with a higher level of education. But, already in 1994, people with incomplete primary education made up only 5.3 percent of benefit recipients, and their proportion dropped to 2.0 percent by 2001.

The return to a former employer continues to be typical of unqualified labour, but variation across levels of education has declined. In 2001, temporary layoffs were not exceptional among high school and college graduates: one in four and one in seven of such layoffs respectively returning to a previous employer. (For the poorly educated, this proportion reached 50 percent.)

76 People leaving the system to do public works or participate in other schemes are treated as staying in the unemployment benefit system along with those who continue to receive benefits.

The relative chances of finding a job for benefit recipients living in the backward regions of the country dropped sharply between 1994 and 2001. On the whole, and also within education categories, exit probabilities (into a new job) were more strongly influenced by labour market conditions than in 1994. Re-employment chances in regions with the lowest unemployment rate were twice as high as in regions with the highest unemployment rate in 1994, and four times as high in 2001. The change was particularly remarkable for high school and college graduates. In 1994, local unemployment hardly affected their chances of finding a job, while in 2001, graduates living in low unemployment regions were four and a half times more likely to be re-employed than their peers in high unemployment areas. Regional variation in the probability of finding a job among people with incomplete or completed primary education also increased, while there was no significant change among skilled workers.

In 1994, people living in the, typically agricultural, small regions hardest hit by unemployment were three times more likely to return to a previous job than people living in regions where the unemployed rate was the lowest. Regional variation disappeared by 2001, suggesting that the proportion of temporarily laid-off unemployed people grew substantially in the more advanced areas of the country.

The effect of benefits on exit probabilities

According to the estimates in model [2], there is no correlation between the amount of total expected benefits and exit probabilities for people returning to previous jobs. By contrast, the probability of exit to a new or unspecified job is smaller for those with higher expected total benefits on the starting day of the survey. Figure 5.5 shows estimated exit probabilities as a function of expected total benefits.[77]

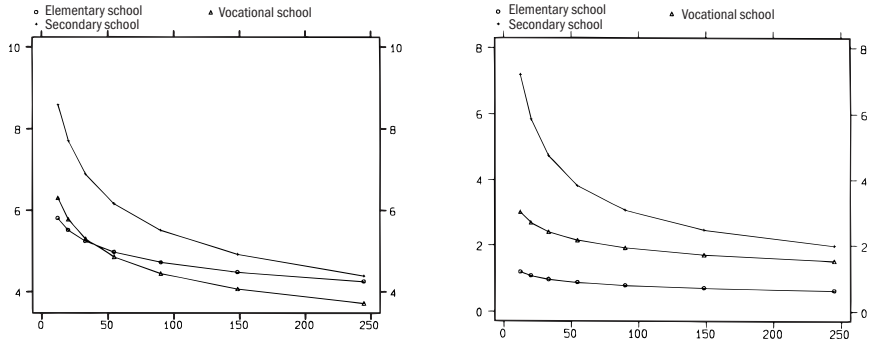
Let us first consider people taking unspecified jobs. The estimated effect is negligible for people with an incomplete or completed primary education or vocational education. However, for those with four year secondary or higher education, there was a significant rise in exit rates when total expected benefit payments dropped below HUF 50,000 (roughly 1.5–2 months of benefits). The situation is similar in the case of exits to a new job: exit rates are higher prior to the expiration of the benefits at all educational levels, but the relationship was particularly strong among people with higher degrees.

Care must be taken when evaluating estimated effects. Total expected benefit payments are correlated with the duration of unemployment and previous wages, so, without a sensitivity test, no conclusions should be drawn from the above figures. Before turning to that, let us take a look at the influence of previous wages and the duration of unemployment since

77 The curves show the estimated probability of exit as a function of expected total benefit payments with a mean value for the continuous variables and a zero value for the dummy variables.

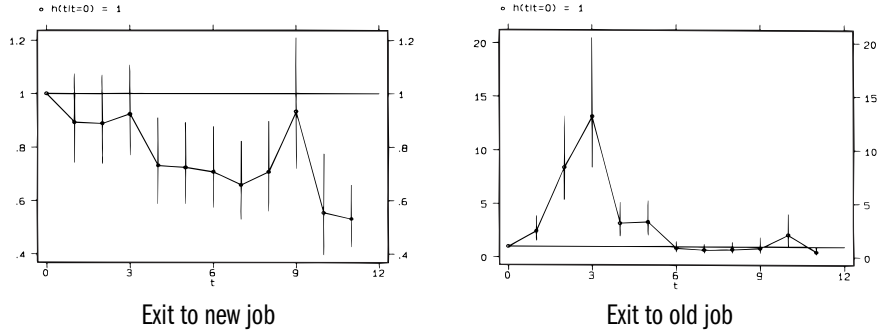
job loss using model [2]. The graphs in Figure 5.6 show re-employment chances as a function of the duration of unemployment up to the time of the survey.

FIGURE 5.5: TOTAL EXPECTED BENEFIT PAYMENTS (THOUSAND HUF) AND PROBABILITY OF EXIT (PERCENT)



Horizontal axis expected benefit.

FIGURE 5.6: EXIT PROBABILITIES AS A FUNCTION OF THE MONTHS SPENT IN UNEMPLOYMENT



Hazards at 1 month duration = 1. The vertical bands indicate the 95 percent confidence interval. Base on equation [2].

The chances of finding a new job declined with the length of the unemployment spell, in both 1994 and 2001. To be more precise, fewer people from the cohort that had been unemployed over a longer period exited the register during the observed period. For instance, the re-employment chances of people who had been unemployed for more than a year were only half that of people unemployed for one to three months.[78]

The curves show a rise in exit probabilities in the ninth month following job loss (when benefits are exhausted in the case of maximum entitlement)

78 Accurate phrasing is particularly important here, since if abilities or environmental features help one or another cohort to exit earlier, then even without duration dependence we would find lower re-employment rates in the groups that lost jobs earlier. Our survey is not suited to separate the effects of selection and duration dependence.

but the standard error of the estimate is too large to interpret this as a powerful sign of the benefit effect without further investigation. We shall return to this issue in the sensitivity test.[79]

Chances of leaving the register for those with prior earnings below the minimum wage who had been unemployed for more than three months did not deviate from the mean.[80] Table 5.7 shows the exit rates of people who had lost their jobs between December and March and were still unemployed in mid-March. Compared to the other unemployed groups, the re-employment chances of this group were very small in 2001, and significantly lower than in 1994. While the parameters did not decline between 1994 and 2001 for all groups, the significance of the estimations increased in every single case.

Table 5.7: Re-employment Rates for Those with Prior Earnings Below the Minimum Wage Who Lost Their Job Between December and March

	To new job		To old job		To unspecified job	
Education	1994	2001	1994	2001	1994	2001
Max primary	0.80	0.78	0.38	0.58	0.52	1.01
	(0.8)	(2.6)	(1.9)	(6.9)	(2.1)	(0.1)
2 year vocational	1.11	0.85	0.41	0.52	1.02	0.69
	(0.4)	(2.2)	(1.6)	(10.1)	(0.1)	(3.9)
Secondary, or higher	1.24	0.71	1.07	0.83	1.29	0.74
	(0.5)	(3.6)	(0.0)	(1.4)	(0.6)	(2.1)
Total	1.00	0.78	0.45	0.57	0.83	0.78
	(0.0)	(5.0)	(2.3)	(12.3)	(1.1)	(3.8)

Note: Probability rates from model [2], Z values in brackets.

Table 5.8: The Proportion of Those Earning Below the Minimum Wage Among Benefit Recipients

	1994	2001
Previous earnings below prevailing minimum wage[a]		
Benefit recipients = 100	10.5	37.3
Previous earnings below minimum wage of 2000[b]		
Inflow before 1 Jan. 2001 = 100	..	3.8
Previous earnings below minimum wage of 2001		
Inflow after 1 Jan. 2001 = 100	..	41.0

a The real value of earnings prior to job loss was below the minimum wage in effect at the time of the investigation (HUF 10,500 and HUF 40,000).

b In 2000, the minimum wage was HUF 25,500.

79 As we have seen, return to a previous job most often occurs in the third month – this means a return in March or April following a December layoff. When compared to 1994 data, we can see that in 2001 there was a particularly strong concentration of departures from the system after that length of time.

80 Excepting one case: for those who completed vocational school, in 2001, exit to unknown destination.

The most likely reason for this is the growth in the proportion of the "below-the-minimum wage" group. Table 5.8 suggests that, had the minimum wage been left unchanged in January 2001, they would have made up a smaller proportion than in 1994. (Only 3.8 percent of benefit recipients in March 2001 had been laid off in 2000 and had received wages below HUF 25,500/month, the minimum before the rise.) However, the proportion of people earning below the new HUF 40,000/month minimum wage among those dismissed in 2001 and still unemployed in March, was 41 percent, that is, ten times higher.

Sensitivity test

How robust are results on expected total benefit payments, the duration of unemployment and low wages, and to what degree are they dependent on model specifications? As we suspect that the benefit effect is likely to be significant only when people exit to a new or unspecified job, we only examine these exits, using a binary logit model. Relying on Figure 5.6, we treat the length of unemployment as a continuous variable (month), and use a dummy variable to distinguish spells of nine months and over one year. We estimated seven specifications, omitting various combinations of individual or grouped variables (Table 5.9).

Table 5.9: Parameter Estimates of Selected Variables in Various Model Specifications

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Expected total benefit (log)	-0.2378	-0.2039	-0.1787	-0.1558	-	-	-
	(12.9)	(11.8)	(10.0)	(9.4)			
Duration of unemployment (t)							
t (months)	-0.0592	-0.0506	-	-	-0.0348	-0.0331	-
	(7.7)	(7.5)			(4.8)	(5.2)	
t = 9 (dummy)	0.3120	0.3070	-	-	0.2825	0.2794	-
	(3.4)	(3.4)			(3.2)	(3.1)	
t> 11 (dummy)	0.0133	0.0039	-	-	0.1118	0.1259	-
	(0.2)	(0.1)			(1.5)	(1.7)	
Minimum wage group							
w'<40 thousand HUF and t<=3 months	-0.1617	-	-0.0264	-	0.0093	-	0.0756
	(4.3)		(0.8)		(0.3)		(2.3)
w'<40 thousand HUF and t>3 months	-0.0909	-	-0.1647	-	0.0354	-	-0.0364
	(2.0)		(3.8)		(0.8)		(0.9)

Binary logit estimates; control variables are the same as in Model [2].

Outcomes: 0 = did not find job, 1 = found new or unspecified job. Sample: Unemployment benefit recipients on 18 March 2001, excluding people who exhausted benefits and those re-entering the register. Observation period: from 18 March to 7 April 2001.

The effect of the expected total benefit payments appears somewhat weaker if the duration of unemployment are omitted from the model, but it is still significant. This conforms to expectations: if there is a higher proportion of people from the "fresh" unemployed cohort, whose total expected benefit payments are still substantial, when omitting the duration variable, the expected benefits variable captures both the effect of expected benefit payments and the effect of duration, which is of the opposite sign. We get the reverse when omitting the benefit payment variable. Here, the dependence of exit probabilities on the duration of unemployment appears weaker, since the parameter of the duration variable is also influenced by the effect of total expected benefit payments, which takes the opposite sign.

In the ninth month following job loss, exit probabilities appear higher in all specifications, and this parameter is not sensitive to changes in the model.

Omitting the dummy for the "below-the-minimum wage" group has hardly any influence on the rest of the parameters, but its own coefficient is extremely sensitive to changes in specification. Exit probabilities for the minimum-wage group with a short unemployment spell are *higher* if duration and expected total benefit payments are omitted from the model. Including duration does not cause any major change since the length of the unemployment spell for those earning below the new minimum wage can only range between 0 and 3 months. However, if we also control for the comparatively high total expected benefit payments in this group, then the model estimates the effects of the low wages to be significantly negative.

Parameter estimates are stronger for those previously earning below the minimum wage and unemployed for a longer period, in that, when we ignore *duration,* that is, when we do not control for the fact that exit probabilities in this group are reduced by the longer duration of unemployment. If the duration of unemployment is included in the model, we get a comparatively weak negative coefficient.

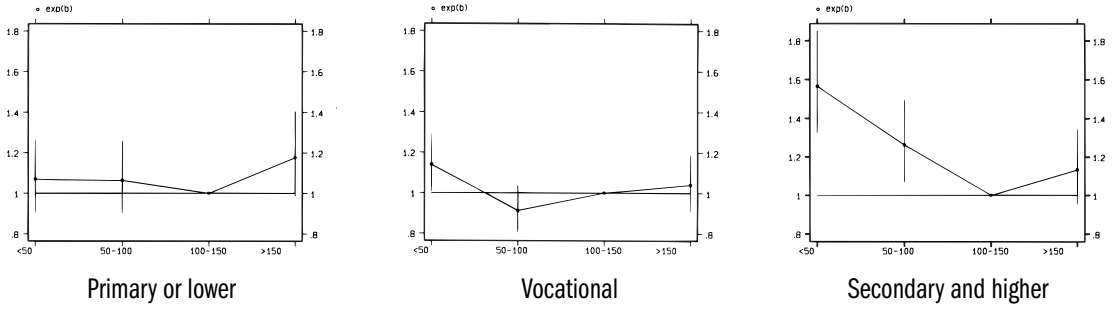
Changes in parameter estimates are not arbitrary, but seem to react to changes in specification along the lines assumed in model [2], which suggests that our estimates on the effect of benefits, duration of unemployment, and prior earnings below the minimum wage reflect genuine correlations.

The accuracy of the picture that has emerged depends on whether the true nature of correlations between the variables correspond to our assumptions regarding their shape: if they are linear, loglinear, or possibly strong within a certain range or at certain points, and weak at others. We measured the duration of unemployment in various ways and did not discover any contradiction between the results of the various specifications, while for including those below the minimum wage, the above procedure appears to be the only suitable one. However, in the case of total expected benefit payments the restriction on functional form (a linear relationship

between the logarithm of the total expected benefit payment and the logarithm of exit probabilities) might be arbitrary and may show the relationship between expected benefits and chances (opportunities and/or willingness) of re-employment to be weaker than it is in reality.

Therefore we re-estimate the logit model for people leaving the register into a new or an unspecified job, entering total expected benefit payments as a category variable (rather than a continuous variable) using four dummy variables. (The bands are: HUF 0–50,000, HUF 50,000–100,000, HUF 100,000–150,000, and over HUF 150,000.) Figure 5.7 shows the exit probabilities in each category of expected total benefit payments, with vertical lines reflecting the 95 percent confidence interval for the estimations.

FIGURE 5.7: EXPECTED TOTAL BENEFIT PAYMENTS AND EXIT PROBABILITY



Odds ratios. Reference: remaining benefit eligibility 100–150 thousand HUF.

The results confirm those in Figure 5.5. For the low qualified, exit probabilities are unrelated to expected total benefit payments. The exit rate was slightly higher among those with two-year vocational training whose total expected benefit payments were below HUF 50,000, controlling for all other variables, but the difference between them and the others was negligible. As before, we find a stronger effect among those with four years of secondary education or a high degree. The 1.56 exit rate for those with total expected benefit payments below HUF 50,000 means that, near the exhaustion of benefits, the *ratio* of the re-employment probability and the probability of remaining in the benefit system grows to over 150 percent. This factor pushes up the 5.6 percent exit probability to 8.5 percent for the average individual with a *four-year secondary of higher education.*

Finally, we might consider whether the indicator (expected total benefit payments) adjusted to the nature of discouraged unemployment should be replaced by the replacement rate (benefit-wage ratio) in the estimates, and the remaining entitlement period be entered in a way that its coefficient is sensitive to a rise in exit probabilities immediately preceding the exhaus-

tion of benefits. The logarithm of the remaining days of benefit payment would suit this requirement. Using this and the logarithm of the replacement rate instead of expected total benefit payments, we re-estimated the probability of exit to a new or unspecified job with a binary logit, keeping all other control variables of model [2]. Since personal control variables (gender and labour market experience within separate education categories) strongly influence wages, and since the indicator for the group with prior earnings below the minimum wage depended on earnings, we calculated several estimates, including or excluding these variables. We report only the parameters for the replacement rate and remaining period of eligibility (Table 5.10).

Table 5.10: Parameter Estimates for Selected Variables in Different Model Specifications

Specifications	Benefit/previous wage (log)			Remaining days of benefit payments (log)		
	Education					
	Primary	2 year vocational	Secondary or higher	Primary	2 year vocational	Secondary or higher
(1)	-0.073	-0.152	0.016	-0.258	-0.248	-0.387
	(0.6)	(2.1)	(0.2)	(8.7)	(6.7)	(11.1)
(2)	-0.038	-0.086	0.040	-0.245	-0.226	-0.357
	(0.3)	(1.1)	(0.4)	(8.3)	(6.0)	(10.1)
(3)	-0.044	-0.110	0.035	-0.237	-0.221	-0.351
	(0.4)	(1.6)	(0.4)	(8.0)	(5.9)	(10.0)

Binary logit estimates, the control variables not reported here are the same as those in Model [2].

Outcomes: 0 = did not find job, 1 = found new or unspecified job.

Sample: Unemployment benefit recipients on 18 March 2001, excluding people who exhausted benefits and those re-entering the register.

Observation period: from 18 March to 7 April 2001.

Specifications: (1) Variables of Model [2] omitting gender and labour market experience; (2) variables of Model [2]; (3) variables of Model [2] without the indicators of earnings below the minimum wage.

In this version of the model the replacement rate does not affect the probability of exit: its parameter is only significant in one specification, for one education level. The coefficients estimated for remaining days of benefit payment followed the same pattern as in the above model with expected total benefit payments: the effect is significant, negative, and comparatively weak for those who with primary or two-three year vocational education, and much stronger for those *with four-year secondary of higher education.*

It is worth noting that, by using the replacement rate, we are likely to overestimate the strength of the correlation between benefits and chances of re-employment. The distribution of individual earnings for a given gender, age, and education level are, at least partly, explained by individual characteristics that also affect exit probabilities. Since benefits to people with high earnings are low compared to wages, under the Hungarian system, and their exit probabilities are comparatively high, this might lead to the illusion that their quick re-employment is the result of a low benefit-wage ratio. A control variable of previous wages cannot be used to treat this problem because the amount of benefits is deterministic and the benefit-wage ratio is close to an $r^2=1$ fit stochastic function of previous earnings. Including benefits and previous wages together, especially together with personal control variables, would lead to strong multicollinearity and unstable parameters.[81]

The close-to-zero value of the parameters for the replacement rate is an *a fortiori* argument that the proportion of benefits to earlier wages does not have a defining influence on the re-employment rate of unemployed people. It also suggests that estimated coefficients for expected total benefit payments reflect the effect of remaining days of benefit payments (rather than the effect of benefit amounts or the benefit-wage ratio).

The group of secondary school and college graduates, where we measured a significant benefit effect, made up 28.5 percent of benefit recipients in March 2001. Let us assume that their 8.5 percent rate prior to expiration of benefits is an indicator of their "realistic" exit probabilities and their re-employment rates are lower in other total benefit payment categories due to the disincentive effect of the benefits. It can be calculated that if, at major expense (for instance, by strict monitoring and sanctions), it was possible to enforce this higher exit rate, the aggregate re-employment rate *(ceteris paribus)* would increase by 0.8 percent, which does not appear to be a significant improvement, considering, for instance the 4.3 percent difference in exit probabilities between the worst and best regions.

The disincentive effect of unemployment benefits appears to be strongest among the better qualified. This is the group that would be best able to find a job when the benefit entitlement is nearing exhaustion and they have the lowest chance of receiving means-tested assistance upon exhausting benefits. (In light of this, the fact that over 90 percent do not find another job immediately preceding the expiration of their benefits tells us a great deal.) As to whether the poorly qualified are slow to find re-employment when their benefits are about to expire because they are expecting to receive social assistance or placement on public works by the local government, or because they simply cannot find work, needs to be investigated by another study.

81 At the same time, the proportion of benefits to expected (estimated) wages is also disputable, because of the inaccuracy of wage estimation.

5.4 Assistance Recipients and Re-employment Following the Exhaustion of UI Entitlement

Péter Galasi, Gyula Nagy

One important change in the new unemployment benefit system was the abolition of the Unemployment Assistance for the long-term unemployed taking effect on 1 May 2000, and its replacement by the Regular Social Assistance for people of economically active age, which is a means-tested social benefit of a smaller amount, and with a stricter per capita income threshold. As opposed to the Unemployment Assistance, the entitlement to the Social Assistance is not conditional on exhausting unemployment insurance benefits, but there is a requirement that claimants have been in contact with the pubic employment service or the local government for one year, seeking assistance in their job search, and participated in a public works scheme for one month prior to placing their claim. This section reviews the results of a follow-up survey on the effects of introducing the new benefit.

The sample used in the investigation was made up of two cohorts that had exhausted their benefits. The first cohort exhausted their benefits in April 2000, and were thus potentially entitled to the Unemployment Assistance, while the second cohort exhausted benefits one month later, in May 2000, so that new rules applied to them. The sample was taken from the insurance benefit register of the National Centre for Labour Research and Methodology.

The data were collected in November and December 2000, seven or eight months after benefits were exhausted, using a questionnaire completed in face-to-face interviews. The questions covered changes in the labour market status of the respondent, participation in public works, benefit receipt, household circumstances, and sources of income. Questionnaires for 4,998 respondents were processed, of whom 1,898 exhausted their benefits in April, and 3,100 in May. Since labour market and economic conditions were essentially identical for the two sub-samples, any significant difference in their labour market states, or chances of finding a job, or receiving benefits, that could not be explained by individual characteristics is assumed to have been the result of changes in the regulations.

Basic characteristics of the sample

Table 5.11 reflects changes in the labour market status of the respondents, two weeks, two months, and six months after exhaustion of benefits. It was typical for both genders and all the three observation dates, that the exit rate to a job was higher for those who exhausted their benefits in May than for the April group, and a larger proportion participated in public works

(no distinction was made between public works financed by the central budget or by the local government, since the respondents were often unable to tell which programme they had worked on).

Table 5.11: Labour Market Status Two Weeks, Two Months, and Six Months After Exhausting Benefit

	Two weeks		Two months		Six months	
	after exhausting UI benefit entitlement					
	in April	in May	in April	in May	in April	in May
Men						
Looking for a job	54.8	45.5	43.9	35.8	35.4	30.3
Not looking for a job	5.7	6.0	5.0	5.5	4.3	5.0
Engaged in casual work and looking for permanent job	10.7	13.3	10.8	11.6	9.5	9.2
Engaged in casual work and *not* looking for permanent job	2.0	1.8	2.2	2.0	1.8	1.9
Employed (employee, self-employed, family help)	15.2	17.8	24.2	26.4	32.8	35.2
On public works	6.3	10.5	8.0	12.2	9.7	11.0
On training programme	1.8	1.4	1.5	1.8	1.4	1.3
Pension, pre-retirement UA, child care allowance	2.9	3.2	3.0	4.1	3.4	4.7
Other	0.7	0.6	1.4	0.6	1.7	1.5
Women						
Looking for a job	58.4	47.9	47.3	39.0	36.6	32.2
Not looking for a job	13.7	12.3	13.0	11.7	12.2	9.8
Engaged in casual work and looking for permanent job	2.7	3.7	2.8	3.9	3.0	2.7
Engaged in casual work and *not* looking for permanent job	0.6	0.6	0.6	0.6	0.6	0.3
Employed (employee, self-employed, family help)	13.3	17.5	22.7	25.8	30.2	34.0
On public works	3.4	7.1	4.4	7.9	5.5	7.4
On training programme	4.5	5.6	4.3	4.8	3.6	4.7
Pension, pre-retirement UA, child care allowance	2.8	4.7	4.5	6.1	7.0	8.1
Other	0.5	0.7	0.4	0.2	1.4	0.8

Table 5.12 summarises data on benefit receipt and participation in public works in the first four months following exhaustion of benefits. The data covered persons who were unemployed at the time or who were on a public

works scheme at the time (i.e., all those who did not find a job, join a training programme, retire, or become entitled to a child care allowance or the Pre-retirement Unemployment Assistance).

TABLE 5.12: RECEIPT OF UA BENEFIT AND PARTICIPATION IN PUBLIC WORKS IN THE FOUR MONTHS AFTER EXHAUSTING BENEFIT (PERCENT)

		Men		Women	
		exhausting benefits			
		in April	in May	in April	in May
Proportion of those applying for benefit	observed	59.7	43.5	63.3	45.1
	corrected		45.8		46.7
Proportion of benefit recipients among applicants	observed	88.6	78.8	87.2	74.7
	corrected		78.1		72.6
Proportion of benefit recipients	observed	55.2	36.8	57.8	36.3
	corrected		38.6		38.4
Proportion of benefit recipients and participants in public works schemes	observed	61.0	45.5	58.9	41.3
	corrected		47.8		42.1
Participants in public works schemes		16.1	28.8	8.5	22.2

Note: Logit estimates were used to obtain corrected proportions.

The first row in the table shows the proportion of persons applying for Unemployment Assistance (who exhausted their benefits in April) or for the Regular Social Assistance to persons of economically active age (who exhausted their benefits in May). It is clear that among both males and females there was a significantly lower proportion of applications for the Regular Social Assistance than for the Unemployment Assistance. In the April sample 60 percent of males and 63 percent of females, while in the May sample 44 percent of males and 45 percent of females applied for support. Proportions changed in the same direction between the two subsamples in the number of approved claims, reported in the third row. While 89 percent of male applicants and 87 percent of females in the April group were granted assistance, the proportions for the May group were only 79 percent and 75 percent.

The fifth row of the table shows the proportion of recipients of the Unemployment Assistance among those who exhausted benefit and did not find a job or enter some other support scheme within four months. There is a spectacular drop in the probability of receiving benefit. While over half of the April group (55 percent of males and 58 percent of females) received

the Unemployment Assistance, barely more than one third (35 percent) of both males and females in the May group received the Regular Social Assistance.

At the same time, a far higher proportion of persons exhausting their benefits in May entered public works schemes (29 percent of males and 22 percent of females as opposed to the 16 percent of males and 9 percent of females in the April group). People entering public works schemes earn an income for the period of participation and later have a better chance of receiving the Regular Social Assistance. This raises the question whether their larger participation rate is enough to offset their disadvantage in chances of receiving assistance during the first four months after the exhaustion of UI benefit. Figures in the second row from the bottom in Table 5.12 suggest that this may not be the case, or not completely. The combined proportion of RSA recipients and participants on public works was still significantly lower among the people who exhausted their benefits in May.

We also did a multivariate analysis to see if the higher re-employment rates and lower rates of application, award, and receipt of means-tested assistance under the new rules were related to the changes in regulations. We shall first review the results regarding assistance.

Receipt of means-tested unemployment assistance after exhaustion of insurance benefit

The decision to apply for means-tested assistance after exhausting benefits depends on the costs of applying and on expected gains. The lower proportion of applicants might suggest either a rise in the costs (including psychological costs) or a fall in expected gains. The mandatory participation in public works as a condition of receiving assistance might have contributed to a rise in costs (stigmatising effect), while the decline in benefit amounts might have induced a fall in expected gains.

According to the results of our investigation for males[82] in both the April and May groups, older persons whose benefits were exhausted were more likely to apply for assistance, but in the May sample the effect was lower. In other words, the tendency of males to apply was lower in the May sample, for all age groups, and the probability of applying for assistance did not increase so much with age in the May sample as in April. There is a similar trend in changes in the relationship between the local unemployment rate and willingness to apply. An increase in the unemployment rate, or the deterioration in labour market conditions, increased willingness to apply in both the April and the May samples, but the effect in the May sample was smaller. In other words, even with a given degree of deterioration in labour market conditions, the increase in the willingness to apply for assistance is smaller in the May sample. The effects of changes in regulations

82 We use logit estimates, separately for males and for females. The dependent variable is "claim accepted by the local government". Explanatory variables: age, education (incomplete primary school, two or three year vocational school, four year vocational school, grammar school, college or university, and the reference group is completed primary education), per capita income in household, monthly unemployment insurance benefit, obtained minimum period of entitlement, lives in Budapest, local unemployment rate.

may also explain the markedly larger proportion of people in the May sample who had a loose attachment to the labour market, with small chances of finding a job or participating in a training programme, for whom the expected income from social assistance was comparatively high, and the costs of applying (including the cost of stigmatisation) were comparatively low.

Among females there were several signs that the regulations did reduce or even increase willingness to apply for assistance. For instance, unlike in the case of men, a rise in small-region unemployment rates increases the May group's willingness to apply to a greater extent than in the April group. The change was similar for females living in Budapest. In the May sample, more Budapest residents applied for assistance than non-Budapest residents, while there was no such difference in April. At the same time, changes in regulations may also be responsible for the decline in willingness to apply among better educated women.

The chances of receiving assistance were influenced by the practices of the local governments in evaluating claims and changes in these practices.[83] Among males, we found that local government practices became stricter after the change in regulations. Tightening took the form of a more consistent application of the income criteria, and that, with given labour market conditions, local governments accepted a smaller proportion of claims. Among females, there were signs of both tougher and more lenient local government practices. Similarly to males, a decline in labour market conditions induced a smaller rise in the chances of being granted local government assistance for females in the May sample. At the same time, for females, the changes in regulations tended to lessen the generosity of more affluent local governments, probably because of increased concern about the disincentive effects of granting assistance. By contrast, however, the Budapest local government became more generous, compared to the other local governments.

