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COMPETITIVENESS AND THE LABOUR MARKET

This paper was produced as part of the research project entitled ‘Economic competitiveness: recent trends and options for state intervention’

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This paper reflects the views of the author and
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Summary

competitiveness of the labour market	<p>If competitiveness is defined as growth potential, the contribution of human resources to economic competitiveness is determined by the size and skills of the labour force and the flexibility of the labour market. This paper aims to review available statistics and research and identify the major constraints on competitiveness and provide a starting point for subsequent research (see recommendations at the end).</p>
low activity rate	<p>In Hungary, 60% of the working age population are in employment or looking for work. The activity rate is especially low among those aged 55-64, which is to a large extent due to an increased inflow into old-age pension and pension-type benefit schemes.</p>
fast productivity growth – and increasing wages	<p>Wages in the business sector responded sensitively to increases in the minimum wage and public sector salaries. Labour demand also proved relatively flexible: after the wage increases, employment declined in the most labour intensive subsectors of manufacturing. Though productivity tended to increase faster than real wages throughout the 1990s, this trend reversed in recent years due to the wage increases induced by the public sector. With moderate wage rises in neighbouring countries, the wage cost advantage of Hungary has diminished.</p>
low mobility – regional disparities	<p>The geographical mobility of labour is low, which is mainly explained by the high costs of relocation and of commuting. Despite the low mobility, regional disparities in employment and unemployment have narrowed, which might indicate that the relatively cheaper labour of high-unemployment regions has attracted more capital, so that labour demand rose somewhat faster in these regions. However, regional disparities in earnings have increased, which may be attributed to the wage advantage of qualified labour. The skills composition of the labour force is relatively poor in high-unemployment regions, therefore expanding employment may induce a decline in the average wage.</p>
public education adapts faster than adult education	<p>Demand for qualified labour has increased, which in general has been adequately reflected in the considerable expansion of public education, particularly in the fast increase of intake in higher education. By contrast, adult education, vocational further training and vocational training in companies, have been slow to expand, and significantly lag behind the standards of Western Europe. The underdeveloped vocational training system may seriously constrain improvement in the adaptive capacity of the labour force.</p>

Introduction¹

If we understand competitiveness to mean growth potential, we must examine the size and efficiency of use of resources. In case of labour as a resource, the utilisation of resources available to the economy is characterised by the size of the labour supply, the flexibility of the labour market and the qualification of the labour force.

The most severe constraint on the efficient use of the Hungarian labour resource is the low level of labour supply. The employment and activity rates are low both as compared with Western Europe and with the period before the systemic change. As Figure 1 indicates, the employment and activity rates started climbing back in 1998, but they are still far from their level at the beginning of the decade. In 2002, 56% of the working age population (15-64 years of age) was employed, and the same ratio for women was only 50%.² The approximately 25% activity rate of the 55-64 year age group is especially below the EU average (38 percent) and the Lisbon criterion (50% by 2010). Despite low employment, the rate of unemployment did not increase to over 13 percent even at the beginning of the decade, and it declined to around 6 percent by 2002.

Figure 1 Participation rate of the age 15-64 population, 1992-2002



Source: CSO Labour force survey (Cf. Table A1 in the Appendix)

As we consider the high inactivity rate to be the decisive factor limiting competitiveness, first we have tried to find an explanation for the low propensity to take up employment. The first chapter overviews the effects of government transfers on the labour market, the second chapter assesses the impacts of the tax and social security contribution system, examining the manner in which the system of the

¹ The author would like to thank Miklós Szabó and Endre Gács for their generous support in collecting the data and removing errors. Any remaining errors are the sole responsibility of the author.

² Details are presented in Table A1 in the Appendix. In 2002 the activity rate (employees and unemployed as a percentage of the working age population) of the age 15-64 population was 60%, while the same ratio for females was only 53%. The comparative figures for the Visegrád countries are disclosed in Table A2 in the Appendix.

redistribution of income influences labour supply. The third and fourth chapters look at the flexibility of the labour market through the examination of wages and productivity, and of regional differences, respectively. The last chapter provides an overview of the qualification of labour.

1. Government transfers and labour market activity

Individuals make their employment decisions by comparing the expected wages (and potentially other non-pecuniary benefits of taking up employment) and the inconveniences of going to work. If individuals obtain some sort of income without work, they may use this additional income to “purchase” more products and more free time, therefore their labour supply will be lower than it would be in the absence of additional income (Killingworth, 1983).

State old age and disability pensions, accident annuities and child care benefits constitute such income obtainable without work and reducing the labour supply while they are paid.³

The emphasis on the disincentive effect of non-labour income does not mean that the provision of such income is not equitable and desirable from another aspect. However, it is expedient to design the system of benefits so that they adequately fulfil their welfare function while reducing the willingness of the individual to take up employment as little as possible.

The theoretical issues of the incentive impacts of the major welfare benefits are thoroughly reviewed by Semjén (1996), while the fundamental technical issues of the harmonisation of benefits and the rules pertaining to the minimum wage are discussed by Garzó (2001). Below we shall review the empirically observable disincentive effects of two major types of benefits, the old age pension and the disability pension, based on the simple statistical data available.

1.1. The effects of the old age pension on labour supply

The effect of the old age pension on reducing labour supply is best illustrated by comparing pensioners with the same age group not receiving pension. Table 1 shows that the economic activity of men and women of similar age close to the retirement age is significantly lower if they are eligible for some sort of retirement benefit.

Table 1 Pension and economic activity close to retirement age, %

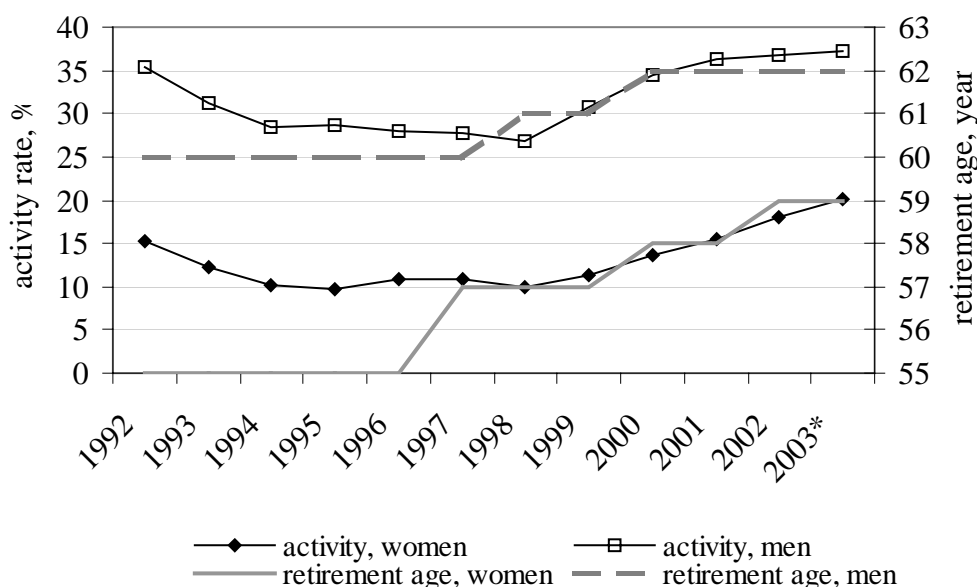
	non-pensioner	old age pensioner	disability pensioner	non-pensioner	old age pensioner	disability pensioner
	60-62-year-old males			56-58-year-old females		
Inactive	6	90	96	24	90	96
Unemployed	1	0	0	0	0	0
Employed	93	10	3	75	10	4
Total	100	100	100	100	100	100
N	103	981	282	273	1158	364
%	8	72	21	16	65	19

Source: CSO Labour survey, first half of 2001 figures, own calculations.

³ As entitlement is conditional on prior employment, these benefits may actually increase labour supply prior to their payment. Here we shall not discuss the internal structure of the benefit system and the incentives arising from the relative level of benefits. Such effects are reviewed by Garzó (2001).

The same influence may also be present in the heightened activity of the age group affected by the increase of the retirement age. If, due to the retirement age increase, fewer people within a given age group receive pensions (that is, fewer people derive income without work), more of the age group concerned will stay economically active. Figure 2 indicates that this impact may be significant: when, upon the increases of the retirement age after 1997, the ratio of pensioners dropped in the age group concerned, the activity rate increased in each case and for both sexes.

Figure 2 The activity of the age 55-64 population and the retirement age, 1992-2002

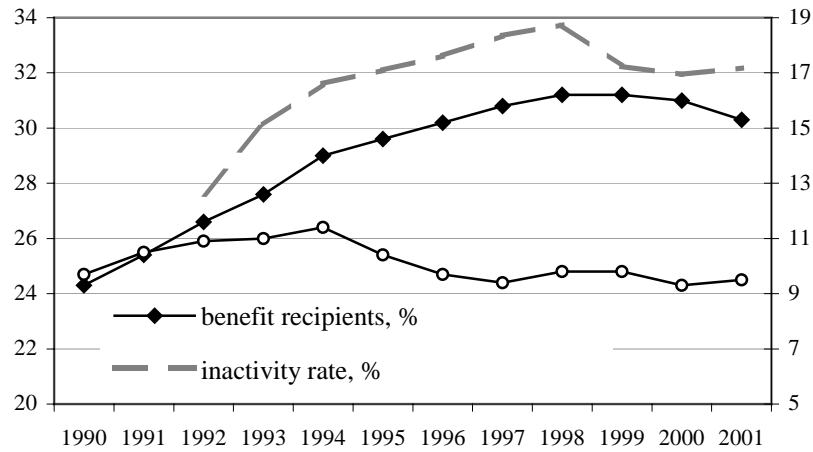


Source: CSO Labour force survey. Note: We considered all those persons to be active who are either at work or who are capable of working and looking for jobs. (Cf. Table A3 in the Appendix.)

Other non-labour income has similar effects. In the second half of the 1990's the ratio of recipients of various benefits, in particular of disability pensions, increased considerably within the working age population. By the end of the decade the ratio of persons receiving various benefits had reached 31% of the total population (see Figure 3). Inactivity grew parallel with the ratio of benefit recipients.⁴

4 Even though in 1998, probably because of the increase of the male retirement age, it declined at a greater rate than the ratio of benefit recipients. The above data concerning inactivity are all taken from the Labour force survey of the CSO conducted on an interview basis. Inactive persons are those who, in the benchmark week of the interview, had no income earning job and were not looking for work, or who were looking but would have been unable to take up employment. Some of that inactive group would in fact like to work, but their proportion is rather low. In the first quarter of 2001, 13% of the age 15-24 inactive population, 27% of the age 25-54 and 3% of the age 55-64 group indicated that they would like to work but they were not looking or were not available. The majority stated that they would not like a job, and were not trying to find one either. The most frequent explanation given was illness or pensioner status (54%), child rearing or some other family obligation (29%), and barely 3% indicated that the absence of appropriate jobs discouraged them from seeking a job.

