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*Work Incentives and the Probability
of Leaving Unemployment
in the Slovak Republic*

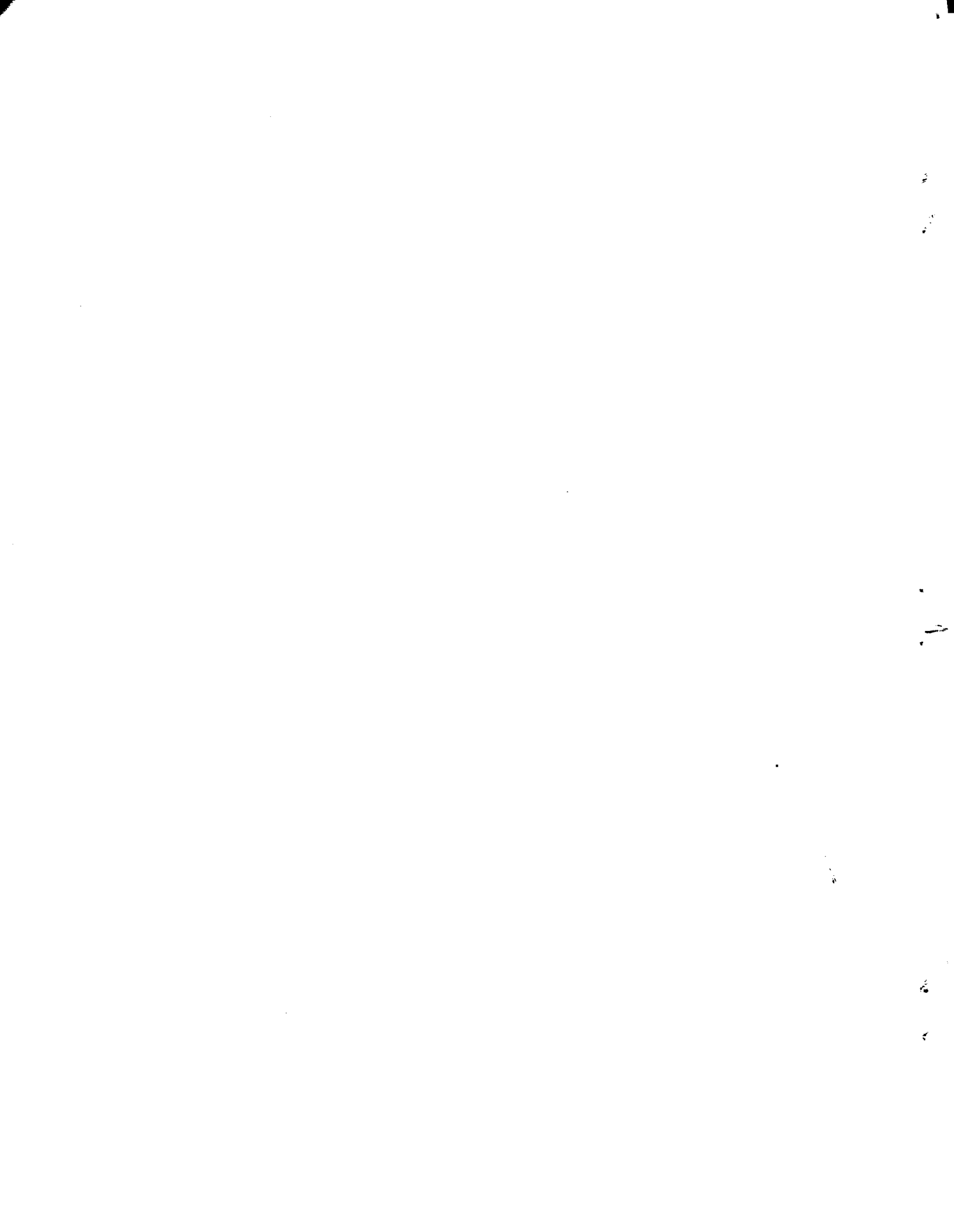
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WORK INCENTIVES AND THE PROBABILITY OF LEAVING UNEMPLOYMENT IN THE SLOVAK REPUBLIC

