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WAGE INEQUALITY IN EAST-CENTRAL EUROPE

GÁBOR KERTESI and JÁNOS KÖLLŐ

The substantial rise of wage inequality in Central and Eastern Europe has attracted the attention of sociologists, concerned with social equity, and economists for whom it indicated the growing differentiation and restructuring of relative prices on the labour market. This research wanted to study wage inequalities from the second point of view by analyzing relative wages during the transition period in Hungary and Romania.[1] In this paper we would like to discuss the policy relevance of the research, summarize the main empirical findings and draw conclusions for policy.

1. THE POLICY RELEVANCE OF THE RESEARCH

This section discusses how the issue of relative wages is connected with one of the most severe problems of CEE economies: the large-scale and persistent under-utilization of their labour force. Millions of potential employees are not offered jobs at the given wages, or the offers are rejected by the workers themselves, indicating that something is wrong with the price mechanism or the returns from matching jobs and workers are reduced by some other factors.

The risk of persistent regional or occupational crises is high if relative wages do not adjust to shifts in demand, do not reflect relative scarcities and relative productivities and therefore do not provide correct orientation for workers and employers. The preconditions for flexible wage adjustment were unfavorable at the start of the transition because of the egalitarian tradition, the survival of administrative wage control (that was maintained to contain inflation) and insider power. Accordingly, the responsiveness of relative wages was the first question we wanted to address by studying departures from the state socialist status quo

[1] The social equity implications of wage inequalities were not addressed in this research.

– and convergence to the West – in terms of overall wage inequality and differences by some important dimensions.

The observation of no change and no convergence would raise concerns and call for policies removing institutional rigidities in wage setting. By contrast, the observation of substantial change and full convergence would not imply that the labour market is in the best conceivable equilibrium state. Depending on factors like mobility costs, the access of workers to non-wage income, transparency of the market, the working of the educational system or the quality of manpower services the economy can be in high or low-employment equilibrium as was emphasized in theoretical models of the transition process (Aghion and *Blanchard 1994, Burda 1993*, *Dewatripont* and *Roland 1992* among others). Wage relativities similar to those in France, Germany or the UK are compatible with a low-equilibrium state if workers and firms face high adjustment costs, have difficulties in collecting information, or the institutions assisting the adjustment process are missing or mismanaged by the state.

These considerations motivated us to engage in the detailed analysis of limited problem areas beyond an extensive overview of overall wage inequality and comparison with the West in a descriptive fashion. At the chosen fields – markets for human capital and regional wage adjustment – we tried to observe demand and supply-side developments during and after the restructuring of relative wages. We also tried to predict, as far as was possible with the data at hand, the direction of future change given wages and other factors affecting the behavior of firms and workers.

In the study of *markets for human capital* the research has benefited from the availability of reliable micro-data for Hungary 1986, 1989 and 1992-96. Information was available for exceptionally large samples of individuals, their employers and regions simultaneously. The data allowed the estimation of properly controlled wage equations, the study of structural breaks, and the analysis of the productivity yield of workers with different educational background and experience. For the study of supply-side developments long time series on the flows of the educational system were used. (See the enclosed paper by *Kertesi* and *Köllő* (1999*a*). Comparable evidence for France is presented in the paper by *Redor* and *Pailhé* (1999). Also see end-note N1 of this paper). A detailed analysis of the Hungarian case can possibly add to the understanding of transformation in other Visegrad countries where the returns to human capital changed in the same direction and by similar orders of magnitude but, in lack of adequate data, less is known about the nature of change and the suitability of particular policy actions.

Regional wage adjustment was addressed in two papers. The first study analyzed Hungary using micro-data mentioned above. (See the regional paper by *Kertesi* and *Köllő* (1999*b*) that also includes a comparison of the key parameters with western and eastern research results). The paper starts with estimating the link between regional relative wages and registered unemployment and follows with the study of other factors affecting regional relative labour costs such as changes in regional productivity levels and differences in the search intensity of the unemployed. Finally, the paper presents data on unemployment persistence and regional indicators of capital investment after the major restructuring of regional relative wages.

The second paper compares Hungary and Romania using regional data and focusing on interactions between unemployment, self-employment and regional relative wages (*Köllő* and *Vincze* 1999). This choice may require explanation. Romania followed a special path of restructuring in that small holder agriculture was fully restored and absorbed many job losers. The massive presence of low-income micro-farm holders and unpaid assisting family members within the non-employed population makes the application of standard economics wisdom difficult and the effect of textbook-based policies rather uncertain. We need to know how the demand and supply of labour are affected by massive subsistence farming. Do farmers return to paid employment at the given wages when the demand for labour shifts upwards? Do they affect the demand for labour by actively searching in the labour market and thus restraining wage claims in the enterprises? The answers to these questions affect the size of the labour force that is available for a region's corporate sector at given wages and influences regional relative wages themselves. Positive answers to the questions promise faster build-up of the modern corporate sector and stronger motivation to invest in the undeveloped rural districts. Negative answers raise the risk that a dual economy – combined of an urban enterprise sector and a backward peasant agriculture – persists with no, or limited, communication between the segments.

Beside Romania – where understanding the patterns of self-employment is essential for employment policy – we also analyzed regional self-employment rates, their responsiveness to demand shifts and effect on wages in Hungary. The findings cannot be generalized but the paper can perhaps call the attention to the importance of the issue in the CEE region where self-employment absorbed between 20 and 60 per cent of the loss in paid employment during the transformational recession (see *Boeri* et al. 1998).

The policy implications of the research depend on whether the empirical findings suggest wage rigidity or rather hint at institutional problems and high adjustment costs which keep the level of employment low in large segments of the

economy (despite the convergence of wage structures to market economy patterns). The first case calls for reforming the wage setting procedure while the second necessitates policies addressing regional and skills mismatch, mobility constraints and the deficiencies of labour market institutions. We present our policy recommendations in Section 3 after an overview of the empirical findings.

2. MAIN FINDINGS

This section summarizes the main empirical findings of the research. The concise summary is organized by subjects and restricted to the results presented in the individual contributions: *Kertesi* and *Köllő* (1999*a*), (1999*b*), *Köllő* and *Vincze* (1999), *Redor* and *Pailhé* (1999). Occasional references to research results based on the collected data – but not presented in the journal-length individual papers – and data taken from the literature will be added in end-notes, denoted as N1, N2 etc.. While the end-notes can be disregarded in the evaluation of the research output reading them is useful for weighing the relevance of some policy recommendations.

The institutional framework of wage bargaining

Despite of the fact that the national frameworks of wage bargaining are different within the CEE region the literature suggests that enterprise-level bargaining plays the decisive role in wage determination, at least in the Visegrad group where (scarce) information on wage setting practices is available. Even in countries where unions, chambers and the government enter national-level negotiations, like Hungary or Poland, they publish recommendations rather than effective guidelines. Minimum wages are set at low levels and seem to enter the wage setting process in an indirect way via public sector pay or social benefits. The industrial level of collective bargaining is apparently undeveloped and the attempts to find a "union effect" on wages repeatedly fail. The available data suggest that if employers and employees enter negotiations they typically do so at the enterprise level in an informal fashion. The emerging institutional patterns of bargaining thus provide favorable conditions for flexible wage adjustment.