Figure 3 Ratio of recipients of pension and pension type benefits, benefit expenditures and the inactivity rate, 1990-2001



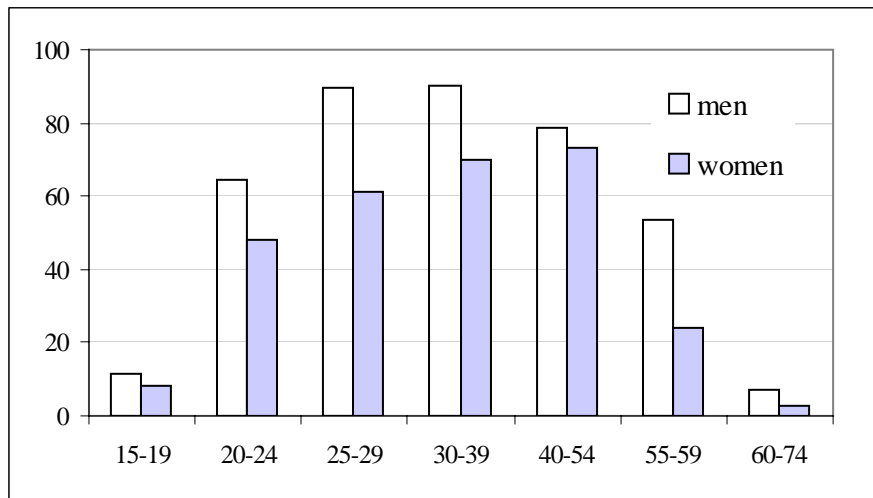
Note: Recipients of benefits are disclosed as a percentage of the total population, inactivity as a percentage of the 15-64 year-old age group.

Sources: Regional characteristics of recipients of pension and pension type benefits, 1993-2001. CSO, Budapest, 2002, and CSO Labour survey data (Cf. Table A4 in the Appendix.)

The prevalence of benefits under the retirement age is one of the reasons that economic activity starts to decline already 5-10 years before the retirement age, especially among men (see Figure 4).⁵

⁵ The second reason is on the demand side of the labour market: with age, and especially above the age of 40, the chances to find a job worsen (in respect of registered unemployed, see the findings of Galasi, Lázár et al. 1999 or Galasi and Nagy 2001). The reduced demand for older persons is also indicated by the fact that the recognition of working experience in the form of higher wages dropped in the first years of transition (for the 1986-95 period see Halpern and Körösi 1998, or Kertesi and Köllő 1997; for the 1986-98 period see Köllő 2000b).

Figure 4 Activity rate by age cohort, in 2001



Source: CSO Labour survey (see Table A5 in the Appendix).

1.2. Labour market activity of disability pension recipients

The most important welfare benefit reducing activity below the retirement age is the disability pension. In 2001, 453 thousand men and women below the retirement age received disability pension.⁶ The overwhelming majority of disability pensioners do not work and are not looking for jobs. Among women of 41-54 years and men of 41-59 years⁷, who are further away from the retirement age and potentially more inclined to find jobs than their older counterparts, 90-92% of disability pension recipients are inactive, while this ratio is 12-15% among persons not receiving disability pension in the corresponding age group.

The lower activity of disability pensioners is obviously affected not only by the disincentive effect of the pension but also by their health status.⁸ According to a study examining the changes in the regulation of disability pension (Scharle, 2003), the effects of poor health are manifested primarily in the expected income levels. Poor health reduces the expected wages, but in itself it does not necessarily reduce the probability of employment. Accordingly, it can be assumed that the labour supply of persons who would lose their eligibility for disability pension would increase especially if their health is not very poor, thus the wage offers available to them are not very low.

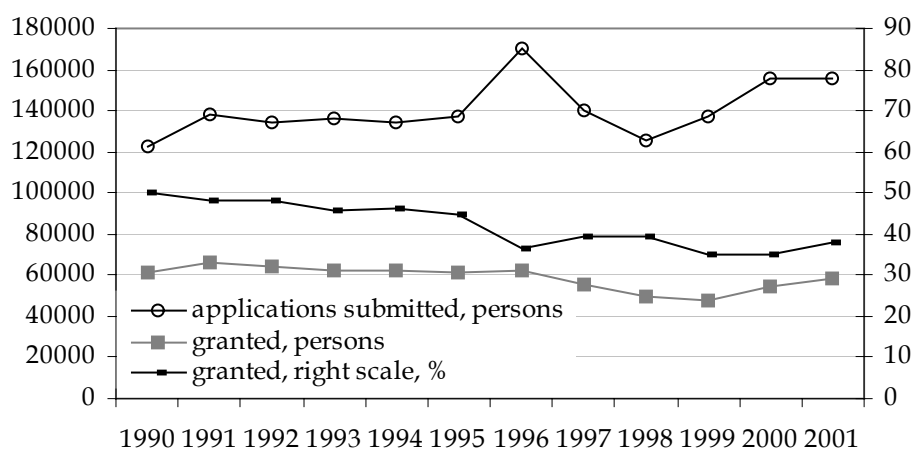
⁶ In 2001, 447 thousand persons, or 7% of the adult population below retirement age, received such benefits; of this within the 41-57/61 age group close to 403 thousand persons, almost 15 percent, received disability pension.

⁷ This age group comprises the majority of disability pensioners below retirement age: according to the weighted figures of the CSO labour survey, over 420 thousand person in the last quarter of 2001.

⁸ Altered working capacity may reduce the productivity of the individual on the one hand, and increase the cost of life and of going to work. Direct compensation for the latter costs may also promote activity; for experiences in the UK, see Burchardt, T. (1999).

In the early 1990's more than 60 thousand persons per annum became eligible for disability pension (see figure 5).

Figure 5 Disability pension applications submitted and granted



Notes: Including accidental disability pension; the number of applications before 1994 is estimated from the number of examinations by medical experts. Sources: Statistical yearbooks of the National Pension Insurance Directorate, Budapest 1998, 2000, 2001 and CSO Yearbook, Budapest 1998 (based on the figures of the National Medical Expert Institute of the National Health Insurance Fund). (See Table A6 in the Appendix).

There was an attempt to tighten the eligibility criteria for disability pension in 1997-1998. This aimed to assure that disability pensions are paid in accordance with real health status.⁹ As a result of the tightening measures, the disability pension became a less secure source of income; this may be one of the explanations for the modest growth in the activity of disability pensioners in 1997 and 1998.¹⁰ In the years when these measures were introduced, the annual increment fell below 50 thousand persons, but it started to climb again after 1999 (see Figure 5). There are no official data on the outflow trends; according to the individual data of the Labour Survey, there are very few exits for reasons other than death (Scharle, 2003), and there is no

⁹ Those persons are eligible for the disability pension who have permanently lost 67 percent of their working capacity, have the required time of service (2-20 years) and whose income has decreased by at least 20 percent (compared to their former income) because of their disability. Eligibility may be terminated if the individual recovers and/or his income reaches the level before the onset of the disability. The new Act which came into effect in January 1998 terminated the definitive eligibility for disability benefits, also reclassifying some of the previously acquired definitive entitlements as temporary, and provided for more frequent medical reviews to sustain the temporary entitlement. According to law, eligibility is terminated even in the absence of improvement of health if the pensioner works on a regular basis and his income for four consecutive months has not been materially lower than he could achieve without disability in his position held before he became disabled.

¹⁰ 7.4% of disability pension recipients were economically active in 1996, and 8.4 % in 1998 (CSO Labour survey, own calculations).

sign that outflow would have increased in the years concerned. Thus the experiment yielded modest results, and its impact proved to be temporary.

The continued increase of the ratio of disability pensioners within the working age population could be mitigated by reviewing the existing disability pension entitlements or by the more rigorous consideration of new applications. Experience indicates that the latter, i.e., the curbing of entry, is a more realistic option.

1.3. Incentives to the activity of persons with reduced working capacity

The incentive effects of the tightening of eligibility criteria arising from the drop in income may be strengthened by the introduction of forms of support directly encouraging employment. In a number of Member States, for instance, there are programmes promoting the employment of persons with reduced working capacity through providing supplementary income (van Lin, Prins et al., 2002). The income supplement may assure that earnings comparable to those available to persons with full working capacity are achieved; furthermore, as it is available only if one holds a job, it promotes employment.¹¹ If the benefit is available only for job holders, some of the income of the beneficiaries is derived from labour rather than state aid; this may be complemented by the non-pecuniary benefits of employment, such as the usefulness of social integration, which may be greater than average in case of person with reduced working capacity (who are therefore excluded from certain forms of community life). In the Hungarian system the subsidy available to employers works on a similar principle, but in its current form it only motivates the demand side of the labour market to expand employment.

2. The impact of taxes and contributions on the labour market

In theoretical models the impact of taxes on the labour supply is controversial. Higher taxes reduce labour income, thus the employee can afford less free time and will work more. On the other hand, lower wage income reduces the amount of wage income foregone because of spare time, thus reducing willingness to take up employment. The relative magnitude of these two effects determines whether taxes increase or decrease the labour supply; however, theories provide no guidance as to the magnitude of these effects.

The models which take into consideration the possibility of tax avoidance also fail to provide clear-cut answers: they depend mostly on the starting assumptions (the risk averseness of the individual, the size of fines, severity of control) of the model (Ali, Cecil et al., 2001.)

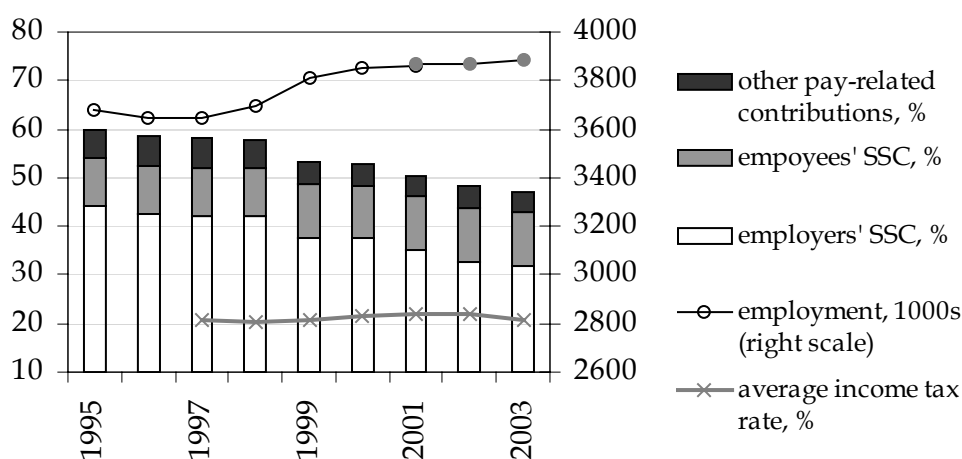
There is no such uncertainty in terms of the theoretical effects of taxes on the labour demand: demand is a negative function of the wage cost, therefore it declines as taxes and contributions payable on wages increase.

In Hungary, no empirical survey has been made about the effects of taxes on the labour market or the relationship of tax levels and tax avoidance. The impacts of changes in tax levels cannot be examined on the macroeconomic level, primarily due

¹¹ For this form of benefit to be effective, it is still necessary to measure the health status and that the administrators of the benefit can establish eligibility; in this respect it is no better than pensions.

to the shortness of the time series. However, Figure 6 shows that employment trends are influenced by important factors other than taxes as well: the expansion of employment started in 1998, before the significant reduction of social security contributions, and it halted in 2001 despite the reduction of payroll taxes.

