IN FOCUS

LABOUR MARKET DISCRIMINATION

Edited by

ANNA LOVÁSZ

&

ÁLMOS TELEGDY

PREFACE

In this year's *In Focus* section we analyze labour market discrimination and segregation. Although the anti-discrimination legislature of developed countries theoretically ensures the equality of every demographic group based on the principle of equal treatment for all, there is a debate among researchers and in public forums regarding the extent of discrimination in the real world, the source of observed discriminatory phenomena, and the most effective ways of handling discrimination. Our goal is to present a summary of these major unresolved issues, problems, and the most recent attempts aimed at their resolution, as well as to assess the current situation in the Hungarian labour market and place it in an international context.

In the first – introductory – chapter of the *In Focus* section, *Anna Lovász* and *Álmos Telegdy* summarize the different types of observable statistical differences between groups present in the labour market, introduce the standard economic models of labour market discrimination, and pay special attention to other, non-discriminatory phenomena which may also lead to between-group differences in the labour market. Among the different models of discrimination, the authors differentiate based on the source of the discriminatory behaviour (taste-based or statistical discrimination), its outcome (in wages, employment, or occupation), and the stage of the life path that is affected (pre-labour market vs. labour market discrimination). After summarizing the possible forms in which discrimination may appear, they outline the difficulties inherent in the measurement and assessment of labour market discrimination. Finally, they introduce the widely used and some newer methods used in research on the topic, some of which the Reader will see examples of in the subsequent studies of the *In Focus* section.

We begin the assessment of the Hungarian situation with the analysis of the legal framework. *Csilla Kollonay Lehoczky* discusses the main concepts of European equal opportunity legislation and Hungarian regulatory practices, the tools available for enforcing the laws, and their practical fulfilment. The author points out that the current legal tools available in Hungary are not sufficient for ensuring the principle of equal treatment for all, since both the content of the norms, and practical enforcement are characterized by over-cautiousness. Despite these problems, the observable changes in legislature and practical enforcement can be viewed as encouraging, as they seem to reflect a clarification of social values, and an increase in knowledge regarding the issue.

Gábor Fleck and *Vera Messing* describe the next level in the realization of anti-discriminatory policy: the functioning of labour market programs aimed at aiding the Roma, their problems and deficiencies. The authors point out that the past years' programs aimed at Roma employment were not able to successfully influence the level of Roma employment. The problems of the system can be linked to the definition of the target population, the goals and priorities, the indicators, and the procedures for grant applications, as well as the lack of monitoring and impact analysis. The authors list numerous aspects that could improve the effectiveness of employment policy.

The remaining chapters of the *In Focus* section present empirical results from Hungary that can be linked to the methodologies used in the newest international research described in the introduction. First, *Gábor Kertesi* and *Gábor Kézdi* examine one of the main pitfalls of Roma employment: the segregation of the schooling system. The authors give a comprehensive picture of the extent of segregation between and within schools, the regional differences, and then analyze the determinants of the dispersion of city and town, and micro-regional segregation indexes, as well as the long term trends in the segregation of Roma students. Finally, they compare the Hungarian results to those of research conducted in the United States, and find that while the level of ethnic segregation in schools is lower in Hungary, an increase in the ratio of the most disadvantaged ethnic minorities increases segregation between schools in a similar way.

Endre Sik and *Bori Simonovits* attempt to determine the level of labour market discrimination based on research that uses several different empirical approaches. They compare data on the perceptions of people regarding the extent of discrimination in Hungary and other European countries, and then based on data from surveys conducted on representative samples of the population and minorities that are aimed at assessing the chances of becoming a victim. According to the studies, in Hungary, Roma ethnicity and migrant status increase the level of perception of discrimination. The authors then use the method of discrimination testing, based on controlled experiments, to measure the level of discrimination against various minority groups. This method is based on the analysis of job postings, as well as on tests conducted by phone, where they measure the frequency of rejection of applicants who share all the characteristics relevant to the experiment (to the job posting), but differ in regard to the single characteristic that is the focus of the test. Their results indicate that the occupations assessed are characterized by significant gender segregation. The testing shows that young workers are more sought after than older workers.

In another study, *Gábor Kertesi* describes the employment situation of the Roma population, and analyzes whether there has been any significant changes in it since the dramatic fall in employment seen at the beginning of

the nineties. His results show that the level of Roma employment has stabilized at a very low level – around 30 percent – and that the typically Roma workplaces are extremely unstable. These indicators are much worse than those of the average worker with comparable education levels: the employment rate of those with a maximum eighth grade education level is double the rate measured in the case of Roma workers, and their workplaces are, in addition, much more stable.

The situation of women in the Hungarian labour market is assessed in two studies using two different approaches. In the first study *Anna Lovász* examines whether the increased level of product market competition following the transition led to a fall in the unexplained wage gap (the wage gap that remains after taking observable characteristics into account) between men and women. According to some models, if certain employers favour male workers over females with equal productivity, increased competition should force such behaviour out of the market, since firms have to behave more efficiently. The study finds a significant negative correlation between the level of competition and the wage gap. Based on the estimates, increased competition accounts for fifteen percent of the fall in the gender wage gap during this period.

In the last study of the *In Focus* section, *Anna Lovász* and *Mariann Rigó* estimate the relative productivity and relative wage of women compared to men based on firm level production functions and wage equations. The authors then compare these group level relative productivities and wages to assess the extent of wage discrimination against women. This method has the benefit over standard individual level wage equation estimation in that it can take unobserved group level differences between the genders into account. The results indicate that the previously published estimates of the wage gap between the genders is not explained by the lower productivity of women, women not appearing to be significantly less productive than men in any specification. The study points out that the estimated level of discrimination depends greatly on the data, since the estimated difference between relative wages and productivities differs according to the type of wage measure used.

1. LABOUR MARKET DISCRIMINATION – TYPES, MEASUREMENT ISSUES, EMPIRICAL SOLUTIONS

ANNA LOVÁSZ & ÁLMOS TELEGDY

Introduction

In the economic sense, discrimination occurs when equally productive members of two different groups that can be differentiated based on some observable characteristic are treated differently. In other words, labour market discrimination means that the market attaches some value to a worker characteristic that is not correlated with the workers' individual productivity. Thus discrimination can occur based on any observable characteristic that causes the discriminating person to attach a lower value to a worker's productive characteristics relative to other, equally productive workers.

Research on labour market discrimination usually focuses on the situation of a few specific demographic groups. Perhaps the most frequently analyzed among these – at least at the international level – is the disadvantage of female workers in the labour market (*Blau–Kahn,* 2000). Racial or ethnicity-based discrimination also has a broad literature in some countries and naturally studies focus on the ethnic minorities present in each region: in Europe, these focus mainly on the situation of the Roma, while in the United States, they assess the situation of African-American, Asian, and Hispanic workers (*Juhn et al,* 1991, *Arrow* 1998, *Charles–Guryan,* 2007, *DeVaro–Gosh–Zoghi,* 2007). Many studies examine the phenomena of discrimination against the ever-increasing number of immigrants as well (for example: *Hersch,* 2008). A separate strain of research analyses labour market discrimination for or against the older age groups. Certain studies (*Bendick–Jackson–Romero,* 1996, *Boglietti,* 1974, *Lallemand–Rycx,* 2009) show that employers prefer younger workers from among equally qualified applicants due to the older workers' higher expected probability of health problems, lower perceived ability to carry a high workload, and lower ability to adjust to using new technology. On the other hand, some studies highlight the fact that older workers receive a higher wage than their productivity merits, so there is often a positive wage premium associated with older workers (*Dostie,* 2006, *Neumark,* 2008).

Besides gender, race, and age, there is a very colourful and interesting literature of discrimination based on other observable physical characteristics. Among these are studies examining the situation of people who are short in height, have a disability, or are overweight, and the results usually clearly show these groups' disadvantage in the labour market (*Hersch,* 2008, *Rosenberg,* 2009). Positive discrimination based on physical beauty has also

been documented (*Hamermesh,* 2004). Certain studies find that men who have a deeper voice, or who are tall are more successful in the labour market, and are promoted to leadership positions more easily than others (*Tiedens– Jimenez,* 2003).

Of the non-physical attributes, there is research on discrimination based on workers' religion and political views, and in Western Europe and the United States extensive work has been done assessing the situation of homosexual workers (*Weichselbaumer,* 2003). A worker's family status may also be the basis of differential treatment: certain studies, for example, show that married men (or those raising children) receive salary increases more often than unmarried men, while others have found that married young women are less likely to be hired into certain occupations, since employers expect them to have children soon, which may translate into lack of manpower and additional recruitment and training costs for the firm (*Antonovics–Town,* 2004).

In the European Union and in the developed countries in general – including in Hungary – the legal framework theoretically ensures equal treatment and equal opportunities for all people in the labour market. Despite this, there are statistically significant differences between groups in all countries, and politicians and analysts believe that decreasing these differences is an important goal. For example, one of the main conclusions of the 2008 OECD analysis of the labour market (*OECD,* 2008) states that labour market discrimination is still one of the biggest problems facing its member countries, and that they should do more to eliminate it. According to the report, women in the OECD countries earn 17 percent less than men, and 30 percent of this difference is due to labour market discrimination.

Are the observed differences in the labour market outcomes of minority and majority groups truly a consequence of discrimination?[1] Although the concept of discrimination may seem simple, in real life it is very difficult to determine its prevalence and extent, since the observed differences in the labour market situation of different groups may be due to several other factors as well. Public opinion is often shaped under the assumption that any wage and employment differences between groups are due to discrimination, but this is not nearly the case, as we would like to show in this study. For this reason, as our starting point in this chapter we will describe the objective, statistically observable facts regarding the situation of different groups. We will then turn our attention to the possible causes of these differences, including – but not limited to – discrimination, and its various forms. Researchers attempt to measure which of these effects are causing the observed phenomena, and to what extent each one contributes, using various methods that we will also summarize. We will discuss the theoretical and empirical difficulties of these methods, due to which the extent of discrimination – as opposed to the concrete statistical differences – remains only an estimated value.

1 In this study, we refer to the group that is the victim of discrimination as the minority group, and the group who does not suffer from discrimination, or who is the discriminating party as the majority.

Observable differences between groups in the labour market

In every labour market there are statistically significant differences between groups that can be clearly observed and these statistics and their trends are continuously reported on in international comparative analysis. These statistics can be divided into two main groups: wage differentials, and differentials in the composition of workers. *Figure 1.1.* summarizes the types of between-group differences that can be observed in the labour market.

Figure 1.1: Types of observed labour market differences
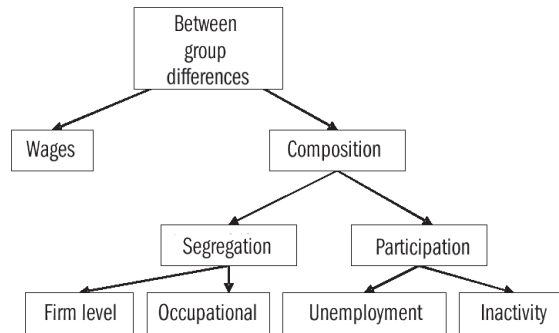
Virtually every country has certain demographic groups whose *average wages* are well below those of other groups. Analyses often compare female workers' average wages to male workers' or different ethnic minority workers' average wage to the majority's for the full set of employed workers present in the labour market. This direct comparison of wages often does not take into account the proportion of each group within the labour market, the education level of the workers, their occupation, or other characteristics that are relevant to the workers' productivities, so a difference in the relative wages of the groups is not in itself proof of labour market discrimination. Despite this fact, the relative wages of different groups are important indicators for assessing the groups' labour market situation, for analyzing trends over time, and for cross-country comparisons.

Compositional differences can be found at several different levels in the market. There are clear differences between groups in terms of participation in the labour market. At the first level, members of different demographic groups are present in the labour market to varying degrees; their labour market participation is not the same. Minority groups are usually more likely to become discouraged from participating at all, and to permanently withdraw from the labour market (*Köllő,* 2005). In terms of becoming employed – if we look at those who would like to find work – minority groups are successful at different rates, the ratio of unemployed is usually higher in the case of minority groups.

The next level of compositional differences can be observed among the *employed workers*. In terms of the occupations of employed workers, it can be observed that certain groups are concentrated into *specific occupations* or *industries*. Finally, segregation can also be seen at the *firm level*: the proportion of minority workers can differ significantly among firms, even within specific industries and regions.

The causes of labour market differences

One possible cause of the differences between demographic groups in terms of labour market outcomes is indeed discrimination. But the differences cannot be unambiguously attributed to discriminatory behaviour; several other phenomena can lead to similar observed differences among the groups. We can only speak of discrimination in the labour market if the differences between the groups do not reflect differences in their productivity. One possible cause of such deviations in group level productivity may be the composition of the groups themselves. If the average productivities of the members of two groups differ due to, for example, the fact that they have different education levels, or because the cognitive abilities they acquired within their families or during their schooling are different, it is not surprising that they are not in the same situation once they enter the labour market.[2]

A measure which takes into account the effect of worker composition in terms of the observable productive characteristics is closer to the true level of discrimination, but even such a measure may show significant differences between groups that are not due to discrimination, since there are many factors that influence a worker's productivity besides their observable characteristics. If two groups differ systematically in terms of some characteristics that influence their productivity, then differences in wage, employment, and occupation can arise even when employers do not discriminate against any group. Since discrimination means that the relative wage of a group differs from the relative productivity of that group, we may overestimate the extent of discrimination if the observed characteristics do not measure the differences in the productivities of the groups accurately.[3] Some studies point out that in the case of male-female differentials, such unobserved variables may include biologically determined differences in personality, which may also affect productivity.[4]

The extent of discrimination is also estimated inaccurately if there is error in the measurement of certain observable characteristics, and if this error is correlated with membership in the groups. The most commonly given example of such measurement error is the lack of information on actual years of work experience, which is often approximated using estimated potential years of experience.[5] Since women are on average absent from the labour market more than men due to childbearing, the estimated potential years of expe-

2 This does not mean that minority groups do not suffer disadvantages prior to their entry in the labour market in their schooling, or their family background, which later affect their opportunities in the labour market.

3 For example, suppose that women exert a lower level of effort in their jobs on average due to their other (domestic, child care) obligations outside their workplace, so women with equal education levels and years of experience tend to be less productive than men within their workplace (*Becker,* 1985). In this case we would overestimate the extent of discrimination against women based on the available data, since the employers observe the workers' actual productivities, and set their wages accordingly, while the researcher can only use the variables included in the data, which do not usually include information on activities outside the workplace or effort level.

4 For example, *Niederle* (2008) finds that within the workplace, women are much less likely to volunteer to undertake difficult tasks, even though they are equally successful at completing them. *Ichino–Moretti* (2006) also study biological differences between the genders in the workplace. *Gneezy–Niederle–Rustichini* (2003) analyze the behaviour of male and female workers in response to a highly competitive work environment.

5 Potential experience is frequently estimated as: age – years of schooling – 6.

rience systematically overestimates the work experience of female workers, and thus their estimated productivity, which leads to the overestimation of the extent of discrimination against women.[6] Of course, there may be similar problems of measurement in the case of other minorities as well, if the minority differs from the majority in terms of a characteristic due to some cultural or biological reason.

Besides differences in productive capabilities, workers may also differ from each other in terms of their preferences, of which there is also rarely any data available. In this case, the differences do not arise in the productivity of the worker groups, but rather in the groups' demand for employment into certain occupations or firms. This is described in the theory of *compensating wage differentials,* in which workers are only willing to undertake certain jobs that have undesirable characteristics if they receive additional compensation compared to other, similar jobs that do not have the undesirable characteristic. For example, workers receive a higher wage for filling jobs that involve a higher risk of physical injury, since they are willing to undertake the risk. On the other hand, certain workers may be willing to work for lower wages if a given job has non-wage characteristics that are beneficial to them. If these preferences towards occupations or firms differ systematically between the demographic groups, this also leads to wage differentials and differences in occupational composition, which may be attributed to discrimination if the job characteristics are not observed in the data. For example, women have a higher average preference for jobs that offer a more flexible work schedule or – though much less common in Hungary – for part time jobs (again due to non-workplace duties), and are willing to accept lower wages to hold such a position. Thus when comparing the wages of women to men, it is important to take into account the actual number of hours worked, and, if possible, the flexibility of the work schedule.

Finally, it is important to discuss the fact that the differences in productivity between groups in the labour market are largely due to the significant differences among them that already exist prior to their entry into the labour market. These can also be the consequence of discrimination that is outside the labour market, for example, discrimination in terms of acceptance into schools, or of other causes, such as differences in family background. *Cunha–Heckman* (2009), summarizing the issue, reach the conclusion that cognitive and non-cognitive abilities greatly determine success in the labour market, and that these abilities are mostly formed prior to schooling age within the family. The analysis of *Neal–Johnson* (1996) points out that in the United States, differences in ability level, measured in the teenage years, prior to entry into the labour market, can explain the majority of the wage differentials between groups in the labour market.[7] *Carneiro–Heckman–Masterov* (2003) try to overcome this problem by measuring children's ability level at an earlier age, as well as the expectations

6 *Hersch* (2006) studies the decisions of women regarding the time they spend at work and within the home.

7 One main criticism of the study was that the pre-labour market differences are not necessarily independent of labour market discrimination. *Ahmed* (2006) develops a model in which members of certain groups apply for lower-wage jobs only due to their pessimistic expectations about the level of discrimination they face, and thus end up in a worse situation than the majority even if employers do not actually discriminate against them. It is also possible, that minorities invest less in their human capital due to their pessimistic expectations, as we will discuss later.

of the families in terms of labour market performance. The study highlights the importance of policies aimed at keeping children from being left behind at an early age, and gives some evidence regarding the important role that the families' negative attitudes play in making decisions about schooling.[8]

Discrimination models

Economic discrimination models can be classified into two main groups: models based on preferences or tastes, and statistical discrimination models, which study discriminative behaviour that is a consequence of insufficient information. In the current section we will introduce these two main types, and, in addition, summarize the theory behind the phenomenon of segregation.

Taste-based discrimination

The main assumption of the first type of models is that some members of the majority group do not wish to work together with members of the minority group due to their personal preferences; they are prejudiced against the minority group. These preferences have no other rational or economic basis, except for the prejudiced personal tastes, so they occur even if the average marginal productivities of the worker groups are equal. This model was first introduced by *Becker* (1957, 1971), and has since become the basis of innumerable empirical studies as the most well-known model of discrimination.[9] Becker differentiated between three different types based on the identity of the discriminator: discrimination by the employer, other employees (co-workers), or customers, of which the model of employer discrimination has been the subject of the most studies.

In the *employer taste discrimination model*, in addition to the wage cost, the employment of a minority worker imposes an additional psychological cost on the employer at the firm, so the employer's utility function depends negatively on the number (or ratio) of minority workers employed in the firm. In this situation, employers who have discriminative tastes will only hire minority workers if their wages are lower than that of majority workers (assuming that both groups' marginal productivity is equal, so they are equally good at doing their job). A wage differential will arise between the groups in the market if the proportion of discriminatory employers is high enough so that at a wage equal to that of majority workers, demand for minority workers is less than supply. The more intensive the extent of prejudice against minority workers, and the higher the number of discriminatory employers, the greater the wage differential will be between the groups. Minority workers will be employed in the least discriminatory firms, which leads to segregation in the labour market. If we assume that the employers' prejudicial tastes are related to occupation (for example, they don't like to see minority workers in leadership positions), we will observe occupational segregation between the groups.

8 *Lang–Manove* (2006), and *Hanna–Linden* (2009) also study pre-labour market discrimination.
9 See *Altonji–Blank* (1999) for a survey of the topic.

51

A direct implication of Becker's model is that discriminating firms will achieve lower levels of profit than those who do not discriminate, since indulging discriminative preferences is costly: such employers do not employ the lower-wage minority workers at the cost of lower profits. If there is perfect competition in the product market, in the long-run, discriminating employers will be forced out of the market, and the wage differential between the groups will decrease, although there are certain cases in which product market competition will not eliminate wage differentials. For example, if discriminating firms can cover their costs (so their short-term profits are positive), then they may be able to discriminate in the short-run even in a competitive environment – the cost will be that their long-term profits will not be positive.

Competition will also not curb discrimination if the source of the discriminatory tastes is the other employees or the customers, since these tastes cannot be influenced by the employer. In these cases, the co-worker's utility is lower, if they have to work alongside members of the minority group, or the customer's utility is lower, if they have to buy the products from a minority worker.[10]

Discriminating customers are only willing to purchase a product from minority workers if they have to pay less for it, and thus the labour market value of minority workers (demand for their labour) is lower in occupations where they are in contact with customers. Customer taste discrimination will only lead to wage differentials between worker groups if there is an insufficient number of occupations available to minority workers in which they are not in direct contact with customers, or where they only have to serve minority customers (*Holzer–Ihlanfeldt,* 1998). Since firms themselves do not bear any additional costs in the case of customer discrimination – buyers are willing to pay more to purchase from majority workers – product market competition will not decrease this type of discrimination.

Employee discrimination will only lead to wage differentials between groups if job search is costly, and if the abilities and preferences of workers regarding the occupations are not equally distributed between the groups. If this is not the case, firms will simply hire the workers into segregated teams, and there would not be a wage differential. If, however, there are not enough highly trained workers in the minority group, for example, and the highly trained (skilled) majority workers are prejudiced, then all less skilled minority workers will have to work together with the prejudiced majority workers, who will demand higher wages for working with them. In this case, the low-skilled minority workers will receive lower wages than the low-skilled majority workers. The return to acquiring skills in this case, however, will be higher in the case of minority workers. If there are no barriers to acquiring skills, over time, the differences between the two groups should decrease, and we will be able to observe segregation in the market, but no wage differentials.

10 This type of discrimination may also be symmetric, in which case members of the minority group discriminate as well, and have a distaste for working with or buying from members of the majority group.

Statistical discrimination

In the models discussed so far, discrimination arose from the tastes of certain groups or individuals: due to some reason not specified in the model (exogenous), members of a certain group dislike members of another group, and therefore are only willing to be in contact with them if they are compensated for doing so. Another type of discrimination, statistical discrimination, does not arise from the preferences of the majority, but rather due to asymmetrical information in the market (*Phelps,* 1972; *Arrow,* 1973). For example, in the case of hiring new workers, it is easy to imagine that the employer is not fully able to assess the productivity of the applicant. If the employer hires a worker who is not suited to the job, this will lead to extra costs – since the worker is not capable, the employer will have to fire him or her, and find a new employee, who will have to be trained, and be given sufficient time to adjust to the new environment. To avoid such extra costs, the employer may take into account characteristics of the applicants that are correlated with productivity, but are not perfect indicators of it. The gender or race of the applicant may be one such characteristic. If employers know (or think they know) that the average productivity of minority workers is lower than that of majority group employees, then they may use skin colour as additional information when they make their hiring decisions, and workers from groups that are less productive on average will be at a disadvantage. Since employers are not using individual level, but rather group level characteristics, they will discriminate against workers from the given minority group: they use the group level (expected) average productivity to assess the applicant's individual productivity. It is worth noting that in this case, employers have no personal distaste against minority workers, they are only discriminating against them because on average, this will lead to lower costs. We should also notice that if employers were perfectly informed regarding the applicants' productivities, they would not discriminate.

This type of discrimination is better than taste-based discrimination in the sense that theoretically no one is prejudiced against the minorities; they are simply minimizing their expected costs. So if it turns out that a minority worker is very productive, the employer will hire that worker or keep him at the firm, while this is not the case with taste-based discrimination. The extent of statistical discrimination can change depending on the information available to the employer. For example, if the employer can observe the productivity of an employee, by hiring him or her for a trial period, then the decision can be made based on their trial period, and not based on the average expectations regarding the worker's race or gender (*Altonji–Pierret,* 2001). The previous work experience of the worker may also be useful information for the employer, and may decrease statistical discrimination. As a result, this

type of discrimination mainly occurs in the case of young applicants who are entering the market for the first time.

This type of discrimination is based on rational decisions (cost minimization), and if the productivity of two groups is truly different on average, it is very difficult to eliminate it. For example, if a significant proportion of young female workers have a high probability of leaving their workplace within a few years to have children, this translates into high costs for the firm, and this will be taken into account both in hiring decisions, and in determining wages.[11] In this case, it is the young women who do not want to take leave of absence to have children who are discriminated against.

So the problem is that employers do not set the wages equal to the worker's individual productivity, but rather with their expected productivity. As a result, minority workers who are as equally productive as majority workers will be victims of unfair treatment.[12]

So far, we have assumed that the true or expected average productivity of minority and majority workers differs due to exogenous reasons. If we lift this restriction, the situation gets even worse. If the majority believes that the abilities of the minority workers are lower than those of the majority workers, this may become a self-fulfilling prophecy if the negative opinion of the majority affects the costs of the minority and as a result, their behaviour as well, as the following examples illustrate.[13]

Let us assume that the majority is of the opinion that the minority is less careful on average, so they make more mistakes. An employer who is supervising workers being trained for a job does not know why the worker made a mistake (so he is not fully informed). Therefore he does not know whether the worker made a mistake because he does not make an effort to work carefully, or because he is simply having a bad day. If the worker belongs to the minority group, the employer's prejudice regarding minority workers will lead him to think that the worker made a mistake because he is less careful. So the employer will reach a different conclusion in evaluating the same information – the number of mistakes made – in the case of a minority worker or a majority worker, and will fire the minority worker for a lower number of mistakes. If the minority worker notices this, he will know that he has a lower probability of being allowed to stay on the job following the training period (which can be viewed as the reward for paying attention). Since he has a lower probability of achieving his goal by working carefully, the minority worker may decide that it is not worth while to be careful, since there is a good chance that he will be fired (since it is not possible to avoid making any mistakes at all). This will result in more mistakes being made by minority workers on average, since it is not worth their while to pay attention to their work. So, the employer's prejudicial expectations are validated: he thought minority workers are less careful than others, and his experiences have proven this to be the case.[14]

11 It is also important to note that if every young woman were to go on child-care leave, we could not speak of discrimination against them, since this signal (the fact that they are young women) would predict the expected length of their employment perfectly.

12 The above thought process can also be applied to other areas of life: the market for loans, if banks assume that minorities have a greater probability of missing a payment, than those from the majority group, or in the market for rental apartments, if the landlords assume, that minorities cause more damage on average than others.

13 *Loury* (2006) discusses the effect of prejudice on the decisions of the minority in detail. In the following we will summarize the relevant sections of this book.

14 Another example: if a minority worker appears drunk on the job one day, and the employer is prejudiced against minority workers, he might take a single occurrence as proof that the worker is a drunkard. In the case of a majority worker, the employer might overlook a one-time incident, assuming that the worker is having problems in the family, or celebrating someone's birthday. Since the minority worker notices the prejudice against him, he will not think it is important for him to pay attention to not going to work drunk (unless he is perfectly abstinent), since he will already be labelled as a drunkard the very first time this occurs. This, once again, reinforces the employer in his prejudice: minority workers get drunk more often – exactly as he expected.

Not only negative, but positive discrimination can also lead to similar outcomes. One of Loury's examples pertains to affirmative action for black students in applying to schools. If black students can get into a school with lower scores than white students, they will know that they don't have to prepare as much for the exams as they do, since acceptance has been made easier for them. So they really will be accepted with lower scores, and the expectations of the majority will be validated.

It is important to note that this model fits into the paradigm of rational individuals maximizing their utility. The employer believes, for exogenous reasons, that the minority worker is less productive on average than the majority worker. This expectation influences his decisions, which in turn influences the minority worker's decisions regarding his effort on the job, level of attention, or other characteristics that are related to his work that have personal costs. The minority worker changes these characteristics in a way that fulfils the employer's expectations. Society reaches a bad, but stable equilibrium, in which the minority group faces prejudice, and this has a negative effect on their performance.

How can this self-fulfilling cycle be broken? If there are a large number of decision-makers, there is probably not much to be done, since it is in their interest that their decisions be upheld. If, however, decisions are made by an institution – for example, the government – then change is possible, since the decision-maker can take into account the effect of the majority's prejudices on the behaviour of the minority, and can act against it (*Coate–Loury,* 1993).[15] This can be achieved if government representatives believe that the bad performance of minorities is due to the negative feedback mechanism, and not some sort of exogenous difference, such as cultural differences (*Loury,* 2006). In this case government decision-makers do not accept differences in labour market activity and wages as unavoidable, and deem their elimination a worthy task. If, however, the decision-makers themselves believe that the minority group is less productive on average than the majority, they do not feel that it is necessary to interfere, since the fact that minorities earn less on average fits into their worldview.[16] Thus the government has a great responsibility in eliminating discrimination. The most important thing, however, is to change the situation of the minorities, so that there really will not be any basis for the prejudice against them. Here we are mainly thinking of segregation prior to their entrance in the labour market, for example in schools, and in the environment where they are raised. For example, *Heckman* (1998) believes that this is a much more important task than the anti-discriminatory measures.

Segregation

Occupational segregation means that workers from minority groups are concentrated into certain occupations. This may be due to several different factors

15 Under government coordination, statistical discrimination can be broken even in the case of a large number of decision-makers, for example, this is the purpose of anti-discrimination legislature.

16 It is possible that the position of women in the labour market has changed relative to that of the blacks in the United States and the Roma in Central-Eastern Europe due to the difference in the prejudice against them. While the situation of women has improved markedly in the last few decades, that of the ethnic minorities has not, and it is possible that this is due to the fact that the government and people do not believe that there are serious cultural differences between the genders, while there are between the ethnic groups.

(*Altonji–Blank,* 1999): It's possible that employer discrimination is stronger in certain occupations than others, so minority workers group into positions that are less discriminated against. It is also possible that there are differences between demographic groups in terms of which professions are more accepted socially, or members of a group may have a preference for certain occupations. The legal and institutional framework may in some cases also hinder the opportunities of certain groups in gaining access to certain positions. Finally, the differences between groups in terms of pre-labour market characteristics, which we have discussed, may give rise to different comparative advantages in the fulfilment of certain jobs. We emphasize that these differences in preferences and endowments prior to labour market entry may also be endogenous, and are not necessarily independent of labour market discrimination.

Empirical measurement of labour market discrimination

As we have shown, the existence of labour market differences in itself does not necessarily indicate that there is discrimination against minority groups, even if we take into account the effect of differences in the most important observable characteristics between the groups. In this section we will introduce the methods used to measure discrimination, as well as their critique.

Traditional wage equation method, measurement of individual productivity

The most commonly used method for measuring discrimination in the labour market is the traditional wage equation approach. In this estimation, the variables used to explain variation in wages are the observable characteristics that determine workers' productivity, such as level of education and labour market experience. The wage equation specification also includes dummy variables indicating whether each worker belongs in a minority group. If we assume that the observed worker characteristics measure productivity well, and that there are no systematic differences in productivity between the groups in addition to what is measured by these variables, the estimated coefficient of the minority group variables indicate the level of discrimination against those groups. However, this assumption – due to several reasons already mentioned in the section dealing with other causes of labour market differences – is too strong: it is very likely that there are unobserved differences between the groups that influence their productivity. In this case, workers that have the same observable characteristics are not really equally productive, and the lower wages of the less productive groups are also reflecting this difference, rather than discrimination against them.

Jarrell–Stanley (2004), *Weichselbaumer–Winter-Ebmer* (2005) and *Kunze* (2008) summarize studies that use the wage equation methodology to measure discrimination. These studies analyze the differences in the esti-

mated level of discrimination due to the quality of data and the methodology used based on a comparison of the results of international research on the topic. During the so-called meta-analysis the authors collect the estimated value of discrimination (or, to be exact, unexplained wage differentials) from the different studies, and they estimate how the choice of explanatory variables, data quality, estimation method used, and choice of samples affect the results, and what type of error they may lead to. The results of their analysis show the main pitfalls of estimating discrimination using the wage equation methodology.

The most important of these is the type of wage measure used: if the monthly wage is used instead of the hourly wage, we may overestimate the extent of discrimination, since women usually work fewer hours than men, and their monthly wage is thus lower. The lack of data on actual labour market experience may also lead to an overestimation of discrimination, since the level of experience of women is usually lower for a given age group than men's.

The estimated measure of discrimination may also differ if the estimation is carried out on a subsample for some reason: several studies analyze the differences between groups on a subsample of certain occupations, or only for nonmarried workers, or new entrants to the labour market. The effect of selection into the labour market must also be considered, although *Jarrell–Stanley* (2004) emphasizes that the error due to this selection has decreased over time. It is interesting that these studies find that the econometric method used to estimate the wage equation does not significantly influence the result; differences in the data have a much greater impact.

Finally, it is very interesting that the gender of the researchers carrying out the estimation also influences the results: studies written by only male researchers tend to find a higher level of discrimination than those written by women only or by mixed gender groups. *Jarrell–Stanley* (2004) believe that this may be due to the fact that male researchers are so afraid of being prejudiced, that they unknowingly try to find some evidence supporting the existence of discrimination against women.

Another great drawback of the wage equation methodology is that the estimates may be biased due to the unobserved differences in productivity. Since this is one of the greatest problems, some studies seek to make use of certain situations in which there is data available on the individual productivity of workers. These studies are usually limited to a single firm or industry, so they cannot be directly interpreted as applying to the entire labour market. One such area studied analyzes the extent of discrimination in professional sports, since the success (productivity) of athletes can be measured quite easily. *Kahn* (1991) summarizes this field, and states that they generally find evidence supporting the existence of discrimination: for example, the prizes of women's tennis tournaments are lower than men's, even though the statistics show

that women's tennis attracts at least as many spectators and revenue, as men's. Another set of studies examines the extent of discrimination in occupations where the productivity of workers can be directly measured by the number of pieces of a product they produce. Their results also support discrimination against women and groups with a lower social status.

Wolfers (2006) uses the expected value of firms' stocks to examine discrimination based on the gender of the CEO. If the market systematically undervalues the abilities of female CEOs, the companies led by women should outperform expectations, however, the results of the study does not find any evidence of this occurring.

Donald–Hamermesh (2004) illustrate the problems of empirical measurement of discrimination using data on the election results of the American Economic Association and the nominees' productivity, measured by their citation index. Based on the data, women have a greater chance of winning than men with similar citation indexes. Although this may at first glance seem to indicate that women are enjoying positive discrimination, the authors point out that there could be other reasons behind the result: the lack of data on other variables that may influence productivity (for example, women's better communication or organizational skills, etc.) The set of factors that influence productivity are not obvious, and without their precise definition, it is impossible to tell what part of the differences observed in a given situation are due to discrimination, and what part is due to missing information – even when productivity is relatively well-measured.

Biddle–Hamermesh (1994) solve the problem of measuring productivity by examining discrimination in a situation where it is only partially correlated with productivity. The study analyzes what effect human beauty has on wages. The benefit of the approach using this characteristic is that beauty only has an effect on productivity in occupations where the worker is in contact with people (for example, if the worker sells something). Since this is relatively easily determined, the extent of discrimination can be measured relatively precisely. The authors find that there is a significant wage gap between people who are less attractive than the average, and those who are more attractive, around 12 percentage points. The estimated "beauty premium" does not depend on the gender of the worker. The study does not answer the question of what type of discrimination this is due to, taste-based or statistical discrimination, although both are possible. People generally prefer to work together with attractive men and women, and it has also been shown that our brain often links good characteristics to each other for no rational reason: we instinctively believe that those who are beautiful are also productive. This false belief, and the positive treatment that goes along with it affects the people who are more attractive than the average, they have been shown to have more self-confidence than other people, which often translates into a

benefit in the labour market (this phenomena is similar to that discussed in the previous section, where the positive or negative prejudice influences the behaviour of the minority).[17]

The relationship between wages and the employer's information set

As we have discussed in the theoretical introduction of statistical discrimination, this type of discrimination is dependent on the employer's information set. If the employer were perfectly informed regarding the productivity of workers, he would not use the signal of membership in a minority group (and consequently the group's average productivity) to select workers. The analysis of *Holzer et al* (2006) is one of the first attempts at separating statistical discrimination from other effects that may also lead to wage differentials between the minority and majority groups. Their idea was the following: if employers determine the wages of workers based on an easily observable characteristic that is not perfectly correlated with productivity when they are hired, then over time the effect of that characteristic should decrease as the employer becomes more familiar with the worker's true productivity. Translating this to the language of regressions, this means that in the wage equation the effect of race should decrease over time if we also control for a variable that approximates productivity, but is not observable to the employer at the time of hiring, only over time. This method can resolve the basic empirical dilemma of discrimination: whether we find a correlation between minority status and wages because employers are discriminating, or because minority status is correlated with some characteristic that describes productivity, which the employers observe, but is unknown to the researcher. The authors analyze statistical discrimination in the case of black workers in the United States, and do not find evidence that employers are statistically discriminating against them.

Holzer et al (2006) also study the effect of additional information, but not on wages, but on the hiring strategies of firms. The authors examine how much it affects the employment of black workers if the employer has access to information regarding the criminal background of workers. Theoretically the question cannot be answered, since – as is the case so often in economic problems – two opposite effects are present simultaneously. Since black workers are relatively more likely to have been to jail, than white workers, information about their priors has a bigger effect on their employment than it does in the case of white workers. If, however, employers are selecting workers based on their skin colour – since this gives them some information about the probability that they have been to jail – then black workers who have never been in jail are also affected by the lack of information on applicants' criminal backgrounds. The results of the study show that in the case where the employer receives information about the worker's background it is much more likely

17 *Mobius–Rosenblat* (2006) separates these effects in an experiment that is also studying the effect of beauty on wages. The author's results indicate that beauty does not affect productivity, but it does positively affect wages, and the self-confidence of workers also has a positive effect on wages. So beautiful people are not only treated better, than the less beautiful ones, but beauty influences their behaviour in a way that further deepens the gap between beautiful and ugly people.

that he will hire black workers. On the one hand, this means that employers do make use of skin colour to estimate workers' productivities when there is no information available on their background (for example, how aggressive they may be, or how likely they may be to steal). But it also means that they are not using taste-based discrimination, because once they have information on the worker's true productivity, the employment probabilities of black workers increase.[18]

Decomposition of the wage gap

The estimation of wage equations is closely tied to *Oaxaca's* (1973) method of decomposition, in which the overall wage gap between minority and majority workers can be broken into two parts: the part that can be explained by differences in the characteristics of workers, and the part that remains unexplained. A part of the overall wage gap is due to the fact that the two groups differ from each other in their endowment of observable characteristics. The part of the wage gap that is due to these differences is not due to discrimination. Based on the average difference in observed human capital variables between the two groups we can calculate what part of the overall gap is explained. For this, the prices (coefficients) of the characteristics need to be estimated. These estimates are usually derived from the estimated wage equation coefficients from a regression run on the sample of majority workers: this means we assume that in the absence of discrimination, all workers would receive the prices that the majority workers receive for their skills.[19] The product of the average difference in skills between the groups and the non-discriminatory prices gives the part of the overall wage gap that is not due to discrimination, but rather the existing differences in the skills of the two groups. If we subtract this from the overall wage gap, we get the part that is not explained by the differences in the worker's human capital endowment.[20]

This remaining part is often interpreted as the discrimination component. This, however, can be very misleading, since it actually contains other things as well. If the explanatory variables included in the wage equation do not measure the workers' productivities accurately (as is usually the case), the unexplained part of the wage gap will also contain all the effects that influence the workers' wages, but are not known to the researcher. For example, as in the previously outlined case when women with equivalent observable characteristics (education level, experience, etc.) are less productive than men because they put less effort into their work for various reasons (other obligations, lower confidence, etc.), then the unexplained portion of the wage gap will also contain this difference, and it is greater than the true value of discrimination. The unexplained component contains unobserved differences in productivity, as well as unobserved differences in preferences. This method also does not take into consideration the possibility that the perceptions of

18 *Autor–Scarborough* (2008) analyze the effect of precise estimation of individual productivity on the probability of employment, and find that it does not affect the chances of black workers in gaining employment, but it does positively influence firm level productivity.

19 The choice of non-discriminatory prices is not obvious since it is possible that the majority group receives higher wages than if there was no discrimination present, so their prices may also not be the best suited for this purpose. The results of the decomposition depend on which prices we use as a reference.

20 *Grimshaw–Rubery* (2002) summarize the various methods of decomposition and their problems.

workers regarding the existence of discrimination affect their decisions about investment in training, and thus their observed characteristics. If a member of the minority group believes that the return to acquiring new skills is lower for him than it is for a majority group worker, it is possible that he chooses not to invest in acquiring those skills. From the point of view of wage equation estimation, this means that education level is an endogenous variable, and this may also bias the estimated level of discrimination.

Another serious problem of the wage equation and decomposition methodology is the estimation bias due to selection into the labour market. Different groups are not equally likely to choose entry into the labour market, so the sample of employees used in estimating wage equations is not representative of the entire population. In most countries, low-skilled women are more likely to leave the labour market than members of other groups. Since during the analysis of wage gaps we are interested in the wages that the entire population of men and women receive in the market, the estimation carried out on the sample of workers may be misleading.[21]

The decomposition technique introduced by *Juhn–Murphy–Pierce* (1991) is the most often used alternative of the Oaxaca method, which is also a useful tool for the international comparisons of wage gaps and for studying their trends over time. The Oaxaca decomposition method does not take into consideration the effect of the changes in wage distributions over time on wage differentials in the case when the return to some characteristic changes. For example, women usually have less work experience, and they tend to work in certain industries. If the market return to experience increases, or the between-industry wage differential increases, this can lead to an increase in the gender wage gap. Juhn et al separate this effect out as well, and divide the overall wage gap into four components. The first part measures the effect of changes in the observable characteristics of workers. The second measures the effect of changes in the prices of observable characteristics. The third accounts for changes in unobservable characteristics, and finally, the fourth part is the unobserved price effect. Compared to previous methods the new element is the division into the final two parts, in which we can measure the effect of changes in the unobserved characteristics. Unfortunately this method is also subject to the general problems of decomposition methodologies.

Measurement of labour market segregation

The measurement of labour market segregation is usually done at the industry, firm, or occupation level. During the estimation of wage equations, there are usually two methods used to account for segregation. The first is to estimate within industry, firm, or occupational effects instead of between effects. For example, when a wage equation includes industry fixed effects, then the coefficient of the female dummy variable measures the gender gap within indus-

21 *Hunt* (2002) illustrates the importance of accounting for labour market selection: the ten percentage point fall in the gender wage gap may sound like a positive development, but it is actually largely due to the fact that low-skilled women exited the labour market in a higher proportion than other groups.

tries. If women tend to work in industries with lower wages, and this is why their average wage is lower than men's, this method can be used to account for the industry level compositional effect. The estimated female coefficient then reflects how much women's wages differ within a given industry. An important question in this case is whether we really want to take out the effect of selection if we are interested in measuring discrimination. If women are selecting into the lower-wage industries by choice (for example, because these jobs offer more flexibility), then we should take the part of the wage gap due to this selection out of our discrimination estimate. But if the employers are the ones who refuse to hire women in the better-paying industries, and that's why women receive lower wages, then this is due to discrimination (in hiring), and we may not want to filter out this effect.