As expected in a regime of decentralized bargaining wages are becoming increasingly responsive to firm revenues on the one hand and to the state of the

local labour market on the other. In Hungary where the data allow the estimation of both effects simultaneously the finding is that the productivity-elasticity of individual wages rose from 6 to 20 per cent between 1986 and 1996 while the unemployment elasticity moved from –1.5 per cent to a range of –10/–12 per cent in 1989-96. The human capital-related wage relativities are also consistent with the changes in group-specific productivity and unemployment (see later).

Departure from the status quo: overall wage inequality

The literature as well as our own results suggest marked rise in overall wage inequalities in all CEE countries. The initial pre-transition level of earnings dispersion was rather low by international standards. The increase in wage dispersion brought the post communist countries from the low into the range of medium/high-inequality countries. Compared to EU member states the Visegrad countries are characterized by high earnings inequalities. The process of wage decompression went through at spectacular pace: the change in the log wage differential between the ninetieth and the tenth percentile of workers amounted to 0,15–0,37 as expressed on a five year basis during the years of the transition, that is, between 1988/89 and 1994/95. This – compared to some developed western economies having experienced rising wage inequalities in the 1980s – hints at very fast restructuring. The change in the log wage differential, expressed on a similar five year basis, ranged between 0,02 and 0.14 in the US, UK, France and Japan during the 1979–1990 period.[2]

Returns to education and experience

Like other studies of the CEECs we found marked rise in the returns to schooling during the early years of transition using Hungarian data. The estimated rates of returns were comparable with those from Western market economies just a couple of years after the start of transition. Educational differentials grew also in several western market economies in the eighties, especially in the US, UK and West Germany but other countries (like France, Canada, Sweden or Japan) had stable or slightly rising educational differentials.[3] (See N3 and N4).

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[2] See notes N1 and N2 drawing from *Kertesi* and *Köllő* (1999*a*), *Redor* and *Pailhé* (1999) and comparable data from the literature.

[3] Only Netherlands being an exception with her sharply falling educational differentials.

The evidence also hints at the devaluation of on-the-job experience accumulated under state socialism. Moreover, the Hungarian data suggest that the retuns to education increased by higher rates in younger cohorts. While the devaluation of experience and the appreciation of new skills continued until 1996 (until observations were available) the relative wages of older skilled workers only increased between 1986 and 1992 but stayed constant or declined afterwards. As opposed to the developments in the East (see N5), the experience-wage profiles became steeper in many western economies. The earnings differentials between prime age and younger men substantially increased during the eighties, with the exception of Sweden, as suggested by N6.[4]

Wage returns and productivity

The trends in demand for skills in Hungary were analyzed by estimating productivity equations derived from Cobb-Douglas production functions with heterogenous labour. (Unskilled, young-and-skilled and old-and-skilled workers were distinguished and their impact on the firm's productivity was estimated holding fixed assets constant). We found the evolution of relative wages to be consistent with changes in productivity. The results confirmed the obsolence of old skills acquired during state socialism. The productivity of skilled and young labour was increasing throughout 1989–1996 while the returns to skilled-old workers were diminishing in 1992–1996 as much as there was no statistically significant difference between old-skilled and unskilled labour, in terms of productivity yields, at the end of the period. Furthermore the results suggested that modern capital-intensive technologies increasingly rely on skilled (particularly on *young*-skilled) labour.

The role of foreign enterprises

Separately run productivity equations reveal profound differences between foreign and domestic enterprises. The models do not indicate differentials

[4] As to the interpretation of the changes in the West, *Mincer* (1991), *Katz* and *Murphy* (1992), *Juhn, Murphy* and *Pierce* (1993) or *Freeman* and *Katz* (1993) emphasise the role of shift in relative labour demand that favoured more educated and more experienced workers combined with a low rate of growth in the supply of highly qualified workers relative to less educated workers. The shift in demand is assumed to be driven by skill biased technological change, however the role of industrial restructuring cannot be excluded either. A shift in labour demand towards sectors that intensively utilize educated workers and/or skills accumulated through work experience will tend to raise the relative wages of educated or experienced workers.

between the productivity of young-skilled and old-skilled labour at domestic firms but suggest a large productivity advantage on the part of young-skilled workers (relative to the old-skilled) in firms where foreign owners have majority. The productivity gap between the two types of skilled labour was constant over time at foreign firms, so the economy-wide increase of the gap resulted from the expansion of foreign capital in the economy as a whole. As a consequence of the economy-wide increasing capital-skill complementarity plus the productivity advantage of young-skilled labour over the old-skilled at foreign firms, the productivity of capital (K/L) is also higher and rising at faster pace at foreign than domestic enterprises Foreign owners use not only more productive labour and capital but they may take advantage of increasing capital-skill complementarity by better match of modern technology and young-skilled labour.

Human capital formation and the productivity of the young-skilled

Answering the question of why younger skilled workers and particularly those employed in foreign firms can be more productive requires further research. At least three different mechanisms can be at work. *(i)* Foreign firms may combine resources more efficiently: the proper match of modern technology and young-skilled labour can create extra returns via increasing capital-skill complementarity *(ii)* By providing considerably more training than domestic firms foreign enterprises improve and specify the skills of young-skilled labour. (See N7). *(iii)* Foreign firms may screen workers better. We found evidence suggesting that foreign enterprises paid a premium above the domestic wage level when they entered the Hungarian market which helped them skim the cream of the labour force, especially young workers having important extra skills.[5] Furthermore, foreign firms prefer hiring young workers but not labour market entrants. By overrepresenting skilled labour with some (3–8 years of) experience they take advantage of on-the-job training of other employers. The conjecture that higher than average wages were used by foreign firms as a screening device is supported by the observation that the wage premium gradually decreased after 1992 and completely disappeared by 1995/6 when the influx of foreign firms slowed down and the existing ones had already built up their staff.

[5] See N8 on how the knowledge of foreign languages and familiarity with computers is distributed by age and education in Hungary.

The market for skills post-transition

Despite the substantial decline of their relative wages the demand for unskilled and older workers has remained low until recently. Employment chances of Hungarian workers with primary education deteriorated during the transition.[6] Similarly, the employment probabilities of workers older than 45 decreased between 1993 and 1997 while their relative wages were also falling.

The supply side did respond to the revaluation of human capital – school enrollment rates increased, general education gained ground at the expense of apprentice-based vocational training, the number of students in higher education nearly doubled – but the school system continues to turn out unqualified labour on a massive scale (as will be discussed in more detail later). We also found evidence of over-reacting: the flows of the educational system suggest that the supply of properly skilled manual workers will fall in the near future. By contrast, a boom is expected in the supply of university graduates which will possibly stop the process of appreciation and reduce the private returns from higher education. These findings hint at institutional rigidities and information problems to be addressed in the policy section.