We investigated the difference in the chances of receiving assistance before and after the new regulations were introduced, which reflects changes in the application behaviour of persons exhausting their benefits on the one hand, and in the practices of the local governments on the other hand.[84]

Among males we found signs of both a decline in willingness to apply and a tightening of granting practices. As a consequence, the chances of receiving assistance declined. One factor causing a change in willingness to apply was that, with the new regulations, chances of receiving assistance were no longer much higher for an older person than for a younger person. Another related factor was that changes in regulations tended to increase the likelihood of receiving assistance for people with a minimum entitlement, i.e. those with a looser attachment to the labour market, with repeated spells of unemployment. The reverse applies to persons with two-

83 We use logit estimates, separately for males and for females. The dependent variable is "claim accepted by the local government". Explanatory variables are per capita household income, small region unemployment rate, resident of Budapest, per capita income tax in place of residence.

84 We use logit estimates separately for males and for females. The dependent variable is the receipt of assistance. Explanatory variables are age, education (incomplete primary school, two or three year vocational school, four year vocational school, grammar school, college or university, and the reference group is completed primary education), per capita income in household, monthly unemployment insurance benefit, obtained minimum time of entitlement, lives in Budapest, small region unemployment rate, per capita income tax in place of residence.

year vocational training: their relative probabilities to apply for assistance are higher, and therefore their chances of receiving assistance were relatively more favourable under the new regulations. With the decline in willingness to apply and stricter practices in granting assistance, there was a drop in chances of receiving assistance as a function of changes in labour market conditions (measured by the small-region unemployment rate). With given labour market conditions, both willingness to apply and the probability of acceptance were lower for the May sample than in April, so the chances of receiving assistance also declined. One sign that granting practices were tightened was that the local governments apply the income criteria more consistently. As a result, following the changes in regulations, a given increase in household induces a larger drop in chances of receiving assistance. Finally, while earlier, the financial situation of the local governments did not influence the probability of accepting claims and that of assistance receipt, under the new regulations, more affluent local governments are less willing to grant assistance. In other words, the better the financial situation of a local government, the poorer the chances of receiving assistance.

Among females, the negative effect of the new rules on chances of receiving assistance were less clear-cut. There was a decline in relative willingness to apply and a resulting drop in the relative chances of receiving assistance in some groups with higher levels of education (vocational secondary schools or grammar school). Similarly to males, local government practices changed in accordance with the financial circumstances of the local governments (more affluent local governments tended to be less generous after introduction of the new regulations), and this was reflected in a drop in the probability of assistance receipt. However, as a result of the changes in regulations, chances of receiving assistance improved for females residing in Budapest, partly as a result of a rise in the willingness to apply and partly due to more generous practices in evaluating claims.

Re-employment after exhaustion of benefit

Our other major question was how the changes in the benefit system influence the re-employment probabilities of people who had exhausted their insurance benefit. In Table 5.11 we saw that the proportion of re-employment for both males and females was somewhat higher among people exhausting their benefits in May. However, differences in gross re-employment rates were quite small. We turn to multivariate analysis so that we can draw a reliable conclusion on whether they were statistically significant, and also to examine how much they can be explained by changes in the benefit system.

We investigated the issue using a sequential duration model, which is suitable for dealing with length bias. The essence of the procedure is that we continuously observe the duration of unemployment, divide the total duration into sections of half months, and conduct the analysis for these sections.

The dependent variable of the model is the probability of re-employment. The explanatory variables include age, which partly indicates work experience, partly the possible amortisation of human capital, and partly their position in the life cycle. We assume that work experience is an increasing function of age, but can be offset by the amortisation of experience, skills, and productivity, and by the fact that towards the end of the life cycle the individual has less time left to enjoy the returns on his efforts and therefore, finds it less worthwhile to make an effort. In addition, age may contain important information for the demand side. It is possible that employers may prefer not to hire absolute beginners, which improves opportunities for older workers to find jobs. However, older age also means that the labour market experience of the individual (partly as a result of the change in the political system) has become obsolete, or that the person can no longer be trained, which reduces the chances of older people to find a job. We measured age with age-group dummies, assuming that the relationship between re-employment and age was non-linear. We chose the 26–30-year age group as the reference group.

We also included the level of education in the analysis. We assumed that education captures the relative size of human capital, and that persons with a higher level of human capital make an effort to find employment faster than people with lower levels of education since they can earn higher wages upon finding a job. Therefore at a given level of benefit payments, re-employment is more profitable to them than unemployment. For an employer, a higher level of education may signal higher productivity and/or other favourable factors (ability to be trained, flexibility, etc.). Therefore, higher education levels are likely to increase chances of re-employment on the demand side as well.

Job-search behaviour can be influenced by the amount of assistance, and by other incomes of the household of the unemployed person. The sign and size of the benefit effect is one of the key issues of our analysis. Therefore, this variable was included in all equations. The usual result in simple search models is that the benefit effect is negative, because benefit payments reduce the loss of income resulting from unemployment. Other incomes may also reduce the probability of re-employment similarly to benefits, and for the same reason. We chose to include this variable only if the estimation yielded significant coefficients. We ran several model specifications (separately for benefit and other incomes separately, for the com-

bined amount of benefit and other incomes, and both of these with a logarithmic transformation, etc.) but none of them yielded significant coefficients for household income, so the variable was not included in the equation reported below. The benefit variable may be defined in a variety of ways. The simplest version is to use the amount of current benefit payments. However, the disadvantage in this case is that, at least at the beginning of the period following exhaustion of benefits, the current amount of payments is often zero, since the application for assistance is still under assessment. Individual behaviour is not influenced by the current level of zero but by the expected amount of future benefit payments. Therefore, we calculate the amount of payment expected for the first month following the exhaustion of benefits, and use this as the amount received in the first month, and used the actual amount received in the subsequent periods. For the calculation of the expected amount, we needed an estimate of the probability of receipt (the amount of expected assistance is a multiple of the amount of assistance and the probability of receiving it). We derived that from a logit estimate.[85]

Family status can play a role in the job-search behaviour of people exhausting their benefits. Empirical observations suggest that being married increases job search intensity for men, at least, mainly because there is a stronger motivation to support the spouse and the family.

Finally, we took into consideration that re-employment chances were influenced by the local labour market, and the intensity of labour demand. We assume that the higher the unemployment rate is on a given local labour market, the lower is demand. We measure local labour market conditions with the small region unemployment rate.

A simple way to measure the difference between the April and May samples in chances of re-employment for people exhausting their benefits was to estimate a duration model including both samples and enter a dummy variable indicating whether the person in question exhausted her/his benefits in April or in May. The weakness in this procedure that it relies on the assumption that the effects of explanatory variables on re-employment probabilities are identical in the April and May groups. The result of the estimate was a negative coefficient for both males and females, which suggests that people with the same observable characteristics who exhausted benefits in April or May, had a smaller chance of re-employment if they had exhausted benefits in May. At the same time, none of the coefficient estimates were significant, so the sub-sample effect can be considered as zero.

The benefit effect is an important problem of employment policy, and within this, of the unemployment benefit system. The benefit effect measures whether assistance to unemployed people changes their job-search behaviour, and if so, to what degree, and in what direction. The usual result is

85 The dependent variable is "received assistance". Explanatory variables are per capita household income, small region unemployment rate, amount of per capita income tax for settlement, and two dummies for Budapest and large city.

that the benefit effect is negative, meaning that more generous assistance reduces the probability of re-employment because it reduces the loss of income from the unemployment. At the same time, earlier research using Hungarian data has suggested that the benefit effect is very small. In other words, even a comparatively significant increase (decrease) in the amount of assistance has a very small effect on reducing (increasing) the probability of re-employment. To see if there is a benefit effect in the two benefit schemes (UA and RSA), and if there was a change in the benefit effect after introducing the new rules, we ran separate duration models for males and for females, and for the April and the May groups. The multivariate model results are reported in Table 5.13.

Table 5.13a: Factors Determining Re-employment Probability, Men

	Exhausting benefit in April		Exhausting benefit in May	
	coefficient	z	coefficient	z
Age				
-20 years	-0.167	-0.61	0.256	1.10
21-25	0.064	0.37	0.274	1.85
31-40	-0.118	-0.68	0.116	0.81
41-50	-0.145	-0.84	0.094	0.66
51+	-0.799	-3.41	-0.274	-1.57
Education				
Incomplete primary	-1.716	-3.35	-0.910	-3.11
Two year vocational secondary	0.294	2.38	0.400	3.97
3-4 year vocational secondary	0.776	4.33	0.472	3.28
Grammar school	0.446	1.74	0.594	2.83
College or university	0.053	0.15	0.572	2.03
Married	0.274	2.26	0.297	3.1
Benefit amount/1000	-0.043	-4.01	-0.070	-5.94
Small region unemployment rate	-0.031	-2.5	-0.021	-1.99
Constant	-3.277	-14.87	-3.564	-20.1
N	11,259			14,314
LR $chi^2(12)$	345.920			438.35
Prob. > chi^2	0.000			0
Pseudo R^2	0.099			0.0849

Table 5.13b: Factors Determining Re-employment Probability, Women

	Exhausting benefit in April		Exhausting benefit in May	
	coefficient	z	coefficient	z
Age				
–20 years	–0.167	–0.61	0.256	1.10
–20 years	0.089	0.28	0.026	0.10
21–25	0.081	0.39	–0.026	–0.15
31–40	0.183	0.97	0.059	0.40
41–50	–0.027	–0.14	–0.004	–0.03
51+	–0.196	–0.67	–0.212	–1.01
Education				
Incomplete primary	–0.528	–1.23	–0.781	–2.12
Two year vocational secondary	0.329	2.13	0.273	2.34
3–4 year vocational secondary	0.431	2.46	0.381	2.89
Grammar school	0.217	1.13	0.183	1.22
College or university	0.645	2.00	0.270	1.04
Married	–0.010	–0.07	–0.086	–0.84
Benefit amount/1000	–0.043	–3.71	–0.062	–4.89
Small region unemployment rate	–0.038	–2.62	–0.016	–1.41
Constant	–3.189	–12.52	–3.316	–16.89
N	8,678		12,372	
LR $chi^2(12)$	153.54		340.73	
Prob. > chi^2	0		0	
Pseudo R^2	0.0574		0.0771	

Note: Sequential duration model, with half-month sections; dependent variable: re-employed.

In all four equations, that is, for males and for females, and for people exhausting benefits in April and May, the benefit effect was significant and negative. In other words, both before and after the rule changes, more generous assistance was related to a lower probability of re-employment. Marginal effects were calculated from the coefficients to determine the size of the benefit effect. The coefficients show the effect of a unit (1 Hungarian Forint) change in benefit amount on the logarithm of the re-employment probability. From this, we calculated an indicator showing the effect of a 1,000 forint increase in benefit on probability of re-employment in the neighbourhood of the sample mean, that is, for the average male and female who exhausted their benefit in April or May.[86] For both males and females in the April sub-sample, the value was –0.002, and for the May

86 In a logit, the estimated coefficients do not reflect marginal effects. The marginal effect is P (1-P)ß, where P is the probability of re-employment, and ß is the estimated coefficient. In the neighbourhood of the mean re-employment probability, the marginal effect is P/ (1-P/) ß, where P/ is the mean probability of re-employment for the given group.

sub-sample it was –0.003. This effect (though statistically significant) is very weak. A value of –0.002 means that a 1,000 forint increase (decline) in assistance reduces (increases) the probability of re-employment by 0.2 percent. In addition, there is practically no difference in the benefit effect between the April and the May groups. In summary, benefit effects in the two sub-samples are identical, but the assistance is smaller under the new rules, and fewer people receive it.

The multivariate analysis showed that belonging to the April or May sample did not influence re-employment probability. Then we looked at the benefit effect (the marginal effect of receiving assistance) to see whether the smaller amount of assistance under the new rules reduced the disincentive effect of the assistance, in other words, did it encourage re-employment? The answer was in the negative. Although in both groups and among both males and females the benefit effect was negative and significant (i.e., a reduction in the amount of assistance increased the probability of re-employment) the effect was very weak. A reduction in assistance induces a negligible increase in the probability of re-employment in both sub-samples, and more or less by the same degree. (The actual reduction in the amount of assistance was small, coming to HUF 1,660.) At the same time, we know that under the new rules, fewer people exhausting insurance benefits receive the social assistance. The disincentive effect in the May sample was smaller for this reason, too, and contributed to an increase in the proportion of those ending the unemployed spell by exit to employment. In other words, by being less generous (fewer people receiving a lower amount of assistance), the new rules speeded up the re-employment of people exhausting their benefits, while significantly reducing the welfare of people who did not find employment.

Changes in the regulations may have had a differential effect on different groups of people who exhausted benefits. Re-employment chances may have improved for some groups, i.e., the new rules may been a stronger incentive to job-search for some groups with particular observable characteristics. The results for *males* in Table 5.13 show that with one exception, none of the coefficients estimated for age groups were significant. In the group exhausting benefits in April, the coefficient for the oldest group (aged over 50) was significant and negative. In the May group, age differences did not influence re-employment probability at all. Taking the value of the coefficient for the oldest group in the May sub-sample to be zero, one may say that the new regulations improved the relative chances (as compared to those aged 26–30) of re-employment for males in the oldest age group, since in the April they their chances were smaller than in the reference group, while in May they had no observable disadvantage.

As for the effects of education, parameter estimates for grammar school and university education were not significant in the April group, while in the May group all the coefficients for education levels were acceptable. Where significant, parameter estimates rise with the level of education compared to the reference group (completed primary school), confirming the expectation that education improves re-employment probabilities. In the May sub-sample, all education levels can be arranged in an ascending order (all estimates being significant). The same applies to the April sub-sample, except for grammar school and university education, where the estimated parameter is considered zero. But the comparison of parameters for the April and May groups also reveals significant differences. Those with incomplete primary education in the April group showed a smaller probability of re-employment compared to the reference group than their peers in the May group, meaning that their relative re-employment chances improved somewhat. The same applies to people with two or three year vocational training. In the May group, they had a somewhat larger advantage in re-employment chances (compared to those with completed primary school) than in the April group. The difference in the effects though is not very large. Calculating marginal effects for the two educational levels at the sample mean, we get a 6 percent gap for those with incomplete primary education in the April group which drops to around 4 percent in the May group. The corresponding values for those with two-three year vocational training are 1 percent in April and 1.7 percent in May, reflecting a slight increase in their relative re-employment chances. The change was in the opposite direction for people who finished four year vocational secondary schools. Compared to people with a primary school education their advantage in finding jobs was higher in the April group than in May. So, in their case, the new rules reduced the relative chances of re-employment, albeit slightly. Finally, the regulations improved the re-employment chances of grammar school and college graduates: their re-employment chances, not significantly above the reference group in April, were already higher in May, as compared to those with completed primary education.

In both sub-samples, married persons showed a significantly higher probability of finding a job after exhausting benefits than unmarried ones. The parameter value for the May group was somewhat higher than for the April group, but the actual difference was small. A rise in the small region unemployment rate significantly reduced re-employment probabilities for both the April and May groups. The parameter estimate is slightly higher in the April group, but the difference is not significant.

Turning to *females*, none of the estimates for the age groups are significant. In both sub-samples, the parameters for the three lowest educational levels are significant, and their relative magnitudes conform to expecta-

tions (a higher educational level has a relatively stronger effect on the probability of re-employment). All parameters are smaller in the May group. In other words, a change in the rules reduced the effect of education on re-employment probabilities at all levels. But differences compared to April are again small. In the April group, the parameter for women with a college or university degree was significant and positive, while in May it was not significant, meaning that relative re-employment chances deteriorated, even with a higher degree. A rise in the small region unemployment rate had a negative influence on re-employment probability for the April group, but not in May. This seems to suggest that under the new regulations, a deterioration in local labour market conditions has less of a negative effect on re-employment probabilities than under the old rules.

To summarise, our investigation yielded some evidence that the new rules increase the relative re-employment probabilities for certain groups (particularly among males), and reduce the negative effect local labour market conditions (a higher unemployment rate) have on the probability of finding a job. However, there are also signs suggesting that the new regulations reduce the relative probabilities of re-employment for some groups (particularly among females). However, all these effects are too small to be a basis for assessing the effect of the new rules.

5.5 Local Government Practices of Providing Income Support and Public Works for the Working Age Unemployed

Károly Fazekas

Unemployment Assistance was abolished on 1 May, 2002, and certain regulations on regular social assistance to unemployed persons also changed.

Local governments were put in charge of administering the *Regular Social Assistance,*[87] given to people who exhausted entitlement to UI or UA benefit and to those unemployed individuals who have co-operated with the local office of the public employment service for at least one year, and passed the means test. A further new responsibility of local governments is to organise *public works* schemes of at least thirty days, variously termed as *community service, publicly useful work,* or *public works*, for applicants for the Regular Social Assistance. Significant resources were transferred from the central budget to local governments to finance such schemes.[88]

Since 1 May, 2000, *the Regular Social Assistance to unemployed persons of economically active age* (RSA) has been restricted to people who agree to participate in a public works scheme under the conditions defined by law. If the local government has no such job to offer, the RSA must still be granted to the person in need. Rules require the applicant to register with the local government, to cooperate in the means test, to accept a suitable

87 The Regular Social Assistance to unemployed persons of economically active age was introduced in 1996. Prior to the amendments that took effect in 2000, a person was qualified as unemployed and of active age if he had exhausted his entitlement to the Unemployment Assistance, and had co-operated with the local job centre for a three-year period prior to applying for the RSA, and did no regular paid work. According to data from TÁKISZ, in April 2000, there were 24,000 unemployed persons of economically active age receiving the Regular Social Assistance in Hungary.

88 In 2000, HUF 4.6 billion, in the 2001–2001 budget HUF 10.5 billion, and in 2002 HUF 14.6 billion was earmarked to finance public works. The normative allowance that local governments can use for this purpose in defined by the central budget. In 2000, it was set at 11 percent of total local government social and welfare expenditure, or a minimum of HUF 180,000. Local governments could apply for HUF 1,500 per one day of public works in 2000, HUF 3,000 for a day in 2001, and HUF 3,490 for a day in 2002. The annual local government budget for public works had a floor of HUF 450,000 in 2000, raised to HUF 550,000 in 2002, and could not exceed a set percentage of total expenditure in cash and kind for welfare and child welfare, as defined by law, depending on the total population of the settlement, with higher proportions applying to smaller settlements.

job offer from the local government or the local job centre, and to participate in a "rehabilitation" programme (job-related or other training) required by the local government, if suited to their physical and mental condition.

The main justification for the above measures was to enforce the principle of *"welfare to work"*. Proponents of the changes assumed that the tighter rules would encourage the long-term unemployed to return to employment, increase participation in public works organised by local governments and discourage free riders, i.e., those who reject services or job offers without an acceptable reason.

Although the tasks specified in the Welfare Act are mandatory for all local governments, the size and nature of the tasks and the organisational and financial resources of local governments vary considerably across settlements. Settlements differ in the number of residents, the unemployment rate, the proportion and composition of the long-term unemployed, in economic, institutional, and social conditions, in opportunities for informal activities, and in many other factors bearing on governmental tasks and choices. Despite this, officials responsible for designing the amendments believed that the local governments and related institutions (county centres and local offices of the public employment service, schools, non-governmental organisations, offices of public administration) would be able to implement the new regulations with their available resources, if they are given proper guidelines.

In the following we report the main conclusions of a research project concluded in July 2001,[89] to examine the extent to which the practices connected to the Regular Social Assistance and public works conformed to expectations about the new regulations. The data came from records of the Regular Social Assistance and of participants in public works schemes, a survey on local government practices, case studies in 15 local governments in four counties, and interviews with (or written reports submitted by) the directors of county and local offices of the public employment service. We followed developments for one year after the amendment of the law in May 2000.

Investigation Results

In the year following the amendments, fewer people than expected transferred into the Regular Social Assistance scheme. Among the long-term unemployed, the number of persons receiving some form of support (Unemployment Assistance, or the Regular Social Assistance) declined, which was only partly offset by the increase in the number of participants in public works organised by local governments.

The amendments were instrumental in the exclusion of free-riders, but also of some people in need of support. Reports from county offices of the employment service and analyses of the re-employment of people exhaust-

89 A research project on "Local government experience regarding the introduction of the regular social assistance and public works" was initiated within the framework of a research programme called "Investigating the effects of a change in the unemployment benefit system", commissioned by the Governing Body of the Labour Market Fund, with the participation of Károly Fazekas, János Köllő, and Ágnes Simonyi.

ing their benefits equally showed that there was no increase in the proportions of people who exited to employment after exhausting UI or UA benefit. So, some of the people excluded from assistance joined the ranks of the unemployed receiving no state support, or of the inactive who had been driven out of the labour market.

Our investigation found that the large majority of local governments were not prepared to handle the tasks related to organising public works. In May 2000, public works schemes were launched in 190 settlements out of 3,156. Though by the end of the year, six times as many settlements were running such schemes, this was still only one-third of the total. In the year under investigation, local governments used only 32 percent of the funds available for such schemes.

National averages conceal significant variations in the inflows into the Regular Social Assistance schemes and in participation in public works. In some settlements, almost all of those exhausting UI or UA benefit after May 2000, transferred to the RSA scheme, while in others, almost all were excluded from further assistance. A significant proportion of the settlements organised no public works for the recipients of social assistance, while others could offer placement on some scheme to all applicants.

According to the latest figures (of June 2001) reported in Table 5.14, there were no RSA recipients in 19.4 percent of the settlements, and in 46.5 percent of those that did provide assistance, there was involvement in public works. The largest number of people receiving the Regular Social Assistance in any one local government area was 3,846, and the largest number participating in a public works scheme was 339.

TABLE 5.14: DIFFERENCES BETWEEN LOCAL GOVERNMENTS IN PROVIDING SOCIAL ASSISTANCE AND PUBLIC WORKS

	Min.	Max.	Average	Average deviation	Total	Bottom quartile	Top quartile
Regular Social Assistance* recipients	0	3846	27.52	94.92	86,885	0.29	92.34
Participants in public works schemes (PW)[a]	0	339	4.06	12.50	12,812	0.00	13.26
RSA per 100 active population*	0	43.27	2.9	4.15	–	0	8.56
PW / RSA recipients[a]	0	36	0.32	1.025	–	0	1.05
New RSA claims/ UI or UA benefit exhaustions[b]	0	4	0.33	36.15	–	0	0.82
PW participants / UI or UA benefit exhaustions[b]	0	9	0.28	0.62	–	0	0.92

a Data from June 2001 (TÁKISZ database).
b Data from March 2001 (National Centre for Labour Research and Methodology database).

On a nationwide average there were 2.9 people receiving the Regular Social Assistance per 100 people of economically active age. In the upper quartile of settlements, the average ratio was 8.6, and the maximum was 43.3. On

average, one-third of Regular Social Assistance recipients participate in public works. However, in the bottom quartile of settlements, there was no involvement in public works and in the top quartile there were more people doing public works than recipients of the Regular Social Assistance. In 2000, 48.8 percent of settlements did not draw on the funds earmarked for public works, while 5.4 percent used over 90 percent of their funding. Differences are similarly large (in both absolute and relative terms) in the data of the National Centre for Labour Research and Methodology on the numbers and proportions of persons claiming RSA upon the exhaustion of UI benefit, and entering public works schemes.

Large variations in local conditions explain the vast inequalities in the provision of the Regular Social Assistance and public works. In the large majority of small settlements the local government cannot afford a separate branch for the management of public works. Only the larger settlements can maintain non-governmental organisations, educational institutions and welfare institutions that offer assistance to families, the elderly, the sick, and the long-term unemployed.

Important reasons behind the large-scale exclusions from the Regular Social Assistance were the tightening of the asset- and income-tests for entitlement, the practice of putting a lien on inheritable property against the assistance, and the introduction of a mandatory minimum of 30 days of public works as a prerequisite.

The local government awards the Regular Social Assistance to a person who has exhausted unemployed insurance benefits or the Unemployment Assistance, is not working, has a monthly income below 70 percent of the prevailing minimum old age pension, a per capita monthly family income of or below 80 percent of the prevailing minimum old-age pension,[90] and where neither the recipient nor any other household member have any assets. Respondents in the case studies generally considered the criteria for entitlement to the Regular Social Assistance to be too tight, and the discretion allowed to local governments in applying the criteria to be too restricted.

Applicants for the Regular Social Assistance were particularly badly affected by the increase in the minimum wage to HUF 40,000/month, since their entitlement is indexed to the minimum old-age pension and not the minimum wage. This means that if there was one person in the household earning the minimum wage, that was enough to push many households over the per capita threshold, and thus lose their entitlement to assistance. Most people whose income is above the threshold leave the benefit system, and undertake informal activities, if they can.

Our survey found that nearly one-third of the local governments took advantage of a clause in the Welfare Act allowing them to register the amount

90 In 2000, it was HUF 13,280, and in 2001 it was HUF 14,648.

of the Regular Social Assistance as a lien on inherited property, and claim a lien during the probate on any property owned by the recipient. The conditions and extent of application vary considerably: in some places 100 percent of the assistance is accounted in this way, and from the first payment, while elsewhere accounting begins only in the seventh month or even the seventh year of payments, but from then on 100 percent goes against the property. Elsewhere, assistance is accounted against the property from the beginning, but only at 25 percent. According to local government data, only a fraction of the local governments that place liens on property investigate any circumstances other than the existence of the property during the procedure.

The opportunity to put liens on the property of the Regular Social Assistance recipients, as mentioned by many authors preparing the case studies, gives plenty of room to the local governments to discourage some of the potential claimants. Data in Table 5.15 attests to this. The share of people exhausting other benefits and receiving the Regular Social Assistance is twice as high in areas where the local government does not place a lien on the property compared to where it does.

TABLE 5.15: NUMBER OF PERSONS RECEIVING THE RSA PER 100 UNEMPLOYED PERSONS EXHAUSTING OTHER FORMS OF BENEFIT (1 MAY – 31 OCTOBER 2000)

	Average	N
No liens on property	21.3	1815
Liens on property	11.5	885
Don't know	8.9	174
Total	17.5	2874

Source: local government survey.

Beside the stricter income- and asset tests used in the evaluation of claims, and the practice of placing liens on property in return for the assistance, the third factor that discourages potential recipients is the mandatory minimum of thirty days of public works. Most of the people who reject participation in public works decide not to apply for support, so there is no data on their numbers. The case studies and reports from county offices of the public employment service suggest that skilled workers, those who completed grammar school, and college or university graduates are the ones who most often reject public works. They consider such work unfair and humiliating, as it typically requires unskilled or semi-skilled labour, and working in public places. Others agree to the public works requirement, but then reject the actual offer, usually referring to a health problem. The proportion of people rejecting public works is above the average in areas

where the unemployment rate is comparatively low and where informal work opportunities are more abundant.

According to reports and interviews from directors of county offices of the public employment service, most believe there was no increase in the number of long-term unemployed who found work in the past year. Reports from several counties, mainly from the western regions where the labour market situation is better, suggest that some of the people exhausting UI or UA benefit have increased the intensity of their job search instead of applying for the RSA which has less favourable conditions, and some of them have found work. Several county managers also suggested that raising the minimum wage to HUF 40,000/month in January 2001 had accelerated this process, since it increased the difference between the amount of the RSA and potential earnings in a job.

It also should be mentioned that some of the recipients feel that the term *"social assistance"* sounds more disparaging than *"unemployment benefit"* or *"unemployment assistance",* and that there is a stigma attached to it. So, despite their needs, some people are too ashamed to apply. Especially in small settlements, many people refrain from applying for assistance because the application process involves personal contact with local government staff. Several county reports mentioned that not only did the mandatory minimum of 30 days of public works keep people away, so did the requirement to cooperate with the organisations named by the local government. Some of the clients do not comply with the requirement to cooperate, because of either laziness or negligence, which leads to exclusion from the assistance. However, according to county reports, a significant proportion of persons exhausting UI or UA benefit who did not apply for the Regular Social Assistance, continue to cooperate with the job centres, expecting to receive other forms of assistance.

The use and effects of public works depends to a large degree on the characteristics of the settlement: size, legal status, the local economy, the local labour market, the size of the informal economy, the composition of the long-term unemployed, and, of course, the policies of the local government. In a significant proportion of small settlements there are no, or hardly any, applicants for assistance. They do not have the institutions which could organise public works, no staff to manage people working in the schemes, and the fixed costs of organisation are high. The local governments of cities and large towns have been the principal organisers of public works.

Available data from the settlements allowed us to use regression analysis to separate the effects of selected factors (settlement size and type, the proportion of unemployed people, the scope of public works, whether payment of assistance resulted in a lien against property) influencing inflows into the RSA scheme and public works. The first step in our two-stage

regression was to determine the intensity of organising public works, defined as the number of persons doing public works per RSA recipients (WORKSRATIO). In the next step we measure the effect of selected factors on the intensity of inflows into the Regular Social Assistance system (ASSISTANCERATIO). Table 5.16 presents the explanatory variables and the expected sign of effects.

Table 5.16: Explanatory Variables and Their Expected Effect in the Regression

1. estimate

Dependent variable: WORKSRATIO (PW participants/RSA recipients between 1 May and 31 Oct. 2000)

Independent variable	Definition of independent variable	Expected sign	Explanation for expected sign
U	registered unemployed/ 100 active age population	+	There is more need for public works in high unemployment regions.
LAKÓ	Population in 1999	+	Local governments of large settlement are better equipped and more affluent.
RSZS	Number of RSA recipients	–	Same PW/RSA ratio costs more where there are more RSA recipients.
KH99	If settlement had a public works scheme in 1999 (dummy)	+	Running a scheme in 1999 implies experience and the existence of an official or a team responsible for organising PW schemes.