The second method for measuring segregation is to include the ratio of women working in the given industry, firm, or occupation in the wage equation. This method can be used to check how it affects the wage gap if a certain occupation becomes female dominated. For example, *Groshen* (1991) uses this method on data from the United States, and finds that the fact that certain occupations are "female occupations" explains the majority of the gender wage gap. *Gupta–Rothstein* (2001) analyze the effect of segregation at the industry, firm, and occupation levels on wage gaps in Denmark using a linked employer-employee dataset. The study finds that occupational segregation has the greatest effect on gender wage differentials, while industry and firm level segregation have only a slight effect. They find that there remains a significant wage gap between men and women even after taking segregation at these three levels into account, which is in line with the existence of wage discrimination.

In analyzing occupational segregation, it is important to separate the effects of employer discrimination, preferences, education, and social pressures (*Johnson–Stafford,* 1998). When estimating the relationship between wages and specific occupations, this means that besides the worker characteristics, the explanatory variables should also include the characteristics of the occupations, as well as variables describing the preferences of workers. Taking these variables into account significantly decreases the measured differences between female and male jobs in the United States and Canada (*Baker–Fortin,* 2001).

Segregation following the Hungarian transition was studied by *Csillag* (2006). His results indicate that while during late socialism the composition of occupations by gender explained a significant portion of the wage gap, following the transition occupational segregation decreased significantly, and the wage gap seen today is no longer explained by it. *Jurajda–Harmgart* (2004) compare the effect of occupational segregation on the gender wage gap in Eastern and Western Germany, and they find that while the wages of both men

and women were higher in female occupations in Eastern Germany, in Western Germany there was no observable difference between occupations.[22]

Analysis of tests

The other main approach for measuring discrimination is the testing of job applications. Applicants who are carefully chosen from the minority and majority groups to be similar in every other respect apply to advertised job openings, and researchers determine whether discriminative practices exist based on the level of asymmetry in the distribution of successful applications. The method has many variations: researchers may send trained actors to the firms with job openings, which allows them to observe every stage of the application process. Another method is the monitoring of phone interviews, or the analysis of the number of responses to written applications. A benefit of the testing method is that researchers can change the observable characteristics as necessary during the experiment, so they can observe their effect.

Literature on the topic has emphasized several drawbacks of the method. The main problem may be that applicants may actually differ in more ways than their group status, since in the real world it is difficult to ensure that all other characteristics are the same that affect the workers' productivities, and the employer's opinion. For example, workers may differ in the level of social capital or communication abilities they signal to employers during the interview. In order to avoid this problem, some studies make all other characteristics invisible. For example, *Goldin–Rouse* (2000) measure discrimination against women applying for positions in orchestras by comparing the number of call-backs following interviews where the employers can see the applicants (and so are aware of their gender), and in the case when applicants play their instruments sitting behind a screen, so they can only be heard, not seen. Their results show that the use of screens during the interviews increased the chances of women being accepted into the orchestras, and increased the ratio of women in orchestras by decreasing prejudicial behaviour towards them.

Studies using testing methods usually show higher levels of discrimination than research that uses other methods. *Heckman* (1998) argues the validity and relevance of discrimination testing. He points out that although it is possible to find several firms that discriminate using this method this is however not the same as observing discrimination in the entire labour market. The level of discrimination in the labour market is not determined by the firms with the most discriminatory tastes, but rather by firms that actually employ the minority workers. So it is possible that there are discriminating firms in the market yet we can still not speak of labour market discrimination, because minorities do not work at them, so there is no effect on their wages. Test analysis cannot be used to determine whether we are only witnessing special cases, which may explain the discrepancy between the results of this

22 Regarding racial segregation see *Hirsch–Macpherson* (2004), *Bertrand–Hallock* (2001) and *Bettio* (2002).

type of research and those that are examining the entire labour market. Applicants in tests are theoretically similar other than their group membership, but Heckman emphasizes that they still may differ in terms of their unobservable characteristics, which may influence their productivity and thus the level of discrimination estimated based on this method.

Another problem may be that the applicants are aware of the purpose of the research, and knowingly or unknowingly may influence the behaviour of employers (*Blank,* 1991). Finally, many question the representativeness of such studies in terms of the economy as a whole. Since carrying them out is very costly, they are usually limited to narrow occupations, regions, or just a few firms, and often to workers with a specific education level.

Research based on written applications can successfully avoid some of these problems. In these, researchers can truly control the experiment so that based on their curriculum vitae, applicants really only differ from each other in the demographic characteristic studied. Usually they use names to signal the gender or ethnicity of the applicant to prospective employers, or, in the case of immigrants, they use the place of birth. Since sending out curriculum vitae has a much lower cost than training actors, written tests can be carried out on much larger samples. In this case, the level of discrimination is not measured based on the number of job offers, but rather based on the number of callbacks and invitations to interviews, which may give a different result if these differ at the group level. Of these studies, the one by *Bertrand–Mullainathan* (2004) has become widely known, in which they examine the success rates of applicants with typically white names (Emily and Greg), and those with typically black names (Laquisha and Jamal). The results suggest that there is still significant discrimination against blacks in the labour market in the United States, those with typical white names were called back one and a half times as often as those with black names.[23]

Using the economic and corporate environment to analyze discrimination

Due to the lack of availability of individual level productivity data some studies seek to measure group level differences in productivities, and compare these with group level wage differentials *(Hellerstein–Neumark,* 1999). The method is closely related to the fact that linked employer-employee datasets have become more prevalent, since the firm level estimation used in this method requires not only firm variables, but also the demographic composition of workers at the firm level. The group level relative productivities are estimated from firm level production functions, where the workforce is divided into worker groups that may differ in terms of their productivity. This method allows us to estimate a firm level relative productivity measure for each worker group (compared to a reference group).

23 *Carlsson–Rooth* (2006), *Arai–Thoursie* (2009), *Moreno et al* (2004), *Bravo–Sanhueza–Urzua* (2008) also carried out similar studies.

If there is perfect competition in a market and employers are maximizing profits, the relative wage of each worker group would be equal to their relative productivity. Hellerstein and Neumark estimate the relative wages at the firm level as well (alternatively, it can be estimated from individual level wage equations), so they can directly test the equality of relative wages and productivities. This method usually gives a lower estimate of discrimination than the traditional wage equation method, which suggests that there are unobserved differences in the groups' productivities, which can be accounted for using this methodology. Results for numerous countries also support this: for example, *Dostie* (2006) for France, *Van Biesebroeck* (2007) for four African countries, and *Kawaguchi* (2007) for Japan also use this method, and they find a much lower level of discrimination, or no significant difference between relative wages and productivities.

The method of estimating group level relative productivities poses several problems. All the problems outlined in the literature on estimating production functions apply here as well, and these can greatly influence the relative productivity estimates. The proper specification of the equation is very important, as well as the measurement of the inputs and the handling of bias due to unobserved shocks in demand. If the shocks are correlated with unobserved inputs, this will lead to a bias in the production function estimation.[24] Another possible econometric issue may arise because we don't know anything about why firms choose different proportions of worker groups, and this may be correlated with production technology. Despite these problems, the method of comparing the estimated relative productivities and wages of worker groups remains an important future area of research, because it allows us to measure the unobserved differences between groups, and their analysis can be carried out at the level of the entire labour market.

Finally, numerous studies attempt to test for the existence of discrimination in the labour market indirectly. In this case, they estimate the effect of an exogenous change, which theoretically should only be correlated with discrimination, thus influencing the labour market. Of these, the most frequently analyzed relationship is that between the level of competition in the product market and employer taste discrimination, as we mentioned in the section describing the Becker model.[25] The assumption is that if the wage and employment differentials between worker groups decrease due to an increase in competition, this is indirect proof of the existence of discrimination in the labour market. This relationship has been tested using various methodologies. Starting in the seventies numerous studies tested the relationship between market concentration and wage differentials (for example, see *Ashenfelter– Hannan,* 1986). One of the shortcomings of these studies is that the use of concentration as a measure of competition has become highly debated. These studies mostly tested the relationship using a single year of cross-section data,

24 To alleviate this problem, researchers may include firm fixed effects, or use econometric methods such as the one developed by *Levinsohn–Petrin,* (2003).

25 See *Frijters et al* (2003) on the measurement of discrimination due to employee tastes.

so a further problem was the possibility of unobserved differences between the industries. If these are somehow correlated with the level of competition in the product market, their effect may mistakenly be attributed to competition.[26]

We are able to measure the effect more precisely if there is some exogenous change in the level of competition. This may be due to various events. Some studies measure the effect of competition that increased due to the deregulation of certain sectors. For example, *Black–Strahan* (2001) use the liberalization of the financial sector in the United States by comparing states where it happened to states where the rules did not change. Their results show that the increase in competition decreased the wage gaps in the states that were liberalized. Others study the effect of increased trade due to globalization. For example, *Black–Brainerd* (2004) demonstrates the effect of increased imports on wage differentials. In Hungary, *Campos–Jolliffe* (2005) analyses show that the residual gender wage gap – referred to as a measure of discrimination – decreased following the transition. Although they take selection effects into consideration, they do not directly test the relationship between wage differentials and product market competition.

Several studies examine the effect of competition on wage gaps using international comparisons, making use of differences in the legal and economic environments. For example, *Weichselbaumer–Winter-Ebmer* (2007) study the residual gender wage gap (that is left after controlling for observed differences in worker characteristics) for numerous countries as a function of the countries' market structure and their anti-discrimination laws. They find that both an increase in the level of competition, and the acceptance of international guidelines for ensuring equal opportunities decrease the wage gap. The authors also emphasize that wage gaps should be interpreted as a measure of discrimination with caution: for example, the fact that in OECD countries competition seems to have a smaller effect on wage gaps is due to the fact that in these countries, the differentials most likely reflect differences in preferences and productivity, and not labour market discrimination.

Closing thoughts

Discrimination against minorities is the topic of numerous scientific studies, but it is also a popular topic in political and social discussions. In this chapter, we defined how discrimination is interpreted in economic literature, and then introduced its types and the methods used for its measurement. Our most important conclusion is that it is very difficult (if not impossible) to prove the existence of discrimination in the labour market, since the productivity of workers is not known, and the variables available in databases do not describe it fully. But, in our opinion, important social phenomena need to be studied even if we can only do so imperfectly. In the other seven studies of the *In Fo-*

26 One example of this may be if higher market competition is correlated with a more stressful work environment, and low-skilled women tend to avoid such jobs, while more productive women stay in them, because they do not mind stress as much (they are more dedicated to their career). In this case, an increase in competition may decrease the gender wage gap, since less productive women will leave their jobs, which leads to an increase in their average wage. However, this fall in the wage gap is not due to a fall in discrimination due to competitive pressures.

cus section the authors attempt to measure discrimination and segregation to the best of their knowledge with respect to the situation of women and Roma in Hungary. Although the topic does not give us much to be cheerful about, we hope you will find them an interesting read.

2. LEGAL INSTRUMENTS GUARANTEEING EQUAL TREATMENT IN THE WAKE OF ACCESSION TO THE EUROPEAN UNION

CSILLA KOLLONAY LEHOCZKY

Introduction

The current system of legal norms on equal treatment is originating basically from two sources: the post-transition Hungarian law and the European legal system guaranteeing equality that began to dynamically develop from the beginning of this century. However, duality can be clearly detected in the pre-accession situation.

The system of norms is based primarily and evidently on the constitutional grounds that were laid down following the political and economic transition. Secondly, the circumspect observation of formal equality and the uneasiness about taking into consideration economic-social inequality indicates that there is an underlying repercussion-effect from the pre-transition period that was characterized by open discrimination on grounds of political beliefs, ideological views and family origin in the name of alleged 'social equality'. It also reflects the impact of the value-crisis immediately following the changes that had only one safe orientation: to reject the past and look for its opposite.[1]

The paper first introduces the construction of European equality law, followed by an introduction to the constitutional grounds of current Hungarian law. Subsequent to this introduction, the terms and concepts of the law in force will be presented together with their interpretation. Following the overview of the legal framework some details will be presented through the case law, with occasional critical remarks.

European and Hungarian foundations

Equal treatment in the European Union

The European Economic Community was established as a supranational organization principally with economic goals. Thus, there was no role in the founding documents either for the human rights' principle of prohibition of discrimination originating from the spirit of protecting human rights, or for social provisions. Nevertheless, the obligation of equal treatment was already present in the 1957 Rome Treaty in two provisions. The first one is the prohibition of differential treatment on the ground of nationality between citizens of Member States (obviously covering economic organizations as well)[2] – a principle belonging to the very substance of the Community. The second

1 The period right after the political shift was characterized by this "repercussion syndrome" in almost all areas of life: the sharp rejection of learning Russian, approaching Otto Habsburg to undertake candidacy for the position of the President of the country, looking on victims of communist tyranny automatically as national heroes, even if they were eventually seen as criminals. A more humorous element is the court case initiated for the removal of the red-star from the label of Heineken beer.) The world of labour was particularly affected by this syndrome. (*Lehoczkyné Kollonay,* 2007).

2 This issue will not be discussed here; it is dealt with in a detailed and thorough way by *Király* (1998).

provision was Article 119 of the Treaty, obliging Member States to change their law and to lay down an obligation to pay equal pay for equal work.[3] The inclusion of this norm – in spite of the considerable debates – was motivated by purely economic (market) goals, and not by justice and human rights: it was aimed at eliminating the competitive disadvantage of countries which already had at that time a domestic law prohibiting gender based wage differentials.

The equal pay requirement is illusory without the opportunity of equal access to occupation, employment, and promotion as well as to equality of working conditions. Thus, the implementation of the equal pay provision was soon leading to the overall prohibition of sex-based discrimination in the area of occupational training employment, working conditions and promotion by Council Directive 76/207/EEC. This directive of historic importance was followed by numerous others that, together with the case law of the European Court of Justice, growing large and sophisticated over the course of time, succeeded in expanding the coverage of equal treatment and to develop and modernize the very concept of equal treatment. Thus, from a formal, narrowly worded provision with a view to equal competition the principle of equal treatment has became an effective, overall principle guaranteeing equality of opportunities and belonging to the foundations of the European Union.[4]

The next step, extending the concept of equal treatment beyond gender and beyond employment was made by Article 13 of the Amsterdam Treaty. This provision authorized the legislative powers of the European Community to take appropriate action to combat discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation. This provision opened the way for obliging Member States to adopt anti-discrimination norms. In line with expectations, the process accelerated and, on the grounds of Article 13, the equality directives of the EU have been adopted.

Equality in the Constitution of Hungary

Section 70/A of the Constitution of the Hungarian Republic declares, that "[the] Republic of Hungary guarantees for all persons in its territory human and civil rights without any discrimination, namely without any difference with regard to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status." This constitutional provision is based on the classic, formal concept of equal treatment, requiring the equal application of laws to everyone. The interpretation developed by the Constitutional Court also gives precedence to such a formal meaning, in spite of broadening the material and personal scope of the equality provision. Firstly, it declared that Section 70/A is applicable not only to fundamental human and citizens' rights, instead, it is an overall principle of the whole legal system, to apply in respect of any right.[5] Secondly, it used the "open ended list" of prohibited grounds of Section 70/A (ending with "other status")

3 This provision, with a renewed text, is Article 141 in the considerably amended and re-numbered Amsterdam Treaty.

4 The development of the concept of equal treatment is primarily a result of a series of notable, progressive decisions of the European Court of Justice that declared, among others, that discrimination on the grounds of pregnancy is sex discrimination, independently from the comparator similarly to discrimination on the grounds of changing the sex by way of surgery. Furthermore, the decisions of the Court have clarified the concept of indirect discrimination, made efforts to reduce the disadvantages deriving from traditional gender roles, and elaborated a model of positive action compatible with the principle of equal treatment. From among the relevant directives Directive 97/80/EC on the reversal of the burden of proof, Directive 96/34/EC on parental leave and Directive 92/85/EEC on protection during pregnancy and after childbirth can be mentioned as contributions to the conceptual development.

5 Resolution 61/1992 (XI. 20.) AB.

to broaden the protected persons and attributes to a practically infinite level, not distinguishing between real, long term social disadvantage and the temporary disadvantage in an actual legal situation.

At the same time, and exactly for the same reason, the interpretation given by the Constitutional Court remained relatively narrow and formal. It qualifies any departure from the formally equal application of the norm as discrimination that might be maintained as constitutional only in the case of meeting the fairly vague prerequisites laid down by the Constitutional Court and to date not clarified.[6] By constituting and using the tautological phrase of "*positive discrimination",* it declares all differences unconstitutional – including the differentiation paying attention to social inequalities. The acceptance as constitutional of such a 'positive discrimination' depends on the unclear 'constitutionality test'. Albeit the differentiation qualifies as discrimination only in the case of persons belonging to a "homogenous group", heterogeneous groups are created by the legal construct and not by the social situation.[7] The text of the decisions that define the conceptual framework of equal treatment reflects the ambivalence towards the acknowledgement of social inequalities and social disadvantages as grounds for differential (preferential) treatment, sometimes coupled with perceivable reference to the past, and not always constitutionally correct, treatment of such social differences.[8]

The further two paragraphs of Article 70/A foresees "strict punishment" for those violating the prohibition of discrimination as well as "adoption of measures decreasing inequality of opportunities". The punishment of those violating equal treatment is illusory and regarding the provision foreseeing measures decreasing inequality, the Constitutional Court declared that it "does not establish any concrete obligation".[9]

The requirements of equal treatment on the grounds of European law

The concept of equality of the European Union is characterized by the endeavour to exceed the formalist-minimalist approach of equal treatment. The *acquis communautaire* resulting from a development of more than thirty years requires, both in its spirit and words, the guarantee of equality. It creates a legal framework that aims for the promotion of substantive equality and, in order to achieve this, requires positive steps, not only as an "exception". This was the legal framework which the accession countries, including Hungary, needed to transpose and adopt. Hungarian legislation has accomplished this duty by Act CXXV of 2003 on equal treatment and the promotion of equal opportunities (Equality Act) that entered into force in January 2004, exactly on the threshold of the May 1 accession.

The Act, was prepared somewhat in a hurry, and, due to a lack of time and adequate background knowledge, the drafters relied mainly on the texts of

6 In the case of "fundamental rights", it phrased the "necessity and proportionality" requirement as a precondition of constitutionality. In the case of other (not fundamental) rights, according to the Constitutional Court the differentiation is non-constitutional if it is "arbitrary" and violates human dignity. The provision is "arbitrary" if it has no "reasonable", "constitutional" justification. The somewhat circling explanation does not help much in clarifying the concepts and terminology.

7 Two illustrative examples: the court considers pregnant women and women in the post-natal period and absent workers on other grounds (except sickness) a homogenous group and considers payment during maternity leave as positive discrimination. Second, considering employers and employees a homogenous group, it held the employers' obligation to give justification of a notice as positive discrimination of the employees against employers. In an up-to-date, European approach to equality, both situations are considered rather as the realization and effectuation of equal treatment and not a departure from it.

8 The closing sentence of decision no. 9/1990 (IV. 25) AB first defining the concept of "positive discrimination" signals, even if in the nebulous way of the whole passage, the conflict that is decisive for equality law in Hungary: "Although social equality as a goal, as social interest, may precede individual interests, it cannot precede the constitutional rights of the individual".

9 Recently: decision 624/B/2000 AB adopted in February 2009, that referred to the confirmation of this earlier statement in decision 13/2008 (II. 21) AB.

the Constitutional Court decisions, giving to them priority even over the EC Directives (the text of the Act is a recital of the decisions). Thus, even after several adjustments[10] of the text there has remained a slight tension, a gentle mismatch between the European requirements of equality and the requirements of equal treatment in Hungary. In spite of these deficiencies the Equality Act and the progress in the wake of its adoption has evidently made the first steps in building up the legal instruments guaranteeing equal treatment. The strong prejudice permeating the social mind in Hungary, the eroded trust in the constitutional guarantees of the protection of rights puts a limitation on the use of such legal instruments.

The violation of equal treatment – direct discrimination

Section 1 of the Equality Act – attempting to adjust itself to the European spirit and the phrasing of the Constitutional court – uses a broad wording: "all private individuals, their groups as well as legal entities and organizations without legal entity shall be treated with equal respect and deliberation, with equal consideration given to individual aspects."

The central concept of the Act is *the violation of equal treatment*, that is defined as upper category in Section 7, consisted of sub-categories such as direct and indirect disparate treatment, harassment, unlawful segregation, retaliation, and instruction to all of these. (Although the latter four kinds of conduct are also forms of disparate treatment, too, they are distinct forms of it and for a long while they were considered improper, but not discriminatory conduct.)

Chapter III of the Act gives a detailed regulation on the subject areas where discrimination is prohibited in areas that are considered important, such as employment, social security, health care, housing, education, services, and the trading of goods. The (sometimes long) lists of subject matters[11] would follow anyway from the Act without such listing. The word 'particularly' starting each list indicates the exemplifying character of them.

Direct discrimination is committed when a person or a group "is treated less favourably than another person or group is, was, or would be treated in a comparable situation" on the grounds of a so-called protected attribute listed in the act (sex, race, religion, age, family status etc.). Thus, discrimination has two substantial elements: less favourable treatment that is a *disadvantage*, and a so-called *protected attribute* serving as a ground for the measure causing disadvantage. Both of these elements will be discussed in details below.

Disadvantage. The disadvantage might be either a damage (e.g. wage differential), or a legal disadvantage (e.g. the termination of employment), loss of an advantage (e.g. being left out of training or travel opportunities, social events), unfavourable conditions of work (such as office room, work schedule) and any other material or moral disadvantage; it does however, need to

10 In September 2009 the text in force was the 13th. version since January 2004,

11 E.g. in the field of employment the listed subject matters are: advertisement of vacancies, the selection procedure, hiring, terms of employment, training, payment and fringe benefits, promotion system, liability and trade union rights.

71

be evidenced. For example security checks at the entrance to court buildings was considered a disadvantage by the Supreme Court and it was considered unlawful that lawyers working as legal counsel were exposed to such a check while other lawyers (private attorneys, public attorneys, and prosecutors) were only required to show their identification. (Decision number LB Kfv. III. 37.365/2007/9).

Discretionary power. Frequent misunderstanding necessitates emphasizing that the employer's action may cause disadvantage – and the violation of equal treatment thereby – without any law-infringing conduct. Rather, discrimination occurs typically in cases of decisions falling within discretionary managerial prerogative. When an employer's action is regulated by law, collective agreement or the employment contract, the employer has no right to deliberate the issue and if its action goes against the applicable provision or terms it is a violation of law and not discrimination. To give an example: giving notice to an employee without adequate justification is against the Labour Code, and for this reason unlawful. The termination will be unlawful for discrimination if, in the case of a redundancy on reasonable grounds (just reason of termination) the employer selects redundant employees within his discretion in such a way that the sex, age, ethnic background, or family status of the employee plays a role. Thus, one may question the frequent explanation to be read in court decisions, that there was no discrimination found because the employer (or other defendant) made its decision within discretionary power, it could "freely" deliberate the decision. (Supreme Court, no.s Mfv. I. 10. 961/2007/5. and Pfv. IV. 21. 938/2007/6.)

Other court judgments express, to the contrary, that the "the fact that an employer's decision was made within its discretionary power (the selection of persons affected by redundancy) cannot preclude its review in a judicial procedure."[12] A progressive decision was the one which, disregarding the otherwise free option of the employer, found violation of equal treatment by an employer's refusal to prolong the fixed term contract with an employee who notified him of her pregnancy while at the same time a short-period fixed-time contract was concluded with another employee. In this case the Equal Treatment Authority has explicitly referred to the decision of the European Court of Justice that saw the same violation in a non-prolongation of the fixed term contract as in the case of a termination of employment or the rejection of an employment contract during pregnancy. (http://www.egyenlobanasmod.hu/zanza/zanza2jan.pdf). Similarly, the Equal Treatment Authority found unlawful discrimination when the employment of a public servant serving her probationary period was terminated following the announcement of her pregnancy in spite of the positive result of her comprehensive mid-term evaluation. The Equal Treatment Authority did not see a determining problem in the freedom of the employer to decide over termination during the proba-

12 Supreme Court decision, no Mfv. I. 11. 018/2006/5. Section 199, § 4 of the Labour Code stipulates clearly that the decision of the employer that was made within its discretionary power can be taken to the court if the employer has exceeded the limits set by the provisions relevant to its decision. Such provisions are typically the principles of exercising rights – such as the principle of *bona fide* acting, the reasonability and, not in the last rank, the provisions requiring non-discrimination with respect to the decisions within the employer's prerogatives.

tionary period. (Decisions of the Equal Treatment Authority, EBH further on, no. 1201/2008).

Comparison. Finding a disadvantage requires comparison: the disadvantage has to occur in comparison to someone or some ones. The person of the *comparator*, the actor who serves as a yardstick is decisive for finding or not finding a disadvantage. The current text of the Equality Act ("who is treated, was treated or would be treated") lays down a broad range of possible comparators, in compliance with EU law. It makes possible the comparison not only between those present at the same time but also to sanction the disadvantage in comparison to an employee who worked in the same or similar job in the past, furthermore, it makes the merely hypothetical comparison possible, too. E.g. discrimination was found in the case when the employer rejected the hiring of a child-caring woman with reference to the "weak constitution" of her body even if finally no one was hired for the position. (EBH no. 310/2007).

The disputes over the equality of pay constitute not only the most frequent but also the most difficult group of cases, among others due to the difficulties with respect to the choice of the comparator. In the first rank, he can be chosen from among the employees working at the same workplace, in the same job. In this respect Section 142/A requires the consideration of "the nature, quality, quantity of the work performed, the working conditions, the required professional skill, physical or intellectual effort, experience, and responsibility".

Defining the concept of pay, the quoted provision of Section 142/A orders, too, that for the purpose of comparison pay means "any cash or in-kind (social) provision, received by the employee directly or indirectly, with respect to his employment". Social provisions might consist of contribution to a private insurance fund, food-tickets, the use of sport or other facilities etc. However, the court could not see a "pay" in the loan granted to the female employee and referred to by the employer as compensation for the unjustified wage differential to the disadvantage of the employee. The rejection of such a defence was not based on the nature of the loan, rather on the fact that such a loan was available for anyone, regardless of the level of their wages, furthermore on the lack of evidence regarding the financial benefit resulting from the loan, whether it was suitable to compensate for the loss in wages. (Supreme Court, no. Kfv. IV. 37. 332/2007/5.) In cases, when the employer has multiple establishments, the employees engaged at the different establishments are considered to be in a comparable situation. Thus, differences in wages between such workers might constitute discrimination unless the employer can reasonably explain the difference. Norms in force at present do not permit challenge to the long criticized, so-called "occupational wage discrimination": in the typical female occupations and sectors (such as health care, education, lower level public administration) wages characteristically lag behind the wages of employees performing similar work in other branches.

Protected Attribute. The second criterion is the connection between the disparate treatment and a protected attribute of the person. The Equality Act enumerates 19 attributes that must not be grounds for differentiation between persons (protected attributes). These are: a) sex, b) race, c) colour, d) nationality, e) belonging to a national or ethnic minority, f) mother tongue, g) disability, h) state of health, i) religious or ideological conviction, j) political or other opinion, k) family status, l) motherhood (including pregnancy) and fatherhood, m) sexual orientation, n) sexual identity, o) age p) social origin, q) financial situation, r) part-time or fixed-term employment, s) belonging to an interest representative organization. This list is completed by a twentieth, general element: under the most often referred sub-section t) prohibiting differential treatment on the grounds of any other characteristic, too.

Such an extensive list that is, in addition, using an "open ended" enumeration undeniably broadens the effect of the prohibition of discrimination. On the other hand it is opportune to water down the concept of protected attributes. Employment as well as other areas of life hold plenty of differences. There is no safe "compass" available to help in finding the criterion that determines whether a differentiation qualifies as discrimination and therefore allows exposure to legal scrutiny. This lack of clarity has already resulted in irrational cases. A more crucial problem is, however, that the boundless and loose list dilutes the difference between the protected attributes and this might prevent the elimination of the disadvantage and exclusion originating from the most pervasive forms of discrimination.[13]

Discrimination is an objective state of facts. The differentiation on the grounds of the given attribute is sufficient for its occurrence; it is not dependent on the discriminatory or exclusionary motive guiding the actor against the discriminated group. The violation is completed merely by the disadvantage originating from the differentiation. Typical of such cases are when the employer who has no prejudice or even belongs to the same group engages in discriminatory practices motivated by the real or supposed prejudice of guests, clients patients or fellow employees, (E.g. when the employer who provides the cleaning services for a shopping centre does not hire Roma cleaners because the shop-owners object to their presence, or when the temporary labour agency does not post Roma employees to the user company that had indicated that they accept "only Hungarians". Unlawful discrimination is carried out merely by making the decision on the grounds of the Roma origin of the employee, independently of the fact that the employer evidenced lack of prejudice. (EBH 271/2007.)

Indirect Discrimination

Indirect discrimination is a relatively new concept, adopted by the EU anti-discrimination law only in the second half of the 1980s.[14] In correspondence

13 There is a difference between attributes that are, on the one hand an inherent part of the identity, that are a visible, inborn attribute, indicating the belonging to a subordinate (mostly minority) status in a society, that is rooted in systemic, long, historic discrimination, coupled with social disadvantage and also couples with social stereotypes (such as race, colour, sex, sexual orientation) and, on the other hand, a protected attribute without such characteristics (e.g. the fixed term or part time form of employment, or trade union membership).

14 The decision made on May 13, 1986 in the case *Bilka-Kaufhaus GmbH versus Karin Weber von Hartz* (C-170/84) has laid down the concept of indirect discrimination declaring that the principle of equal treatment might be violated by a measure that granted occupational pension to employees with at least twenty years of service provided that at least fifteen years out of the twenty was spent in full time employment.

with the *acquis communautaire,* according to the Equal Treatment Act, indirect discrimination is an apparently neutral provision that puts persons or groups having a protected attribute into a position of significant disadvantage. (Equality Act, Section 9). Typically such provisions affect predominantly women, for example differential treatment based on family obligations (absence from work). Prior to the creation of the concept such differentiation did not violate equal treatment unless there was evidence of an underlying discriminatory intention.[15]

The difference between the two forms of discrimination is relative and much criticized. While originally it was meant for extending the prohibition of discrimination to a situation not prohibited before, in practice it provides a loophole for escaping the consequences of unlawful discrimination. The differentiation leads to a more lenient acceptance of defence, satisfied frequently by the simple presentation of the financial consideration.

For example the court accepted the defence of an employer who excluded those employees from bonuses and wage-rises who were absent due to sickness for more than 15 days per year. The provision, obviously disadvantaging parents with small children, was challenged at the court by one of the parents affected. The court accepted the explanation given by the employer that keeping costs low makes it impossible to employ more staff than utterly necessary, at the same time they have to deliver car parts to their car-producer customers with an accuracy of minutes under the threat of paying a huge "penalty", since the delay of a single part might interrupt the operation of a whole assembly line. The court considered this a "reasonable" defence and did not find a violation of equal treatment. (Collection of Court Decisions, 208/253.)

It is also a violation of the principle of equal treatment if the opportunity of equal access to the exercise of rights is not guaranteed. This happens to persons who – with respect to a protected attribute – need either assistance or the appropriate adjustment of their environment in order to be able to exercise their fundamental rights. Primarily disability is such a quality, however, it can also be sickness, pregnancy, motherhood or age. Failure to provide the equal conditions for the exercise of rights is also discrimination. The Equality Act has not denoted the failure to adjust the environment as a "special form" of discrimination. Even though such a conduct might be sanctioned under a correct interpretation of the Equality Act taken together with the provisions of Act XXVI of 1998 on the rights of the disabled and on the guarantee of their equal opportunity – in reality such sanctions are impeded by conceptual obscurities regarding the concept of equality.

In one case two persons with a visual handicap complained about being unable to use their ATM cards due to the total lack of ATM machines installed with Braille script or aural communication although they were paying an identical service fee based on their contract as others were. The first instance

15 For example in the case *Jenkins versus Kingsgate* (C-96/80 of March 31, 1981) where the issue was whether the lower hourly wages paid to the predominantly female part timer employees was a violation of the equal pay rule. The Court found no discrimination except when the measure is motivated by the intention to pay less to women.

court correctly found direct discrimination and ordered the installation of a number of properly adjusted ATM machines. This decision was annulled by the High Court of Appeal Budapest, and this decision was confirmed by the Supreme Court. The upper courts saw indirect discrimination: the failure to install special ATM machines was a neutral decision that brought the plaintiffs into a disadvantage. The decisions found that such a violation of equal treatment could be "reasonably" explained by the interest of avoiding the costs of the change to the ATM machines. A standard equality analysis shows that the measure brings each person with a visual disability (i.e. each member of a group with a given attribute) to a disadvantage while not bringing anyone to a disadvantage from the opposite group and therefore was a direct discrimination. The case clearly illustrates the difficulty of the distinction between the two groups, and that the courts see the distinction as a facilitation of defence.[16]

Harassment and Sexual Harassment

Harassment as one form of discrimination means conduct violating human dignity with the purpose or effect of creating an intimidating, hostile, humiliating, degrading or offensive environment against a person or a group in connection with a protected attribute. (Equality Act, Section 10, § (1). Harassment can be perpetrated in numerous forms: unpleasant comments, aggressive or mocking gestures, displaying offensive pictures, schemes or objects in the common working area (e.g. obscene, pornographic graphics or objects, pictures or objects mocking religious symbols etc.).[17] Such behaviour significantly influences the workplace disposition and performance of the targeted person(s), that is, it creates more disadvantageous working conditions for them, compared to others. By affecting work performance it affects the promotion opportunities of the employee and frequently results in their quitting the workplace, i.e. the loss of the job.

The Equality Act does not regulate sexual harassment that can be committed in the form of claiming sexual advances.[18] The reluctance of the drafters manifests itself by the struggle to squeeze into one definition two different situations, regulated separately in the EU Directive. The reflected ambivalence of the legislature at the same time weakens the protection aimed at by the EU norms.[19]

The qualification of harassment as a form of discrimination was achieved relatively late. Earlier it was considered an individual disposition of the perpetrator and not as a discrimination for which the employer is liable, except when it was occasioned by an executive exercising the employer's power, acting in the "gown" of the employer. Based on today's norms any form of harassment by any (i.e. non-superior) employee may establish the liability of the employer. Tolerating such conduct in the workplace is in contravention of the

16 High Court of Appeal Budapest, no. 2. Pf. 21.073/2007/4 and Supreme Court no. Pfv. IV. 21.144/2008/7. Section 7, § (2) of the Equality Act is not about the reasonability criterion of equal treatment without costs, instead it is about a "reasonable cause directly related to the given legal relationship" (that might be, for example, that the installation of such machines would hinder the reasonable operation of the bank, or causes a serious security risk etc.) There are further statements in the decision that will be referred to below. Interestingly the same panel of the High Court of Appeal Budapest in a decision several months earlier not only found discrimination upon a claim launched for lack of accessibility by a customer using a wheelchair but also used a totally different language, a more "empathic" set of terms both in respect of turning down the justification given by the defendant and in respect of the distinction between direct and indirect discrimination – and all these used with reference to the Act on the rights of the disabled. (See: High Court of Appeal Budapest, no. 2. Pf. 20.531/2007/4.).

17 E.g. the visible display of the notorious "Mohammed-caricatures" at a workplace where persons belonging to the Muslim religion would constitute harassment.

18 Even after an explicit warning from the European Union only a moderate change of the text of the Equality Act followed: adding the words "or of sexual nature" to the definition. However, this means discrimination with respect to the sex of someone but does not mean sexual harassment.

19 According to Directive 2006/54 /EC, finding sexual harassment is not conditional upon the intimidating, hostile, humiliating environment; such result might rather be an aggravating factor. (Article 2, § 1, subsection d.)

duty of the employer to create healthy working conditions, and establishing and maintaining a workplace climate that does not endanger either spiritual or physical health. The risk of becoming liable can be significantly decreased by the employer through the constitution of an internal code of conduct and its dissemination through training (merely by this already promoting a workplace atmosphere condemning harassment), by establishing forums where complaints can be submitted and last but not least by effective sanctions applied in cases of harassment.

Due to the legal uncertainties regarding the concept, the lack of relevant knowledge, and barriers in social attitude the enforcement of the prohibition is in its infancy in Hungary.

Unlawful segregation, retaliation and instruction to discriminate

In contrary to the concept of direct and indirect discrimination and harassment, the following forms may lack either the disadvantage or the protected attribute, nevertheless they constitute a violation of equal treatment.

The prohibition of unlawful segregation was motivated by the unlawful practices of segregating Roma and non-Roma pupils followed in some schools in Hungary. This is a specific Hungarian provision, not regulated in the EU norms. Under the law, unlawful segregation is defined as a conduct that separates certain persons or groups from other, similarly situated persons or groups devoid of an explicit permission by the law. Unlawful segregation is independent of the quality of facilities: it is perpetrated regardless to the equal or even better quality of the conditions provided for the segregated group compared to the comparator group.

Retaliation is a conduct that causes (or is intended to cause or threatens to cause) a violation of the rights of a person who stood up (raised objection, initiated procedure or co-operated in a procedure) against discrimination. Retaliation therefore may be directed against a person without any protected attribute in the event of raising a voice against discrimination or participating in such a procedure.

Instruction to commit discrimination is an autonomous form of discrimination. This means that issuing such instruction in itself creates discrimination regardless of whether the instruction is realized. It also means that the instructed person may lawfully refuse to perform the instruction.[20] (Consequently, if the employer consequently bears a liability for damages from such an instruction – thereby causing a loss to the employer – the employer may oblige the instructing superior and also the subordinate performing the instruction to remedy the losses they caused to their employer (obviously to a different extent, proportionate to their position and responsibility in the organization). If the subordinate refuses to carry out the instruction he is protected not only by the labour law norms, but also by the provision of the

20 Labour Code, Article 104, § 2, "The employee has no duty to carry out an instruction that would be ....against the law."

Equality Act, mentioned in the previous paragraph, that qualifies such retaliation as *sui generis* discrimination.

Exception (Defence)

There are situations when a legal relationship can fulfil its function only by differentiating between persons on the grounds of a protected attribute (i.e. when a certain job can be fulfilled only by a person belonging to one sex, nationality or religion). Such, extremely rare situations can be dictated by important public interest (such as public safety, public order, public health) or respect for the fundamental rights of individuals.[21]

The Equality Act lays down general and special preconditions for exceptions. The general preconditions reciting the terms used by the Constitutional Court lay down the so-called "necessity and proportionality" test as well as the "reasonability" requirement, distinguishing between the violations of fundamental or non-fundamental rights and attempting to adjust the text to the various "tests" of the Constitutional Court.[22]

The special exception for employment relationships has more clarity, but is too large a well. There is no violation of equal treatment by a provision that is justified by the characteristic or nature of the work, is proportionate and is based on all relevant and legitimate conditions." This text takes over, inaccurately, the original Section 5 of the Labour Code ("There is no discrimination in the case of a differentiation that follows unequivocally from the characteristic or nature of the work"). This is combined with the proportionality requirement of the EU directive, however here the Act also drops the most important words, namely, that the given attribute must be a *genuine and determining* occupational requirement.

The Court found the sex of the employee determining and decisive when, for example, the bath-management wanted to hire only female guards for the female baths. (Supreme Court, no. Mfv. I. 11. 160/2000, Collection of Court Decisions, no. BH 2003/86.)

Less convincing is the decisive role of the sex-criterion in another case when the female applicant was told that the so-called "other administrator" job was "rather for men". Even if four women were invited for interview, a man was finally hired. The Equal Treatment Authority accepted the explanation by the employer referring in general to the physical work (maintenance, repair, moving heavy objects) to be done during the major part of the working day, and did not even touch on the issue of the individual suitability of the applicant, or the concurrence of her physical capacities to the actual job requirements. (EBH 441/2008.).[23]

The broadly drawn exceptions are topped by the Equality Act with the exception established for religious, ethnic-cultural and similar organizations with an exception permitted if it is "directly flowing from the spirit" of the

21 For example prescribing age or physical requirements prescribed for jobs connected to public order and public safety, or belonging to a given sex in the case of health care and various personal services.

22 Thus, there is no violation of the principle of equal treatment when a provision limits the fundamental right of a party in order to promote the enforcement of another fundamental right in unavoidable cases provided that the limitation is suitable and proportionate. In case of the limitation of non-fundamental rights, differential treatment is permitted, "if there is an objective and reasonable ground" that is "directly related to the particular relationship". The Act – rightly – excludes race, nationality, and ethnic origin from the cases of justified exceptions, which means that no reason may justify distinction on such grounds.

23 The stereotypic attitude behind the employer's conduct is evident and the stricter requirements of exceptions than it is in the current Hungarian law would have the role to prevent the perpetuation of such stereotypes.

organization. On these grounds the court found the removal of a protestant theology student from the higher education institution after the student had revealed his homosexuality to his professor in a confidential conversation[24] to be lawful.

The successful defence (proving the exception) means that in the given case – in spite of classifying on the grounds of a protected attribute – the principle of equal treatment was not violated. It is important to emphasize this conclusion, because the text of the Equal Treatment Act on the burden of proof ("was not obliged to observe the principle of equal treatment…in the context of the given legal relationship") may lead to mistaken conclusions. E.g. according to the court decision already cited (in footnote 16) "the defendant had a reasonable cause, thus the defendant was not obliged to observe the principle of equal treatment". This statement is mistaken. The exception is not authorizing the violation of equal treatment, instead, it qualifies the use of the given criterion as being in correspondence with the principle of equal treatment.

The enforcement of the principle of equal treatment

Actors obliged to observe equal treatment

The Equality Act provides for detailed norms regarding the group of subjects bound by the order of equal treatment. This detailed regulation has been motivated by the post-transition liberties, primarily by the cautious respect for "privacy" and private property and as a result it binds a narrower group of subjects than would be dictated by EU principles and norms.

Actors of the public sphere – the Hungarian State, the local self-governments, their organs, therefore the organizations financed from the public budget – are naturally bound. Furthermore also obliged are the public foundations, public bodies and, from October 2009, the interest representative organs of employees and employers. A further large group are the organizations providing public services (providing energy, water, heating, public sanitation, mail and public transportation. etc.), the educational, social, child-protection, public culture institutions, health care providers, private pension funds and voluntary mutual insurance funds. Political parties are also obliged to observe equal treatment, excepting differentiation on the ground of political views.

Independently from the type of the organization (the subject) a further four categories are covered by the Act: 1. one who is making an offer or call for an offer for the "public" (for an undefined group of persons, 2. one who is providing a service or selling goods at premises for open turnover; 3. one who is using public subsidies (the prohibition of discrimination binds such a subject only in legal relationships established in the course of utilizing the public support); 4. the employer and the person entitled to issue instructions in other relationships established for performing work as well as in respect of legal relations connected to them.

24 According to the explanation given by the Supreme Court religious training is inseparably connected to the articles of faith of the given church that cannot be reviewed by the institutions of the state, and therefore the disparate treatment (removal from the university in this case) on the ground of sexual orientation is not in contravention with the law. (Supreme Court, no. Pfv. IV. 20. 678/2005., Collection of Court Decisions BH no. 2006. 14.).