The effect of regional unemployment on wages

Regional wage adjustment was analyzed with repeated cross-section regressions using large data sets comprising both individual and firm-level data from Hungary 1986–96 and regional data from Hungary and Romania. The Hungarian findings suggest that by 1996 the elasticity of individual earnings with respect to local registered unemployment reached a value of –10 per cent interpreted in the literature as *the* typical estimate for mature market economies. The implied differentials relate to labour costs, that is, wage differentials between firms of identical productivity. The unemployment elasticity of wages increased faster in

[6] Using simple logit models (keeping age, marital status and the number of children constant, taking workers with secondary school background as the reference, and setting the dependent variable 1 in case of employment and 0 otherwise) we can estimate odds ratios of 0,37 for male and 0,31 for female workers with primary school background in 1993. Four years later the odds ratios were even lower: 0,32 for males and 0,28 for females.The estimates relate to the working age population aged 15–55/60 and are based on LFS data from the third quarter of each year. We note that the cross-products of relative employment and wage changes in groups formed by age and education indicate that demand-side effects were dominant in 1989–92 and 1994–96 while the changes in 1992–94 were compatible with supply-driven scenarios. The results are available upon request.

smaller firms but after the liberalization of wage setting in 1993 the differentials by firm size gradually disappeared. Estimates for various occupations also gave parameters of similar magnitude. The Hungarian elasticities are slightly higher than similar estimates from Poland and the Czech Republic and markedly higher than those from Romania where the effect of unemployment on wages was weak during the transition and almost disappeared after 1994. The finding of wage rigidity is consistent with the fact that the reform of the Romanian economy proceeded slowly by the end of the period discussed in this project.

Other factors affecting regional relative labour costs

We also analyzed the impact of location on the cost of labour holding registered unemployment and other wage determinants constant. The finding was that in later stages of the transition labour costs fell in Budapest and the central agglomeration relative to the peripheries, and in large cities relative to small towns. The most important cause explaining this change was that relative productivity levels changed in favour of the more developed, centrally located urban districts during the transition. Second, the search activity of the registered unemployed fell in the villages and small towns relative to the capital and large cities.[7]

As a combined effect of these changes the labour cost differential between villages located in the most depressed quarter of regions (as measured by registered unemployment) and Budapest decreased substantially from 23 per cent in 1993 to 15 per cent in 1996. The adverse implications of this change call for policies addressing region-specific external economies and job search.

[7] This implies decreasing differences between large and small settlements in terms of wage pressure. The implied reduction in the wage differential (if any) is captured by the region dummies since registered unemployment is held constant in the earnings functions. Similarly, the impact on labour costs of the region-specific changes in productivity is captured by the region dummies.

Demand-side developments

The Hungarian data on firm creation, small business start-ups, physical capital formation and foreign direct investment suggest increasing rather than decreasing regional differentials in firm density and capital endowments. Until the end of the observed period the existing labour cost differentials did not motivate the investors to move to the depressed districts, less businesses were started and less firms opened new premises.

The role of self-employment

The results yield support to the hypothesis that private agriculture absorbed a considerable part of the potential unemployed in the early years of Romania's transition. However, the regional data on flows *from* agricultural self-employment *to* paid employment suggest that, at least until 1996, the pool of private farmers failed to behave as a 'reserve army'. It seems that at the given wages, travel-to-work costs and farm incomes upward shifts in demand do not result in flows back from farming to employment or unemployment. Dependent-status employees are paid lower wages in regions with higher rates of agricultural self-employment but the differentials are small. On the basis of the upper-bound estimates presented in the paper the authors conclude that subsistence farming has no strong influence on the wage claims of employees. The results, taken together, hint at scarce interactions between the two broad segments of the contemporary Romanian labour market.

Entry to self-employment in Hungary was not strongly affected by the risk of unemployment. The regional data (much like the individual data used in other studies) provide no evidence of trade-off between unemployment and self-employment. Self-employment rates are high in the low-unemployment regions. Particularly high rates of regional self-employment are not associated with particularly low unemployment (unlike in Romania). Changes in the regional unemployment and self-employment rates are uncorrelated. Higher rates of self-employment (at a given rate of unemployment) do not imply lower wages in the enterprise sector. The results suggest that the 'disguised unemployed' tend to be inactive, by legal status, rather than entrepreneurs in the depressed regions of Hungary.

3. IMPLICATIONS FOR POLICY

In this section we draw the policy conclusions of the findings and recommend policy actions. As was emphasized in *Section 1* we are concerned with the problem of low employment rates rather than with the social equity effects of wage differentials. We believe, however, that acting in the spirit of some of the forthcoming recommendations would also help reduce inequalities by increasing employment in some particularly hard-hit social groups and regions.

In formulating the policy conclusions we would start from the observation that in the more developed, fast-reforming CEE countries earnings inequalities are high by EU standards; wage setting practices are de facto liberalized, the corporatist institutions have weak influence. Wages do respond to the state of the labour market and are adjusted to the group-specific differences in marginal product. In the case of Romania and, probably, of other slow-reforming economies a further move towards wage flexibility seems desirable. Without a proper scale of wage flexibility the labour market of these countries will be exposed to stronger shocks during the integration process when the scope for price and exchange rate adjustment will be limited. In fast-reforming CEE countries policies should rather be targeted at those factors which imply low level labour market equilibrium even with high wage flexibility.

3.1. Policies related to human capital

Policies concerned with the market of skills should first of all break with the illusion that – as was often heard at the start of the transition – CEE countries have highly qualified labour force. In fact, ten years after the start it is apparent that a non trivial fraction of the labour force is low educated and has meagre chance of being integrated into a competitive environment. In elaborating reasonable supply-side policies it should also be considered that more education, in general, does not necessarily imply higher employment rates on the macro level. The focus should be on people whose educational background does not reach the minimum level of schooling required by a modern economy. The following points discuss some fields where government intervention seems both possible and desirable.

(A) Developing the school system

Introduction of mandatory general secondary education

Though there had been major advance in the increasing the level of education in the CEECs in the nineties there still exists a considerable lag behind the EU levels. The gap between Hungary's school enrollment ratio and the OECD average is the largest at 17, 18 and 19 years of age. (6.2, 21.3 and 19.7 per cent, respectively).[8] Furthermore, the educational system continues to turn out unqualified workers. In 1996 18 per cent of the cohort of age 18 had completed no more than 8 classes and 2 percent had no more than a simple 2 year vocational school – one in five school leavers entered the labour market without any qualification.[9]

The most effective means of raising the educational level of the 15-18 years old is extending the age of compulsory schooling by the introduction of mandatory public general secondary education until age 18. This consize reform has to face a number of financial, institutional, social and regional obstacles. *(i)* The secondary school system giving "maturity" (general and vocational secondary schools) is severely underdeveloped. There is an ongoing shortage in places relative to the demand in the general secondary schools and in vocational secondary schools depending on their specialization. There is a strict selection procedure even in the largest cities unlike in most of the western OECD countries where secondary education is available for all. *(ii)* The process of educational expansion in Hungary took place without the opening of new public schools or by increasing their capacities. Among the 3200 communities of the country only 200 have any kind of secondary education (including vocational schools and vocational training schools). *(iii)* The network of dormitories is undeveloped, accommodation prices both in dormitories and in sublets are almost prohibitively high. *(iv)* This, together with the high costs of books, transportation and school programs creates a severe obstacle to school continuation, especially in the case of children coming from rural low-income families.

The extension of compulsory education would require policy action in at least three fields. *(i)* It is neccessary to increase the capacity of schools, and to open new schools, particularly in regions where there is an acute shortage of secondary schools. *(ii)* The decentralized system of school finance is inconsistent with the principle of compulsory secondary education. It is important to work out a system of transfers by which the municipalities without schools contribute to the costs of maintaining the secondary schools attended by their children. Compulsory secondary education may involve the definition of schooling dis-

[8] See Education at a glance, OECD, Paris, 1996, Table P3.1.
[9] Own calculations using data from the Microcensus, 1996.

tricts. *(iii)* The travel and accommodation of students from communities without schools should be assisted. The central administration should initiate the preparation for the reform by starting the expert work now.

