TÁRKI Social Report Reprint Series No 14.

Péter Galasi

Overeducation, Undereducation and Demand*

Abstract

The paper looks at the impact of overeducation and undereducation on earnings in Hungary over the period of 1994 to 2002 with using a large cross-section data set representative of Hungarian employees. Schooling is measured in terms of years of education, required education is proxied by modal years of education of the occupations. The standard results are arrived at, that is, 1. an extra year of required and overeducation yields positive, an extra year of undereducation results in negative wage premia, 2. the economic return to required education is higher than that to overeducation, 3. the penalty for undereducation is smaller than the returns to required education. We can witness increasing demand for educated workers and increases in higher-education supply over the period. At the beginning of the period supply seems rather inelastic, resulting in increasing wage premia for the overeducated, then it becomes more elastic, leading to higher economic returns to required education. The proportion of overeducated workers increases from 11 per cent (1994) to 24 per cent (2002) over the period.

Keywords: Human Capital, Overeducation, Undereducation
JEL Classification: I20, J24, J41

Author: PETER GALASI is labour economist, professor and head of Department of Human Resources, Corvinus University of Budapest. Research interests: returns to education, wage inequality, job/skill (mis)match, transition from education to work, unemployment and labour market programmes.
E-mail address: galasi@uni-corvinus.hu

TÁRKI
Budapest, 2005

* This research was carried out as part of the project entitled '*The knowledge-based economy and job market in Hungary in the 21st century*' of the 5th theme of National Research and Development Programme (NKFP).

Reprint from Tamás Kolosi, György Vukovich, István György Tóth eds.: Social Report 2004, Budapest: TÁRKI, 2004 pp. 248–260.
Please use the book reference for citation.

English translation:
Anna Babarczy

Published by:
TÁRKI Social Research Centre Inc.
P.O. Box 71, H-1518 Budapest, Hungary
Tel: +361 309-7676, http://www.tarki.hu

Coordinator: Ildikó Nagy
Language Editor: Clive Liddiard-Maár

All rights reserved, including the right of reproduction in whole or in part in any form.

© TÁRKI, Péter Galasi, 2004

The Social Report 2004 was published with the support of
the Hungarian Ministry of Health
and
the Hungarian Ministry of Youth, Family, Social Affairs and Equal Opportunities.

The subject of our study is the development of wage premiums due to over- or undereducation in Hungary. According to the literature, in the 1990s the increasing supply of job seekers with higher levels of education was paired with an increasing demand for higher levels of education in the labour market in this country (Kertesi and Köllő 1995, 1997, 1999, 2002; Kézdi 2002, Kőrösi 1998, 2000, 2002). As a result, higher levels of education resulted in high and rising wage returns.

In this study we investigate the effects of overeducation and undereducation on wages in the Hungarian labour market in the second half of the 1990s and in the first few years of the 21st century. First we will briefly outline the problem; the databases and the methods of estimation will be presented next; and finally we will discuss our major results and summarize the major conclusions of our investigations.

What do we mean by overeducation and undereducation?

Overeducation and undereducation are categories describing the relationship between employers' demands and level of education. They characterize the match between workplaces and workers using level of education as an indicator of match. A worker is overeducated (undereducated) if his or her level of education is higher (lower) than is required for the job. The issue now has a substantial literature, most of which is concerned with the wage returns to over- and undereducation or with the question of how widespread the phenomenon is (see e.g. Chevalier 2003; Cohn and Khan 1995; Cohn and Ng 2000; Daly, Büchel and Duncan 2000; Dolton and Vignoles 2000; Groot 1996; Oliveira, Santos and Kiker 2000; Rubb 2003; Vahey 2000).

The most important hypothesis of models of over- and undereducation is that the match in terms of level of education between workplace and worker has an effect on wage returns. If the worker's level of education matches the schooling requirements of the job as defined by the employer, the returns to that level of education will be higher than in a situation of poorer match. This is because a better match facilitates the most efficient exploitation of the worker's skills.

It follows from the above facts that analysis of the wage returns to over- and undereducation calls for the investigation of two interrelated problems. Firstly, the requirements of the workplace, specifically the level of education necessary for the given job, need to be established. Second, based on this information, workers need to be categorized as being overeducated, undereducated or appropriately educated. There is more than one method to achieve these tasks (Hartog 2000; Groot and Maassen van den Brink 2000). In the current study we employ the method developed by Kiker, Santos and Oliveira (1997), similarly to other authors (for instance Cohn and Ng 2000).