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Abstract

The system of unemployment benefits and subsistence benefits in Slovakia has potentially large disincentive effects with respect to the outflow from unemployment to a job. Especially low educated unemployed and unemployed with young children are often faced with replacement ratios which are close to 100%. We investigate whether the potential effects have an actual meaning. Using data from subsequent labour force surveys we analyse the (hazard) rates at which unemployed workers find jobs. We find no evidence of disincentive effects of the Slovak unemployment system.

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1. INTRODUCTION

Since the late 1980s Central and Eastern European countries have economies in transition. Their economies have changed rapidly to adjust the old centralised command system to a new competitive market economy. Along with this economic change the countries had to adjust their institutional structure. For the labour market this implied that a social security system had to be set up to cope with the new phenomenon of unemployment. Unemployment in the past did not occur, while in the new situation workers laid off by shrinking firms were not rehired immediately by expanding or newly created firms. Having to deal with a new system of unemployment benefits and social assistance schemes in a rapidly changing economic environment caused a lot of countries to adjust the system several times in the course of the 1990s.

This paper focuses on Slovakia, a small country in Central Europe with about 2 million employed and 350.000 unemployed workers which became independent from the Czech Republic in January 1993. Like other social security systems the aim of the Slovak system was twofold. First, to provide income for unemployed workers and give them social protection. Second, to stimulate them to leave unemployment and take a job. Being in transition Slovakia adjusted the rules of the benefit system several times in several ways. In 1992 to increase incentives for unemployed to find a job, eligibility criteria for UI benefits were tightened by cutting the eligibility period by one half and reducing the replacement ratios slightly. In 1995, to increase social protection for some age groups, the UI scheme was loosened by means of softening the eligibility criteria for UI benefits for these age-groups (back to the pre-1992 rules) and prolonging the eligibility period depending on the age of unemployed.

So far, not a lot of research has been done on the incentive/disincentive effects of the benefit system with respect to the exit to a job. The main purpose of this paper is to study these effects more closely. The system of benefits has a complex structure with unemployment benefits, social assistance and family support as its main components. All in all, the benefit system seems to have some serious disincentive effects since for some groups of unemployed the replacement ratio is 100%. However, it is not clear that the potential disincentive effects actually discourage workers in the search and job acceptance behaviour to the extent that they are reluctant to leave unemployment and go back to work. It may be that unemployed workers do not take current disincentive effects into account because they evaluate their current position from a life time perspective. If so, they are more interested in a labour market career with the prospect of eventually getting into a high wage job. Even if there is no direct instantaneous gain from accepting a job there may be a long term gain if workers move up the job ladder. If the long term perspective dominates short term considerations then current disincentive effects do not matter. Therefore, to answer the question whether or not there

are serious disincentive effects related to the Slovak benefit system we have to study the unemployment exit behaviour of individual Slovak workers. That is what this paper does.

The paper is set up as follows. In section 2 we provide stylised facts about recent developments in Slovak unemployment and the Slovak benefit system. In section 3 we discuss our data. In section 4 we present our statistical model and in section 5 our estimation results. Section 6 concludes.

2. UNEMPLOYMENT AND UNEMPLOYMENT BENEFITS

Unemployment in Slovakia increased strongly in 1991 from practically zero to 400,000. In the beginning of 1992 there was a decline while there were fluctuations afterwards with the number of unemployed varying between 250,000 and 400,000 and the monthly outflow from unemployment varying between 8 and 10%. There are big differences with respect to the extent to which Slovak workers are confronted with unemployment. In 1994 the unemployment rate of workers aged 15-24 was 29%, for workers aged 25-49 it was 12%, while for the age group 50-59 it was 8%. Furthermore, there were big differences between educational categories with unemployment rates being lower for higher educated workers: The unemployment rate of workers with basic or no education was 28%, while for academics it was 3%. Finally, there were also big differences between regions, with the unemployment rate of 4% in Bratislava being the lowest and rates of 25-30% in the Eastern parts of Slovakia being the highest.