Albeit the exact list implicitly excludes everyone else from the coverage of the Act, the legislature felt necessary to add four explicit exception areas that exclude the subject that would be otherwise covered by the Act. These are: a) family law relationships, b) relationships between relatives, c) the relations of clerical legal persons connected to the religious faith, finally d) in the case of public actors enumerated in Section 4 membership issues are qualified private and exempted from the observation of equal treatment provided that they have membership. Public bodies and labour market representations, on the other hand are not exempted with regard to the establishment and termination of membership as well as the exercise of membership rights.[25]

Procedures available in case of the violation of equal treatment

There are several ways to remedy the infringement and to sanction unlawful behaviour in the event of the violation of equal treatment: public procedure, civil litigation and the – still relatively unknown – conciliation with the assistance of a mediator. In the case of opting for legal enforcement, taking the public administration path is faster and less complicated; on the other hand, the court procedure is able to provide real remedies. The public administration path means the procedure of the Equal Treatment Authority, and in principle offers enforcement through the help of the labour market inspection,[26] however, in practice it does not extend to equal treatment.

Equal Treatment Authority. The EU norms put an increased emphasis on the effective implementation of the principle of equal treatment. The directives on gender and racial equality expect the governments to establish bodies that provide concrete assistance to victims of discrimination on the one hand, and promote the achievement of equal treatment through surveys, analysis and proposals on the other. The Equality Act – going beyond the requirements of the European Union – set up the Equal Treatment Authority as an organ of public administration authorized to proceed upon request and to apply sanctions in discrimination cases. As the most serious sanction the Authority may inflict a fine of a maximum of six million Forints (about 22 thousand Euros), in addition it may order the termination of the unlawful situation and prohibit such conduct for the future. These, however, with regard to the administrative type of the procedure, cannot provide a remedy to the victim of the discrimination,[27] which can be claimed only through the court. Publicizing the violation for a period might contribute to prevention and so is the effect of putting employers whose liability was established on a list of employers not having "orderly labour relations" thus making them ineligible to apply for state subsidies for two years from the date of the final and binding decision.[28] The Equal Treatment Authority may launch a court case by its own imitative as well (this has not happened yet) and, besides its role in individual cases, it carries out surveys, and fulfils a consultative role in governmental issues.

25 With regard to the private nature of the advertising foundation, the publicly announced competition for a scholarship offered only to male law students was found lawful. (EBH no. 531/2005. http://www.egyenlobanasmod.hu/zanza/zanza4jan.pdf).

26 Act LXXV of 1996 on labour inspection, Section 3, § 1, subsection d.) also extends to the observation of equal treatment.

27 For example, the decision on "bringing the situation contravening the law to an end" does not include the reinstatement of the employment of an employee dismissed by discrimination. If the employer voluntarily reinstates the employment, it might significantly influence the infliction of the fine.

28 Act XXXVIII of 1992 on the State budget, Section 15, § (6), subsection c).

With regard to the fast and cheap (free) character of the procedure, the cases brought to the Authority have grown rapidly since its setting up in 2004. In contrast to the few dozens of claimants in the first year, they had 491 claims in 2005 and in 2008 there were 1153 claimants turning to the Authority due to real or imagined discrimination.

Court Procedure. Article 5 of the Labour Code was a differentiated and up-to-date equality provision for labour relations;[29] nevertheless the considerable existing workplace discrimination remained mostly hidden. Apart from the causes in social attitude significant hindrance is found in the difficulties of enforcement through court procedure.

The greatest room for development in the wake of the European accession has been therefore in promoting effective enforcement. There are four elements in the EU norms targeting more effectiveness in the implementation of equal treatment: 1. the reversal of the burden of proof, 2. remedies that are sufficiently dissuasive and grant adequate compensation for damages caused, 3. the extension of the right to launch a procedure (the introduction a kind of *actio popularis* as well as granting the procedural standing of non-governmental organizations) and 4. enhancing the role of social partners primarily in prevention.

The right to take a case to the court has been broadened by the Equality Act through the introduction of the *public interest litigation,* that, in addition to the affected person and the Equal Treatment Authority, extended the right to initiate a lawsuit to the public attorney as well as to civil and interest representative organizations having, as a goal in their constitution, the protection of the equal opportunity of disadvantaged groups and of human and civil rights. The two preconditions of the right to start the court procedure are: first, that the discrimination took place on grounds that are an essential attribute of a person and secondly, the infringement or its imminent danger affects an undetermined larger group of persons. The inherent limitations built into these rights prevented public interest litigation from becoming a serious instrument of the protection of rights.

A serious setback was in rights' enforcement – including discrimination cases – the abolishment of the exemption of labour litigation from procedural charges. Litigation bears considerable risks for subordinate employees even if they win the case, now coupled with the risk of a further, serious financial burden.

The burden of proof

The classic principle of evidence – that everyone has to prove what he/she asserts – would bring the victims of discrimination cases into a hopeless position since they have to prove internal consideration that has no external evidence. The Equality Act provides for rules on this subject that correspond with the

29 It not only prohibited discrimination but also positively ordered the guarantee of equal opportunities in promotion, reversed the burden of proof and had a clearer norm for exceptions permitting it in a narrower scale.

European and international criteria. It sets up the presumption that if a person with a protected attribute suffered a disadvantage in comparison to others it is a result of discrimination, and puts the burden of the counter-evidence, i.e. the lack of discrimination, onto the person taking the disputed measure.

If therefore a person having a protected attribute can present the likelihood of suffering a disadvantage, the opposite party has to prove that the disadvantage was in no connection with the protected attribute, or that there was a connection but, since it was a permitted exception, it did not violate the principle of equal treatment, since classification on grounds of the protected attribute is a determining requirement in the given relationship.[30]

Notwithstanding the fact that the spreading application of the provisions on the burden of proof and the Equal Treatment Authority also pay attention to its observance, regrettably there are still court sentences that expect the plaintiffs to prove, beyond the disadvantage itself, the evidence of the "differential treatment".[31]

Conclusions

Legal instruments available in Hungary today are insufficient for the guarantee of this fundamental human rights' principle. Even though there was a degree of progress, resulting from the legislative steps transposing the community law as a condition of accession to the European Union, towards the creation of the framework of a modern equality law, both the legislation and the judicial case law is permeated by an over-cautiousness reluctant to intervene into the fundamental civil and economic rights re-gained by the political transition. The barriers to enforce rights, the available compensation – quite modest, certainly so by international comparison – rather divert the victims from legal steps and do not stimulate a more courageous practice that would discourage perpetrators. At the same time the amendments of the Equality Act and the obvious progress of the fluctuating case law give the hope that the growing experience and knowledge, leaving the past behind, and the clarification of social values will lead to the achievement of a legal framework and legal instruments that promote substantive equality at a more up-to-date level.

30 Section 22, § (2) subsection b). Both on logical-principal grounds and on the grounds of the text of section 5, the evidence of not being "obliged to observe the principle of equal treatment...in the context of the given legal relationship" is possible only for those who are excluded from the coverage of the Act.

31 Supreme Court, no. Mfv. I. 10. 842/2007/3: "the assertion by the plaintiff that he was dismissed for the deterioration of the state of his health and for his age was not proved. The burden of proof regarding these facts was on the plaintiff and the defendant has to prove his statement of defence only if the fact of discrimination is maintained."

3. TRANSFORMATIONS OF ROMA EMPLOYMENT POLICIES

GÁBOR FLECK & VERA MESSING

Introduction

As researchers doing fieldwork, we are made constantly aware that Roma people are rejected by employers even when they meet all the criteria related to education, training and whatever the specifications are in job advertisements. Our Roma interviewees have given accounts of a broad scale of racial discrimination, almost independently from the settlement and region they come from, or whenever our conversation took place over the past 8–10 years. Governments have long failed to take ethnic discrimination seriously, or at least not treated it as a problem which calls for governmental intervention. At the same time, many recently published studies have provided substantial evidence supporting the fact that negative discrimination is a widespread phenomenon in Hungary.

A part of these studies establish, by examining national employment statistics, that the low employment rates of Roma can not be explained merely by their low educational level and unfavourable residential patterns. In analyzing the impact of various factors using econometric methods, Gábor Kertesi concludes that "the depression of local economy represents a much more serious plight for Roma than for non-Roma of the same gender, age, educational level and family conditions. […] *It would be hard to interpret this situation as something else than the sign of employment discrimination.*" (*Kertesi*, 2000a, p. 440., italics in the original). Kertesi's calculations made five years later imply the same conclusion: "their employment opportunities amount to less than half of those characterizing the control group [employment seekers of the same level of education]…" (*Kertesi*, 2005, p. 191.).

Many investigations conducted in recent years examine discrimination in a direct manner, with unanimously disappointing results. According to the empirical studies done by Ferenc Babusik regarding Hungarian enterprises, 80 per cent of employers "not only do not employ Roma but are also unwilling to do so, even in the case where their educational level is satisfactory" (*Babusik*, 2006, p. 3.). A study commissioned by the European Roma Rights Center (ERRC) in 2005 gives an overview of the discriminatory practices employed by employers and other actors in the labour market, establishing the following: "The most important outcome of the research is that discrimination is present in all segments of the labour market. As a result, the vast majority of working-age Roma becomes excluded from the labour market"

83

(*ERRC*, 2007). In spite of anti-discrimination legislation, Roma are excluded from employment already at the point of entry to the labour market, i.e. during hiring procedures. It is a common experience, evidenced by both research studies, that employers reject applicants merely on the basis of their presumed Roma origin: 29 per cent of respondents in the ERRC survey said employers had explicitly told them that the reason for refusal had been their Roma origin. This phenomenon is also revealed by the complaints submitted to, and investigations conducted by, the authorities in charge of enforcing equal treatment: reports of the Equal Treatment Authority, the Roma Anti-discrimination Service Network of the Ministry of Justice and Police, the Legal Defence Bureau for National and Ethnic Minorities and the ombudsman for minorities all refer to similar cases.

As indicated by several studies, Roma are discriminated against not only by employers but, indirectly, also by employment agents and public employment centres that take employers' preferences with respect to ethnic membership into account. Employment centres treating this type of request by employers in a lenient or even accepting manner have been encountered during our research[1] as well as that of the ERRC.[2] A frequent justification for this illegal practice given by offices is that employers would refuse to employ Roma even in the event that they insisted on it – this would lead nowhere but rather make employers avoid employment centres in filling vacancies (OTKA research No. 67898). Thus it is legitimate to raise the question: once the state is unable to prevent racial discrimination (even in its own institutions), what does it do in order to, at least, mitigate its consequences? The significance of this question is underlined in the 2008 annual report of the State Audit Office exploring this state of affairs (*ÁSZ*, 2008, p. 37.):

> "*Allowances promoting employment have played a determining part in the funding of Roma integration.* Resources dedicated to this purpose are allocated by different ministries (Ministry of Economy /later Ministry of Economy and Trade/, Ministry of Agriculture, Ministry of Social Affairs and Labour, and Ministry of Environmental Protection and Water Management). These resources have altogether exceeded 3.6 billion HUF in 2002, 10.4 in 2004, 18.4 in 2005 and 17.6 in 2006. The amount of support invested in enhanced employment, reintegration of people excluded from the labour market, the development of networks organizing such initiatives, and the promotion of Roma enterprises and enterprises employing Roma, has increased every year. Estimated data suggest that overall 74.7 billion HUF was spent on such objectives between 1997 and 2006."

As indicated in the quote, these numbers are based on estimations. It could not be otherwise, indeed, since they mostly refer to the budget of programs not targeting the Roma. In most cases, ministries and organizations managing programs have no idea concerning how much of the budget of their programs has been invested in helping the Roma. At the same time, in satisfying the demand

1 Szegény családok megélhetési stratégiái regionális és etnikai metszetben. [Subsistence strategies of poor families in regional and ethnic breakdown.] OTKA 687898. Research. Head of research: Vera Messing.

2 A Hungarian case study shows how this is done in practice: jobs for which employers indicated they did not want to employ Roma were marked by the letter *R* in the computer system of the employment agency. (*ERRC*, 2007, p. 41.).

84

for accountability, they make efforts to assess the size of the Roma populations concerned as well as the amounts invested in them. However, the validity of these estimations can be challenged in several respects. Moreover, to date no professional means have been developed, unfortunately, to monitor programs.[3]

In the following, we classify the types of governmental frameworks determining relevant policies during the past decade. However, given primarily the inaccessibility of data and the lack of professional monitoring and impact assessment that otherwise form unavoidable parts of such programs, our opportunities in evaluating these policies are fairly limited. Although drawing on all available sources, we have only been able to draft a mosaic-like sketch full of gaps. Thus one of the main conclusions of this study can already be set forth in the introductory part: it makes no sense to launch policies to combat discrimination and mitigate its effects without collecting data concerning the programs, or planning and carrying out impact assessments. Or to be more direct: not a single penny should be spent from public monies without planning an impact assessment beforehand.

Colour conscious policies

Until the early 2000s, governments tried to enhance the employment of Roma and compensate for the effects of the labour market discrimination which they face, primarily by implementing Roma (i.e. ethnically targeted) employment programs. The effects of Roma employment programs are analyzed in an unpublished study based on an investigation commissioned by the Ministry of Social Affairs and Labour which we carried out in 2005 (*Fleck–Messing–Mike,* 2005). During this research, we contacted institutions that had introduced programs between 1998 and 2003 enabling the employment of Roma in Hungary. Since no other investigations analyzing the effects of ethnically targeted programs have been conducted since, the section of the present study discussing Roma employment programs will be primarily based on this work.[4] Besides the analysis of the documentation and partially available statistics, the main body of this research is based on interviews with tendering institutions, applicant organizations, and employees participating in the programs.

Roma employment programs, managed by various organizations, were running parallel in the early 2000s. These organizations – such as the National Employment Fund (NEF), the European Social Fund-Phare, or the Roma Enterprise Support Program of the Széchenyi Program – were usually managed or funded by the government. Significant civil organizations active in this field include the Autonomy Foundation and the (semi-civil) Public Foundation for the Hungarian Roma that coordinated programs promoting entrepreneurship and the subsistence of Roma.

Given their immense differences – especially regarding accessible resources[5] but also in terms of their scope of influence and, often, objectives – it is virtu-

3 Dilemmas regarding monitoring will be discussed below.

4 A research project carried out by Autonómia Alapítvány [Autonomy Foundation] deals with a similar subject matter, however, that study refers to an even earlier period (*Lukács,* 2005).

5 During their period of operation (which varied from between 1 and 3 years), the financing of these programs looked as follows: the overall budget of the 3 programs (labour market training of Roma, Roma small plant program, Roma community program) run by the Autonomy Foundation was 37.5 million HUF; the Roma employment program of the NEF used 120 million HUF, 5 billion HUF was spent by the ESF (European Social Fund) on its program called 'Struggle against exclusion from the Labor Market', while the amount spent on programs targeting Roma or "disadvantaged population with particular attention to Roma" is unknown, though estimated at 5 billion HUF at least by the organizing employment centres. The annual budget of the programs promoting entrepreneurship and the subsistence of Roma, organized by the Public Foundation for Hungarian Roma, was 200 million HUF, and the Roma Enterprise Support Program also had 200 million HUF per year at its disposal.

ally impossible to compare these programs. At the same time, strictly speaking, the comparative evaluation of active employment programs is feasible, in fact, based on their primary objectives, i.e. considering the extent to which they are able to reach target groups, or increase opportunities of employment (that is, if they succeed in reintegrating the permanently unemployed in the primary labour market), as well as by examining whether they entail unintended and harmful side effects, or how they can be characterized in terms of a cost/benefit ratio.

As for this latter aspect, we had no possibility to analyze the programs because of the unavailability of input data concerning investments and other types of information (such as the number of participants). Thus the assessment of benefits was not even attempted.[6] The first three aspects, in turn, were successfully investigated in our research.

"Who is Roma?"

One of the most disputed aspects of the programs supporting Roma is represented by the challenge of reaching the target group. Tendering organizations face the problem of defining the target group even at the commencement. Supporting organizations have found different ways to resolve the dilemma of "who is Roma?" One solution was prescribing Roma affiliation for applicant civil organizations, while not using ethnic criteria with respect to participant employees. As a result, though the tendered organizations were Roma, a significant proportion of the employees was not. Tendering organizations adopting this method were under the presumption (later proving to be false) that Roma organizations would employ Roma people. Another part of the organizations tried to reach unemployed Roma people by requesting recommendation by, or cooperation with, local Roma minority self-governments in realizing Roma employment programs. Although there are no reliable data concerning the ethnicity of participants in the programs – i.e. it is unknown to what extent ethnically targeted employment programs succeed in reaching their target group – the interviews made with employers suggest that, according to estimates by the tendering/employing organizations, less than half of the employees were Roma. Differences in this respect were enormous (Roma participation varied between 20 and 80 per cent). Nevertheless, it can be established that the more complex (i.e. involving training, employment and the provision of other services) and long-term the program, the lower the rate of Roma among participants.

Are employment opportunities improved by programs?

In other words: have programs contributed to the reintegration of the permanently unemployed in the primary labour market? Employment programs should be functional in increasing the employment chances of participants

6 Our study (*Fleck–Messing–Mike,* 2005) affirms: "There are no indicators of success in the case of the Autonomy Foundation, employment centres, the PFHR and Széchenyi Program and, to the extent they are formulated, expectations of success are over-generalized. Although the Phare program defines outcome goals, these are impracticable. The NEF did not elaborate indicators, nevertheless, the viability and profitability of enterprises operated by applicant organizations, as well as the extent to which they had been able to reach their original goals, were thoroughly inspected during re-application phases every 3 years."

following the end of the program and ensuring their employment at least in the mid-term. Only 3 of the programs under investigation attempted to track the employment situation following the end of the program: those run by the European Social Fund-Phare, the Employment Center and the National Employment Fund – the latter being able to provide just one piece of fairly vague data concerning the rate of further employment. However, no numeric indicators have been employed so far by any organizations.

As revealed by our empirical research, even in the case of tenders that report on using relatively convincing means to ensure further employment, solutions of this problem are often rather illusory (*Fleck–Messing–Mike,* 2005). Here are a few typical cases:

– participants were not really unemployed, or they were unemployed only on paper. The program, in fact, provided a means for companies to legalize the employment of previously illegally employed workers;
– in successful programs (with a higher than 50 per cent rate of further employment), the percentage of Roma among participants was insignificant;
– further employment generally lasts strictly for the prescribed compulsory period, after which participants are immediately dismissed.

After the end of the program, an element of the participants started working in the framework of another one; thus their further employment was apparently realized and the program could demonstrate success on paper, while the labour market situation of the concerned target group remained absolutely unchanged.

A frequent impediment of further employment consists in the wrong choice of program, including related education or training. We often came across enterprises obviously doomed to failure given the lack of support in the given region.[7] Hardly any of the programs we encountered were adjusted to the actual labour market opportunities in the given area, that is to say, where the subsequent employment of the unemployed people participating in the program was really taken into account.

Functional defects of Roma employment programs

In the course of our investigation, we did not encounter any programs that could be considered exemplary in every respect. In many cases, initiatives were not only ineffective but, in fact, also counter-effective. In other words, contrary to the proposed objectives, they contributed to the welfare-dependence and defencelessness of the permanently unemployed, reinforced the existing patron-client system in local communities, and further deteriorated the stereotypical view of unemployed Roma people by the majority society.

Below, we provide a list summarizing the problems that greatly contributed to the failure of the Roma programs analyzed here.

7 Training dressmakers and creating a dressmakers' shop in a small region where, due to cheap Chinese imports, 3 active dressmakers' shops went bankrupt in one year; training and employment of lumber workers in an area where no woods were nearby; training park-keepers and petrol mower operators in places where more than a hundred – presently unemployed – people were trained in the same professions.

Tendering system. In the case of most programs, available resources were distributed via tenders. The grave problem of counter-selection follows from the tendering system itself: the most potent organizations and communities, with extensive experience in application for tenders and maintaining widespread social relationships, are the most likely to obtain resources, thus inequalities become even greater and the factors determining the disadvantaged situation of the most dependent population mutually reinforce one another. Increasing inequalities and the incalculability of the system even in the midterm raise fundamental doubts regarding the usefulness of the above methods of financial support in this field.

Administration. The realization or implementation of programs – particularly when the applicant employer is a civil organization – entails administrative difficulties that only potent organizations, with massive experience, are able to cope with. This intensifies counter-selective mechanisms that already emerge at the application stage. Regions and organizations already struggling with the most handicaps have meagre chances to successfully implement programs. Difficulties of administration, default payments that are months or even years overdue but fail to reach their destination due to the late arrival of excuses and requests to fill in gaps, not only cause the failure of projects, but also drive implementing organizations into bankruptcy. Unfortunately, the following example is not exceptional: all of the enterprises interviewed mentioned that very significant amounts – often multiples of ten million HUF – drawn from other sources had to be advanced.

> "The practice [of the tendering authority] of taking several months in evaluating the periodic reports and financial accounts related to projects that were financed from advanced payments, and withholding the next instalment until the approval of accounts, fundamentally threatened the foundation. In practice, this meant that the second instalment of the financial support (about 30 million HUF) arrived at the time when the program was already closing because, given that the period of evaluation lasted for several months, the approval of periodic reports took this long. In other words, the foundation had to credit 30 million HUF from its own pocket." (*Fleck–Messing–Mike,* 2005.)

Professional preparedness of the implementing organization. Professionally unprepared tendering organizations supported several projects doomed to failure from the start because, lacking any professionals, they were unable to estimate the economic-professional viability of the given application.

> "Neither the promotion of enterprises, nor employment belong to the profile of tendering organizations, therefore, they keep supporting activities without professional considerations, which drives beneficiaries into bankruptcy. [...] Due to the lack of appropriate preparations and professional assistance, supported applications often result in disaster as supported enterprises run into debts or go bankrupt (they are required to specify a mortgage or a guarantor

of cash in the contract), thus becoming the subjects of legal proceedings…" (*Fleck–Messing–Mike,* 2005.)

With the exception of those of the Autonomy Foundation and NEF, all of the programs under investigation struggled with the lack of efficient professional support: for the duration of the programs, fundamentally untrained applicants/employers did not receive any help in accomplishing tasks related to accounting and financing, or any assistance regarding legal and administrative matters. In the absence of such support, even the most well-meaning and thoroughly prepared projects are destined to fail. A significant part of the projects were devised without professional expertise, only to meet the basic requirements prescribed in the tender. "A poorly designed program, indeed, must be implemented poorly", said an experienced applicant we interviewed.

The formal nature or total absence of monitoring and professional support. In the period under investigation, primarily projects financed from European Union funds were monitored. However, monitoring even in these cases was rather formal and technical in nature, mostly lacking professional considerations and the implementation of professional criteria. "Monitoring involves only ascertaining that financial, procedural and legal requirements are fulfilled. As long as appropriate documentation is provided, silly things get easily accepted, while when a successfully accomplished project is poorly documented, it will fail at the monitoring stage," this is how the situation was described by an expert dealing with tenders at one of the ministries. Without monitoring, not only the results of the program remain obscure, but participants feel abandoned and tend to assume that any serious investments in the project would be in vain.

Colour-blind policies

Considering the problems related to the Roma employment programs discussed above, the question emerges whether "colour-blind" or "colour-conscious" policies are more effective, i.e. stipulations regarding ethnic belonging should be weighed carefully. When departing from the claim that the employment situation is basically unrelated to ethnicity but has to do, rather, with educational, residential and regional issues, the support of people suffering disadvantages in the labour market appears to be more justified. Every problem should be addressed where they emerge: problems of employment arising from a disadvantaged situation ought to be remedied by reducing disadvantages, instead of turning them into issues of ethnicity. Difficulties characterizing the majority of Roma are fairly complex in nature: their situation is determined by a low educational level, discrimination, socio-economic exclusion, territorial isolation and the conjugate effects of all these factors. Thus it seems to be appropriate to resolve the situation by treating all the problems manifesting in a particular crisis zone in a comprehensive manner, i.e. by pri-

oritizing compound methods that are relevant for each problem suffered by the specific target group.

Public policies seemed to have developed in this direction after 2002, when efforts were made to reach marginalized populations that were overwhelmingly, though not entirely, Roma. Although populations truly in need may be accurately defined by territorial, social and educational traits taken together, this practice nevertheless failed to produce the expected results. Apparently, the agents implementing the programs prepared by various ministries considered such definitions too narrow, as their proposals contain simplified categories such as 'the unemployed', those 'having a large family', or with a 'low educational level', even though the intersection of all these categories would have represented the group of those truly in need. As a consequence, the supported group shifted upwards in relation to populations occupying the lowest social status, and the more the circle of beneficiaries was expanded in practice, the more those at the bottom of the social hierarchy became marginalized. At the same time, (in connection with the socio-economic situation of the Hungarian Roma population) this state of affairs also resulted in the programs implemented by different ministries being much less able to reach the Roma population than originally planned. In the absence of surveys, specific research or investigations, it is obviously impossible to back this claim by factual evidence. Nevertheless, this conclusion, also supported by our fieldwork experiences, is suggested by the logic implied in the *modus operandi*.

A part of the operative programs of the National Development Plan[8] defines people in a disadvantaged situation as a group to be supported without, however, attaching a specific definition to this category. In other programs, equality of opportunities represents a horizontal (general) principle.[9] Ethnic belonging was also defined as a horizontal principle in all of these programs. This approach, again, is theoretically capable of resolving the problem. However, practical experience reveals that, unfortunately, horizontal requirements can be easily satisfied by a few resounding phrases at the stage of evaluating applications, while they are pushed to the background during the implementation of projects. Posterior evaluation of programs covers only compliance with formal requirements and financial performance, while disregarding the professional and content-related aspects of the projects. In this way, considerations that should permeate operative programs, from planning to closing, mostly become meaningless decorative elements in practice (*Bernát* et al., 2007). In its brochure evaluating the Regional Operative Program, the National Development Agency says the following about the enforcement of the principle of equal opportunities.

"Available information does not allow us to take effects related to the equality of opportunities into account, or this can be done only by rough estimation as no impact analyses regarding equal opportunities were prepared during the

8 Social Renewal Operative Program, Social Infrastructure Operative Program, Regional Operative Program.

9 The announcement of tenders says the following in this respect: "…independently from its nature and theme, each project should contribute to improving the equal opportunities of women, Roma and the disabled… The entire project, from its design to posterior evaluation, should be governed by considerations regarding equal opportunities. The equality of opportunities as a goal must be taken into account by the applicant, both in performing everyday organizational activities and in the course of realizing the project." (http://www.nfu.hu/rop_ertekelesek.)

planning phase and thus "bases of comparison" are unavailable. Besides, the majority of project managers were unable to provide useful information for an objective impact assessment." (http://www.nfu.hu/rop_ertekelesek.)

Another type of the programs attempts to reach those in need by using territorial determinants. For instance, the *Catch-up program for the most disadvantaged small regions* was conceived based on the following recognition:

"The uneven development of small regions produces social injustices handed down from generation to generation. A number of small regions still struggle with increasing poverty, unemployment, the absence of active enterprises and quality public services and the lack of opportunities. The Roma population is especially affected by these processes." (http://www.nfu.hu/lhh.)

In order to improve the situation, the government designated the 33 most disadvantaged regions on the basis of statistical data. A portion of the tenders announced in the framework of the *Catch-up program of the most disadvantaged small regions* addressed the especially disadvantaged small regions, while concerning the rest of the tenders, applications arriving from the most disadvantaged small regions were given priority in the course of evaluation. Overall, a budget of 157 billion HUF was determined to be invested in the 33 most disadvantaged small regions, which sum was distributed among operative programs in the following manner.[10]

– A lump sum of 97 billion HUF to finance expenditures that may be planned by small regions (distributed among Regional Operative Program: 66.4 billion HUF, Social Renewal Operative Program: 26.6 billion HUF, and Social Infrastructure Operative Program: 4 billion HUF).

– A lump sum of 60 billion HUF held for small regions to cover additional costs (distributed between the Economic Development Operative Program: 25 billion HUF and the New Hungary Rural Program: 35 billion HUF).

Considerations based on territoriality can also be justified since the country is characterized by serious regional inequalities and the concentration of the population afflicted by deep poverty is increasing in disadvantaged regions. Moreover, the territorially based marginalization of poor groups due to ethnicity is growing. However, the program is capable of tackling, again, only one segment of this complex problem; what is more, it does so at the level of an intermediary territorial unit, i.e. small regions. As a consequence, inequalities within small regions will probably grow, given that the centres of these small units appropriate the majority of resources. Thus only the centres of the periphery will become reinforced, while marginalized small villages will remain excluded from resources and opportunities. Besides, the relevance of the ethnicity-oriented approach, as a horizontal principle, can be detected here, too, only at the same level as in the case of implementing operative programs in general: the mere appearance of cooperation with Roma organizations proved to be sufficient for obtaining support. At the same time, the mass of mostly Roma families living in deep poverty, increasingly deprived of opportunities

10 Guide on the development program of the 33 most disadvantaged small regions: www.nfu.hu/lhh.

and lacking any trained and active earners, becomes ever more concentrated in increasingly marginalized villages and areas.

Therefore, in theory, it would be possible to reach unemployed Roma in significant proportions by using territorial, economic, and social categories, such as disadvantaged region, small region or settlement (applying indicators such as the size of settlement, GDP per capita, level of education) without necessarily conferring ethnic framing to the support program. However, the programs fail to accomplish their goals and reach the most deprived when these dimensions are not taken into account simultaneously. In this case, the group of beneficiaries "shifts upwards" by a few social layers and moves further by a few kilometres, thus reinforcing the already severe social and territorial inequalities.

"Away from labour"

Previous attempts to enhance the employment of Roma (among others) – that were more problematic than successful – were replaced by a new "paradigm" in the past year. On December 15, 2008, Parliament adopted a legal modification that radically changed the provisions concerning the beneficiaries of regular social assistance. The underlying aim of the modification was to realize the program called *Path toward labour* the conception of which was applauded by the majority of local and national politicians, while eliciting ambivalent reactions among experts. This new paradigm removes the concept and practice of social assistance from the context framed by the principle of neediness, reframing it in terms of abilities: henceforward, eligibility is determined by merits gained on account of hard work.[11]

Our reason for discussing the program *Path toward labour* in this article is that this seems unavoidable when dealing with government programs compensating for the exclusion of Roma from the labour market. While not using ethnicity explicitly as the basis of targeting, it must be noted nevertheless that the initiative is regarded by those conceiving and implementing it, as well as in public opinion and the media, as the framework employment program for Roma living on welfare. The previous Minister of Social Affairs referred to "Roma", "disadvantaged" and "people with a low level of education permanently excluded from the labour market" alternatively in his/her communiqué at the time of announcing the program (*Szűcs,* 2008), and articles and statements of major actors treating the group of eligible people and the permanently unemployed Roma as equivalent categories are abundant in the media.

County-level data provided by the National Employment Service also lead to the conclusion that one of the most important target groups of the program is represented by the Roma population that has permanently been excluded from the formal labour market. Considering their distribution with-

11 The program *Path toward labour* was commented on by the Minister of Social Affairs in this way: "Those unfit for work may be assisted by financial aid, however, those able to work should receive jobs." (*Szűcs,* 2009.)

in the unemployed population (and, specifically, among the permanently unemployed), the ratio of the subjects of the *Path towards labour* program, that is, of those eligible for disposition assistance,[12] is in direct relation to the percentage of Roma in the respective counties. Thus 35–40 per cent of the unemployed received disposition assistance, i.e. they were obliged to perform public work, in counties with a large Roma population (Borsod-Abaúj-Zemplén, Szabolcs-Szatmár, Baranya, Somogy, Nógrád, Jász-Nagykun-Szolnok), while this rate varied between 10 and 20 per cent only in counties scarcely populated by Roma.[13]

In the view of several experts, the program had many ambiguous side effects. Economists claim that linking social assistance and employment in this way is miscarrying in the economic sense, since there is either no demand for the labour performed in jobs that were created in this manner, or, when such demand is present, the program exerts a drive-out influence: jobs realized in terms of public employment tend to be extracted from the primary labour market. The drive-out influence of public employment will become especially problematic in the event that the presently proposed legal modification enters into force, making actors of the market able to participate in the *Path toward labour* program as employers.[14] While acknowledging its good intentions – concerning the gradual reintegration of people excluded from jobs in the labour market – it is hard to assess the distorting effects this proposal might have once it becomes reality: currently 95 per cent of the wages and contributions of employees participating in the *Path toward labour* program is covered by the state, while employers are obliged to pay only 5 per cent of the costs.

The state presently spends an estimated 120 billion HUF on public employment[15] knowing that, among policies supporting active employment, this instrument has absolutely no positive bearing on the employability of the people concerned.[16] Instead of supporting integration in the primary labour market, public employment even hinders this process: as a result of taking temporary and short-term jobs, closely linked to receiving social assistance, employment becomes highly instable, and people hovering between public employment and welfare are increasingly helpless (*Kertesi*, 2005). In analyzing the life history database of the National Employment Service, *Tardos* (2006) draws the following conclusion:

> "…registering these people as »temporarily employed unemployed« would much more correspond to reality. (…) It is as if employment centres have »given up« on helping these people get back to the primary labour market by using the rest of the means supporting active employment."

Objections against the proposition were raised by scholars of this subject matter claiming that it could reinforce the already strong ethnic character of public employment and increase the defencelessness of permanently unem-

12 The new unemployment benefit system that was introduced in 2008 targets long term unemployed inactive people in the social welfare system. This scheme – called 'benefit for those who are at disposal', shortly 'disposition benefit' – prescribes compulsory public employment for those on welfare.

13 National Employment Service, May 2009. http://www.afsz.hu/engine.aspx?page=full_afsz_stat_telepules_adatok_2009

14 "Erika Szűcs says that, in its present state, the *Path towards labour* program needs several corrections to be accomplished by means of the legal modifications taking place in the fall. […] On the side of employers, private companies would also be represented alongside local governments. http://www.origo.hu/itthon/20090801-ut-a-munkahoz-program-a-munkakeresokon-segit-a-tartos-munkanelkulieken.html.

15 According to the statistics displayed on the homepage of the National Employment Service, the number of beneficiaries of the assistance for those *being at disposal* is almost double previous estimations.

16 According to the impact assessment of the National Employment Service, with the exception of public employment, all the means supporting active employment are capable of redirecting a significant part of those concerned by these policies to the primary labour market: every other person participating in labour market training found employment after the end of the program; two thirds of the people receiving subsidized wages for a period of time had their contract finalized afterwards; three thirds of the beneficiaries of assistance for first-time entrepreneurs managed to stay in the market even after they stopped receiving this kind of support. Only public employment has no positive effects whatsoever: in 2008, 0.7 per cent of the participants in the program were able to find a job after the period of supported employment – this rate is lower even compared with the employment opportunities of those who did not receive this type of support (*Tajti*, 2008).

ployed Roma people *vis a vis* institutions. It is presumed by respected experts of Hungarian social policies that the proposition contributes to the ethnicization of public employment, the division of the poor into groups deserving and not deserving social assistance, the control of the permanently unemployed by local authorities (and potentates) and their defencelessness *vis a vis* institutions (*Ferge,* 2008, *Szalai,* 2009).

The fact that circumstantial criteria – short period of employment, lack of training, absence of appropriate jobs – were included in legislation indicates that the creators of the program did not really mean to promote the objective of reintegration into the labour market. We had an opportunity to observe the way in which the *Path toward labour* program isolates the permanently unemployed, creating a ghetto even within this population, whilst doing fieldwork related to other inquiries. Apart from a few minor exceptions, workers participating in the *Path toward labour* program were employed by two employers: the local government of the town (more precisely, its affiliated company dealing with urban economy) and the minority self-government. One does not need an extraordinary imagination to picture the ethnic distribution of employees. At the same time, instead of providing employment to all the unemployed Roma living in urban areas, Roma minority self-governments gave jobs only to those living in problematic neighbourhoods, i.e. ghettos. It did not take long (only a few months) until institutionalized ethnic-social ghettos developed within the population of public employees: the local government and its affiliated companies got rid of the constraint of employing problematic and "undeserving" Roma living in the urban ghetto who were too difficult to handle. This task was delegated to Roma minority self-governments.

It should have been already obvious at the stage of devising that the *Path toward labour* program did not ensure a path toward labour, instead, it estranged people from the labour market by perpetuating and stabilizing welfare-dependence and providing an opportunity to ghettoize participants, i.e. create an ethnic divide between them. In analyzing the documentations of the program, Júlia Szalai argues that this prospect already represented a theoretic possibility when the program was being planned.

"In my opinion, [the act] represents a milestone with regard to the ethnicization of poverty and the institutionalization of ethnicized poverty. The significance of this development lies in the fact that […] the first act was born that explicitly and legally ensures a clear, organizational and procedural separation of the local Roma ghettos of social policies from the support system of poor people belonging to the majority". This is accomplished by "dividing the permanently unemployed into two groups, in the case of one the conferring of public money in the form of welfare is still regarded as justified, while those belonging to the other one, seen as »habitual slackers«, are subjected to compulsory employment controlled by authorities." (*Szalai* 2009.)

In view of all the above, the *Path toward labour* program does not lead to employment or encourage value-generating activities but realizes a kind of compulsory employment that fails to increase welfare, either at individual or social level. Why do we think this is so? First, in practice, public employment shows no differences from occasional labour in terms of the content of the job and its temporary character as well as the dependence implied in these conditions.

Second, illegal workers are persecuted severely: anyone caught doing unreported work loses eligibility for any type of social assistance – even though illegal work, in fact, is a type of value-generating activity since there is demand for it. The reason why it is illegal is that the low qualified workforce employed in such jobs does not produce related contributions and other public costs. At the level of the individual, the program drives people concerned to develop false assumptions and hide facts, since it is as clear as day for anyone familiar with the situation of people living in deep poverty and permanently dependent on welfare that social assistance, in itself, is insufficient to ensure a basic livelihood and thus it must always be complemented by income coming from other sources.

Our third contention regarding the *Path towards labour* program is that it encloses the permanently welfare-dependent population into a negative cycle of social assistance and public employment that is virtually impossible to abandon, since employment policies hardly, if at all, promote any way out.

The fourth problem is that in many settlements – especially in villages characterized by a high unemployment rate – self-governments are simply unable to provide reasonable employment to all inhabitants receiving disposition assistance.[17] The most critical aspect of the program, in our opinion, is that it stigmatizes those on welfare by dividing the socially needy population into two groups: one *required to work* and another one *eligible for welfare*: i.e. people in public employment do not deserve social assistance unless they work for it.

Concluding remarks

Reviewing the series of employment policies implemented during recent years, the situation appears to be rather disappointing. The way of thinking concerning social assistance has changed several times during this period, each approach having some justifiable elements. However, none of these schemes have managed to influence the indicators of employment concerning the Roma population, whether in an absolute or a relative sense. The system is characterized by a host of problems, ranging from the definition of target groups, objectives and priorities, to determining indicators and the methods of tendering, or organizing the system of monitoring and impact assessment.

17 "I can't have our single street swept three times a day, or the cemetery cleaned every day. This village can give jobs to 3 or 4 people, while there are 40 on welfare. All I can do is have more than enough people do one job, which makes no sense at all", said the major of a dead-end village with a high rate of unemployment. (Kint és bent háromszor. [In and out three times.] OTKA 73015. Head of research: Éva Kovács).

18 "The Monitoring Office started its operations in April 2004. As a first step, coordination was established between the Monitoring Office, belonging first to the Government Office of Equal Opportunities and then its legal successor, the Ministry of Family, Social Affairs and Equal Opportunities, and the other ministries, to manage the planning and regular evaluation of programs related to the proposed measures. The methodology of operating the monitoring system and devising indicators has been elaborated. In modifying the governmental resolution, questionnaires to be used for the purpose of unified professional and financial reporting have been introduced. However, the monitoring system has not been instituted in full measure. The Monitoring Office operated at the ministry responsible for governmental coordination until mid-2006, and subsequently it ceased functioning." (ÁSZ, 2008. p. 56.)

19 "According to the dominant point of view, the collection and handling of ethnic data is indispensable, both with regard of the protection of minorities and enforcing equal opportunities; without creating appropriate databases, it is impossible to establish truly efficient and adequate systems of minority protection, or develop policies and legal institutions to combat discrimination. (...) The characteristic fields where the collection of ethnic data has relevance are the following: employment, education, health care, jurisdiction, immigration, housing and personnel employed in administration." (Introduction of the 2005 annual report of the State Commissioner of Minority Rights. Quoted in ÁSZ (2008) p. 57.)

An important task when devising programs consists in the accurate definition of the target group. In trying to avoid supporting people who are not truly in need, the hosts of programs (governments and governmental institutions or large civil organizations) often commit the error of not paying enough attention to ensuring that those in need have access to assistance.

Impact assessment, too, represents a challenge that must be faced in order to enable the successful functioning of programs. Ever since support programs have appeared in Hungary, the absence of pre-planning studies, monitoring to trace the process, and subsequent evaluation, or the effectively formal nature of such exercises, represent notorious problems. Evaluation and monitoring – if undertaken at all – tend to refer only to the formal (legal or administrative) and financial aspects of implementation, while failing to indicate the extent to which the programs have been able to realize the intended objectives. In fact, not a single penny should be spent from public monies without providing accurate data concerning end results. This is a crucial condition not only regarding the evaluation of the program in question but also with respect to devising further programs.

The report of the State Audit Office cited above underlines the lack of a unified monitoring system. Although there have been governmental initiatives to make up for this deficiency,[18] these were exhausted, as endeavours of this kind often are, well before producing actual results. With reference to, among other documents, the statements of several European Union organizations and the 2005 annual report of the State Commissioner of Minority Rights,[19] the report of the State Audit Office adopts an unambiguous stance with regard to the usefulness of collecting ethnic data in resolving this problem. As for our part, we recommend a much more cautious approach to this issue. Although it is legally possible, the collection of ethnic data raises a lot of ethical and methodological concerns. First, who would be responsible for classifying clients according to ethnic membership in offices and institutions, and according to what criteria would this be done? Whether such a system of classification is based on ascription or self-identification in determining ethnic belonging, it is unclear how one should conceive of those defined as Roma, as long as one accepts the thesis that ethnic categorization is by no way an objective category – what is more, ascription as well as self-identification are largely determined by particular situations. Besides, in the present national context (wide-spread anti-Roma attitudes and deficiencies of data protection), the question whether the collection and maintenance of such data by institutions should be permitted poses a serious dilemma. Thus the reliability of this method is highly questionable, while it involves severe social risks.

Taking the fact that ethnic belonging is a horizontal principle in operative programs as a starting point, the consideration that impact assessments should include the access of programs by the Roma population is a legitimate prop-

osition. However, this does not necessarily presume the collection of ethnic data by governmental offices and implementing organizations. Besides, the realization of two, independent evaluations also seems to be more reasonable from a methodological point of view.

1) The inspection of the administrative requirements in proposed fields may be realized using data collected by organizations implementing the programs, in a unified system of reporting, by applying well-defined indicators.

2) However, it is more justified to employ researchers who are independent from the organizations implementing the programs in order to examine the enforcement of equal opportunities as a horizontal principle and the access of programs by, and their impacts on, the Roma population. In recent times, there have been a number of research studies that, independently of one another, attempted to describe the situation of Roma in Hungary. These projects, having significant merits themselves, used different methodologies and definitions of ethnicity in selecting their sample – yet, by making cross-references, they tried to draft a tendentious image of the transformation of the conditions of the Roma population. Thus a reliable and professionally sound impact assessment should be based on regularly repeated panel surveys using identical methods, definitions of Roma, and ways of selecting the sample.