2. estimate

Dependent variable: ASSISTANCERATIO (RSA recipients/exhaustions of UI or UA benefits between 1 May and 31 October 2000)

U	registered unemployed/ 100 active age population	+	There is more need for RSA in high unemployment regions.
HAGYATÉK	Property liens applied (dummy)	–	Property liens discourages some applicants in need of support.
KÖZCÉLÚ-ARÁNY	PW participants/RSA recipients	–	PW condition may discourage some eligible RSA applicants.
FALU	Village (dummy)	–	Claiming support may be perceived more stigmatising in a village due to personal contact with officials, while free-riding may be more difficult.

As Table 5.17 reports results of the two-equation model estimated in one stage using Zellner's seemingly unrelated regression.[91] The estimated effects have the correct sign for all explanatory variables, and though the explanatory power of the model is weak for WORKSRATIO, it is fairly strong for the ASSISTANCERATIO, and deviations from the estimated values are uncorrelated.

91 See the description of the STATA SUREG command in StataCorp. Stata Statistical Software: Release 6.0. College Station, 1999, manual.

Table 5.17: Results of the two-equation regression

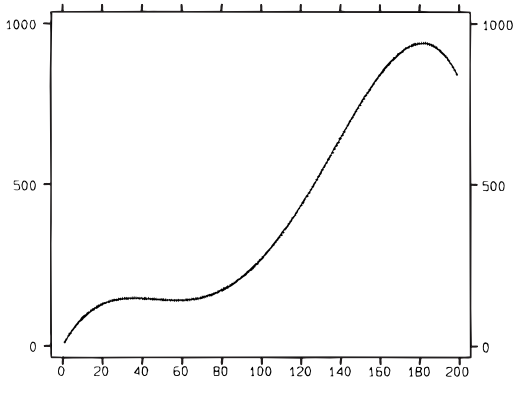
Estimate	N[a]	Variable	RMSE	"R-sq"	F	P
ASSISTANCERATIO	2 198	5	16,5945	0,3964	360,9719	0,0000
WORKSRATIO	2 198	5	52,3627	0,0419	24,23 012	0,0000
Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]		
Estimates for ASSISTANCERATIO						
WORKSRATIO	0,0198	0,0067	-2,944	0,003	-0,0330	-0,0066
u	1,6664	0,0477	34,931	0,000	1,5728	1,7599
falu	-2,6441	1,2966	-2,039	0,042	-5,1868	-0,1014
hagyaték	-4,2334	0,7791	-5,434	0,000	-5,7612	-2,7056
_cons	4,9554	1,3526	3,664	0,000	2,3029	7,6079
Estimates for WORKSRATIO						
u	-1,0669	0,1517	-7,035	0,000	-1,3643	-0,7694
lako	0,3947	0,1442	2,737	0,006	0,1118	0,6775
rszs	-0,0837	0,0211	-3,973	0,000	-0,1250	-0,0424
kh99	10,4666	2,9190	3,586	0,000	4,7422	16,1909
_cons	33,0967	3,1310	10,571	0,000	26,9567	39,2367
Correlation matrix of residuals						
	ASSISTANCERATIO	WORKSRATIO				
ASSISTANCERATIO	1,0000					
WORKSRATIO	0,0149	1,0000				
Breusch-Pagan test of independence: $chi^2(1) = 0,489$, Pr = 0,4844						

a Budapest and eleven outliers are excluded (two for a high ASSISTANCERATIO of above 200, and nine for a high WORKSRATIO of above 500), as well as some other settlements with missing data.

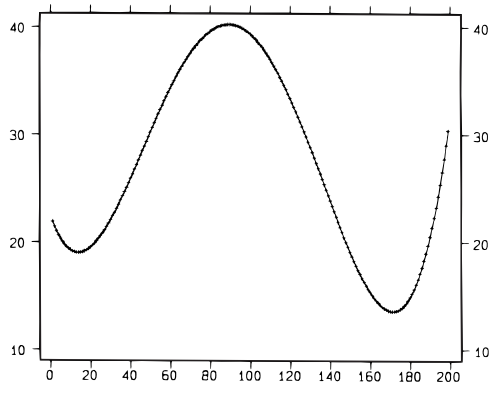
Estimating marginal effects at the sample mean in the regression on ASSISTANCERATIO, use of the property lien reduces the ASSISTANCERATIO by 4.2 percent, and by 2.6 percent if the settlement is a village, by 9.3 percent if unemployment is below the average by the amount of the standard deviation, and by 32.6 percent if it is higher. The effects of WORKSRATIO on ASSISTANCERATIO are of the expected sign, but are both weak. Increasing WORKSRATIO from one order of deviation below the mean to one order above it pushes up ASSISTANCERATIO by only 3 percentage points, from 19 percent to 22 percent. That is in line with the finding that the degree to which public works schemes act as a deterrent largely depends on whether there is any job opportunity at all in the settlement for persons exhausting UI or UA benefit.

With a 10 percent unemployment rate, 20 people receiving RSA, and a population of 25,000 used as a basis for comparison, the regression function for WORKSRATIO predicts a 5 percent rate for public works participation if the unemployment rate is 5 percent, a 60 percent rate for a 25 percent unemployment rate. If ten people receive RSA, participation is at 32 percent, and for 100 recipients it is 24 percent. Controlling for the positive effect of settlement size on WORKSRATIO and its negative effect on RSA recipient numbers, we get the simulation results presented in Figure 5.8.

FIGURE 5.8 RELATIONSHIPS BETWEEN SETTLEMENT SIZE, THE NUMBER OF RSA RECIPIENTS, AND PROPORTION OF RECIPIENTS IN PUBLIC WORKS SCHEMES (SMOOTHED WITH FOUR DEGREE POLINOMIAL)



Horizontal axis: Population (thousand).
Vertical axis: benefit recipients.



Horizontal axis: Population (thousand).
Vertical axis: Public worker/benefit recipients ratio.

The irregular curve in the right side of the figure merits more attention. It shows that as settlement size increases, WORKSRATIO increases up to 90,000 residents, and then steeply declines. Then, at the end of the settlement size scale, it again shows a marked rise, for the largest cities. The obvious explanation for the relationship shown by the curve is that while, as settlement size increases, so do resources for providing public works opportunities, there is also a rise in management costs and in the number of rejections, and only large cities have the finances and organisational capacities to counterbalance these effects.

In 2001 there was a significant rise in the growth of public works opportunities, and by June 2001, 15 percent of Regular Social Assistance recipients had public works jobs.

This was partly the result of the increase of financial support to HUF 3,000/capita per month (twice the amount of the previous year) available

to cover the wage costs and miscellaneous expenses of providing public works employment, and partly due to the option to delegate the organisation of public works to other institutions. This means that the local government signs cooperation agreements with various organisations, such as schools, kindergartens, welfare institutions, foundations, and can send RSA recipients to work in these organisations. This extended the range of public works from unskilled labour in community services to jobs requiring higher qualifications, and not just manual work. In addition, raising the minimum wage to HUF 40,000/month made public works expressly attractive in high unemployment regions, which led to a drop in rejections and a rise in the number of applicants who never exhausted unemployment benefit but agreed to cooperate with the public employment service in order to be able to participate in a public works scheme.

At the same time, this process increased inequalities between settlements. On the one hand, a significant proportion of the local governments in regions with better conditions and in larger settlements had exceeded spending limits on public works by mid-year. On the other hand, most of the small settlements are unable to organise public works schemes and lose the earmarked funds, all the more unfortunate since the funding for public works was not an add-on to their budgets, but had been re-directed from other local government and employment policy resources. In addition, in the majority of cases, public works schemes have proved to be unable to reach their main goal, to transfer unemployed persons into normal (unsubsidised) jobs. In other words, the current benefit system cannot offer appropriate services to the long-term unemployed who would be willing and able to work, nor to unemployed people who are unable to work because of physical, mental, or other problems, and thus are dependent on support, which, contrary to hopes attached to the new regulations, contributes to the expansion of informal activities.

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STATISTICAL DATA

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Data Sources

FH BT	NLC 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 publications
KSH IMS	CSO institution-based labour statistics
KSH MEF	CSO Labour Force Survey
KSH MEM	CSO Labour Force Accounting Census
MC	Microcensus
MNB	Hungarian National Bank
NSZ	Census
NYUFIG	Pension Administration
OM STAT	Ministry of Education, Educational Statistics
TB	Social Security Records

Table 1.1: Main Economic Indicators 1.*

Year	GDP	Industry production	Exports	Imports	Real earnings	Employment
1989	100.7	95.0	100.3	101.1	99.7	98.2
1990	96.5	90.7	95.9	94.8	94.3	97.2
1991	88.1	81.6	95.1	105.5	93.0	92.6
1992	96.9	84.2	101.0	92.4	98.6	90.3
1993	99.4	103.9	86.9	120.9	96.1	93.8
1994	102.9	109.7	116.6	114.5	107.2	98.0
1995	101.5	104.6	108.4	96.1	87.8	98.1
1996	101.3	103.2	104.6	105.5	95.0	99.1
1997	104.6	111.1	129.9[2]	126.4[2]	104.9	100.1
1998	104.9	112.5	122.1[2]	124.9[2]	103.6	101.4
1999	104.2	110.4	115.9[2]	114.3[2]	102.5	103.2
2000	105.2	118.1	121.8[2]	121.1[2]	101.5	101.0
2001	103.8[1]	104.1[1]	109.1[2]	106.3[2]	106.4	100.3

* Previous year = 100.
1 Preliminary.
2 Including free trade zones.
Source: Employment: 1989–91: KSH MEM; 1992–: KSH MEF.
Other data: KSH.

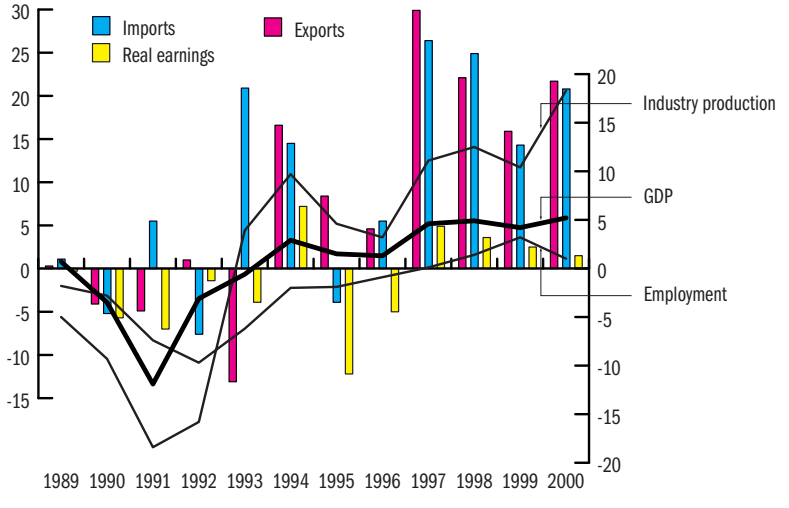


Figure 1.1: Annual Changes of Main Economic Indicators 1.

Table 1.2: Main Economic Indicators 2.*

Year	GDP deflator	Consumer price indexes	Trade balance[5]/ /GDP	Balance of current account[3]/GDP	General government deficit[4]/GDP	Gross foreign debt/GDP[2]
1989	118.8	117.0	...	...	2.8	...
1990	125.7	128.9	+2.6	+0.4	0.0	60.7
1991	125.4	135.0	–1.0	+0.8	2.1	62.7
1992	121.6	123.0	–0.3	+0.9	6.0	61.7
1993	121.3	122.5	–8.2	–9.0	4.2	66.6
1994	119.5	118.8	–6.5	–9.4	3.9	66.5
1995	125.5	128.2	–1.3	–5.5	6.6	71.5
1996	121.2	123.6	–1.1	–3.7	3.1	62.4
1997	118.5	118.3	+0.3	–2.1	4.8	54.6
1998	112.6	114.3	–2.1	–4.8	6.3	55.8
1999	108.3	110.0	–2.5	–4.3	3.4	64.4
2000	109.7	109.8	–4.0	–3.2	3.4	66.6
2001	108.6	109.2	–2.1	–2.1[1]	...	62.9[1]

* Previous year = 100)

1 Preliminary. – 2 Including owner credit. – 3 1989–94: In convertible currency; 1995–98: In convertible and non-convertible currency. – 4 1995–98: Excluding revenues from privatization. – 5 Goods and services.

Source: KSH. Balance of current account: MNB.

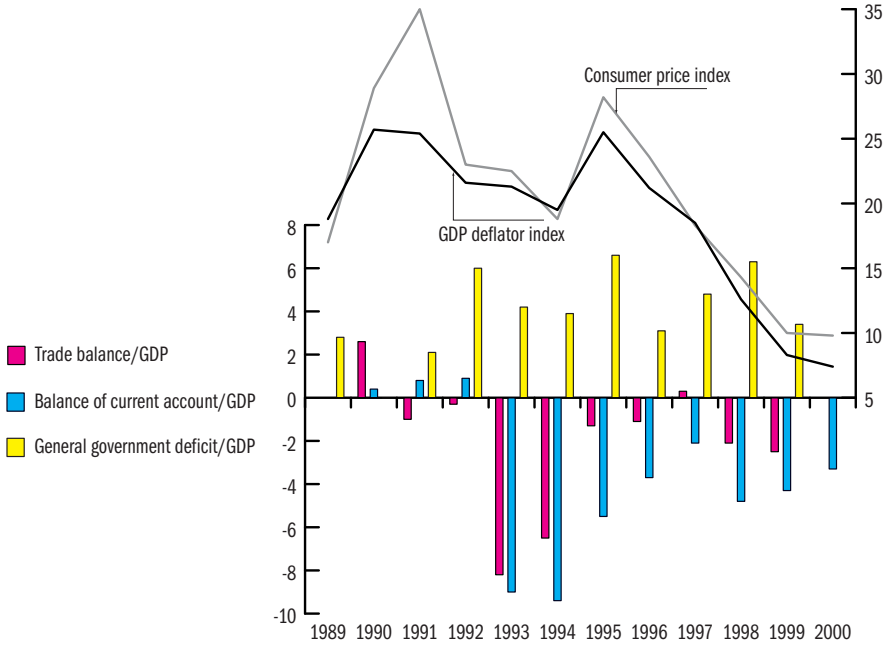


Figure 1.2: Annual Changes of Main Economic Indicators 2.

Table 2.1: Population*

Year	In thousands	1992 = 100	Annual changes
1980	10,709	103.6	–
1989	10,421	100.8	–
1990	10,375	100.4	–0.2
1991	10,373	100.0	0.0
1992	10,374	100.0	0.0
1993	10,365	99.9	–0.1
1994	10,350	99.8	–0.1
1995	10,337	99.6	–0.1
1996	10,321	99.5	–0.1
1997	10,301	99.3	–0.2
1998	10,280	99.1	–0.2
1999	10,253	98.8	–0.3
2000	10,221	98.5	–0.3
2001	10,200	98.3	–0.2

* 1st January.
Note: Updated population census.
Source: NSZ.

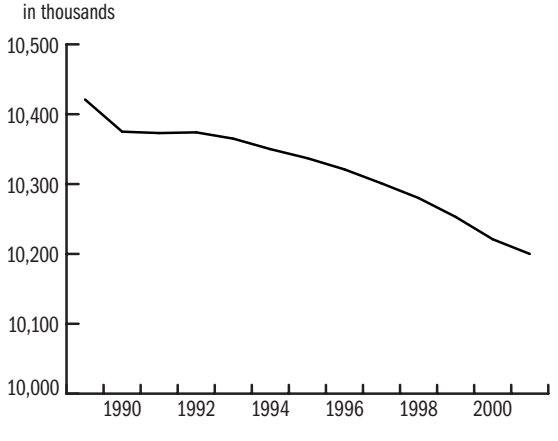


Figure 2.1: Population on 1st January

Table 2.2: Population of Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	6,157.5	101.9	...
1990	5,977.1	98.9	...
1991	6,014.5	99.5	0.6
1992	6,044.0	100.0	0.5
1993	6,064.1	100.3	0.3
1994	6,076.8	100.5	0.2
1995	6,081.3	100.6	0.1
1996	6,081.3	100.6	0.0
1997	6,075.8	100.5	-0.1
1998	6,061.0	100.3	-0.2
1999	6,039.7	99.9	-0.4
2000[1]	5,996.0	99.2	...

* Male: 15–59 years; female: 15–54 years. Annual average.
1 Calculation based on population at 1th of January.
Source: KSH, Updated census figures.

Table 2.3: Males of Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	3,219.7	102.3	...
1990	3,116.3	99.0	...
1991	3,133.6	99.6	0.6
1992	3,147.2	100.0	0.4
1993	3,156.0	100.3	0.3
1994	3,161.4	100.5	0.2
1995	3,164.1	100.5	0.1
1996	3,166.1	100.6	0.1
1997	3,166.9	100.6	0.0
1998	3,163.0	100.5	-0.1
1999	3,155.9	100.3	-0.2
2000[1]	3,130.8	99.4	...

* 15–59 years. Annual average.
1 Calculation based on population at 1th of January.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

Table 2.4: Females of Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	2,937.8	101.4	...
1990	2,860.8	98.8	...
1991	2,880.9	99.4	0.7
1992	2,896.9	100.0	0.6
1993	2,908.1	100.4	0.4
1994	2,915.4	100.6	0.3
1995	2,917.2	100.7	0.1
1996	2,915.2	100.6	-0.1
1997	2,908.9	100.4	-0.2
1998	2,898.0	100.0	-0.4
1999	2,883.8	99.5	-0.5
2000[1]	2,865.2	99.4	...

* 15–54 years. Annual average.
1 Calculation based on population at 1th of January.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

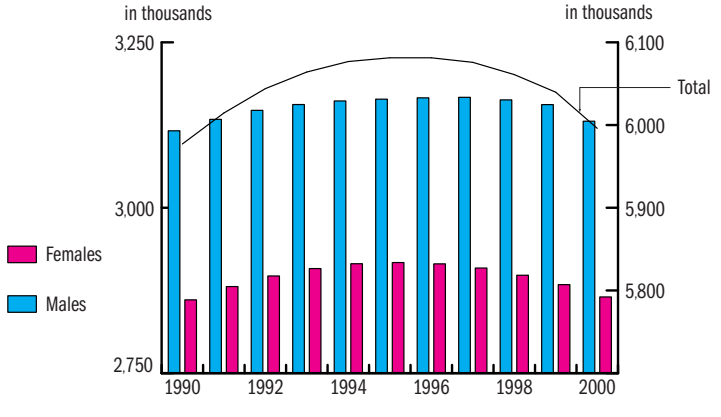


Figure 2.2: Population of Working Age, Males and Females

Table 2.5: Population Below Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	2,347.6	118.3	...
1990	2,097.1	105.7	...
1991	2,036.8	102.7	-2.9
1992	1,983.9	100.0	-2.6
1993	1,934.4	97.5	-2.5
1994	1,890.4	95.3	-2.3
1995	1,853.2	93.4	-2.0
1996	1,819.3	91.7	-1.8
1997	1,786.9	90.1	-1.8
1998	1,758.2	88.6	-1.6
1999	1,731.1	87.3	-1.5
2000[1]	1,718.0	86.6	...

* 0–15 years. Annual average.
1 Calculation based on population at 1th of January.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

Table 2.6: Males Above Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	757.1	95.8	...
1990	789.2	99.8	...
1991	791.1	100.1	0.2
1992	790.4	100.0	-0.1
1993	788.1	99.7	-0.3
1994	785.4	99.4	-0.3
1995	781.8	98.9	-0.5
1996	776.5	98.2	-0.7
1997	770.9	97.5	-0.7
1998	766.3	96.9	-0.6
1999	762.3	96.4	-0.5
2000[1]	781.2	98.9	...

* 60 or older. Annual average.
1 Calculation based on population at 1th of January.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

Table 2.7: Females Above Working Age*

Year	In thousands	1992 = 100	Annual changes
1980	1,445.3	96.0	...
1990	1,501.4	99.7	...
1991	1,503.6	99.9	0.1
1992	1,505.4	100.0	0.1
1993	1,506.9	100.1	0.1
1994	1,508.7	100.2	0.1
1995	1,512.7	100.5	0.3
1996	1,516.3	100.7	0.2
1997	1,521.1	101.0	0.3
1998	1,528.1	101.5	0.5
1999	1,534.8	101.9	0.4
2000[1]	1,547.8	102.8	...

* 55 or older. Annual average.
1 Calculation based on population at 1th of January.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

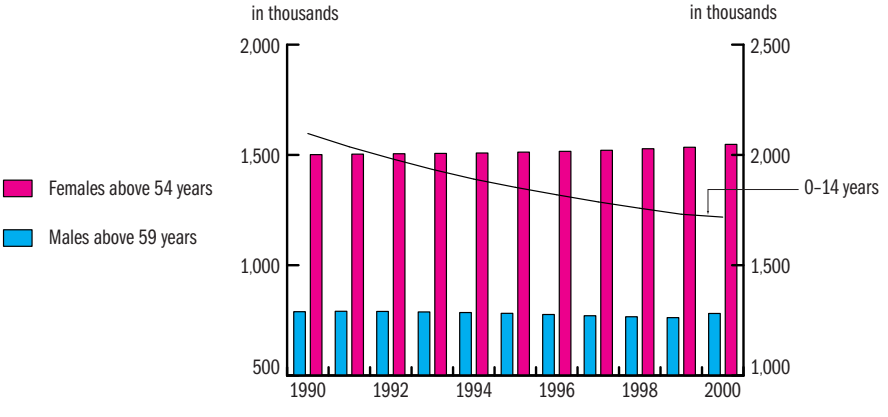


Figure 2.3: Population Below and Above Working Age

Table 3.1: Labour Force Participation (in thousands)*

Year	Below working age	Population at working age							Population above working age			Total
		Em-ployed	of which: self-em-ployed and assisting family members	Un-em-ployed	Pensioner	Student	On child care leave	Other inactive	Em-ployed	Pensio-ner and other inactive	Unem-ployed	
1980	2,347.6	4,887.9	170.6	0.0	300.8	370.1	259.0	339.7	570.3	1,632.1	0.0	10,707.5
1990	2,097.1	4,534.3	260.2	62.4	284.3	548.9	249.7	297.5	345.7	1,944.9	0.0	10,364.8
1991	2,036.8	4,270.5	280.0	253.3	335.6	578.2	259.8	317.1	249.5	2,045.2	0.0	10,346.0
1992	1,983.9	3,898.4	301.0	434.9	392.7	620.0	262.1	435.9	184.3	2,101.7	9.8	10,323.7
1993	1,934.4	3,689.5	319.3	502.6	437.5	683.9	270.5	480.1	137.5	2,141.2	16.3	10,293.5
1994	1,890.4	3,633.1	342.0	437.4	476.5	708.2	280.9	540.7	118.4	2,163.8	11.9	10,261.3
1995	1,853.2	3,571.3	366.2	410.0	495.2	723.4	285.3	596.1	107.5	2,180.6	6.4	10,229.0
1996	1,819.3	3,546.1	388.9	394.0	512.7	740.0	289.2	599.3	102.1	2,184.6	6.1	10,193.4
1997	1,786.9	3,549.5	389.6	342.5	542.9	752.0	289.0	599.9	96.9	2,189.0	6.3	10,154.9
1998	1,758.2	3,608.5	375.0	305.5	588.8	697.0	295.5	565.7	89.3	2,197.6	7.5	10,113.6
1999	1,731.1	3,701.0	411.5	283.3	534.7	675.6	285.3	546.6	110.4	2,185.2	1.4	10,067.8
2000	1,718.0[1]	3,721.7	384.3	260.2	506.4	695.1	297.2	619.1*	127.4	2,271.0*	2.3	10,211.0
2001	1,676.0	3,719.2	371.5	230.5	508.3	685.7	298.3	656.6*	140.3	2,277.1*	2.3	10,189.7

* Annual average figures.

1 Date related to 01/01/2000. The census-based estimate of population at 01/02/2000 is 10,197 million. Estimates of the population by gender are not yet available.

Note: 'Employed' includes conscripts and persons receiving pension. Data on students for 1995–97 have been reestimated using protected population weights. 'Other inactive' is a residual category.

Source: Pensioners: 1980–92: NYUFIG, 1992–99: KSH MEF. Child care recipients: TB. Unemployment: 1990–91: FH REG, 1992–2000: KSH MEF. 1980–91: KSH MEM, 1992–: KSH MEF.

Table 3.2: Labour Force Participation – Males (in thousands)*

Year	Below working age	Men at working age							Men above working age			Total
		Employed	of which: self-employed and assisting family members	Unemployed	Pensioner	Student	On child care leave	Other inactive	Employed	Pensioner and other inactive	Unemployed	
1980	1,208.2	2,750.5	85.6	0.0	173.8	196.3	0.0	99.1	265.3	491.8	0.0	5,185.0
1990	1,073.1	2,524.3	168.9	37.9	188.4	284.2	1.2	80.3	123.7	665.5	0.0	4,978.6
1991	1,041.7	2,351.6	179.8	150.3	218.7	296.5	1.5	115.0	90.4	700.7	0.0	4,966.4
1992	1,014.4	2,153.1	195.6	263.2	252.0	302.4	1.7	174.8	65.1	722.1	3.2	4,952.0
1993	989.1	2,029.1	207.8	311.5	263.2	346.9	2.0	203.3	47.9	735.7	4.5	4,933.2
1994	966.5	2,013.4	222.5	270.0	277.6	357.1	3.7	239.6	41.6	740.0	3.8	4,913.3
1995	947.9	2,012.5	243.0	259.3	282.2	367.4	4.9	237.8	37.1	742.6	2.1	4,893.8
1996	931.0	2,007.4	266.4	242.4	291.9	372.8	3.3	248.3	28.9	746.3	1.3	4,873.6
1997	914.8	2,018.0	268.5	212.2	306.0	377.6	1.5	251.6	25.5	743.5	1.9	4,852.6
1998	900.3	2,015.5	256.7	186.5	345.4	350.4	1.0	264.2	26.2	737.3	2.8	4,829.6
1999	886.8	2,068.4	283.3	170.3	312.7	338.8	4.2	261.5	34.7	727.2	0.4	4,805.0
2000	874.7	2,084.2	263.7	158.8	310.8	352.5	4.1	273.1	38.2	760.4	0.7	4,792.0
2001	857.9	2,091.4	260.9	141.9	311.6	342.7	1.0	293.9	39.2	769.5	0.7	4,845.2

* See the notes to Table 3.1.

Table 3.3: Labour Force Participation – Females (in thousands)*

Year	Below working age	Women at working age							Women above working age			Total
		Em-ployed	of which: self-em-ployed and assisting family members	Un-em-ployed	Pensioner	Student	On child care leave	Other inactive	Em-ployed	Pensio-ner and other inactive	Unem-ployed	
1980	1,139.4	2,137.4	85.0	0.0	127.0	173.8	259.0	240.6	305.0	1,140.3	0.0	5,522.5
1990	1,024.1	2,010.0	91.3	24.5	95.8	264.7	248.5	217.3	222.0	1,279.4	0.0	5,386.3
1991	995.1	1,918.9	100.2	103.1	116.9	281.8	258.3	201.9	159.1	1,344.5	0.0	5,379.6
1992	969.5	1,745.3	105.4	171.7	140.8	317.6	260.4	261.1	119.2	1,379.6	6.6	5,371.8
1993	945.3	1,660.4	111.5	191.1	174.3	337.0	268.5	276.8	89.6	1,405.5	11.8	5,360.3
1994	923.7	1,619.7	119.5	167.4	198.9	351.1	277.2	301.1	76.8	1,423.8	8.1	5,347.8
1995	905.3	1,558.8	123.2	150.7	213.0	356.0	280.4	358.3	70.4	1,438.0	4.3	5,335.2
1996	888.3	1,538.7	122.5	151.6	220.7	367.2	285.9	351.1	73.2	1,438.3	4.8	5,319.8
1997	872.1	1,531.5	121.1	130.3	236.9	374.4	287.5	348.3	71.4	1,445.3	4.4	5,302.1
1998	857.9	1,593.0	118.3	119.0	243.4	346.6	294.5	301.5	63.1	1,460.3	4.7	5,284.0
1999	844.3	1,632.6	128.2	113.0	222.0	336.8	291.1	288.3	75.8	1,458.0	1.0	5,262.9
2000	835.3	1,637.5	120.6	101.4	195.6	342.6	293.1	346.0	89.2	1,510.6	1.6	5,251.0
2001	818.1	1,627.8	110.6	88.6	196.7	343.0	297.3	362.7	101.1	1,507.6	1.6	5,344.5

* See the notes to Table 3.1.

Table 3.4: Labour Force Participation (per cent)*

Year	Below working age	Population at working age							Population above working age			Total
		Em-ployed	of which: self-em-ployed and assisting family members	Un-em-ployed	Pensioner	Student	On child care leave	Other inactive	Em-ployed	Pensio-ner and other inactive	Unem-ployed	
1980	21.9	45.6	1.6	0.0	2.8	3.5	2.4	3.2	5.3	15.2	0.0	100.0
1990	20.2	43.7	2.5	0.6	2.7	5.3	2.4	2.9	3.3	18.8	0.0	100.0
1991	19.7	41.3	2.7	2.4	3.2	5.6	2.5	3.1	2.4	19.8	0.0	100.0
1992	19.2	37.8	2.9	4.2	3.8	6.0	2.5	4.2	1.8	20.4	0.1	100.0
1993	18.8	35.8	3.1	4.9	4.3	6.6	2.6	4.7	1.3	20.8	0.2	100.0
1994	18.4	35.4	3.3	4.3	4.6	6.9	2.7	5.3	1.2	21.1	0.1	100.0
1995	18.1	34.9	3.6	4.0	4.8	7.1	2.8	5.8	1.1	21.3	0.1	100.0
1996	17.8	34.8	3.8	3.9	5.0	7.3	2.8	5.9	1.0	21.4	0.1	100.0
1997	17.6	35.0	3.8	3.4	5.3	7.4	2.8	5.9	1.0	21.6	0.1	100.0
1998	17.4	35.7	3.7	3.0	5.8	6.9	2.9	5.6	0.9	21.7	0.1	100.0
1999	17.2	36.8	4.1	2.8	5.3	6.7	2.8	5.6	1.1	21.7	0.0	100.0
2000	16.7	36.4	3.8	2.5	5.0	6.8	2.9	6.1	1.2	22.2	0.0	100.0
2001	16.4	36.5	3.6	2.3	5.0	6.7	2.9	6.4	1.4	22.3	0.0	100.0

* See the notes to Table 3.1.