In accordance with this method, we characterize workplaces with reference to occupations and the level of education required for a workplace is determined with reference to the modal education levels of those occupations. We can then establish with the help of observed and required education levels whether, and to what extent, an individual is over- or undereducated. The required and observed education levels are characterized here by the number of completed years of schooling. Overeducation is thus defined as having extra years of schooling, while undereducation means fewer years of schooling relative to the requirements. As the next step, we use some version of the *Becker-Mincer* earnings function to estimate the wage premiums to appropriate, surplus and inadequate education. We expect the three wage returns to be unequal.

The results of estimates of wage returns generally support the most important hypothesis of the problem of over- and undereducation. The typical results are as follows: (1) the return to appropriate and surplus schooling is positive, while it is negative to inadequate schooling; (2) the return to surplus years at school is smaller than the return to the correct level of schooling; (3) although the return to fewer years of education is negative, the negative return, in absolute terms, is smaller than the return to appropriate schooling.

In the case of Hungary, the phenomenon of over- and undereducation should be interpreted in the context of a transitional economy. The Hungarian literature cited in the introduction describes the effects of the transition on the returns to education as follows. In the first phase of the transition (from the second half of the 1980s to the mid-1990s) the transformation brought about a large number of large-scale job losses and a small number of new jobs. A considerable proportion of workers in the higher age range or with lower levels of education were forced out of the labour market, while at the same time there was no increase in the demand for educated workers. In the second phase (up to the end of the 1990s) the structures of workplaces went through a major reorganization. Modern workplaces with a demand for educated workers appeared in ever greater numbers. The wage returns to young and educated workers grew substantially and the experience of older workers in the labour market became devalued. In this period the increasing demand for workers with higher education was accompanied by wage growth for young and educated workers. This suggests that, in spite of the substantial increase in the number of people completing higher education, the supply of better educated young people was relatively inflexible. We looked into this process in a previous study that focused on workers with secondary and higher education up to 2002 (Galasi 2004). The results show that, by the beginning of the 21st century, due to the supply of workers with higher levels of education becoming more flexible, employers were in a position to hire workers whose

levels of education met the new (higher) requirements of the workplace. As a result, the proportion of workers with higher levels of education increased in jobs which required higher levels of education, but at the same time the wage returns to higher levels of education decreased. Both indicators suggest that, by the beginning of the decade, the restructuring effected by the demand had slowed down or even stopped.

In the context of the problem of mismatch defined in terms of the number of completed school years, three factors can be considered in connection with the restructuring. First, the development of required and observed levels of schooling can be followed over time. If the above account is right, the movement of the pattern of demand towards higher levels of education should be observable in the (rising) curve of job requirements. Similarly, the availability of an ever larger number of workers with higher levels of education in the labour market should be measurable as a rise in the observed level of education. Second, the restructuring of the nature of the problem of mismatch can be analysed. The changes in the patterns of demand and supply occur in the same direction: towards higher levels of education. We can, therefore, expect that, if the overall proportion of well matched pairs of worker and workplace is constant, the problem of mismatch should be characterized by a tendency for undereducation at the beginning of the period and by a tendency for overeducation at the end of the period. That is, we expect workers not meeting the job requirements to be likely to be undereducated at the beginning of the period and overeducated at the end.

In a labour market with a dynamically changing pattern of demand and a relatively inflexible supply, the procedure for defining appropriate schooling, overeducation and undereducation presents problems of interpretation. If the pattern of demand is continuous or changes slowly and/or the supply is highly adaptable, the modal level of education observed at a given point in time can be justly regarded as a good indicator of the required level of schooling. If, however, the pattern of demand moves relatively rapidly towards workers with higher levels of education and the supply is relatively inflexible, then the modal level of education observed at a given point in time does not necessarily reflect the redefined schooling requirements of the workplace. It might instead be an indication of the extent to which employers have been able to replace workers meeting the earlier requirements of lower levels of education with workers meeting the redefined (higher) schooling requirements, i.e. with better educated workers. If this is the case, it is also possible that overeducated workers are not actually overeducated but, taking the redefined job requirements into account, they have the correct levels of education or have fewer surplus years of schooling than the relevant observed modal level of education would suggest. Finally, if this is so, we may underestimate the degree of undereducation, since the gap between the actual level of education and the

observed modal level of education will be smaller than we would get if we considered the actual redefined job requirements as the standard of comparison. The problem could be avoided by employing panel models with a time delay; this solution, however, is not available to us, since our samples are representative cross-section samples. In this study we pilot a procedure where we build on the observation that the supply had become more flexible by the end of the period studied and so the employment of workers with levels of education meeting the requirements of the workplace became more feasible. Therefore, the modal levels of education observed at the end of the period are closer to the redefined job requirements than are the concurrent modal levels of education.

The method of measurement

The estimates were run on annual wage level samples of the National Employment Office[1]. Two aspects of human capital can be measured: (highest completed) level of education and potential labour market experience. The former is represented by the number of completed school years and the latter is calculated on the basis of the formula of age—six years[2]—number of completed school years.