Figure 6 Social security contributions payable on wages and employment, 1995-2003



Source: The average personal income tax (PIT) is the calculation of the Income Tax Department of the Ministry of Finance, the contribution figures are also from the Ministry of Finance, the lump-sum health contribution was calculated as a percentage of the average wage and was added to the employers' SSC. Employment figures are from the CSO Labour force survey among the age 15-74 population. (Cf. Table A7 in the Appendix.)

Changes in the taxes and contributions payable on wages, however, are directly reflected in net earnings; therefore we may use the findings of studies on wages to get an approximate estimate of the effects of taxes. We must treat estimates with caution because we also know little about the manner taxes and contributions influence the wage negotiation mechanism. We do not know, for instance, if cuts in taxes payable by employers and by employees result in the same increase in net wages.

The effects of taxes on labour supply can be approximated with the wage elasticity of labour supply. Galasi (2002) provides an estimate of this based on the 1992-94 figures. In the models differentiating between paid employment, household work and small-scale agricultural production, the net hourly earnings did not significantly affect the (paid) labour supply of the individual. In estimates differentiating between several types of paid employment (normal working hours, overtime and part-time job) higher wages either did not influence the labour supply of individuals or reduced it.

The effect of taxes on labour demand can be inferred from the wage elasticity of the labour demand of businesses. Kőrösi (2002) made estimates for different models on a corporate panel data for the period of 1992-1999. In these models, at the beginning of the period labour demand responded relatively elastically to wage changes in the short term (with elasticity of around -1), while later, with the exception of 1999, it was much less sensitive to wage trends. Kertesi and Köllő (2002) made

estimates for the same period using a model which differentiated between three types of labour (unskilled, young-skilled and old-skilled). According to their results concerning the medium-sized and large companies in the business sector, the wage elasticity of demand rather increased.¹² In the second half of the decade demand for unskilled labour responded the most actively to wage changes (the estimated elasticity being between -1 and -1.8), the response being less marked in the demand for older-skilled and especially for young-skilled labour (values between -0.5 and -1).

Thus the studies of wage elasticities indicated that changes in the tax policy may affect economic activity more on the demand than on the supply side of the labour market.

3. Wage and output growth

In theory, wage trends are important mainly because this is one of the mechanisms to assure the efficient allocation of labour. If, upon an economic shock, wages freely adapt to the new situation, labour will always work where it can achieve the highest possible productivity, which assures the maximum total output from the aspect of the labour resource.

In empirical literature and especially in the business cycle analyses of international organisations it is often the wage level that is emphasised, and competitiveness is linked with differences of wage levels from country to country.

In this section first we shall examine wage trends from the above aspect within the national economy, then we shall outline the theoretical relevance of international comparison and the changes in the relative position of Hungary.

3.1. The effects of the wages increase of 2001-2002 in Hungary

If an environment of perfect competition, if businesses make their labour utilisation decisions with an eye to profit maximisation, they employ an additional unit of labour if the market value of the products thus generated is at least equal to the price of the unit of labour. If their turnover per employee grows slower than wages do, it may be profitable for them to lay off some of their employees because they may achieve greater savings on the labour cost than the revenues foregone. This may occur when wages increase at a faster rate than the productivity of labour (market price of production / employees).¹³

There is no such decision making constraint in the public sector, and in the overwhelming majority of cases the price of the products or services created by the employees cannot be determined. Still, the government is such a large employer that it can influence, with its demand, the wage levels.

¹² There may be several reasons for the differences found by the two studies in wage flexibilities. Kőrösi (2002) estimated dynamic demand models using balance sheet data of firms with over 10 and over 20 employees, and found declining flexibility in short term adaptation. As another difference, he handled the heterogeneity of corporate data using separate estimated equations for each sector. Kertesi and Köllő (2002) estimated static cost functions for each year, using balance sheet data as well as the wage tariff survey of the National Labour Centre (Employment Office) without differentiating between the sectors. Furthermore, both studies point out the questionable reliability of the capital and depreciation (cost of capital) figures used in the estimates.

¹³ For the explanation of the labour demand curve see e.g. Bosworth et al (1996). In the standard model the wage elasticity of labour demand depends on the substitution elasticity of factors of production (capital and labour), the price elasticity of the end product, the ratio of wage expenditure within the total production cost, and the price elasticity of the other factors of production.

Assuming that in the business sector there is perfect competition on the labour market, wage increases in the public sector are reflected there as the exogenous reduction of labour supply: employees will offer less work for the same wage as wage opportunities outside the business sector have improved. Similarly, the increase in the headcount of public employees results in higher wages in the business sector, as it constrains the labour supply in the competitive sector. For instance, the wage hike for public servants may result in the business sector in higher wages, or in a drop in employment and in output.

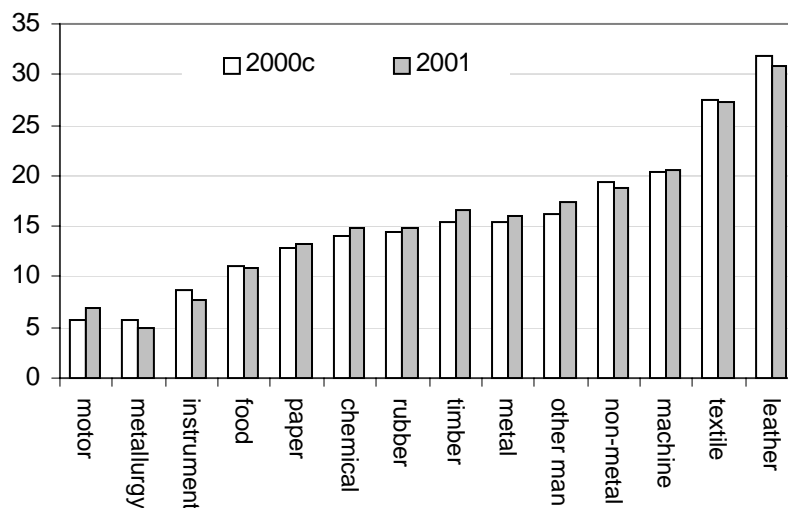
Higher minimum wages undermine the adaptability of the labour market because they broaden the range where employees cannot be profitably employed as the proceeds from the product or service they produce are lower than the wage payable to them. If, in case of an adverse shock, wages start declining, the floor represented by the minimum wage may halt that decline above a lower equilibrium wage level that would be appropriate for the new situation, and employment will be lower than the equilibrium level. The minimum wage increase may also contribute to increasing wages if it is set below the average equilibrium wage level. It has a direct effect on employees with the lowest wages, and an indirect effect on others: if businesses intend to maintain the differences between wages paid in various positions for motivation or other reasons.

No analysis has been conducted on the effects of the significant wage increase of public employees in 2002 which would present the consequences of the wage increase net of the effects of other micro- and macro-economic factors. The figures for the whole of the national economy indicate that wages have increased while employment and economic activity have also grown.

One of the first studies on the minimum wage increase looked mostly at the changes in income ratios. According to the calculations of Popper (2002), the first increase affected one quarter, the second one third of the employees in the business sector directly. In the textile and leather industries 47-59% of the employees were subject to the wage increase required by law. However, Palócz and Tóth (2002), in a questionnaire survey of companies, concluded that the high real wage increase in 2002 was attributable more to excessive inflationary expectations than to the pressures of the minimum wage increase. According to the survey, the mandatory minimum wage motivated wage increases in services and in firms with a small number of employees. Based on the study of the capital and labour expenditures of companies with more than 300 employees between 1992 and 1999, Kertesi and Köllő (2002) forecasted a significant drop in employment as a result of the minimum wage increases. The increases added to expenditures mostly in the labour intensive industries and in companies using labour with low qualifications. The substitutability of labour and capital is the highest in this category of labour (Kertesi and Köllő, 2002), therefore the wage increase affecting the low end of the wage scale is more likely to result in the substitution of factors and declining employment than in the increase of consumer prices on the competitive market.

Sectoral level aggregate figures indicate that the higher wages have indeed forced companies to adapt in sectors with high labour needs and using labour with low qualifications, i.e., in the textile and leather industries: in these sectors, the ratio of labour use has declined, the ratio of capital use has increased (see Figure 7).

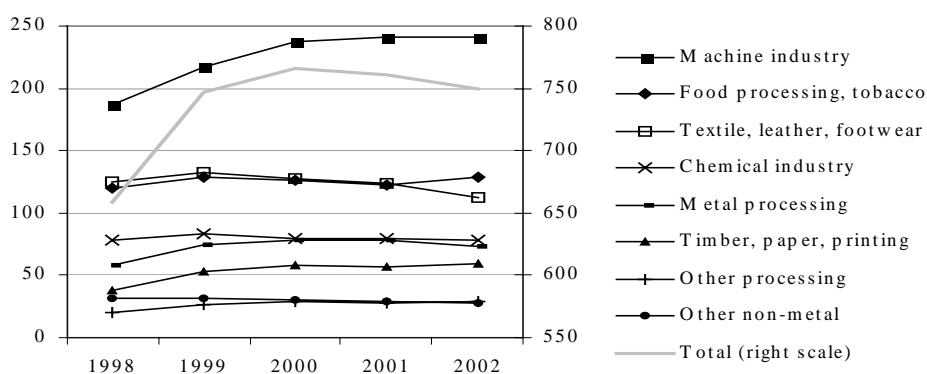
Figure 7 The ratio of labour cost to total cost in the manufacturing industries, 2000-2001



Source: Own calculations based on the APEH July 2002 Flash Report. The year 2000 figure is from subsequent reporting requested for comparison (self-assessment of companies on the year 2000 figures in the structure of the year 2001 accounting rules). (Cf. Table A8 in the Appendix).

Employment has declined in absolute terms as well in the textile and leather industries, while in other sectors it produced hardly any change or even increased (cf. Figure 8). As compared to the year 2000 level, the number of employees dropped by a total of 12 thousand persons (1.5 percent) in the processing industry; within this, in the textile and leather industries there was an 11 thousand person (8.8 percent) drop in employment.

Figure 8 Number of employees in the manufacturing industry by subsector, thousand persons



Source: CSO Statdat. Institutional labour data collection system figures (full time employees of economic associations with over 4 employees). (Cf. Table A9 in the Appendix).