The most fundamental issue, however, is represented by a dilemma beyond the scope of this article: the problem whether the current paradigm of employment politics can be maintained. Hungarian employment politics, at present, is based on state support, that is, it consists in forms of employment financed from the central budget that are barely connected with the competitive sector. At the same time, the interests of the unemployed (and society at large) would be served by enabling as many people as possible to find jobs useful in *generating values*. The potential use of employment policies in promoting this goal can be tackled here by setting forth a few ideas, not intended to be exhaustive, with the aim of initiating a debate.

1) The employment of people with a low educational level should be promoted even at the cost of granting significant exemptions from paying contributions and tax allowances to employers, since it is a well-known fact that the opportunities of people occupying this social stratum in finding legal and permanent employment are especially meagre. This solution would also be useful in "whitening" the massive illegal employment of people in such a situation.

2) The transition from supported employment (or social assistance) to the primary labour market should be made gradual. Countries that are successful in the field of employment policies have introduced support systems in which social assistance is gradually diminished as permanently unemployed beneficiaries become reintegrated into the labour market. This approach would be especially relevant in Hungary where, due to high rates and taxes, low-skilled

workers are hardly ever employed on a permanent basis. Few people are willing to give up the apparently stable social assistance for some insecure job.

3) The mobility of the workforce should be promoted. A significant proportion of the permanently unemployed live in settlements that are difficult and expensive to access by public transport. Employment policies could have an important role in resolving this problem, both regarding the reduction of costs, and the reorganization of transport.

4) The functions of enforcing agencies should be reconsidered as well. The key actors in this field are represented by employment organizations, including the National Employment Service and its employment centres at county and small regional levels. At present, these organizations operate much more like authorities (dealing with the registration of the unemployed and determining their eligibility for allowances, taking record of the needs of employers, granting and recording employment allowances) than like service providers offering individualized assistance to those in need. A feasible solution would be the separation of functions to those appropriate for authorities and others suitable for service providers, since the former obviously suppress the latter and also require the development of another kind of relationship with clients.

5) The provision of services to clients by employment organizations must be fundamentally changed. According to the interior statistics of the National Employment Service, an average of 5 to 8 minutes are warranted to clients, which is obviously insufficient for helping a client who has been out of work for a relatively long time to find a job: beyond registration, at best, he or she will be offered a few telephone numbers. However, all the involved actors know perfectly well that such a service is unsatisfactory. A client lacking fundamental abilities and expertise in finding a job needs personalized assistance. The reinforcement of service providing functions involves securing the physical proximity of services and clients. While centres are located in the centres of small regions, clients characteristically come from distant villages that are expensive and time consuming to access by means of public transport. At present, clients are expected to reach centres, instead of having the personnel of centres, driving a service car and equipped with a laptop, receive clients in certain hours at various settlements belonging to the centre.[20]

If employment policies managed to adopt these terms of procedure, probably a great number of permanently unemployed people – including many Roma – could be successfully reintegrated into the labour market; a lot more than in the strongly paternalistic practice that currently prevails.

20 We know of only one instance where this has been done: the employment centre of Komló operates a mobile office.

4. SEGREGATION OF PRIMARY SCHOOLS IN HUNGARY. A DESCRIPTIVE STUDY USING DATA FROM THE NATIONAL ASSESSMENT OF BASIC COMPETENCES OF 2006[1]

GÁBOR KERTESI AND GÁBOR KÉZDI

Introduction

This study looks at segregation in the Hungarian primary school system (primary schools in Hungary cover grades one through eight). Segregation is understood to be the separation of students of different family background between schools or, within each school, between classes. We focus on segregation by ethnicity (Roma versus non-Roma students) and social disadvantage (using two measures, one income-based and one based on parental education). We use data from the National Assessment of Basic Competences (OKM: Orszagos Kompetenciameres) of year 2006. The OKM is a yearly national assessment test that covers all schools, and within each school, all eight graders (as well as some other grades). Our main contribution is descriptive: our data covers all primary schools in Hungary, and thus we are able to provide a national description. While a few excellent studies analyzed school segregation in certain cities or regions, this is the first complete description in post-communist Hungary.

The next section introduces the data and the measurement methods. We turn to the descriptive analysis afterwards. We show statistics of segregation between schools and between classes within schools; in addition to national averages, we show regional differences and establish long-term trends. We also estimate reduced-form regressions to shed some light on the factors that may affect the level of segregation. Finally we compare our findings to those from the United States.

Data

We use data from an administrative dataset with national coverage, the National Assessment of Basic Competences (OKM) of 2006. This was the first of the Hungarian student assessments that covered entire cohorts of students. Besides the tests themselves, the data also includes supplementary information collected from school principals and from the students (and their families). We use data from those supplementary questionnaires to measure the background of students within schools and classes.

The OKM has tested students in standardized ways since 2001. Typically, two tests are administered to students of grades 6, 8, and 10; one in reading

comprehension and one in mathematics. Participation in the assessment is compulsory. The assessment is run by the National Education Office (Oktatasi Hivatal). Similarly to the widely known PISA tests, the OKM aims at measuring working knowledge ("competence") as opposed to textbook knowledge. Testing takes place in May; additional individual data is collected at the time of testing, while school-level data is collected in the preceding fall.

All education institutions with students between grades 1 and 12 participate in the assessment (with some exceptions; see later). Starting with the school year of 2005/6, all students in certain grades (4 and 8 in 2005/6) are covered. As well as the tests themselves the OKM collects school-level information from principals and student-level information from the families of the students. Students and their families fill out the family background questionnaire at home and hand those in to the school in sealed envelopes. The goal of the supplementary data is to assess the performance of schools and students conditional on various characteristics. The school-level questionnaire is filled out by the school principals. Some institutions have two or more units under different addresses that may be quite far from each other.[2] The information is collected not only at the level of the institution but also its units. We analyze unit-level information in this study as opposed to institution-level information because the possibility of physical contact between students is an important element in the measurement of segregation. From that point of view, different units of the same institution are *de facto* different schools. Throughout the entire study we use the word "school" to denote such a unit. We use both school-level and student-level data from the year 2006 assessment.

The school-level questionnaire includes the number of students by grade. Among many other questions, it asks the school principal to estimate the fraction of students in various categories, including ethnicity (Roma) and receipt of child support from the municipality (one of the official measures of social disadvantage). As a result we can estimate the number of students in each category. These fractions are asked for students in "primary school" and in "secondary school," separately. The Hungarian system is somewhat eclectic in the sense that while most primary schools cover grades 1 through 8 and most secondary schools cover grades 9 through 12, some secondary schools admit students in grade 7 and some as early as grade 5. 8th graders in secondary schools are considered as a strongly selected group of students with higher achievement levels and richer family. As a result, not all 8th graders are in primary schools. It is also true that not all primary schools cover all eight grades. In order to impose consistency on our estimates, we excluded all secondary schools from the analysis. This is likely to lead to a downward bias in measured segregation as the excluded secondary schools have very few Roma or disadvantaged students.

Our measures of between-class segregation within schools are based on student-level variables of 8th graders, from the family background question-

2 86 per cent of the primary schools in our final sample have one unit, 11.4 per cent have two units, 2 per cent three and less then one per cent more than three.

naire, aggregated up to the class level. Two variables are used: whether the student's family received child support from the municipality (the same indicator of social disadvantage that is used at the school level), and whether the student's mother has 0–8 grades of education. *Table 4.1* summarizes the definitions and data sources

Table 4.1: Data definitions and sources[a]

Level of segregation	Data definitions		
	Roma ethnicity	*Disadvantaged* (those who receive child support transfers "rendszeres gyermek-vedelmi tamogatas")	*Mother's education* (mothers with 0 to 8 grades of education)
Between-school separation school = unit with a single postal address (analysis restricted to towns and cities)	*source*: OKM school question-naire *questions*: According to your assessment, what is the percentage share of Roma students among primary school students? *respondent*: school principal or head of the unit *content of the variable*: the estimated fraction of Roma students among all primary school students	*source*: OKM school question-naire *questions*: According to your assessment, what is the percentage share of students who receive child support from the municipality ("rendszeres gyermekvedelmi tamogatas") among primary school students? *respondent*: school principal or head of the unit *content of the variable*: the estimated fraction of disadvantaged students among all primary school students	
Within-school (unit), between-class separation (analysis restricted to schools with at least two classes in grade 8)		*source*: OKM family background questionnaire *questions*: Does your family receive child support ("rendszeres gyermekvedelmi tamogatas") from the municipality? *respondent*: student together with family *content of the variable*: at the individual level: whether the student's family receives child support from municipality (binary variable); at the class level: the fraction of such students	*source*: OKM family background questionnaire *questions*: What is the highest level of educational attainment of your mother or step-mother? *respondent*: student together with family *content of the variable*: at the individual level: whether the student's mother has 0–8 grades of education (binary variable) at the class level: the fraction of such students

[a] OKM = National Assessment of Basic Competences of 2006 (referring to school year 2005/6).

Despite having the aim of national coverage, the actual coverage of the OKM is incomplete in several ways. The school-level data is missing from 60 schools. Students of "special educational needs" (SNI in Hungarian abbreviation) do not participate in the assessment and thus their family background informa-

101

tion is also missing. 20 of the 60 schools with completely missing data have SNI students only. Since Roma and disadvantaged students are significantly overrepresented in such schools, their omission is likely to lead to an underestimation of between-school segregation. Item non-response on the fraction of Roma and of disadvantaged students is small but non-negligible: it is around 7 per cent overall but well above 10 per cent in the big cities. Individual data is missing for students that were absent on the day of the assessments or did not hand in their family questionnaire. Some 90 per cent of all students in the target grades took the test, and around 85 per cent of them handed in the family background questionnaire. We conducted some simulations in order to see the effect of missing data on the segregation measures we use. The results of those simulations suggest that the average measures are likely to be slightly downward biased. However, the measures for individual towns or regions can be severely biased (likely downward). Therefore, our estimates should not be used at the town or regional level.

Quite naturally, segregation between schools is defined in regional units with at least two schools. Since only a handful of the villages satisfy this criterion, we dropped those and restricted the analysis to towns and cities. Similarly, segregation between classes of eight-graders within schools is defined in schools with at least two classes in grade eight. The next section introduces the measures of segregation we use.

Measurement

Following the literature (e.g. *Clotfelter*, 2004), we measure segregation with the help of the following three indices: exposure of majority students to the minority (E^T), exposure of minority students to the majority (E^K), and the standardized version of these indices, called here as the segregation index (S). In order to define and interpret these indices, let's work with the following notation (we consider between-school segregation in towns; segregation at other levels are measured in analogous ways).

N_{ji} is the number of students in town j in school i,

M_{ji} is the number of *minority* students in town j in school i,

N_j is the number of students in town j,

M_j is the number of *minority* students in town j,

p_{ji} is the fraction of the *minority* students among all students in town j in school i,

p_j is the fraction of the *minority* students among all students in town j,

$(1 - p_{ji})$ is the fraction of the *majority* students among all students in town j in school i,

$(1 - p_j)$ is the fraction of the *majority* students among all students in town j,

$(N_{ji} - M_{ji})/(N_j - M_j)$ the fraction of *majority* students in school i among all majority students in town j,

M_{ji}/M_j the fraction of *minority* students in school i among all minority students in town j,

Index E_j^T measures the exposure of an average (a randomly chosen) majority student in town j to the possibility of meeting minority students.[3] E_j^T is equal to the fraction of minority students in each school, averaged over schools, where the average is taken with weights that are equal to the share of majority students in the school in all majority students in the town. Formally:

$$E_j^T = \sum_{i=1}^{I} \frac{N_{ji} - M_{ji}}{N_j - M_j} p_{ji} \text{, so that } 0 \leq E_j^T \leq p_j.$$

The minimum value of the exposure index is zero: in such a case no contact is possible between minority and majority students within the schools because the schools are either all-majority (and so $p_{ji}=0$) or all-minority (when $N_{ji}-M_{ji}=0$). The maximum value of exposure is when the fraction of minority students in each school is equal to the fraction in the town: $p_{ji}=p_j$. In order for (E_j^K) to make sense, we need $0 < p_j < 1$, i.e. there must be both majority and minority students in town j.

The exposure of minority students to the majority (E_j^K) is analogous: it measures the exposure of an average (a randomly chosen) minority student in town j to the possibility of meeting majority students. E_j^K is equal to the fraction of majority students in each school averaged over schools, where the average is taken with weights that are equal to the share of minority students in the school in all minority students in the town. Formally:

$$E_j^K = \sum_{i=1}^{I} \frac{M_{ji}}{M_j}(1 - p_{ji}) \text{, so that } 0 \leq E_j^K \leq (1 - p_j).$$

The minimum value of this exposure index is zero, too and $E_j^K = 0$ exactly when $E_j^T = 0$. No contact is possible amount minority and majority students within the schools because the schools are either all-minority $(1-p_{ji}=0)$ or all-majority $(M_{ji}=0)$. The maximum value of minority exposure is when the fraction of majority students in each school is equal to the fraction in the town: $1-p_{ji}=1-p_j$, and this is achieved again exactly when E_j^T is at its maximum. The two indices are intimately related:

$$E_j^K = \frac{1 - p_j}{p_j} E_j^T.$$

Despite their intuitive content, the exposure indices are rarely used. The reason is that their value depends on the overall fraction of minority students, which poses a severe constraint on their use in comparing segregation across

3 "Minority" here is defined as minority at the national level (e.g. Roma or disadvantaged students). In a particular school (or even in a particular town) the national minority may be the majority.

103

time or geographic units. It is the segregation index that is intended to solve this problem. It is a normalized version of the exposure indices, and thus it retains their information content, albeit in a less intuitive way. The normalization amounts to comparing exposure to its attainable maximum; there is also a reversal of sign so that higher levels of the index indicate higher levels of segregation (less exposure). Intuitively, the segregation index shows the fraction of contact possibilities that are made impossible by segregation. Formally:

$$ S_j = \frac{p_j - E_j^T}{p_j} = \frac{(1 - p_j) - E_j^K}{1 - p_j}, \qquad 0 \leq S_j \leq 1. $$

The maximum value of the index is one: segregation is at its maximum when the exposure is zero. The minimum value is zero: it is attained at maximum exposure, when the fraction of minority students is the same in every school.

A key question in analyzing between-school segregation is within what geographical unit we choose for comparing its schools (i.e. what we choose for index j to denote). Educational policy can make the choice of comparison nontrivial even in the case of no school choice (i.e. when students from a neighbourhood have to go to a particular school). Municipalities with multiple schools may define admission districts in ways that can either increase or decrease between-school segregation.[4] School mergers or closures can also affect the level of segregation. Finally, small municipalities are free to form any coalition to manage a single common school. However, the most important problem behind the choice of the geographic unit in Hungary is the system of free school choice. In Hungary, students are free to apply to any school even at the primary level, and schools are free to admit students from anywhere after they have admitted all applicants from their own designated admission area. In principle, students can go to any school in the country. In practice, of course, commuting costs limit the set of attainable schools for each family.

The ideal geographic units of analysis are areas that are practically closed in terms of daily commuting to schools, i.e. areas in which (almost) all students that live there go to the schools that are within the area. Defining such areas is beyond the scope of this study. Instead we consider two alternatives: towns (and cities), and micro-regions. Towns and cities[5] are likely too narrow an alternative as a considerable amount of commuting is known to take place from neighbouring villages to schools in the towns or vice versa. Micro-regions[6] are likely too wide: they cover larger distances than most families are willing to travel for schooling. Using micro-regions for the analysis results in covering the entire country, including all villages as well as towns and cities. That is a clear advantage over restricting the analysis to towns and cities.

For segregation between classes within schools, the natural units of measurement are the schools themselves. We consider all schools with two or more

4 The vast majority of Hungarian primary schools are managed by municipalities. Larger municipalities manage more schools; the most important decisions (including admission numbers and jobs) are at the municipal level. The smallest municipalities (small villages) often jointly manage a single school.

5 193 towns or cities are considered in this study (174 towns, 18 county centres and Budapest). An additional 9 towns were dropped from the analysis: each has two schools but one or both of them provided no data for all the questions used here.

6 There are 168 micro-regions in the country; those are the NUTS4 regions in terms of European classification. They are defined by the Hungarian Statistical Office in such a way that much of the economic activity is supposed to take within the micro-regions (e.g. they are the closest definitions to local labour markets). Typical micro-regions include one town or city as the centre and the surrounding villages (18 of them on average).

classes in grade eight in the school year of 2005/6. There are 1,555 schools in the analysis.

Results: the extent of school segregation in Hungary, 2006

Average levels of segregation between and within schools in Hungary are presented in *Table 4.2*. Between-school indices are calculated for towns and cities, as well as for all micro-regions. Within-school indices are calculated for all schools with at least two classes in grade eight. National averages are calculated using the number of students as weights (in the micro-region, the town or city, or the school). Weighted averages can be interpreted as the segregation experienced by a randomly chosen student.

Table 4.2: Between-school segregation in towns/cities and micro-regions, and between-class segregation within schools. Average values of the segregation indices (weighted by the total number of students). Hungary, 2006

		Level of segregation		
		between schools		between classes within school[b]
Indices		within towns and cities[a]	within micro-regions	
Exposure index of the majority (E^T)	Roma students	0.07	0.10	–
	disadvantaged students	0.20	0.26	0.18
	uneducated mothers	–	–	0.15
Exposure index of the minority (E^K)	Roma students	0.71	0.67	–
	disadvantaged students	0.67	0.58	0.76
	uneducated mothers	–	–	0.71
Segregation index (S)	Roma students	0.21	0.23	–
	disadvantaged students	0.12	0.16	0.06
	uneducated mothers	–	–	0.07

[a] Budapest, 18 county centres and 174 other towns.
[b] 1,555 schools (school units with a unique postal address) with two or more classes in grade eight.
Source: National Assessment of Basic Competences (OKM), 2006.

The main conclusions are the following. Between-school segregation (measured by *S*) is significantly stronger than between-class segregation within schools. Between-school segregation (measured again by *S*) is stronger in the micro-regions than in the towns and cities. That is quite natural as micro-regions include all the villages, and thus school segregation, as measured here, includes inequality across those villages as well. On the other hand, the difference is relatively small. Perhaps the most interesting result is that ethnic segregation is significantly stronger than segregation by social disadvantage.

Tables 4.3 and *4.4* show the average of the segregation indices (S), disaggregated by towns/city type and by larger (NUTS2) regions.

Table 4.3: Average segregation indices (S) in cities, towns, and villages, 2006

	Between schools		Between classes within school	
	Roma students	Disadvantaged students	Disadvantaged students	Uneducated mothers
Budapest	0.28	0.14	0.06	0.07
County centres	0.23	0.15	0.05	0.06
Other towns	0.17	0.10	0.06	0.08
Villages	–	–	0.04	0.06

Source: National Assessment of Basic Competences (OKM), 2006.

Between-school segregation is stronger the larger the town. This is true both for segregation by ethnicity and social disadvantage. Similarly to the national average, ethnic segregation is significantly stronger than segregation by social disadvantage in all categories. In Budapest, the difference is twofold. No pattern is found for between-class segregation within schools.

Table 4.4: Average segregation indices (S) in the large regions of Hungary, 2006

	Between schools				Between classes	
	within towns and cities		within micro-regions		within schools	
	Roma students	Disadvantaged students	Roma students	Disadvantaged students	Disadvantaged students	Uneducated mothers
Central Hungary	0.22	0.12	0.23	0.13	0.05	0.07
Central Transdanubia	0.13	0.09	0.15	0.13	0.05	0.07
Western Transdanubia	0.17	0.10	0.19	0.12	0.05	0.05
Southern Transdanubia	0.22	0.13	0.24	0.20	0.05	0.07
Northern Hungary	0.28	0.19	0.30	0.25	0.06	0.08
Northern Plains	0.21	0.11	0.26	0.18	0.06	0.08
Southern Plains	0.19	0.12	0.20	0.14	0.05	0.06

Source: National Assessment of Basic Competences (OKM), 2006.

Regional differences in between-school segregation are significant. Segregation is strongest in Southern Transdanubia (South-West), Northern Hungary (North-East) and Northern Plains (East). These are the areas with the largest fraction of Roma and disadvantaged families. Similarly to what we found before, within-school segregation shows no similar patterns.

Segregation in towns and cities is of special interest. First, most have many schools[7] within short distances, providing opportunities for different social groups to mix – or separate from each other. Secondly, they are subject to a single educational policy determined at the city halls. As a result, segregation is a result of different policies as well as residential patterns. *Figures 4.1* and *4.2* show the 193 towns and cities in our analysis on the map of Hungary, indicating the strength of school segregation by ethnicity and social disadvantage respectively.

7 Budapest has 297 schools (units with a unique postal address). The average number of schools in county centres is 20 (standard deviation is 10, minimum is 8, maximum is 37); the average in other towns is 5 (standard deviation is 3, minimum is 2, maximum is 14).

Figure 4.1: Roma – non-Roma segregation between schools
in the towns and cities of Hungary,[a] 2006

Between-school segregation index,
2006.
- < 0.05   (70)
- 0.05 - 0.10   (24)
- 0.10 - 0.20   (44)
- 0.20 - 0.30   (20)
- 0.30 <   (35)
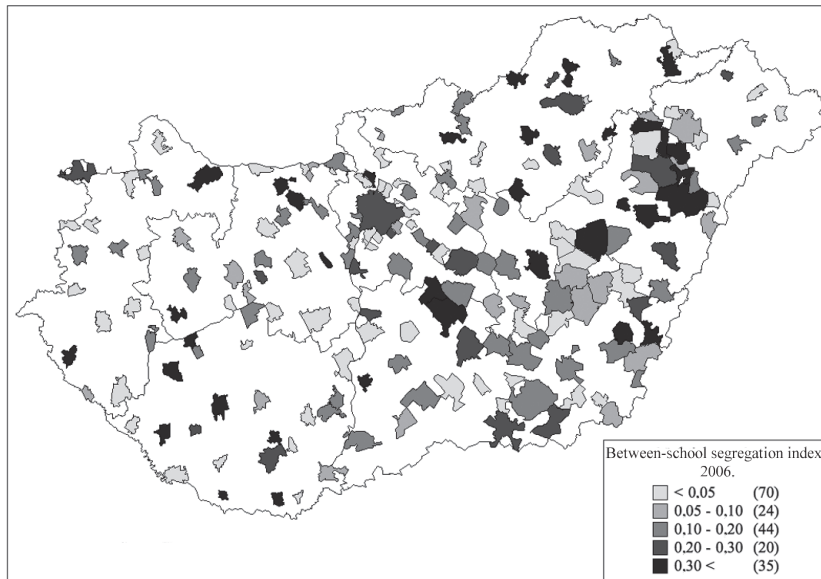
Figure 4.2: Disadvantaged – non-disadvantaged segregation between schools
in the towns and cities of Hungary,[a] 2006

Between-school segregation index,
2006.
- < 0.05   (83)
- 0.05 - 0.10   (40)
- 0.10 - 0.20   (46)
- 0.20 - 0.30   (12)
- 0.30 <   (13)
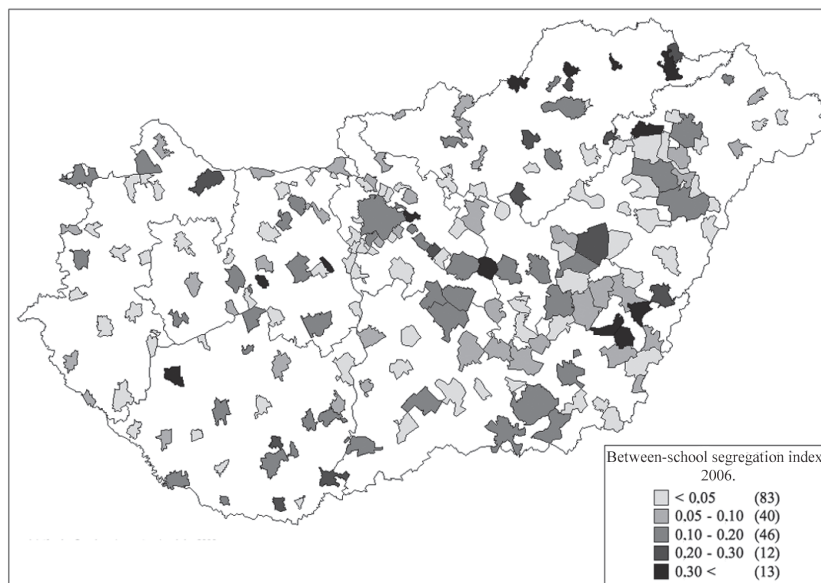
[a] Of the 202 towns and cities, 9 are excluded due to missing data. These towns and all villages are left blank.

Source: National Assessment of Basic Competences (OKM), 2006. Maps by Pannon Elemző Iroda.

107

Individual data on the maps are rough approximations. As we noted above, our results are likely to be accurate on average, but they can be very inaccurate at the level of individual towns and cities, due to missing data and other data problems.

The maps show stronger segregation in the Eastern regions of Hungary, both in terms of ethnicity and social disadvantage. At the same time, there is substantial heterogeneity within regions as well: even neighbouring cities can show very different levels of segregation. Besides potential measurement error, city-level educational policies may be responsible for those differences.

Table 4.5: Towns and cities where ethnic segregation is the strongest (S>0.3) or virtually zero (S<0.05), by the major regions of Hungary, 2006

| | Ethnic segregation between schools. Segregation index (S) | |
Region	S>0.3[a]	S<0.05
Central Hungary	1	15
Central Transdanubia	4	10
Western Transdanubia	2	9
Southern Transdanubia	7	8
Northern Hungary	8	5
Northern Plains	8	12
Southern Plains	5	11
All	35	70

[a] Mean is 0.46, standard deviation is 0.12, minimum is 0.31, maximum is 0.80.
Source: National Assessment of Basic Competences (OKM), 2006.

Table 4.5 shows the number of towns and cities with strong ethnic segregation, with S>0.3 (there is 35 of them) and negligible segregation with S<0.05 (there are 70 of them). Two thirds of the towns or cities in the strongest group are in the North-East, North or South-West regions of Hungary where the fraction of the Roma population is highest. At the same time, there are 25 towns in the same regions with virtually zero segregation. This strengthens the assumption that local policies have a significant role in shaping segregation outcomes.

Figures 4.3 and *4.4* show the estimates of between-school segregation by ethnicity and social disadvantage for the micro-regions of Hungary. Since micro-regions are larger than towns or cities (they include the surrounding villages as well), measures of segregation are likely to be more accurate at their level.

The patterns are similar to those on *Figures 4.1* and *4.2*. Ethnic segregation is the strongest in North-East Hungary, ethnic segregation is stronger than segregation by social disadvantage, and there is substantial heterogeneity within regions as well.

Figure 4.3: Roma – non-Roma segregation between schools
in the micro-regions of Hungary,[a] 2006
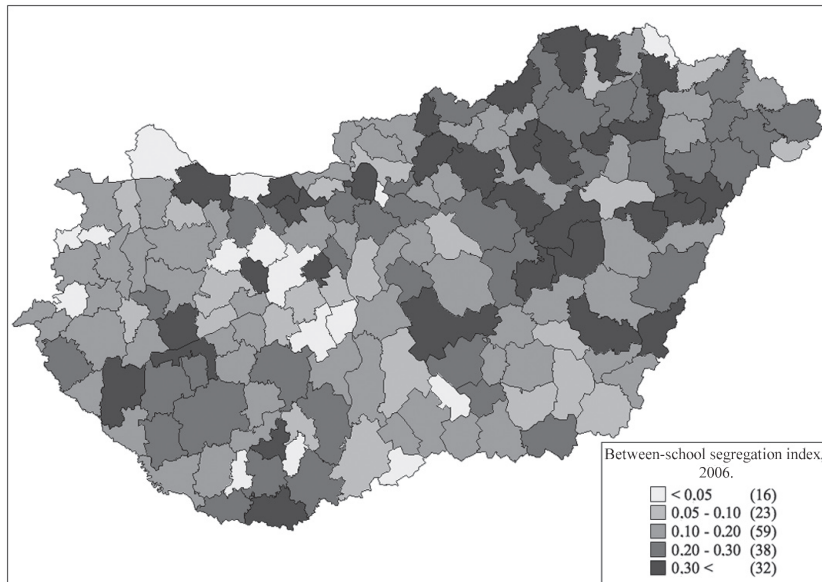
Figure 4.4: Disadvantaged – non-disadvantaged segregation
between schools in the micro-regions of Hungary,[a] 2006
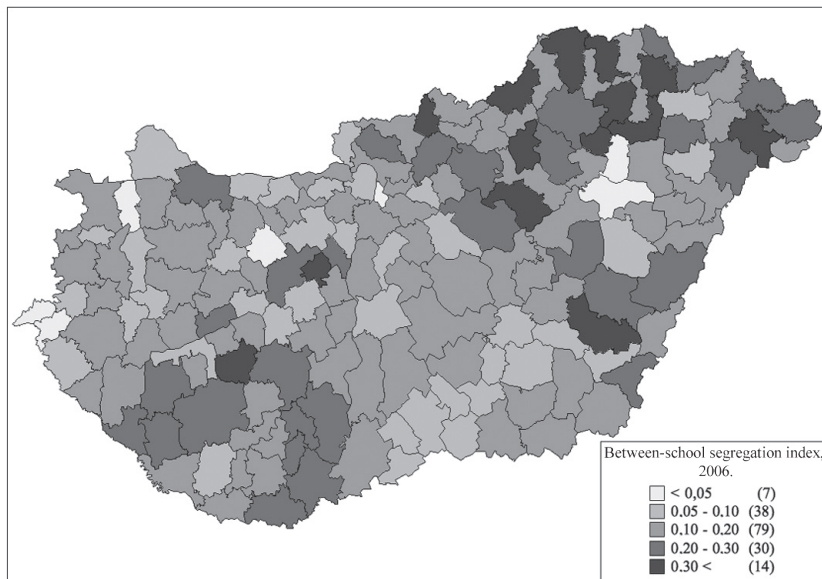
Source: National Assessment of Basic Competences (OKM), 2006. Maps by Pannon
Elemző Iroda.

Determinants of segregation: some correlations

The results of *Table 4.3* (segregation is stronger in larger cities) suggest that more schools or more students in a town may induce more segregation. More schools can, in principle, lead to both weaker and stronger segregation. Education policy may make use of the larger supply of schools to induce more mixing among students than that which residential segregation could allow (an example is school busing in some districts of the United States). Free school choice, on the other hand, is likely to lead to stronger segregation when more schools are available. Students of disadvantaged minorities are less likely to commute to distance schools, because of informational disadvantages, the larger burden of commuting costs on the family budget, or because of fear of the unknown. *Table 4.6* shows the fraction of students who go to a school that is not the closest one to their home, by town type as well as the educational attainment of the mother.

Table 4.6: The fraction (per cent) of students who go to a more distant school in grade 8, by the educational attainment of the mother and the type of the village/town/city

Education of the mother	Residence of the student				All
	Budapest	county centre	other town	village	
0–8 grades	35	37	16	12	17
Vocational training	39	39	19	15	22
Secondary school	48	46	24	22	31
College	57	59	30	31	42
All	48	47	22	18	27

Source: National Assessment of Basic Competences (OKM), 2006.
The figure excludes eight graders of secondary schools.

The table shows a substantial and fairly monotonic increase in the fraction of commuters with the increase of the mother's education and the size of the town/city. While only 12 per cent of the children of the least educated mothers in the villages commute to a more distant school, the same fraction for the most educated mothers is 31 per cent in the villages and 57 per cent in Budapest.

Figure 4.5 shows the relationship between the (log) number of schools and the fraction of students in the schools of the geographic unit (town, city, or micro-region) who commute from outside the given school's admission area. The figure shows results from two nonparametric regressions, one taken over all towns and cities, the other one taken over all micro-regions (Budapest is excluded from both).

Note that while *Table 4.6* shows the probability of commuting by the location of the residence of the student, *Figure 4.5* shows the same probability by the location of the school. While the first approach is more intuitive from the

viewpoint of family choices, the second one is more relevant for school segregation. Since virtually all commuting takes place within the boundaries of micro-regions, the question there is empirically irrelevant. At the same time, it is likely very relevant for towns and cities, as a substantial part of commuting from villages aims at schools in towns and cities, but a lot less the other way round. As we see, however, the qualitative results are very similar. The results of figure 4.5 show a strong positive correlation between the number of available schools and the fraction of students who commute. The relationship is strong and monotonically positive both among towns and cities, and among micro-regions. Moreover, there is no sign of diminishing effects: if anything, the relationship seems to be convex among micro-regions.

Figure 4.5: The number of schools and the fraction of students who commute
from outside the school's admission area
(nonparametric regressions, Budapest excluded)

a) Within towns and cities   b) Within micro-regions
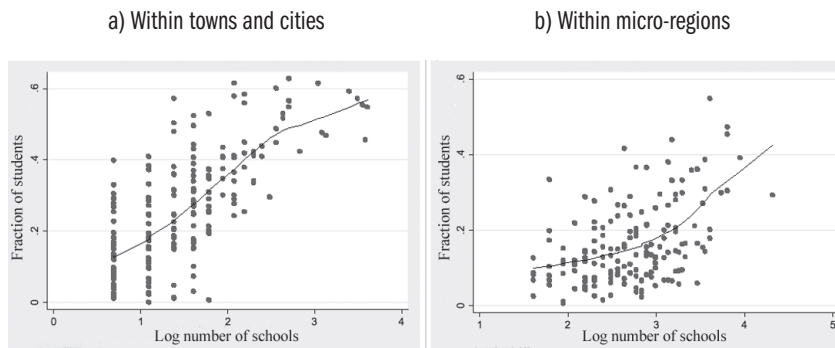
Besides the number of available schools, segregation is likely to be correlated with the size of schools as well as other characteristics of the local "educational markets." The smaller the schools on average, or the larger the size inequality across schools, the larger the number of small schools. Since it is easier for minority students to form dominant clusters in small schools than in large ones, the number of small schools is likely positively correlated with between-school segregation (this is seen most easily from the viewpoint of the exposure of minority students to the majority). The fraction of minorities within the geographic unit may also influence the level of between-school segregation. In principle, the relationship may be positive as well as negative: a larger fraction of minorities may make majority families more hostile or more tolerant, leading to greater or lesser demand for segregation, respectively, on their part. Recall that our previous results suggest stronger ethnic segregation in regions characterized by larger fractions of Roma inhabitants. Therefore we expect that the relationship is positive: a larger fraction of minority students in the geographic unit is associated with stronger between-school segregation.

111

We estimate linear regressions in order to check the statistical significance and the magnitudes of those associations. *Table 4.7* shows the summary statistics of the variables of the regressions. *Table 4.8* shows the regression estimates with the ethnic segregation (S_{roma}) as the dependent variable. *Table 4.9* shows the estimates with the segregation of disadvantaged students (S_{dis}) as the dependent variable. For each dependent variable, we estimated two basic specifications. In one specification the right-hand side variables include the (log) number of schools, the average school size, and the (log) standard deviation of school size. The alternative specification does not include those three variables. Instead, it includes the fraction of students who commute from outside the school's admission area. Having all four on the right-hand side results in strong multicollinearity and makes partial correlations impossible to estimate with appropriate precision. All regressions include the fraction of Roma students and the fraction of disadvantaged students. In some of the regressions the control variables include binary variables for Budapest and the major regions of Hungary.

Table 4.7: Summary statistics of variables used in the regressions

Variables	Observations	Mean	Standard deviation	Minimum	Maximum
Towns/cities					
S_{roma}	192	0.21	0.14	0.00	0.80
S_{dis}	192	0.12	0.08	0.00	0.56
$\log I$	192	2.92	1.62	0.69	5.69
N/I (in 100s)	192	3.36	0.72	0.71	7.67
Standard deviation of $\log N$	192	0.74	0.29	0.04	2.77
Percent of commuters	192	0.42	0.16	0.00	0.63
p_{roma}	192	0.10	0.08	0.00	0.52
p_{dis}	192	0.23	0.14	0.05	0.77
Micro-regions					
S_{roma}	168	0.23	0.11	0.00	0.57
S_{dis}	168	0.16	0.07	0.00	0.43
$\log I$	168	3.40	1.02	1.61	5.69
N/I (100 persons)	168	2.53	0.67	0.68	3.95
Standard deviation of $\log N$	168	0.82	0.18	0.38	1.55
Percent of commuters	168	0.26	0.16	0.00	0.55
p_{roma}	168	0.14	0.11	0.00	0.54
p_{dis}	168	0.32	0.17	0.09	0.82

S_{roma} = Segregation index of Roma versus non-Roma students, S_{dis} = Segregation index of disadvantaged versus non-disadvantaged students, I = number of schools, N/I = average number of students, Standard deviation of $\log N$ = standard deviation of the number of students in the schools. p_{roma}, p_{dis} = the overall fraction of Roma and disadvantaged students, respectively, in the geographic unit.

Table 4.8: Between-school segregation of Roma and non-Roma students. Regression results

Variables[a]	Towns and cities				Micro-regions			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
log$I$	0.042		0.070		0,035		0,040	
	(5.74)**		(3.86)**		(3,94)**		(2,03)*	
N/I (in 100s)	0.002		–0.008		0,019		0,007	
	(0.14)		(0.69)		(1,27)		(0,41)	
Std.Dev. of log$N$	0.049		0.044		0,035		0,016	
	(1.59)		(1.52)		(0,78)		(0,32)	
Percent of commuters		0.375		0.266		0,347		0,278
		(4.60)**		(2.92)**		(6,92)**		(2,85)**
Fraction of Roma (%)	0.551	0.670	0.563	0.585	0,425	0,459	0,382	0,393
	(3.79)**	(4.50)**	(4.03)**	(3.98)**	(3,79)**	(4,46)**	(2,91)**	(3,11)**
Fraction of disadvantaged (%)	0.105	0.076	0.023	0.012	–0,010	0,059	–0,187	–0,070
	(1.03)	(0.70)	(0.21)	(0.10)	(0,12)	(0,73)	(1,75)+	(0,67)
Budapest and region dummies	No	No	Yes	Yes	No	No	Yes	Yes
Observations	193	192	193	192	168	168	168	168
R^2	0.26	0.19	0.32	0.26	0,20	0,24	0,26	0,27

[a] See the notes of table 4.7 for the content of the variables.
Weighted least squares regressions; standard error estimates are robust to heteroskedasticity. [+] significant at 10 per cent, [*] 5 per cent, [**] 1 per cent.
Source: National Assessment of Basic Competences (OKM), 2006.

Table 4.9: Between-school segregation of disadvantaged and non-disadvantaged students. Regression results

Variables[a]	Towns and cities				Micro-regions			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
log$I$	0.018		0.045		0,012		0,042	
	(3.08)**		(5.30)**		(1,40)		(4,68)**	
N/I (in 100s)	0.002		–0.007		–0,009		–0,026	
	(0.29)		(0.81)		(0,93)		(2,88)**	
Std.Dev. of log$N$	0.009		0.002		0,029		–0,003	
	(0.55)		(0.13)		(1,03)		(0,13)	
Percent of commuters		0.229		0,192		0,078		0,066
		(5.81)**		(3,97)**		(1,57)		(1,22)
Fraction of Roma (%)	0.400	0.448	0.366	0,374	0,467	0,498	0,432	0,439
	(3.45)**	(4.06)**	(3.42)**	(3,28)**	(6,69)**	(7,22)**	(5,32)**	(5,18)**
Fraction of disadvantaged (%)	0.000	0.033	–0.027	–0,012	–0,078	–0,062	–0,227	–0,176
	(0.00)	(0.66)	(0.47)	(0,18)	(1,63)	(1,28)	(3,80)**	(2,59)*
Budapest and region dummies	No	No	Yes	Yes	No	No	Yes	Yes
Observations	192	191	192	191	168	168	168	168
R^2	0.23	0.28	0.38	0,32	0,35	0,34	0,51	0,44

[a] See the notes of Table 4.7 for the content of the variables.
Weighted least squares regressions; standard error estimates are robust to heteroskedasticity. [+] significant at 10 per cent, [*] 5 per cent, [**] 1 per cent.
Source: National Assessment of Basic Competences (OKM), 2006.

The results are qualitatively similar for segregation by ethnicity and social disadvantage, but the magnitudes are substantially larger when ethnic segregation is the dependent variable (*Table 4.8*). Controlling for regional dummies does not lead to systematic and significant changes in the other coefficients.

The number of available schools is positively associated with segregation in all specifications. A ten per cent increase in the number of available schools is associated with an increase of 0.4 to 0.7 percentage points in the segregation index by ethnicity and 0.1 to 0.4 percentage points in the segregation index by social disadvantage. Average school size does not seem to be related to the level segregation (holding other right-hand side variables constant). The standard deviation of (log) school size is positively related to ethnic segregation in the sample but the relationship is statistically insignificant; it is also practically zero in the sample for the segregation of disadvantaged students. The percentage of commuting (out-of admission area) students is strongly associated with segregation. One percentage point increase in the fraction of such students at the schools is associated with stronger segregation by ethnicity, by 0.3 to 0.4 percentage points. The association with segregation by disadvantage is weaker, to the extent that it becomes statistically insignificant in the micro-regions.

The strongest and perhaps most interesting relationship is with the ethnic and social composition of the geographic units. Ethnic segregation is strongly associated with the fraction of Roma students in the area. A one per cent higher fraction of Roma students in towns or cities corresponds to half a per cent higher segregation. Comparing two towns, one with the fraction of Roma students at 5 per cent and the other one at 15 per cent (the 25th percentile and the 75th percentile, respectively, with the difference being equal to the standard deviation), the second town is expected to have 6 percentage points higher segregation index, which is almost half of its standard deviation. The same association is 0.4 when the unit in comparison is the micro-region, a similarly strong relationship. The magnitude of this coefficient is virtually the same in all four specifications of the rest of the right-hand side variables.

The fraction of disadvantaged students does not seem to be related to ethnic segregation (once the fraction of Roma students is controlled for). Perhaps even more interestingly, the fraction of disadvantaged students is not related to the segregation of disadvantaged students either, once ethnic composition is controlled for. It is again the fraction of Roma students that is strongly associated with the level of segregation, by a magnitude comparable to its relationship with ethnic segregation. While the two fractions are strongly correlated (by a coefficient of 0.51 across towns and 0.74 across micro-regions), it is ethnicity that contains the more important information for both segregation indices. While we refrain from drawing strong conclusions from these reduced-form regressions, we have some ideas that may rationalize this difference. The meas-
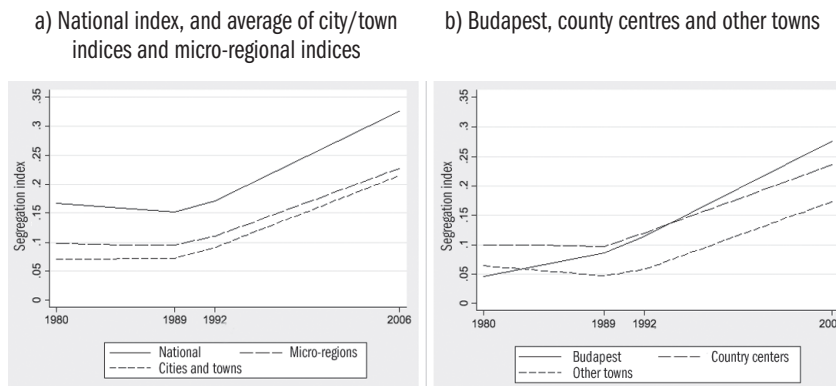
ure of social disadvantage is likely noisier than the measure of ethnicity in our data, and the extra measurement error may in part be responsible for our findings. Note however that social disadvantage is harder to infer than ethnicity for most decision makers themselves. As a result, it is possible that ethnicity is the more important signal and the more important basis for separation. The thorough analysis of the question is beyond the scope of this analysis.