An extended *Mincer* function is used to analyse the wage returns to overeducation and undereducation. We start with the assumption that the observed level of schooling (S) is made up of three components: required education (R), degree of overeducation (O) and degree of undereducation (U), each of which is characterized by the number of school years:

$$S = R + O - U \qquad (1)$$

If an individual has exactly the required education, then $S = R$ ($O = U = 0$). For an overeducated person $S = R + O$ ($O > 0$), and for an undereducated person $S = R - U$ ($U > 0$). For the analysis we need at least one piece of information in addition to the observed level of education. This can be obtained by defining the required level of education. If we know the required level of education, it can be established with the help of the observed level of education whether the individual is over- or undereducated and the number of surplus or missing school years can be calculated. In principle, R reflects the requirements of the workplace as to the number of years of education. We characterize workplaces with reference to occupations, and the level of education required by the workplace is defined in terms of the modal levels of education of those occupations. Due to the number of components, we use

[1] In Hungarian: 'Foglalkoztatási Hivatal'. (*eds*.)
[2] Formal education starts at the age of six in Hungary.

three-digit occupational codes (FEOR[3]) rather than the more differentiated four-digit codes.

The procedure is as follows: the modal levels of education of occupations are found and assigned to individuals as required levels of education. It is then established with the help of observed and required levels of education whether the individual is over- or undereducated and, if so, to what degree. As was mentioned above, at certain periods of the economic transition the observed modal level of education is presumably an inaccurate measure of the real requirements of the workplace due to the inflexibility of the supply. In our case—i.e. when the pattern of demand moves towards higher levels of education but this trend remains hidden because of the inflexibility of the supply—the modal level of education observed in a given year may underestimate the actual requirements of the workplace and a higher proportion of workers may be considered to be overeducated than is appropriate. In addition, the degree of overeducation measured as the number of surplus school years would be overestimated and the proportion of undereducated workers and degree of undereducation would probably be underestimated. No satisfactory solution can be found to this problem, given our cross-section samples. With the help of additional assumptions, we can verify, however, that the use of concurrent modal levels of education does indeed lead to distortions of this kind. Based on the results of previous work it can be assumed that, following the period of shock after the politico-economic transition, the process of redefining job requirements began in the mid-1990s and during the first few years the saturation of workplaces of this kind with workers with adequate levels of education was hindered primarily by the relatively inflexible supply. Among other findings, this conclusion is supported by the fact that, from the mid-1990s to the end of the decade, the wages of better educated workers rose fairly steeply. We also have some empirical evidence that the growth of wages stopped in 2000, and we even find a slight decrease, which suggests that by the beginning of the new century the supply had become more adaptable. We can, therefore, be more confident that the observed modal level of education reflects the requirements of the workplace at the end of the period. For this reason, the variables indicating required education and the degrees of overeducation or undereducation were constructed by two different methods. Firstly, for each year, according to the concurrently observed modal levels of education, and secondly, according to the modal levels of education observed in the final year. While neither method can be claimed to reflect accurately the requirements of the workplace at any given time, provided that the interpretation of the above processes is along the right lines, the second

[3] FEOR stands for 'Foglalkozások Egységes Osztályozási Rendszere', the Unified Classification System of Occupations. (*eds*.)

method should lead to more satisfactory results. This would be given implicit support if we found that the two methods gave different results, i.e. if the proportion of overeducation came out higher and the proportion of undereducation came out lower using the method of comparison with concurrent modal level of education. We should further find that the difference between the outcomes of the two methods diminishes over time. This finding would indicate that, in parallel with the supply becoming more flexible, we could gradually approximate the actual values of overeducation and undereducation using the two methods.

If a shift in the nature of demand occurs with the supply being initially inflexible and later becoming more adaptable, several differences are expected between the wage estimates of the methods working with the two types of modal level of education. First, with an inflexible supply, the wage returns to higher levels of education will increase in this market. As a result of classification relative to the concurrent modal levels of education, more workers with higher, and in fact appropriate, levels of education will be considered overeducated than relative to the modal levels of 2002. The wage return to overeducation will therefore be estimated higher by the former method than by the latter. Second, for the same reason, by the concurrent modal method fewer people with higher levels of education, and with high premiums due to the inflexible supply, will be classified as having appropriate levels of schooling than by the final year modal method. The wage return to the required level of education is therefore likely to be lower with the method of classification using the concurrent modal value than with the method using the final year modal value. Finally, if the two statements above are correct, the likelihood of the non-standard outcome that the wage returns are higher to overeducation than to the required level of education is greater in the first case than in the second.