Dealing with primary school graduates and drop outs

Special attention must be paid to young people leaving the school system after finishing the primary school or dropping out from secondary schools. These children have very low job finding probability and are typically not registered as unemployed in the local labour offices. (See N9). We propose the registration of the 15-18 years old jobless workers in labour offices. The registration should be based on information provided by the schools. The offices should keep contact with the youngsters in order to involve them to training courses.

It is equally important to introduce some targeted forms of assistance for those families who are the most disadvantaged in terms of schooling their children. Two types of grants/subsidies are proposed. *(i)* School continuation grant must be provided for families in which none of the parents completed more than 8 grades of primary school, at least one of them has no job and at least one of the children attends secondary or higher level education. The size of the support may vary with the unemployment rate of the community where the family lives. This criterion will favour people living in crisis regions and small villages where the chances of school continuation are extremely poor. *(ii)* A per head quota type budget-supplement should be granted to the primary schools for each child who meets the above criteria *and* was admitted to a secondary school (or to the secondary school if its pupil was admitted to a higher educational institution).

(B) Education outside the school system

Assisting the private accumulation of human capital

Some of the skills becoming important in the modernization of CEE economies, like langauages and computer-related skills, are accumulated at least partly via private human capital investment. Therefore the distribution of these skills follows the patterns of overall geographical and income inequalities. Some kind of public assistance in the provision of low income and/or rural population with computer facilities and language labs could raise the level of these general skills and compensate their handicaps.

In this context we should emphasize the importance of the so called *Sulinet* program introduced by the former educational government of Hungary. This program provided financial assistance to the purchase and operation of computer facilities (including softwares), and to internet access of secondary schools. The coverage was planned to be extended to primary schools, however the program was practically stopped by severe program budget cuts by the new educational governance in 1999. In this respect we suggest the revitalization of the *Sulinet* program and the extension of its coverage to primary schools and/or to the community cultural centres (if any) of those smaller rural settlements which do not have their own primary school.

Retraining prime age workers

The devaluation of both school-based and experience-based skills affected a considerable part of the working age population including relatively young people (of age 40 or even younger at the time of the political changes). In light of the massive joblessness of working-age adults one would expect that employment policies put special emphasis on their assistance.[10] The returns to the retraining of prime age workers are limited by several factors: older people learn less efficiently, have lower probability of being hired and use the acquired human capital for a shorter period of time. However, in calculating social returns it should be taken into consideration that the massive withdrawal of prime-age adults from the labour market incurs additional spending on early retirement pensions and increased expenditures for poverty-alleviating social transfers. Indirect costs of this kind are much lower in the case of young workers.

Considering that the expected private return from retraining is relatively low in the case of older workers, but the social return to successful retraining is relatively high, it seems justified to subsidize the participation of older workers in firm-based retraining courses, or other programs promising a high probability of job finding. In such cases preference should be given to the enrollment of older workers.

[10] It happens in some cases (such as the preference given to workers above age 50 in the Czech socially purposeful jobs program) but cannot be regarded as a main rule. Early retirement programs have dominated all other support schemes, contributing to rather than inhibiting the disemployment process. Estimates by *Micklewright* and *Nagy* (1994) suggest that workers' access to training and subsidized jobs decrease with age in Hungary. In Poland *Puhani* and *Steiner* (1996) compared participation in self-financed, employer-financed and public retraining schemes and found that older persons were significantly more likely to receive private or self-financed than public training.

The government should also combat the open discrimination of older workers in help-wanted advertisements and vacancy notification. In registering vacancies the labour offices should reject the stipulation of age limits unless the firm justifies why the restrictions are necessary, and the justification is accepted by a board or an ad hoc committee. Obviously, the firms' right to reject older applicants would not be curtailed by these policies but the *a priori* exclusion of 'older' workers would be called into question.[11]

(C) Providing information for vocational choice

Information flows between educational institutions and firms should be maintained in both directions in order to enhance proper vocational choice. Reliable signals must come from the labour market with respect to the quantities and quality of skills required by firms (and the budget sector) as well as to the current valuation of skills. During the time of rapid changes educational institutions and families can easily miscalculate.

Reliable information on schooling institutions can be particularly important in the orientation of educational choice in Romania because of the extremely large number of newly founded private teaching institutions. Local centres for enhancing vocational choice could play the role of intermediator between the needs of the local economy and the schooling system. Organisations of this type existed under state socialism and used to have strong administrative entitlements (setting of enrollment quotas, the right to redirect applicants from one profession to another). The revitalisation of these institutions as providers of information – without giving them administrative power – could reduce the risk of skills mismatch.

3.2. Regional policies

Ten years after the start of transition the CEE economies are characterized by severe regional inequalities and major under-utilization of the labour force in many regions. In the twenty counties of Hungary, 1997 the labour force participation rates ranged between 60 and 42 per cent within the population aged 15-

[11] It should be emphasised that in this context 'older' often stands for relatively young people. Age limits set at age 25 or 30 are common in both newspaper ads and with notified vacancies.

74,. In the forty-one regions of Romania, 1996 the activity rates varied between 53 and 37 per cent in the population aged 15 or older.[12]

The winners and the losers of the transition are separated by at least two dividing lines. First, the *core-periphery* division has become stronger during the transition: the central agglomerations and the regions along the main east-west transport routes recovered faster and benefited from the influx of foreign direct investment. The worst affected regions are typically rural, located near the former Soviet borders and have low educational levels. (*EC* 1996a, 1996*b*; *Gorzelak*, 1996). In Hungary the regional unemployment rates were closely and negatively correlated with educational levels (r = –0,68) and positively with 'agricultural character' (r = 0,36). Similarly, in Romania the employment ratio was increasing in the 'human development index' (r = 0,48) and decreasing in the share of agriculture in GDP (r = –0,32). In case we remove the self-employed from the numerator of the employment ratio the coefficients are 0,83 and –0,83, respectively.[13]

Another dividing line separates *urban and rural* settlements. Villages and smaller towns lag behind larger cities in terms of physical infrastructure and the data also suggest a widening gap in terms of human capital endowments. Tests of reading and mathematics conducted in 1991 and 1995 in Hungary revealed major fall in the test scores of students in villages and smaller towns compared to Budapest and the county capitals. School enrollment rates at the second and tertiary levels are considerably lower in the rural areas in Romania. (*Unicef* 1998; 46). Many villages are isolated from the urban labour markets for the lack of public transport and have high unemployment rates for that reason, among others.[14]

The role that *wage adjustment* could play in the revitalization of depressed districts and remote villages in Romania remains an open question because, as was suggested in the previous section, region-specific wage differentials are small and the unemployment-related wage effects are weak. However, Hungary's experience prompts us not to expect high factor mobility when wages are flexible by EU standards. Despite the fact that in Hungary wages respond to the pressure

[12] The Hungarian data are LFS-based. The Romanian figures relate the number of employees, self-employed persons and registered unemployed to the population aged 15 or older.

[13] Agricultural character is measured with agricultural employees per inhabitant in 1990 in Hungary's 170 regions. The share of agriculture in GDP relates to Romania's 41 counties, 1994. Educational level is approximated with the average number of schoolyears completed by the adult population in Hungary (1990 Census). For the definition of the human development index see the enclosed paper by *Köllő* and *Vincze* (1999).