3.2. The relative advantage of Hungary in the region

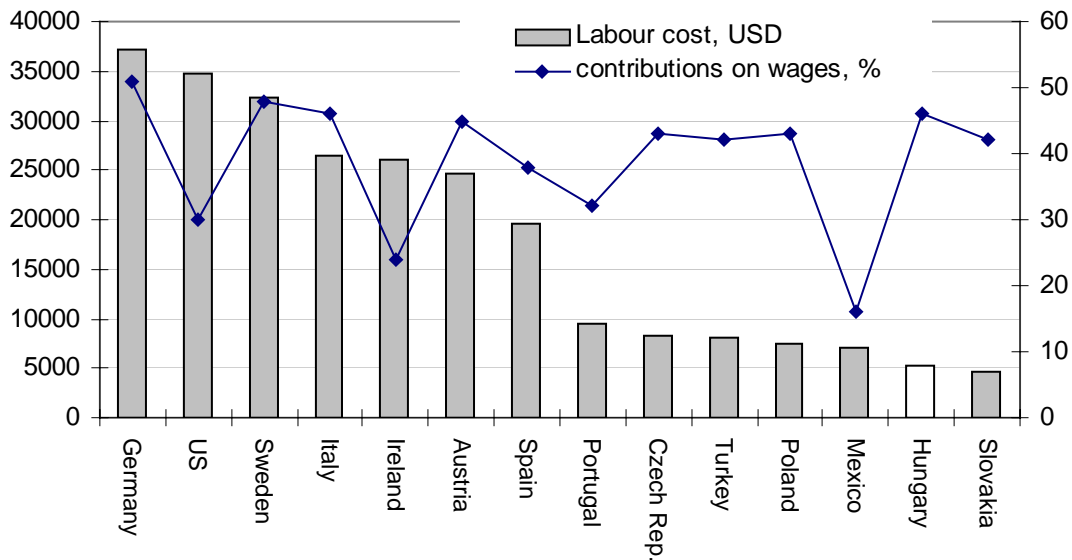
In the empirical literature of competitiveness it is customary to compare the wage costs of countries, starting from the assumption that relatively low wages allow the products of the country to enter the world market at a relatively lower price (and also attract foreign direct investment). In the classic theory of international trade this aspect is irrelevant, because comparative advantages (which are manifested in the comparison of two or more products and countries) assure benefits from foreign trade irrespective of the absolute levels of the prices of factors and products.¹⁴ In this approach the important thing is not absolute advantages but the ability of the economy to adapt to changes in comparative advantages. That is, economic competitiveness is driven by the extent of adaptability rather than by changes in advantages.

The adaptability of the economy depends on the extent to which the changes in economic conditions are followed by the allocation of the factors of production and the prices of factors and products. Of these, we are going to discuss the adaptation of the labour market, but first, following the empirical tradition, we shall present the trends in labour costs, wages and productivity in international comparison.

Hungarian wage costs are relatively low even in Eastern Europe, despite the high contribution rates. Within the manufacturing industry, wages in the textile, leather and footwear industries are much lower than in the Western countries publishing comparative data (year 1995-97 data, Ketesi and Köllő, 2001). According to the comparative figures of the OECD for 2002, Hungarian labour costs are the second lowest (after Slovakia) not only as compared to the European Union but also among the Visegrád countries (see figure 9).

¹⁴ To use a somewhat rough-and-ready example for illustration: if one litre of quality wine can be produced in Hungary with half the resources necessary for the production of one kilogram of salmon (we have a comparative advantage in wine production), and the other way around in Slovenia, then the welfare of the (salmon-loving) Hungarian population can be increased without any special additional effort through foreign trade. Because if, by reallocating our resources, we produce more wine (and less salmon), and sell it to Slovenia, we can buy from the proceeds more salmon than we could have produced ourselves with the resources expended on the export wine. Slovenia can similarly increase its welfare if it produces more salmon and less wine even if they produce both products cheaper than Hungary (they have an absolute advantage). The inconsistency of the classic theory of comparative advantage and the popular concept of competitiveness is explained in detail by Krugman (1996).

Figure 9 Labour costs and contributions in some countries*, 2002

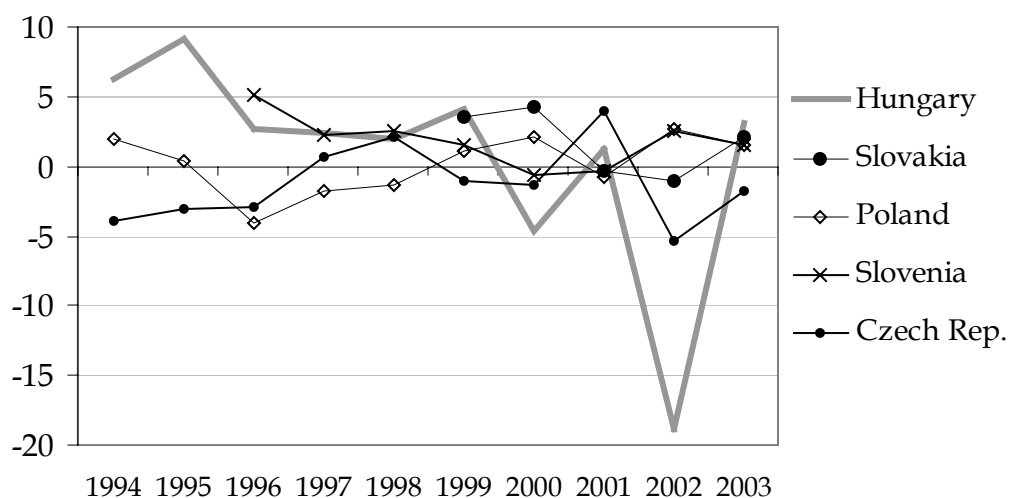


Source: OECD (2003)

Note: *The labour costs of an average blue-collar worker in the processing industry including the taxes and contribution payable on the gross average wage. According to the OECD definition, the labour cost is the sum of the gross wage and the employer contributions payable on such wage, in dollars, on an annual average. Taxes and contributions payable on wages: personal income tax + employer's and employees' social security contributions (including the health contribution) projected on the average blue-collar employee in the physical sector, in case of single persons (no children). (Cf. Table A10 in the Appendix).

In 2002 this advantage narrowed, as the increase of real wages in Hungary exceeded productivity growth (see Figure 10). The change was not this significant in other Visegrád countries, or the trend moved in the opposite direction.

Figure 10 Difference of annual productivity and real wage changes in the countries of the region (percentage point)

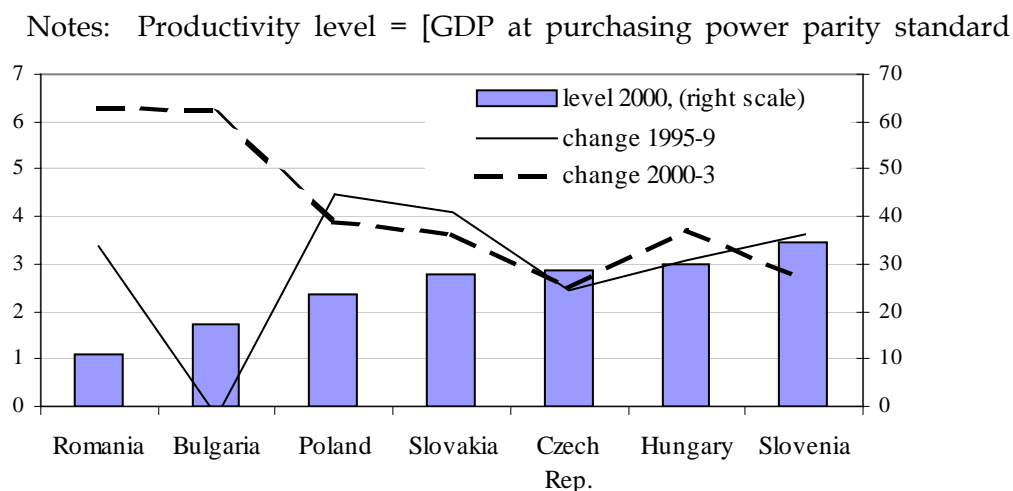


Source: Own calculations based on the data and July 2003 forecast of AMECO (annual macro-economic database of the Economic and Financial Directorate General of the European Commission).

Note: The positive figures indicate productivity growth in excess of wage growth. Annual average changes, productivity = GDP at 1995 prices/employed persons; real wage = employment income per one employed person based on the national accounts, calculated with a DGP deflator (1995=100). (Cf. Table A11 in the Appendix)

Hungarian labour productivity is only half of the Austrian level, but its growth rate has been continuously high since 1995. Within the central European region it is preceded only by Slovenia in terms of productivity: however, the productivity growth projected for 2000-2003 is higher in Hungary, thus the advantage of Slovenia is narrowing (see figure 11). Poland and Slovakia have also produced a dynamic productivity growth, but its rate has been decelerating in recent years.

Figure 11 The level and change of labour productivity in the countries of the region



(PPS, current prices), 1000 million PPS] / [number of employed persons, thousand (ILO)]; the change is the average of percentage changes observed in the period concerned. Sources: PPS GDP: Eurostat Statistical Yearbook on Candidate and SE European Countries, in 1000 million PPS; productivity change: Commission Services, AMECO. The July 2003 forecast of the Commission for 2003; number of persons employed: ILO Laborsta. (Cf. Table A12 in the Appendix).

The above figures reveal that within the region the position of Hungary has somewhat deteriorated in respect of wage costs, while it has improved slightly in terms of labour productivity.

4. Regional differences in the labour market and the mobility of labour

The effects on the economy may have different impacts on the various sectors and geographical regions. One dimension of adjustment is the industry structure, which is related to the training and re-training system to be discussed in the next section. The mobility of capital and the adjustment of prices and wages may also play a major part. Finally, the geographical mobility of labour may also contribute to adjustment: in this section we are going to look at the extent of this.

Let us assume that the marketability of the products of a certain region declines for external reasons. The firms in the region may respond to this by reducing their output and/or their prices. In both cases they will employ fewer persons, which results in higher unemployment in the short term. The excess supply on the labour market exerts a downward pressure on wages: if wages adapt flexibly, we will find relatively higher unemployment and lower wages in this region.¹⁵

¹⁵ As a result of lower wages, labour supply may be reduced and the demand for labour and capital stock may increase. The example depicts a negative demand shock, but the process of adjustment is similar in case of other types of shocks as well.

If the mobility of labour is high, the regional differences arising from such shocks may be reduced over time. Labour will move from settlements with high unemployment and worse paid jobs to towns with better potentials, and unemployment will be lowered in the underprivileged regions, and after a while wages will start climbing again. If, however, mobility is low (and wages and capital flows are slow to adapt), regional disparities may survive for a long time. The most important condition for the mobility of labour is that the expected benefit (higher earnings) is greater than the cost of relocation or commuting.

Some of the differences found in the average income of regions are attributable to such shocks, the different levels of the labour supply and demand. Others, however, result from differences in the composition of workers by qualification and productivity: such differences indicate the efficient allocation of resources, therefore they may persist in the long term as well.