If we observe the differences discussed above, we may conclude that the modal level of education of the final year is a better indicator of the requirements of the workplace than the concurrent modal level of education.

Based on the function in (1), we can specify the extended *Mincer* function with its factors in linear form as follows:

$$W=\alpha_0+\alpha_1 R+\alpha_2 O+\alpha_3 U+\alpha_4 E+\alpha_5 E^2+\alpha_6 R^* E+\alpha_7 O^* E+\alpha_8 U^* E+\alpha_9 SEX, \qquad (2)$$

where E is the (potential) labour market experience, and the variable of *SEX* (male=1, female=2) serves to separate the possible effect of women's wage disadvantage from other factors. The interaction variables $R^* E, O^* E, U^* E$ are needed because the effects of over- and undereducation on wages are not necessarily independent of labour market experience. For our purposes the following partial derivatives may be of interest:

$$\frac{\partial W}{\partial R} = \alpha_1 + \alpha_6 E\,, \tag{3}$$

$$\frac{\partial W}{\partial O} = \alpha_2 + \alpha_7 E\,, \tag{4}$$

$$\frac{\partial W}{\partial U} = \alpha_3 + \alpha_8 E\,. \tag{5}$$

In our analysis we examine the effects of over- and undereducation on wages without the confounding factor of labour market experience and our main focus is on the α_1, α_2 and α_3 coefficients. Our predictions as to the signs and relative magnitudes of the coefficients have already been discussed; these will not be repeated here.

The extended *Mincer* function in (2) was estimated for the period between 1994 and 2002 for the nine samples of the National Employment Office wage surveys. The function uses OLS estimation, with a robust standard error, therefore because of potential problems of endogeneity the estimation of the relevant factors may be distorted. The standard procedures in this situation are not applicable due to the lack of relevant variables and the limitations of the sample.

Results

Before discussing the results of the estimation let us look at the distribution of subjects with appropriate, surplus and insufficient education according to the two methods of classification. If our hypotheses are correct, we expect more overeducated and fewer undereducated workers with the concurrent modal levels of education as our standard. We also expect the differences to diminish over time. Our hypotheses appear to be confirmed. The classification using the concurrent modal produced higher proportions than the classification using the modal of 2002, and the differences diminish with the progression of time. As regards the proportion of undereducated workers, the reverse relationship holds: we classified fewer workers as undereducated using the concurrent modal method than using the 2002 modal method. Again, the difference is reduced over time.

We also made predictions as to the differences in estimated wage returns between the two methods. The results show that our predictions hold true. The returns to required schooling will be estimated lower and the returns to surplus education will be estimated higher by the concurrent modal method than by the 2002 modal method. As was expected, according to the estimates of the concurrent modal method, the wage returns to surplus education are higher than the returns to required education in all but two time periods. The

alternative version of estimation shows the opposite pattern: with the exception of two time periods the returns to required education are higher than the returns to surplus education. On the basis of these findings we then conclude that the method using the modal education level of the final year provides a better approximation to the requirements of the workplace. Accordingly, it is the results of this method that will be analysed here.

Our reasoning with regard to the nature of changes over the studied time period is also supported by the data curves characterizing over time the changing proportions of observed and required mean numbers of school years and the proportions of overeducated and undereducated workers.

The mean number of required school years decreases up to 1997, while the mean number of observed school years remains essentially constant. This suggests that between 1994 and 1997 employers were forced to lower the job requirements because of the inflexible supply. The observed level of education is considerably lower each year than the required level. After this period, starting from 1997, both values increase, which indicates that job requirements are now being redefined and the supply is becoming more flexible. The latter process is also suggested by the fact that the mean number of observed school years increases more rapidly than the mean number of required school years, with the difference between the two smallest in the last time period (*Figure 1*).