Trends in ethnic segregation between primary schools, 1980–2006

The Hungarian Ministry of Education has collected data on all schools for decades. Its current data collection system is called KIR-STAT. Up to 1992, the data included the number of Roma students in each school (by grade). Since the practice of collecting such data involved marking each Roma student in the school registry, the collection of this data was abolished after 1992 as unconstitutional. Since no alternative measure was collected until 2006, the time trends of ethnic segregation can be analyzed with a jump between 1992 and 2006.[8]

Figure 4.6 shows national averages of the ethnic segregation index between Hungarian primary schools in years 1980, 1989, 1992 and 2006. Part a) shows the average across towns/cities[9] and across micro-regions (all appropriately weighted), as well as a single national index which treats the entire country as the geographical unit for school segregation.

Figure 4.6: Ethnic segregation between Hungarian primary schools, 1980 to 2006. The time series of the average segregation indices (S_j) defined over various geographic units

a) National index, and average of city/town indices and micro-regional indices

b) Budapest, county centres and other towns

Naturally, the national index includes all regional inequalities in residential patterns. Its inclusion serves a benchmark purpose: trends in segregation within towns/cities or micro-regions can be compared to the trend in the national index in order to assess the magnitude of increased regional inequalities. Part b) shows the segregation index for Budapest, and the average index of county centres (bigger cities) and other towns.

8 In and before 1992 the data was not collected separately for units with separate postal addresses. However, most such units that belong to the same legal school in 2006 had been separate schools before the mid-1990s. As a result, school-level segregation in and before 1992 is comparable to the unit-level segregation in 2006 without substantial bias.

9 Towns and cities were defined using the 1992 definitions.

115

According to the figures, ethnic segregation was somewhat constant between 1980 and 1989, with the notable exception of Budapest which saw a significant rise. Starting in 1989, though, ethnic segregation between Hungarian schools increased substantially. For most geographic units, the rate of increase between 1989 and 1992 was similar to the rate after 1992. The index of ethnic segregation between primary schools increased from 0.07 in cities and towns to 0.21 by 2006, a threefold increase. In micro-regions the 1989 level was 0.10 to increase to 0.23 by 2006. The national index rose more than the average index of cities/towns or micro-regions, indicating an increase in residential inequality. Panel b) shows that the trends in bigger cities and smaller towns are similar, but Budapest saw a steeper increase. The index of ethnic segregation in Budapest increased from 0.05 in 1989 to 0.09 by 1989 and further to 0.27 by 2006.

Our data cannot indicate the timing of the large increase within the 1992 to 2006 interval, but large increases in all likelihood took place at an early stage. The Education Act of 1993 codified the right to free school choice (financed by the state), by then a widespread practice in Budapest and other cities. Free school choice most likely lead to large gradual increases in segregation (as it affected newer cohorts more than those already in school). However, the trends of ethnic segregation coincide with the trends of the fraction of Roma students in primary schools. *Figure 4.7* shows the trends in the fraction of Roma students nationally (it is also the weighted average of micro-regional fractions), within cities/towns, and, in panel b) separately for Budapest, the county centres and other towns.

Figure 4.7: The fraction of Roma students in the primary schools of Hungary, 1980–2006

a) National fraction and average fraction in cities and towns

b) Budapest, county centres and other towns
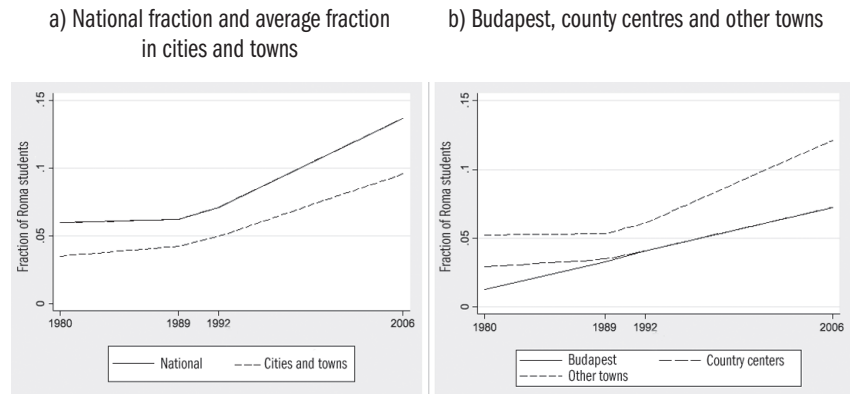
Recall that we documented a strong cross-sectional correlation between the fraction of Roma students in a geographic unit and the level of ethnic segregation there. A similar correlation is seen between the time trends on *Figure 4.7*.

Comparing Hungarian results with school segregation in the United States

Whether school segregation in Hungary is small or large is perhaps best assessed through international comparison. Extensive international comparisons are beyond the scope of this paper. Instead we compare our results to those from the United States. The American figures were calculated by Charles T. Clotfelter for 331 metropolitan areas (*Clotfelter,* 1999). Clotfelter uses the segregation index (S), and he considers segregation of non-whites and whites. In addition to comparing the level of segregation, we also look at how segregation varies with various city characteristics in Hungary and the U.S. When comparing school segregation in these two countries, one has to keep in mind that while Hungary is characterized by free school choice, the U.S. is not. At the same time, residential mobility is significantly higher in the U.S.

Clotfelter's analysis is restricted to public (state) schools, omitting private schools. Such an omission is likely to lead to a downward bias in measured segregation, similarly to the effect of our omission of secondary schools that have students in the relevant grades. The American Metropolitan Areas are substantially larger than the Hungarian towns and cities. While Budapest would be in the upper third of the size distribution of the American cities considered here, the next largest Hungarian city would be in the bottom third.[10] As we have seen above, the size of the city is in all likelihood strongly associated with the level of segregation so that the large asymmetry limits comparisons. We compare the level of segregation of Budapest with the large metropolitan areas, but we use all the Hungarian towns and cities when we estimate the relationship of segregation and city characteristics.

Ethnic segregation between primary schools in Budapest is characterized by the segregation index of 0.28. This level is comparable to the segregation of white and non-white students in the following American metropolitan areas: San Diego (0.28), Phoenix (0.31) or Los Angeles (0.33). These are not among the most segregated American cities: the segregation index in New York City is 0.45, in Chicago 0.57, and the most segregated metropolitan area is that of Detroit (0.71, se *Clotfelter*, 1999, p. 494). In sum, the largest metropolitan areas in the U.S. are characterized by stronger segregation than Budapest, but a few of them have comparable levels.

In addition to their size, American metropolitan areas are different from Hungarian towns and cities in a number of other dimensions. Regressions can help in analyzing the segregation differences between the two countries after controlling for some of those characteristics, and they can shed light on whether the correlations are similar. *Table 4.10* replicates the results of the regression of *Clotfelter* (1999) on the 331 metropolitan areas in the U.S. For comparison, we estimated the same specification on all Hungarian towns and

10 The distribution of the American metropolitan areas, in terms of enrolled students, is the following. 183 have less than 50 thousand students, 91 between 50 and 100 thousand, 39 between 150 and 350 thousand, and 18 more than this (*Clotfelter*, 1999, p. 393). The corresponding distribution of the Hungarian towns and cities: 78 less than one thousand, 68 between 1 and 2 thousand, 33 between 2 and 5 thousand, 9 between 10 and 20 thousand, and one above 20 thousand (Budapest with 96 thousand students).

cities (as well as without the very small towns). The dependent variable of the Hungarian regressions is the ethnic segregation index (Roma versus non-Roma students). The dependent variable in the U.S. regression is the index of segregation of whites and non-whites. The right-hand side variables include the (log) size of the geographic unit in terms of students, the (log of the) average size of schools (of school districts in the U.S.), and the fraction of Roma students in Hungary and fraction of Hispanic and other non-white students.

Table 4.10: The association between school segregation and characteristics of the local schooling markets. Regression results for Hungarian towns and cities and American metropolitan areas

Right-hand side variable	Hungary, 2006		United States, 1994
	Towns and cities	Towns and cities with 1000 students or more	Metropolitan areas
	segregation of Roma and non-Roma students		segregation of non-white and white students
Log of number of students	0,056 (6,02)**	0,045 (4,79)**	0,074 (11,3)*
Log of average school size	–0,057 (1,79)	–0,055 (1,16)	–
Log of average size of school district	–	–	–0,041 (5,3)*
Per cent of Roma students	0,483 (3,95)**	0,749 (4,23)**	–
Per cent of African American students	–	–	0,667 (10,6)*
Per cent of Hispanic students	–	–	0,089 (2,1)*
Per cent of other non-white students	–	–	–0,280 (1,6)
Constant	0,011 (0,06)	0,078 (0,29)	–0,259 (3,4)*
Observations	193	115	331
R^2	0,24	0,33	0,59

Notes: Additional control variables are regional dummies (seven NUTS-2 regions in Hungary, six census regions in the U.S.). All regressions are weighted by the square root of the number of students.

Heteroskedasticity-robust t-values in parentheses. * significant at 5 per cent, ** 1 per cent.

Sources. Hungary: National Assessment of Basic Competences (OKM), 2006. U.S.: *Clotfelter* (1999) p. 501.

The coefficients on the number of students in the area show the relationship between segregation and the size of the local schooling market. The estimated coefficients are comparable and quite precisely estimated. Areas that are

ten per cent larger tend to be about half a percentage point more segregated both in Hungary and the U.S. Average school size is weakly negatively associated with segregation, and while the coefficients are again comparable in magnitude, the relationship is statistically significant in the U.S. only. Areas where schools are ten per cent larger on average tend to be half a percentage point less segregated.

Perhaps most interestingly, the association between the fraction of the most disadvantaged minorities (the Roma in Hungary and African Americans in the U.S.) is strongly positively associated with school segregation in both countries, and the magnitudes are again very similar. Areas where the fraction of the minority is one per cent larger tend to be half a per cent more segregated both in Hungary and the U.S. The relationship in Hungary seems weaker than in the U.S. when all towns and cities are considered, but it is stronger when the smallest towns are dropped from the sample. Finally, the constant in the Hungarian regressions is larger (insignificant positive) than in the U.S. (significant negative). While the magnitudes are meaningless themselves (segregation with zero per cent minorities and practically zero students), their comparison reveals that holding other things constant, school segregation in Hungarian cities is stronger than in the U.S. According to this result, it is the differences in those other elements (size of the schooling markets and size of minorities) that make school segregation stronger in U.S. metropolitan areas.

5. MEASURING DISCRIMINATION: QUESTIONNAIRES AND TESTS

ENDRE SIK & BORI SIMONOVITS

Introduction

In the broadest sense of the word, discrimination is defined as a process leading to a group of people suffering disadvantages for unjustifiable reasons. In countries where there are laws against it, discrimination can be simply defined as an infringement of these laws.

In Hungary, discrimination is likely to be everyday practice despite the facts that since the adoption of the directives of the European Union accompanying the country's accession, the regulations – especially the law of equal treatment and promotion of equality of opportunity in effect as of January 2004[1] – have guaranteed equal rights for minorities, and that since the Equal Treatment Commission (ETC) was set up in February 2005, the victims of discrimination may turn not only to civic organisations but also to government institutions for justice and compensation.

This paper surveys the available research evidence on negative discrimination experienced in the labour market in Hungary. The aim of the study is to establish the extent of labour market discrimination or, more precisely, to estimate its extent relying on the results of various approaches using distinct methodologies.

Methods

Since the extent of labour market discrimination cannot be characterised by a single figure and there is not even an all-encompassing method that could provide a reliable estimate of the extent of discrimination,[2] our analysis makes use of the results of several studies relying on different methods.

The first method assesses the perception of discrimination. The most important drawback of this approach is that perceptions are determined by three inseparable factors (the probability of discrimination, the sensitivity of the society and the political and legal institutional environment).

The second technique assesses the likelihood of falling victim to discrimination by surveying either the population of potential targets or a representative population sample. The downside of this approach is that the possibility of under- or overestimating the extent of discrimination based on the responses cannot be excluded. It may be underestimated if respondents are inclined to

1 See Chapter 2 of In Focus on Act CXXV of 2003 on equal treatment and the promotion of equality of opportunity effective as of January 2004.

2 A further complication is that labour market discrimination tends to follow from (and at the same time precondition) educational and residential discrimination, the assessment of which is beyond the scope of labour market research.

bury their grievances, and it may be overestimated if they cannot forget old injustices and are keen to bring them up.

The third approach relies on the controlled experimental method of discrimination testing, which poses the problem that the generalisation of the results of even the most carefully designed tests is not a straightforward matter.

Perceptions of labour market discrimination

In a survey of vulnerable groups – the Roma population of Hungary in our case – 90 per cent of respondents perceived major discrimination on the grounds of their ethnic origins, which is the second highest value (topped only by the North African population of Italy) among the 45 minorities – on average two in each of the EU-27 countries – participating in the survey (*EU-MIDIS,* 2009*a*). This markedly high value cannot be directly compared to other indicators of labour market discrimination since the answers by respondents sensitive to discrimination apply to general experiences of discrimination in the various areas of everyday life and are not restricted to labour market perceptions.[3]

Looking at the total population, as the presumed reason for discrimination when looking for paid work[4] Hungarians were more likely than the EU average to mention skin colour (65 per cent versus 42 per cent: +23 per cent), age (67 per cent: +22 per cent), gender (29 per cent: +7 per cent), a disability (50 per cent: +9 per cent) and smoking (25 per cent: +7 per cent) (*Discrimination in the European Union,* 2008). The criteria mentioned with less than average frequency were the name of the candidate, accent, religion and appearance (such as height and weight). These figures give a direct indication of the perceived extent of labour market discrimination, but they have limited coverage as they apply to only one specific point in the labour market process. The results suggest that skin colour and age may play a major role in labour market discrimination since age-based discrimination is more likely to be perceived in Hungary than in any other country of the European Union (*Sik and Simonovits,* 2008).

Labour market discrimination experiences

Perceived discrimination experiences among vulnerable groups were examined by the EU MIDIS project. In each country, the groups most likely to fall victim to discrimination were selected on the basis of expert analysis. In seven of the countries, including Hungary, the survey looked into the evolution of the perceived discrimination experiences of the Roma minority over the past 12 months (*EU-MIDIS,* 2009*b*). When looking for paid work, one in three Hungarian Roma felt that they were discriminated against, which is the highest probability (shared with the Czech Roma) among the countries surveyed (see *Figure 5.1*).

3 In the summer of 2008 discriminative behaviour was assessed in nine situations (buying or renting property, health care, services, loan applications, purchases, schools, hospitality services, labour hiring and workplace) based on a sample of five hundred respondents in Budapest and Miskolc.

4 The question was: When a company wants to hire someone and has the choice between two candidates with equal skills and qualifications, which of the following criteria may, in your opinion, put one candidate at a disadvantage?

121

Figure 5.1: Percentage of Roma perceiving discrimination when looking for paid work
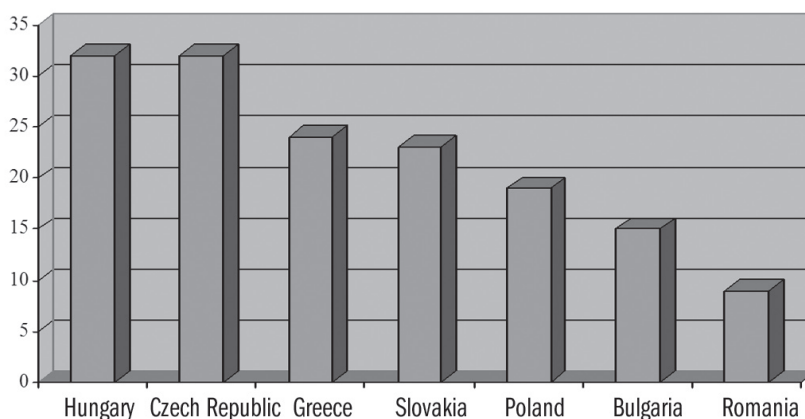
Source: *EU-MIDIS* (2009b).

Another research project compared the probability of discrimination experiences among three immigrant groups resident in Hungary with the likelihood of such experiences among the native population of Budapest in various situations. The three groups were persons of Hungarian ethnicity arriving from any of the neighbouring countries, Chinese immigrants (from Taiwan or any part of the diaspora) and Muslims, most of whom were of Arabic or Turkish ethnicity.

As revealed in *Table 5.1*, immigrant status tends to increase the perceptions of discrimination, but this could be explained by over-sensitivity. The difference between the target groups and the control group (the majority group) may still not disappear, however, if over-sensitivity is controlled for. Workplace discrimination is substantially more likely to be perceived by each of the three immigrant groups than by the control group (who nevertheless perceive the highest level of discrimination against them in the workplace and in hiring). A similar pattern is observed in connection with looking for paid work with the difference that the Chinese group perceive less discrimination, presumably because they rarely enter the majority labour market.

The population's perceived experiences of labour market discrimination were also assessed in a side-survey of the Hungarian Central Statistical Office Labour Survey (*KSH,* 2008). The survey investigated whether 19–64 year old respondents felt discriminated against on the grounds of ethnic origins, educational attainment, health, gender, age or family status in two labour market situations: hiring and dismissals or layoffs.[5] Looking at job applications, 16.1 per cent of respondents felt discriminated against (for at least one reason), and the corresponding figure was 7.8 per cent for the scenario of dismissal. For both scenarios, the most frequently cited presumed causes of discrimina-

5 As no time period was specified in the question, respondents may have interpreted it as applying to experiences of discrimination over their lifetimes.

122

tion were age (6.4 and 2.9 per cent) and marital status (4.1 and 1.7 per cent). Men were more likely than average to mention ethnic origins as the grounds of perceived discrimination when looking for a job, while women mentioned family status and age with higher than average probability.

Table 5.1: Perceived experiences of discrimination in various "situations" among Budapest natives (the control group) and three immigrant groups (per cent)

	Budapest natives	Hungarians from other countries	Chinese	Muslim
N	600	300	300	300
Looking for work	14	30	13	47
Workplace	9	28	32	38
School	6	28	17	12
Health service	2	24	21	15
Immigration office	1	34	27	17
Police	7	9	26	10
Church	0	0	4	5
Restaurant, bar	7	9	34	20
Street	5	9	51	21
Neighbours	2	8	14	9
Shop	4	5	33	19
Public transport	3	6	38	27
Cumulated perception of discrimination	17	71	88	65

Source: *Sik* (2009).

A very recent project by Tárki, completed in April 2009, looked at the extent of perceived labour market discrimination among the active – 18–62 year-old, non-retired, non-student – population. For the correct interpretation of the data, it should be noted that as the survey questions referred to events related to labour hiring/dismissal and workplace experiences during the 12 months preceding the interview, the responses must have been affected by the ongoing crisis. This is also indicated by the fact that 16 per cent of respondents had lost their jobs and 28 per cent of the active population had looked for a job at some time during the target period.

Labour market discrimination is assessed in this paper by combining the results of several questions into three aggregate indicators (see the section "Indicators of labour market discrimination" in *Appendix 5*). The first indicator is the probability of discrimination perception in labour hiring and dismissal among the active population (*Table 5.2*). This variable is labelled discrimination perceptions in labour market transition, and its cumulative value is 6 per cent. Looking at the two directions of transition individually, the value is higher for hiring and lower for dismissal (5 and 2 per cent respectively).[6] The second indicator applies to the employed population and amalgamates the questions related to experiences of discrimination in wage policies, promotion

6 The considerably lower probability of perceived discrimination here compared to the OCSH survey is due to the fact that this question referred to the year preceding the interview.

policies and working conditions. This variable is labelled discrimination perceptions in the workplace, and its value is 9 per cent. 6 per cent of respondents perceived discrimination in terms of lower pay, 3 per cent mentioned a lower position and 2 per cent mentioned poorer working conditions.

Table 5.2: Perception of discrimination among major labour market groups (per cent)

	Discrimination perceptions in labour market transition (active age)		Discrimination perceptions in the workplace (employed)		Overall discrimination perceptions (employed)	
	N	Percentage	N	Percentage	N	Percentage
Total	603	6	405	9	405	11
Gender						
Men	310	5	217	8	217	10
Women	293	8	188	11	188	12
Significance (χ^2)	0.128	0.329	0.410			
Age						
18–27 years	84	15	X	X	X	X
28–37 years	213	7	141	11	140	13
38–47 years	154	5	114	5	114	6
48–62 years	154	3	110	7	110	8
Significance (χ^2)	*0.002*	*0.025*	*0.014*			
Educational attainment						
Primary	84	13	X	X	X	X
Vocational training	209	6	150	9	149	11
Upper secondary	202	7	134	11	135	13
Tertiary	110	2	87	7	88	8
Significance (χ^2)	*0.016*	0.662	0.743			
Ethnic origins						
Roma	50	12	X	X	X	X
Non-Roma	551	6	386	10	386	11
Significance (χ^2)	0.085	0.194	0.496			
Settlement type						
Budapest	115	4	90	18	90	20
County seat	102	9	68	4	68	7
Town	213	6	143	10	142	11
Village	174	7	104	5	105	6
Significance (χ^2)	0.507	*0.007*	*0.009*			
Region						
Central Hungary	182	6	139	16	139	17
Northwest	71	6	53	9	53	9
West border	60	3	X	X	X	X
Southwest	56	7	X	X	X	X
Northern Hungary	68	6	X	X	X	X
Northeast	92	9	X	X	X	X
Southeast	76	7	53	2	53	2
Significance (χ^2)	0.923	*0.031*	0.052			

Note: Statistically significant values of χ^2 are marked in italics, X = low cell count.

Finally, an aggregate likelihood indicator of perceived discrimination experiences in any of the five scenarios was calculated for the employed population. This variable is labelled overall labour market discrimination perceptions, and its value is 11 per cent. Its likelihood was 3 per cent for labour hiring and 1 per cent for dismissal.

Summarising the aggregate indicators of the perception of labour market discrimination, the following observations can be made:[7]

– gender alone does not give rise to discrimination;
– age has a strong effect among both the active and the employed populations: the youngest cohorts (18–27 year olds) of both the active and the employed populations face a high probability of discrimination;
– educational attainment only plays a significant role in hiring and dismissal: respondents having primary education are twice as likely than average to perceive discrimination, while higher education graduates are three times less likely than average;
– Roma ethnicity increases the perception of discrimination in entering the labour market as well as in exiting it;
– settlement type, in contrast, only has an effect among the employed: Budapest residents are twice as likely than average to perceive discrimination, while the corresponding probabilities are just over half of the average for county seats and villages;
– the effects of geographical region on the perception of discrimination are also limited to the employed population: Central Hungary is characterised by twice the average probability of perceiving discrimination in the workplace, while only a fraction of the average value is observed in the Southeast and the Southwest.

It is worth adding two qualifications to the above analysis. 1) The figures are likely to overestimate the extent of discrimination, since employers may be more discriminative in a crisis-generated supply market. 2) The extent of discrimination tends to be underestimated in categories where there is a high proportion of people previously excluded from the labour market or having no labour market experience at all (see the low cell counts for the Roma, the young and the uneducated in *Table 5.2*), since these values apply to a pre-selected group screened before entering the labour market.

Three models have been constructed to examine the effects of worker characteristics on the perception of discrimination (see the section "Models of the perception of labour market discrimination" in *Appendix 5* for the details of the dependent and independent variables). The results indicate that with all other variables controlled for, the following groups are prone to discrimination perception (*Table 5.3*):

7 Among the active population, the reasons most frequently cited for experiences of discrimination in labour market transition were firstly, having young children (36 per cent), followed by age (14 per cent each for young and old age), and Roma ethnicity (14 per cent). In the workplace, in contrast, the most frequent presumed reason was young age (44 per cent), followed by female gender (29 per cent).

Table 5.3: Factors affecting discrimination perceptions (logistic regression)

	Discrimination perceptions in labour market transition, active (N = 602)			Discrimination perceptions in the workplace, employed (N = 399)			Overall discrimination perceptions, employed (N = 399)		
	Wald test	Signifi-cance	Odds ratio	Wald test	Signifi-cance	Odds ratio	Wald test	Signifi-cance	Odds ratio
Gender: female/(male)	2.610	0.106	1.912	0.398	0.528	1.247	0.481	0.488	1.300
Ethnic origin: Non-Roma/(Roma)	0.000	0.991	1.007	0.215	0.643	1.737	0.000	0.998	0.000
Education (tertiary)	2.958	0.398		2.607	0.456		1.396	0.706	
– Primary	2.907	0.088	5.365	2.317	0.128	3.116	0.434	0.510	1.803
– Vocational training	2.031	0.154	3.694	1.614	0.204	2.006	1.246	0.264	1.923
– Upper secondary	2.217	0.136	3.790	1.062	0.303	1.734	1.143	0.285	1.833
Age (38–47 years)	7.762	*0.051*		12.167	*0.007*		7.785	*0.051*	
– 18–27 years	3.193	0.074	2.700	10.802	*0.001*	7.009	7.277	*0.007*	5.502
– 28–37 years	1.987	0.159	2.104	2.818	0.093	2.243	1.659	0.198	1.946
– 48–62 years	0.593	0.441	0.598	0.511	0.475	1.475	0.609	0.435	1.564
Settlement type (village)	4.410	0.220		4.276	0.233		5.134	0.162	
– Budapest	0.798	0.372	0.513	3.624	0.057	3.800	2.981	0.084	3.595
– County seat	2.561	0.110	2.501	0.089	0.766	1.236	0.271	0.603	0.648
– Town	0.029	0.864	0.920	3.047	0.081	2.685	3.225	0.073	3.032
Region (Southeast)	6.993	0.321		4.573	0.600		6.574	0.362	
– Central Hungary	2.716	0.099	3.495	2.536	0.111	7.036	2.179	0.140	6.076
– Northwest	0.426	0.514	0.587	2.341	0.126	6.952	3.306	0.069	10.419
– West border	0.268	0.605	0.604	1.261	0.261	4.276	0.776	0.378	3.291
– Southwest	0.051	0.821	0.837	1.009	0.315	3.755	0.002	0.968	0.936
– North Hungary	0.331	0.565	0.632	0.570	0.450	2.787	0.558	0.455	2.764
– Northeast	0.032	0.858	1.129	2.759	0.097	7.548	1.869	0.172	5.516
Employment (employed)	23.967	*0.000*		–	–	–	–	–	–
– Self-employed, entrepreneur	0.000	0.997	0.000	–	–	–	–	–	–
– Temporary work	3.229	0.072	4.682	–	–	–	–	–	–
– Unemployed	21.311	*0.000*	8.470	–	–	–	–	–	–
– Maternity leave	0.041	0.840	0.842	–	–	–	–	–	–
Employment (other)	–	–	–	0.015	0.993		0.610	0.737	
– Public servant, public sector employee	–	–	–	0.002	0.965	1.026	0.027	0.869	1.102
– Government, local government employee	–	–	–	0.015	0.904	1.058	0.508	0.476	0.672
Constant	19.209	0.000	0.003	13.730	0.000	0.002	0.000	0.998	0.000

Note: Statistically significant values (Wald test level of significance is smaller than 0.05) are marked in italics; reference categories are shown in brackets.

– women feel they are discriminated against when changing labour market positions;

– activity status has a significant effect when changing labour market positions: the unemployed are eight times more likely to perceive discrimination than are those in employment;

– age has a decisive effect (as has been indicated by earlier data) both among the active and the employed populations: among the youngest respondents (18–27 year olds) the probability of perceiving discrimination in the workplace is seven times higher and the overall probability of perceiving labour market discrimination is five times higher than among the middle-aged (38–47 year olds);

– educational attainment, position, Roma ethnicity, settlement type and region do not have a significant effect.

We also wanted to find out whether the perception of labour market discrimination had an income reducing effect after controlling for the variables customarily used in regression models analysing income (*Table 5.4*).

Table 5.4: Factors explaining income differences among the active and the employed populations, least squares estimation

	Active			Employed					
	Discrimination perceptions in labour market transition			Discrimination perceptions in the workplace			Overall discriminations perception		
	β	t	Signifi-cance	β	t	Signifi-cance	β	t	Signifi-cance
Gender (male = 1, female = 0)	0.169	4.712	*0.000*	0.260	5.310	*0.000*	0.259	5.303	*0.000*
Age	0.224	0.873	0.383	-0.131	-0.344	0.731	-0.188	-0.493	0.622
Age	-0.169	-0.662	0.508	0.206	0.544	0.587	0.259	0.680	0.497
Roma (Roma = 1, non-Roma = 0)	-0.031	-0.869	0.385	-0.109	-2.249	*0.025*	-0.109	-2.245	*0.025*
Primary	-0.364	-7.668	*0.000*	-0.355	-6.304	*0.000*	-0.350	-6.216	*0.000*
Vocational training	-0.478	-9.735	*0.000*	-0.557	-8.447	*0.000*	-0.555	-8.429	*0.000*
Upper secondary	-0.358	-7.630	*0.000*	-0.406	-6.362	*0.000*	-0.405	-6.354	*0.000*
Budapest	0.051	1.254	0.210	0.101	1.701	0.090	0.108	1.813	0.071
County seat	-0.008	-0.203	0.839	0.001	0.023	0.981	0.003	0.046	0.963
Town	-0.017	-0.421	0.674	0.007	0.111	0.912	0.010	0.175	0.861
Self-employed	0.080	2.323	*0.021*	-	-	-	-	-	-
Unemployed	-0.392	-10.210	*0.000*	-	-	-	-	-	-
Maternity leave	-0.139	-3.876	*0.000*	-	-	-	-	-	-
Discrimination (yes = 1, no = 0)	-0.021	-0.608	0.544	-0.041	-0.819	0.413	-0.069	-1.381	0.168
Constant		3.953	0.000		3.572	0.000		3.715	0.000
R^2	*0.457*	*0.270*	*0.273*						

* Statistically significant values (*t* test level of significance is smaller than 0.05) are marked in italics, reference categories: tertiary education, village, employee.

The expected control effects clearly emerge in the models: men's incomes are higher than women's, and each of low educational attainment, Roma ethnicity, unemployment and maternity leave[8] reduces income to a statistically significant extent. Perceived discrimination, however, has no observable effect, i.e., the fact that someone has experienced negative discrimination in the process of hiring or dismissal, or in the workplace is not accompanied by a reduction in incomes.

8 The effects of activity status could only be analysed in the model of labour market transitions, as the other two models were restricted to the employed population.

Discounting the flawed solutions (the "infinity" of the time period and the poorly defined list of protected characteristics) contaminating the HCSO survey results, the approach relying on the perception of discrimination is likely to overestimate the extent of discrimination on the assumption that oversensitivity may have a stronger effect than a desire to pass over incidents.

Discrimination tests among vulnerable labour market groups

Discrimination field experiments involve testing employers' hiring behaviour in ordinary "real-life" situations. Since too many processes are involved in "real life" to be able to identify discriminative behaviour with sufficient confidence, the testing is carried out under controlled conditions and with carefully selected tester characteristics. In this experimental setup pairs of testers are matched for all important characteristics relevant to the goals of the experiment except for one protected characteristic tested in the experiment.[9]

The latest experimental data on discrimination in Hungary are provided by the Hungarian Bureau for Ethnic Minority Rights research project conducted between February and May 2009.[10] During the project period, job vacancy advertisements were monitored for discriminative and fair content, and 68 advertisers were contacted by phone in Budapest and in a county in the Northeast of Hungary. A trial was classed as successful provided that the vacancy was still available, the person answering the phone had the authority to answer the questions asked by the tester, all three testers – one having control and two having protected characteristics – could talk to the employer or the employer's representative, and information was successfully gathered on both the control characteristic and each of the protected characteristics.

Similarly to previous research by Tárki (and to the majority of labour market experiments carried out in other countries), the experiment focused on jobs not requiring special qualifications.[11] The telephone interviews tested the probability of discrimination on the grounds of four protected labour market characteristics: social gender (male), ethnicity (Roma), family status (having young children) and age (45–54 year olds). The different combinations of test characteristics (Roma man, Roma woman, woman with young child, middle-aged woman and middle-aged man) and the control group (non-Roma woman) were presented at the job interviews by thoroughly trained testers. The job advertisements were selected from the electronic and printed press.

The composition of the job pool included in the experiment reflected the distribution of advertisements appearing in the selected papers during the period of data collection. About a third of the employers contacted had advertised for shop assistants, almost a fifth sought counter assistants, and the remaining jobs were security guards (10 per cent), telemarketing (7 per cent), salespeople (7 per cent), florists (6 per cent) and office assistants and secretaries (5 per cent).[12]

9 See also *Sik and Simonovits* (2006) on the technique, and *Otlakán* (2007a 2007b), *Pálosi, Sik and Simonovits,* (2007) and *Sik and Simonovits* (2008) for the details of the methodology used in earlier field experiments on discrimination.

10 Macro programme 2006/018-176.03.01, *Civil Organisations and the Delivery of the Anti-discrimination Act,* is supported by the National Development Agency. The project runs under the title of "Exploring the manifestations of labour market discrimination by monitoring job advertisements, testing and realising public demands; paving the way for fair job advertising and labour hiring."

11 Shop assistant, cashier, secretary, office assistant, door keeper, maintenance worker, counter assistant/waiting staff, store assistant, telemarketing agent, clerk, salesperson, florist, agricultural worker, construction worker, security guard, seamstress and ironing assistant).

12 During the data collection period of the Tárki survey of 2006, the most frequent jobs advertised with telephone contact details were the following: salesperson (27 per cent), shop assistant (15 per cent), bar counter assistant (17 per cent), telemarketing agent (18 per cent). Other jobs included in the experiments were: clerk (8 per cent) secretary (5 per cent), office assistant (2 per cent), store assistant (3 per cent), maintenance worker (2 per cent) and cashier (2 per cent).

128

The goal of the experiments was to assess the extent of discrimination. The unit of analysis for our comparison must therefore be the workplace represented by the advertisements. That is, what we are interested in is which of the tester applicants (or which protected characteristics) were rejected and which of them were not. Looking at the net discrimination indicator, for the jobs under analysis male gender and old age unequivocally present a disadvantage (*Table 5.5*).

Table 5.5: Probability of discrimination by gender, ethnic origins, age and family status

	Successful trials (number of pairs) (1)	No discrimination (2)	Discrimination against minority (3)	Discrimination against majority (4)	Net discrimination (per cent) (5)
Male–female	54	31	16	7	17
Roma–non-Roma	46	31	8	7	2
Middle-aged–young	43	25	13	5	19
Young children–no children	23	18	2	3	–4

(1) Where we have information on the outcome of the interviews for all three testers (two protected characteristics and the control) and at least one of the three applicants was not rejected.

(2) The testers with the protected characteristics and the control received equivalent treatment (all were rejected, or all were given a positive response, i.e., invited for an interview, asked to call again later or invited to submit a curriculum vitae).

(3) Only the male, Roma, middle-aged or child rearing applicant was rejected.

(4) Only the female, non-Roma, young or childless applicant was rejected.

(5) Net discrimination = [(discrimination against minority) – (discrimination against majority)]/(successful trials) × 100.

The interpretation of the results must take into account that the scope of the discrimination experiment was limited to a specific segment of the labour market and, within that, to the initial phase of the labour hiring process not involving face-to-face contact. The results therefore cannot be generalised either to the entire labour market or to the overall process of labour hiring. Within these limits, we may conclude that for the jobs included in the research, women are more in demand than men, and younger applicants are more welcome than older applicants. In partial disagreement with the results of the discrimination tests of 2006 (*Sik and Simonovits,* 2008), no significant discrimination against the Roma can be observed at this phase of the job application process.

A second analysis of the experimental data looks at the effects of the various combinations of protected characteristics on the employment odds of the applicants.[13] As shown in *Table 5.6*, non-Roma and Roma women and women with young children were the most likely to be invited for a face-to-face interview, while women over the age of 45 and Roma men were asked to send a curriculum vitae or to call back later with higher than average probability.

13 In this analysis non-test characteristics are not controlled for, i.e., the probabilities of rejecting control applicants versus applicants with protected characteristics are not compared on the basis of matched pairs.

129

The only group facing a prominently high likelihood of rejection is the group of men over the age of 45.

Table 5.6: Outcome of telephone interviews by applicant characteristics (per cent)

	Face-to-face interview	Call again, submit CV, database	Rejection	Total
Non-Roma women (N = 68)	61	18	21	100
Roma women (N = 26)	62	15	23	100
Roma men (N = 25)	44	32	24	100
Women with young children (N = 23)	57	26	17	100
Women over 45 (N = 21)	52	33	14	100
Men over 45 (N = 25)	38	15	46	100
Total (N = 188)	54	22	24	100

Significance (χ^2) = 0.195.

Separating the overt and covert manifestations of discriminative behaviour results in a considerably more varied picture (*Table 5.7*). Explicit rejection is defined as an unequivocal statement by the employer that the test characteristic is the reason for the rejection (see Question 18 in the extract from the questionnaire shown in *Appendix 5*). A rejection is classed as implicit, in contrast, if the employer cited a reason other than the protected characteristics or avoided giving a specific reason but there was a change in their behaviour, e.g., in their intonation, tone of voice or manner of speaking or there was a sigh or pause before uttering their reply (see Questions 16 and 18 in the extract from the questionnaire shown in *Appendix 5*). Female testers with young children did not encounter implicit rejection at all, and the probabilities of implicit rejection display little variation across the testers representing the remaining characterisitcs. The probability of explicit rejection was very high for men over the age of 45 – almost three times higher than average. This result is, to some extent, contrary to the results of the 2006 experiment, in which employment odds in a similar domain of the labour market were examined with reference to ethnic origins and gender, and explicit rejection was given to Roma men with the highest probability (one and a half times the average), while Roma women were the most likely to face implicit rejection (*Table 5.8*).

The most important conclusions learnt from the 2009 tests are that in the labour market segment studied there is a higher demand for women than for men, and for young than for older workers, and that middle-aged men are the most likely to meet open rejection when applying for a job.

Risking the charge of repetitiousness, we must point out again that, similarly to even the most sophisticated techniques of discrimination testing, our results are also subject to the problem that they cannot be generalised in time, space or to the overall process of labour market hiring. While it is a fact that women have better odds of employment than men, using this phenomenon to

conclude that men are discriminated against in the Hungarian labour market would have as much validity as using the low activity rate among the Roma population to infer that the Roma drive the non-Roma into the labour market. In other words, based on qualitative and quantitative research data and on analyses of the wage differentials between men and women, the possibility of labour market discrimination against men may only arise in the sense that women exclude unfortunate men from low-wage, essentially dead-end segments of the labour market. This interpretation is, however, difficult to reconcile with the definition of discrimination discussed in the introduction to this chapter, which contends that for a group to be the victim of discrimination, it must suffer disadvantages of some kind.

Table 5.7: Outcome of telephone interviews by applicant characteristics in 2009 (per cent)

	Face-to-face interview	Call again/ CV	Implicit rejection	Explicit rejection	Total
Non-Roma women (N = 68)	61	18	15	6	100
Roma women (N = 26)	62	15	15	8	100
Roma men (N = 25)	44	32	16	8	100
Women with young children (N = 23)	57	26	0	17	100
Women over 45 (N = 21)	52	33	10	5	100
Men over 45 (N = 25)	38	15	12	35	100
Total (N = 188)	54	22	12	12	100

Significance (χ^2) = 0.036.

Table 5.8: Outcome of interviews by applicant ethnicity and gender in 2006 (per cent)

	Face-to-face interview	Asked to call again	Implicit rejection	Explicit rejection	Total
Roma men (N = 88)	59	9	14	18	100
Non-Roma men (N = 88)	65	10	11	14	100
Roma women (N = 88)	57	11	21	11	100
Non-Roma women (N = 87)	69	9	16	6	100
Total (N = 351)	62	10	15	12	100

Source: *Otlakán et al*, 2006.

Conclusions

A clear conclusion drawn from the international comparative surveys discussed above is that in Hungary Roma origins and immigrant status significantly increase the extent of discrimination perceptions in the labour market, in education and in various services (e.g., health care, hospitality services, access to bank loans). Focusing on the perception of discrimination in the labour market, the unanimous message of Tárki and HCSO research is that age, especially a young age, is seen as a disadvantage both in the process of finding

employment and then in the workplace. The Tárki results put the probability of in-service discrimination perceptions among the youngest cohort (18–27 year-olds) at seven times the corresponding probability among the middle-aged (38–47 year olds), and the gap between the two groups for overall discrimination perception was fivefold. The HCSO data further reveal that ethnicity was mentioned with higher than average probability by men and family status by women as the primary grounds for negative discrimination. The Tárki results, on the other hand, suggest that Roma origins and educational attainment only increased discrimination perceptions in the process of entering and in the process of exiting the labour market.

Employers' attitudes were examined with respect to the first phase of labour hiring in a specific segment of the labour market. The most important lessons emerging from the research are that most of the jobs under analysis are characterised by a pronounced gender preference: there is a substantially higher demand for female than male counter assistants, waitresses, cashiers, shop assistants, seamstresses and florists, telemarketing and sales agents; and that in telephone job inquiries in the domains included in the research, younger applicants are preferred to older applicants.

Distinguishing overt and covert manifestations of rejection, it was found that middle-aged men were the most likely to meet overt rejection, while there was no significant difference between the various testers in terms of the likelihood of covert rejection with the exception of women with young children, who did not experience implicit forms of rejection at all. The data, however, must be interpreted with its limitations kept in mind: the pattern of discrimination measured by the experiment applies to a specific segment of the labour market and to the initial phase of the path to employment, i.e., the results cannot be generalised to either the entire labour market or the overall process of labour hiring.

APPENDIX 5

Indicators of labour market discrimination

Table F5.1: The scope and composition of the three variables of discrimination perceptions, 18–62 year-olds

	1. Labour market transition	2. Workplace	3. Overall labour market
	discrimination perceptions		
	Active	Employed	Employed
1. Whether experienced discrimination when looking for a job	X		X
2. Whether lost their job because of discrimination	X		X
3. Whether has lower income than colleagues in equivalent position		X	X
4. Whether has lower position than colleagues with equivalent qualifications		X	X
5. Whether has poorer working conditions than colleagues		X	X

Models of the perception of labour market discrimination

1. *Discrimination perceptions in labour market transition:* the dependent variable of the model is the dummy variable (0, 1) of discrimination experiences in labour hiring or dismissal.
2. *Discrimination perceptions in the workplace*: the dependent variable of the model is the dummy variable (0, 1) of *workplace discrimination perceptions* among the employed population.
3. *Overall labour market discrimination perceptions*: the dependent variable of the model is the dummy variable (0, 1) of the overall perceived experiences of discrimination in the labour market.