4.1. Regional differences in wages and employment.

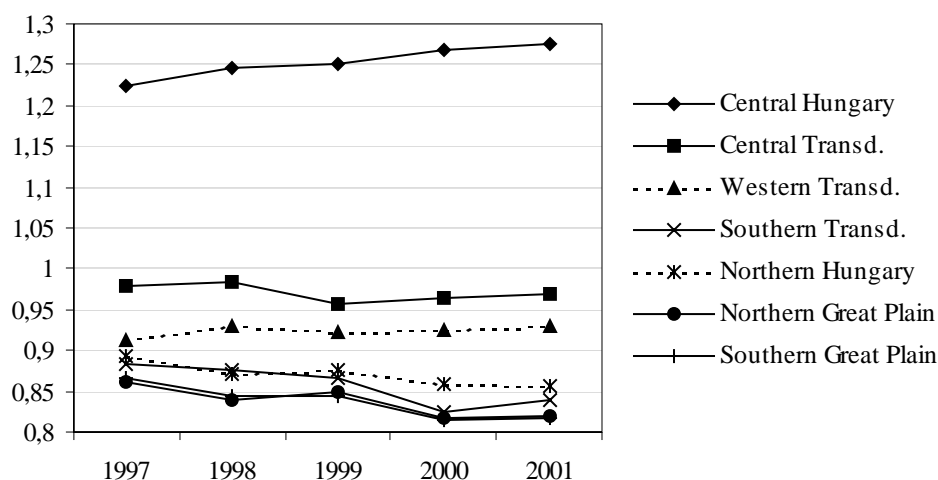
Having examined the 1986-1995 period, Kertesi and Köllő (1998) found that the negative correlation between the regional distribution of incomes and the local unemployment rate, characteristic of advanced economies, emerged already in the late 80's. High unemployment, however, worked less and less as a tool to curb wage increases (and thus to promote adaptation) as the ratio of long-term unemployment increased. The relatively cheap labour in the adversely affected regions improved the profitability of enterprises, but this did not lead to major capital inflows.¹⁶ According to Köllő (2000a), the wage disparities between regions did grow between 1986 and 1998, but they remained relatively modest. This may be the reason why the considerable regional differences in employment did not induce any major flows of labour and capital: the expected yield of mobility did not exceed the estimated costs.

No similarly thorough analysis has been published about the most recent past as yet. Below we are going to use simple aggregated figures to find out if there have been any changes in the adjustment processes.

The figure below indicates a slow increase of differences in incomes in the second half of the 1990's. The lag of regions with income significantly below the average increased especially in 2000.

¹⁶ Kertesi and Köllő (1998) used the number of economic associations and the ratio of persons employed by firms in majority foreign ownership (as the approximate measure of green-field projects) as the indicator of capital inflow. Both indicators showed relatively poorer capital supply in regions in difficulties. In case of foreign investments, this was attributable to a large (and increasing) extent to the lower qualifications of the labour force.

Figure 12: Regional disparities of income compared to the national average, 1997-2001

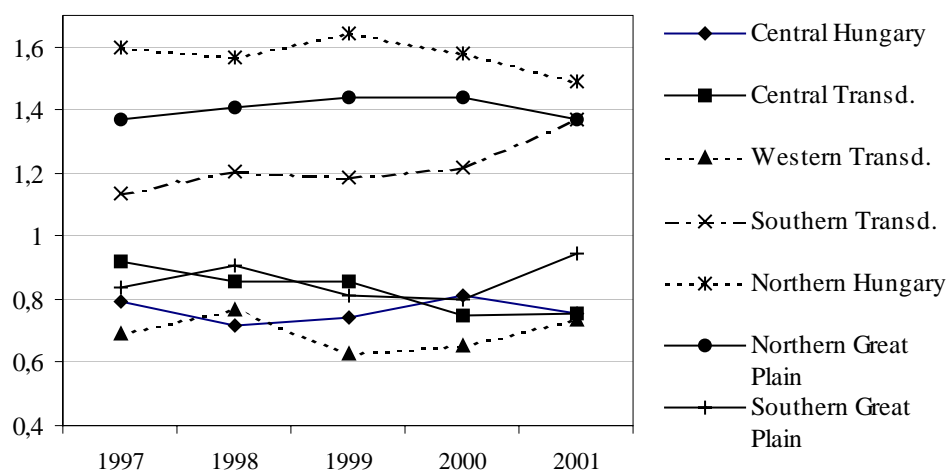


Source: Munkaerőpiaci tükör, 2002. (Cf. Table A13 in the Appendix). Note: The composition of the regions: Central Hungary = Budapest and Pest county, Central Transdanubia = Fejér, Komárom and Veszprém counties, Western Transdanubia = Győr, Vas and Zala counties, Southern Transdanubia = Somogy and Tolna counties, Northern Hungary = Borsod, Heves and Nógrád counties, Northern Great Plain = Hajdú, Szolnok and Szabolcs counties, Southern Great Plain = Bács, Békés and Csongrád counties.

The continuous decline of the unemployment rate affected each region, but the rate of decline was not the same. The disparities between regions increased until 1999, then started decreasing.¹⁷ The Southern Transdanubia is an exception to the favourable trend: there the unemployment rate, which had been barely above average, did not follow the declining trend of the national average in 2001. In the regions with the two highest unemployment rates, however, unemployment fell faster than average.

¹⁷ Regional disparities were measured by the square of the difference from average.

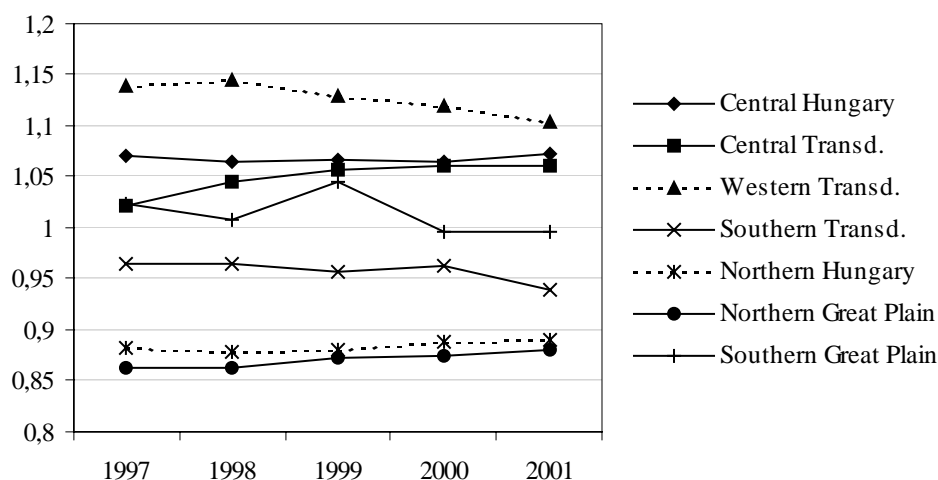
Figure 13: Regional disparities in the unemployment rate, 1997-2001



Source: Munkaerőpiaci tükör, 2002, CSO Labour survey data. Unemployment rate as a percentage of the national average (Cf. Table A14 in the Appendix).

Employment shows similar trends as unemployment: regional disparities have been reduced, and the use of labour expanded faster than average in regions with low employment rates. The exception is Southern Transdanubia again, where the lag behind the average increased in 2001.

Figure 14: Regional disparities in employment, 1997-2001

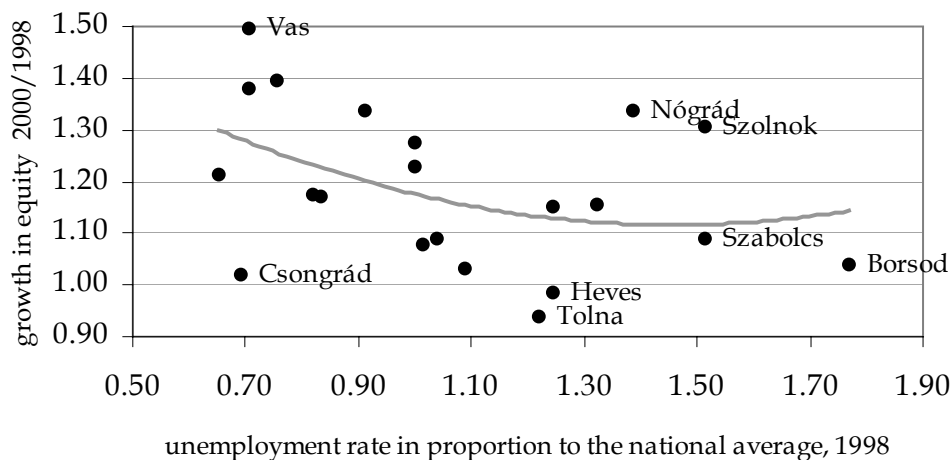


Source: Munkaerőpiaci tükör, 2002., Employment rate in proportion to the national average (Cf. Table A 15 in the Appendix).

One possible interpretation of the increase of regional disparities in incomes and their decrease in employment is that despite the growth of long term unemployment, the employees have a better bargaining position in disadvantaged regions, therefore they can increase employment without raising relative wages even if the labour supply is constant. The increase in the measured average wages may also be hindered if the qualifications of new entrants on the labour market are lower than average.¹⁸

The increase of the labour demand of businesses in regions in poorer positions indicates that the capital stock has adapted: the availability of relatively cheap labour has attracted capital into regions with high unemployment. We attempted to verify this assumption with a simple approximate indicator. According to the figure below, the equity of businesses keeping their books in the double entry system located in counties with higher unemployment produced less increase, but the correlation is reversed in regions in poor position: in Szabolcs and Borsod counties, where unemployment is 1.5-2 times higher than average, the increment of capital stock is no smaller than in counties with average unemployment, and in Nógrád and Szolnok counties the capital stock increased even faster than the national average.

Figure 15. Capital formation as a function of unemployment



Note: ILO unemployment figures. The equity of businesses with double-entry book-keeping, in real terms, per capita (based on residents at beginning of year).

Source: Time series of the Labour survey 1992-2001, CSO and Az APEH világa [The world of APEH] 1999, 2000, 2001.

¹⁸ We can assume this because in disadvantaged regions the qualifications of the labour force are below average. In this event the increase in income disparities is explained by the wage advantage of better qualified persons, which results in the fallback of the average wage in regions with population of lower qualifications.

4.2. Low mobility of labour force

The activity rate has not changed in poorer regions, therefore it is all the more likely that the adjustment described above occurred through labour demand, that is, capital movements. This is underpinned by the data measuring the geographical mobility of labour. According to a survey conducted in 1995, the Hungarians are among the least mobile of the workforce of 21 advanced or transition economies¹⁹ (Blanchflower, 2000). The frequency of relocation did not change between 1997 and 2001: on average, 2-2.5 percent of the age 15-55/59 population moved house each year, any only part of that represented migration between regions.²⁰ In their study of the intra-country mobility in the 90's, Cseres-Gergely (2002) also found that even though migration can be explained by wage and labour demand factors, on the whole mobility is very low.

According to Firdmuc (2002), the raw and net migration rates are very low in relation to the less developed southern Member States in Hungary as well as in the three other Visegrád countries. Even though unemployment and wages influence net migration in the direction necessary for equalisation, this impact is very minor.²¹ Higher unemployment reduces, and high wages increase, migration into both directions. Migration out of poor regions may be low because of the high fix costs of migration (which exceeds the expected yields), and the different mix of demand and supply. The workers with qualifications appropriate for the local structure of industry are not necessarily capable of taking jobs in other regions, no matter how high the wages are. Migration out of better placed regions may be higher because there the relocation of better qualified and better paid workers is less hindered by the costs or by the absence of qualifications.

Sinn (1994) identifies the state of the real estate market as the key reason for low mobility. The stock of rented accommodation is small, and the large regional disparities in real estate prices also render it difficult to relocate from high-unemployment regions into regions with better potentials. According to the calculations of Kertesi and Köllő (1998), Kertesi (2000) and Köllő (2002), the high transport costs as compared to wages also present a high barrier to commuting.