Figure 1: ***The mean number of observed and required school years, 1994–2002***

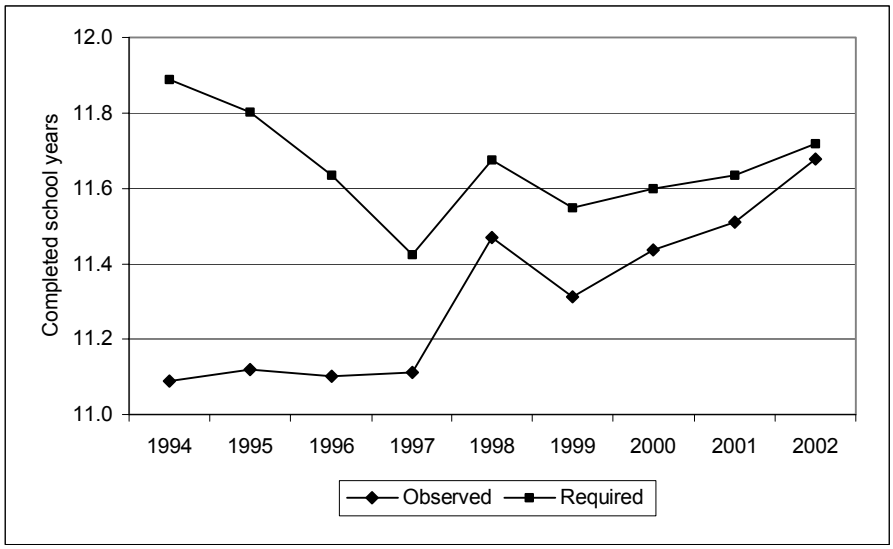


Figure 2: ***The proportions of over- and undereducated workers, 1994–2002 (%)***

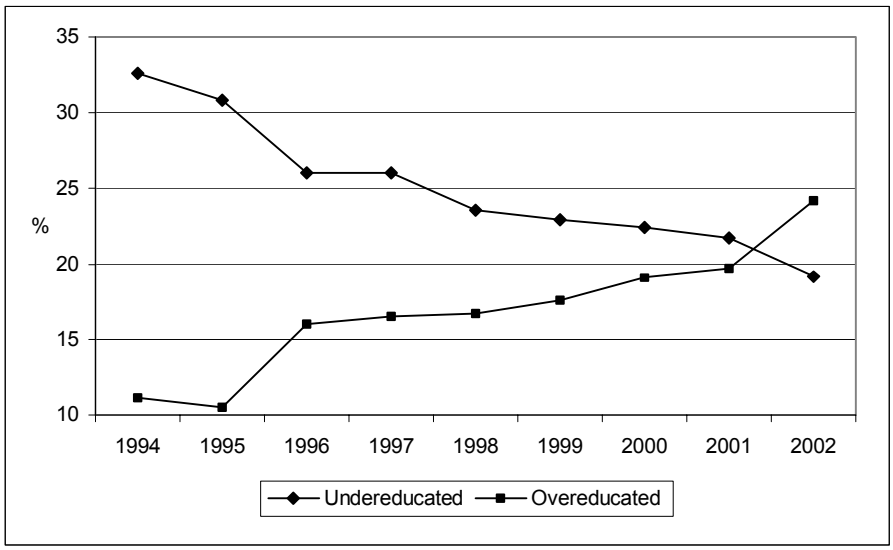
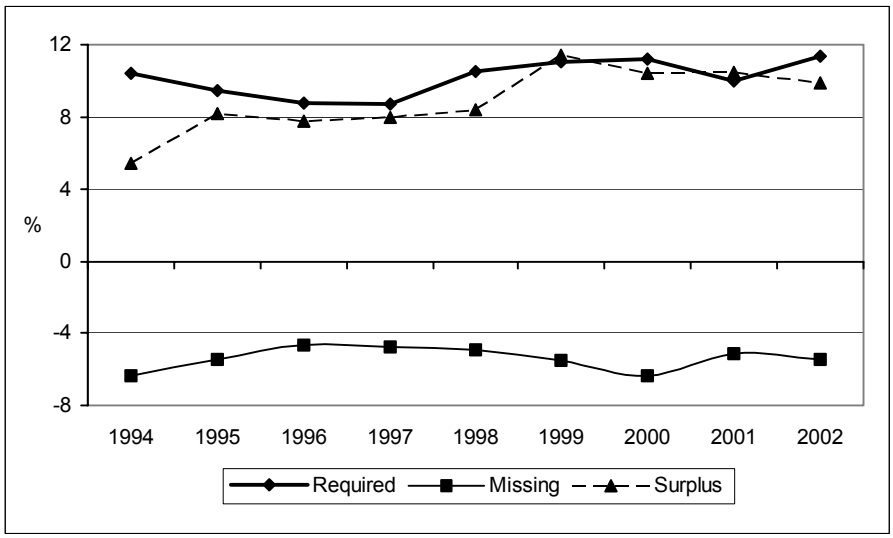


Figure 2 shows the proportions of over- and undereducated workers at various time periods. At the beginning of the survey approximately one third of workers were undereducated and around one tenth were overeducated. The proportion of undereducated workers decreases throughout the period studied, to below 20 per cent in the final year. The proportion of overeducated workers starts increasing in 1995 and surpasses undereducation in the last time slot (24 per cent). That is, one of the consequences of the transition in the labour market is that the mismatch becomes characterized by overeducation rather than undereducation.

The wage returns to schooling can be seen in *Figure 3*. The required level of education is rewarded by a non-negligible wage return of between nine and eleven per cent. The return decreases from ten to around nine per cent between 1994 and 1997 before it starts rising again in 1997; this rise continues until 2002, with the exception of the penultimate year. By 2002 it exceeds 11 per cent. This suggests that in the second half of the period studied employers rewarded better matches with wage premiums, that is, the value of a better match increased as the supply became more flexible.