[14] See note N10 on the impact of public transport connections on local unemployment in Hungary.

of unemployment and the labour cost differentials between regions are non-trivial, labour and capital move slowly towards higher earnings or lower labour costs. This hints at high mobility costs and/or strong region-specific cost effects to be addressed by regional policies.

Our policy recommendations can be grouped into three clusters. First we consider policies increasing the benefits from job search and employment, at the given wages, in the depressed areas where the labour force is severely under-utilized, and a further decline of the take-home pay would predictably result in even lower labour supply. Second, we outline policy actions reducing the regional diseconomies characteristic of the depressed areas. Finally, we address the costs of inter-regional mobility.

(A) Increasing the benefits from job search and employment at the given wages

While studying Hungary we found the search activity of the registered unemployed to be substantially lower in villages and smaller towns on the one-hand, and in the undeveloped eastern parts of country on the other. (The same would hold for the total population of the working age non-employed). In Romania we found that a large part of the potential employees are engaged in subsistence farming but the self-employed population is not responsive to shifts in labour demand.

Helping the non-employed return to the labour market

The fall in labour force participation rates and the accumulation of passive unemployment in the depressed regions are consistent with the expectations (since both demand and wages are low) but employment policies can improve or worsen the situation within certain limits. The current policies often fail to address the issue of passive unemployment or even deteriorate the prospects of the unemployed for reintegration.

In Hungary a recently planned reform of the unemployment assistance system puts strong emphasis on *workfare* as a means of reintegration. The duration of unemployment insurance benefits would be cut (9 months as opposed to one year); the flat-rate unemployment assistance benefit for UI exhausters (equal to the minimum pension) would be abolished; the responsibility of dealing with the long-term unemployed would be shifted from regional labour offices to local governments; a budget for unemployment assistance would be available for the local governments under the condition that they offer publicly useful jobs for the UI exhausters; and the long-term unemployed would be disclosed from assistance in case of refusing public works paying more than the minimum pension.[15] This plan is being criticized for many reasons but here we only deal with its implications for depressed regions.

We think that this plan is aggravating the regional crises for at least three reasons. First it will loosen the link between the long-term unemployed and labour offices and deteriorate the actors' access to information. Second, in view of the workfare obligation many UI exhausters will predictably give up cooperating with the assistance system.[16] Third, corruption and the risk that many unemployed can be blackmailed (with the withdrawal of various social benefits in case they do not accept a publicly useful job) may give rise to a low-wage 'welfare economy'. By decreasing the information available for the unemployed, reducing the time they can devote to job search and stimulating them to avoid registration and cooperation with the offices this plan tends to isolate the jobless from the labour market. This is exactly what should be avoided if the aim is to maximize job search in the depressed regions.

Recently the communication between the labour office network and the non-registered non-employed is minimal despite the high rates of inactivity and the existence of disguised forms of joblessness (like survival farming in Romania).

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[15] This description reflects the government's plan as it stood in the summer of 1999.

[16] Close to 40 per cent of the UI exhausters have vocational qualification and about 20 per cent have secondary or higher education background in Hungary while the public works include typically simple manual jobs like road repair and park maintenance.

By opening easily accessible Job Shops a useful communication channel could be established. The Job Shops could advertise vacancies in several ways and people could sign in without being included into the official unemployment register. Preferably these shops should be located in the busiest quarters of medium-sized urban centers, frequented by local people as well as visitors from the neighboring villages, should be directly accessible from the street and generally should give the impression of a service unit rather than an office. Registration and benefit administration should be kept away from these premises. [17]

The recent major improvements in telecommunication in both Hungary and Romania opens the possibility of establishing small „job shops" in local government premises, too, with on-line connection to the regional labour office's data base and possibility to sign in without being registered. The cost of operating an easy-to-use work station on a part-time basis hardly exceeds the cost of employing one or two public workers throughout the year while the system would substantially reduce the cost of information for both workers and employers.

Improving the accessibility of urban centers

The benefit from job search and employment at given wages is substantially reduced by the cost of travel to work in the CEECs. Since travel costs are strongly affected by fuel prices (while fuel prices are adjusted to the EU levels for a number of reasons) the per-kilometer cost of traveling to work is high compared to wages in the CEE region. This can hardly be changed by government action but there is a point where policies matter.

Short-distance geographical mobility is heavily exposed to the availability of public transport in the CEECs. At the end of 1997 the average Austrian industrial worker had to work 35 minutes to earn the price of 10 liters of regular gasoline, and 39 minutes to purchase a train ticket for 100 km. These numbers indicate, roughly as they do, that the costs of traveling by car versus public transport were not substantially different for a single driver in this country unlike in the CEECs where fuel prices are extremely high compared to public transport fares. Using the figures above, for sake of illustration, we get a gasoline price/train fare ratio of 0.9 for Austria while similar data suggest ratios of 3.0 in Hungary and 4.6 in Romania.[18]

[17] Similar guidelines were followed in the UK, in the early eightees, during the reform of the Jobcenters.

[18] Note N11.

The relative costs imply that – in case it is necessitated by the cutting of train or coach services – the shift from public to private transport implies extremely high costs. It should also be taken into account that many people should buy a car in order to change mode of transport. According to our estimation based on Household Panel Survey data only 28% of the rural households with unemployed members owned a car in Hungary 1993 and this ratio must have been considerably lower in Romania. Public transport policies should therefore play a distinguished role in maintaining the availability of region centers for village dwellers.

The subsidization of fuel prices seems to be an infeasible option given the enormous dead-weight loss implicit in such a policy. The subsidization of public transport companies raises similar concerns, and therefore generally opposed in the EU, but should be considered in the CEECs in our opinion. Given the external economic effect of public transport there seems to be a strong case for mixed finance. Projects aimed at the maintaining or starting of particular coach services, with the financial contributions of the affected local governments and firms, should be considered for state support. Bringing the middle class back to trains and buses by improving travel conditions, building park-and-ride facilities, and adjusting the time-tables to office hours could slow down the squeeze of demand for public transport and help to maintain the accessibility of urban workplaces.

In the particular case of Romania it should be added that hundreds of villages are connected with the rest of the world with unpaved or completely ruined asphalt roads. Without major improvement in the quality of the road network the cohesion of regional labour markets can not be restored.

Fighting discrimination discouraging the Romany from job search

Research related to the early transition period suggested that the male Romany unemployed searched for jobs more intensively than did the non-Roma with similar personal characteristics. (*Kertesi* 1994). In the same time their job finding probabilities were substantially lower than those of the non-Romany. Recently, a disproportionally large share of the non-employed is accounted for by Romany people – discouraged from job search, with meager hope of being hired in the registered economy – especially in the depressed eastern rural regions where unemployment is the highest and the share of Romany people is above the average. In 1995, the linear correlation between the share of Gypsies and the

regional unemployment rate was as high as 0.66.[19] (This was not the case in Romania where neither unemployment nor employment was correlated with the share of Gypsies in 1992-96 on the level of the 41 counties).

Statistical discrimination and racial prejudice reduce the Romanies' returns from job search and aggravates the problem of low search intensity among the non-employed of eastern rural districts. It is important to add that the risks inherent in the workfare-based policies criticized beforehand affect the Gypsy population improportionately.