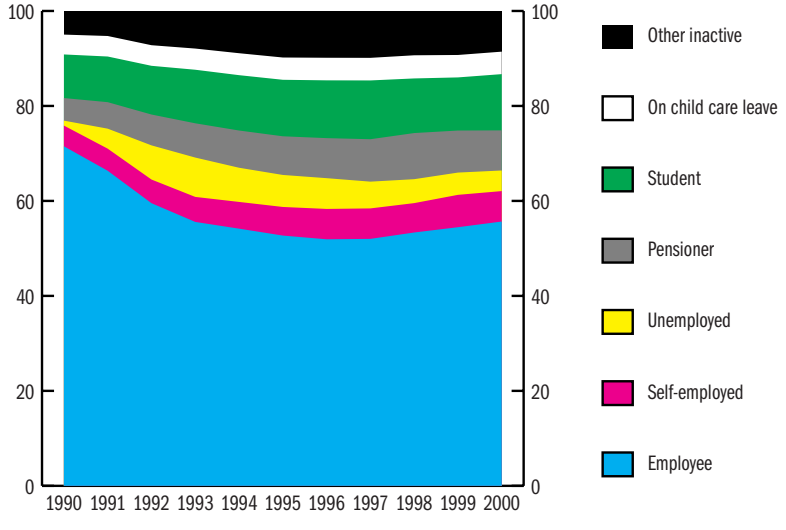


Figure 3.1: Labour Force Participation of Population at Working Age (per cent)

Table 3.5: Labour Force Participation – Males (per cent)*

Year	Below working age	Men at working age							Men above working age			Total
		Em-ployed	of which: self-em-ployed and assisting family members	Un-em-ployed	Pensioner	Student	On child care leave	Other inactive	Em-ployed	Pensio-ner and other inactive	Unem-ployed	
1980	23.3	53.0	1.7	0.0	3.4	3.8	0.0	1.9	5.1	9.5	0.0	100.0
1990	21.6	50.7	3.4	0.8	3.8	5.7	0.0	1.6	2.5	13.4	0.0	100.0
1991	21.0	47.4	3.6	3.0	4.4	6.0	0.0	2.3	1.8	14.1	0.0	100.0
1992	20.5	43.5	3.9	5.3	5.1	6.1	0.0	3.5	1.3	14.6	0.1	100.0
1993	20.0	41.1	4.2	6.3	5.3	7.0	0.0	4.1	1.0	14.9	0.1	100.0
1994	19.7	41.0	4.5	5.5	5.6	7.3	0.1	4.9	0.8	15.1	0.1	100.0
1995	19.4	41.1	5.0	5.3	5.8	7.5	0.1	4.9	0.8	15.2	0.0	100.0
1996	19.1	41.2	5.5	5.0	6.0	7.6	0.1	5.1	0.6	15.3	0.0	100.0
1997	18.9	41.6	5.5	4.4	6.3	7.8	0.0	5.2	0.5	15.3	0.0	100.0
1998	18.6	41.7	5.3	3.9	7.2	7.3	0.0	5.5	0.5	15.3	0.1	100.0
1999	18.5	43.0	5.9	3.5	6.5	7.1	0.1	5.4	0.7	15.2	0.0	100.0
2000	18.0	42.9	5.4	3.3	6.4	7.3	0.1	5.6	0.8	15.7	0.0	100.0
2001	17.7	43.2	5.4	2.9	6.4	7.1	0.0	6.1	0.8	15.9	0.0	100.0

* See the notes to Table 3.1.

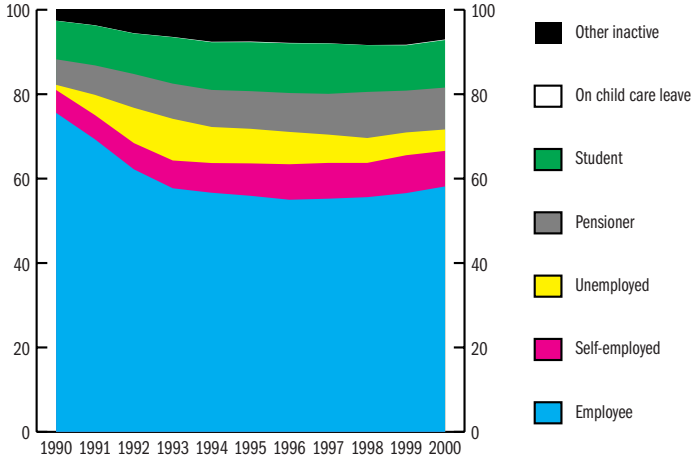


Figure 3.2: Labour Force Participation – Men Aged 15–59 (per cent)

Table 3.6: Labour Force Participation – Females (per cent)*

Year	Below working age	Women at working age							Women above working age			Total
		Em-ployed	of which: self-em-ployed and assisting family members	Un-em-ployed	Pensioner	Student	On child care leave	Other inactive	Em-ployed	Pensio-ner and other inactive	Unem-ployed	
1980	20.6	38.7	1.5	0.0	2.3	3.1	4.7	4.4	5.5	20.6	0.0	100.0
1990	19.0	37.3	1.7	0.5	1.8	4.9	4.6	4.0	4.1	23.8	0.0	100.0
1991	18.5	35.7	1.9	1.9	2.2	5.2	4.8	3.8	3.0	25.0	0.0	100.0
1992	18.0	32.5	2.0	3.2	2.6	5.9	4.8	4.9	2.2	25.7	0.1	100.0
1993	17.6	31.0	2.1	3.6	3.3	6.3	5.0	5.2	1.7	26.2	0.2	100.0
1994	17.3	30.3	2.2	3.1	3.7	6.6	5.2	5.6	1.4	26.6	0.2	100.0
1995	17.0	29.2	2.3	2.8	4.0	6.7	5.3	6.7	1.3	27.0	0.1	100.0
1996	16.7	28.9	2.3	2.8	4.1	6.9	5.4	6.6	1.4	27.0	0.1	100.0
1997	16.4	28.9	2.3	2.5	4.5	7.1	5.4	6.6	1.3	27.3	0.1	100.0
1998	16.2	30.1	2.2	2.3	4.6	6.6	5.6	5.7	1.2	27.6	0.1	100.0
1999	16.0	31.1	2.4	2.1	4.2	6.4	5.3	5.7	1.4	27.8	0.0	100.0
2000	15.6	30.6	2.3	1.9	3.7	6.4	5.5	6.5	1.7	28.2	0.0	100.0
2001	15.3	30.5	2.1	1.7	3.7	6.4	5.6	6.8	1.9	28.2	0.0	100.0

* See the notes to Table 3.1.

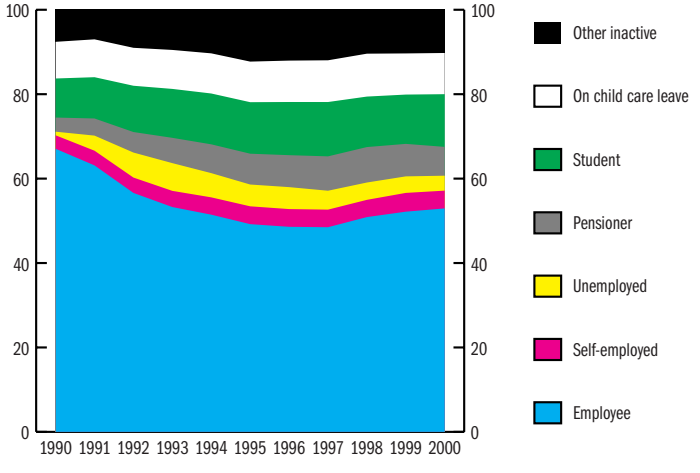


Figure 3.3: Labour Force Participation – Women Aged 15–54 (per cent)

Table 4.1: Employed of Working Age*

Year	1000 prs	1992 = 100	Annual change	Empl. ratio[1]
1980	4,887.9	125.4	...	79.4
1990	4,534.3	116.3	...	75.9
1991	4,270.5	109.5	-5.8	71.0
1992	3,898.4	100.0	-8.7	64.5
1993	3,689.5	94.6	-5.4	60.8
1994	3,633.1	93.2	-1.5	59.8
1995	3,571.3	91.6	-1.7	58.7
1996	3,546.1	91.0	-0.7	58.3
1997	3,549.5	91.1	0.1	58.4
1998	3,608.5	92.6	1.7	59.5
1999	3,701.0	94.9	2.6	61.3
2000	3,721.7	95.5	0.6	62.1
2001	3,719.2	95.4	0.0	...

* Females aged 15–44, males aged 15–59; no correcton on the basis of the increasing working age.
1 Per cent of the working age population.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

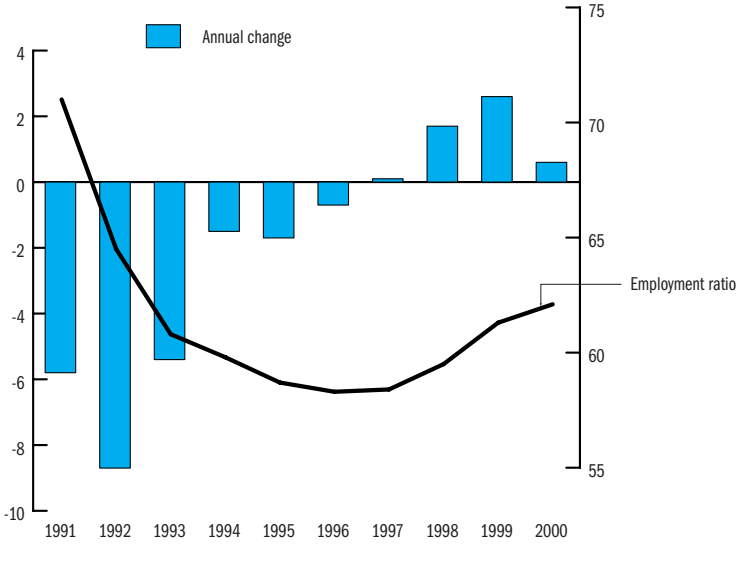


Figure 4.1: Employed of Working Age

Table 4.2: Employed Above Working Age*

Year	1000 prs	1992 = 100	Annual change	Empl. ratio[1]
1980	570.3	309.4	...	25.9
1990	345.7	187.6	...	15.1
1991	249.5	135.4	-27.8	10.9
1992	184.3	100.0	-26.1	8.0
1993	137.5	74.6	-25.4	6.0
1994	118.4	64.2	-13.9	5.2
1995	107.5	58.3	-9.2	4.7
1996	102.1	55.4	-5.0	4.5
1997	96.9	52.6	-5.1	4.2
1998	89.3	48.5	-7.8	3.9
1999	110.4	59.9	23.6	4.8
2000	127.4	69.2	15.3	5.5
2001	140.3	76.1	10.2	...

* See note of Table 4.1.
1 Per cent of the population above working age.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

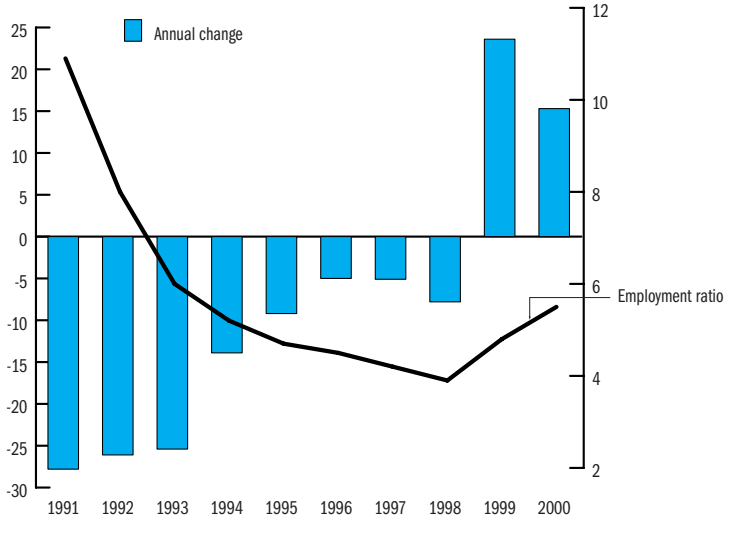


Figure 4.2: Employed Above Working Age

Table 4.3: Employed

Year	1000 prs	1992 = 100	Annual change	Empl. ratio[1]
1980	5,458.2	133.7	...	65.3
1990	4,880.0	119.5	...	59.0
1991	4,520.0	110.7	-7.4	54.4
1992	4,082.7	100.0	-9.7	49.0
1993	3,827.0	93.7	-6.3	45.8
1994	3,751.5	91.9	-2.0	44.8
1995	3,678.8	90.1	-1.9	43.9
1996	3,648.2	89.4	-0.8	43.6
1997	3,646.4	89.3	0.0	43.6
1998	3,697.8	90.6	1.4	44.3
1999	3,811.4	93.4	3.1	45.7
2000	3,849.1	94.3	1.0	46.2
2001	3,859.5	94.5	0.3	45.4

1 Per cent of the population above 15 year.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

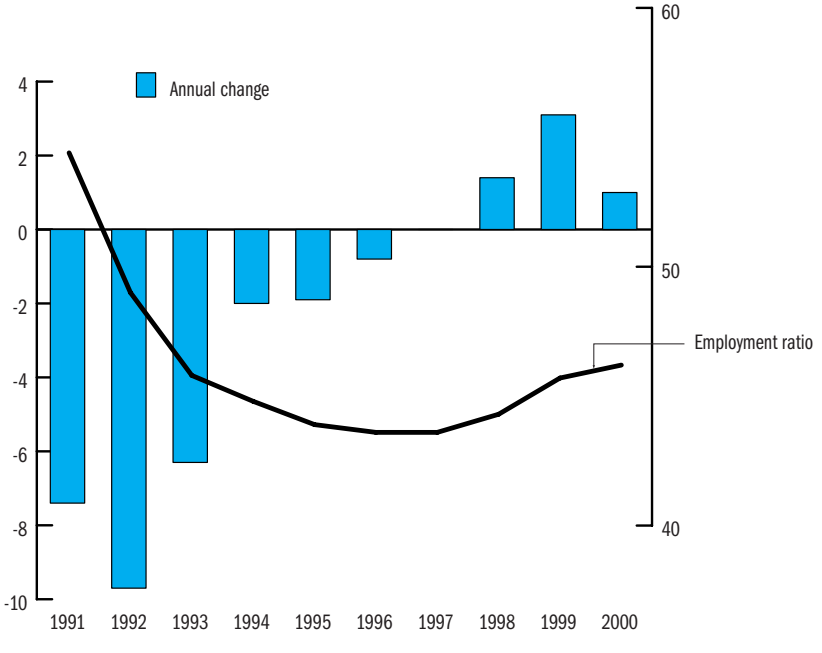


Figure 4.3: Employed

Table 4.4: Employed by Gender

	Males		Females		Ratio of females
Year	1000 prs	1992 = 100	1000 prs	1992 = 100	per cent
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

Source: 1980–91: KSH MEM, 1992–: KSH MEF.

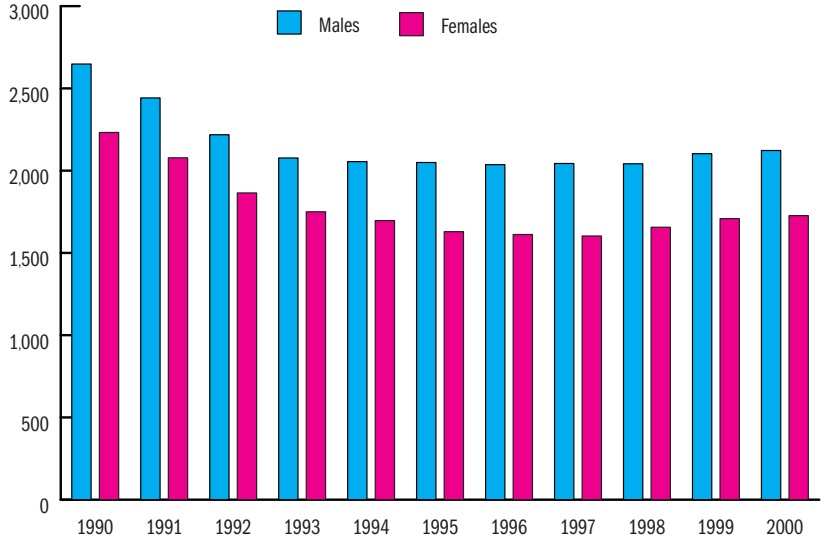


Figure 4.4: Employed by Gender

Table 4.5: 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

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

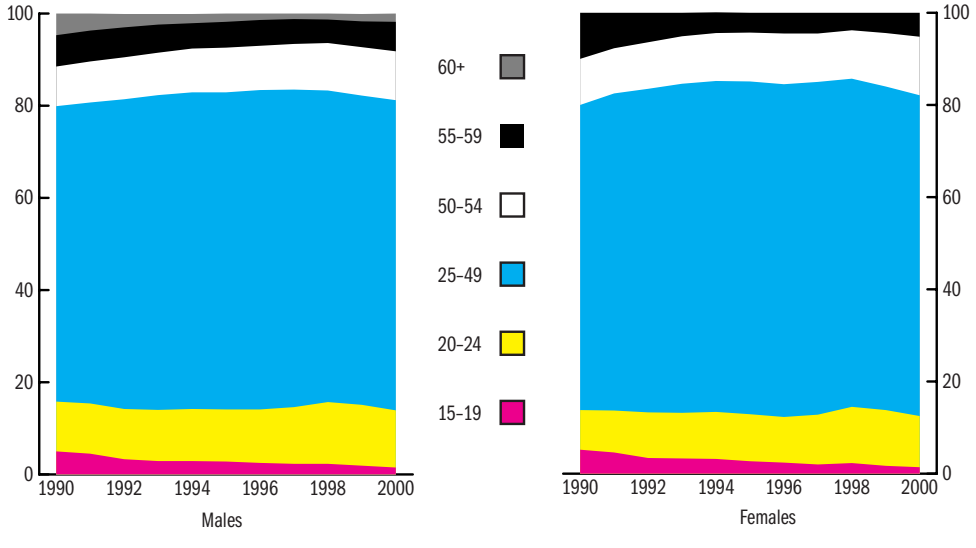


Figure 4.5: Employed by Age (per cent)

Table 4.6: 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
1991	4.6	9.1	68.8	9.8	7.7	100.0
1992	3.4	9.9	70.2	10.1	6.4	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

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

Table 4.7: 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
1992	25.9	35.2	24.1	14.7	100.0
1993	24.0	36.2	25.1	14.7	100.0
1994	22.5	38.1	25.2	14.2	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

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

Table 4.8: 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
1992	32.8	17.0	36.0	14.2	100.0
1993	31.1	17.9	35.9	15.1	100.0
1994	28.4	19.5	36.8	15.3	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

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

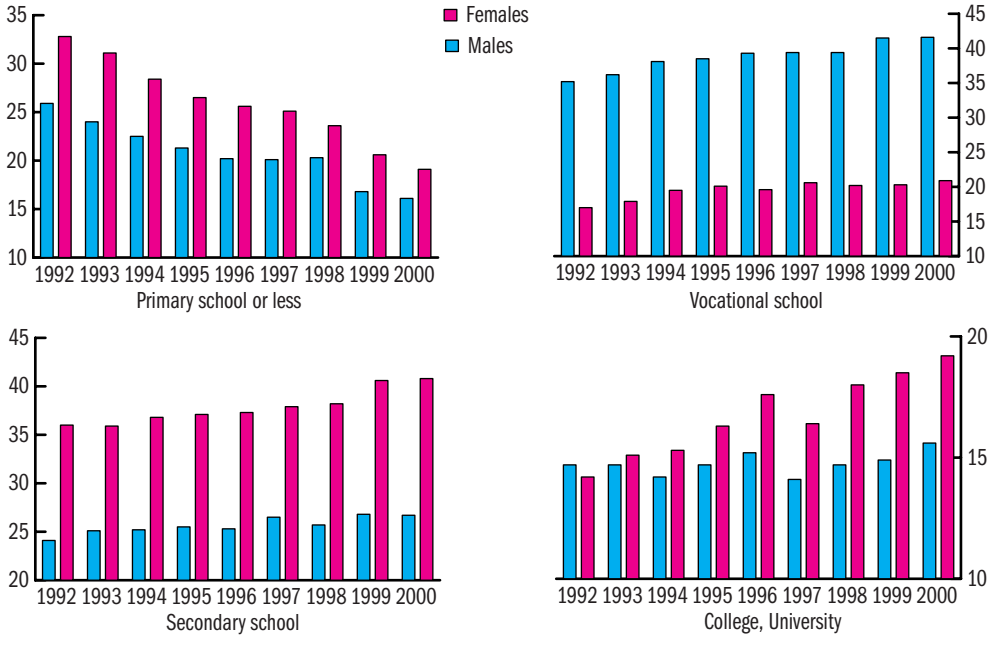


Figure 4.6: Employed by Highest Educational Attainment and Gender (per cent)

Table 4.9: Composition of the Employed by Type of Employment (per cent)

Year	Employees	Self-employed and assisting family members
1980	96.5	3.5
1990	94.3	5.7
1991	93.4	6.6
1992	92.3	7.7
1993	91.3	8.7
1994	90.6	9.4
1995	89.7	10.3
1996	89.0	11.0
1997	89.0	11.0
1998	89.6	10.4
1999	88.9	11.1
2000	89.4	10.6
2001	89.6	10.4

Source: 1980–91: KSH MEM, 1992–: KSH MEF.

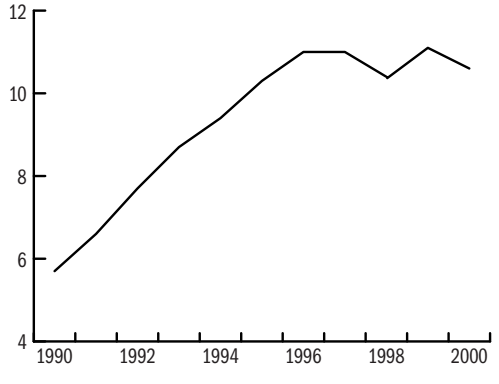


Figure 4.7: Ratio of Self-Employed and Assisting Family Members (per cent)

Table 4.10: Self-Employed and Assisting Family Members*

Year	In thousands	1992 = 100	Annual changes
1980	170.6	56.7	...
1990	260.2	86.4	...
1991	280.0	93.0	7.6
1992	301.0	100.0	7.5
1993	319.3	106.1	6.1
1994	342.0	113.6	7.1
1995	366.2	121.7	7.1
1996	388.9	129.2	6.2
1997	389.6	129.4	0.2
1998	375.0	124.6	-3.7
1999	411.5	136.7	9.7
2000	384.3	127.7	-6.4
2001	371.5	123.4	-2.9

* Aged 15–54, 15–59.
Source: 1980–91: KSH MEM, 1992–: KSH MEF.

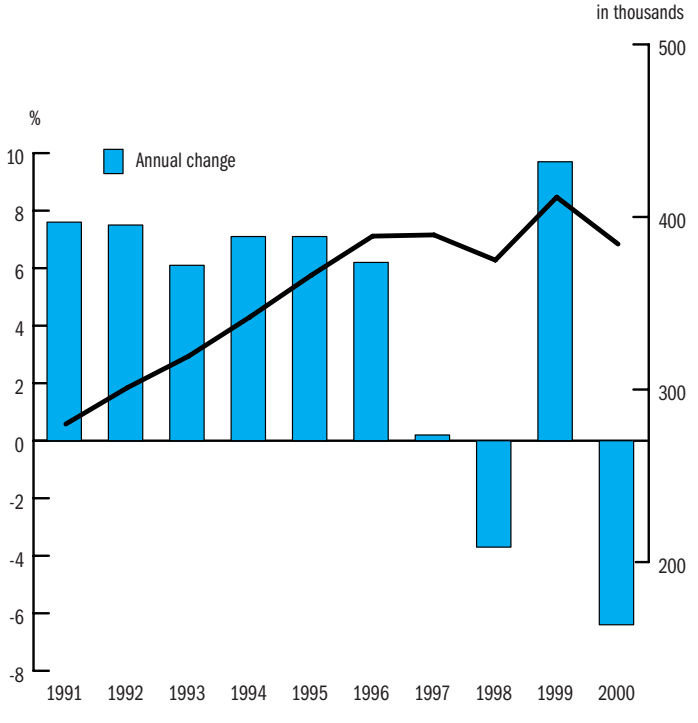


Figure 4.8: Self-Employed and Assisting Family Members (number and annual change)

Table 4.11: Employees*

Year	In thousands	1992 = 100	Annual changes
1980	4,717.3	131.1	...
1990	4,274.1	118.8	...
1991	3,990.5	110.9	-6.6
1992	3,597.4	100.0	-9.9
1993	3,370.2	93.7	-6.3
1994	3,291.1	91.5	-2.3
1995	3,205.1	89.1	-2.6
1996	3,157.2	87.8	-1.5
1997	3,159.9	87.8	0.1
1998	3,233.5	89.9	2.3
1999	3,289.5	91.4	1.7
2000	3,337.4	92.8	1.5
2001	3,347.7	93.1	1.0

* Employees of working age net of self-employed and assisting family members.

Source: 1980–91: KSH MEM, 1992–: KSH MEF.

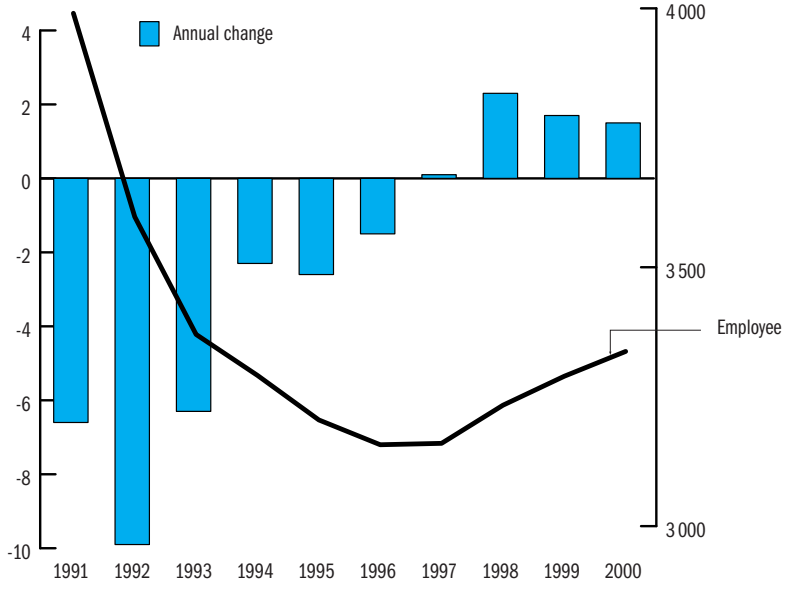


Figure 4.9: Employees

Table 4.12: Employees by Industry (per cent)*

	1980	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001
Agriculture	18.0	15.8	8.2	7.6	6.9	7.1	6.6	6.3	5.8	5.2	4.9
Mining and quarrying	2.2	1.8	1.2	1.2	1.0	1.0	0.8	0.7	0.7	0.7	0.4
Manufacturing	29.2	29.5	25.9	24.7	24.3	24.7	25.1	26.0	26.0	25.9	26.5
Electricity, gas, steam and water supply	2.9	3.0	3.1	3.2	2.9	2.7	3.0	2.9	2.6	2.3	2.3
Construction	7.0	5.9	5.3	5.0	5.5	5.5	5.5	5.7	6.0	6.4	6.5
Wholesale and retail trade	8.7	8.9	10.8	10.9	10.7	11.5	12.0	11.4	12.3	13.0	13.1
Hotels and restaurants	2.3	2.4	2.6	2.5	2.9	2.8	3.0	3.0	3.3	3.2	3.5
Transport, storage and communication	7.4	6.7	8.9	8.4	8.6	8.6	8.4	8.3	8.3	8.3	8.3
Financial intermediation	1.1	1.4	2.1	2.1	2.5	2.5	2.5	2.3	2.2	2.2	2.1
Real estate, renting and business activities	3.2	2.9	3.7	3.2	3.4	3.2	3.7	4.0	4.5	5.0	5.4
Public administration and defence; compulsory social security	4.0	5.6	8.7	9.4	9.6	9.4	9.0	8.8	8.4	8.1	7.9
Education	6.0	7.1	10.0	9.9	10.1	9.8	9.1	9.2	9.0	9.1	8.9
Health and social work	5.3	5.5	7.1	7.0	6.9	6.8	7.1	7.1	6.9	6.8	6.6
Other	2.7	3.4	4.2	4.8	4.7	4.1	4.2	4.3	4.0	3.9	3.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Includes members of cooperatives and partnerships.
Source: Census based estimates. 1992–: KSH MEF.