Figure 3: ***The wage returns to required, surplus and missing school years, 1994–2002 (%)***



The return to overeducation is positive in each year. In accordance with previous results, this shows that surplus education brings higher wages, i.e. it cannot be seen as wasted investment. These returns (with the exception of two years) are lower than the returns to required education. That is, an overeducated worker in a given job earns more than an appropriately educated worker in the same job but—usually—earns less than he or she would in a job with matching requirements. The return to surplus schooling increases or remains constant between 1994 and 1999 but starts decreasing thereafter, by around 1.5 percentage points between 1999 and 2002. We can see, then, that the growing demand for better educated workers led to a rise in the wage returns to surplus education while the supply was inflexible, and this tendency was reversed as the supply became more adaptable.

The wage return to undereducation is negative throughout the survey: its value improves from –6 per cent in 1994 to –5 per cent in 1997, before falling again by one percentage point between 1997 and 2000. In the last two samples it is over –5 per cent. It therefore holds for each year and for the entire period as a whole that every missing school year means noticeable wage loss for the undereducated worker, relative to a worker who has the required level of education for the same job. We can also see, however, that an undereducated worker earns more than someone with the same level of education in a job where that level is what is required.

Summary

Both the observed level of education and the level of education required by the workplace have shifted between 1994 and 2002 in the Hungarian labour market. In the first half of the period, while the mean number of observed years of schooling remained constant, the mean number of required years of education decreased. The observed level of education was considerably lower than the required level. In a situation of this kind employers try to bring supply and demand together by lowering job requirements. In the second half of the period both the observed level of schooling and the required level of schooling increased—the former more rapidly than the latter—which suggests rising job requirements and a more adaptable supply. By the end of the period the difference between observed and required levels of education had become negligibly small. At the same time, the nature of the mismatch also changed: the proportion of undereducation fell throughout the period, while the proportion of overeducation grew, with the value of the latter slightly surpassing the value of the former in the last year.

The results of our cross-section samples of workers are mostly in agreement with the basic tenets of the literature on overeducation and undereducation. They support the hypothesis that the wage return to education is not independent of the match between the worker and the workplace. Our results show that the returns to required and surplus school years were positive in each year, and in seven out of nine years the returns to surplus education were lower than the returns to required education. Finally, we found the wage returns to undereducation to be negative in each year, but their absolute values were smaller than the values of returns to required education.

A shift in the nature of demand towards better educated workers can be observed in the period studied. This is in part due to developments in technology—this can also be observed elsewhere—and in part to the job creating and job demolishing trends of an economy in transition. The supply of workers with higher levels of education was relatively inflexible in the first half of the period (roughly up to the end of the 1990s), but later became more flexible as a result of more workers with higher levels of education becoming available. With a relatively inflexible supply at the beginning of the period, the return to required education first decreased by one percentage point and subsequently gradually increased (with the exception of one year). In the final year (2002) it was around two percentage points higher than its lowest value (in 1997). This suggests that, as the supply becomes more adaptable, a better match becomes more highly valued and employers reward workers with just the right level of education with higher wage premiums. The wage return to surplus school years increased or remained constant up to

1999, and subsequently decreased by nearly one and a half percentage points by 2002. This is probably not independent of the fact that during this period above all the number of workers with higher levels of education increased sharply in the labour market.

REFERENCES

Chevalier, A. 2003: 'Measuring over-education.' *Economica*, vol. 70, pp. 509–531.

Cohn, E. and S. P. Khan 1995: 'The wage effects of overschooling revisited.' *Labour Economics*, vol. 2, pp. 67–76.

Cohn, E. and Y. C. Ng 2000: 'Incidence and wage effects of overschooling and underschooling in Hong Kong.' *Economics of Education Review,* vol. 19, pp. 159–168.

Daly, M. C., F. Büchel and G. J. Duncan 2000: 'Premiums and penalties for surplus and deficit education. Evidence from the United States and Germany.' *Economics of Education Review*, vol. 19, pp. 169–178.

Dolton, P. and A. Vignoles 2000: 'The incidence and effects of over-education in the U.K. graduate labour market.' *Economics of Education Review*, vol. 19, pp. 179–198.

Galasi, P. 2004: *Valóban leértékelődtek a felsőfokú diplomák? A munkahelyi követelmények változása és a felsőfokú végzettségű munkavállalók reallokációja Magyarországon, 1994–2002*. [*Have been University and College Diplomas Really Devaluated? Changes in Employers' Expectations, and Reallocation of Employees with Higher Education in Hungary 1994–2002*]. Budapesti Munkagazdaságtani Füzetek [Budapest Working Papers on the Labour Market] 2004/3. Budapest: MTA Közgazdaságtudományi Intézet – BKÁE Emberi Erőforrások Tanszék, [Institute of Economics, Hungarian Academy of Sciences and Department of Human Resources, Budapest University of Economics].