Employment policies should address both open and statistical discrimination. The creation of incentives for job search should be accompanied by affirmative action – otherwise the cuts in benefits create incentives for informal self-sustaining activities, crime, segregation and emigration. Second, there is eager need for employment programs generating information for the employers about Gipsy *individuals* seeking employment. Temporary employment in subsidized jobs (in firms and budget institutions) should be given priority over public works. The temporary wage subsidy schemes should be available for all unskilled workers irrespective of ethnicity – setting the criteria of participation in this way will automatically open windows of opportunity for the Roma unemployed.

(B) Addressing regional external economic effects

One of the important findings of the research was that relative productivity levels changed in favour of the more developed districts during the transition, partly offsetting the labour cost advantage of high-unemployment regions. Firms of identical size, industry, ownership and capital-labour ratio have higher revenues in the central agglomeration suggesting that location per se has non-negligible impact on productivity. The advantages stem from a number of innate or hard-to-change attributes like high educational levels, favourable geographical location, historical concentration of business activities and political power, better infrastructure and other potential sources of external increasing returns. Policies, however, can create external economies in the undeveloped regions and in smaller settlements.

We recommend policy actions addressing two potential sources of external economies. First, the external economic advantages partly stem from links with the public administration. In an overcentralized governmental structure these

[19] The coefficient relates to 170 regions using data from the representative national Gypsy Survey of 1993.

advantages are not available outside the primate agglomeration and the largest cities. Second, some further advantages are related to the availability of business-related services. In the case of some services local provision is a realistic option that should be assisted. In other cases the policies should promote communication between the providers of the services and the firms of smaller settlements and remote regions.

Government: the need to decentralize

The Romanian governmental structure remained centralized both politically (with nominated prefects having strong influence) and economically. The local governments' own tax revenues are minimal, their access to the centrally allocated resources heavily depends on their success or failure in an informal bargaining process. Hungarian local governments are also becoming increasingly dependent on centrally allocated resources. [20] Another characteristic feature of the Hungarian public administration is the lack of intermediate levels between the municipal and the central governments. The county level assemblies are consultative bodies with limited rights and responsibilities while the recently formed macro-regions can be regarded as mere statistical entities, as yet.

Centralization raises concerns for a general and a specific reason. Generally, the deprivation of fiscal autonomy of the local and regional governments leads to a further concentration of policy-related external economies in the primate agglomerations. Specifically, the prevailing government structure makes the absorption of domestic and European regional transfers difficult and/or wasteful. As far as EU regional assistance is concerned the lack of competent and autonomous regional governments (on the NUTS-2 and NUTS-3 levels) and the absence of region-level matching funds constitute legal barriers. In the distribution of domestic regional assistance the adverse implications of over-centralization are also severe. Matching funds are generally required to reduce moral hasard in the distribution of regional transfers – if the local and regional governments have no own assets to set up such funds then regional redistribution will be inevitably inefficient.

Changing the priorities in regional transfers

[20] The proportion of personal income tax retained by them gradually decreased from 100 per cent to 5 per cent between 1990 and 1999. The centralization of the most importan local tax (industry and trade tax) was seriously considered by government officials recently.

Regional external diseconomies partly stem from the unavailability of business-related services like financial intermediation, legal counseling, insurance, marketing and agency, advertising, applied research, design and testing, data banks, computer-related services, publishing, data processing, retraining and other labour-related services. By reducing the transaction costs of all (or nearly all) employers the promotion of these services may have larger impact on a region's economy than have the subsidization of producers and the lump-sum assistance provided for job creation in industry. Therefore in distributing the regional assistance funds the government should pay special attention to business-related services. Before specifying the priorities the respective authorities should conduct surveys of enterprises in order to measure up what kind of services are not available for them locally, and to assess the costs implied by the deficiencies. The emphasis on services is particularly justified in Romania where this sector is generally undeveloped.

(C) Reducing the costs of inter-regional mobility

Migration: a policy dilemma

Unlike the US (where inter-regional migration has a decisive role in the elimination of regional crises as shown by Blanchard and Katz 1992) the CEECs are characterized by relatively low migration rates and weak impact of migration on regional unemployment. Migration can hardly ever become as intense as in the US under the institutional conditions and traditions characteristic of the region: the rental housing sector is small, secondary school students generally go to school at the family's region of residence, kinship relations are strong, people adhere to their place of living more than Americans do, and so on. The impact of migration on unemployment is reduced by the composition of out-migrants and in-migrants and vacancy chain effects: high out-migration rates imply high in-migration rates, and the people who move out from the depressed areas tend to have better endowments than those who move in. [21]

Choosing adequate policies presupposes a deeper knowledge of the actual patterns of migration as well as an open discussion of preferences. On the one hand, in lack of data it is difficult to assess how the composition of the population is affected by migration and how the labour market status and earnings of the migrants are affected by their change of residence. On the other hand, politicians should decide how they evaluate the (probably positive) direct impact of

[21] See note N12.

moving on the migrants' welfare as opposed to the (presumably negative) indirect effect of migration on the human capital endowments of depressed regions.

Provided there is a priority for supporting migration the most important policy action is the expansion of the rental housing sector accompanied by the development of mortgage financing. Given that substantial regional differences exist in real estate prices we cannot expect that people who own a house in a depressed region will buy property in a prospering district, on massive scale. The creation of a rental housing sector presupposes changes in the enforcement of law because the recent practices favour the tenants versus the owners. The expansion of the social housing sector seems to be an important prerequisite for the enforcement of owner's rights.

Equally important is the promotion of mobility among secondary school and university students. The related policies might include the subsidization of the accommodation and traveling of non-resident students; the offering of temporary assistant positions and training for young workers coming from depressed areas.

Transport costs: another dilemma

Finally, we turn to the issue of transport costs where two types of dilemmas should be addressed before policy action. The first is similar to that discussed in the case of migration: the equity effect of lower transport costs is theoretically indeterminate, improvements in the accessibility of rural peripheries due to road construction may actually lead to a further concentration of economic activity.[22] While the reduction in transaction costs is expected to have a positive effect on the amount of transactions the implied effect on regions is difficult to predict. Second, under the prevailing conditions of financing it is not self-evident that the building of new roads implies lower transport costs.

In the case of Romania the uncertainties concerning the regional implications seem to be of secondary importance: the state of the road network apparently implies losses for the whole society and calls for treating road reconstruction as a top priority. In Hungary motorway construction is on the agenda that is supported by several European funds including Phare and ISPA. An important feature of the policy is that the building of new motorway sections is partly financed from tolls introduced on the new and the old sections alike.

[22] See *Kilkenny* (1998) for a theoretical discussion and *Markusen* (1994) on the case of Brazil where motorway construction resulted in the expansion of the Sao Paulo agglomeration rather than the growth of inland regions.

In the Hungarian case both the first and the second dilemmas mentioned above seem relevant. The regional effect of motorway construction is assumed to be equality-enhancing but this belief has not been supported by factual evidence as yet. There is no publicly available information on the economic effect of the projects. The unpublished cost-benefit calculations ignore the economic side-effects of high road prices (impact on commuting, effect on real estate prices, cost of investments necessitated by the return of traffic to the old roads, and so on). No data are available on how the *actual* transport costs changed in the corridors where new sections have been built and tolls have been introduced (M3 and M5 motorways).[23]

These deficiencies and uncertanties call for a careful evaluation of highway development. The economic side-effects should be analyzed and the cost-benefit calculations should be publicly discussed. The European institutions should assist the Hungarian government in the carry-out of methodologically sound impact studies which consider the external effects and apply the basic principles of the economics of road pricing. Depending on the results the plan of building most modern highways should be revisited and less costly projects should be considered like the development of old roads by adding lanes and bypass sections.