2.1 Unemployment insurance

The system of unemployment insurance (UI) in the Slovak Republic has been discussed elsewhere (for a detailed description of institutions we refer the reader to OECD (1996)). Therefore, we restrict ourselves to a brief summarisation of the key reforms of the Slovak UI which occurred in the course of transition and which had serious implications at both macroeconomic level and the level of individuals. During the transition period, the evolution of UI regulations was marked by two big reforms of the UI system. The first reform, in January 1992, was in line with the development in most of the other Central and Eastern European (CEE) countries: the UI scheme was tightened by means of tightening eligibility criteria for UI benefits, cutting the eligibility period by one half, and reducing the replacement ratios slightly. The reform was motivated mostly by financial considerations. First, the rapid increasing unemployment at the initial stage of transition exerted pressure on the stage budget which was at the time the only source for financing both passive and active labour market policies. Second, there was a concern about the possible

disincentive effects of the UI scheme. The reform of UI implied for many unemployed an earlier switch from non means-tested benefits (Unemployment insurance) to means-tested benefits (Social assistance).

Three years later, in January 1995, the second bid reform of the UI system was introduced, a reform which was unique among the CEE countries. This reform acted in the opposite direction of the 1992 reform: the UI scheme was loosened by means of softening the eligibility criteria for UI benefits (back to the pre-1992 rules) and prolonging the eligibility period depending on the age of the unemployed worker (Table 1 gives a stylised overview of the characteristics of the current benefit system). The 1995 reform was related to the change of financing mechanism. While before 1994 UI and SA benefits were financed from the same source - state budget, since January 1994 UI started to be covered by the so-called Employment Fund. The sources of the Employment Fund come from insurance contributions which are paid mostly by employers and employees. In this way, the UI financing was separated from the state budget while the SA financing remained part of the state budget expenditures. Under these conditions, the 1995 loosening UI reform which brought about partial shift from SA benefits to UI benefits, was reflected in a reduction of social expenditures of the state budget. Simultaneously, potential incentive problem at the individual level was re-enforced.

2.2 Unemployment assistance

Unemployment assistance is in fact the social assistance (SA) received by unemployed. When looking more closely at the SA scheme in Slovakia, one has to note four key facts:

1. Unemployed who exhausted their UI eligibility or who are not eligible for UI are entitled to social assistance (SA) benefits. SA benefits are available practically for anyone who is socially deprived, with the eligibility being based on a means-test. The structure of SA benefits is the same for unemployed and others. There is, however, one distinction for the unemployed: SA eligibility requires registration at labour office. This requirement has two serious implications. First, persons who cannot or do not want to work for various reasons (except the officially recognised reasons like full-time study, retirement or disability) come to register themselves at the labour office in order to be eligible for some kind of benefits (UI or SA). Usually, they try to stay in the register as long as possible in order to keep the eligibility (typically for SA benefits).

2. Another crucial feature of the Slovak SA system is that the means-test is related to household income rather than individual income. This makes household income and household composition significant factors in the analysis of disincentive effects of SA benefits. Therefore, it is not possible to judge one's disincentives based on comparing merely his or her potential labour income to the income from UI or SA.

Rather, one has to take into consideration the income position of the whole household, also because the SA eligibility itself is derived from the household income. Similarly, when dealing with replacement ratios under SA scheme, one has to model the replacement ratio for an unemployed person within several model household types.