Table F5.2: Explanatory variables and values of the regression models analysing labour market discrimination perceptions, with reference categories in brackets

Variable	Values	Scope	Models including it
Gender	1. (Male) 0. Female	Active age population	1., 2., 3.
Age	18–27 years 28–37 years 48–62 years (38–47 years)	Active age population	1., 2., 3.
Educational attainment	1. Primary 2. Vocational training 3. Upper-secondary 4. (Tertiary)	Active age population	1., 2., 3.
Ethnic origins	1. (Roma) 0. Non-Roma		
Settlement type	1. Budapest 2. County seat 3. Town 4. (Village)	Active age population	1., 2., 3.
Region	1. Central Hungary 2. Northwest 3. West border 4. Southwest 5. Northern Hungary 6. Northeast (Southeast)	Active age population	1., 2., 3.
Employment type	1. Public servant, public sector employee 2. Government or local government employee 3. (Other)	Employed population	2., 3.
Economic activity status	1. (Employee) 2. Self-employed, entrepreneur 3. Temporary jobs 4. Maternity leave 5. Unemployed	Active age population	1.

Extract from questionnaire

(Telephone testing, 2009 – Hungarian Bureau for Ethnic Minority Rights)

```
15. What was the employer's or their representative's reaction to the given
characteristic (Roma ethnicity, disability, age, children)?
  1 – (Probably) not a problem
  2 – (Probably) a problem
  3 – Unidentifiable
```

```
16. What words or other means of conveying their opinion were used? Please
cite the words used, if any, and select the code most appropriate to the re-
action.
```

```
..............................................................
  1 – Said: why should it be a problem?        MULTIPLE ANSWERS ALLOWED
  2 – Sighed
  3 – Paused
  4 – There was a change in their tone of voice or manner of speaking
  5 – Hung up
  6 – Other, please specify: ...................................
```

```
17. What was the outcome of the interview?      MULTIPLE ANSWERS ALLOWED
  1 – Rejection
  2 – Invitation for face-to-face interview
  3 – Job offer
  4 – Request to call again later
  5 – Request to send CV
  6 – Registering caller in their database
  7 – Other, please specify: ...................................
```

```
IF REJECTED
```

```
18. Was there a reason given for the rejection?
NO  1 – No unequivocal reason
    2 – Said goodbye without giving reason
    3 – Hung up without giving reason or saying goodbye
    4 – Other:......................................

YES 5 – Position has been filled
    6 – No applications are accepted at present, caller should inquire later
    7 – Applicant's unsuitability because of a certain characteristic.

        What was this characteristic?         MULTIPLE ANSWERS ALLOWED

         1 – Inadequate qualifications:..........................
         2 – Lack of experience:................................
         3 – Lack of foreign language skills:...................
         4 – Lack of computing skills: ........................
         5 – Lack of required documents: ......................
         6 – Ethnicity
         7 – Age
         8 – Marital status
         9 – Something related to having children
        10 – Something related to having children in the future
        11 – Place of residence
        12 – Smoking habits
        13 – Gender
```

6. ROMA EMPLOYMENT AT THE TURN OF THE MILLENNIUM. AN ANALYSIS OF THE NATIONWIDE REPRESENTATIVE ROMA SURVEY OF 2003

GÁBOR KERTESI

The five years of the economic transition brought about the dramatic collapse of the employment of the Roma population. By 1993, half of the Roma who were in employment before the economic transition had lost their jobs, and there was little indication of either those excluded from the labour market or the new generations of labour market entrants being able to reverse this process. Although the transitional period has long passed, the structural changes in employment have not favoured that strata of the population at the lower end of the educational scale: the employment rate among the uneducated (those having no more than primary education) has undergone a substantial decline. Has the Roma population of Hungary been able to establish a foothold on this increasingly steep slope? This paper undertakes to analyse the results of the nationwide Representative Roma Survey of 2003[1] in order to reveal whether the labour market position of the Roma population of Hungary has undergone any notable changes since the early 1990s. In what position did the Roma find themselves as the Hungarian labour market stabilised towards the end of the millennium? How does their situation compare to that of the average Hungarian worker having comparable qualifications?

The analysis focuses on the 15–49 year old age group. Combining the retrospective labour history data of the 1993 survey with the cross-sectional data of the 2003 survey, we undertake to turn the highly fragmented evidence available into a reasonably reliable picture of the situation characterising the first years of the new millennium.

The persistence of the low employment rate

The basic facts indicating the decline of employment are summarised in *Table 6.1*. The observed processes suggest that the erosion of Roma employment started during the years preceding the economic transition: between 1984 and 1989 the proportion of those in employment among the 15–49 year-old Roma population dropped by no less than 10 per cent. During the dramatic years of the economic transition, this drop was followed by a sweeping wave of job losses. More than 35 per cent of those in employment (45 per cent of men and 30 per cent of women) became excluded from the labour market. We can only speculate about what exactly happened between 1993 and 2003. What

1 This is the latest available source of nationwide representative data on the Roma.

135

we know for a fact, however, is that the exceptionally low employment rates that had evolved during the years around 1993 were essentially unchanged at the turn of the millennium. In 2003 Roma workers were approximately as likely to be in employment as they had been ten years previously.

Table 6.1: Percentage of the employed
among the 15–49 year-old Roma
population between 1984 and 2003

Year	Men	Women	Total
1984	95	61	77
1989	85	53	67
1993	39	23	31
2003	38	20	29

Note: Full-time students and pensioners
are excluded from the reference groups.
Source: Representative Roma Surveys of
1993 and 2003.

A further empirically verified aspect of the story is that early retirement – see *Table 6.2* – was a major component in the decline of Roma employment (*Kertesi,* 2000, pp. 425–428). Around the time of the economic transition and during the years leading up to the economic transition, the phenomenon of early retirement among the Roma bloated to astonishing proportions. This is clearly indicated by the figures for 1993 in *Table 6.2.*

Table 6.2: Percentage of pensioners among the Roma population
below the retirement age (15–49 years) in 1993 and 2003

Cohort (years)	Men			Women		
	1993	2003	(2003) – (1993)	1993	2003	(2003) – (1993)
15–19	1.4	0.9	–0.5	0.8	0.0	–0.8
20–24	3.3	2.2	–1.1	1.3	3.9	+2.6
25–29	3.2	4.7	+1.5	2.5	4.7	+2.2
30–34	8.5	7.7	–0.8	7.5	5.0	–2.5
35–39	10.3	9.6	–0.7	13.3	5.3	–8.0
40–44	16.9	17.6	+0.7	18.4	12.9	–5.5
45–49	35.3	26.7	–8.6	35.4	29.2	–6.2
15–49	8.7	9.3	+ 0.6	8.7	7.9	–1.2

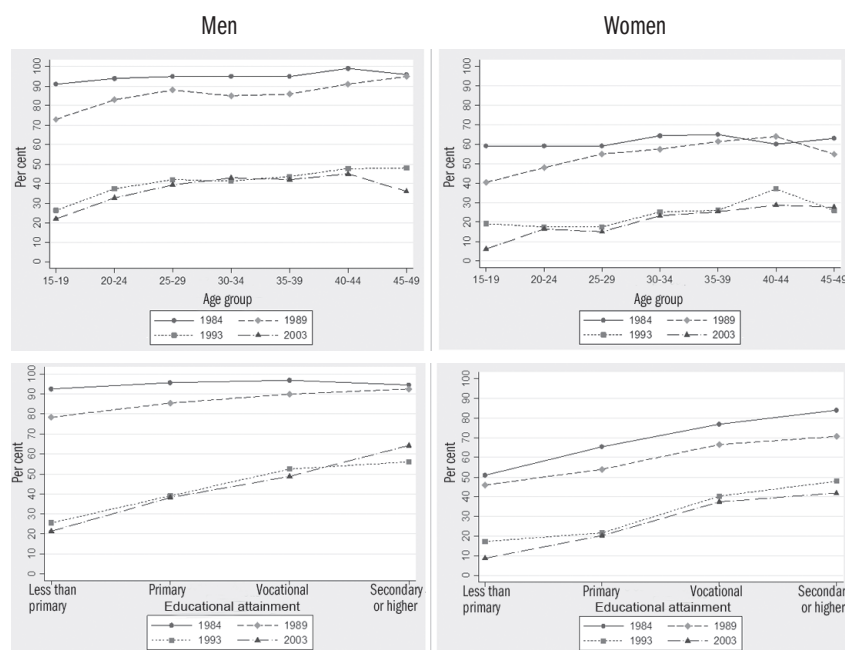Note: Full-time students are excluded from the reference groups.
Source: Representative Roma Surveys of 1993 and 2003.

Looking at the data for the turn of the millennium, that trend does not appear to have been reversed. Although the substantially more than 30 per cent likelihood of early retirement among the 45–49 year-old cohort had decreased to a considerable extent (especially among men), the proportion of pensioners had increased among some of the younger (and larger) cohorts. The two ef-

fects had essentially cancelled each other out and thus for the 15–49 year-old population as a whole, early retirement was as frequent as in 2003 as it had been in 1993. The probability of early retirement has stabilised: the pension system continues to admit approximately 9 per cent of men and 8 per cent of women below the retirement age. In what follows, the problem of early retirement will be put aside, and our analyses will focus on the employment situation of the 15–49 year-old non-pensioner population.

An analysis of employment by age and educational attainment reveals similarly little change over the period in question (*Figure 6.1*). Following the major decline observed between 1989 and 1993, time appears to have stopped. Another notable feature of the graphs is that the employment gradient by education has become steeper (especially for men). The Roma population clearly follows the overall nationwide trend in this respect: a gap has emerged between the employment odds of workers at the lower and at the higher ends of the educational scale.

Figure 6.1: Employment rates among the Roma population
by age and educational attainment, 1984, 1989, 1993, 2003

Note: Full-time students and pensioners are excluded from the reference groups.
Source: Representative Roma Surveys of 1993 and 2003.

The lasting shock of the economic transition

The labour history block of the 1993 Roma survey allows us to reconstruct the fate of those young workers (aged 20–39 in 1984) whose careers were cut

short by the economic transition (*Kertesi,* 2000, pp. 418–422). The life history of this cohort can then be followed based on the data provided by the survey of 2003.[2] Their results can be compared to a control group characterised by a quasi-longitudinal age cohort based database created from a series of large-scale cross-sectional surveys covering the total population.[3] The control group was created before the turn of the millennium but has been updated to include data from 2003.[4]

Figure 6.2: Evolution of employment between 1984 and 2003 among the generation aged 20–39 in 1984 (percentage of the cohort in employment in each year)
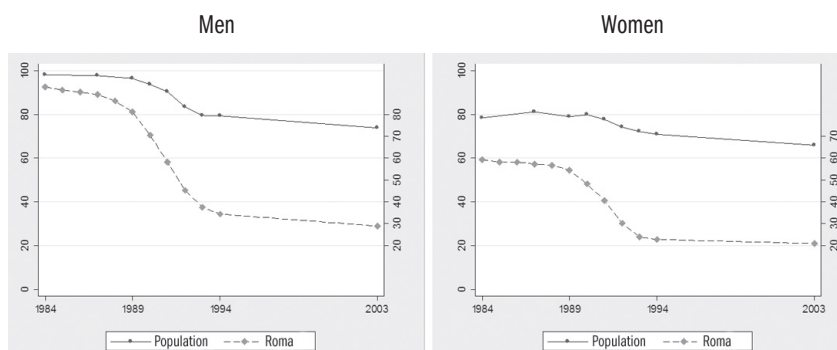
Source: Representative Roma Surveys of 1993 and 2003, total population: quasi-longitudinal age cohort based database created from the large-scale nationwide surveys specified in Footnotes 3 and 4.

2 Using retrospective labour history information, in the survey of 1993–1994 a *snapshot* was taken of each respondent recording the respondent's activity status at the end of each year between 1984 and 1994. This database was expanded to include the age-aligned cohort of the 2003 survey thus creating a quasi time series sample for the first cohort (the group aged 20–39 in 1984). *Figure 6.2* was drawn using the figures of this database.

3 The samples used were from the Micro Census of 1984, the HCSO Household Panel of 1987 and 1989, the Census of 1990, the HCSO Household Panel of 1991 and the HCSO Labour Surveys of 1992 and 1994. See *Kertesi* (2000) pp. 417–418 for the details of the method of calculations.

4 The third quarterly wave of the OCSH Labour Survey of 2003 was used here.

Summarising the data on these two populations, *Figure 6.2* displays the proportions of those in this generation – of Roma and of the total population – who successfully retained their employment over the years.

So was there a way back in the nineties for those who had dropped out of the labour market in the great wave of job losses between 1989 and 1993? There clearly was not. The Roma cohort of 20–39 year olds in 1984 irrevocably carried with them the disadvantage accumulated during the years of the economic transition relative to their earlier position and relative to the overall situation of the population.

Younger generations of the Roma are in no better position. As can be seen in *Table 6.3*, in terms of employment there is an even larger gap between the group of young Roma men aged 20–39 in 2003 and the group of age- and education-matched representatives of the total population than there was between the two equivalent groups twenty years previously. The disadvantage of 20–39 year-old Roma women is comparable to the disadvantage of the equivalent cohort twenty years previously. That is, the young generation appears to recreate the fate of the generation driven into long-term unemployment at the time of the economic transition. The employment shock of the economic transition has proved to be a lasting shock for all successive Roma generations.

138

Table 6.3: Comparative employment rates among the Roma population,
by cohort in 2003 (per cent) (full-time students are excluded)

Cohort/difference in difference	Primary education			Vocational training or vocational secondary education		
	Overall population (*n*)	Roma (*r*)	diff: (*n*) – (*r*)	Overall population (*n*)	Roma (*r*)	diff: (*n*) – (*r*)
Men						
20–39 (1)	65.8	36.9	28.9	86.3	44.6	41.7
39–58 (2)	56.0	31.9	24.1	72.6	38.6	34.0
Diff: (1) – (2)	9.8	5.0	4.8	13.7	6.0	7.7
*Diff in diff** (per cent)	–	–	18.1	–	–	20.3
Women						
(1) 20–39	39.4	17.9	21.5	59.7	35.9	23.8
(2) 39–58	49.3	27.9	21.4	65.1	40.9	24.8
Diff: (1) – (2)	–9.9	–10.0	0.1	–5.4	–5.0	–1.0
*Diff in diff** (per cent)	–	–	0.5	–	–	–4.1

* Diff: *Diff in diff* = $100 \times [(1) - (2)]/[(d1 + d2)/2]$ where $d1$ stands for $[(n) - (r)]$ for the 20–39-old cohort and $d2$ stands for $[(n) - (r)]$ for the 39–58-old cohort.
Note: Pensioners are included in the non-employed population.
Source: Representative Roma Survey of 2003 (Roma data) and Quarter 3 of HCSO Labour Survey of 2003 (national data).

Indications of employment instability

What could be the *mechanisms* underlying the *recurrence* of the low employment rate? For a statistical explanation, the following questions need to be clarified. If the current state is regarded as a permanent state (a big "if"), it is supported by a balance between exits from unemployment and entries into employment. The two kinds of event may occur with equally high or equally low probabilities (*Hall,* 1972, *Marston,* 1976). If both the exit and the entry rates are low, there will be a low turnover combined with long employment periods. In this case the level of employment remains low but stable. In another scenario, the low employment rate is coupled with high exit and entry rates.[5] In this case there will be a high turnover of labour combined with short periods of employment. That is, employment remains not only at a low level but also markedly unstable. The following paragraphs attempt to demonstrate that it is the latter scenario that describes Roma employment at the turn of the millennium.

A situation of this kind may develop as a result of either demand or supply factors. Unstable employment will be regenerated by *demand* factors if the labour opportunities open to a given population are markedly unstable: if jobs are created and shed at a rapid rate, and thus the positions themselves have a very brief existence. If the problem is rooted in *demand* factors, it is because a population may have a lifestyle or alternative options that are better served by irregular employment even though other – more stable – forms of employ-

5 The rates of exit from employment and entry into employment are the ratios of exits and entries to the employed population in the base period; they measure *annual* changes.

139

ment would also be accessible. An example for this situation are the seasonally engaged smallholder workers of the seventies and eighties, who, exploiting the excess demand for labour characterising the period, followed a strategy of frequent exit and entry. However, for the period following the economic transition, when the demand for unqualified workers was steadily declining, this labour supply-driven employment instability is difficult to envisage. Our next task is thus to gather all the evidence suggesting that the Roma are faced with extreme employment instability and that this instability is essentially grounded in demand factors. Among these demand factors, a prominently important role is fulfilled by the solidified operating practices characterising the Hungarian welfare regime. The underlying mechanisms corner Roma workers into a clearly delineated low-level segment of the labour market.

The following characteristics of Roma employment will be put under scrutiny: job loss probabilities, the specifics of employment structure, and the contribution, value and significance of the jobs available to the Roma through the informal sector of the economy or the welfare system.

One of the symptoms of employment instability is an employment pattern indicating that a random selection of workers are in employment at any one time: if the population found without a job at one period were observed at an another period, many of them would be in employment, and, conversely, if those in employment at one point were observed again at another point, many of them would turn out to be jobless. Although in the absence of longitudinal data we have no means of implementing this thought experiment, the available retrospective employment histories (or their various components) allow us to map some parts of the problem. The data displayed in *Tables 6.4* and *6.5* provide some evidence that – at least as regards the exit rates – the above description seems to fit the situation in question. The figures in *Table 6.4* show that a large share of the jobless *had been employed* at some stage before the interview, while it is clear from the data in *Table 6.5* that this employment – especially in the case of men – had *ended in the recent past*. This means that a substantial share of those recently in employment had lost their jobs. That is, *there are high exit rates.*

Let us make some rough calculations. Take the 30–39 year-old cohort of men. As shown in *Table 6.4*, at the time of the interview (February-March 2003), 42 per cent of those having primary education were in employment and 51 per cent were without a job at that point but had had previous work experience. Looking at *Table 6.5* – where the data are not broken down to educational groups because of low cell counts – we can tell that about every third male respondent of a similar age not currently in employment but having work experience had lost his job sometime in 2002 or at the very beginning of 2003. If this ratio of 33 per cent is projected onto the group size of 51 per cent, the result is that 16.8 per cent of the 30–39 year old primary-school

140

educated male population had been in employment sometime during 2002 (or in January 2003).

**Table 6.4: Distribution of the 20–39 year-old Roma population[*]
according to employment status in 2003, and distribution of the jobless subgroup
according to previous employment status**

| Education | Gender | Age | Had job in 2003 | Jobless in 2003 | | Total |
				Had worked before	Had never worked	
Primary	Men	20–29	38.4	38.0	23.6	100.0
		30–39	41.7	51.3	7.0	100.0
	Women	20–29	12.7	31.3	56.0	100.0
		30–39	27.0	48.8	24.2	100.0
Vocational training	Men	20–29	44.0	44.0	12.0	100.0
		30–39	55.7	37.2	7.1	100.0
	Women	20–29	37.3	41.0	21.7	100.0
		30–39	39.5	52.6	7.9	100.0

[*] Excluding those in early retirement.
Source: Representative Roma Survey of 2003.

**Table 6.5: Time of termination of last employment and the average duration of last
employment among the 20–39 year-old Roma population having a job history
but not in employment at the time of the interview (February-March 2003)**

| Age | Percentage of persons whose employment ended during the following periods[*] | | | Average duration of last job (months)[**] as a function of the recency of the last job | | | |
	–2000	2001	2002–2003	–2000	2001	2002–2003	All
Men							
20–24	16–21	11–15	47–63	..	..	13	13
25–29	37–48	9–12	31–40	29	..	16	26
30–34	37–43	19–22	30–35	52	..	13	42
35–39	55–64	3–3	28–33	78	..	61	71
20–39	37–45	10–13	34–42	55	41	25	43
Women							
20–24	33–47	16–23	20–30	.	..	..	22
25–29	63–71	11–13	14–16	24	..	..	25
30–34	79–83	4–4	12–13	43	..	..	40
35–39	79–85	3–4	10–11	71	..	..	70
20–39	66–75	8–9	14–16	45	33	29	42

[*] Some of the respondents did not specify the duration of their last employment. The distribution was calculated both with and without the missing cases. The cells therefore show low-high values (rounded).
[**] Rounded to the nearest number of months. Cells with low case counts are left blank.
Source: Representative Roma Survey of 2003.

As these *terminated* employment periods had an average duration of at least 13 months, there is a high probability that had they been asked in February

or March 2002, this 16.8 per cent segment of the population would have reported being in employment.[6] They are therefore likely to be included in the count of the employed population for spring 2002. Assuming that the size of the employed population was more or less constant during the years at the turn of the millennium – the steady state assumption –, the proportion of those in employment among the primary school-educated population must have also been around 42 per cent a year before data collection (in February-March 2002). The annual job loss rate[7] between 2002 and 2003 must therefore be around 40 per cent (0.4 = 16.8/42) among the 30–39 year-old primary school-educated population. The annual exit rate thus defined[8] can also be estimated for 30–39 year-old men having vocational training. Using the same method of calculation, their exit rate comes to 22 per cent. Looking at the population of men aged 20–29 in either educational group, the exit rates are estimated to be 43 per cent. The corresponding figures are somewhat lower for women: for the group having primary education, 48 per cent among 20–29 year olds and 22 per cent among 30–39 year olds; for the group with vocational training, 18 per cent among the younger cohort and 14 per cent among the older cohort.[9]

Given these figures, we cannot be too far from the truth if we estimate the *annual job loss rate (exit rate) at the least as 25–30 per cent on average.*[10]

The instability of Roma employment can also be measured on another scale: the characteristic structure of their employment (*Table 6.6*). 40 per cent of the Roma are employed in jobs – see the first two groups of occupations – where workers can be freely replaced without significant loss to the employer. Furthermore, employers engaging large numbers of workers in these occupations tend to run their entire businesses under unstable conditions,[11] which is bound to introduce a considerable degree of instability into their workers' lives.

Table 6.6: Nature of work at the time of observation among the 15–49 year-old working Roma population

Nature of job	Percentage
1. Unskilled farmworkers, unskilled labourers and labourers trained on the job in forestry, day-labourers, temporary workers	4.8
2. Unskilled construction labourers, material movers, freight movers, cleaners, housekeeping cleaners, maids, unskilled service-sector workers, office hands	35.3
3. Labourers trained on the job in industry, mining, metallurgy or agriculture, machine operators	24.5
4. Vehicle drivers	2.1
5. Skilled labourers in industry, mining, metallurgy, construction, agriculture or food industry, skilled service-sector workers	23.6
6. Public-sector employees, members of the armed forces, other white-collar workers	7.2
7. Self-employed entrepreneurs, farmers	2.5
Total	100.0

Source: Representative Roma Survey of 2003.

6 With the exception of those who happened to lose their job in January 2002.

7 This indicator cannot measure *short-term* employment periods. The *annual* exit rate, therefore, underestimates the extent of employment instability.

8 *Annual* job loss and new job rates (or *annual* exit and entry rates) are calculated by choosing the two points of observation of an individual's employment status (and its changes) at a precisely one year interval.

9 The data in *Table 6.5* were aggregated to 10-year cohorts assuming that 43 per cent of 20–29 year-old and 33 per cent of 30–39 year old men (and 20 and 10 percent of women of the same ages) lost their jobs in 2002 or at the beginning of 2003.

10 Men and workers having primary education typically characterised by higher exit rates are in the majority among the employed population.

11 This has not always been the case. Before the economic transition, the Roma could count on long-term employment at the large state-owned construction firms.

142

The third, major, source of instability in Roma employment is the ever increasing availability of government funded "welfare" employment (public works schemes of various types) and the heavy role they play role in Roma employment in Hungary. The latest data available in connection with these schemes are summarised in *Table 6.7*. These figures are needed because – due to the method of personal interviews – the results of the Roma Survey of 2003 are likely to underestimate the contribution of welfare works schemes to the employment rate of the Roma population. The problem is that respondents cannot reliably distinguish the entities giving them the job (the local government, local school or, say, a construction firm engaging them in roadworks) from the budget sources supplying their pay. In a survey relying on population interviews, therefore, some of these "welfare" jobs may have been miscategorised as "regular" jobs, and thus regular employment may have been overestimated and welfare employment underestimated.

Table 6.7 was constructed in an effort to avoid this mistake. Three kinds of information can be seen in the Table: the annual amount of resources allocated for these schemes from the government budget, the size of the population participating in the schemes (including new entrants for the year and those retained from previous years), and an estimate of the average period of support, i.e., the duration of the public works engagement. Notably, the latter set of figures tend to be rather small: on average, Scheme A offers four to four and a half months', Scheme B four to five months' and Scheme C only one month's employment. A heavy presence of these forms of engagement in the working lives of a social group is bound to have an impact on the stability of their employment. This is exactly what we find in the case of the Roma population.

To be able to assess the role of these schemes in Roma employment, two problems must be overcome. First, the figures showing the number of participants including those carried over from the previous year must be converted into an indicator showing the size of the population employed in the given scheme *measured on any randomly selected day of the given year*, because it is this figure that can be compared to the employment figures of the Representative Roma Survey. Second, we must determine *the number of Roma* within the estimated number of public works scheme participants at any given time. The results of these calculations are shown in *Table 6.8*. The problem of aggregation can be solved if we assume that the employment periods in the given year are equally distributed and of equal duration,[12] while the ratio of the Roma can be estimated with the help of a survey specifically created for this purpose.

12 The expected number of participants for a randomly selected day of a given year (L) was estimated as follows: L = number of participants for the year × [(average support period)/12].

143

Table 6.7: Annual government spending on the various types
of welfare employment schemes and the number of participants
(including those carried over from previous year)

Welfare schemes	2000	2001	2002	2003	2004
Costs, billion forints (current rate)[f]					
Scheme A	8.6	11.6	11.9	11.9	8.9
Scheme B	–	–	5.6	4.9	4.4
Scheme C	1.2	5.9	9.4	12.1	14.4
Total	–	–	26.9	28.9	27.7
Number of participants (thousand people)					
Scheme A[a]	93.4	80.7	84.5	76.9	64.0
Scheme B[b]	–	–	13.6[d]	9.5	10.0
Scheme C[c]	–	112.4	147.2	182.7	212.6
Total	–	–	245.3	269.1	286.6
Average monthly costs (forints/person)					
Scheme C[e]	–	52,498	63,859	66,229	67,733
Minimum wage with contributions (×1,32)	33,660	52,800	66,000	66,000	69,960

[a] Community services assigned by job centres. Number of participants = number of participants on 1st January of the reference year (carried over from previous year) + number of new entrants. Average duration of participation: four to four and a half months. The value of 4.5 months will be used in future calculations.

[b] Work organised by companies winning public works tenders. The number of participants (none carried over from previous year). Average duration of participation: four months in 2002, five months in 2003 and 2004.

[c] Jobs assigned by local governments. The number of participants (none carried over from previous year). Estimated value of average duration of employment: one month (see note below on the method of estimation).

[d] Estimation. The average costs per person can be calculated for 2003–2004 (assuming an average support period of five months): 2003 = 103 thousand forints, 2004 = 88 thousand forints. Assuming that the average monthly cost was also 103 thousand forints in 2002 and the average duration of participation was four months, 13600 people are estimated to participate.

[e] Total expenditure/total number of participants. Since the average costs per person almost exactly equal the amount of the monthly minimum wage augmented by the amount of employer's contributions, the average support period must be around one month. The regulations applying to Scheme C do not allow an employment period of less than 30 days.

[f] At the time of writing, the exchange rate is about 250 HUF to the Euro.

Source: Scheme A (costs), Scheme B (participants): Ministry of Social Affairs and Labour; Scheme A (participants): Employment Service; Scheme C (costs and participants): Ministry of Home Affairs. The table was constructed by *Ildikó Varga* (Labour Market Fund).

In the first quarter of 2001, the Autonomy Foundation in collaboration with the Hungarian Employment Service carried out a survey covering all job centres in the country (N = 171). The survey measured the size of the population affected by the active and passive tools of labour policies, and the proportion of Roma workers participating in the programmes at that time.[13] The number

13 A detailed discussion of the survey can be found in *Lukács* (2003).

of Roma participating in the above employment schemes in the years between 2001 and 2004 was calculated based on these 171 independent estimates using the nationwide data shown in *Table 6.7*.

Table 6.8: Estimated number of Roma employed in welfare employment schemes not specifically targeting the Roma

Welfare schemes	2000	2001	2002	2003	2004
Scheme A	8,721	7,535	7,890	7,180	5,976
Scheme B	–	–	2,543	2,220	2,338
Scheme C	–	2,454	3,214	3,989	4,642
Total	–	9,989	13,647	13,389	12,956
Total (*Autonomy* survey)	–	13,880	–	–	–

Estimation method: The expected number of participants for a randomly selected day of a given year (L) was estimated as follows: L = number of participants for the year × [(average support period)/12] × percentage of Roma among the participants. The average size of the population between 2001 and 2004 was estimated to be 13,468 people ≈ 13 500 people.

Source: Number of participants for the year, average support period: *Table 6.7*. Average support period: Scheme A: four and a half months, Scheme B: four months in 2002 and five months in 2003 and 2004, Scheme C: one month. Percentage of Roma among participants: Employment Service-Autonomy Foundation survey, 2001. Data providers: every local job centre in Hungary (N = 171), fourth quarter of 2001; the number of Roma calculated with reference to the estimated percentage of the Roma among the participants of the given scheme, weighted by quarterly participant numbers. Estimated Roma ratios: 24.9 per cent for Scheme A, 56.1 per cent for Scheme B and 26.1 per cent for Scheme C.

Since the resulting four figures for the four years were very close to each other, their arithmetic mean (rounded to hundreds) was taken as the most likely estimate for the turn of the millennium (13,500 people) (*Table 6.8*).[14] The Employment Service-Autonomy Foundation survey of 2001 also gathered data on participant numbers in employment programmes *specifically* targeting the Roma population offered by various organisations.[15] The results estimate this figure at 2,500 people. The two values add up to 16,000, which is the figure taken here to describe the size of the population in "welfare programme employment." The absolute figures and distributions estimated from the Representative Roma Survey of 2003 were corrected by this value (*Table 6.9*).

Table 6.9 summarises the aggregated results of estimates derived from the various sources. The figures reveal that unstable forms of employment – casual work offered by the informal economy and short-term jobs provided by the welfare system – are represented in a very high proportion (reaching 38–40 per cent).[16]

In summary, the following facts have been revealed in connection with the issue of employment instability among the Roma population. 1. About 40 per cent of the Roma in employment have markedly unstable jobs. 2. The annual job loss rates are extremely high: 25–30 per cent of those in employment in

14 In some countries the Roma are especially highly represented among welfare programme participants (Schemes A, B, C and weighted total, percentage): in Borsod county (respectively 40, 39, 77 and 43 per cent), in Heves county (48, 59, 59 and 51 per cent), and in Jász-Nagykun-Szolnok county (41, 39, 73 and 45 per cent).

15 National Employment Foundation, Hungarian Public Foundation for the Roma, Soros Foundation, Ministry of Social Affairs and Labour, Regional Development Council, local governments, local Roma minority governments, National Roma Self-Government, Autonomy Foundation.

16 With specifically Roma-targeted programmes disregarded, the share of welfare employment comes to 17 per cent.

145

one year will be without a job a year later. Since the employment rate appears to have stabilized by the turn of the millennium, the only explanation for these high exit rates is that entry rates must be similarly high. 3. These high entry rates are likely to be a consequence of the persistently[17] high proportion of short-term welfare employment (17–20 per cent), which ensures a large number of transitions from joblessness to employment year after year.

Table 6.9: Employment among the 15–74 year-old Roma population in 2003
(full-time students excluded)

Has a job?	Activity status or employment type	Estimated number of people	Distribution (per cent)		
No	Pensioners	57,000	18.2	–	–
	Non-pensioners	176,000	56.2	68.7	–
	Total	233,000	74.4	–	–
Yes	Employees, entrepreneurs[a]	47,000[*]	15.0[*]	18.4[*]	59.0[*]
	Welfare programme[b] participants	16,000[*]	5.1[*]	6.3[*]	20.0[*]
	Casual workers[c]	17,000	5.4	6.6	21.0
	Total	80,000	25.6	31.3	100.0
Total		313,000	100.0	–	–
Total excluding pensioners		256,000	–	100.0	–

[a] Employees, entrepreneurs, and company members.
[b] Welfare programmes: 1. employment schemes not specifically targeting the Roma (Schemes A, B and C) = 13,500 people (see *Table 6.8*); *2.* specifically Roma employment schemes = 2,500 people (see *Lukács,* 2003, p. 59). Their respective ratios to the employed population are 15 + 3 = 20 per cent.
[c] Temporary workers and helpers, family helpers, other workers.
Source: Representative Roma Survey of 2003. Figures marked with an asterisk have been corrected based on the Employment Service-Autonomy Foundation survey of 2001 and on the welfare employment data displayed in *Tables 6.7 and 6.8*.

The Roma and the non-Roma

Starting our analysis with the period up to 1993, changes in the employment situation of the Roma population can be reconstructed from the detailed labour history of a large-scale sample[18] tracking labour market transitions on a yearly basis. The database allows us to follow the evolution of employment rates and of the flows both out of and into employment. These processes have been analysed in greater detail in an earlier study by the author of this chapter (*Kertesi,* 2000, pp. 408–415). For the period between 1993 and 2003 no factual data are available. However, we can sketch a picture of the unobserved processes taking place during this period by making an imaginary connection between the known characteristics of the decade up to 1993 and the features of the state of employment just revealed for 2003. This connection is illustrated in *Figure 6.3*.

17 Remaining high in every year during the period between 2001 and 2004.
18 The labour histories of 5,800 adults were recorded in the 1993 survey.

Figure 6.3: The employment situation of the 15–49 year-old Roma population between 1984 and 2003 (persons taking early-retirement and full-time students are excluded)
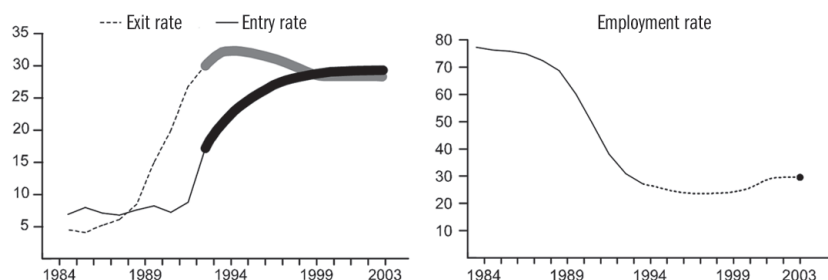
Exit rate, entry rate: The ratios of entries into employment and exits from employment to the total employed population in the reference year. Observed figures: 1985–1993. Hypothetical figures: 1994–2003 (heavy grey and black lines). Source of observed figures: Labour history data from the Roma Survey of 1993 (see *Kertesi*, 2000, pp. 408–414). Figures recalculated for the 15–49 year-old non-pensioner population.

Employment rate: The ratio of the employed to the reference population. Observed figures: 1984–1993, 2003. Hypothetical figures: 1995–2002 (dotted line). Source of observed figures: Labour history data from the Roma Survey of 1993 (see *Kertesi*, 2000, pp. 408–414), and the Roma Survey of 2003. Figures recalculated for the 15–49 year-old non-pensioner population.

The graph on the right in *Figure 6.3* shows the gradual exclusion of the Roma from the labour market starting in the mid-eighties and continuing until the early nineties. The end point of the process is marked by its state in 2003, which is not significantly different from the state observed in 1993–1994. The dotted line connecting the data points for 1993 and 2003 shows a *possible* – and *plausible* – scenario. The graph on the left of the figure displays the processes leading to the transitions. The curves representing the exit and entry rates between 1984 and 1993 are based on observed data. The heavy grey and black lines, however, describe a *possible* scenario, which, of all possible scenarios, is the one that appears to be the most *plausible* given the evidence revealed above with respect to the instability of Roma employment.

The *enduringly high* – 25–30 per cent – exit rates were estimated with reference to the data shown in *Tables 6.4 and 6.5.* The *similarly high* entry rate is suggested by the high share of welfare employment together with the high share of casual jobs. *We have no reason* to posit an increasing trend in the probability of casual work.[19] It is *a fact,* however, that the likelihood of welfare employment displayed *an increasing trend* over the decade. While the number of workers employed in one of these public works schemes, Scheme A, was more or less constant throughout the nineties,[20] the introduction of the other two non-Roma-specific schemes was followed by the rapid expansion of welfare employment starting at the turn of the millennium. While these schemes must have cost the central budget less than 10 billion forints (at

19 The qualitative analyses we are aware of report a persistently high percentage of casual jobs: *Tóth* (1997), *Szuhay* (1999), pp. 53–75, *Fleck, Orsós and Virág* (2000) pp. 99–102, *Kemény* (2000*a*) pp. 30–32.

20 *Fazekas and Varga* (eds.), 2004, Table 5.10, p. 253.

current rates) a year during the last years of the millennium, in 2002–2004 the programme bloated into some sort of "welfare mass production" costing *three times as much,* 30 billion forints a year.[21] Since the Roma are grossly overrepresented in these employment schemes relative to their proportion in the country's population, this institutional change must have raised the entry rates among the Roma to a higher level. The continuing high entry rates are robustly sustained by the government injections ensuring the financial viability of these short-term – for the Roma, lasting 3.5 months on average[22] – employment contracts. (The short employment periods also take care of the sustainment of high exit rates, of course.)

In summary, the employment situation of the Roma population at the turn of the millennium can be characterised as follows: the employment rate had stabilized at a prominently low (about 30 per cent) level, which was coupled with an outstandingly high (about 25–30 per cent) turnover rate, typical of third world economies. A share of the responsibility for this level of employment instability is borne by Hungarian labour policies investing serious resources into maintaining support programmes that keep regenerating this situation year after year.

One may wonder whether this employment pattern is characteristic of the entire relatively uneducated population of Hungary. The answer is that it is not. The most important evidence supporting our claim is summarised in *Figure 6.4*. The figures displayed in the graphs are based on the micro level data of all quarterly waves of the HCSO Labour Survey between 1992 and 2003 (a total of 48 large-scale surveys). For reasons of comparability,[23] the 15–49 year-old, non-student, non-pensioner population having primary education was selected as the reference population.

The figure displays the evolution of three important employment indicators between 1992 and 2003, broken down by gender: a) men's and women's employment[24] rates; and two indicators measuring the stability of employment: b) the proportion among the employed population of those being in employment for four consecutive quarterly periods without interruption, and c) and d) the *annual* probabilities of job losses and new starts – exit and entry rates – by gender. The latter indicator was calculated by comparing the figures for each quarter to the figures measured three quarterly periods later. The values of entry and exit rates display substantial seasonal fluctuations. These fluctuations were smoothed by applying a ±4 quarter moving average filter. The resulting trends are shown in Graphs c) and d) in *Figure 6.4*. Indicators a), c) and d) are *directly comparable* to the Roma data discussed above.

Compared to the state of employment among the Roma population, *Figure 6.4* reveals an astonishingly different picture. Overall employment is at more than twice the level of Roma employment. Jobs are fairly stable: for both

21 See *Szalai* (2004–2005) for a general discussion.

22 Assuming four and a half months' duration for Schemes A and B, one month's duration for Scheme C, weighted by the average Roma employment rate for 2002–2004 (see *Table 6.8*).

23 With respect to educational attainment this appears to be a reasonable basis for comparison. Although the probability of not completing primary education is higher among the Roma than among the total population of the country, about 20 per cent of the Roma have higher than primary education (vocational training: 16 per cent, higher than vocational training: 4 per cent). The countrywide control group does not include persons having higher than primary education.

24 An individual is classed as being employed according to the ILO-OECD definition: a labour survey respondent is employed provided that they performed at least one hour's paid work in the week preceding their interview. The criterion of one hour is not particularly restrictive in actual practice. Only 0.32 per cent of the employed thus defined work less than 10 hours *in a regular week*. The proportion of those working less than 30 hours *in a regular week* is still not particularly high (5.6 per cent) (fourth quarter of the HCSO Labour Survey of 2003).

men and women, the proportion of jobs retained for at least a whole year had reached 90 per cent by the turn of the millennium (1999–2003).

Figure 6.4: Employment among the at most primary-school educated 15–49 year-old population in Hungary between 1993 and 2003 (persons in early retirement and full-time students are excluded from the reference population)

a)

b)

c) Férfiak

d) Nők
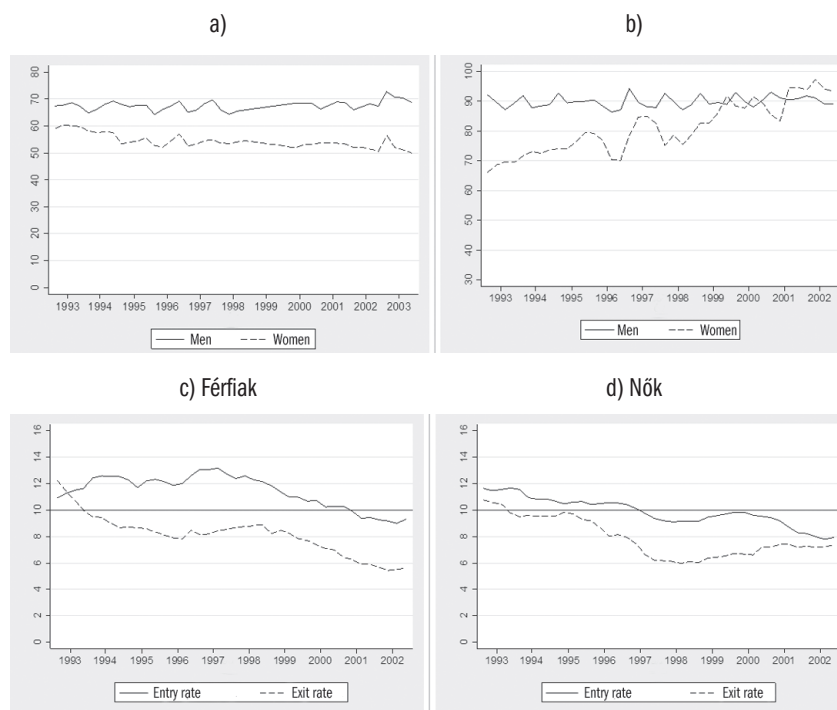
a) Employment rate (quarterly figures).
b) The proportion of workers in employment for four consecutive quarters without interruption among the employed population.
c) and d) The ratio of entries into employment and exits from employment to the employed population in the reference quarter (yearly changes, trends). *Method of calculation:* Exits or Entries in *Quarter* t+3 divided by the size of the employed population in Quarter *t.* Trends: estimated using a ±4 quarter moving average filter.
Source: Calculations based on the HCSO quarterly labour survey data.