3.3. The implementation and financing of the recommendations

Some of the recommendations presented in the previous sections call for changing the distribution of existing funds and/or changing the legislation. The costs implied by these actions (modifying the priorities in regional assistance and retraining, fighting discrimination, stopping the recentralisation of tax revenues) are modest. Some of the projects advocated in the preceding chapters imply minor increase in the expenditures (school continuation grants, assistance to career choice, school-based computer labs, dormitories, job shops). We made three costly recommendations: the extension of compulsory education until age 18; the reconstruction of the road network in Romania; and the subsidization of public transport in both Hungary and Romania.[24]

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[23] Arguably, the costs of the median goods carrier have increased in both cases. According to the available statistics more than 50 per cent of the trucks use the toll-free old roads instead of the highways. Preceeding a motorway project the median lorry driver used the old road and the motorway (where it existed) between A and B. After the project he drives on the old road all the way between the two cities and this predictably implies an increase in his actual transport costs.

[24] Social housing is also highly expensive but does not belong to the core of our suggestions. In light of the available evidence the expectations concerning inter-regional migration as a cure to the unemployment problem seem exeggarated.

A systematic discussion of fiscal feasibility is beyond the scope of this project but we would mention four sources of finance. The budget for developing the educational system can be slightly increased by (re)introducing tuition fees in higher education. This policy is justified by the high private returns to higher education. (See *Varga* 1996 on the Hungarian case). The current practices of regional assistance should be revisited and the savings in job creation subsidies should be used to support labour market services, public transport and business-related services in the depressed regions. The Romanian government should consider the temporary increasing of the road tax (introduced in May 1999) in view of the urgent need of reconstruction.

Last but not least the European support programs might consider that the recent high dependency ratios, the deficiencies of the educational system and the persistence of regional crises imply risks in the integration process. The results from this research call for stronger emphasis on the development of secondary education; supporting the establishment of language and computer laboratories in primary and secondary schools, and the building of student dormitories; the development of a labour market information system that takes into account the patterns of non-employment; and the economical development of the transport network with strong emphasis on public transport. By changing the composition of EU aid these projects can be partially financed without an increase of the aggregate amount of support. The development of these areas might help Romania and Hungary in moving from a low-employment equilibrium to higher rates of activity and better prospects for European integration.

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NOTES

N1: Wage Inequalities in the advanced Western counties, 1979–1990 (Log wage differential of the ninetieth and the tenth percentile workers)

Country	1979	1984	1987	1990	(1990) − (1979) change	Five year change [a]
			Males			
United States	1,23	1,36	1,38	1,40	0,17	0,077
United Kingdom	0,88	1,04	1,10	1,16	0,28	0,121
France	1,19	1,18	1,22	1,23	0,04	0,018
Japan	0,95	1,02	1,01	1,04	0,09	0,041
			Females			
United States	0,96	1,16	1,23	1,27	0,31	0,141
United Kingdom	0,84	0,98	1,02	1,11	0,27	0,123
France	0,96	0,93	1,00	1,02	0,06	0,027
Japan	0,78	0,79	0,84	0,83	0,05	0,023

Source: *Katz* et al. (1995), p. 58.

[a] The difference between the last year and the first year value expressed on a five year basis

N2: Wage Inequalities in the CEE countries, 1988–1995 (Log wage diffe-rential of the ninetieth and the tenth percentile workers, both genders)

Country	1988	1989	1993	1994	1995	Five year change [a]
Czech Re-public	–	0,88	1,16	–	1,31	0,358
Hungary	1,14	–	1,30	1,33	–	0,158
Poland	0,96	–	1,11	–	1,22	0,186
Romania	–	0,67	1,02	–	1,12	0,375

Source: 1988–1993: *Rutkowski* (1996a), p. 27.; 1994/1995: *Rutkowski* (1997), p. 108.

[a] The difference between the last year and the first year value expressed on a five year basis.

N3: Changes in educational differentials during the 1980's in the advanced Western countries

Country	Educational group ratio	Initial year	Ratio value	Second year	Ratio value	Five year change[a]
United States	College/High school	1979	1,37	1987	1,52	0,11
United Kingdom	College/ No qualification	1980	1,53	1988	1,65	0,08
France	Males: Nonmanual/Manual[b]	1976	1,58	1987	1,53	–0,03
	Females: Nonmanual/Manual[b]	1976	1,38	1987	1,35	–0,01
	(16) – (12) years of educ. diff.[c]	1977	0,344 [c]	1991	0,281 [c]	–0,02
Japan	College/Upper high school	1979	1,26	1987	1,26	0,00
Canada	University/High school	1980	1,40	1985	1,43	0,03
West Germany	(14-18)/(11-13) years	1981	1,36	1983	1,42	0,10
Sweden	University/Post Secondary	1981	1,16	1986	1,19	0,03
Netherlands	University/Secondary	1983	1,43	1987	1,23	–0,25

Source: *Davis* (1992), p. 269., except France.

[a] The difference between the second year and the initial year value expressed on a five year basis.

[b] Katz et al (1995), p. 43.

[c] The base of the calculation are Mincerian earnings functions with the number of completed years of schooling as educational measure regressed on log wages with standard controls. Parameters: *b*(1976) = 0.086 /year; *b*(1991) = 0.0702/year. *Redor – Pailhé* (1999), p. 22 (1977); p. 9 (1991).

N4: Changes in educational differentials during the 1980's in the CEE countries

Country	Educational group ratio	Initial year	Ratio value	Second year	Ratio value	Five year change [a]
Czech Republic	Higher education /Secondary	1988	1,29	1992	1,41	0,15
Hungary	Higher education /Secondary	1989	1,44	1994	1,47	0,03
	Higher education /Vocat.training sch.	1989	1,56	1994	1,86	0,30
Poland	Higher education /Vocational secondary	1988	1,23	1993	1,39	0,16

Sources: Hungary: own calculations (Wage Surveys); Czech Rep. and Poland: Rutkowski (1996a), p.49, 52

[a] The difference between the second year and the initial year value expressed on a five year basis.

N5: Returns to experience are falling in CEE countries. The loss in predicted returns ($\hat{y}_t - \hat{y}_{t-1}$, $\hat{y} = \hat{\beta}_{\exp} * \exp + \hat{\beta}_{\exp 2} * \exp^2$) in the group of workers with 15-25 years of experience range between –5 and –10 per cent in Hungary and Poland, between –30 and –35 per cent in the Czech republic. **Sources:** *Hungary*: 1989-92, own calculations, dependent: log of pre-tax monthly earnings, controls: gender, schooling; P*oland*: 1987–92, dependent: log of after-tax monthly earnings; controls: gender, schooling, industrial dummies. *Sources*: Rutkowski (1996b), Table 6. columns 1 and 3; *Czechoslovakia*: 1984, *Czech Republic*: 1992, dependent: log of pre-tax monthly earnings, controls: gender, schooling, source: *Sakova* (1996), Table 6.