Table 4.13: Employees of the Corporate Sector by Firm Size (per cent)

Year	Less than 50	51–500	More than 500
	employed in companies		
1989	0.4	24.2	75.4
1990	...	...	...
1991	...	...	...
1992	2.6	34.8	62.6
1993	5.6	38.7	55.6
1994	5.9	47.7	46.4
1995	6.6	47.7	45.8
1996	6.9	45.4	47.7
1997	7.1	46.4	46.4
1998	7.0	45.0	48.0
1999	8.4	46.2	45.5
2000	8.3	52.6	39.1

Note: 1989–94: firms employing 20 or more workers; 1995–99: firms employing 10 or more workers; 2000: firms employing 5 or more workers.
Source: FH BT.

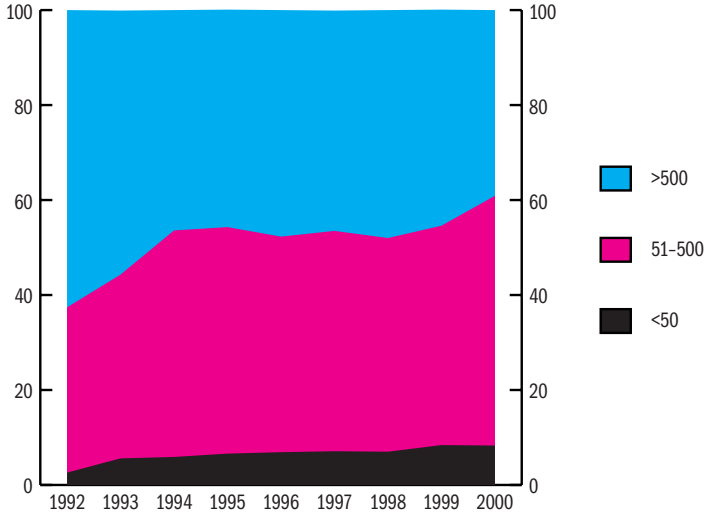


Figure 4.10: Employees of the Corporate Sector by Firm Size (per cent)

Table 4.14: Employees of the Corporate Sector by the Share of Foreign Ownership (per cent)

Foreign Ownership	1997	1998	1999	2000	2001
100%	12.2	14.4	17.1	17.5	19.0
Majority	12.3	13.9	13.5	11.7	11.0
Minority	7.3	7.6	6.0	5.3	4.9
0%	68.2	64.1	63.4	65.5	65.1

Note: 1997–99: firms employing 10 or more workers; 2000–: firms employing 5 or more workers.
Source: FH BT.

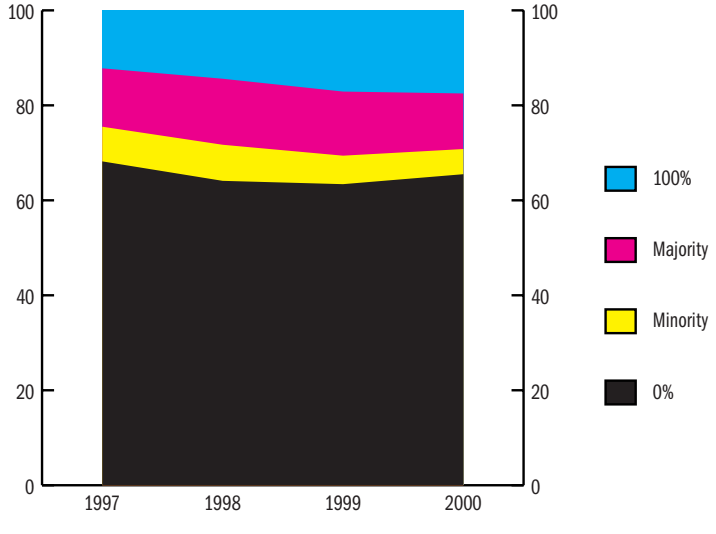


Figure 4.11: Employees of the Corporate Sector by the Share of Foreign Ownership (per cent)

Table 5.1: Unemployment

	Registered unemployed		LFS unemployed	
Year	in thousands	rate in %	in thousands	rate in %
1990	477.4	–	–	–
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

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.

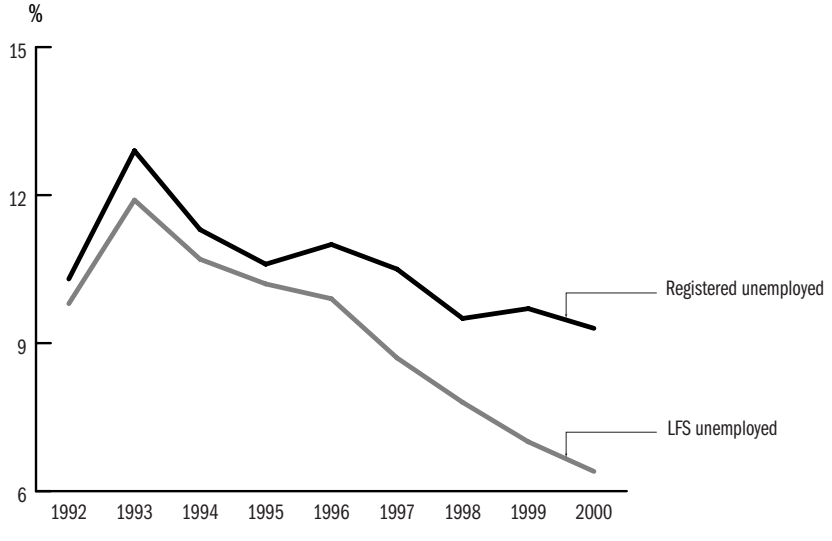


Figure 5.1: Registered and LFS Unemployment Rates

Table 5.2: 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

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 were excluded.
Source: KSH MEF.

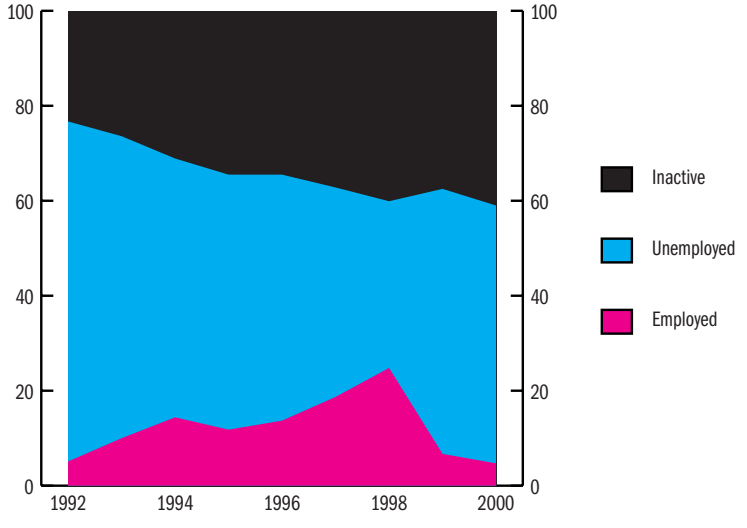
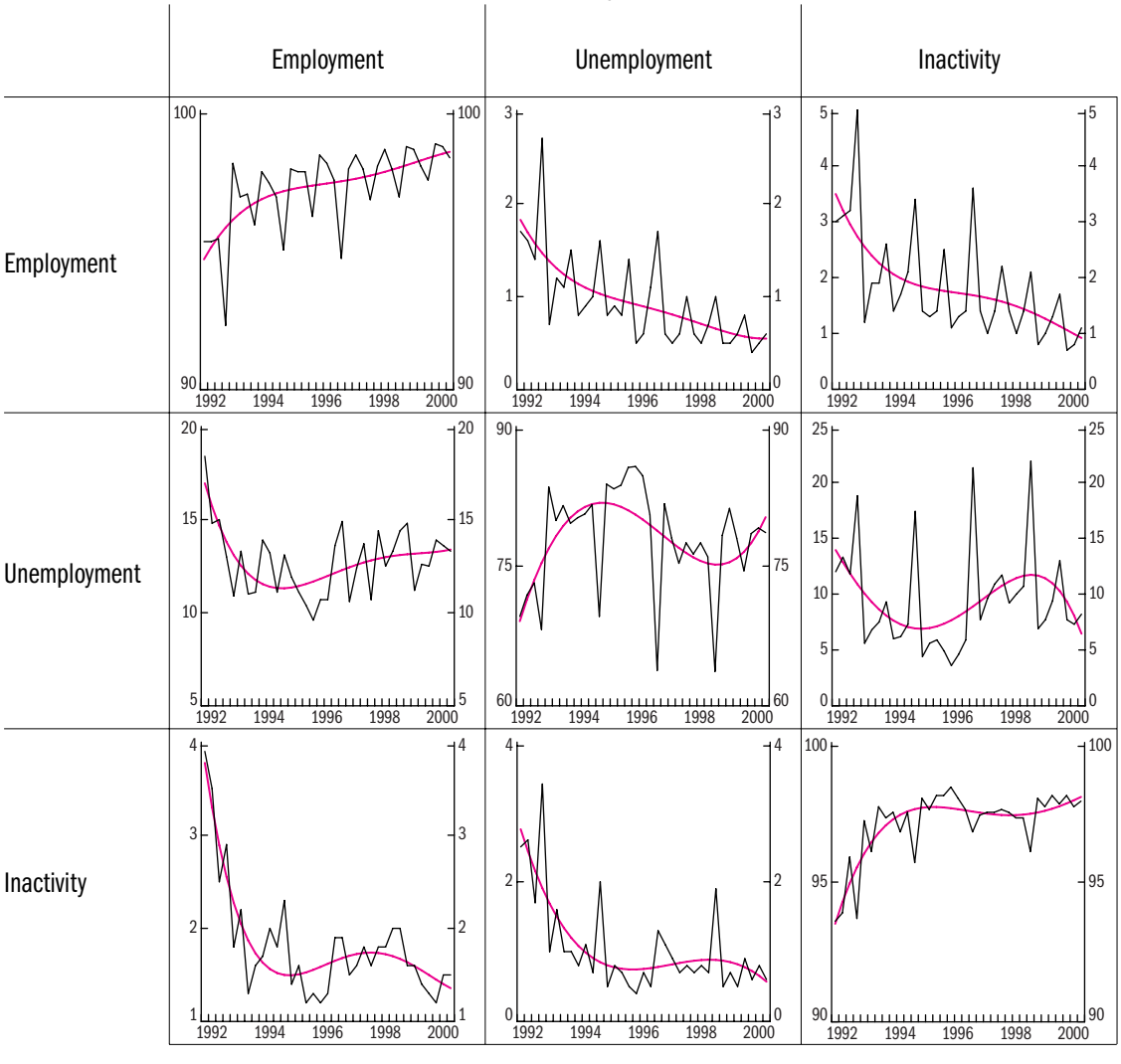


Figure 5.2: Registered Unemployed by Economic Activity

Figure 5.3: Quarterly Flows Between Labour Market States, Population Between 15–74 years, 1992–2000



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 5.3: Selected Time Series of Registered Unemployment (yearly average, in thousands, per cent)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Registered Unemployment	557.0	671.7	568.4	507.7	500.6	470.1	423.1	409.5	390.5	364.1
Unemployment rate	10.3	12.9	11.3	10.6	11.0	10.5	9.5	9.7	9.3	8.5
Of which										
School-leavers	39.6	59.7	62.1	54.5	46.2	42.4	32.5	29.9	26.0	26.8
Non school-leavers	517.4	612.0	506.2	453.2	454.4	427.7	390.6	379.6	364.4	337.4
Male	328.0	395.3	333.0	293.8	284.1	267.1	233.4	221.4	209.7	196.4
Female	228.9	276.4	235.3	213.8	216.5	203.0	189.7	188.1	180.8	167.7
25 years old and younger	139.7	174.8	153.3	134.2	124.0	105.8	89.9	85.4	79.1	75.6
Manual workers	465.1	556.0	467.6	414.3	407.4	386.3	349.0	336.8	321.2	302.0
Non manual workers	91.9	115.8	100.7	93.4	93.2	83.8	74.1	72.7	69.3	62.1
Ratio, %										
School-leavers	7.1	8.9	10.9	10.7	9.2	9.0	7.7	7.3	6.7	7.3
Male	58.9	58.8	58.6	57.9	56.7	56.8	55.2	54.1	53.7	53.9
25 years old and younger	25.1	26.0	27.0	26.4	24.8	22.5	21.3	20.9	20.3	20.8
Manual workers	83.5	82.8	82.3	81.6	81.4	82.2	82.5	82.3	82.2	82.9
Unemployment benefit recipients	412.9	404.8	228.9	182.8	171.7	141.7	130.7	140.7	131.7	119.2
Unemployment assistance recipients	18.4	89.3	190.3	210.0	211.3	201.3	182.2	148.6	143.5	131.2
Inflow to the Register	–	48.6	42.3	45.7	52.8	56.1	55.4	57.2	54.1	57.0
Of which										
School-leavers	–	7.6	7.8	8.0	7.5	9.2	9.8	9.3	8.0	7.8
Outflow from the Register	–	51.2	51.7	47.6	54.3	57.3	60.4	57.2	56.8	59.4
Of which										
School-leavers	–	6.6	7.9	8.5	8.9	9.0	11.0	9.4	8.2	7.7

Note: The national average of the registered uneployment rate is not published by the Employment Office from 2000.
Source: FH REG.

Table 5.4: Unemployment Rate by Age and Gender and Lengths (per cent)

Year	Unemployment rate			Of which 15-24 ages	Ratio of long term unemployment*
	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	41.3
1995	11.3	8.7	10.2	18.6	45.6
1996	10.7	8.8	9.9	17.9	49.8
1997	9.5	7.8	8.7	15.9	46.5
1998	8.5	7.0	7.8	13.4	44.3
1999	7.5	6.3	7.0	12.4	44.9
2000	7.0	5.6	6.4	12.1	44.2
2001	6.3	5.0	5.7	10.8	46.7

* 100 % = Unemployed total.
Source: KSH MEF.

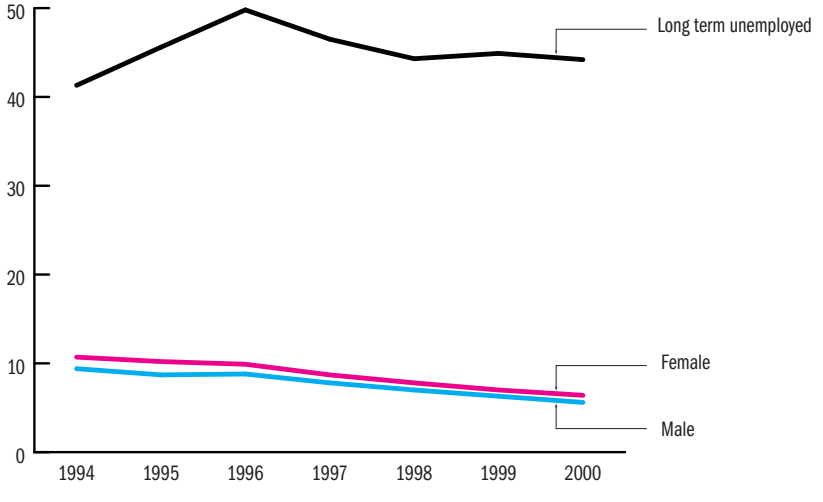


Figure 5.4: Unemployment Rate by Gender and Length

Table 5.5: The Distribution of Unemployed by Duration of Job Search (in thousands)

	Length of job search (weeks [month])								
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
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

Source: KSH MEF.

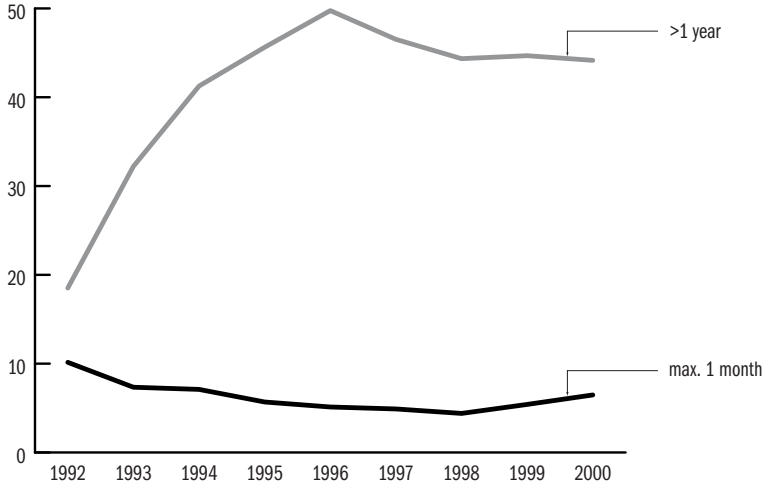


Figure 5.5: The Distribution of Unemployed by Duration of Job Search (in thousands)

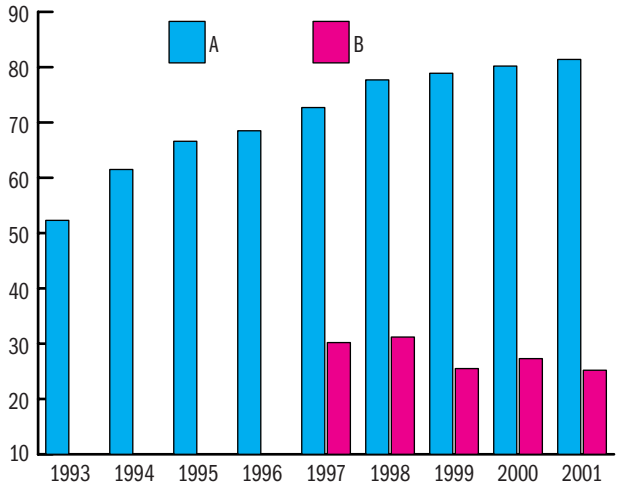


Figure 5.6: Long-Term Registered Unemployment

A: Time since first registration exceeds 1 year; per cent of total registered unemployment.
B: Time since last registration exceeds 1 year; per cent of total registered unemployment.

Table 5.6: First-Time Entrants and Re-Entrants to Unemployment Register (in thousands)

		January	February	March	April	May	June	July	August	September	Oktober	November	December	Monthly average
1994	First-Time Entrants	26.7	22.3	19.5	21.0	18.5	20.2	28.5	21.6	23.6	18.7	16.6	15.0	21.0
	Re-Entrants	24.0	17.4	15.4	17.3	14.9	18.1	33.6	21.8	23.3	21.8	23.8	24.8	21.3
	Total Number of Entrants	50.6	39.7	34.9	38.3	33.4	38.3	62.1	43.3	46.9	40.5	40.5	39.8	42.4
1995	First-Time Entrants	20.0	18.5	15.6	15.8	13.8	17.9	27.9	16.9	16.4	15.5	12.9	12.4	17.0
	Re-Entrants	36.3	24.6	18.8	20.8	18.0	23.3	35.3	24.8	35.2	27.3	40.3	40.0	28.7
	Total Number of Entrants	56.3	43.0	34.4	36.6	31.8	41.2	63.2	41.7	51.6	42.8	53.2	52.4	45.7
1996	First-Time Entrants	18.6	20.3	18.3	17.0	16.2	21.8	34.7	18.5	21.6	14.6	16.2	12.7	19.2
	Re-Entrants	38.9	30.9	25.2	22.9	31.5	34.0	37.5	31.2	38.3	37.8	38.0	37.4	33.6
	Total Number of Entrants	57.4	51.1	43.4	40.0	47.7	55.7	72.1	49.7	59.9	52.4	54.2	50.2	52.8
1997	First-Time Entrants	18.1	20.7	15.3	13.6	13.7	20.6	27.2	17.6	18.3	13.6	14.5	10.5	17.0
	Re-Entrants	56.7	47.5	36.3	32.5	30.0	32.5	34.3	32.5	36.9	36.9	47.5	46.5	39.2
	Total Number of Entrants	74.8	68.3	51.6	46.1	43.7	53.1	61.4	50.1	55.2	50.5	62.0	57.0	56.1
1998	First-Time Entrants	13.8	14.9	11.8	10.4	10.6	12.2	21.9	15.1	15.7	12.9	12.2	9.2	13.4
	Re-Entrants	58.9	46.3	39.1	35.0	35.5	32.9	36.1	34.6	38.4	44.4	50.9	52.0	42.0
	Total Number of Entrants	72.7	61.2	50.9	45.3	46.1	45.1	58.0	49.7	54.1	57.3	63.1	61.1	55.4
1999	First-Time Entrants	12.7	12.5	11.1	10.2	10.3	10.6	21.0	14.7	16.9	12.3	11.6	9.8	12.8
	Re-Entrants	59.7	47.2	42.4	39.8	38.7	35.9	40.2	39.8	42.5	43.3	49.6	53.9	44.4
	Total Number of Entrants	72.4	59.6	53.5	50.0	48.9	46.5	61.2	54.5	59.4	55.7	61.1	63.7	57.2
2000	First-Time Entrants	11.9	12.0	9.9	9.7	7.4	9.6	18.1	12.3	14.9	10.7	9.6	8.8	11.2
	Re-Entrants	57.4	46.3	39.9	39.2	32.0	37.9	41.1	35.0	42.9	43.4	45.8	53.9	42.9
	Total Number of Entrants	69.3	58.3	49.8	48.9	39.4	47.5	59.2	47.3	57.8	54.1	55.4	62.7	54.1
2001	First-Time Entrants	11.2	12.9	9.9	9.7	8.3	10.9	15.8	11.5	15.9	10.6	9.6	8.7	11.2
	Re-Entrants	57.8	53.7	42.0	42.9	38.5	42.3	52.7	22.9	46.6	45.8	46.1	57.7	45.8
	Total Number of Entrants	68.7	66.6	51.9	52.6	46.8	53.2	68.5	34.4	62.5	56.4	55.7	66.4	57.0

Source: FH REG.

Table 5.7: Benefit Receipt and Participation in Active Labour Market Programs

Year	Unemployment benefit	Unemployment assistance	UA for school-leavers	Do not receive provision	Public work	Retraining	Wage subsidy	Other programmes	Total
1990									
In thousands	42.5	–	–	18.6	...	...	...	...	61.0
Per cent	69.6			30.4					100.0
1991									
In thousands	236.0	–	9.0	72.7	...	...	...	...	317.7
Per cent	74.3		2.8	22.9					100.0
1992									
In thousands	431.2	27.2	18.4	150.3	18.2	27.4	7.7	20.6	701.0
Per cent	61.5	3.9	2.6	21.4	2.6	3.9	1.1	2.9	100.0
1993									
In thousands	312.4	123.2	23.8	195.6	26.0	30.1	14.8	45.2	771.1
Per cent	40.5	16.0	3.1	25.4	3.4	3.9	1.9	5.9	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[1]	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	24.7	25.0	0.0	23.3	6.4	6.6	5.7	8.2	100.0

1 Together with the number of regular social allowance recipients.

Note: October. The percentage ratios refer to the combined number of the registered unemployed and program participants.

Source: FH.

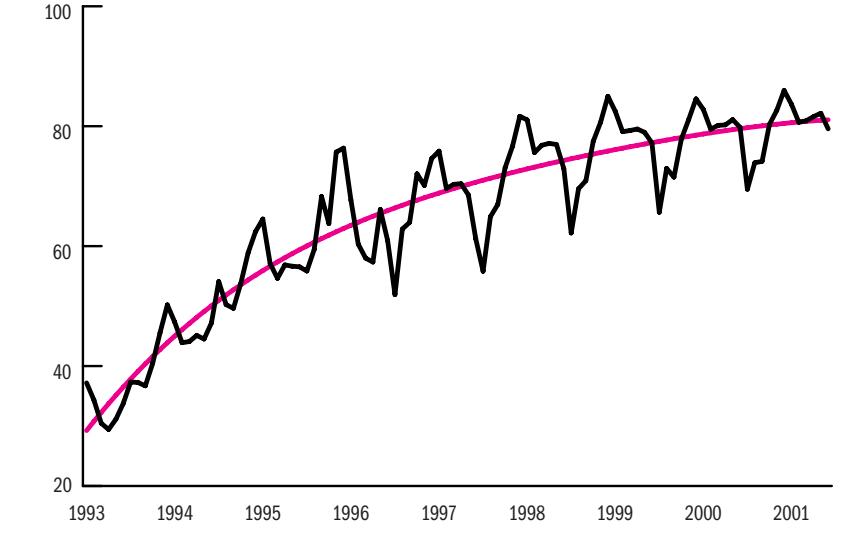


Figure 5.7: Ratio of Re-Entrants to First-Time Entrants in the Register

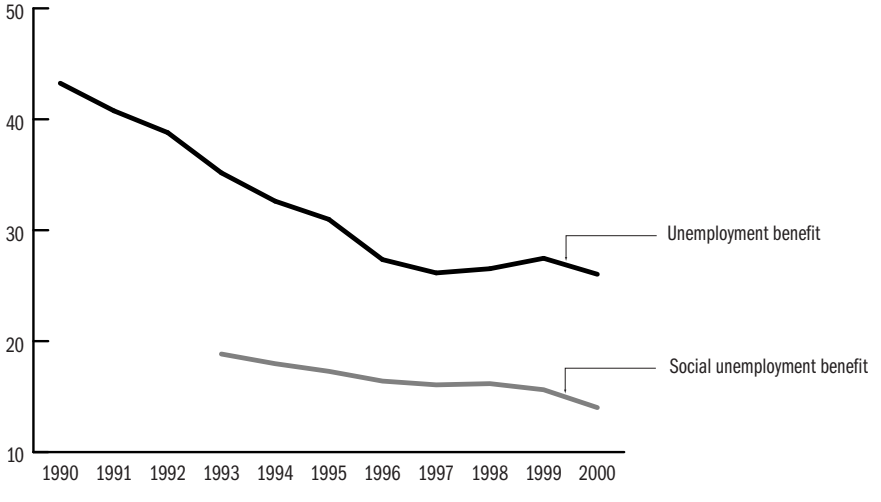


Figure 5.8: The Ratio of Average Unemployment Benefits and Unemployment Assistance to Gross Earnings

Table 5.8: The Number of School Leavers' Unemployment Benefit Recipients on the Closing Day of Each Month

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
January	–	17,261	28,943	28,943	34,525	38,675	428	88	69	15
February	–	17,813	31,136	31,136	36,859	38,994	1,443	78	81	13
March	–	17,529	31,192	31,192	33,545	36,171	968	89	96	15
April	–	11,799	20,064	20,064	22,844	23,347	580	81	74	12
May	–	10,472	16,618	16,618	18,513	17,655	474	57	56	18
June	529	8,991	14,063	14,063	15,120	12,699	333	59	53	15
July	1,082	8,081	12,240	12,240	13,444	9,579	203	52	49	19
August	1,378	7,603	11,484	11,484	12,977	6,694	192	55	41	14
September	2,100	7,937	11,289	11,289	12,771	3,867	152	50	28	11
October	9,033	18,371	23,809	23,809	26,276	2,613	86	52	24	8
November	13,753	23,885	29,565	29,565	32,560	1,588	77	61	18	13
December	16,281	27,402	33,158	33,158	36,970	776	63	65	12	14

Source: FH.

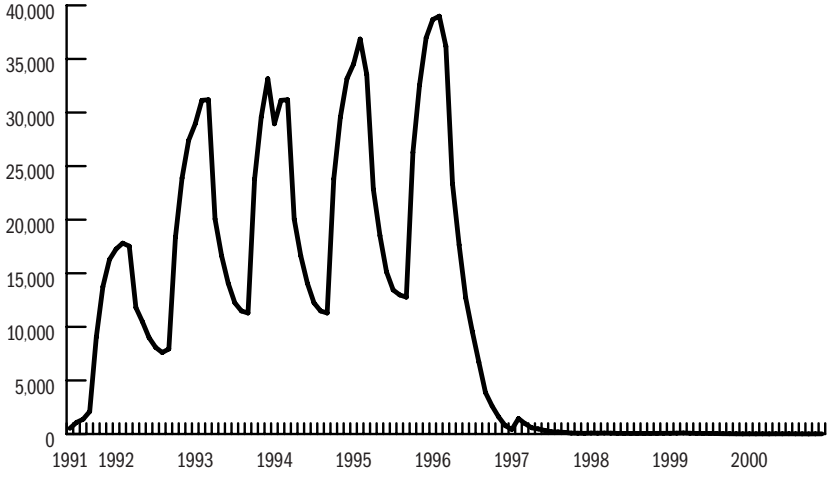


Figure 5.9: The Number of School Leavers' Unemployment Benefit Recipients on the Closing Day of Each Month

Table 5.9: Distribution of Registered Unemployed, Unemployment Benefit Recipients and Unemployment Assistance Recipients by Educational Attainment

	Registered unemployed			Unemployment benefit			Unemployment assistance		
Educational attainment	1995	1998	2002	1995	1998	2002	1995	1998	2002
Max. 8 classes of primary school	43.6	40.9	42.6	36.9	32.0	30.8	56.8	50.0	59.2
Vocational school	34.5	36.0	33.5	36.6	39.5	40.4	30.6	34.3	29.1
Vocational secondary school	11.7	12.8	13.3	14.9	16.0	16.4	6.9	8.7	6.4
Grammar school	7.9	7.8	7.6	8.3	9.0	8.5	4.5	5.7	4.5
College diplom, BA	1.5	1.8	2.3	2.2	2.6	2.8	0.8	1.0	0.7
University diplom, MA	0.7	0.6	0.8	1.0	0.9	1.1	0.3	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	482,746	406,386	328,459	167,278	125,583	104,677	220,725	186,599	112,564

Source: FH.