Given a low educational attainment among the reference population, the exit and entry rates are relatively high (there is a high turnover) but compared to the Roma figures, a striking gap can be seen. Looking at the data for the first years of the new millennium once again, the values of the exit and entry rates measuring the employment instability of the average uneducated Hungarian population are both found below the 10 per cent level. The corresponding indicator for the Roma population is, in contrast, estimated to be two and a half to three times higher (25–30 per cent) for the same years.[25] The gap between the Roma and the *similarly uneducated average Hungarian popula-*

25 Following the procedure used to calculate the annual exit rates among the Roma based on Tables 4 and 5 – maintaining the steady state assumption –, a similarly large gap is revealed between the Roma and the total population based on the fourth quarter figures of the Labour Survey of 2003. Let us take the group of the control population corresponding to the Roma group selected as an example earlier in this chapter (page 6): 30–39 year old men with primary education. 85% were in employment in the given quarter, 1% never had a job and 14% had a job in the past (these figures were calculated by exactly the same method as the figures characterising the Roma population shown in Table 4). 37% of this 14% must have had a job the year before (the method of calculating the figures characterising the Roma shown in Table 5 is applied here). Thus, reproducing the reasoning discussed earlier, the exit rate between 2002 and 2003 comes to 6% ((14*0.37)/85 = 0.06) for the given subgroup of the total population, which is about seven times smaller than the corresponding value calculated for the Roma subgroup of equivalent age and education (40%).

tion is not limited to the fact that the employment odds of the former are less than half of the odds enjoyed by the latter, but also emerges in the sense that a typical Roma job is almost three times less stable than a job in which an average Hungarian worker with similar education is employed. Let me repeat what I wrote five years ago in connection with the fossilisation of this sort of employment pattern. "The spread of unstable employment has led to social disintegration extending to a substantial share of even those in employment: the lack of regular work brings with it a lack of regularity in everyday life, basic subsistence problems, and lower levels of public social security support and corporate social services or, in some cases, the complete loss of entitlement to these services." (*Kertesi,* 2000, p. 414)

The identification of the causes underlying these striking differences is a far-reaching issue. A discussion of this problem would stretch beyond the scope of this paper. Further meticulous research is needed to reveal the contribution of the geographical position of the Roma population to this gap, i.e., the fact that they live in regions with far less favourable employment prospects than the regions inhabited by the non-Roma population; the contribution of the disproportionately high probability of markedly short-lived and inherently unstable employment among the Roma population financed from welfare funds; and finally, the contribution of labour market discrimination putting the Roma at a disadvantage and a thousand other manifestations of their social exclusion.

7. THE EFFECT OF COMPETITION ON THE GENDER WAGE GAP IN HUNGARY 1986–2003

ANNA LOVÁSZ

Introduction

Of the economic models of discrimination, perhaps the most well-known is the preference-based discrimination model developed by *Becker* (1971), in which employers (or alternatively, employees or customers) have a distaste for a particular minority group, so employing them (or being in contact with them) affects their utility negatively. One of the well-known implications of the model is that product market competition decreases the level of this type of discrimination in the long-run, since discriminating employers are not behaving efficiently, and competition forces them out of the market: discriminating employers pay majority workers a higher wage than a minority worker of equal productivity, so they face extra costs. According to Becker's reasoning, only firms that have a positive economic profit are able to behave this way, so they must be monopolistic firms or those in a market that is restricted in the level of competition. If competition increases in a market for some reason, discriminating employers are forced out or are forced to change their prejudicial behaviour, since the profit needed to indulge their tastes decreases.

The implied negative relationship between market competition and discrimination does not hold in many cases, as summarized in *Heywood* (1998). In the case of customer discrimination the prejudicial behaviour of employers is profit-maximizing: it is more efficient to hire workers from the majority group into occupations where there is contact with buyers, since buyers are willing to pay more to buy from such workers. In the case of employee (co-worker) discrimination, the employer is also not able to change the level of discrimination, as this is beyond his control, so competition does not affect this type of discrimination in the way described above. The magnitude of the effect of employer discrimination on wages depends greatly on the industry level elasticity of labour demand and supply, so the effect of competition may be different under different market conditions. Finally, in cases where the interests of firm managers and owners diverge, and the manager is the one with prejudicial tastes while the latter is motivated by profit alone, Becker's implication will only hold if owners lack sufficient control over managers to stop their discriminatory behaviour.

Keeping these caveats in mind, it is clear that competition does not necessarily decrease discrimination in all cases. Empirical studies show that wage

151

differentials between minority and majority groups can exist in the long-run, although these may be due to differences in the average productivity of the groups. Despite this fact, the implication has been a popular empirical research question since the introduction of the model, and is often cited by parties arguing the pros and cons of globalization and market competition. Although increased competition only explains a small part of the decrease in labour market differences seen in recent decades, studies usually find a significant correlation between the two, so it seems that competition does have a positive effect on labour markets in this respect.

The majority of empirical studies on the topic have tested Becker's implication on data from the United States, but there are results for numerous other countries as well. During testing, some of the most important questions are how we measure the level of competition, and how we identify the effect of competition. Some studies compare markets that differ in the level of competition to assess how much wage differentials depend on market characteristics. Since markets may differ along numerous other dimensions, and this may influence estimation of the effect, estimation based on changes in the level of competition over time within industries provides stronger proof. The exogenous change needed in such estimation may be the result of various phenomena. For example, *Black–Strahan* (2001) study the effect of the deregulation of the banking sector, and their results support the idea that increased competition decreased discrimination against women in the labour market.[1] The newest research on the topic often measures the changes in the relative situation of different groups in the labour market that are due to increased competitive pressure due to international trade. *Hazarika–Otero* (2004) show that competition decreased discrimination in Mexico, while *Dutta–Reilly* (2005) do not find a significant correlation between industry level gender wage gaps and the level of international trade in India.[2] *Black–Brainerd* (2004) study the United States and emphasize that although international trade increased the inequality between workers with different skill levels, it did, at the same time, decrease the prejudicial behaviour of firms.

The broad changes in Hungary following the transition pose an excellent opportunity for the analysis of the relationship between competition and the labour market differences between men and women. Since the first year of the Hungarian Wage Survey, 1986, the level of competition in Hungarian markets increased significantly both due to the entry of new domestic firms following the liberalization of markets and also due to the increase in international trade. During this same time period the wage gap between men and women fell significantly: from 31 percent at the end of the eighties to 15 percent by 2003. Although the decrease in the wage gap may be due to numerous other factors, a question that arises naturally is whether increased competition had a role in it as well.

1 *Ashenfelter–Hannan* (1986) also study the banking sector of the United States.
2 *Berik* (2003), on the other hand, also studies the effect of increased competition due to trade in East Asia, and finds a significant negative correlation between the level of competition and wage differentials.

Analyzing the effect of competition on labour market discrimination on data from other countries remains an important research task, since the differences between countries provide an experiment-like setting for testing the relationship.[3] The question has not lost its importance, since if it is true that certain characteristics of markets determine the extent of discrimination, policies targeted at the industry level may be more effective than more general principles and attempts made to enforce them. The goal of this chapter is to extend the research, testing the implication for Hungary, making use of the rapid and broad changes in product markets that can be seen in the years following the transition.[4] Since to my knowledge empirical analysis has not been carried out on data from transitional countries, the estimation results are an important contribution to the analysis of the effects of competition. The study also provides new indirect evidence on the existence of discrimination: the fact that in those industries that experienced an increase in competition we can also observe a decrease in the wage gap between men and women suggests that some level of discrimination must have existed, though this methodology does not give an estimate of its magnitude.

Wage differentials and their changes in transitional countries

Previous studies suggest that the gender wage gap decreased significantly in Central-Eastern European countries following the transition. *Brainerd* (2000) and *Newell–Reilly* (2001) document this trend, while in the former Soviet countries the opposite trend was observed (*Ogloblin,* 1999, *Reilly,* 1999). Several parallel phenomena may be behind the fall in differences. First, the training of female employees has improved due to their increased involvement in higher education. The increase in women's human capital causes an increase in their average relative wages. If the average education level of women in the labour market increases their relative wage increases as well because lower-skilled women are forced out of the labour market – and this occurred in a higher proportion for women than men. *Hunt* (2002) emphasized the importance of this selection effect, and shows that the ten percentage point fall in the gender wage gap in East Germany is mostly due to the exit of low-skilled women from the labour market, which increased the average wage of women compared to men, but cannot be interpreted as an unambiguously positive development.

In Hungary, the decrease in wage differentials occurred relatively rapidly during the few years following the transition (*Galasi,* 2000). *Kertesi–Köllő* (1998) show that the wage differential between men and women was 15 percent lower in 1994 compared to 1986. They suggest that the phenomena is mainly due to two major factors: the value of intellectual work increased, and this type of work typically characterizes women, and at the same time, the wages of men in certain failing industries that mostly employ low-skilled

3 *Heywood–Peoples* (2006) is a collection of studies on the effect of competition in the labour market, and the editors state that testing in other countries is an important goal. *Weichselbaumer–Winter-Ebmer* (2007) measure the effect of competition on the gender wage gap using data from various countries. Their results suggest that increased competition decreases the gap.

4 *Némethné* (2000) analyzes the main changes in the Hungarian labour market.

workers fell relative to the wages of women. *Frey* (1998) emphasizes the importance of the increased education level of women and the fact that low-skilled women were forced out of the labour market in the case of Hungary as well.

Campos–Jolliffe (2005) analyze the relationship between the transition and the gender wage gap in Hungary. The authors subtract the part of the overall wage gap that is due to differences in the observable characteristics of the two groups. They take the workers' human capital variables into account, including their education level and labour market experience,[5] as well as further explanatory variables that determine wages (the size, ownership type, county, and industry of their place of employment), and they also account for the selection of workers into the labour market (changes in the composition of the workforce). Their results suggest that observable characteristics only explain a small part of the fall in the overall gender wage gap. The remaining unexplained difference can be viewed as the upper-bound estimate of discrimination[6] – its significant decrease explains most of the fall in the wage gap. Although the authors conclude that this is evidence that the increase in competition led to a fall in discrimination, they do not directly measure the relationship between the two. A more complex empirical method is necessary to determine the effect of competition.

Methodology and data

We use a two step method to estimate the effect of competition on the wage gap.[7] The empirical analysis is carried out using the Hungarian Wage Survey, which includes a random sample of the employees of all double-book-keeping firms with at least 20 workers, data on their wages and other characteristics, as well as some characteristics of the firm of their employment. Since we are actually interested in the possible changes in discrimination, in the first step we use the decomposition method (*Oaxaca,* 1973) also used in *Campos–Jolliffe* (2005) to calculate the so-called residual wage gap between men and women, which is the part of the overall wage gap not explained by the observable characteristics of the workers. This is calculated separately for each firm, so we obtain the within-firm residual wage gap that remains after taking workers' education levels and estimated years of experience into account.[8] Figure *7.1.* shows the overall gender wage gap, and the residual wage gap calculated using this method for the years 1986–2003. The figure clearly shows that changes in the observable characteristics do not explain most of the fall of the overall gap.

The second step provides the test for Becker's implication regarding the effect of competition. The dependent variable is the residual wage gap calculated in the first step, and we use regression methods to assess how it depends on the level of competition, which is measured using several different variables.

5 Unfortunately, actual labour market experience is not available in a lot of datasets, even though it is commonly known that women usually have less experience than men of similar age due to child-bearing. The use of their estimated potential experience overstates their human capital, and leads to overestimation of the level of discrimination.

6 The unexplained wage gap is often interpreted as the discriminational component. This, however, is not an accurate interpretation, since wage discrimination only applies to a gap between the productivity and wage of workers. Based on the observable characteristics, we do not estimate the productivity of individual workers accurately, and if certain unobserved characteristics are systematically different for men and women, this may lead to a bias in the estimated level of discrimination.

7 *Meng–Meurs* (2004) use a similar two step methodology using data from France and Australia.

8 Practically this is calculated by estimating a separate wage equation for each firm, where the explanatory variables are the level of education and the potential experience of workers. Then we subtract from the wage of each worker the coefficient-weighted sum of the education and experience variables, so we get the part of the wage of each worker that is not explained by their characteristics. Finally, we subtract the average residual wage of women from that of the men for each firm.

The estimated equation is of the form:

$$B_{jt} = \alpha + \beta_1 \times V_{kt} + \beta_2 \times X_{jt} + e_{jt},$$

where B_{jt} represents the firm level residual wage gap in year t, V_{kt} the level of competition in industry k in year t, and X_{jt} includes other firm characteristics, and dummy variables for each year. If competition decreases discrimination, the estimated coefficient of the competition variable will be negative: < 0.

The equation is estimated using various methods and samples. First we estimate using ordinary least squares, which measures the *between-industry* effect, then we take industry fixed effects into account, so we measure the relationship between the level of competition and wage differentials *within industries*. This means that we control for all industry characteristics that are constant over time. Coefficients estimated in this way reflect the effect of changes within industries over time, so this helps us avoid estimation bias that may arise from unobserved differences between industries (including selection bias). The estimation is carried out on the full sample of industries, as well as on a sample restricted to manufacturing industries. We estimate the latter separately as well because it is easier to measure the level of trade for firms in manufacturing than it is in the much less tangible services sector.

Figure 7.1: The overall gender wage gap and the residual wage gap in Hungary, 1986–2003
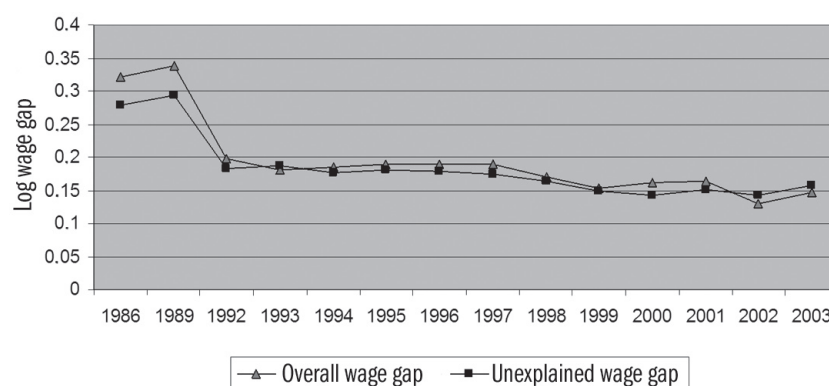

One of the main empirical issues is the correct measurement of the level of competition in the markets. Since in Hungary competition increased both as a result of the entry of new Hungarian firms as well as due to the expansion of international trade, it is important to take the effects of both into account.

It is also important to determine the correct level of industrial aggregation for measuring the level of competition (the relevant market), since the decisions of employers are only influenced by the market in which they sell their products. Ideally, we would determine their markets based on data on the products each firm produces, as well as geographical considerations, but un-

155

fortunately we do not have such data available. So we determine the firms' markets based on their three digit industrial classification (Teaor codes). In this way, we obtain 180 industrial categories. The level of domestic competition is measured by the HHI concentration ratio (Hirschmann–Herfindahl-index).[9] This takes on a value of 1 if the market is monopolistic, and 0 if it is perfectly competitive. Figure *7.2.* shows the changes in the concentration ratios during the time period.

Figure 7.2: Changes of the industrial concentration ratio between 1989 and 1998
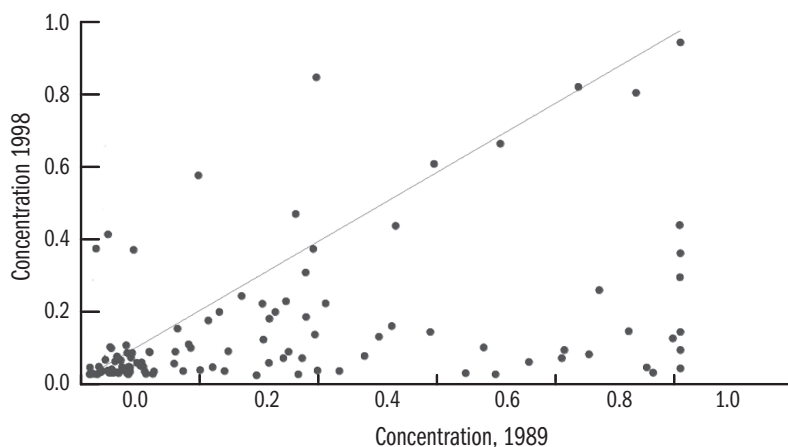
The horizontal axis displays the values of the concentration ratios in 1989, while the vertical axis shows the values in 1998. Each point represents a three digit industry. The 45 degree line shown on the figure indicates the location of industries where the concentration ratio did not change between the two years. The figure clearly shows that the industries underwent significant change in terms of competition. Many industries are located below the 45 degree line, which means that the concentration ratio decreased in these markets, so the level of competition increased. This is important for our analysis, because we want to identify the effect of changes in competition, for which some variation in the concentration ratio is needed.

International trade increases the number of competitors that firms face both via exports and imports, and forces them to behave more efficiently. The relevant market of companies that export includes all international companies that sell the same product, so such firms face greater competition. This effect is measured using the industry level export share variable in the regressions.[10] We measure the level of imports for each industry similarly using the import penetration ratio,[11] since imports mean direct competition for domestic firms. Both trade variables take on values between 0 and 1, the values increasing with the level of competition. The concentration ratio, export share, and import penetration ratio together measure competition in our regression

9 The Hirschmann–Herfindahl-index of a given sector is calculated as the sum of the square of each firm's market share in that sector. The concentration ratio does not always measure the actual level of competition accurately. *Boone–van Ours–van der Viel* (2007) and *Bikker–Haaf* (2002) summarize the relevant literature on this topic. Despite these problems, it is still often used in empirical research because there are no easily obtainable alternative measures available.

10 Export share is calculated by dividing the export revenue of the three digit industry by total revenue.

11 The import penetration ratio is calculated according to the following formula at the three digit industry level: *imports/ (revenue – exports + imports)*.

156

equations, so we combine the different competition measures used in previous literature on the topic.

Results

Table 7.1. presents the estimated coefficients of the regressions for the different specifications outlined above. Instead of the *HHI* concentration ratio, we substitute 1 – HHI as the explanatory variable, which makes interpretation of the results easier, because in this way all three competition measures increase if the level of competition increases – as was previously specified in the estimation equation. The Becker implication states that the estimated coefficients should be negative if competition really decreases discrimination, and through it, the residual wage gaps that we observe.

Table 7.1: Regression results

	Full sample			Manufacturing	
	1	2	3	4	5
1 – *HHI*	–0.051**	–0.062**	–0.058**	–0.108**	–0.093**
	(0.019)	(0.021)	(0.021)	(0.040)	(0.031)
Import ratio	–	0.029	–0.082**	–0.018	–0.035
		(0.026)	(0.019)	(0.020)	(0.022)
Export share	–	–0.059*	–0.121**	–0.038	–0.163**
		(0.022)	(0.038)	(0.031)	(0.039)
Industry fixed effects	no	no	yes	no	yes
Number of observations (N)	7752	7752	7752	3696	3696

Notes: We control for year fixed effects in all of the regressions. Standard errors of the estimates are presented in parentheses.
** significant at the 1 percent level, * significant at the 5 percent level.

In the first column, we only look at the effect of the concentration ratio without imports or exports. The estimated coefficient is –0.05, and it is significant. This is in line with our expectation based on the Becker hypothesis, since a negative coefficient means that if a given industry has higher levels of competition (lower concentration ratio), then the residual gender wage gap is smaller. Based on this coefficient estimate, if a market changed from monopolistic to perfectly competitive, the residual gender wage gap would decrease by 5 percentage points. This sounds like a significant change compared to the current 0.15 overall wage gap, but of course such a drastic change rarely occurs in real life.

The second column also includes the variables measuring international trade. The effect of the concentration ratio remains significant, and rose to 6 percentage points. The estimated coefficient of the export share is also significant, and of similar magnitude as the concentration ratio. Based on this result, if an industry switched from producing solely for the domestic market to producing only for export (if the export share increased from 0 to 1), the

157

gender wage gap would decrease by 6 percentage points. The estimated coefficient of the import ratio is not significantly different from 0 in this specification, which means that changes in import penetration do not affect the wage gap. However, this changes in the results of the next column, underlining the importance of industry level selection.

The third column adds industry fixed effects to the previous specification, so the estimated coefficients measure the within-industry effects, or the effects without industry level selection. In this case we are testing how a change in the level of competition within a given industry over time affects the within-firm residual wage gaps. We include all three competition measures as controls here as well, and the results indicate that all three measures have a significant negative effect on the wage gap. The estimated effect of the concentration ratio remains stable around the −0.6 seen so far. The import penetration ratio also has a significant effect – if it were to increase from 0 to 1, the gender wage gap would fall by 0.8 percentage points. The effect of exports is even higher: the estimated coefficient is −0.12. Looking at the within-industry results, we can say that an increase in competition has a negative effect on the residual gender wage gap, which supports the Becker implication, and suggests that in Hungary, the observed fall in the gender wage gap may be partially due to the efficiency-enhancing effect of increased competition, and the fall in discrimination against women.

To determine how much of the observed fall in the overall gap is due to the increase in competition, we look at the estimated coefficients and the average changes of the competition measures during the period. The concentration ratio decreased by 0.2 on average during the time period, while the residual gender wage gap fell by 0.18. According to the results, if the concentration ratio increased by 1, the wage gap would fall by 0.06. Based on these numbers, the observed change in the concentration ratio explains about 7 percent of the fall in the wage gap. Based on a similar calculation, the average change of the export share also led to a 7 percent fall, while the change in imports explains 1 percent of the change. Of course, some industries underwent larger, and some underwent smaller changes of the competitive environment, so the effect on wage differentials is also different by industry. We can see however that competition does have some effect on wage gaps, although it does not explain most of the observed change in the gaps.

The last two columns present the results of the estimation limited to the sample of manufacturing firms. The effect of competition is negative in each case, though in the case of imports it is not statistically significant. A decrease in the concentration ratio (increase in competition) still decreases the wage gaps: the estimated effect is larger in the manufacturing sector, around −0.1. The within-industry results suggest that the average change in concentration can explain 11 percent of the observed fall in the wage gap. In the case

of exports, the estimated coefficient is −0.16, and this can explain about 21 percent of the fall in the wage gap in the manufacturing sector. These results all support the notion that competition decreases discrimination and wage differentials between men and women.

To check the robustness of these results, we also run the regressions with an alternative dependent variable. The Becker model suggests that discriminating firms not only pay lower wages to minority employees, but they also hire a lower than profit-maximizing ratio of minority workers. If the level of competition in a given market increases, and this leads to more efficient behaviour of the firms in that market, we expect the ratio of female workers to increase. To test this, we calculate the ratio of women employed at each firm, and estimate an equation similar to the previous ones, with the same competition measures. In this case, based on the Becker model we would expect the coefficients of the competition measures to be positive, since an increase in competition should increase the ratio of women employed at firms. The results of these regressions are presented in *Table 7.2*.

Table 7.2: The effect of competition on the ratio of female workers

	1	2	3
1 – *HHI*	0.377** (0.106)	0.581** (0.153)	0.056* (0.021)
Import ratio	–	0.001 (0.000)	0.001 (0.001)
Export share	–	0.569** (0.143)	0.408* (0.161)
Industry fixed effects	no	no	yes
Number of observations (N)	7752	7752	7752

Notes: We control for year fixed effects in all of the regressions. Standard errors of the estimates are presented in parentheses.
** significant at the 1 percent level, * significant at the 5 percent level.

The first column again presents the effect of the concentration ratio alone, without industry fixed effects. The ratio of women depends positively on the level of market competition, with a coefficient estimate of 0.38. This means that if the concentration rate decreased from 1 to 0, the ratio of female workers would increase by 38 percent. This result is not easy to interpret, but taking the average change in concentration as before, this translates into a 7.5 percent increase in the ratio of female workers. The effect of the concentration ratio remains significant in the within-industry specification (column 3), but it is significantly lower: within a given industry, the estimated effect of an increase in competition (a change of the concentration ratio from 1 to 0) is 0.06. The import ratio does not have a significant effect on the ratio of women in either specification, but the export share has a strong positive effect in each case. Overall, these results are also in line with the implication of

the Becker model, and they suggest that some level of discrimination against women must have existed in the labour market, and this decreased as a result of increased competition following the transition.

Conclusion

The goal of this study was to assess the relationship between product market competition and the residual gender wage gap between men and women (an upper bound for the level of discrimination), and to determine what part of the fall in the wage gap following the transition was due to increased competitive pressure on firms. We measure competition using the industry concentration ratio, and international trade using the export share and import penetration ratio, and we estimated how the changes of these variables over time affected the residual gender wage gap within firms.

The results are in line with the Becker model's implication: they show a significant negative relationship between the level of competition and the wage gap, suggesting that increased competition decreased employer discrimination against women. The magnitude of the effect, however, can only explain a small part of the observed decrease in the wage gap: based on the actual average changes of the variables, market concentration explains 7, the import ratio 1, and the growth of export shares explains 7 percent of the fall in the gap. We also document a positive relationship between the level of competition and the ratio of women employed in firms, which also suggests that competition forced employers to behave more efficiently, since discriminating employers hire a lower than profit-maximizing ratio of female workers.

8. ESTIMATION OF THE RELATIVE PRODUCTIVITY AND WAGE OF WOMEN COMPARED TO MEN IN HUNGARY

ANNA LOVÁSZ & MARIANN RIGÓ

Introduction

The average gross wage of women is usually between 60–94 percent of the average wage of men.[1] In Hungary, women's wages are roughly 15 percent lower than men's (*Fazekas–Bálint,* 2008). Only a small part of this difference can be explained by the observable characteristics of workers, such as education level, experience, occupation, etc. According to our calculations, the unexplained wage gap is around 14 percent, which can be viewed as an upper bound estimate of the level of discrimination against women in the labour market.[2] The estimation of wage returns to characteristics is usually done via wage equations, where researchers include observable worker characteristics (such as gender, experience, and education) and firm characteristics (such as industry, size, and ownership type) as explanatory variables. In this specification, the estimated coefficient of the female dummy variable represents the wage gap of women compared to men. A wage gap estimated using this method is only a precise measure of wage discrimination if we are able to control for all relevant characteristics of the workers and their workplace. If this is not the case, the negative coefficient of the gender dummy variable may be due to unobserved lower productivity of women (for example, if women spend less time in the workplace than men or are less motivated in their careers due to obligations outside their workplace, and this is not observed in the data), or to differences in the characteristics of the jobs of men and women (flexible schedule, less health risk, etc.).[3] The increasing availability of datasets that follow firms over time (panel data) may overcome the latter by allowing the estimation of firm level fixed effects, or occupation level effects, but data on the individual productivity of workers is rarely available, as was discussed in the first chapter of the *In Focus* section.

One possible solution to the problem may be the use of alternative variables that signal the individual productivity of workers. Several studies use IQ or AFQT test scores[4] as additional controls. These studies, for example *Griliches–Mason* (1972), *Griliches* (1977), and *Neal–Johnson* (1996), use test scores to approximate the unobserved abilities of workers that determine their productivity. It is a well known problem in the estimation of returns to education that ability is missing from the traditional wage equations, since it is difficult or impossible to measure. But it is likely to be correlated

1 *OECD* (2006). Of the OECD countries, the relative wage of women is the lowest in Korea (60 percent), and the highest in New Zealand (94 percent). *Brainerd* (2000) and *Newell–Reilly* (2001) study the changes in the gender wage gaps of transitional countries. *Reilly* (1999) analyzes the wage gap in Russia, while *Blau–Kahn* (2000) do so for the United States. In Hungary, *Csillag* (2006), *Frey* (1998), *Galasi* (2000), *Kertesi–Köllő* (1998), *Linderné* (2007), and *Koncz* (2008) all analyze the male-female wage differential.

2 After taking the control variables into account, the remaining wage differential was calculated using data from the Wage Survey of the Hungarian Employment Office for the year 2003.

3 The model of compensating wage differentials was introduced by *Rosen* (1986). In this model specific occupations differ in terms of some characteristics that workers care about (for example in flexibility of hours, risks, effect on health), and workers who are willing to undertake less appealing jobs receive higher wages for doing so. *Thaler–Rosen* (1975), *Biddle–Zarkin* (1988) and *Gupta et al* (2003) also study worker preferences for job characteristics and their effect on wage differentials.

4 Armed Forces Qualification Test: a test used to filter applicants to the United States military.

with the workers' education levels, and this may lead to a bias in the estimation of the returns. These studies attempt to avoid the bias by taking the workers' test scores into account. Unfortunately, this approach does not provide a widely applicable solution to the problem, since such data is only available for a small fraction of workers, and are not representative of the entire population.

Another possible solution may be the use of data that follows both workers and firms over time, which allows for the inclusion of both individual and firm level effects that are constant over time. *Abowd–Kramarz–Margolis* (1999) develop a measure of human capital that incorporates the observable characteristics of workers (education, experience, gender, etc.) and their unobservable characteristics (ability, quality of schooling, social capital, and effort on the job). This can be carried out using datasets that follow workers and firms over time (panel data), so we are able to measure both worker and firm fixed effects (characteristics that do not change over time). With this method, we are able to take not only workers' observable human capital, but also their skills that are stable over time and affect productivity into account when estimating workers' individual productivities. The method has been used in numerous studies since, including *Abowd–Lengerman–McKinney* (2003), *Haskel–Hawkes–Pereira* (2005), and *Iranzo–Schivardi–Tosetti* (2006). Since it can only be applied when worker level panel data is available, and these exist only in a few countries, researchers often have to use other methods to more accurately measure individual or group level productivity.

In our study we will follow an alternative methodology: we will estimate the relative productivities of different worker groups at the firm level using production functions. The measure of group level productivity derived in this manner can be compared to the relative wage of each group, which is estimated from wage equations, so that we can assess whether the wage gap between men and women is due to a difference in the productivity of the two groups, or some other phenomenon, such as discrimination. This method was first developed based on the work of *Griliches* (1960) by *Hellerstein–Neumark–Troske* (1999), who were the first to use it to test the relationship between the productivities and wages of different demographic groups. The estimation is carried out in two steps. In the first step, we estimate a Cobb-Douglas production function that is expanded to include the worker composition of each firm, to gain estimates of the relative productivities of each group. In the second step, we estimate wage equations at the firm level using the same worker groups to get a measure of their relative wages, using various wage measures. We then compare the relative productivity and wage of women compared to men and assess the difference between the two. Since our relative productivity measure is estimated independently of wages, and this measure should include group level unobservable differences in productivity, this comparison

may give us new information regarding the male-female wage differential that could not be derived from the traditional wage equation method.

We carry out the estimation using wage survey data for 2000–2005. The database – both in terms of representativeness and the availability of detailed worker and firm characteristics – is very well suited to this methodology. At the worker level, we have information on the age, gender, occupation, education, and place of employment for each individual. Linked to this information are the firm level characteristics of each worker's employer: we know the firms' industries and the major variables needed for estimating production functions. The dataset contains data on all firms with at least twenty employees and double bookkeeping,[5] and for each firm a roughly 10 percent sample of its workers and their characteristics. Another strength of the dataset is that it is a panel dataset at the firm level, which allows us to track firms over time, and to take firm fixed effects into account. This allows us to separate out the part of the difference between worker groups that is truly due to differences in worker characteristics, and the part that is due to the selection of workers at the firm level (crowding into better or worse firms).

Estimation method and previous research[6]

In the first step, we estimate a Cobb-Douglas production function with three inputs – capital, labour, and material costs – in which the term that describes the use of labour contains the average employment of each firm (L) weighted by the different worker groups' productivities. Workers are divided into groups based on gender, age (whether the worker was of working age before the transition or not), and education level (university or lower), under the assumption that the relative productivity and ratio of women is equal within each age and education category. This gives us a production function of the form:

$$\ln Y_{jt} = \alpha_0 + \alpha \ln K_{jt} + \beta \ln M_{jt} + \gamma \ln L_{jt} +$$
$$+ \gamma \ln\left[1 + (\varphi_F - 1)\frac{L_{F_{jt}}}{L_{jt}}\right] + \gamma \ln\left[1 + (\varphi_O - 1)\frac{L_{O_{jt}}}{L_{jt}}\right] + \qquad (8.1)$$
$$+ \gamma \ln\left[1 + (\varphi_U - 1)\frac{L_{U_{jt}}}{L_{jt}}\right] + \delta \cdot Z_{jt} + u_{jt}$$

In the above equation Y_{jt} represents the revenue of firm j in year t, K_{jt} the stock of capital, M_{jt} the material cost, and L_{jt} the average employment of firm j during the year t. The different worker groups are represented as follows: F refers to female workers, O the group that was of working age prior to the transition, and U stands for those with a university degree. The matrix Z contains other control variables – the ownership (state, domestic, or foreign), industry, and region of the firm, year dummies, and dummies for each firm (firm fixed

5 In the later years of the data, firms with fewer employees were also included in the sample, but we will carry out our estimation on the sample of those with at least twenty employees, and we restrict our sample further to those firms that have enough male and female workers in the sample to estimate group level differences between them.

6 The methodology is discussed in greater detail in the appendix.

effects). The relative productivity of various worker groups is represented by the parameter φ. In this simplified model we estimate an average relative productivity: φ_F represents the relative productivity of women compared to men in all age and education groups.

Besides this average parameter, it may also be interesting to see whether there is a difference between the relative productivity of women of different ages and education levels. So we also estimate an unrestricted model in which we allow the relative productivity of all seven detailed worker groups to vary compared to the reference group of younger (those who only have work experience after 1989) low-skilled male workers. A more general form of the production function for $n = 0, 1, …, N$ worker groups is the following:

$$\ln Y_{jt} = \alpha_0 + \alpha \ln K_{jt} + \beta \ln M_{jt} + \gamma \ln \varphi_0 + \gamma \ln L_{jt} +$$
$$+ \gamma \ln \left[1 + \sum_{n=1}^{N} \left(\frac{\varphi_n}{\varphi_0} - 1 \right) \frac{L_{n_{jt}}}{L_{jt}} \right] + \delta \cdot Z_{jt} + u_{jt} \tag{8.2}$$

The relative productivity parameters are estimated using the method of non-linear least squares (NLS). We first carry out the estimation using only the observed characteristics as controls; in this case parameters are identified from variation between firms. In the next specification, we take into account firm level effects that are not observable but are constant over time by using firm fixed effects estimation. These are controlled for using firm dummy variables, and the parameters of the production function are estimated in first differenced form using nonlinear least squares estimation (FD).[7] In this specification, the relative productivity of women is identified from changes in worker composition within firms over time. Thus we are able to filter out the effect of systematic selection of men and women. This is necessary because it is possible that women are employed at lower productivity firms (those with less effective management, less capital, etc.), which lowers their measured group level productivity, but they actually perform just as well as, or even better than men within a given firm. In this case, we would estimate φ_F to be less than one in the NLS specification that only controls for observable firm characteristics, and closer to or even greater than 1 in the FD specification.

In the second step, we determine the relative wage using firm level wage equations. We prefer to aggregate to the firm level rather than estimate at the individual level for two reasons. First, at the firm level, we have two different wage measures available: the wage bill of the firm, which includes all wage-related expenses paid by the firm, and an aggregated variable calculated from the individual wages of workers. Second, at the firm level, the production function and the wage equation can be estimated together using the method of *seemingly unrelated regression*s (SUR), which allows for the correlation of the error terms of the two equations, and makes hypothesis testing of the

7 The estimation was also carried out using the method suggested by *Levinsohn–Petrin* (2003), in which material costs are used to control for unobserved productivity shocks. Our results remained robust in both the NLS and FD specifications.

equality of relative wages and productivities straightforward. The firm level wage equation is actually a definitional equation derived from the aggregation of the individual level wage equations, which can be written in the following form to include the control variables also used in the production function:

$$\ln w_{jt} = \alpha_0 + \alpha \ln K_{jt} + \beta \ln M_{jt} + \gamma \ln \lambda_0 + \gamma \ln L_{jt} +$$

$$+ \gamma \ln \left[1 + \sum_{n=1}^{N} \left(\frac{\lambda_n}{\lambda_0} - 1 \right) \frac{L_{n_{jt}}}{L_{jt}} \right] + \delta \cdot Z_{jt} + u_{jt} \tag{8.3}$$

In equation (8.3) w represents firm level wage costs, and λ_n/λ_0 represents the relative wage of various worker groups. The relative wages, as in the case of the production functions, are estimated in both the restricted and unrestricted models, and we test their deviation from the relative productivities.

The methodology developed for estimating relative productivities and wages has been employed in several studies to estimate the level of discrimination in a new way. The results usually indicate that women receive a lower relative wage than their relative productivity, which suggests that there is some wage discrimination in the market, but the magnitude is much smaller than that of estimates based on the traditional wage equation methodology. The research results indicate that a higher ratio of female workers is associated with lower firm level productivity; the relative productivity of women is usually estimated to be around 0.7–0.9. Their wages are usually 15–40 percent lower than men's. The deviation of wages and productivities does not necessarily signify discrimination, for example, there may still be unobserved differences in the characteristics of workplaces (dangerous, involves traveling, etc.), which may be the reason for the higher wage men receive. But this method does alleviate one important problem of traditional wage equation-based estimates of discrimination: it decreases the bias due to unobserved differences in productivity. The fact that studies that use this methodology find lower levels of discrimination is not surprising, since we suspected that the productivity of women was overestimated based on the observable characteristics, for example, due to the lack of information on actual labour market experience, or to lower effort on the job due to other responsibilities.

According to *Hellerstein–Neumark–Troske* (1999), who were the first to use this methodology, the productivity of women is 85 percent of men's in the United States, and their wages are 68 percent of men's. This means that there is a significant negative wage gap between men and women that cannot be explained by differences in their productivity of around 17 percent. Of course this does not prove the existence of discrimination against women, but it does provide new evidence in support of it. In other countries, however, estimation results suggest a much smaller or insignificant unexplained wage gap. Although *Hellerstein–Neumark* (1999) estimates on Israeli data, and

Dong–Zhang (2009) on Chinese data that women's productivity is around 75–80 percent of men's, the relative wage does not differ significantly from this in the private sector. In the Chinese public sector, low-skilled women actually receive a higher wage than their productivity would justify, and this wage premium decreases the overall gender wage gap. The study emphasizes the importance of separating groups by level of education, since their results are completely different in the case of skilled and unskilled women. *Dostie* (2006) uses the method on Canadian data. The results suggest that the relative wage of women is 0.85 compared to men, while their relative productivity is somewhere between 0.8 and 0.9 depending on the specification of the production function. This also suggests that discrimination is overestimated by the traditional wage equation method.

Kawaguchi (2007) examines the relationship between relative wages and productivity using Japanese data, and points out the importance of selection at the firm level. Without the inclusion of firm fixed effects, the estimated productivity of women is 44 percent of men's, and their wage is 31 percent of men's, but in the within firm estimates, which take selection into better or worse firms into account, both are around 50 percent. Kawaguchi concludes that there is discrimination against women in hiring practices, but once they are employed they are not treated unequally. *Ilmakunnas–Maliranta* (2003) and *Van Biesebroeck* (2007) also emphasize the importance of proper specification. The former estimates on Finnish, and the latter on African data, and their conclusion is that using this estimation method, they do not find evidence of discrimination. Finally, *Deniau–Perez-Duarte* (2003) also find no significant deviation between relative wages and productivities in France.

In Hungary, *Kertesi–Köllő* (2002) used a similar estimation strategy to analyze wages and productivity. Their research focuses on the analysis of the decrease in the value of knowledge gained prior to the transition using wage equation estimation. They also estimate the effect of the composition of firms' workforces on firm level productivity to examine how much the return to education and experience reflect their effects on productivity. Although their main goal is not to analyze the situation of women, they do separate the worker groups based on gender. The study also underlines the importance of dividing the gender groups further by education level, since their findings indicate that the situation of women differs by skill level. In our study, we consider this possibility in the unrestricted specification, where we estimate relative productivities and wages of more detailed worker groups. We study the level of discrimination only for the years 2000–2005, so we are not attempting to analyze the changes following the transition; our goal is to paint a picture of the current situation of women in the labour market.

Estimation results

The parameter estimates of the restricted model can be seen in Table *8.1*. In these specifications, we do not differentiate between the relative productivities and wages of women by education level or age, the estimates reflecting the average differences. If we compare the NLS and FD specifications, we do not see evidence of a high level of selection: the estimated productivity and wage parameters are very similar in both cases. For this reason, during our discussion of the estimation results we will focus on the FD specification, which we believe is the best suited for our purposes, since our goal is to analyze the level of discrimination within firms.

Table 8.1: Parameter estimates of the restricted model
(hypothesis: relative productivity = relative wage)

Specification	Relative productivity	Relative wage (wage cost)	*p*-value
Firm wage bill			
NLS	*1.065*	1.039	
	(0.053)	(0.012)	
FD	1.092	1.034	0.135
	(0.040)	(0.012)	
Aggregated individual wages			
NLS	*1.065*	0.863	
	(0.053)	(0.012)	
FD	1.090	0.786	0.000
	(0.040)	(0.020)	

Note: Parameters that do not differ significantly from 1 are italicized. Standard errors of the estimates are in parentheses.

Within firms, the estimated productivity of women is somewhat higher than that of men, the relative productivity of women compared to men is 1.09 at the group level. Compared to previous international results, it is surprising to see a relative productivity that is greater than 1, which would mean that a higher ratio of women within a firm will increase its productivity. One possible explanation for this curious result may be that in the last few years, the typically "female" services sector has become more important.

The results for relative wages are different when using the two different wage measures: the firm level wage bill from their accounting records, or the weighted sum of the wages of individual workers of the firm. When estimating with the wage bill as the dependent variable, the results suggest that the wages of females are somewhat higher than the wages of males, so their wages are in line with their estimated productivity. On the other hand, the aggregated wage variable results indicate a wage gap of about 20 percent; the relative wage is well below the relative productivity. One possible explana-

167

tion for this difference in the results may be that women receive non-wage benefits to a greater degree than men, and these are only reflected in the wage bill variable. However, a more precise explanation of the difference requires more future exploration. The volatility of the results does highlight the fact that one must take great care when attempting to measure discrimination: both the choice of the wage variable and the estimation method may affect the results significantly.

We can gain more insight on the relative productivities and wages of women by estimating the unrestricted parameter model. As can be seen in *Table 8.2*, the NLS and FD parameters differ significantly in several cases, which suggests that in the case of more detailed worker groups, certain worker types tend to group into certain types of firms, for example, those with lower productivity. This selection effect is especially visible in the case of skilled and unskilled workers. Unskilled workers – especially the older unskilled workers – tend to work in lower productivity firms, while the skilled – especially the younger group – tend to work in highly productive firms. For example, the relative productivity of older unskilled women is 0.53 in the NLS specification, suggesting that they are half as productive as young unskilled men. However, in the FD specification, where effects are identified from changes within firms over time, we can see that their productivity does not differ significantly from that of the reference group, it is near one. In the case of skilled workers the relationship is exactly the opposite: their relative productivity in the NLS specification is 2.8, within firms, however, we can see that they are also not significantly different from one. This suggests that skilled workers tend to be employed at highly productive firms, while unskilled workers work at less productive firms, but if we account for this selection effect, the average productivity of the two groups does not differ significantly.

This result is in line with previous international experiences. For example, *Haltiwanger–Lane–Spletzer* (1999) analyze data from the United States and found that most firms employ either mainly skilled or mainly unskilled workers, so there are "high-skilled" firms and "low-skilled" firms. *Malmberg–Lindh–Halvarsson* (2005) studied the relationship between the age composition of a firm's workforce and its productivity using Swedish data, and found similar selection effects: older workers tend to work in older firms with less capital, while the younger workers tend to be employed in younger, more productive firms.