N6: Changes in age-earnings differentials during the 1980's in the advanced Western countries (Log wage differential of males in the (40–55)/(25–30) cohorts)

Country	Initial year	Ratio value	Second year	Ratio value	Five year change[a]
United States	1979	1,28	1986	1,46	0,13
United Kingdom	1979	1,08	1986	1,17	0,06
France	1979	1,25	1984	1,40	0,14
Canada	1981	1,16	1987	1,33	0,14
West Germany	1981	1,14	1984	1,39	0,42
Sweden	1981	1,20	1987	1,22	0,01
Netherlands	1983	1,30	1987	1,40	0,12

Source: *Gottschalk – Joyce* (1991), Table III.

[a] The difference between the second year and the initial year value expressed on a five year basis.

N7: In the enterprise sample of the *Short Term Labour Market Forecast Survey* by the National Labour Centre of March 1996 (N≈4500 firms) about 18 per cent of the foreign firms conducted some kind of internal training (or retraining) as opposed to the 11 per cent share of the domestic firms. Similar results were presented in the Czech Republic, too (see: *Filer* et al 1995)

N8: Young workers (the cohorts with 0-10 years of experience) are highly overrepresented at foreign firms in all educational groups by 1996. At the same time, knowledge of foreign languages and computer use as special skills are the more widespread in a cohort the younger it is. See: Table on next page. Thus, even if foreign enterprises chose randomly from among the applicants, they would make use of these extra skills unproportionally more than the domestic firms, simply because young cohorts are highly overrepresented in their staff. However, we have good reasons ro believe that – on top – they do not choose randomly, they have well defined screening policy, as well.

Cohort in 1996	Knowledge of languages in the cohort, %				Computer use in the cohort, %			
	Completed schooling				Completed schooling			
	Primary	Vocational	Secondary	Higher Ed.	Primary	Vocational	Secondary	Higher Ed.
15 – 19	13,7	14,3	47,0	.	6,7	8,7	46,3	.
20 – 24	8,6	9,6	46,7	82,4	2,8	7,1	42,0	59,4
25 – 29	4,1	10,8	35,1	83,0	3,1	5,9	33,8	60,2
30 – 34	.	.	.	37,8 [a]	.	.	.	.
35 – 39	.	.	.	39,9 [a]	.	.	.	.

Source: Labour Force Survey of the Hungarian Central Statistical Office, Special Survey of the Employment of Youth (15–29 years old), 1996 Fall. Data of the employed.

[a] Data of the 24–28 and 29–33 years old employed in the Census year of 1990.

N9: In the cohort of the 15–24 years old with 8 years of completed schooling or +2 year vocational school (which gives no qualification) 57 percent is out of the labour force, 16 per cent is unemployed by ILO definition, 25 per cent is working and 2 per cent is studying. Among that 25 per cent who is working only 16 per cent is full-time worker and 9 per cent is working either part time or in irregular manner. (**Source** of the data: Labour Force Survey, 1995 first wave.) Though about three-quarter of this group is jobless, only 8 per cent is registered as unemployed by the local labour centres.

N10. In the enclosed table municipality-level unemployment rates (from 1993, Hungary) are regressed on the regional unemployment rate, settlement size, distance from urban centers, and dummies standing for the availability of centers by means of public transport. The results suggest that availability significantly affects the local unemployment rate.

	No. of centers within a distance of 40 km:			
	One	Two	Three	Four
Regional unemployment rate (per cent)	1,258 (5,4)	1,522 (12,1)	1,603 (19,3)	1,332 (33,9)
Settlement size[1]	-0,051 (-1,7)	-0,016 (-1,9)	-0,023 (-2,6)	-0,011 (-3,1)
Average distance from centers 1-4 (km)	0,071 (0,5)	0,111 (1,2)	0,412 (4,9)	0,264 (6,4)
Centers available by means of public transport: [2]				
* None	6,891 (2,1)	4,914 (2,6)	-0,516 (-0,4)	2,850 (2,2)
* Two	–	-3,238 (3,9)	-1,684 (-2,5)	-1,344 (-3,5)
* Three	–	–	-2,866 (-2,4)	-1,714 (-3,6)
* Four	–	–	–	-1,809 (-1,9)
Constant	0,639	-3,916	-13,128	-5,951
aR2	0,535	0,515	0,509	0,497
Nobs	108	398	653	1828

[1] Active population x 100. Census 1990 [2] One available centre is the reference.

Notes to the table. Municipalities: Excludes Budapest and settlements with no center within a distance of 40 km Centers: Centers of the 170 labour office districts. Availability: Center *i* is classified as available from municipality *j* if it is possible to arrive at *i* from *j* between 5,30 and 7,30 by train or coach operated by a Volán company. For details see *Köllő* (1997).

N11. The data are taken from *Transition*, Vol. 9, No. 2, April 1998, p.8. For a proper comparison of costs by mode of transport one should also take into consideration a part of the fixed costs (car insurance, taxes), depreciation, repair costs, season ticket discounts, or the shadow price of travel time. Nevertheless it is unlikely that the pattern indicated by the illustrative figures above would substantially change by the inclusion of these cost items. The estimated monthly pecuniary cost of commuting with a car for 20 km in Hungary, 1993 was 6,392 Ft per car. (Calculated by the Institute of Transport Research. See *Köllő* 1997). The per-person cost would have equaled the cost of commuting with train (2,100 Ft) in case of more than three passengers per car. The observation of transport authorities on the actual number of passengers suggest that in the case of inter-settlement daily commuting the average is well below 2 (loc.cit.).

N12. The gross migration rate *within* regions amounted to about 1,5% per annum in the Czech Republic between 1970 and 1990. It jumped to 2,5% in 1991 and remained at that level in 1992 and 1993. Migration *across* regions had a lower and continuously falling rate (0,9% in 1970 and 0,6% in 1993). Hungary's gross migration rate was 2,13% in 1985–88, 1,95% in 1989–92 and 2,04% in 1993-96. Intra-regional migration accounted for about 70% of the gross flow before, during and after the transition period. Nevertheless, if we disregard the ongoing suburbanization of Budapest (increasing flows to the surrounding villages) we can speak of a marked *decline* in the intensity of spatial mobility after 1989 both within and across regions. See *Erbenova* (1995), *Daróczi* (1998) and *Kertesi* (1997).

The studies found net migration rates to be correlated with wages and indicators of labour market tightness (unemployment in Hungary, vacancies in the CzR). The assumption of direct causal linkage between job prospects and migration is questionable nevertheless because the depressed regions already had high outflows during the times of socialism. Erbenova's regression estimates of the in-migration and out-migration rates, observed on the level of macro-regions in 1991–93, resulted in insignificant parameters for unemployment but significant positive coefficients for vacancies and wages in *both* equations. The parameters of the vacancy ratio were almost equal in the two models suggesting that the *net* flow from loose to tight labour markets was unimportant in the discussed period. *Kertesi* found close link between unemployment and net migration in

Hungary but his simulations raise doubts over the equilibrating effect of spatial mobility. Relying on observed values of municipality-level net migration rates in 1990-96; estimating their link with local unemployment rates; considering the share of people with unemployment experience among the migrants; and assuming different scenarios with respect to change in the labour market status of migrants *Kertesi* estimates that the time needed to reduce the unemployment rate differential between a typical low-unemployment town (u=5%) and a high-unemployment village (u=25%) by 1/4 would require about 20 years.