Table 6.1: Inactive Population by Gender*

	Male			Female		
Year	In thousands	1992 = 100	Inactivity ratio[1]	In thousands	1992 = 100	Inactivity ratio[1]
1980	961.0	66.1	24.2	1,940.7	82.3	44.3
1990	1,219.6	83.9	31.2	2,105.7	89.2	48.3
1991	1,332.4	91.7	33.9	2,203.4	93.4	50.3
1992	1,453.0	100.0	36.9	2,359.5	100.0	53.6
1993	1,551.1	106.8	39.3	2,462.1	104.3	55.8
1994	1,618.0	111.4	41.0	2,552.1	108.2	57.7
1995	1,634.9	112.5	41.4	2,645.7	112.1	59.7
1996	1,662.6	114.4	42.2	2,663.2	112.9	60.1
1997	1,680.2	115.6	42.7	2,692.4	114.1	60.8
1998	1,698.3	116.9	43.2	2,646.3	112.2	59.8
1999	1,644.4	113.2	42.0	2,596.2	110.0	58.8
2000	1,700.9	117.1	42.7	2,687.9	113.9	59.5
2001	1,718.7	118.3	43.1	2,707.3	114.7	59.8

* Population above 15 years of age.
1 Per cent of the population above 15 years of age.

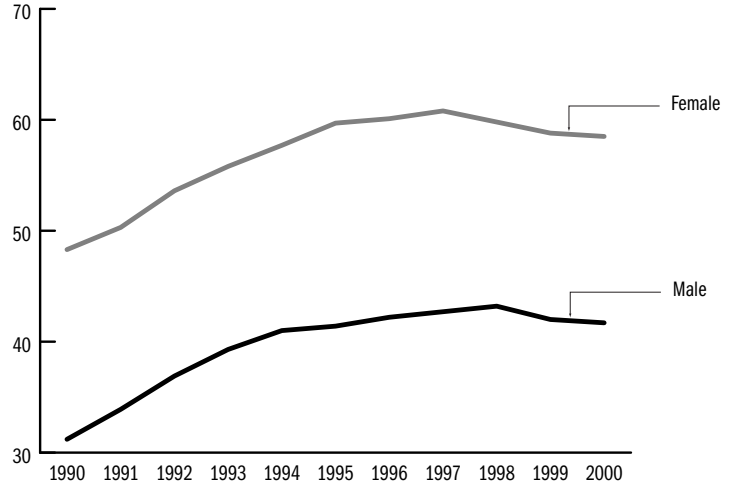


Figure 6.1: Inactive Ratio by Gender

Table 6.2: Inactive Population of Working Age by Gender

Year	Male			Female		
	In thousands	1992 = 100	Inactivity ratio[1]	In thousands	1992 = 100	Inactivity ratio[1]
1980	469.2	64.2	14.6	800.4	81.7	27.2
1990	554.1	75.8	17.8	826.3	84.3	28.9
1991	631.7	86.4	20.2	858.9	87.7	29.8
1992	730.9	100.0	23.2	979.9	100.0	33.8
1993	815.4	111.6	25.8	1,056.6	107.8	36.3
1994	878.0	120.1	27.8	1,128.3	115.1	38.7
1995	892.3	122.1	28.2	1,207.7	123.2	41.4
1996	916.3	125.4	28.9	1,224.9	125.0	42.0
1997	936.7	128.2	29.6	1,247.1	127.3	42.9
1998	961.0	131.5	30.4	1,186.0	121.0	40.9
1999	917.2	125.5	29.1	1,138.2	116.2	39.5
2000	940.5	128.7	29.5	1,177.3	120.3	40.3
2001	949.2	129.8	29.8	1,199.7	122.4	41.1

1 Per cent of the working age population.
Source: 1980–91: KSH MEM; 1992–: KSH MEF.

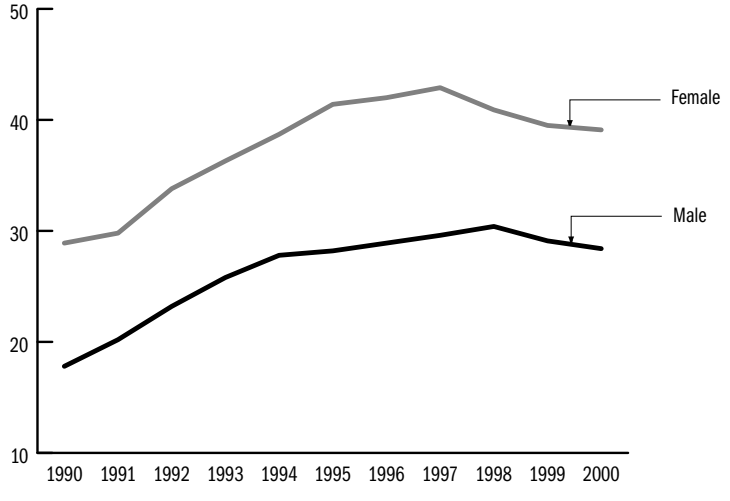


Figure 6.2: Inactivity Ratio of Working Age Population by Gender

Table 7.1: Nominal and Real Earnings

Year	Gross earnings (HUF)	Net earnings (HUF)	Consumer price[1]	Gross real earnings index	Net real earnings index	Net real earnings[2]
1989	10,571	8,165	117.2	100.6	99.7	115.6
1990	13,446	10,108	128.9	99.8	94.3	109.1
1991	17,934	12,948	135.0	96.3	93.0	101.4
1992	22,294	15,628	123.0	101.7	98.6	100.0
1993	27,173	18,397	122.5	99.5	96.1	96.1
1994	33,939	23,424	118.8	105.1	107.2	103.0
1995	38,900	25,891	128.2	91.1	87.8	90.5
1996	46,837	30,544	123.6	97.4	95.0	86.0
1997	57,270	38,145	118.3	103.4	104.9	90.2
1998	67,764	45,162	114.3	103.5	103.6	93.4
1999	77,187	50,076	110.0	105.5	102.5	95.8
2000	87,645	55,785	109.8	103.7	101.5	97.2
2001	103,558	64,915	109.2	108.1	106.4	103.4

1 Previous year = 100%.
2 1992 = 100.
Source: KSH IMS.

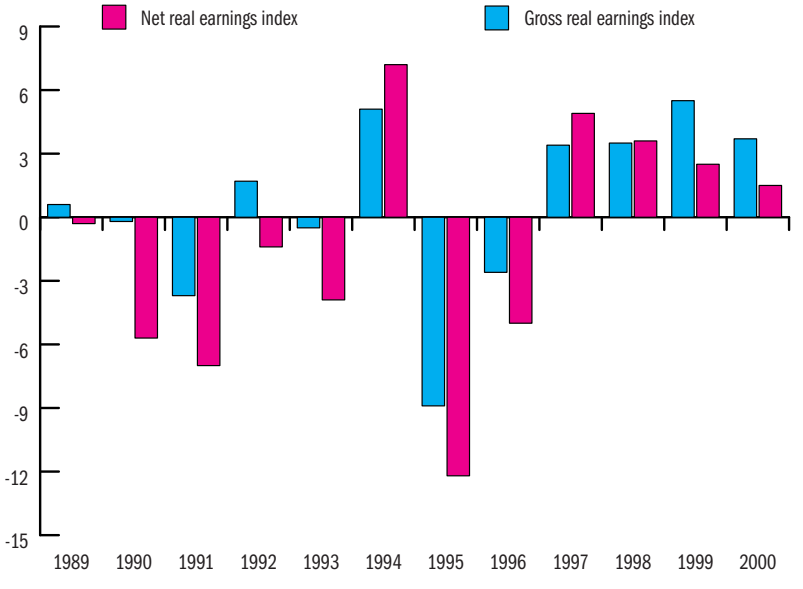


Figure 7.1: Change of Gross Real Earnings and Net Real Earnings

Table 7.2: Gross Average Earnings by Industry*

	1993	1995	1996	1997	1998	1999	2000	2001
Agriculture	19,230	29,873	35,073	42,216	48,762	53,521	59,246	72,116
Mining and quarrying	36,611	50,765	60,102	76,952	84,977	95,762	112,914	126,796
Manufacturing	26,317	38,797	47,178	57,597	67,169	76,335	88,136	101,119
Electricity, gas, steam and water supply	34,202	50,805	62,525	75,729	90,305	104,543	119,539	135,682
Construction	24,053	32,544	38,407	46,884	54,123	56,753	64,259	79,719
Wholesale and retail trade	27,294	36,311	45,463	53,733	62,688	66,913	77,758	90,596
Hotels and restaurants	23,298	29,370	35,267	41,012	46,437	50,067	56,593	68,120
Transport storage and communication	28,208	41,437	51,513	63,288	76,108	88,238	98,815	114,447
Financial intermediation	52,881	71,194	88,759	114,083	142,432	165,327	189,444	215,970
Real estate, renting and business activities	31,434	41,716	51,733	61,146	81,125	89,399	101,019	121,821
Public administration and defence; compulsory social security	33,550	45,861	53,523	65,329	75,671	92,821	103,428	131,724
Education	24,495	34,866	38,996	49,460	59,822	72,869	81,204	97,647
Health and social work	22,624	32,462	37,530	45,376	52,781	59,105	68,304	78,850
Other	27,794	39,884	47,857	54,533	63,896	71,199	79,820	91,677
Total	27,173	38,900	46,837	57,270	67,764	77,187	87,645	103,553

* HUF/month, per capita.

Note: The data refer to full-time employees in the budget sector and firms employing at least 20 workers (1993), 10 workers (1995–98) and 5 workers (1999–), respectively.

Source: KHS, IMS.

Table 7.3: Gross Average Earnings by Industry (per cent)*

	1993	1995	1996	1997	1998	1999	2000	2001
Agriculture	70.8	76.8	74.9	73.7	72.0	69.3	67.6	69.6
Mining and quarrying	134.7	130.5	128.3	134.4	125.4	124.1	128.8	122.9
Manufacturing	96.8	99.7	100.7	100.6	99.1	98.9	100.6	97.7
Electricity, gas, steam and water supply	125.9	130.6	133.5	132.2	133.3	135.4	136.4	131.0
Construction	88.5	83.7	82.0	81.9	79.9	73.5	73.3	77.0
Wholesale and retail trade	100.4	93.3	97.1	93.8	92.5	86.7	88.7	87.5
Hotels and restaurants	85.7	75.5	75.3	71.6	68.5	64.9	64.6	65.8
Transport storage and communication	103.8	106.5	110.0	110.5	112.3	114.3	112.7	110.5
Financial intermediation	194.6	183.0	189.5	199.2	210.2	214.2	216.1	208.6
Real estate, renting and business activities	115.7	107.2	110.5	106.8	119.7	115.8	115.3	117.6
Public administration and defence; compulsory social security	123.5	117.9	114.3	114.1	111.7	120.3	118.0	127.2
Education	90.1	89.6	83.3	86.4	88.3	94.4	92.7	94.3
Health and social work	83.3	83.4	80.1	79.2	77.9	76.6	77.9	76.1
Other	102.3	102.5	102.2	95.2	94.3	92.2	91.1	88.5

* National average = 100.
Note: See the note to Table 7.2.
Source: KHS, IMS.

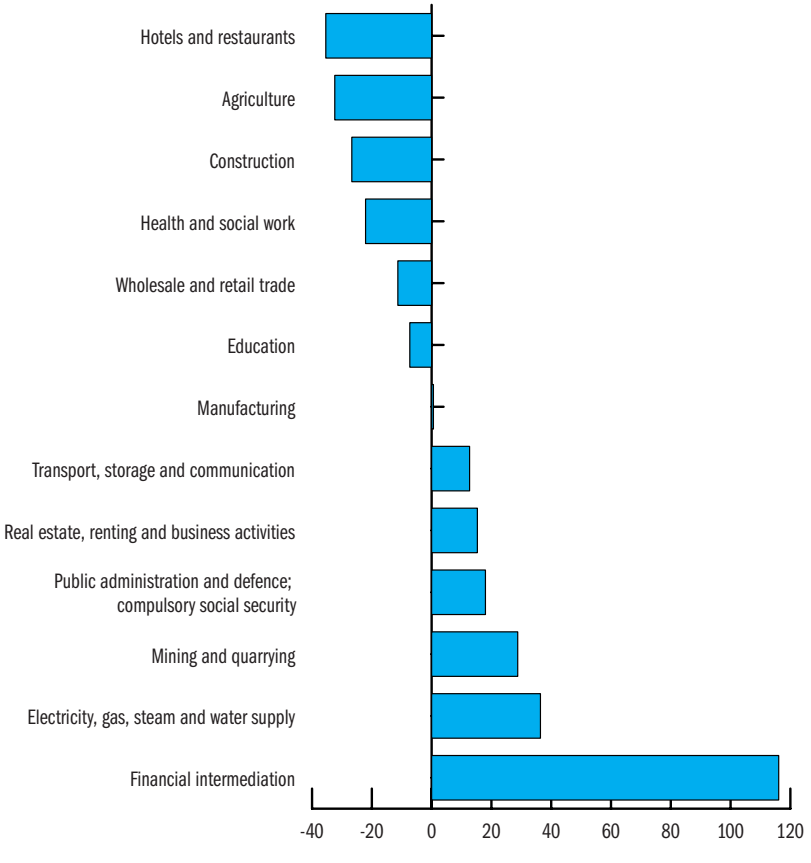


Figure 7.2: Gross Real Earnings as a Percentage of National Average Industry, 2000

Table 7.4: Wages, Sales Prices and Productivity in Industry

Year	Average gross earnings	Producer price index	Index of productivity	Real earnings deflated with the producer prices
1989	118.6	115.4	100.7	102.8
1990	123.0	122.0	95.0	100.8
1991	127.6	132.6	93.7	96.2
1992	124.4	112.3	95.3	110.8
1993	124.9	110.8	113.4	112.7
1994	123.3	111.3	115.7	110.8
1995	121.1	128.9	110.9	93.9
1996	121.7	121.8	107.5	99.9
1997	121.8	120.4	113.8	101.2
1998	116.6	111.3	111.9	104.8
1999	115.5	105.1	109.9	109.9
2000	115.0	111.7	116.7	103.0
2001	114.4	105.2	105.5	108.7

Source: KSH IMS. Prices and productivity: KSH.

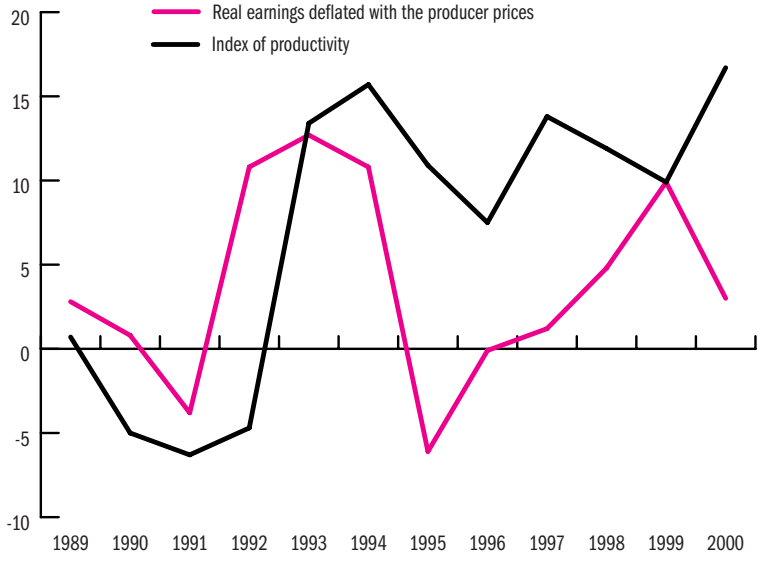


Figure 7.3: Index of Productivity and Real Earnings Deflated by the Producer Index

Table 7.5: Minimum Wage

Date	Monthly average (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	43.7*

* Jan.-June monthly average.
Source: Ministry of Labour, Ministry of Economic Affairs.

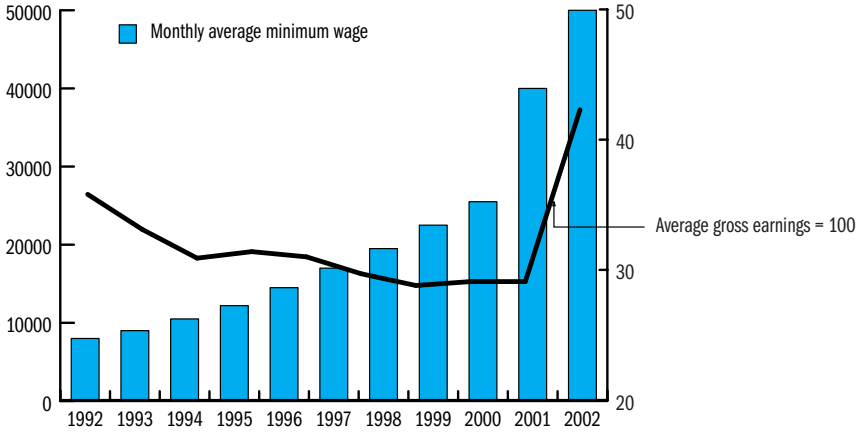


Figure 7.4: Minimum Wage, Average Gross Earnings = 100

Table 7.6: Central Wage Agreements*

	Recommendation		Actual indexes	
Year	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

* Gross average wage increase: actual rates and recommendations by the Council of the Reconciliation of Interest.
Source: KSH, Ministry of Labour.

Table 7.7: Industrial and Firm-Level Wage Agreements

	Branch		Corporate	
Year	Number	In thousand (prsn)	Number	In thousand (prsn)
1992	24	874.5	391	567.0
1993	12	232.1	394	592.4
1994	12	207.6	490	555.6
1995	7	88.0	816	490.9
1996	12	201.0	594	512.7
1997	12	210.0	598	488.3
1998	33	342.0	843	651.0
1999	41	328.8	827	387.5
2000	n.a.	n.a.	n.a.	n.a.
2001	n.a.	n.a.	n.a.	n.a.

Note: 1992–97: reported wage agreements; 1998–99: collective agreements containing wage agreements.
Source: FH.

Table 7.8: The Inequality of Individuals' Per Capita Household Income – Selected Indicators

	1977	1982	1987	1992	1995	1996	1999	2000
p10	61	62	61	60	53	48	49	51
p90	161	162	173	183	203	191	191	193
p90/p10	2.65	2.61	2.82	3.07	3.83	3.95	3.86	3.78
S1	4.5	4.9	4.5	3.8	3.3	3.2	3.4	3.3
S5+S6	18.7	18.6	17.9	17.4	17.0	17.5	17.3	17.3
S10	18.6	18.6	20.9	22.7	24.7	24.3	24.9	24.8
S10/S1	4.1	3.8	4.6	6.0	7.4	7.5	7.2	7.6
Robin Hood	15.0	14.9	17.0	18.5	21.3	20.7	20.3	21.2
Éltető-Frigyes	1.84	1.82	2.00	2.13	2.39	2.32	2.33	2.37
Gini	0.214	0.209	0.244	0.266	0.304	0.300	0.302	0.306

Source: Atkinson & Micklewright, 1992; Tóth, 2001.

Notes: The measures are based on the variation of per capita household income of individuals.

p10: Upper break point of the lowest decile, per cent of the median. – **p90:** Lower break point of the highest decile, per cent of the median. – **S1, S10:** Income of the lowest/highest decile, per cent of the population's total income. – **Robin Hood:** Income to be transferred from high-income to low-income deciles in order to achieve perfect equality, per cent of the population's total income. (High income: decile with a share higher than 1/10) – **Éltető-Frigyes:** Ratio of incomes above the average to incomes lower than the average. – **Gini:** Index of concentration ranging from 0 (all incomes are equal) to 1 (all incomes owned by a single person.

Table 8.1: School Leavers by Level of Education

Year	Primary school	Specialized secondary school	Vocational school	Secondary school	College and university
1980	119,809	2,646	46,586	43,167	14,859
1989	170,891	3,241	50,483	52,573	15,699
1990	164,614	3,375	51,558	53,039	15,963
1991	158,907	3,890	55,412	54,248	16,458
1992	151,287	3,810	62,451	59,646	16,201
1993	144,200	6,302	60,040	68,607	16,223
1994	136,857	7,285	55,617	68,604	18,041
1995	122,333	6,991	50,066	70,265	20,024
1996	120,529	6,414	47,795	73,413	22,128
1997	116,708	4,895	41,973	75,564	24,411
1998	113,651	3,995	38,871	77,660	25,338
1999	114,302	2,460	36,362	73,965	...
2000	...	...	...	...	...
2001	114,200	...	...	70,441	29,746

Note: Primary school: completed the 8th grade. Other levels: received certificate. Excludes special schools.
Source: OM STAT.

Table 8.2: Pupils/Students Entering the School System, by Level of Education

Year	Primary school[1]	Specialized secondary school	Vocational school	Secondary school	College and university
1980	171,347	4,051	56,634	57,213	17,886
1989	128,542	6,219	85,548	84,140	20,704
1990	125,665	6144	81,788	83,939	22,662
1991	126,258	9,934	74,033	85,054	25,385
1992	129,852	13,011	66,380	86,675	30,192
1993	125,679	13,642	63,335	87,657	35,005
1994	126,032	16,112	61,034	87,392	37,934
1995	123,997	9,820	55,532	82,665	42,433
1996	124,554	7,603	51,219	84,773	44,698
1997	127,214	5,319	47,764	84,395	45,669
1998	125,875	3,007	36,658	86,868	48,886
1999	121,424	2,694	30,876	89,184	51,570
2000	...	...	...	...	...
2001	114,144	...	34,210[2]	92,393	56,709

1 Excludes special schools.
2 Specialized secondary schools are included.
Source: OM STAT.

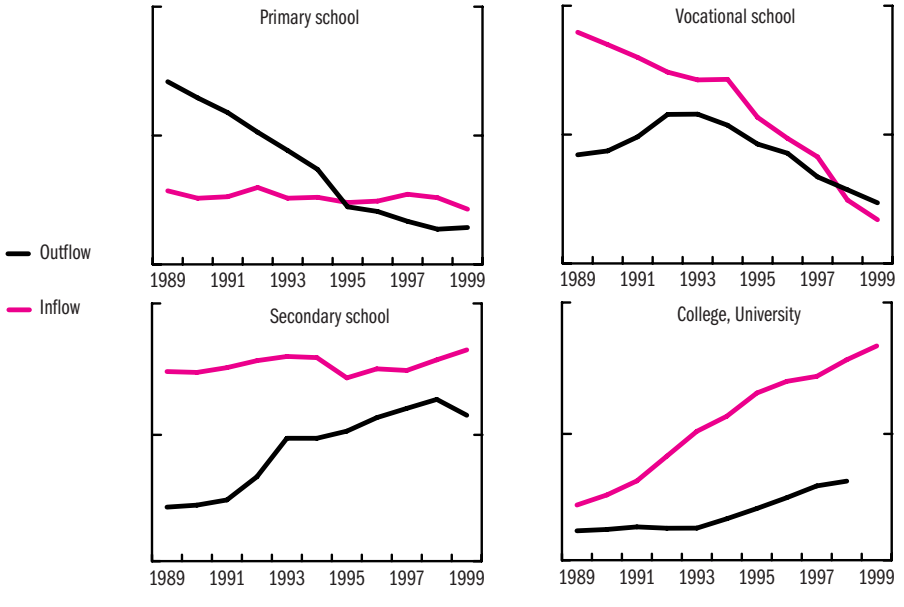


Figure 8.1: Flows of the Educational System by Level

Table 8.3: The Number of Pupils/Students by Level of Education

Year	Primary school[1]	Specialized secondary school	Vocational school	Secondary school	College and university
1980/81	1,162,203	8,613	154,096	203,238	64,057
1989/90	1,183,573	11,995	201,702	273,511	72,381
1990/91	1,130,656	12,833	209,371	291,872	76,601
1991/92	1,081,213	17,065	204,655	309,351	83,191
1992/93	1,044,164	23,263	188,570	322,954	92,328
1993/94	1,009,416	24,672	174,187	330,586	103,713
1994/95	985,291	22,421	163,330	337,317	116,370
1995/96	974,806	18,305	154,294	349,299	129,541
1996/97	965,998	14,561	143,846	361,395	142,113
1997/98	963,997	11,274	132,637	368,645	152,889
1998/99	964,248	8,476	119,727	376,626	163,100
1999/2000	960,601	7,504	109,534	386,579	171,516
2000/2001	905,932	...	123,951[2]	420,889	184,071

1 Excludes special schools.
2 Specialized secondary schools are included.
Source: OM STAT.

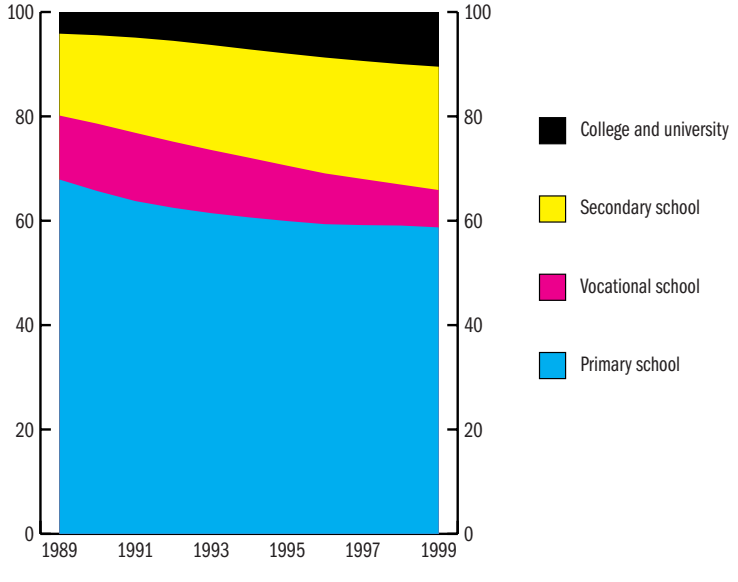


Figure 8.2: The Percentage of Sharing the Pupils/Students in the Educational System

Table 9.1: Registered Vacancies*

Year	Number of vacancies at closing day	Number of registered unemployed at closing date	Number of Vacancies for 100 prsn
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

* Monthly average stock figures.
Source: FH.

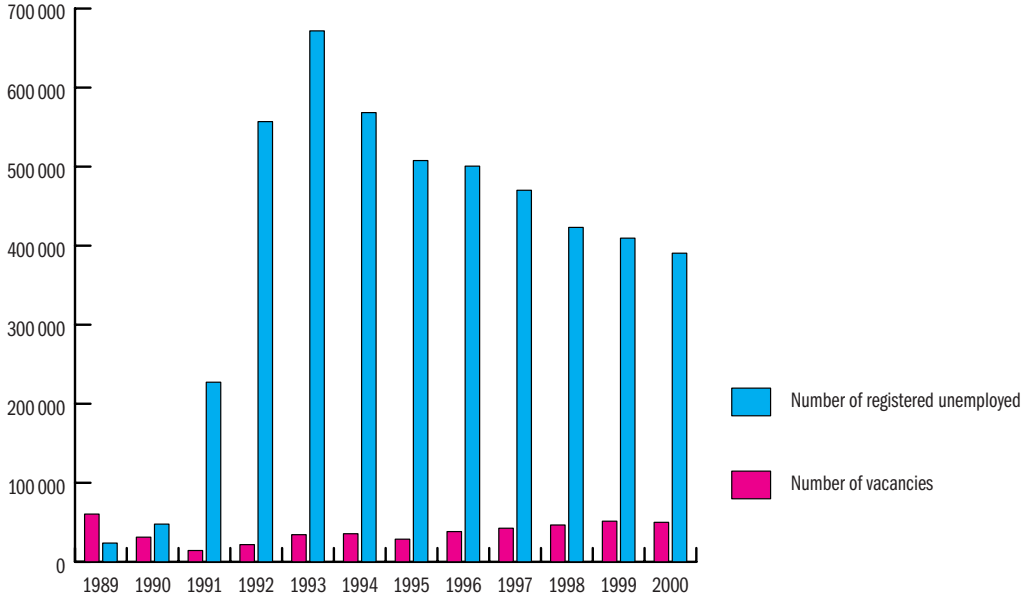


Figure 9.1: Number of Registered Vacancies and Registered Unemployed

Table 9.2: Firms Intending to Increase/Decrease their Staff*

Year	Half year	Intending to decrease	Intending to increase
1992	I.	36.1	10.2
	II.	36.0	15.4
1993	I.	34.7	23.6
	II.	28.5	22.3
1994	I.	24.5	29.1
	II.	21.0	29.7
1995	I.	30.1	32.9
	II.	30.9	27.5
1996	I.	32.9	33.3
	II.	29.4	30.4
1997	I.	29.6	39.4
	II.	30.7	36.8
1998	I.	23.4	42.7
	II.	28.9	37.1
1999	I.	25.8	39.2
	II.	28.8	35.8
2000	I.	24.4	41.0
	II.	27.2	36.5
2001	I.	25.3	40.0
	II.	28.6	32.6

* In a period of six months after the interview date.
Source: FH PROG.