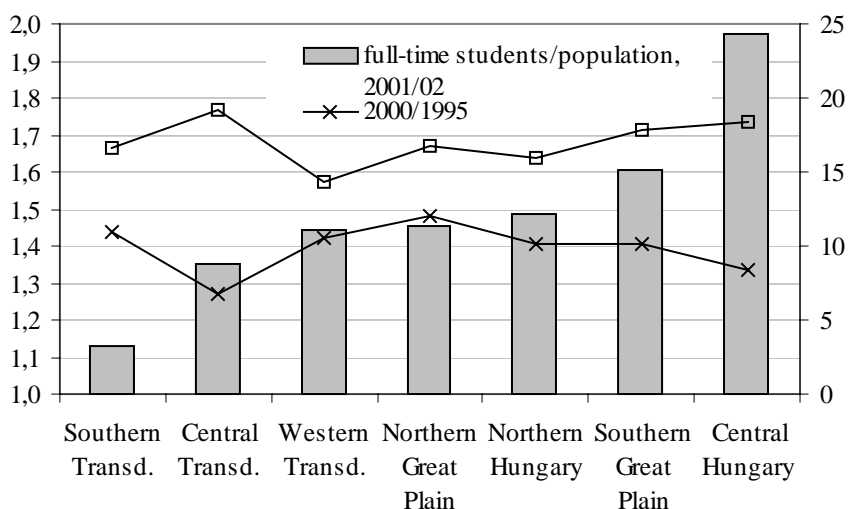
The further education and vocational decisions of young people may, however, contribute to reducing the regional disparities in the longer term - even if further education is partly motivated by the lack of jobs. This kind of adjustment may be reflected in the faster-than-average growth of student numbers in higher education between 1995 and 2000 in regions with the highest unemployment rates (see Figure 16).

19 The question in the survey related to the willingness of the individual to move to another vicinity or village, to another town within the county, to another region or another country if they could thereby improve their working or living conditions. Based on the responses, Hungary was ranked 19th. The ranking of the other countries: US (1), Canada (2), Germany (2), the Netherlands (2), six other EU Member States (5-17), New Zealand (8), Slovakia (11), Poland (12), Slovenia (13), Czech Republic (15), Japan (16), Russia (20), Latvia (21).

20 Source: CSO population register. Relocation means permanent migration.

21 The Czech, Slovak, Polish and Hungarian figures for 1992-1998 are compared with the Italian, Spanish and Portuguese indicators for 1984-1995, and the model to explain migration is estimated country by country. The net migration is the difference of persons migrating into and out of a region. In case of Hungary, the model only uses the net migration data, and not the separate inward and outward migration figures.

Figure 16. Number and proportion within the population of full-time students



Source: CSO Periodical information, Social statistics: Education figures 2001/2002. (Cf. Table A16 in the Appendix).

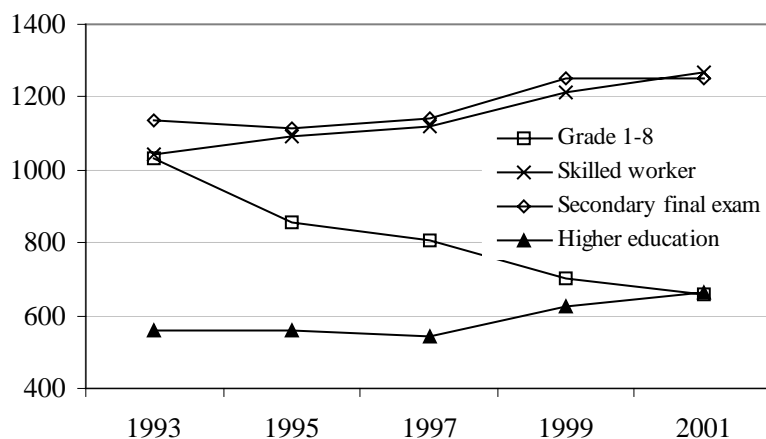
5. Adaptation of training to the demand on the labour market

5.1. Changes in labour demand

The more the qualification mix of the labour force is in line with the labour demand of businesses, the higher the potential employment rate, and the lower the (structural) unemployment resulting from the difference of demand and supply. The qualification structure can efficiently adapt to the demand if the state-run basic education, adult training and on-the-job further training all adapt flexibly to the needs. Obviously, at the time of economic restructuring flexible adaptation is more important, potentially even warranting state subsidies to training organised by businesses.

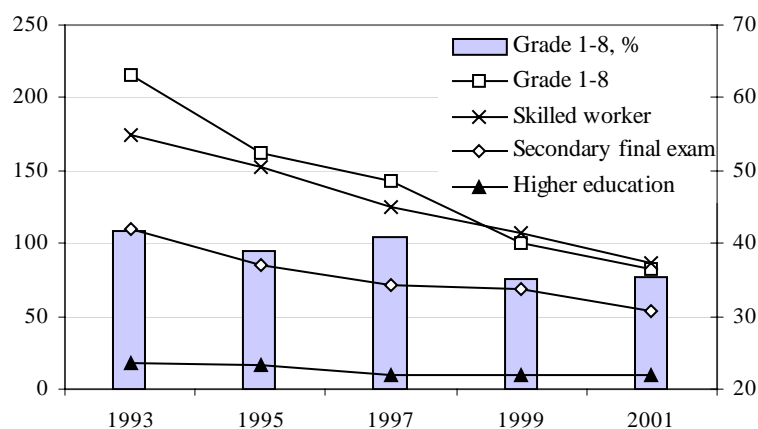
The changes in the composition of the employed and unemployed indicates that in Hungary demand for unskilled labour has been declining. The ratio of persons with only elementary school education among the employed has been halved since 1992, while persons without any vocational skills constitute 40 percent of the unemployed (cf. figures 17 and 18).

Figure 17 Number of employed persons by qualification category, 1993-2001



Source: Time series of the CSO Labour survey, 1992-2001, Budapest, 2002 (Cf. Table A17 in the Appendix).

Figure 18 Number of unemployed and ratio of unskilled persons, 1993-2001



Source: Time series of the CSO Labour survey, 1992-2001, Budapest, 2002 (Cf. Table A18 in the Appendix).

The wages of skilled employees and those with higher education qualifications increased faster in the past decade than the wages of persons without qualifications. According to the estimates of Köllő (2000b), the wage advantage of persons with higher education qualifications increased at the highest rate between 1986 and 1998.

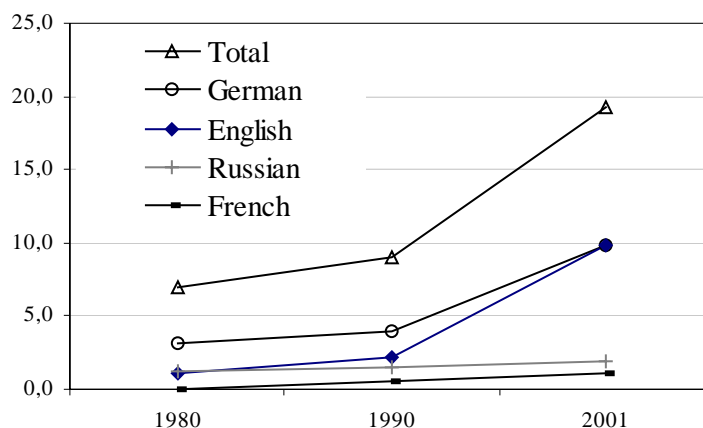
5.2. Transformation of the structure of training

The changes in the labour demand were mirrored in the expansion of public education. In recent years the level of education of younger age groups increased at a

fast rate: since the late 90's, over 70 percent of the above-16 age group has gone to secondary schools and close to 40% of the 18-24-year group has studied at universities or colleges, while in the adult population (18-64) the ratio of persons with higher education qualifications is barely ten percent.

Figure 19 shows that the ratio of foreign language speakers has also increased at a fast rate, but adaptation appears to be the fastest among young people (see table 2).

Figure 19 Proportion of foreign language speakers in the total population, 1980-2001



Source: CSO Census 2001.

Table 2 Proportion of foreign language speakers by age group, 1992

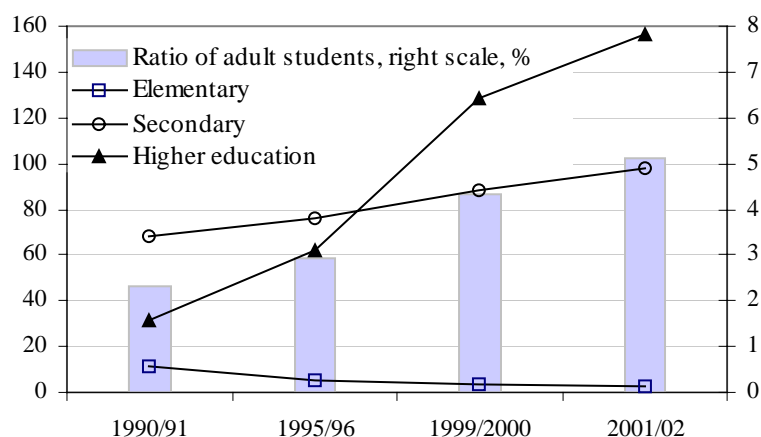
age 15-19	14.83
age 20-24	17.90
age 25-29	14.16
age 30-74	11.15
total	12.31

Source: CSO Labour survey, 1992 Q1, own calculations.

On the other hand, the scope of adult education has been slow to increase: the ratio of students participating in adult education within the population increased from 2 to 5 percent in ten years (see Figure 19). The ratio of companies organising professional further training is low in comparison to the EU and to other countries of the region as well. According to an EBRD survey, 12% of companies in Hungary organised some internal training, as opposed to 42% in the Czech Republic, 16% in Poland, and the indicators in EU Member States varying between 15 and 61 percent (EBRD, 2000). (On the reform of the training system see Tót, 2001.) The

underdeveloped nature of vocational training may be a barrier to improving the adaptability of labour.

Figure 20 Number of students in adult education by level of training (thousand persons) and their proportion within the 20-54 year-old population (%)



Source: CSO Periodical information, Social statistics: Education data 2001/2002, Budapest, 2002 and CSO Labour survey time series (Cf. Table A19 in the Appendix).

Hungary has limited experience in alleviating structural unemployment by retraining. In the 1990's 4-5 percent of the unemployed (in 2001: 6.6%) participated in retraining, mostly persons with secondary qualifications and young people. Previous studies indicated that unemployed persons above 40 years of age and having no secondary qualifications, who have little chance to find jobs, tend not to receive retraining assistance (Micklewright and Nagy, 1994). According to a more recent questionnaire survey²² one of the reasons for this may be the fact that the registered unemployed primarily expect job offers from the labour organisation, and few of them want to participate in training (Berde, 2003). Other surveys indicated that the majority of persons who completed retraining fail to find jobs. According to a representative survey conducted in 1997, in the months following the training the ratio of persons in employment among those who participated in retraining supported from the Employment Fund in the second half of 1996 was between 23-48 percent (Galasi, Lázár et al., 1999).

²² The survey was conducted in late 2002 and early 2003 in Borsod, Szolnok and Nógrád counties, by interviewing the clients visiting the labour offices.