There is also a significant selection effect in the case of relative wage estimates. We can see strong positive selection in the skilled categories, and weaker positive selection in the unskilled categories. The two different wage measures give different results in the unrestricted specifications as well. When using the wage bill (in the top portion of *Table 8.2.*), relative wages do not differ significantly from one for any category, and the relative wages and rela-

tive productivities of all four female worker groups are equal at the 5 percent significance level.

Table 8.2: Estimation results of the unrestricted parameter model
(hypothesis: relative productivity = relative wage)

	NLS		FD		
	relative productivity	relative wage (wage bill)	relative productivity	relative wage (wage bill)	*p*-value
Firm wage bill					
Male, unskilled, pre-1989	0.401	1.430	*0.978*	*0.984*	0.902
	(0.033)	(0.036)	(0.050)	(0.015)	
Male, skilled, post-1989	4.210	3.734	*1.099*	*0.994*	0.303
	(0.387)	(0.119)	(0.105)	(0.029)	
Male, skilled, pre-1989	2.050	2.887	1.182	*1.023*	0.066
	(0.171)	(0.080)	(0.089)	(0.024)	
Female, unskilled, post-1989	*0.905*	*1.012*	1.099	1.031	0.368
	(0.095)	(0.037)	(0.077)	(0.022)	
Female, unskilled, pre-1989	0.529	1.461	*1.077*	*1.021*	0.341
	(0.040)	(0.036)	(0.061)	(0.017)	
Female, skilled, post-1989	2.816	3.126	*1.223*	*1.003*	0.067
	(0.339)	(0.119)	(0.124)	(0.033)	
Female, skilled, pre-1989	*1.345*	3.379	*1.164*	*1.056*	0.345
	(0.187)	(0.112)	(0.117)	(0.033)	
Aggregated individual wages					
Male, unskilled, pre-1989	0.401	1.404	*0.978*	1.075	0.109
	(0.033)	(0.042)	(0.050)	(0.035)	
Male, skilled, post-1989	4.210	3.634	*1.099*	1.211	0.371
	(0.387)	(0.141)	(0.105)	(0.071)	
Male, skilled, pre-1989	2.050	3.280	1.184	1.308	0.243
	(0.171)	(0.106)	(0.089)	(0.062)	
Female, unskilled, post-1989	*0.905*	*0.942*	1.097	0.741	0.000
	(0.095)	(0.041)	(0.077)	(0.039)	
Female, unskilled, pre-1989	0.529	1.183	*1.076*	0.843	0.001
	(0.040)	(0.035)	(0.061)	(0.032)	
Female, skilled, post-1989	2.816	2.521	*1.223*	*0.932*	0.038
	(0.339)	(0.126)	(0.124)	(0.070)	
Female, skilled, pre-1989	*1.345*	3.077	*1.166*	1.206	0.771
	(0.187)	(0.125)	(0.118)	(0.076)	
Number of observations	29,123		19,237		

Note: In the worker categories "pre-1989" refers to workers who were of working age prior to the transition, while "post-1989" refers to those who could only have acquired work experience after the transition based on their age. Parameters that do not differ significantly from 1 are italicized. Standard errors of the estimates are in parentheses. The reference worker group is: male, unskilled, post-1989 category.

169

Based on these results we do not find evidence supporting the existence of discrimination. Only in the case of the younger skilled group can the wage be shown to be lower than productivity, however, even these two parameters only differ at the 10 percent significance level. This result is in line with previous studies that suggest that the wage gap is higher for skilled women than it is for unskilled women (*Fazekas–Bálint,* 2008).

Using the aggregated wage variable, the average wage of women is 22 percent lower than the wage of men. Separating the workers into more detailed groups (*Table 8.2.* lower portion), we can see that the difference between productivity and wage varies by age group and skill level. For skilled and unskilled younger workers, the wage gap is near the average,[8] but in the skilled older group it is lower, here we find a wage gap of around 10 percent. In this specification, this is the only demographic group where we observe that women are paid according to their productivity. The wages of the skilled and unskilled younger groups are lower than their productivity, which is in line with discrimination against women, but in the unrestricted estimation we can see that the results are different when using the firm wage bill as our wage measure: although in the case of the female groups relative productivity is higher than relative wage, the difference between the two is not statistically significant.

Summarizing the results, we can say that the roughly 15 percent gender wage gap seen in previous literature using the individual level wage equation method cannot be explained by the lower productivity of women. Women do not have a lower productivity than men using any estimation method. When we estimate the relative wages using the wage measure aggregated from individual wages, we get similar average wage gaps of around 10–30 percent between male and female workers, which is not explained by the lower productivity of women. However, when we use the firm level wage bill variable (which includes all wage-related costs of the firm), we do not find a significant gap between the wages of men and women, and we cannot reject the hypothesis that relative wage equals relative productivity at the 5 percent significance level. In order to decide what may be behind these seemingly contradictory results, more careful study of the wage variables is needed. One possible explanation may be that women choose non-wage compensation in a higher ratio than men, for example, food stamps and travel imbursements, which are included in the firm level wage bill, but not in the individual wages or the firm level wage measure aggregated from them.

The results of this study underline the fact that the determination of the existence and extent of discrimination is a complex task, and results are highly dependent on the data used and the estimation method. If we are able to take the unobserved differences in the productivity of various worker groups into account, the estimated level of discrimination is significantly lower than what previous results based on traditional wage equations suggest.

8 The wage gap is compared to the same worker group category. For example, in the case of skilled older workers the male-female wage gap is 10 percent (1.3 – 1.2).

170

Conclusion

In our study, we estimate the level of discrimination using a new method instead of traditional individual level wage equations: we estimate relative productivities at the group level, by seeing how the ratio of a given group in a firm affects the firm's revenue. We estimate firm level production functions, in which we allow the marginal productivity of different worker groups to vary. We compare the relative productivities that we estimate from firm production data with wage gaps that are also estimated at the firm level: if there is discrimination against women in the labour market, the two should differ significantly, since women would not be rewarded according to their relative productivity. The method we employ has the benefit that the relative productivities estimated at the group level measure the differences between men and women more precisely than based on observable worker characteristics (education, age) alone, so our estimate of discrimination is lower than what is usually found by wage equation methods.

Our results suggest that the productivity of women is not lower than that of men, and the individual wage results show that they are underpaid relative to men, which suggests discrimination against them. In our case, though, we also see that when we use the firm level wage bill to estimate relative productivities, the difference between male and female wages is lower than when based on individual wage data. Exploring the reasons behind these results remains an important task for future research.

APPENDIX 8

Estimation of the production function

During the estimation of the relative productivities of worker groups we start out from a Cobb-Douglas production function with three inputs: capital, material cost, and labour. Capital is measured by the annual average capital stock, material cost is the firm's material costs in the given year, and labour is measured using the worker group-weighted average annual employment (L) of the firm, the quality of labour, or QL variable. The workers are grouped into $n = N + 1$ categories, where the productivity of the n-th group is represented by φ_n, and the number of workers in the n-th group is represented by L_n in the following way:

$$QL = \sum_{n=0}^{N} \varphi_n L_n = \varphi_0 L_0 + \sum_{n=1}^{N} \varphi_n L_n =$$

$$= \varphi_0 L \left[1 + \sum_{n=1}^{N} \left(\frac{\varphi_n}{\varphi_0} - 1 \right) \frac{L_n}{L} \right].$$

(F8.1)

Plugging this into the production function we get:

$$\ln Y_{jt} = \alpha_0 + \alpha \ln K_{jt} + \beta \ln M_{jt} + \gamma \ln \varphi_0 + \gamma \ln L_{jt} +$$

$$+ \gamma \ln \left[1 + \sum_{n=1}^{N} \left(\frac{\varphi_n}{\varphi_0} - 1 \right) \frac{L_{n_{jt}}}{L_{jt}} \right] + \delta \cdot Z_{jt} + u_{jt} \qquad \text{(F8.2)}$$

The matrix Z contains various other controls: year, industry, region, ownership type, and firm dummies. The relative productivity of workers compared to the $n = 0$ reference group is φ_n/φ_0, which we estimate using the method of nonlinear least squares. Since the number of worker categories is relatively large even when we differentiate along only a few demographic characteristics (for example, if we use gender, three age groups, and three education levels we have 18 groups), most studies use certain restrictions on the productivity and composition of the worker groups. Assuming that the relative productivity and ratio of women is the same within all age groups and education levels, the production function based on the previous example is the following:

$$\ln Y_{jt} = \alpha_0 + \alpha \ln K_{jt} + \beta \ln M_{jt} + \gamma \ln \varphi_0 + \gamma \ln L_{jt} +$$

$$+ \gamma \ln \left[1 + (\varphi_F - 1) \frac{L_{F_{jt}}}{L_{jt}} \right] + \gamma \ln \left[1 + (\varphi_M - 1) \frac{L_{M_{jt}}}{L_{jt}} + (\varphi_O - 1) \frac{L_{O_{jt}}}{L_{jt}} \right] + \qquad \text{(F8.3)}$$

$$+ \gamma \ln \left[1 + (\varphi_S - 1) \frac{L_{S_{jt}}}{L_{jt}} + (\varphi_U - 1) \frac{L_{U_{jt}}}{L_{jt}} \right] + \delta \cdot Z_{jt} + u_{jt}$$

In this simplified model we estimate the average relative productivity of women compared to men in all age groups and education categories (φ_F). On the other hand, in the unrestricted model we allow the relative productivity of women to differ for the various age and education categories.

REFERENCES

ABOWD, J. M., KRAMARZ, F. AND MARGOLIS, D. N. (1999) High Wage Workers and High Wage Firms. Econometrica, Vol. 67, No. 2. pp. 251–333.

ABOWD, J. M., LENGERMANN, P. AND MCKINNEY, K. L. (2003) The Measurement of Human Capital in the US Economy. Cornell University, manuscript.

AHMED, A. (2006) Discrimination: Believe it and You'll See it. Centre for Labour Market Policy Research Working Paper, No. 10.

ALTONJI, J. G. AND BLANK, R. M. (1999) Race and Gender in the Labor Market. In: ASHENFELTER, O. AND CARD, D. (eds.): Handbook of Labor Economics, Vol. 3, Chapter 48. pp. 3143–3259.

ALTONJI, J. G. AND PIERRET, C. (2001) Employer Learning and Statistical Discrimination. Quarterly Journal of Economics, Vol. 116, No. 1. pp. 313–350.

ANTONOVICS, K. AND TOWN, R. (2004) Are All the Good Men Married? Uncovering the Sources of the Marital Wage Premium. American Economic Review, Vol. 94, No. 2. pp. 317–321.

ARAI, M. AND THOURSIE, P. (2009) Renouncing Personal Names: An Empirical Examination of Surname Change and Earnings. Journal of Labor Economics, Vol. 27, No. 1. pp. 127–147.

ARROW, K. (1973) The Theory of Discrimination. In: ASHENFELTER, O. AND REES, A. (eds.): Discrimination in Labor Markets. Princeton University Press, Princeton N.J., pp. 3–33.

ARROW, K. (1998) What Has Economics to Say About Racial Discrimination? The Journal of Economic Perspectives, Vol. 12, No. 2. pp. 91–100.

ASHENFELTER, O. AND HANNAN, T. (1986) Sex Discrimination and Product Market Competition: The Case of the Banking Industry. The Quarterly Journal of Economics, Vol. 101, No. 1. pp. 149–174.

ÁSZ (2008) A magyarországi cigányság helyzetének javítására és felemelkedésére a rendszerváltás óta fordított támogatások mértéke és hatékonysága. Összegző, helyzetfeltáró tanulmány [The extent and efficiency of support aimed at improving the position of the Roma population of Hungary since the regime change. An exploratory overview]. State Audit Office, Budapest, April, http://www.asz.hu/ASZ/tanulmanyok.nsf/0/79ED5720B293EBC9C12574F30031B5C7/$File/t206.pdf.

AUTOR, D. AND SCARBOROUGH, D. (2008). Does Job Testing Harm Minority Workers? Evidence from Retail Establishments. Quarterly Journal of Economics, Vol. 123, No. 1. pp. 219–277.

BABUSIK FERENC (2006) Foglalkoztatási egyenlőtlenségek a munkaerő-piacon: a romák foglalkoztatási diszkriminációja [Employment inequalities in the labour market: Roma discrimination]. Delphoi Consulting, Budapest, www.delphoi.hu.

BAKER, M. AND FORTIN, N. M. (2001) Occupational Gender Composition and Wages in Canada, 1987–1988. Canadian Journal of Economics, Vol. 34, No. 2. pp. 345–376.

BECKER, G. S. (1971) The Economics of Discrimination. The University of Chicago Press, Chicago.

BECKER, G. S. (1985) Human Capital, Effort, and the Sexual Division of Labour, Journal of Labor Economics, Vol. 3, No. 1. pp. S33–S58.

BENDICK, M. JR., JACKSON, C. W. AND ROMERO, H. J. (1996) Employment Discrimination Against Older Workers: An Experimental Study of Hiring Practices. Journal of Aging and Social Policy. Vol. 8, No. pp. 4. 25–46.

BERIK, G. (2003) International Trade and Wage Discrimination: Evidence from East Asia. The World Bank, Policy Research Working Paper, No. 3111.

BERNÁT ANIKÓ, SIK ENDRE AND KOVÁCS KATALIN (2007) A hátrányos helyzetű csoportokra gyakorolt hatás [The impact on disadvantaged groups]. In: Az Új Magyarország Fejlesztési Terv Operatív Programjainak horizontális ex ante értékelése [A horizontal ex ante assessment of the New Hungary Development Plan Operational Programmes]. Tárki, Budapest, pp. 107–157. http://www.tarki.hu/hu/research/development/hea_elemzesek_20070321_4.%20fejezet.pdf

BERTRAND, M. AND HALLOCK, K. F. (2001) The Gender Gap in Top Corporate Jobs. Industrial and Labor Relations Review, 55. pp. 3–21.

BERTRAND, M. AND MULLAINATHAN, S. (2004) Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. American Economic Review, Vol. 94, No. 4. pp. 991–1014.

BETTIO, F. (2002) The Pros and Cons of Occupational Gender Segregation in Europe. Canadian Public Policy, 28, pp. S65–S84.

BIDDLE, J. E. AND ZARKIN, G. (1988) Worker Preference and Market Compensation for Job Risk. Review of Economics and Statistics, Vol. 70, No. 4. pp. 660–667.

173

BIKKER, J. AND HAAF, K. (2002) Measures of competition and concentration in the banking industry: A review of the literature. Economic and Financial Modelling, 9. pp. 53–98.

BLACK, S. AND BRAINERD, E. (2004) Importing Equality? The Effects of Globalization on Gender Discrimination. Industrial Labor Relations Review, Vol. 57, No. 4. pp. 540–559.

BLACK, S. AND STRAHAN, P. (2001) The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry. The American Economic Review, Vol. 91, No. 4. pp. 814–831.

BLANK, R. M. (1991) The Effects of Double-Blind versus Single-blind Reviewing: Experimental Evidence from the American Economic Review, American Economic Review, Vo. 81, No. 5. pp. 1041–167.

BLAU, F. AND KAHN, L. M. (2000) Gender Differences in Pay. Journal of Economic Perspectives, 14. pp. 75–99.

BLAU, F. AND KAHN, L. M. (2003) Understanding International Differences in the Gender Pay Gap. Journal of Labor Economics, Vol. 21, No. 1. pp. 106–144.

BLINDER, A. S. (1973) Wage Discrimination: Reduced Form and Structural Variables. Journal of Human Resources, 8. pp. 436–455.

BOGLIETTI, G. (1974) Discrimination against older workers and the promotion of equality of opportunity. International Labour Review, Vol. 110, No. pp. 4. 351–365.

BOONE, J., VAN OURS, J. AND VAN DER VIEL, H. (2007) How (not) to Measure Competition. Tilburg University, Center for Economic Research Discussion Paper, No. 2007–32.

BRAINERD, E. (2000) Women in transition: Changes in Gender Wage Differentials in Eastern Europe and the Former Soviet Union. Industrial and Labour Relations Review, Vol. 54, No. 1. pp. 138–162.

BRAVO, D., SANHUEZA, C. AND URZUA, S. (2008) An Experimental Study of Labor Market Discrimination: Gender, Social Class, and Neighbourhood in Chile. Inter-American Development Bank Working Paper No. R-541.

CAMPOS, N. AND JOLLIFFE, D. (2005) Does Market Liberalization Reduce Gender Discrimination? Econometric Evidence from Hungary, 1986–1998. Labour Economics, Vol. 12, No. 1. pp. 1–22.

CARLSSON, M. AND ROOTH, D.-O. (2006) Evidence of Ethnic Discrimination in the Swedish Labor Market using Experimental Data. IZA DP No. 2281.

CARNEIRO, P., HECKMAN, J. AND MASTEROV, D. (2003) Labor Market Discrimination and Racial Differences in Premarket Factors. NBER WP No. 10068.

CAWLEY, J., HECKMAN, J. J. AND VYTLACIL, E. (1999) On policies to reward the value added by educators. Review of Economics and Statistics, Vol. 81, No. 4. pp. 720–727.

CHARLES, K. K. AND GURYAN, J. (2007) Prejudice and the Economics of Discrimination, NBER Working Paper No. 13661.

COATE, S. AND LOURY, G. C. (1993) Will Affirmative-Action Policies Eliminate Negative Stereotypes? American Economic Review, Vol. 83, No. 5. pp. 1220–1240.

CLOTFELTER, CH. T. (1999) Public school segregation in metropolitan areas. Land Economics, Vol. 75, No. 4. pp. 487–504.

CUNHA, F. AND HECKMAN, J. J. (2009), The Economics and Psychology of Inequality and Human Development, Journal of the European Economic Association, MIT Press, Vol. 7, No. 2–3. pp. 320–364.

CSILLAG MÁRTON (2006) "Female work" and the gender wage gap from late socialism to today. In: FAZEKAS KÁROLY AND KÉZDI GÁBOR (eds.): The Hungarian Labour Market. MTA KTI-OFA, Budapest, pp. 97–103.

CSONGOR ANNA, LUKÁCS RÓBERT GYÖRGY AND O'HIGGINS, N. (2003) Labour Market Programmes for the Roma in Hungary. Hungarian Foundation for Self-Reliance, ILO, UNDP: http://www.ilo.org/ public/english/region/eurpro/budapest/download/ roma_labour_market.pdf.

DEVARO, J., GHOSH, S. AND ZOGHI, C. (2007) Job Characteristics and Labor Market Discrimination in Promotions: New Theory and Empirical Evidence. Cornell University ILR Collection Working Paper 2007.

DISCRIMINATION IN THE EUROPEAN UNION (2007) Discrimination in the European Union. Summary, Special Eurobarometer, 263. January, http://ec.europa.eu/ public_opinion/archives/ebs/ebs_263_sum_en.pdf.

DISCRIMINATION IN THE EUROPEAN UNION (2008) Discrimination in the European Union: Perceptions, Experiences and Attitudes. Special Eurobarometer, 296. July, http://ec.europa.eu/public_opinion/archives/ ebs/ebs_296_en.pdf.

DONALD, S. AND HAMERMESH, D. S. (2004) What is Discrimination? Gender in the American Economic Association, National Bureau of Economic Research, Working Paper No. 10684.

DONG, X. AND ZHANG, L. (2009) Economic Transition and Gender Differentials in Wages and Productivity: Evidence from Chinese Manufacturing Enterprises. Journal of Development Economics, 88. pp. 144–156.

DOSTIE, B. (2006) Wages, Productivity and Aging. IZA DP. 2496.

DUTTA, P. AND REILLY, B. (2005) The Gender Pay Gap and Trade Liberalisation: Evidence for India. PRUS Working Paper No. 32.

ERRC (2007) The glass box. Exclusion of Roma from employment. ERRC, Budapest, http://www.errc.org/ db/02/14/m00000214.pdf.

EU-MIDIS (2009a) EU-MIDIS At a Glance Introduction to the FRA's EU-wide Discrimination Survey. Europe-

174

an Union Agency for Fundamental Rights, European Union Minorities and Discrimination Survey http://fra.europa.eu/fraWebsite/attachments/EU-MIDIS_GLANCE_EN.pdf.

EU-MIDIS (2009b) Data in Focus Report 01 – The Roma. European Union Minorities and Discrimination Survey, http://fra.europa.eu/fraWebsite/attachments/EU-MIDIS_ROMA_EN.pdf

FAZEKAS KÁROLY (2006) A magyar foglalkoztatási helyzet jelene és jövője [The present and future of employment in Hungary]. Pénzügyi Szemle, Vol. 51, No. 2. pp. 194–207.

FAZEKAS KÁROLY AND BÁLINT MÓNIKA (2008) Labour market activity and wages in 2007–2008. In: The Hungarian Labour Market 2008. MTA KTI-OFK, 17–40.

FAZEKAS KÁROLY, KÖLLŐ JÁNOS, LAKATOS JUDIT AND LÁZÁR GYÖRGY (eds.) Statistical data. In: The Hungarian Labour Market. MTA KTI-OFA, Budapest.

FAZEKAS KÁROLY AND VARGA JÚLIA (eds.) (2004) The Hungarian Labour Market, 2004. MTA KTI-OFA, Budapest.

FERGE ZSUZSA (2008) Rögös út a munkához [The bumpy road to work]. Népszabadság, April 13th.

FLECK GÁBOR, MESSING VERA AND MIKE KÁROLY (2005) Roma foglalkoztatási programok értékelése. Kutatási jelentés [An assessment of Roma employment programmes. Research report], Tárki, Budapest.

FLECK GÁBOR, ORSÓS JÁNOS AND VIRÁG TÜNDE (2000) Élet a Bodza utcában [Life in Bodza street]. In: KEMÉNY, 2000b, pp. 80–139.

FREY MÁRIA (1998) A nők munkaerőpiaci helyzetének változása a rendszerváltás óta eltelt időszakban, Nők a munka világában, A nők munkavállalói jogai Magyarországon [Changes in the labour market position of women since the regime change, Women in the world of work, Women's labour rights in Hungary], ILO, Central and Eastern European Expert Group, pp. 9–24.

FRIJTERS, P., SHIELDS, M., THEODOROPOULOS, N. AND PRICE, S. (2003) Testing for Employee Discrimination Using Matched Employer-Employee Data: Theory and Evidence, IZA DP No. 807.

GALASI PÉTER (2000) Női-férfi kereseti különbségek Magyarországon 1986–1996 [Male-female wage differentials in Hungary, 1986–1996]. Országos Munkaügyi Kutató és Módszertani Központ, Budapest.

GNEEZY, U., NIEDERLE, M. AND RUSTICHINI, A. (2003) Performance in Competitive Environments: Gender Differences. The Quarterly Journal of Economics, Vol. 118, No. 3. pp. 1049–1074.

GOLDIN, C. AND ROUSE, C. (2000) Orchestrating Impartiality: The Impact of "Blind" Auditions and Female Musicians, American Economic Review, Vol. 90, No. 4. pp. 715–741.

GRILICHES, Z. (1960) Measuring Inputs in Agriculture: A Critical Survey. Journal of Farm Economics, Vol. 42, No. 5. pp. 1411–1433.

GRILICHES, Z. (1977) Estimating the Returns to Schooling: Some Econometric Problems, Econometrica, Vol. 45, No. 1. pp. 1–22.

GRILICHES, Z. AND MASON, W. (1972) Education, Income and Ability. Journal of Political Economy, Vol. 80, N. 2. pp. 74–103.

GRIMSHAW, D. AND RUBERY, J. (2002) The Adjusted Gender Pay Gap: A Critical Appraisal of Standard Decomposition Techniques. Prepared for Equal Opportunities Unit in the European Commission, http://www.mbs.ac.uk/research/europeanemployment/projects/gendersocial/documents/GPGpolitical%20paper.pdf.

GROSHEN, E. L. (1991) The Structure of the Female-Male Wage Differential: Is It Who You are, What You Do, or Where You Work? Journal of Human Resources, Vol. 26, No. 3. pp; 457–472.

GUPTA, I., RAO, V., LOKSHIN, M. AND JANA, S. (2003) Sex workers and the cost of safe sex: the compensating differential for condom use among Calcutta prostitutes. Journal of Development Economics, Vol. 71, No. 2. pp. 585–603.

GUPTA, N. AND ROTHSTEIN, D. (2001) The Impact of Worker and Establishment-level Characteristics on Male-Female Wage Differentials: Evidence from Danish Matched Employer-Employee Data. CLS WP 01–09.

GURYAN, J. (2004) Desegregation and black dropout rates. American Economic Review. Vol. 94, No. 4. pp. 919–943.

HALL, R. E. (1972) Turnover in the Labor Force. Brookings Papers on Economic Activity, 3. pp. 709–764.

HALTIWANGER, J. C., LANE, J. I. AND SPLETZER, J. R. (2007) Wages, Productivity, and the Dynamic Interaction of Businesses and Workers. Labour Economics, 14. 575–602.

HAMERMESH, D. (2004) Changing Looks and Changing Outcomes: the Beauty of Economists, NBER Working Paper No. 11712.

HAMERMESH, D. AND BIDDLE, J. E. (1994) Beauty and the Labor Market. American Economic Review, No. 84. Vol. 5. pp. 1174–1194.

HANNA, R. AND LINDEN, L. (2009) Measuring Discrimination in Education, NBER Working Paper no. 15057.

HASKEL, J., HAWKES, D. AND PEREIRA, S. (2005) Skills, Human Capital and the Plant Productivity Gap: UK Evidence from Matched Plant, Worker and Workforce Data. CEPR Discussion Paper, No. 5334.

HAZARIKA, G. AND OTERO, R. (2004) Foreign Trade and the Gender Earnings Differential in Urban Mexico. Journal of Economic Integration, 19. pp. 353–373.

HECKMAN, J. (1998) Detecting Discrimination. Journal of Economic Perspectives, 12. pp. 101–116.

HELLERSTEIN, J. K. AND NEUMARK, D. (1999) Sex, Wages and Productivity: An Empirical Analysis of Israeli Firm-Level Data. International Economic Review, Vol. 40, No. 1. pp. 95–123.

HELLERSTEIN, J. K., NEUMARK, D. AND TROSKE, K. R. (1999) Wages, Productivity, and Worker Characteristics: Evidence from Plant-Level Production Functions and Wage Equation. Journal of Labor Economics, Vol. 17, No. 3. pp. 409–446.

HERSCH, J. (2006) Sex Discrimination in the Labor Market, Foundations and Trends in the Labor Market, Vol. 2, No. 3. pp. 1–85.

HERSCH, J. (2008) Profiling the New Immigrant Worker: The Effects of Skin Colour and Height, Journal of Labor Economics, Vol. 26, No. 2. pp. 345–386.

HEYWOOD, J. S. (1998) Regulated Industries and Measures of Earnings Discrimination. In: PEOPLES, J. (ed.): Regulatory Reform and Labor Markets. Kluwer Academic Publishers, Boston, pp. 287–324.

HEYWOOD, J. S. AND PEOPLES, J. H. (eds.) (2006) Product Market Structure and Labor Market Discrimination. State University of New York Press.

HIRSCH, B. AND MACPHERSON, D. (2004) Wages, Sorting on Skill, and the Racial Composition of Jobs. Journal of Labor Economics, Vol. 22, No. 1. pp. 189–210.

HOLZER, H. J. (1990) Wages, Employer Costs, and Employee Performance in the Firm. Industrial and Labor Relations Review, Vol. 43, No. 3. pp. 147–164.

HOLZER, H. J. AND IHLANFELDT, K. (1998) Customer Discrimination and Employment Outcomes for Minority Workers. Quarterly Journal of Economics, 113. pp. 835–867.

HOLZER, H. J., RAPHAEL, S. AND STOLL, M. (2006) Perceived Criminality, Criminal Background Checks, and the Racial Hiring Practices of Employers. Journal of Law and Economics, 49. pp. 451–480.

HUNT, J. (2002) The Transition in East Germany: When is a Ten-Point Fall in the Gender Wage Gap Bad News? Journal of Labor Economics, Vol. 20, No. 1. pp. 148–169.

ICHINO, A. AND MORETTI, E. (2006) Biological Gender Differences, Absenteeism, and the Earning Gap, NBER Working Paper No. 12369.

ILMAKUNNAS, P. AND MALIRANTA, M. (2003) Technology, Labor Characteristics and Wage-Productivity Gaps, ETLA DP. 860.

IRANZO, S., SCHIVARDI, F. AND TOSETTI, E. (2006) Skill Dispersion and Firm Productivity: An Analysis with Employer-Employee Matched Data. Working Paper CRENoS 200617.

JARRELL, S. AND STANLEY, T. D. (2004) Declining Bias and Gender Wage Discrimination? A Meta-Regression Analysis. The Journal of Human Resources, Vol. 39, No. 3. pp. 828–838.

JOHNSON, G. AND STAFFORD, F. (1998) Alternative Approaches to Occupational Exclusion. In: JONUNG, C. AND PERSSON, I. (eds.): Women's Work and Wages, Routledge, London.

JUHN, C., MURPHY, K. AND BROOKS, P. (1991) Accounting for the Slowdown in Black-White Wage Convergence. In: KOSTERS, M. (ed.): Workers and their Wages. American Institute Press, pp. 107–143.

JURAJDA, S. (2003) Gender Wage Gap and Segregation in Late Transition. Journal of Comparative Economics, Vol. 31, No. 2. pp. 199–222.

JURAJDA, S. AND HARMGART, H. (2004) When Are 'Female' Occupations Paying More? IZA Discussion Papers, 985.

KAHN, L. (1991) Discrimination in Professional Sports: a Survey of the Literature. Industrial Labor Relations Review, 44. pp. 395–418.

KAWAGUCHI, D. (2007) A Market Test of Sex Discrimination: Evidence from Japanese Firm-Level Data. International Journal of Industrial Organization. Vol. 25, No. 3. pp. 441–460.

KEMÉNY ISTVÁN (2000a) Előszó [Preface]. In: KEMÉNY, 2000b, pp. 7–37.

KEMÉNY ISTVÁN (ed.) (2000b) A romák/cigányok és a láthatatlan gazdaság [The Roma/Gypsy population and the invisible economy]. Osiris-MTA Kisebbségkutató Műhely, Budapest.

KERTESI GÁBOR (1996) Két cigányvizsgálat (kritikai elemzés) [Two Roma studies (a critical analysis)]. Szociológiai Szemle, No. 1.

KERTESI GÁBOR (1998) Az empirikus cigánykutatások lehetőségeiről [On empirical research concerning the Roma population]. Replika. 29, pp. 201–222.

KERTESI GÁBOR (2000) A cigány foglalkoztatás leépülése és szerkezeti átalakulása 1984 és 1994 között. [The decline and restructuring of Roma employment between 1984 and 1994] Munkatörténeti elemzés Közgazdasági Szemle, Vol. 47, No. 5. pp. 406–443.

KERTESI GÁBOR (2005) Roma foglalkoztatás az ezredfordulón. A rendszerváltás maradandó sokkja [Roma employment at the turn of the millennium. The lasting shock of the regime change]. In: KERTESI GÁBOR: A társadalom peremén. Romák a munkaerőpiacon és az iskolában [On the fringes of society. The Roma in the labour market and at school], Osiris, Budapest, pp. 173–204.

KERTESI GÁBOR AND KÖLLŐ JÁNOS (1998) Regionális munkanélküliség és bérek az átmenet éveiben [Regional unemployment and wages during the transition period]. Közgazdasági Szemle, Vol. 45, No. 7–8. pp. 621–652.

KERTESI GÁBOR AND KÖLLŐ JÁNOS (2002) Economics Transformation and the Revaluation of Human Capital – Hungary 1986–1999. Research in Labor Economics, 21. pp. 235–273.

KIRÁLY MIKLÓS (1998) A diszkrimináció tilalma az Európai Bíróság joggyakorlatában c. monográfiája [Dis-

crimination prohibition in the legal practices of the European Courts]. Akadémiai Kiadó, Budapest.

KONCZ KATALIN (2008) Nemek szerinti bér- és keresetkülönbség Magyarországon, az Európai Unióban [Male-female wage and demand gap in Hungary in the European Union]. Munkaügyi Szemle, Vol. 52, No. 4. pp. 61–75.

KÖLLŐ JÁNOS (2002) Az ingázási költségek szerepe a regionális munkanélküliségi különbségek fenntartásában. Becslési kísérlet [Commuting costs as a factor in regional differences in unemployment. Estimation]. Budapesti Munkagazdaságtani Füzetek, BKÁE-MTA KTKI, Budapest, 2002/2.

KÖLLŐ JÁNOS (2005) A nem foglalkoztatottak összetétele az ezredfordulón [The composition of the nonemployed population at the turn of the millennium]. Budapesti Munkagazdaságtani Füzetek, BCE-MTA KTI, Budapest, 2005/2.

KÖLLŐ JÁNOS (2006) A napi ingázás feltételei és a helyi munkanélküliség Magyarországon. Újabb számítások és számpéldák [The conditions of daily commuting and local unemployment in Hungary]. Budapesti Munkagazdaságtani Füzetek, BCE-MTA KTI, Budapest, 2006/1.

KSH (2008) Társadalmi jellemzők és ellátórendszerek, 2007 [Social characteristics and welfare programmes, 2007]. Hungarian Central Statistical Office, Budapest, http://portal.ksh.hu/pls/ksh/docs/hun/xftp/idoszaki/pdf/tarsjell07.pdf.

KUNZE, A. (2008), Gender wage gap studies: Consistency and decomposition. Empirical Economics, 35. pp. 63–76.

LALLEMAND, T. AND RYCX, F. (2009) Are Young and Old Workers Harmful for Firm Productivity? Working Papers CEB 09-002.RS, Université Libre de Bruxelles, Solvay Brussels School of Economics and Management Centre, Emile Bernheim (CEB).

LANG, K. AND MANOVE, M. (2006) Education and Labor Market Discrimination, NBER Working Paper No. 12257.

LEHOCZKYNÉ KOLLONAY CSILLA (2007) Értékválság és adaptáció. A munkajog átalakulása a rendszerváltás után [Value crisis and adaptation. Changes in labour rights after the regime change]. In: JAKAB AND TAKÁCS (eds.): A magyar jogrendszer átalakulása 1985/1990–2005 [The transformation of the Hungarian legal system]. Gondolat-ELTE, Budapest, pp. 748–766.

LEVINSOHN, J. AND PETRIN, A. (2003) Estimating Production Functions Using Inputs to Control for Unobservables. Review of Economic Studies, 70. pp. 317–341.

LINDERNÉ DR. EPERJESI ERZSÉBET (2007) Nők és férfiak kereseti esélyegyenlősége a statisztikai adatok tükrében [Statistical data on gender pay equality]. www.egyenlobert.hu/doc/berelemzo_tanulmany_vegl_Soltesz.doc.

LOURY, G. C. (2006) A faji egyenlőtlenségek anatómiája [The anatomy of racial inequalities]. Nemzeti Tankönyvkiadó, Budapest.

LUKÁCS GYÖRGY RÓBERT (2003) Roma munkaerőpiaci programok [Roma labour market programmes]. In: CSONGOR ANNA AND LUKÁCS GYÖRGY RÓBERT (eds.): Roma munkaerőpiaci programok [Roma labour market programmes]. Autonomy Foundation, Budapest, pp. 45–88.

LUKÁCS GYÖRGY RÓBERT (2005) Roma munkaerőpiaci programok és környezetük [Roma labour market programmes and their context]. In: NEMÉNYI MÁRIA AND SZALAI JÚLIA (eds.): Kisebbségek kisebbsége [The minority of the minorities]. Új Mandátum Publ., Budapest.

MALMBERG, B.LINDH, T. AND HALVARSSON, M. (2005) Productivity consequences of workforce aging – Stagnation or a Horndal effect? Institute for Future Studies, ISBN 91-89655-75-3.

MARSTON, S. T. (1976) Employment Instability and High Unemployment Rates. Brookings Papers on Economic Activity, 1. pp. 169–210.

MENG, X. AND MEURS, D. (2004) The gender earnings gap: effects of institutions and firms – a comparative study of French and Australian private firms, Oxford Economic Papers, 56. pp. 189–208.

MOBIUS, M. AND ROSENBLAT, T. (2005) Why Beauty Matters. American Economic Review, Vol. 96, No. 1. pp. 222–235.

MORENO, M. et al (2004) Gender and Racial Discrimination in Hiring: A Pseudo Audit Study for Three Selected Occupations in Metropolitan Lima. IZA Discussion Paper No. 979.

NEAL, D. A. AND JOHNSON, W. R. (1996) The Role of Premarket Factors in Black-White Wage Differences. The Journal of Political Economy, Vol. 104, No.5. pp. 869–895.

NÉMETHNÉ PÁL KATALIN (2000) Small Open Economies: the Benefits of Foreign Direct Investment. 1st International Conference of Association of South Eastern European Economic Universities, Thessaloniki, May. 24–27.

NEUMARK, D. (2008) The Age Discrimination in Employment Act and the Challenge of Population Aging. NBER Working Paper No. 14317.

NEWELL, A. AND REILLY, B. (2001) The Gender Gap in Transition from Communism: Some Empirical Evidence. Economic Systems, 25. pp. 287–304.

NIEDERLE, M. (2008) Gender Differences in Seeking Challenges: the Role of Institutions. National Bureau of Economic Research, WP 13922.

OAXACA, R. (1973) Male-Female Wage Differentials in Urban Labor Markets. International Economic Review, Vol. 14, No. 3. pp. 693–709.

OECD (2006) Employment Outlook, OECD, Paris.

177

OECD (2008) Employment Outlook, OECD, Paris.

OECD (2009) Employment Outlook, OECD, Paris.

OGLOBLIN, C. (1999) The Gender Earnings Differential in the Russian Transition Economy. Industrial and Labor Relations Review, Vol. 52, No. 4. pp. 602–627.

OTLAKÁN KRISZTIÁN (2007) Diszkriminálnak-e a hazai munkavállalók. I–II. rész [Do Hungarian employers discriminate? Parts I and II]. Munkaügyi Szemle, Vol. 51, No. 3. pp. 25–28, No. 4. pp. 32–36.

OTLAKÁN KRISZTIÁN, SIK ENDRE, SIMONOVITS BORI AND SZABÓ ENDRE (2006) Munkahelyi diszkriminá- ció a kis- és középvállalkozások körében [Workplace discrimination among small and medium-sized busi- nesses]. Manuscript, Tárki, Budapest.

PÁLOSI ÉVA, SIK ENDRE AND SIMONOVITS BORI (2007) Diszkrimináció a plázában [Discrimination in the pla- za]. Szociológiai Szemle, 3–4. No. pp. 135–149.

PHELPS, E. (1972) The Statistical Theory of Racism and Sex- ism. American Economic Review, 62. pp. 659–661.

REILLY, B. (1999) The Gender Pay Gap in Russia during the Transition, 1992–96. Economics of Transition, Vol. 7, No. 1. pp. 245–264.

ROSEN, S. (1986) The theory of equalizing differences. In: ASHENFELTER, O. AND CARD, D. (eds.): The Hand- book of Labor Economics. Vol. 2, Chapter 12. pp. 641–692.

ROSENBERG, I. (2009) Height Discrimination in Employ- ment, Utah Law Review, to appear.

SIK ENDRE (2009) Kínaiak Magyarországon [The Chinese in Hungary]. In: TÖRÖK JÓZSEF (ed.): Kultúrák között [Between cultures]. Csongrád Megyei Népművelők Egyesülete, Szeged, pp. 143–149.

SIK ENDRE AND SIMONOVITS BORI (2006) A diszkrimi- nációtesztelés módszeréről [On discrimination testing techniques]. Esély, 4. pp. 72–85.

SIK ENDRE AND SIMONOVITS BORI (2008) Egyenlő bá- násmód és diszkrimináció [Equal treatment and dis- crimination]. In: KOLOSI TAMÁS AND TÓTH ISTVÁN GYÖRGY (eds.): Társadalmi Riport [Social Report], 2008. Tárki, Budapest, pp. 363–386.

SZALAI JÚLIA (2004–2005) A jóléti fogda. I–II. rész [The welfare trap. Parts I and II]. Esély, 2004, No. 6. and 2005, No. 1.

SZALAI JÚLIA (2009) A romák integrációja [Roma inte- gration]. Fundamentum, No. 2. pp. 39–42.

SZUHAY PÉTER (1999) A magyarországi cigányság kul- túrája: etnikus kultúra vagy a szegénység kultúrája [Roma culture in Hungary: ethnic culture or the cul- ture of poverty]. Panoráma, Budapest.

SZŰCS ERIKA (2008) A közszférára kell építeni az Út a munkához programot [The Pathway to Work pro- gramme must rely on the public sector]. Interview, December 12th. http://szmm.gov.hu/main.php?fol derID=13565&articleID=40819&ctag=articlelist &iid=1.

SZŰCS ERIKA (2009) Paradigmaváltás a szociális segé- lyezésben az Út a munkához program [The Pathway to Work programme constitutes a paradigm change in the welfare regime]. Government spokesman an- nouncement, January 8th. http://szmm.gov.hu/main. php?folderID=13565&articleID=40870&ctag=art iclelist&iid=1

TAJTI JÓZSEF (2008) 2008. I. félévben befejezett mun- kaerőpiaci programok hatékonyságának értékelése [An evaluation of the efficiency of the labour mar- ket programmes completed in the first half of 2008]. Hungarian Employment Service, Budapest, http:// www.afsz.hu/engine.aspx?page=afsz_stat_fobb_ak- tiv_eszkozok.

TARDOS KATALIN (2006) Munkaerő-piaci helyzetkép és az aktív foglalkoztatási eszközök működése Bor- sod-Abaúj-Zemplén megyében [The state of the la- bour market and active employment tools]. Manu- script.

THALER, R. AND ROSEN, S. (1975) The value of saving a life: evidence from the labour market. In: TERLECK- YJ, N. (ed.): Household Production and Consump- tion, NBER.

TIEDENS, L. Z. AND JIMENEZ, M. C. (2003) Assimilation for affiliation and contrast for control: Complemen- tary self-construals. Journal of Personality and Social Psychology, 85. pp. 1049–1061.

TÓTH PÁL (1997) A falusi cigányok és az informális szek- tor [The Roma in rural areas and the informal sector]. Magyar Tudomány, Vol. 42, No. 6. pp. 690–697.

VAN BIESEBROECK, J. (2007) Wages Equal Productivity. Fact or Fiction? University of Toronto, Department of Economics, WP 294.

WEICHSELBAUMER, D. (2003) Sexual Orientation Dis- crimination in Hiring. Labour Economics, 10. pp. 629–642.

WEICHSELBAUMER, D. AND WINTER-EBMER, R. (2005) A Meta-Analysis of the International Gender Wage Gap. Journal of Economic Surveys, Vol. 19, No. 3. pp. 479–511.

WEICHSELBAUMER, D. AND WINTER-EBMER, R. (2007) International Gender Wage Gaps. Economic Policy, Vol. 22, No. 50. pp. 235–287.