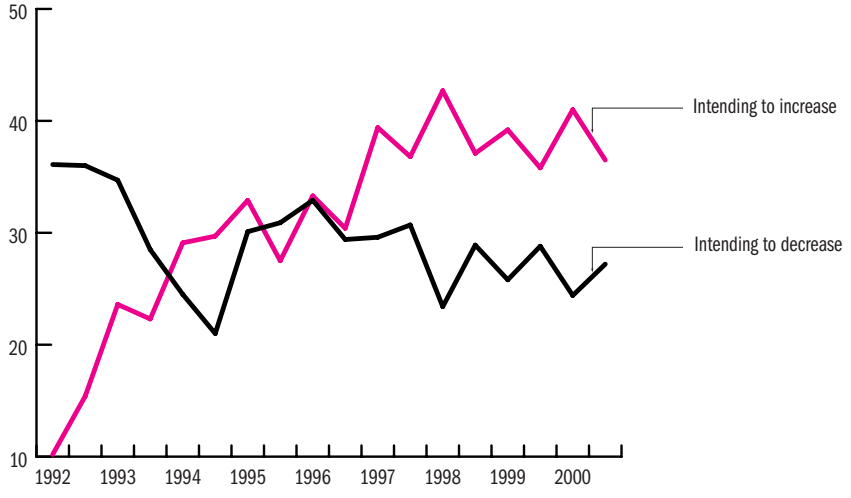


Figure 9.2: Firms Intending to Increase/Decrease their Staff

Table 9.3: Firms Expecting Increasing/Decreasing Orders*

Year	Half year	Orders	
		increasing	decreasing
1992	I.	27.2	40.1
	II.	21.0	38.2
1993	I.	31.8	36.0
	II.	35.9	33.0
1994	I.	38.7	24.8
	II.	45.6	21.7
1995	I.	40.9	23.8
	II.	47.2	20.7
1996	I.	39.8	24.4
	II.	45.5	21.0
1997	I.	42.7	19.4
	II.	47.5	16.7
1998	I.	46.1	15.2
	II.	47.5	18.0
1999	I.	38.7	21.9
	II.	42.2	20.2
2000	I.	38.9	18.3
	II.	49.1	14.9
2001	I.	44.1	16.2
	II.	44.4	19.1

* In a period of six month after the interview date.
Source: FH PROG.

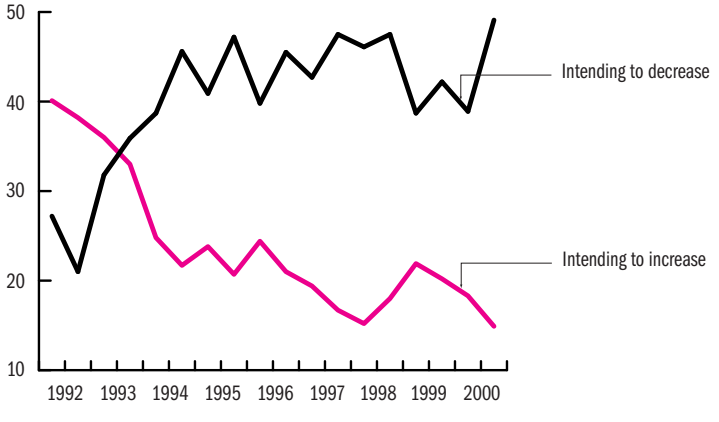


Figure 9.3: Firms Expecting Increasing/Decreasing Orders

Table 9.4: Firms Activating New Capacities*

Year	Halfyear	Building only	Building and/or machinery	Total
1992	I.	...	10.2	10.2
	II.	3.0	11.4	14.4
1993	I.	3.4	14.1	17.5
	II.	3.0	14.7	17.7
1994	I.	3.6	17.7	21.3
	II.	4.1	17.4	21.5
1995	I.	4.2	18.4	22.6
	II.	4.4	18.8	23.2
1996	I.	3.6	20.2	23.8
	II.	4.2	19.5	23.7
1997	I.	3.9	19.2	23.1
	II.	4.7	21.1	25.8
1998	I.	4.4	20.9	25.3
	II.	5.4	23.6	29.0
1999	I.	4.7	20.5	25.2
	II.	5.2	20.9	26.1
2000	I.	4.6	21.1	25.7
	II.	4.4	23.9	28.3
2001	I.	4.0	21.9	25.9
	II.	4.7	22.9	27.6

* In a period of six month after the interview date.
Source: FH PROG .

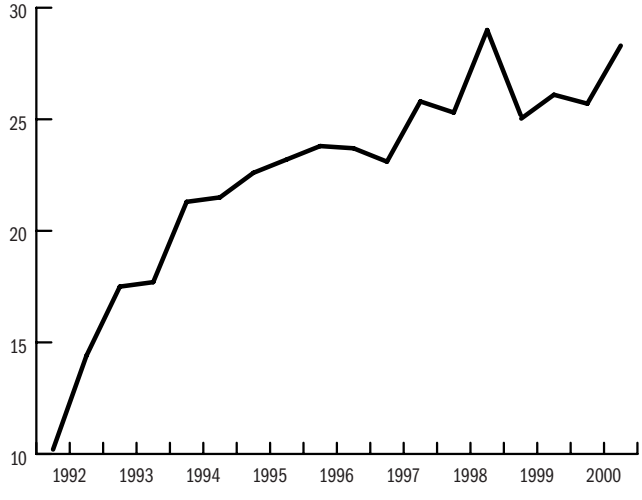


Figure 9.4: Firms Activating New Capacities

Table 10.1: 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	74.4	72.5	75.1	71.8	68.4	67.1	71.9	71.8
1993	71.7	70.3	74.4	68.7	66.6	63.6	68.5	69.3
1994	69.5	68.5	72.9	67.2	63.8	61.8	66.6	67.3
1995	68.3	67.0	70.6	62.5	62.8	60.1	65.8	65.6
1996	68.4	65.8	71.4	62.7	61.4	58.8	64.5	65.0
1997	67.2	65.1	70.8	62.5	60.0	57.3	64.6	64.1
1998	67.2	66.8	72.5	63.5	59.6	57.9	64.7	64.7
1999	69.3	69.3	72.8	64.2	61.3	60.0	65.1	63.8
2000	69.8	69.2	72.5	64.9	61.5	59.8	65.1	66.4
2001	69.9	69.2	71.9	63.5	60.8	59.6	65.7	66.2

* Working age population.
Source: KSH MEF.

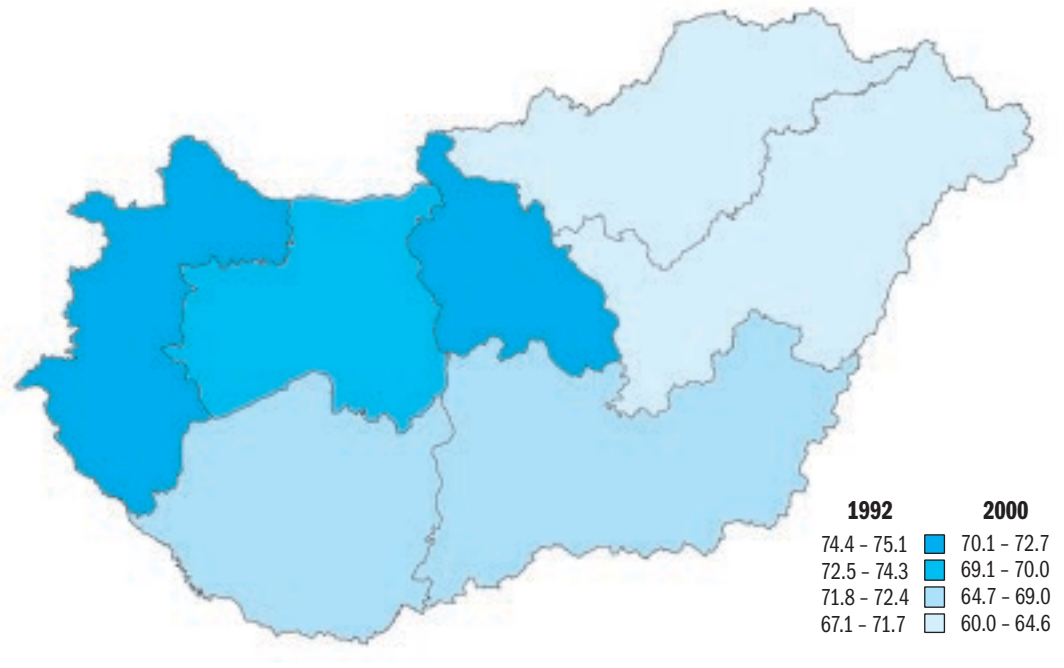


Figure 10.1: Regional Inequalities: Labour Force Participation Rates in NUTS-2 Level Regions, 1992, 2000

Table 10.2: Regional Inequalities: Employment Ratio*

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1992	68.7	63.9	69.5	64.7	58.6	58.6	64.4	64.5
1993	64.6	61.4	67.9	59.8	55.7	54.0	60.0	60.8
1994	63.3	61.0	67.3	59.1	54.0	53.2	59.6	59.9
1995	63.1	59.5	65.7	54.8	52.5	51.7	59.6	58.7
1996	62.7	58.8	66.3	56.7	51.7	51.0	59.1	58.3
1997	62.5	59.7	66.5	56.3	51.5	50.4	59.8	58.4
1998	63.4	62.3	68.2	57.5	52.3	51.4	60.1	59.6
1999	65.6	65.0	69.5	58.8	54.1	53.7	64.3	61.5
2000	66.0	65.8	69.4	59.7	55.1	54.2	61.7	62.0
2001	66.8	66.1	68.8	58.5	55.5	54.8	62.0	62.3

* Working age population.
Source: KSH MEF.

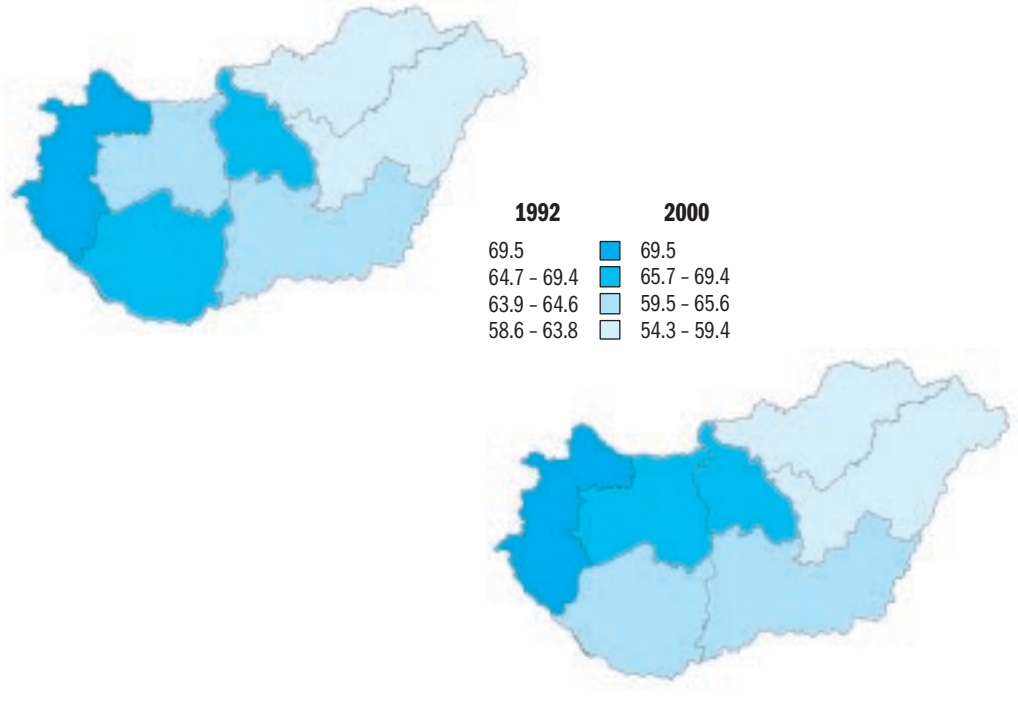


Figure 10.2: Regional Inequalities: Employment Ratio in NUTS-2 Level Regions, 1992, 2000

Table 10.3: 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

* The denominator of the ratio is the active population on January 1st of the previous year.
Source: OMK REG.

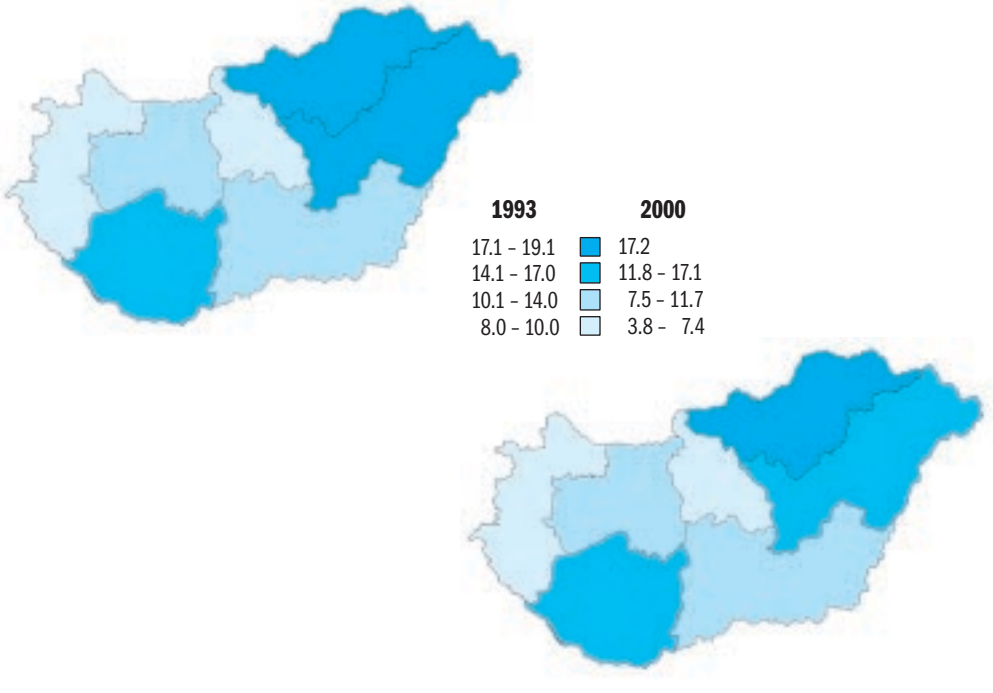


Figure 10.3: Regional Inequalities: Registered Unemployment Rate in NUTS-2 Level Regions, 1993, 2000

Table 10.4: Regional Inequalities: LFS-Based Unemployment Rate

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
1992	7.4	11.4	7.2	9.5	13.9	12.3	10.1	9.8
1993	9.8	12.4	8.9	12.7	15.9	14.6	12.2	11.9
1994	8.7	10.6	7.7	11.8	15.0	13.6	10.5	10.7
1995	7.3	10.8	6.8	11.9	15.8	13.6	9.2	10.2
1996	8.1	10.3	7.1	9.3	15.3	13.0	8.3	9.9
1997	6.9	8.0	6.0	9.9	13.9	11.9	7.3	8.7
1998	5.6	6.7	6.0	9.4	12.2	11.0	7.1	7.8
1999	5.2	6.0	4.4	8.3	11.5	10.1	5.7	7.0
2000	5.2	4.8	4.2	7.8	10.1	9.2	5.1	6.4
2001	4.3	4.3	4.2	7.8	8.5	7.8	5.4	5.7

Source: KSH MEF.

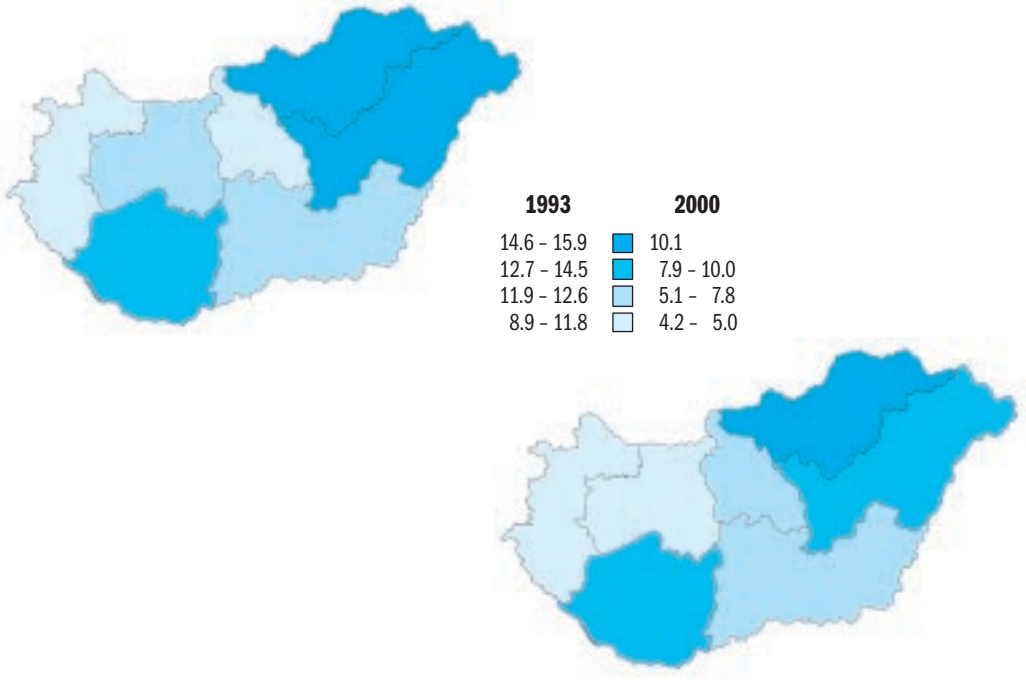


Figure 10.4: Regional Inequalities: LFS-Based Unemployment Rate in NUTS-2 Level Regions, 1992, 2000

Table 10.5: Annual Average of Registered Unemployment Rate by Counties

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Budapest	0.1	1.2	4.6	6.6	5.9	5.7	5.7	4.8	4.0	3.7	3.0	2.6
Baranya	1.1	5.1	11.2	13.2	11.7	11.8	12.2	13.3	11.8	11.6	11.6	11.1
Bács-Kiskun	1.1	5.9	13.4	16.0	13.1	11.0	10.9	10.7	9.7	10.0	10.0	9.3
Békés	1.1	7.4	13.3	16.3	15.1	14.0	14.0	13.5	13.0	13.0	13.1	11.9
Borsod-Abaúj-Zemplén	2.3	8.0	16.7	20.2	17.5	16.7	18.0	19.0	17.9	19.5	20.3	19.0
Csongrád	1.0	4.8	9.8	11.7	10.8	9.9	9.3	9.2	8.1	8.5	8.6	8.3
Fejér	1.0	4.1	10.1	12.5	11.3	10.6	10.4	9.4	8.4	8.3	7.2	6.4
Győr-Moson-Sopron	0.5	2.9	6.9	8.2	7.7	6.8	7.4	6.4	5.1	4.8	4.6	4.1
Hajdú-Bihar	0.9	5.0	11.5	16.6	15.3	14.2	15.6	15.0	14.0	15.6	14.7	13.6
Heves	1.6	6.4	12.7	15.2	13.9	12.5	13.6	12.1	11.7	12.3	12.0	10.6
Jász-Nagykun-Szolnok	1.6	7.0	14.4	17.1	15.8	14.6	14.8	14.8	13.5	13.7	13.4	11.5
Komárom-Esztergom	1.0	4.1	11.5	14.4	12.6	11.3	12.0	11.4	9.8	10.1	8.3	7.0
Nógrád	2.4	9.8	16.8	21.3	17.2	16.3	17.0	16.3	15.6	16.2	14.9	14.3
Pest	0.5	4.4	8.1	11.0	8.1	7.6	7.8	7.3	6.3	6.0	5.2	4.4
Somogy	1.4	5.2	9.2	11.6	10.9	11.2	12.5	12.7	11.3	12.2	11.9	11.6
Szabolcs-Szatmár-Bereg	2.6	10.7	18.9	20.6	19.3	19.3	19.7	18.9	17.2	18.7	19.5	17.8
Tolna	1.6	6.5	12.1	14.7	13.4	12.2	13.4	13.5	12.3	12.9	11.8	11.0
Vas	0.4	2.9	7.3	9.1	8.3	7.2	7.2	6.7	5.6	5.6	5.2	4.9
Veszprém	0.9	4.9	9.9	11.9	10.9	10.0	9.9	9.2	7.9	8.2	7.2	6.9
Zala	0.8	3.9	7.7	10.3	9.8	9.2	9.8	9.2	8.1	7.7	7.2	6.5
Country	1.0	4.1	10.3	12.9	11.3	10.6	11.0	10.5	9.5	9.7	9.3	8.5

Source: FH REG.

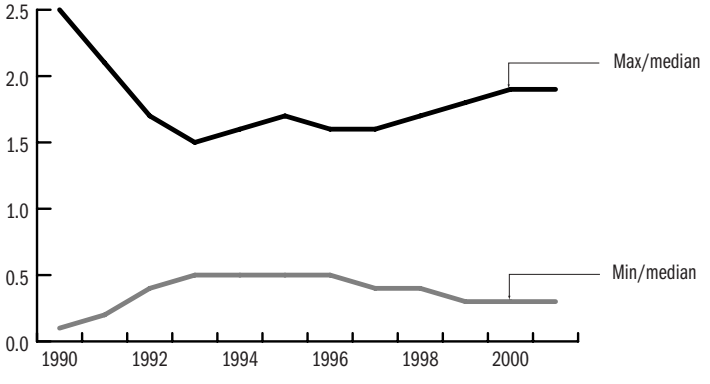


Figure 10.5: Regional Inequalities: Unemployment Rates in the Counties

Table 10.6: The Average Monthly Per Capita Earnings in Budapest and in the Counties

	1994		1996		1998		2001	
County	HUF/month	%	HUF/month	%	HUF/month	%	HUF/month	%
Budapest	45,180	126.8	60,870	127.8	90,949	131.0	140,312	135.4
Baranya	32,445	91.1	43,955	92.3	63,391	91.3	89,479	86.4
Bács-Kiskun	30,124	84.6	40,477	85.0	57,325	82.6	83,432	80.5
Békés	30,725	86.3	40,428	84.9	57,433	82.7	79,718	76.9
Borsod-Abaúj-Zemplén	32 260	90.6	41,512	87.1	61,295	88.3	89,223	86.1
Csongrád	33,057	92.8	42,855	90.0	60,780	87.6	90,367	87.2
Fejér	37,068	104.1	50,129	105.2	73,592	106.0	108,290	104.5
Győr-Moson-Sopron	34 666	97.3	47,327	99.4	68,684	98.9	103,371	99.8
Hajdú-Bihar	31,978	89.8	42,517	89.3	58,907	84.9	87,352	84.3
Heves	33,033	92.7	43,699	91.7	62,163	89.6	92,861	89.6
Komárom-Esztergom	33 648	94.5	46,139	96.9	66,564	95.9	98,494	95.1
Nógrád	29,023	81.5	38,287	80.4	53,855	77.6	80,158	77.4
Pest	32,417	91.0	46,009	96.6	67,768	97.6	103,871	100.3
Somogy	29,791	83.6	41,151	86.4	56,888	82.0	80,440	77.6
Szabolcs-Szatmár-Bereg	30,675	86.1	39,441	82.8	56,218	81.0	79,937	77.2
Jász-Nagykun-Szolnok	30,554	85.8	41,807	87.8	59,441	85.6	89,393	84.3
Tolna	33,729	94.7	44,220	92.8	61,594	88.7	90,583	87.4
Vas	30,443	85.5	41,668	87.5	60,840	87.6	92,492	89.3
Veszprém	33,142	93.0	43,578	91.5	63,474	91.4	91,189	88.0
Zala	32,307	90.7	43,314	90.9	61,866	89.1	89,252	86.1
Total	35,620	100.0	47,633	100.0	69,415	100.0	103,610	100.0

Source: FH BT (The earning structure survey of NLC/NEO).

Table 10.7: Registered Unemployment in Counties and in Service Areas of Labour Centers

Regions	May 2000			May 2001			
	Registered unemployed	Active population	Unemployment rate (%)	Registered unemployed	Active population	Unemployment rate (%)	Change of the rate (%)
Budapest	**24,833**	**806,800**	**3.1**	**21,616**	**809,500**	**2.7**	**-0.4**
Baranya	**18,238**	**160,200**	**11.4**	**18,173**	**163,900**	**11.1**	**-0.3**
Pécs	4,437	71,966	6.0	4,390	73,670	6.0	-0.1
Komló	3,775	27,322	13.6	3,575	27,859	12.8	-0.7
Mohács	2,832	21,472	12.9	2,495	21,961	11.4	-1.5
Siklós	2,161	16,276	13.0	2,367	16,683	14.2	1.2
Sellye	1,603	5,764	27.1	1,918	5,915	32.4	5.3
Szigetvár	2,430	11,189	21.3	2,441	11,405	21.4	0.1
Szentlőrinc	1,000	6,211	15.6	987	6,407	15.4	-0.2
Bács-Kiskun	**22,156**	**222,200**	**10.0**	**21,323**	**228,200**	**9.3**	**-0.6**
Kecskemét	4,978	63,132	7.9	5,539	64,837	8.5	0.7
Baja	3,526	32,332	10.9	3,411	33,205	10.3	-0.6
Kalocsa	2,900	24,088	12.0	2,650	24,738	10.7	-1.3
Kiskőrös	1,906	21,073	9.0	1,827	21,642	8.4	-0.6
Kiskunfélegyháza	1,575	20,048	7.9	1,460	20,589	7.1	-0.8
Kiskunhalas	1,686	19,981	8.4	1,629	20,521	7.9	-0.5
Bácsalmás	1,933	13,862	13.9	1,851	14,236	13.0	-0.9
Kiskunmajsa	1,097	8,411	13.0	865	8,638	10.0	-3.0
Kunszentmiklós	1,777	11,588	15.3	1,431	11,901	12.0	-3.3
Tiszakécske	778	7,685	10.1	660	7,893	8.4	-1.8
Békés	**20,988**	**153,500**	**13.7**	**19,191**	**156,701**	**12.2**	**-1.4**
Békéscsaba	3,903	41,810	9.3	3,453	42,682	8.1	-1.2
Békéscsaba	1,792	9,970	18.0	1,609	10,178	15.8	-2.2
Gyula	2,993	23,633	12.7	2,821	24,126	11.7	-1.0
Orosháza	2,793	23,688	11.8	2,190	24,182	9.1	-2.7
Szarvas	962	12,317	7.8	809	12,574	6.4	-1.4
Szeghalom	3,386	14,344	23.6	3,292	14,643	22.5	-1.1
Gyomaendrőd	1,406	10,042	14.0	1,378	10,251	13.4	-0.6
Mezőkovácsháza	3,753	17,696	21.2	3,639	18,065	20.1	-1.1
Borsod-Abaúj-Zemplén	**55,785**	**276,513**	**20.2**	**54,900**	**282,899**	**19.4**	**-0.8**
Miskolc	14,812	102,509	14.4	14,447	104,877	13.8	-0.7
Encs	2,912	8,365	34.8	2,892	8,558	33.8	-1.0
Kazincbarcika	7,029	32,284	21.8	6,923	33,030	21.0	-0.8
Tiszaújváros	1,888	13,332	14.2	1,879	13,640	13.8	-0.4
Mezőkövesd	2,065	16,756	12.3	1,880	17,143	11.0	-1.4
Ózd	5,058	23,681	21.4	4,921	24,228	20.3	-1.0
Sárospatak	2,592	10,934	23.7	2,754	11,186	24.6	0.9
Sátoraljaújhely	3,558	14,841	24.0	3,167	15,184	20.9	-3.1
Szerencs	4,914	17,838	27.5	5,168	18,250	28.3	0.8
Edelény	3,864	12,097	31.9	3,800	12,377	30.7	-1.2
Szikszó	2,222	7,327	30.3	2,250	7,496	30.0	-0.3

Regions	May 2000			May 2001			
	Registered unemployed	Active population	Unemployment rate (%)	Registered unemployed	Active population	Unemployment rate (%)	Change of the rate (%)
Tokaj	1,204	4,875	24.7	1,182	4,987	23.7	-1.0
Putnok	1,003	3,752	26.7	1,034	3,838	26.9	0.2
Gönc	1,051	2,471	42.5	1,058	2,528	41.9	-0.7
Mezőcsát	1,613	5,451	29.6	1,545	5,577	27.7	-1.9
Csongrád	**14,508**	**181,200**	**8.0**	**14,913**	**177,800**	**8.4**	**0.4**
Szeged	5,783	83,352	6.9	6,525	81,787	8.0	1.0
Csongrád	984	11,683	8.4	888	11,464	7.7	-0.7
Hódmezővásárhely	2,165	25,653	8.4	2,224	25,172	8.8	0.4
Makó	2,421	22,700	10.7	2,305	22,273	10.3	-0.3
Szentes	1,543	20,125	7.7	1,293	19,748	6.5	-1.1
Kistelek	772	8,877	8.7	765	8,711	8.8	0.1
Mórahalom	840	8,810	9.5	913	8,645	10.6	1.0
Fejér	**13,898**	**190,200**	**7.3**	**12,190**	**192,100**	**6.3**	**-1.0**
Székesfehérvár	5,764	81,000	7.1	4,619	81,800	5.6	-1.5
Dunaújváros	2,567	40,100	6.4	2,386	40,500	5.9	-0.5
Mór	719	13,100	5.5	660	13,300	5.0	-0.5
Bicske	774	13,700	5.6	588	13,800	4.3	-1.4
Gárdony	709	12,600	5.6	617	12,700	4.9	-0.8
Sárbogárd	1,347	10,700	12.6	1,290	10,800	11.9	-0.6
Ercsi	913	9,700	9.4	861	9,800	8.8	-0.6
Enying	1,105	9,300	11.9	1,169	9,400	12.4	0.6
Győr-Moson-Sopron	**8,785**	**192,000**	**4.6**	**7,771**	**194,800**	**4.0**	**-0.6**
Győr	4,176	83,350	5.0	3,916	85,000	4.6	-0.4
Kapuvár	840	16,550	5.1	589	16,800	3.5	-1.6
Mosonmagyaróvár	1,318	30,550	4.3	1,147	31,100	3.7	-0.6
Sopron	1,054	32,800	3.2	869	33,050	2.6	-0.6
Csorna	764	16,950	4.5	696	17,050	4.1	-0.4
Tét	633	11,800	5.4	554	11,800	4.7	-0.7
Hajdú-Bihar	**31,331**	**218,300**	**14.4**	**30,916**	**223,000**	**13.9**	**-0.5**
Debrecen	10,133	100,581	10.1	9,643	102,747	9.39	-0.7
Berettyóújfalu	2,035	13,649	14.9	2,060	13,943	14.8	-0.1
Püspökladány	2,933	17,006	17.2	3,241	17,372	18.7	1.4
Hajdúböszörmény	1,814	12,568	14.4	1,488	12,839	11.6	-2.8
Hajdúnánás	2,201	11,885	18.5	2,451	12,140	20.2	1.7
Hajdúszoboszló	2,292	17,250	13.3	2,259	17,622	12.8	-0.5
Balmazújváros	1,817	10,501	17.3	1,643	10,727	15.3	-2.0
Hajdúhadház	2,132	7,212	29.6	2,103	7,367	28.5	-1.0
Polgár	1,330	6,584	20.2	1,443	6,726	21.5	1.3
Biharkeresztes	733	3,359	21.8	769	3,432	22.4	0.6
Komádi	936	3,471	27.0	990	3,545	27.9	1.0
Vámospércs	1,634	6,685	24.4	1,507	6,829	22.1	-2.4
Létavértes	1,341	7,549	17.8	1,319	7,711	17.1	-0.7