Groot, W. 1996: 'The incidence of, and returns to overeducation in the UK.' *Applied Economics*, vol. 28, pp. 1345–1350.

Groot, W. and H. Maassen van den Brink 2000: 'Overeducation in the labor market: a meta-analysis.' *Economics of Education Review*, vol.19, pp. 149–158.

Hartog, J. 2000: 'Over-education and earnings: where are we, where should we go?' *Economics of Education Review*, vol. 19, pp. 131–147.

Kertesi, G. and J. Köllő 1995: *Kereseti egyenlőtlenségek Magyarországon.* [*Earning Inequalities in Hungary*]. Budapest: MTA Közgazdaságtudományi Intézet [Institute of Economics, Hungarian Academy of Sciences]. (December).

Kertesi, G. and J. Köllő 1997: 'Reálbérek és kereseti egyenlőtlenségek, 1986–1996. [Real Wages and Earning Inequalities, 1986–1996]' *Közgazdasági Szemle*, no. 7–8.

Kertesi, G. and J. Köllő 1999: *Economic Transformation and the Return to Human Capital*. Budapest Working Papers on the Labour Market 1999/6. Budapest: Institute of Economics, Hungarian Academy of Sciences – Department of Human Resources, Budapest University of Economics.

Kertesi, G. and J. Köllő 2002: 'Economic transformation and the revaluation of human capital—Hungary 1986–1999.' In: Grip, A. de, J. Van Loo and K. Mayhew (eds.) *The Economics of Skills Obsolescence*. Research in Labour Economics, vol. 21. Oxford: JAI, pp. 235–273.

Kézdi, G. 2002: *Two Phases of Labor Market Transition in Hungary: Inter-Sectoral Reallocation and Skill-Biased Technological Change*. Budapest Working Papers on the Labour Market 2002/3. Budapest: Institute of Economics, Hungarian Academy of Sciences – Department of Human Resources, Budapest University of Economics.

Kiker, B. F., M. C. Santos and M. Mendes de Oliveira 1997: 'Overeducation and undereducation: evidence for Portugal.' *Economics of Education Review*, vol. 16, pp. 111–125.

Kőrösi, G. 1998: *Labour Demand During Transition in Hungary*. Budapest Working Papers on the Labour Market 1998/5. Budapest: Institute of Economics, Hungarian Academy of Sciences – Department of Human Resources, Budapest University of Economics.

Kőrösi, G. 2000: *A vállalatok munkaerő-kereslete* [*Labour Demand of Enterprises*]. Budapesti Munkagazdaságtani Füzetek [Budapest Working Papers on the Labour Market] 2000/3. Budapest: MTA Közgazdaságtudományi Intézet – BKÁE Emberi Erőforrások Tanszék [Budapest: Institute of Economics, Hungarian Academy of Sciences – Department of Human Resources, Budapest University of Economics].

Kőrösi, G. 2002: *Labour Adjustment and Efficiency in Hungary*. Budapest Working Papers on the Labour Market 2002/4. Budapest: Institute of Economics, Hungarian Academy of Sciences and Department of Human Resources, Budapest University of Economics.

Mendes de Oliveira, M., M. C. Santos and B. F. Kiker 2000: 'The role of human capital and technological change in overeducation.' *Economics of Education Review*, vol. 19, pp. 199–206.

Rubb, S. 2003: 'Overeducation in the labor market: a comment and re-analysis of a meta-analysis.' *Economics of Education Review*, vol. 22, pp. 621–629.

Vahey, S. P. 2000: 'The great Canadian training robbery: evidence on the returns to educational mismatch.' *Economics of Education Review*, vol. 19, pp. 219–227.

Social Report 2004, Budapest: TÁRKI, 2004
Tamás Kolosi, György Vukovich, István György Tóth eds.