Summary and recommendations

The low level of labour supply is a significant constraint on the competitiveness of the labour market. In Hungary, only 60 percent of the working age population is working or looking for a job. The participation rate is especially low among those aged 55-64, which is to a large extent due to the disincentive effect of non-labour incomes. This effect is reflected in the increase of economic activity in age groups affected by the increases of the retirement age. Working-age disability pensioners are six-seven times less likely to work than their non-pensioner of the same age: such a huge difference can hardly be explained solely by poor health.

The above facts suggest that it would be important to take a closer look at the disincentive effects of transfer incomes on the willingness to work and options for reforming the welfare system in a way that accounts for such effects. This is especially justified by the fact that inflows to pension-type benefit schemes continue to be high, despite the considerable drop in the once-high unemployment rate which had motivated generous rules of eligibility in the early 1990s.

The available aggregate data was not sufficient for drawing any conclusion concerning the incentive effects of taxes and their macro-level consequences for labour demand and supply. In this respect empirical analysis is all the more important since the direction of these effects cannot be decided on a theoretical basis. The potential effect of any proposed tax cut can only be evaluated on the basis of empirical analysis.

The adjustment of the labour market has been relatively flexible in terms of wage levels, and labour demand responded sensitively to changes in wage levels. Wages increased faster than productivity following the increases of public sector wages and of the minimum wage. The most labour intensive sectors of manufacturing responded by factor substitution and cuts in employment.

Productivity tended to increase faster than real wages throughout the 1990s, but this trend reversed in recent years due to the wage increases induced by the public sector. With moderate wage rises in neighbouring countries, the wage cost advantage of Hungary has diminished. This is to some extent balanced by the fact that the productivity of Hungarian labour, though only half of the Austrian, comes second after Slovenia among the countries of Eastern Europe. Hungarian productivity growth has tended to be faster than elsewhere in the region, and projections indicate the continuation of this trend.

The geographical mobility of labour is low, which is due primarily to the high cost of relocation and of commuting. In the past few years, regional disparities in employment and unemployment have narrowed, while differences increased in earnings. One possible explanation is that labour demand increased relatively faster (adaptation of capital flows) in high-unemployment regions, while labour supply changed little, given the low geographical mobility. In this case the growth of earnings disparities may be attributed to the wage advantage of qualified labour, which lowers the relative wage in less developed regions where labour is less qualified. Higher education intake from poorer regions has grown faster than the national average, which may improve the correspondence of labour supply and demand and help reduce earnings disparities in the long run. Policy options may

only be identified on the basis of a closer analysis of the consequences of low mobility and of the factors hindering mobility.

Demand for qualified labour has increased, which has in general been reflected in the considerable expansion of public education – especially the fast growth in the higher education intake. Vocational further training and vocational training in companies has been much slower to grow and is significantly below the levels typical in Western Europe. The underdeveloped state of vocational training may hinder improvement in the adaptive capacity of the labour force. It would be worthwhile to examine in more detail the labour market impact of the recent expansion of secondary and higher education, the challenges facing adult education, and the range of incentives.

References

Ali, M. M., H. W. Cecil, et al. [2001]: "The effects of Tax Rates and Enforcement Policies on Taxpayer Compliance: A Study of Self-Employed Taxpayers." *Atlantic Economic Journal* 29(2): 186-203.

Berde, É. [2003]: A felnőttek pályamódosításának és foglalkoztathatóságának kapcsolata [Relationship of the career change and employability of adults]. Research paper. Budapest.

Blanchflower, D.G. [2000]: "Self-employment in OECD countries." *Labour Economics* 7:471-505.

Bosworth, D., P.Dawkins, et al. [1996]: *The economics of the labour market*. Harlow, Longman.

Burchardt, T. [1999]: *The Evolution of Disability Benefits in the UK: Re-weighting the basket*. London. CASE Papers No.26.

Cseres-Gergely, Zs. [2002]: *Migration, migrants and the role of economic incentives to migrate in Hungary 1990-1999*. Budapest, MTA-KTK.

EBRD [2000]: *The 2000 Transition Report among foreign investors in Eastern Europe*. London, European Bank for Reconstruction and Development.

Firdmuc, J. [2002]: *Migration and regional adjustment to asymmetric shocks in transition economies*. Michigan. William Davidson Institute Working Paper No. 441.

Galasi, P. [2002]: Munkakínálati becslések - fizetett / nem fizetett munka és jövedelem [Labour supply estimates - paid / unpaid work and income]. *Munkaerőpiaci Tükör*. Budapest, MTA KTK: 101-104.

Galasi, P., Lázár Gy., et al. [1999]: *Az aktív foglalkoztatáspolitikai programok eredményességét meghatározó tényezők* [Factors affecting the effectiveness of active employment policy programmes]. Budapest, MTA Közgazdaságtudományi Kutatóközpont.

Garzó, L. [2001]: *A szociális (és munkanélküli) ellátórendszer munkára ösztönző hatásának felülvizsgálata és erősítése* [The review and reinforcement of the incentive to work of the welfare (and unemployment) benefit system]. EU-konform foglalkoztatáspolitikai. M. Frey. Budapest, Országos Foglalkoztatási Közalapítvány: 149-174.

Halpern L. and Kőrösi, G. [1998]: "Labour market characteristics and profitability (Econometric analysis of Hungarian exporting firms 1968-1995)" *Economics of Transition* 6(1): 145-162.

Kertesi G. [2000]: *Ingázás a falusi Magyarországon* [Commuting in rural Hungary]. *Közgazdasági Szemle* 47(10): 775-798.

Kertesi, G and Köllő, J. [1997]: "Reálbérek és kereseti egyenlőtlenségek, 1986-1996, I. rész" [Real wages and income disparities, 1986-1996, Part I]. *Közgazdasági Szemle* 44(7-8): 612-634.

Kertesi, G and Köllő, J. [1998]: "Regionális munkanélküliség és bérek az átmenet éveiben (Regional unemployment and wages in the transition period)." *Közgazdasági Szemle* (45(7-8): 621-652.

Kertesi, G and Köllő, J. [2001]: *Ágazati bérkülönbségek Magyarországon* [Sectoral wage disparities in Hungary]. Budapest, Országos Foglalkoztatási Közalapítvány.

Kertesi, G and Köllő, J. [2002]: Labour Demand with Heterogeneous Labour Inputs after the Transition in Hungary, 1992-1999 - and the Potential Consequences of the Increase of Minimum Wage in 2001 and 2001. MTA-KTK Budapesti Munkagazdaságtani Füzetek 2001/5.

Killingsworth, M.R. [1983]: Labour Supply, Cambridge University Press.

Köllő J. [2000a]: Regionális kereseti és bérköltség különbségek [Regional disparities in income and wage costs]. Munkaerőpiaci tükrök (Közelkép: Bérek a politikai rendszerváltástól az ezredfordulóig). Budapest, MTA_KTK: 90-95.

Köllő, J. [2000b]: Iskolázottság és életkor szerinti különbségek: az "emberi tőke" átértékelődése [Differences by education and age: the revaluation of "human capital"]. Közelkép: bérek a politikai rendszerváltástól az ezredfordulóig. J. Köllő. Budapest, MTA Közgazdaságtudományi Kutatóközpont: 80-90.

Köllő, J. [2002]: Az ingázási költségek szerepe a regionális munkanélküliség különbségek fenntartásában [The role of commuting costs in maintaining regional unemployment disparities]. MTA-KTK Budapesti Munkagazdaságtani Füzetek 2002/2.

Kőrösi, G. [2002]: Labour adjustment and efficiency in Hungary. MTA-KTK Budapesti Munkagazdasági Füzetek 2001/4.

Krugman, P.R. [1996]: "Making sense of the competitiveness debate." Oxford Review of Economic Policy 12(3): 17-25.

Micklewright, J. and Nagy Gy. [1994]: Flows to and from insured unemployment in Hungary. EUI Working Papers in Economics. 94/41.

OECD [2003]: Taxing wages 2001-2002. Paris, Organisation for Economic Co-operation and Development.

Palócz, É. and Tóth I. J. [2003]: A 2002. évi bérnövekedés okai. Elemzés a statisztikai adatok és egy vállalati felmérés tükrében [The causes of the year 2000 wage increase. Analysis in light of statistical data and a corporate survey]. Budapest, MKIK Gazdaság- és Vállalkozáselemzési Intézet.

Popper, L. [2002]: "A 2001-2002. évi minimálbér-emelés hatása a hazai kereseti arányokra" [The impact of the year 2001-2002 minimum wage increases on income proportions in Hungary]. Munkaügyi Szemle 46(6 and 7-8): 10-14 and 13-17.

Scharle, Á. [2003]: A rokkantnyugdíjasok munkakínálatának változása 1992-2000 [Changes in the labour supply of disability pensioners 1992-2000]. Budapest. Manuscript.

Semjén, A. [2006]: "A pénzbeli ellátások ösztönzési hatásai" [Incentive effects of cash benefits]. Közgazdasági Szemle (10): 799-816.

Sinn, H.-W. [1994]: Housing and labour markets in the East. Obstacles to enterprise restructuring in transition. P. Aghion and N. Stern (ed.) EBRD.

Tót, É. [2001]: Alapvetések az életpályát végigkísérő tanulás koncepciójának kidolgozásához és a vállalaton belüli emberi erőforrás-fejlesztés ösztönzéséhez [Fundamentals of the development of the concept of life-long learning and the promotion of intra-company human resource development]. EU-konform foglalkoztatáspolitikai. Frey M. (ed.) Budapest, Országos Foglalkoztatási Közalapítvány: 433-461.

van Lin, M., R. Prins, et al. [2002]: Active Labour Market Programmes for People with Disabilities. Facts and figures on use and impact. Zoetermeer, EIM Business and Policy Research: 68.

Appendix

Table F1 Participation rate of the age 15-64 population, 1992-2002

	employment, %			activity, %	unemployment, %
	men	women	together		
1992	64.4	52.3	58.3	64.7	9.9
1993	60.6	49.3	54.8	62.3	11.9
1994	60.3	47.8	53.9	60.4	10.7
1995	60.2	45.9	52.9	58.9	10.2
1996	60.2	45.5	52.7	58.5	9.9
1997	60.3	45.5	52.8	57.8	8.7
1998	60.6	47.3	53.9	58.4	7.8
1999	62.6	49.0	55.7	59.9	7.0
2000	63.3	49.7	56.4	60.2	6.4
2001*	62.9	49.8	56.2	59.6	5.7
2002*	62.9	49.8	56.2	59.7	5.8
EU15					
2000	72.5	54.0	63.3		
Lisbon target					
2005		57.0	67.0		
2010		60.0	70.0		

Source: CSO Labour survey (*weighted in accordance with the census of 2001) and Employment in Europe 2001, EC, Luxembourg 2001.

Table A2: Participation rate of the age 15-64 population in some countries, 1997-2001

	Employment rate %			Activity rate %			Unemployment %		
	1997	1999	2001	1997	1999	2001	1997	1999	2001
Czech Republic	68.7	65.9	65.3	72.1	72.2	71.1	4.8	8.7	8.2
Poland	68.8	57.5	53.5	66.4	65.9	65.7	11.5	12.8	18.6
Hungary	52.7	55.7	56.6	57.8	59.9	60.0	8.7	7.0	5.7
European Union	60.9	62.6	64.1	68.1	69.1	69.2	10.7	9.3	7.4

Source: OECD Employment Outlook 2002: Statistical Appendix

Table A3 The activity of the age 55-64 population and the retirement age, 1992-2002

	activity: female	activity: male	retirement age: female	retirement age: male
1992	15	35	55	60
1993	12	31	55	60
1994	10	28	55	60
1995	10	29	55	60
1996	11	28	55	60
1997	11	28	57	60
1998	10	27	57	61
1999	11	31	57	61
2000	14	34	58	62
2001	16	36	58	62
2002	18	37	59	62

Source: CSO Labour force survey.