Regions	May 2000			May 2001			
	Registered unemployed	Active population	Unemployment rate (%)	Registered unemployed	Active population	Unemployment rate (%)	Change of the rate (%)
Heves	**15,106**	**125,300**	**12.1**	**14,092**	**131,600**	**10.7**	**-1.3**
Eger	4,038	42,000	9.6	3,976	44,000	9.0	-0.6
Gyöngyös	3,069	31,300	9.8	2,993	32,900	9.1	-0.7
Hatvan	2,515	21,900	11.5	2,125	23,000	9.2	-2.2
Heves	2,695	13,000	20.7	2,513	13,700	18.3	-2.4
Füzesabony	1,687	11,700	14.4	1,552	12,300	12.6	-1.8
Pétervására	1,102	5,400	20.4	933	5,700	16.4	-4.0
Jász-Nagykun-Szolnok	**21,351**	**161,400**	**13.2**	**19,013**	**166,000**	**11.5**	**-1.8**
Szolnok	6,894	59,580	11.6	5,377	60,580	8.9	-2.7
Jászberény	2,336	30,900	7.6	2,089	31,900	6.5	-1.0
Karcag	2,496	16,100	15.5	2,108	16,600	12.7	-2.8
Mezőtúr	1,624	11,500	14.1	1,510	12,100	12.5	-1.6
Tiszafüred	1,909	8,100	23.6	1,745	8,500	20.5	-3.0
Törökszentmiklós	2,306	16,300	14.1	2,142	16,800	12.8	-1.4
Kunszentmárton	1,787	9,220	19.4	1,712	9,620	17.8	-1.6
Kunhegyes	1,999	9,700	20.6	2,330	9,900	23.5	2.9
Komárom-Esztergom	**11,416**	**135,100**	**8.5**	**9,617**	**137,100**	**7.0**	**-1.4**
Dorog	1,501	16,870	8.9	1,114	17,120	6.5	-2.4
Esztergom	1,863	23,710	7.9	1,583	24,060	6.6	-1.3
Komárom	1,258	18,350	6.9	1,151	18,620	6.2	-0.7
Oroszlány	1,307	12,180	10.7	1,153	12,360	9.3	-1.4
Tata	1,512	16,870	9.0	1,285	17,120	7.5	-1.5
Tatabánya	3,208	38,680	8.3	2,699	39,250	6.9	-1.4
Kisbér	767	8,440	9.1	632	8,570	7.4	-1.7
Nógrád	**13,500**	**88,300**	**15.3**	**12,980**	**89,400**	**14.5**	**-0.8**
Salgótarján	5,266	26,728	19.7	4,899	27,010	18.1	-1.6
Balassagyarmat	1,982	17,430	11.4	1,879	17,686	10.6	-0.7
Pásztó	1,470	13,682	10.7	1,466	13,855	10.6	-0.2
Szécsény	1,667	9,274	18.0	1,632	9,372	17.4	-0.6
Bátonyterenye	1,982	11,075	17.9	2,065	11,169	18.5	0.6
Rétság	1,133	10,111	11.2	1,039	10,308	10.1	-1.1
Pest	**22,266**	**428,100**	**5.2**	**20,180**	**445,000**	**4.5**	**-0.7**
Cegléd	2,725	38,269	7.1	2,589	39,787	6.5	-0.6
Érd	1,721	33,424	5.1	1,627	34,747	4.7	-0.5
Gödöllő	2,907	59,638	4.9	2,651	62,007	4.3	-0.6
Nagykőrös	1,180	13,445	8.8	809	13,977	5.8	-3.0
Szentendre	1,193	27,087	4.4	1,015	28,165	3.6	-0.8
Vác	2,914	61,502	4.7	2,844	63,936	4.4	-0.3
Budaörs	787	38,746	2.0	691	40,271	1.7	-0.3
Dabas	2,135	34,054	6.3	1,979	35,392	5.6	-0.7
Monor	2,098	45,076	4.7	1,788	46,846	3.8	-0.8
Nagykáta	1,794	23,652	7.6	1,830	24,580	7.4	-0.1

Regions	May 2000			May 2001			
	Registered unemployed	Active population	Unemployment rate (%)	Registered unemployed	Active population	Unemployment rate (%)	Change of the rate (%)
Szigetszentmiklós	1,147	28,696	4.0	933	29,825	3.1	-0.9
Ráckeve	1,196	17,664	6.8	992	18,355	5.4	-1.4
Zsámbék	469	6,847	6.8	432	7,112	6.1	-0.8
Somogy	**16,196**	**132,300**	**12.2**	**15,942**	**137,000**	**11.6**	**-0.6**
Barcs	2,134	10,730	19.9	2,148	11,100	19.4	-0.5
Kaposvár	5,392	45,150	11.9	5,060	46,750	10.8	-1.1
Marcali	1,514	11,840	12.8	1,554	12,250	12.7	-0.1
Nagyatád	2,026	13,570	14.9	2,071	14,050	14.7	-0.2
Siófok	1,706	19,870	8.6	1,613	20,600	7.8	-0.8
Balatonboglár	1,444	17,240	8.4	1,459	17,850	8.2	-0.2
Csurgó	1,101	7,200	15.3	1,147	7,450	15.4	0.1
Tab	879	6,700	13.1	890	6,950	12.8	-0.3
Szabolcs-Szatmár-Bereg	**40,094**	**202,600**	**19.8**	**38,648**	**209,700**	**18.4**	**-1.4**
Kisvárda	5,025	29,000	17.3	4,886	30,000	16.3	-1.0
Mátészalka	5,319	24,100	22.1	5,144	24,900	20.7	-1.4
Nyírbátor	3,841	15,800	24.3	4,009	16,300	24.6	0.3
Nyíregyháza	11,061	73,000	15.2	10,187	75,600	13.5	-1.7
Fehérgyarmat	3,705	14,200	26.1	3,530	14,700	24.0	-2.1
Vásárosnamény	3,827	13,400	28.6	3,208	13,900	23.1	-5.5
Tiszavasvári	1,935	10,200	19.0	2,185	10,500	20.8	1.8
Csenger	1,359	5,000	27.2	1,605	5,200	30.9	3.7
Nagykálló	2,475	11,100	22.3	2,154	11,500	18.7	-3.6
Baktalórántháza	1,547	6,800	22.8	1,740	7,100	24.5	1.8
Tolna	**11,963**	**103,200**	**11.6**	**11,404**	**103,400**	**11.0**	**-0.6**
Bonyhád	1,167	13,297	8.8	1,169	13,322	8.8	0.0
Dombóvár	1,898	14,583	13.0	1,716	14,611	11.7	-1.3
Paks	2,024	19,148	10.6	1,855	19,185	9.7	-0.9
Tamási	2,251	16,476	13.7	2,143	16,508	13.0	-0.7
Szekszárd	3,391	31,151	10.9	3,299	31,212	10.6	-0.3
Tolna	1,232	8,545	14.4	1,222	8,562	14.3	-0.1
Vas	**6,181**	**124,100**	**5.0**	**6,145**	**127,600**	**4.8**	**-0.2**
Celldömölk	661	12,410	5.3	685	12,760	5.4	0.0
Körmend	667	13,651	4.9	671	14,036	4.8	-0.1
Kőszeg	571	10,921	5.2	522	11,229	4.6	-0.6
Sárvár	873	19,484	4.5	1,021	20,033	5.1	0.6
Szentgotthárd	470	6,825	6.9	400	7,018	5.7	-1.2
Szombathely	2,403	53,984	4.5	2,331	55,506	4.2	-0.3
Vasvár	536	6,825	7.9	515	7,018	7.3	-0.5
Veszprém	**11,262**	**165,700**	**6.8**	**11,206**	**167,900**	**6.7**	**-0.1**
Ajka	2,194	25,918	8.5	2,038	26,411	7.7	-0.7
Balatonfüred	386	9,877	3.9	476	9,832	4.8	0.9
Pápa	1,962	27,992	7.0	2,130	28,566	7.5	0.4

Regions	May 2000			May 2001			
	Registered unemployed	Active population	Unemployment rate (%)	Registered unemployed	Active population	Unemployment rate (%)	Change of the rate (%)
Sümeg	788	8,120	9.7	761	8,249	9.2	-0.5
Tapolca	1,133	16,816	6.7	1,001	16,813	6.0	-0.8
Várpalota	1,268	16,829	7.5	1,423	17,107	8.3	0.8
Zirc	843	11,676	7.2	715	11,762	6.1	-1.1
Veszprém	2,122	38,218	5.6	2,139	38,913	5.5	-0.1
Balatonalmádi	566	10,255	5.5	523	10,248	5.1	-0.4
Zala	**9,774**	**135,800**	**7.2**	**8,742**	**137,800**	**6.3**	**-0.9**
Keszthely	1,147	20,400	5.6	1,091	20,600	5.3	-0.3
Lenti	734	11,200	6.6	774	11,400	6.8	0.2
Nagykanizsa	3,534	38,500	9.2	2,934	39,000	7.5	-1.7
Zalaegerszeg	2,860	49,000	5.8	2,626	49,800	5.3	-0.6
Zalaszentgrót	693	8,500	8.2	535	8,650	6.2	-2.0
Letenye	806	8,200	9.8	782	8,350	9.4	-0.5
Hungary total	**389,631**	**4,,202,813**	**9.3**	**368,962**	**4,281,400**	**8.6**	**-0.7**

Source: FH, KSH.

Table 10.8: Regional Inequalities: Earnings*

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
HUF								
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
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

* 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 (1995–98) and 5 workers (1999–2000), respectively.

Source: FH BT.

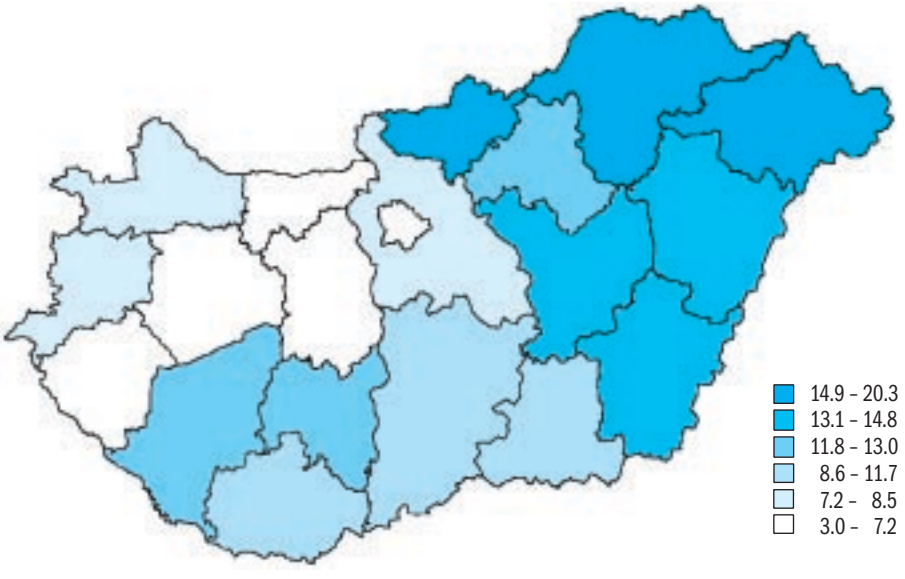


Figure 10.6: Average of Registered Unemployment Rate by Counties, 2000

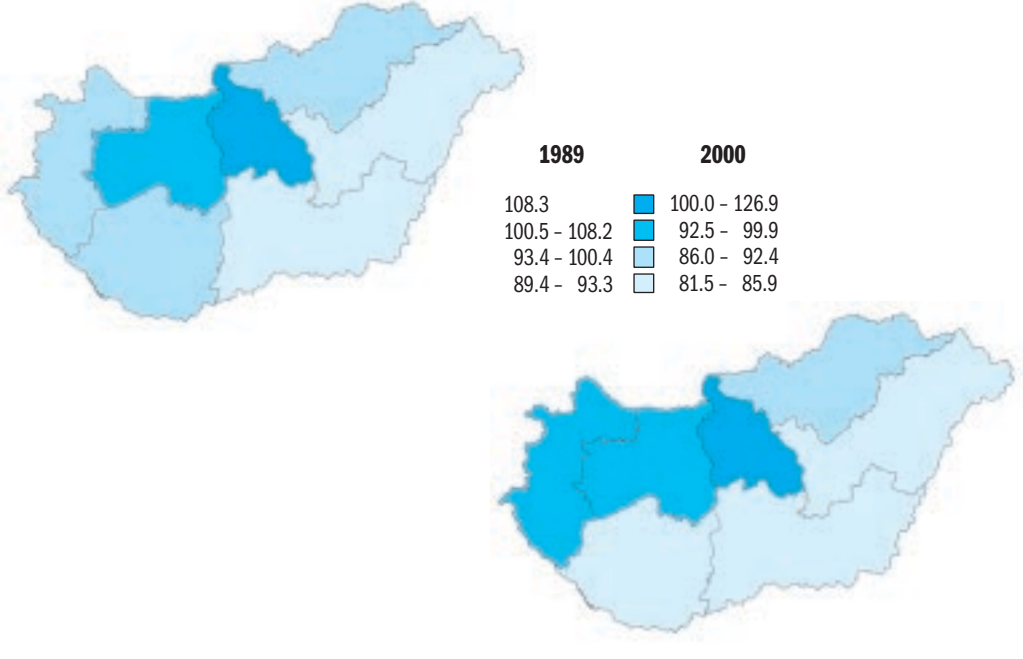


Figure 10.7: Regional Inequalities: Earnings, 1989, 2000

Table 10.9: Regional Inequalities: Gross Domestic Product

Year	Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain	Total
Per capita, HUF								
1994	619	367	428	357	296	314	354	425
1995	792	497	565	448	400	391	457	549
1996	993	621	710	541	467	476	549	676
1997	1,254	807	885	653	566	581	655	841
1998	1,474	978	1,102	770	678	675	761	997
1999	1,710	1,061	1,031	880	751	726	843	1,132
2000	1,997	1,318	1,494	982	847	832	943	1,312
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	100.5	113.9	74.8	64.6	63.4	71.8	100.0

Source: KSH.

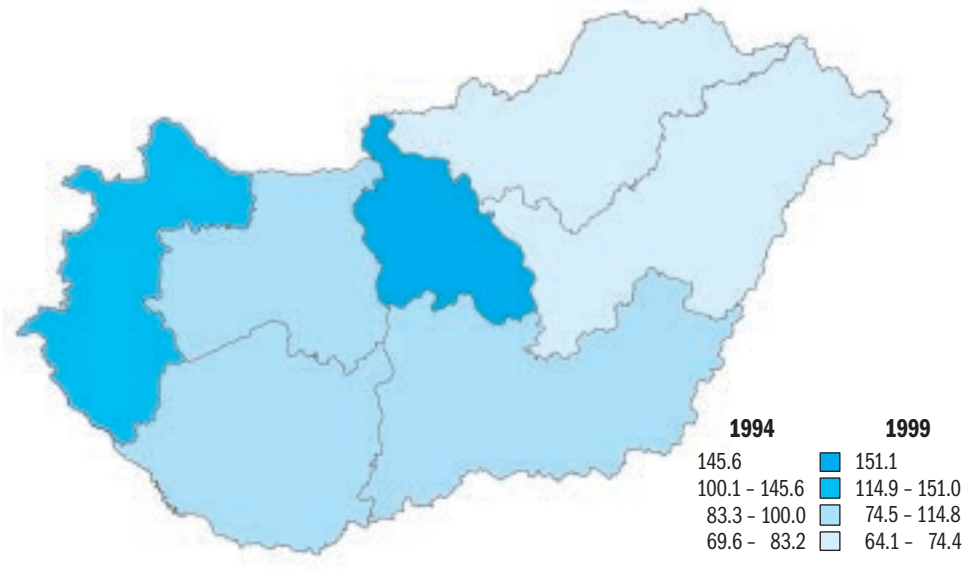


Figure 10.8: Regional Inequalities: Gross Domestic Product, 1994, 1999

Table 11.1: Domestic Migration

Year	Number of changes of dwelling (permanent migrations) in thousands	Number of 15–55/59 years old persons changing dwelling as a percentage of the 15–55/59 years old population
1998	204,058	2.2
1990	213,625	2.4
1991	188,381	2.1
1992	204,641	2.3
1993	207,839	2.3
1994	209,075	2.3
1995	210,909	2.3
1996	208,971	2.2
1997	219,837	2.3
1998	224,208	2.4
1999	220,000	2.4
2000	229,000	2.5
2001	219,000	2.2

Source: Population register.

Table 11.2: Commuting

	Working in the residence		Commuter	
Year	in thousands	%	in thousands	%
1980	3,850.4	76.0	1,218.4	24.0
1990	3,381.6	74.7	1,145.6	25.3
1996	2,598.1	74.6	886.7	25.4

Note: The data refer to persons classified as ‘active wage earners’.
Source: 1980, 1990: NSZ, 1996: MC.

Table 11.3: 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

Source: FH, based on reports by regional labour centres.

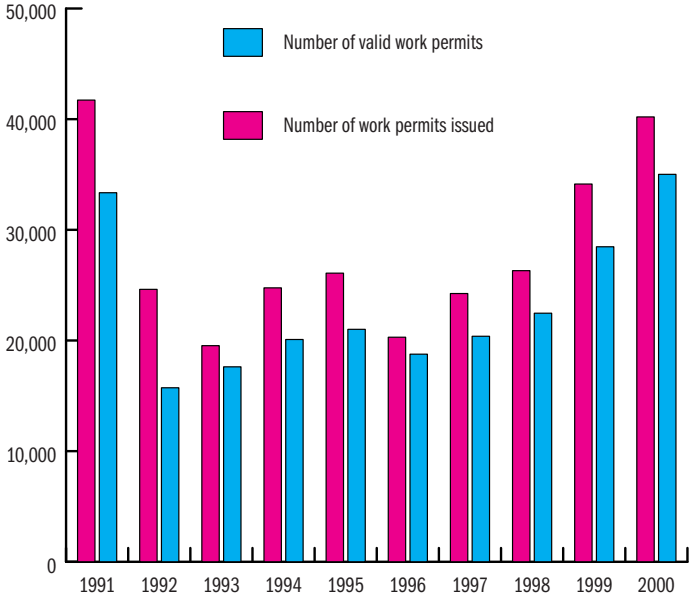


Figure 11.1: Work Permit Issued to Foreign Citiziens

Table 11.4: Labour Turnover*

Year	Number	Share
1989	628,529	14.1
1990	448,484	10.8
1991	315,705	8.5
1992	...	...
1993	...	...
1994	175,995	4.7
1995	219,359	6.0
1996	269,635	7.4
1997	212,383	5.8
1998	216,593	5.9
1999	189,770	5.0
2000	192,483	4.9
2001	182,202	4.7

* Persons changing employer during the year.
Note: Data before and after 1992 are not comparable.
Source: 1989–91: KSH IMS; 1994–98: KSH MEF, supplementary survey.

Table 12.1: Strikes

Year	Number of strikes	Number of involved persons	Hours were 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[1]	1,708[1]
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

1 Teachers strikes number partly estimated.

Table 12.2: Employees by Usual Weekly Working Time, 2000 (per cent)

Number of hours	Males	Females	Together
1–14	0.3	0.4	0.3
15–35	2.2	7.6	4.6
36–40	62.0	73.5	67.3
41–42	4.1	4.6	4.3
43–50	11.1	6.6	9.1
51+	6.4	2.0	4.4
Very varying	14.0	5.3	10.0
Total	100.0	100.0	100.0

Source: KSH MEF.

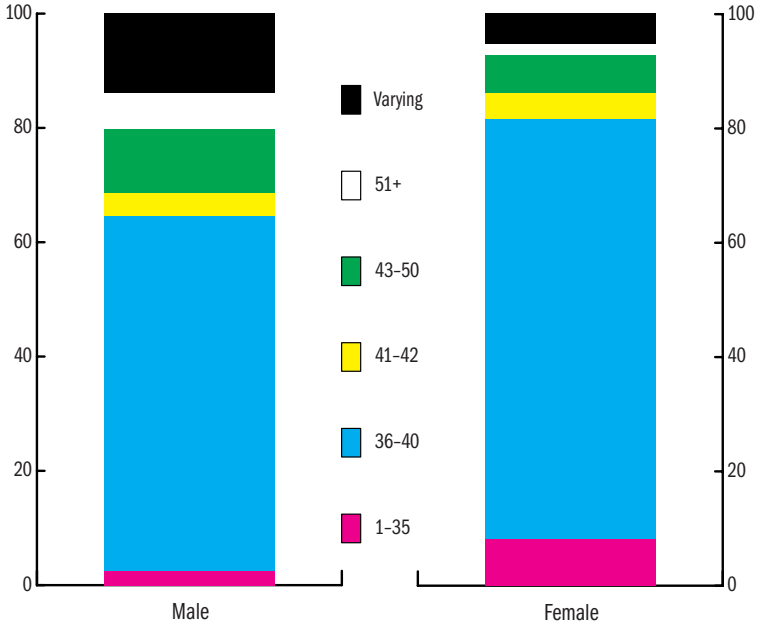


Figure 12.1: Employees by Usual Weekly Working Time, 2000

Table 13.1: Unemployment Rate by Age and Sex and Length of Unemployment, 2001 (per cent)

Country	Unemployment rate			of which	Long-term
	male	female	together	15–24 ages	unemployment rate
Hungary	6.3	4.9	5.7	10.5	2.5
Czech Republic	6.7	9.6	8.0	16.3	4.1
Poland	17.0	20.0	18.4	41.5	9.2
Roumania	7.0	6.0	6.6	17.6	3.2
Slovenia	5.4	6.0	5.7	15.7	3.6
Slovak Republic	20.1	18.6	19.4	38.9	11.3
EU-15 average	6.4	8.7	7.4	14.9	3.3
Ireland	3.9	3.7	3.8	6.6	1.3
Portugal	3.2	5.1	4.1	9.3	1.5
Spain	7.5	15.5	10.6	21.5	5.1
Italy	7.3	12.9	9.4	28.1	5.9
Greece	6.7	15.4	10.2	28.1	5.4

Source: Employment in Europe 2001. Recent Trends and Prospects. European Commision. Luxemburg. 2001.

Figure 13.1: Unemployment Rate by Sex and Long Term Unemployment Rate, 2000

Table 13.2: Employment Rate by Age and Sex and Length of Unemployment, 2001 (population aged 15–64, per cent)

Country	Employment rate			Long-term unemployment rate
	male	female	together	
Hungary	63.3	49.6	56.3	31.4
Czech Republic	73.2	57.0	65.0	34.4
Poland	29.2	48.4	53.8	21.4
Roumania	68.6	58.2	63.3	32.7
Slovenia	68.5	58.6	63.6	30.3
Slovak Republic	61.8	51.8	56.7	27.7
EU-15 average	73.0	54.9	63.9	40.7
Ireland	76.4	55.0	65.7	49.6
Portugal	76.9	61.1	68.9	43.8
Spain	70.7	41.9	56.3	33.1
Italy	68.5	41.1	54.8	26.3
Greece	70.8	40.9	55.4	26.0

Source: Employment in Europe 2001. Recent Trends and Prospects. European Commision, Luxemburg, 2001.

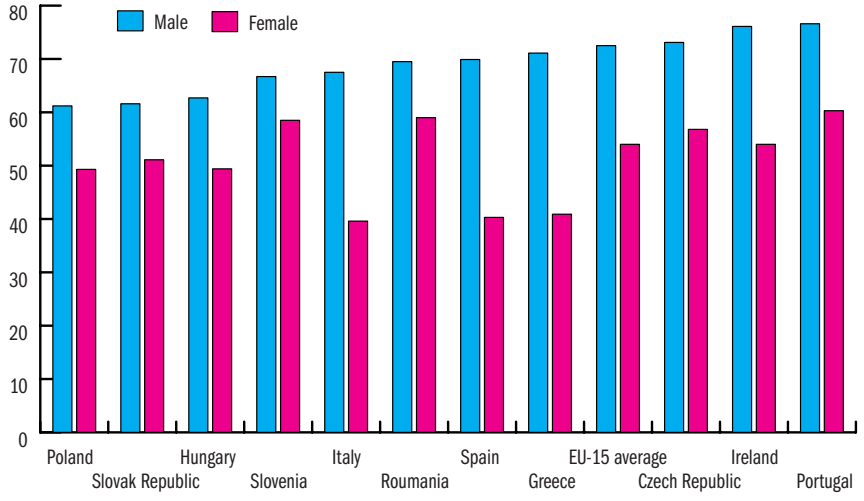


Figure 13.2: Employment Rate by Population (aged 15–64), 2000

Table 13.3: Composition of Employed Population, 2001 (15–64 ages, per cent)

Country	Self employed	Part time	Fix term contr.	Service	Industry	Agriculture
Hungary	13.9	3.3	6.4	59.4	34.5	6.1
Czech Republic	14.6	4.3	6.9	54.6	40.5	4.9
Poland	22.5	9.5	8.6	50.1	30.7	19.2
Roumania	25.7	16.8	1.6	29.7	25.8	44.4
Slovenia	11.8	6.1	10.8	51.4	38.6	9.9
Slovak Republic	8.4	2.3	4.6	56.7	37.1	6.3
EU-15 average	14.8	17.9	13.4	69.4	26.4	4.2
Ireland	17.6	16.5	3.7	64.0	29.0	7.0
Portugal	28.5	10.8	20.6	58.5	30.6	10.9
Spain	16.4	8.1	31.7	63.8	29.8	6.5
Italy	25.8	8.4	9.8	65.8	29.4	4.8
Greece	43.3	4.0	12.6	59.5	24.2	16.3

Source: Employment in Europe 2001. Recent Trends and Prospects. European Commision, Luxemburg, 2001.

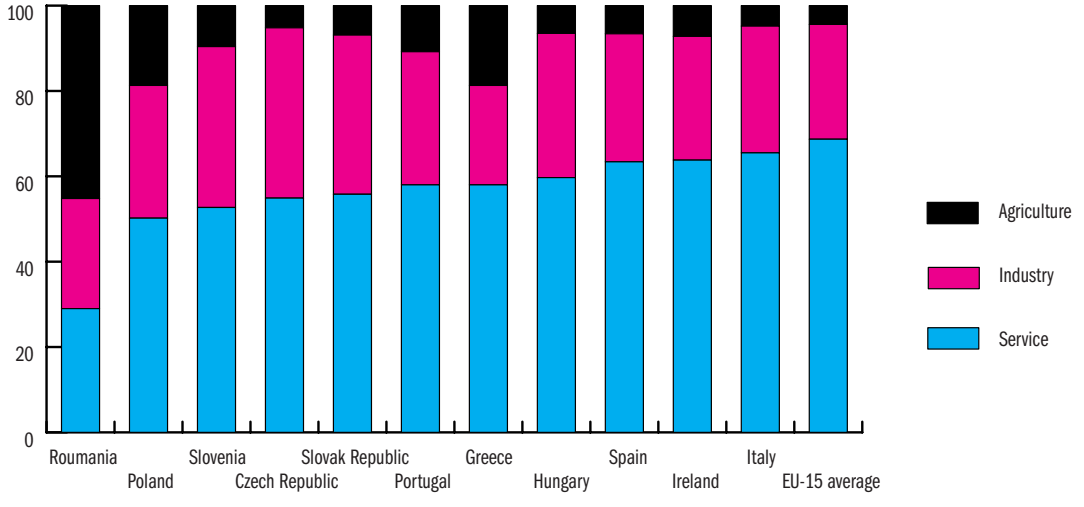


Figure 13.3: Composition of Employed Population, 2000

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 settlements 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% 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 1 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 statistic

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 percen in the same period t.

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 administra-

tive 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 useful 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 surwey 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%) 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 organisations, (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 con-

taining 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 closing day 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.

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