Table of Contents

Introduction
Tamás Kolosi, István György Tóth and György Vukovich

PART I: SOCIAL INDICATORS, SOCIAL STRUCTURE
1 Hungarian Society Reflected in Indicators
(Erzsébet Bukodi, István Harcsa and György Vukovich)
2 Key Processes of Structural Transformation and Mobility in Hungarian Society since the Fall of Communism
(Tamás Kolosi and Péter Róbert)
3 Income Composition and Inequalities, 1987–2003
(István György Tóth)
4 Poverty in Hungary on the Eve of Entry to the EU
(András Gábos and Péter Szivós)

PART II: DEMOGRAPHIC PROCESSES AND WELFARE SYSTEM
5 Hungarian Population Characteristics in the EU Context
(Gabriella Vukovich)
6 Fertility Decline, Changes in Partnership Formation and Their Linkages
(Zsolt Spéder)
7 Lifestyle and Well-being in the Elderly Population
(Edit S. Molnár)
8 Effects of Intergenerational Public Transfers on Fertility: Test on Hungarian Data
(Róbert Iván Gál and András Gábos)
9 Housing Conditions and State Assistance, 1999–2003
(János Farkas, József Hegedüs and Gáborné Székely)
10 Educational Performance and Social Background in International Comparison
(Péter Róbert)

PART III: LABOUR MARKET AND HOUSEHOLD ECONOMICS
11 Labour Market Trends, 2000–2003
(Gábor Kézdi, Hedvig Horváth, and Péter Hudomiet)
12 Business Expectations of the Largest Exporters at the Beginning of 2004
(István János Tóth)
13 Low Participation among Older Men and the Disincentive Effects of Social Transfers: The Case of Hungary
(Orsolya Lelkes and Ágota Scharle)
14 **Overeducation, Undereducation and Demand**
(Péter Galasi)
15 The Labour Market and Migration: Threat or Opportunity?
(Ágnes Hárs, Bori Simonovits and Endre Sik)

16 General Characteristics of Household Consumption with Focus on Two Fields of Expenditure
(Anikó Bernát and Péter Szivós)

PART IV: INFORMATION SOCIETY
17 Digital Inequality and Types of Info-communication Tool Use
(Róbert Angelusz, Zoltán Fábián and Róbert Tardos)
18 The Spread of Information Technology: Objective and Subjective Obstacles
(Tibor Dessewffy and Zsófia Rét)
19 The Development of Electronic Commerce in Hungary and in Countries of the European Union
(László Szabó)
20 E-government in Hungary Today
(Teréz N. Vajdai)

PART V: MINORITY AND MAJORITY IN HUNGARY
21 Is Prejudice Growing in Hungary
(Zsolt Enyedi, Zoltán Fábián and Endre Sik)
22 The Income Situation of Gypsy Families
(Béla Janky)
23 Residential Segregation and Social Tensions in Hungarian Settlements
(Marianna Kopasz)
24 The Social Position of Immigrants
(Irén Gödri and Pál Péter Tóth)

PART VI: POLITICAL BEHAVIOUR, SOCIAL ATTITUDES
25 Trends in Party Choice after the Change in Government
(István Stumpf)
26 Public Support for EU Accession in Hungary
(Gergely Karácsony)
27 National Identity in Hungary at the Turn of the Millennium
(György Csepeli, Antal Örkény, Mária Székelyi and János Poór)
28 The Individual and Social Components of Insecurity
(György Lengyel and Lilla Vicsek)

Cataloging in Publication Data

Social Report 2004 /ed. by Tamás Kolosi, István György Tóth,
György Vukovich—Budapest: TÁRKI, 2004 487 p.

Society—Hungary—Social structure—Social indicators—Welfare systems
Labour market—Information society—Migration—Election.

Hard copies of the book can be ordered directly from TÁRKI.
Order form: www.tarki.hu/
Contact information:
Ilona Pallagi
H-1518 Budapest, Pf. 71., Hungary
E-mail: pallagi@tarki.hu

Research Areas:

- social structure, labour market
- income distribution, poverty, inequalities
- social policy, welfare systems
- boom study, economic attitudes
- election research, market research
- survey methodology, statistical analyses
- microsimulation implementation

References:

- government agencies
- international organizations
- professional organizations
- local councils
- financial institutions
- major companies

Services:

- non-profit public data archive with more than 650 databases
- empirical surveys carried out with the help of highly qualified survey apparatus
- acclaimed research results, wide-ranging training experience
- revealing analyses, advance effect studies
- occasional, half-yearly and yearly reports, Social Report, TÁRKI Public Policy Discussion Papers

Contact Information for TÁRKI Social Research Centre:

Address: Budaörsi út 45, H-1112 Budapest, Hungary
Postal address: P.O. Box 71, H-1518 Budapest, Hungary
Phone: +36 1 309-7676
Fax: +36 1 309-7666
E-mail: tarki@tarki.hu
Internet: http://www.tarki.hu

Useful Addresses:

President: Tamás Kolosi, kolosi@tarki.hu
General Director: István György Tóth, toth@tarki.hu
Scientific Director: Tamás Rudas, rudas@tarki.hu
Survey Dept: Matild Sági, sagi@tarki.hu
Data Archive Dept: Zoltán Fábián, fabian@tarki.hu
Office Manager: Katalin Werner, wernerka@tarki.hu