Note: We considered all those persons to be active who are either at work or who are capable of working and are looking for jobs.

Table A4: Ratio of recipients of pension and pension type benefits, benefit expenditures and the inactivity rate, 1990-2001

	recipients, %	expenditure as % of GDP	inactivity rate, %
1990	24.3	9.7	
1991	25.4	10.5	
1992	26.6	10.9	27.61
1993	27.6	11.0	30.11
1994	29.0	11.4	31.61
1995	29.6	10.4	32.10
1996	30.2	9.7	32.61
1997	30.8	9.4	33.35
1998	31.2	9.8	33.75
1999	31.2	9.8	32.23
2000	31.0	9.3	31.95
2001	30.0	9.5	32.18

Sources: CSO: Regional characteristics of recipients of pension and pension type benefits, 1993-2001, Budapest, 2002, and CSO Labour survey data

Note: Recipients of benefits are disclosed as a percentage of the total population, inactivity as a percentage of the 15-64 age group.

Table A5 Activity rate by age cohort, in 2001

	15-19	20-24	25-29	30-39	40-54	55-59	60-74
male	11.3	64.4	89.7	90.1	78.5	53.4	7.1
female	8	47.9	61.1	69,9	73.2	23.9	2.8

Source: CSO Labour survey

Table A6 Disability pensioners

	granted, persons	applications, persons	granted, %
1990	61300	122612	44.99
1991	66338	137912	48.10
1992	64418	134217	48.00
1993	62745	134217	45.94
1994	62418	136595	46.34
1995	61009	136806	44.06
1996	61597	169849	36.48
1997	55400	140162	39.53
1998	49280	125328	39.32
1999	48022	137092	35.03
2000	54196	155413	34.87
2001	58765	155602	37.77

Sources: Statistical yearbooks of the National Pension Insurance Directorate, Budapest 1998, 2000, 2001 and CSO Yearbook, Budapest 1998 (based on the figures of the National Medical Expert Institute of the National Health Insurance Fund).

Table A7 Social security contributions payable on wages and employment, 1995-2003

	1995	1996	1997	1998	1999	2000	2001	2002*	2003*
Employment, thousand persons	3679	3648	3646	3698	3812	3849	3860	3871	
Employers' contribution, %	SS 44.0	42.5	42.1	42.1	37.7	37.4	35.1	32.7	32.7
Employees' contribution, %	SS 10	10	10	10	11	11	11	11	11.5
Other contributions, %	5.7	6.0	6.0	5.6	4.5	4.5	4.5	4.5	4.0
Average PIT rate, %	-	-	20.7	20.5	20.6	21.6	21.8	21.9	20.9

Source: The average personal income tax (PIT) is the calculation of the Income Tax Department of the Ministry of Finance, the contribution figures are also from the Ministry of Finance, the lump-sum health contribution is included in the employers' SS contribution prorated to the gross average wages. The employment data come from the CSO Labour survey among the age 15-64 population.

Note: * 2002: preliminary figure, 2003: budgeted

Table A8. The ratio of labour costs to total costs in the manufacturing industries, 2000-2001, %

	2000comp	2001
Motor	6	7
Metallurgy	6	5
Instrument	9	8
Food	11	11
Paper	13	13
Chemical	14	15
Rubber	14	15
Timber	15	17
Metal	15	16
Other processing industry	16	17
Non-metal	19	19
Machine	20	21
Textile	27	27
Leather	32	31

Source: Own calculations based on the APEH 2002 July Flash Report.

Note: The year 2002 figure is from subsequent reporting requested for comparison (self-assessment of companies on the year 2000 figures in the structure of the year 2001 accounting rules).

Table 9: Number of employees in the manufacturing industry by subsector, thousand persons

	1998	1999	2000	2001	2002
Food processing, tobacco	119	129	126	123	128
Textile, leather, shoe	125	133	128	123	112
Timber, paper, printing	38	53	58	57	69
Chemical industry	79	83	80	79	78
Other non-metal	31	32	30	29	28
Metal processing	59	74	78	79	74
Machine industry	187	217	237	242	241
Other processing	20	27	29	28	29
Total	658	747	765	760	749

Source: CSO Statdat

Table A10 Labour cost of average blue-collar workers in the manufacturing industry and the taxes and contributions payable on gross average wages in some OECD countries, 2002

	Contributions, %	Labour cost, USD
Germany	51	37118
US	30	34650
Sweden	48	32338
Italy	46	26451
Ireland	24	25975
Austria	45	24699
Spain	38	19613
Portugal	32	9535
Czech Republic	43	8328
Turkey	42	8169
Poland	43	7441
Mexico	16	7116
Hungary	46	5295
Slovakia	42	4554

Source: OECD (2003)

Note: According to the OECD definition, the labour cost is the sum of the gross wage and the employer contributions payable on such wage, in dollars (recalculated from the OECD data disclosed on the same purchasing power parity), on an annual average. Taxes and contributions payable on wages: personal income tax + employer's and employees' social security contributions (including the health contribution).

Figure F11 Difference of annual productivity and real wage changes in the countries of the region (percentage point)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Hungary	6.27	9.2	2.64	2.41	1.92	4.14	-4.62	1.23	-18.85	2.06
Slovakia						3.5	4.27	-0.39	-1.03	2.12
Poland	1.92	0.39	-4.13	-1.83	-1.36	1.12	2.14	-0.79	2.72	1.5
Slovenia			5.18	2.31	2.48	1.54	-0.69	-0.31	2.47	1.48
Czech Republic	-3.99	-3.13	-2.91	0.65	2.17	-1.08	-1.32	4.03	-5.42	-1.72

Source: Own calculations based on the data and July 2003 forecast of AMECO (annual macro-economic database of the Economic and Financial Directorate General of the European Commission).

Note: Annual average changes, productivity = GDP at 1995 prices/employed persons; real wage = employment income per one employed person based on the national accounts, calculated with a DGP deflator (1995=100).

Table A12 The level and change of labour productivity in the countries of the region

	Level 2000	Change 1991-94	Change 1995-99	Change 2000-03
Romania	11	-2.13	3.38	3.28
Bulgaria	17	0.77	-0.24	6.13
Poland	24	5.30	4.46	3.80
Slovakia	28		4.52	3.20
Czech Republic	29	0.70	2.44	3.53
Hungary	30	5.55	2.96	4.05
Slovenia	35	1.48	4.06	2.975

Notes: Productivity level = [GDP at purchasing power parity standard (PPS, current prices), 1000 million PPS] / [number of employed persons, thousand (ILO)]; the change is the average of percentage changes observed in the period concerned.

Sources: PPS GDP: Eurostat Statistical yearbook on candidate and SE European countries, in 1000 million PPS; productivity change: Commission Services, AMECO. The July 2003 forecast of the commission for 2003; number of persons employed: ILO Labor statistics.

Table A13 Regional disparities of income compared to the national average, 1997-2001

	Central H.	Central Transd.	Western Transd.	Southern Transd.	Northern Hungary	Northern Great Plain	Southern Great Plain
1997	1.223	0.978	0.912	0.884	0.893	0.862	0.866
1998	1.245	0.984	0.931	0.875	0.870	0.839	0.843
1999	1.251	0.958	0.923	0.866	0.875	0.848	0.843
2000	1.269	0.964	0.926	0.824	0.860	0.818	0.815
2001	1.275	0.969	0.929	0.838	0.856	0.820	0.818

Source: Munkaerőpiaci tükör, 2002.

Table A14 Regional disparities in the unemployment rate, 1997-2001

	Central H.	Central Transd.	Western Transd.	Southern Transd.	Northern Hungary	Northern Great Plain	Southern Great Plain
1997	0.793	0.920	0.690	1.138	1.598	1.368	0.839
1998	0.718	0.859	0.769	1.205	1.564	1.410	0.910
1999	0.743	0.857	0.629	1.186	1.643	1.443	0.814
2000	0.813	0.750	0.656	1.219	1.578	1.438	0.797
2001	0.754	0.754	0.737	1.368	1.491	1.368	0.947

Source: Munkaerőpiaci tükör, 2002.

Note: Unemployment rate as a percentage of the national average.

Table A15 Regional disparities in employment, 1997-2001

	Central H.	Central Transd.	Western Transd.	Southern Transd.	Northern Hungary	Northern Great Plain	Southern Great Plain
1997	1.070	1.022	1.139	0.964	0.882	0.863	1.024
1998	1.064	1.045	1.144	0.965	0.878	0.862	1.008
1999	1.067	1.057	1.130	0.956	0.880	0.873	1.046
2000	1.065	1.061	1.119	0.963	0.889	0.874	0.995
2001	1.072	1.061	1.104	0.939	0.891	0.880	0.995

Source: Munkaerőpiaci tükör, 2002.

Note: Employment rate in proportion to the national average

Table A16 Number and proportion within the population of full-time students

	Central H.	Central Transd.	Western Transd.	Southern Transd.	Northern Hungary	Northern Great Plain	Southern Great Plain
Full-time students/population, 2001/02	34.33	8.74	11.12	3.21	12.15	11.41	15.18
1995/90	1.73	1.77	1.58	1.66	1.64	1.67	1.71
2000/1995	1.34	1.27	1.42	1.44	1.40	1.48	1.40

Source: CSO Periodical information, Social statistics: Education figures 2001/2002, Budapest, 2002 and CSO Labour survey time series

Table A17: Number of employed persons by qualification category, 1993-2001

	1993	1995	1997	1999	2001
Secondary final examination	1135.9	1112.1	1140	1252.4	1249.4
Skilled worker	1044.4	1094.5	1119.6	1211.9	1269.6
Grade 1-8	1039.5	857.2	805.2	701.0	660.7
Higher education	560.5	559	545.5	626.2	664.8

Source: CSO Labour survey

Table A18: Number of unemployed and ratio of unskilled persons, 1993-2001

	1993	1995	1997	1999	2001
Grade 1-8	216.2	162.2	142.8	100.2	82.5
Grade 1-8, %	41.7	28.9	40.9	35.2	35.4
Skilled worker	174.8	152.8	124.8	107.2	86.6
Secondary final examination	110.3	84.5	71.3	68.2	54.2
Higher education	17.6	17.0	9.9	9.1	9.6

Source: CSO Labour survey

Table A19 Number of students in adult education and their proportion within the 20-54 age population

	1990/91	1995/96	1999/2000	2001/02
Elementary	11.5	5.2	3.1	2.8
Secondary	68.1	75.9	88.5	97.7
Higher education	31.8	62.2	128.1	156.3
Ratio of adult students, %	2.32	2.91	4.33	5.11

Source: CSO Periodical information, Social statistics: Education data 2001/2002, Budapest, 2002 and CSO Labour survey

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