3. The third important fact in the context of SA system is the interaction between SA benefits and benefits based on social insurance (we will refer to the latter like SI benefits). SI system consists of four schemes: sickness insurance, health insurance, pension insurance and unemployment insurance. So the UI system itself can be viewed as one of four elements of the SI system. The common feature of all four elements of SI is that eligibility for benefits is conditioned by participation in the insurance schemes which in general requires regular contribution payments. The SA system, on the contrary, is not based on insurance principle. Therefore, the eligibility for SA benefits is not conditioned by prior contribution payments. Rather, it is related to household income and to the social status of the claimant. Given that for the registered unemployed the SI contributions are paid either by the Employment Fund (the Fund covers those who receive UI benefits) or by the state (state pays for those not eligible for UI and for UI exhaustees), in practise it is possible that an unemployed receives both UI and/or SA benefits and/or payments from other social insurance schemes.

4. The interaction between various benefit schemes considerably complicates the situation when analysing the effects of SA benefits. In terms of this analysis, the major importance of SA system comes from the fact that it determines the minimum guaranteed income denoted like Minimum Living Standard (MLS) to which any citizen is entitled. In case that his or her household income from employment and other activities (including income from social insurance schemes) does not reach this level, the person is entitled to be brought to this level by SA benefit. The MLS is determined by law.

2.3 Minimum living standard and replacement ratios

The MLS represents the level of net income which is guaranteed by the SA scheme. The MLS consists of two components: a household allowance and a personal allowance. The household allowance depends solely on the number of household members. The personal allowance depends on the age of persons. The household allowance and personal allowances for individual household members are added together in order to determine appropriate MLS for the particular household.

According to the above mentioned rules for the construction of MLS we can compute the MLS for particular household types. Results for selected household types are presented in Table 2. For 1 adult or 2 adults households, the MLS corresponds also to the so-called minimum social pension, i.e. a minimum income to which a person or a couple without dependent children is entitled if the pension is the

only source of income. This level is mostly applied to unemployed without dependent children and it is also relevant for households of pensioners. We also present in the table the level of minimum wage and average wage in each particular year.³

Eligibility for SA benefits is based on means-test. As was mentioned above, the means-test applies to household income rather than individual income. Therefore, unless the unemployed lives in a single-member household, one has to take into consideration the household income and composition when judging whether the criteria for SA eligibility are met. The household composition enters into calculation through the construction of MLS which represents a threshold for SA eligibility. In general, a person is eligible for SA benefit if his or her household income does not reach the appropriate MLS level for that household. The benefits are made up to the level of the MLS. The household composition further determines the possibility of children allowance payments. The allowances are viewed as one of the payments which provide most temptation for not accepting a job.

By the same token, we can calculate the income threshold for one-member household. In 1995 it was about 2 450 Sk per month which represented the minimum wage or 34 per cent of average wage. This means that if an unemployed who receives SA benefit accepts a job which yields minimum wage, his or her net monthly income does not increase. Under these conditions, low-skilled workers and young workers with lower education who tend to stay at the lower tail of wage distribution have practically no incentive to accept jobs.

The calculation of income thresholds becomes more complicated when it comes to households with dependent children. This is due to the possibility of receiving children allowances. The allowances are the social payments which are most often blamed for providing disincentives to unemployed parents. Children allowances were substantially reformed in 1994: from an across-the-board lump-sum payment dependent at the number of children they were turned into targeted payments indexed with respect to the MLS and granted at the basis of means-test.

One can also ask whether the potential labour income of the unemployed spouse would not help. If both workers are low skilled their net household income would be the same whether they are employed or not. In case of a higher potential labour income the overall household situation can improve. However, due to the children allowances payments, raising the household gross labour income has its caveats. Due to the fact that children allowances are also means-tested, it is possible that an increase of gross household labour

³ A caution should be exercised when comparing the wage levels with the level of MLS for particular household type. The computation of replacement ratio is not straightforward due to tax treatment and presence of children allowances and other household related payments.

income above certain level brings about a fall in total net household income due to the loss of children allowances.

In order to analyze the behaviour of replacement ratio over unemployment spell, we constructed theoretical replacement ratios for an unemployed person within several household types. The three examined periods of unemployment spell are: the period covered by UI with higher replacement ratio (i.e. the first three months of receiving UI), the period covered by UI with lower replacement ratio (i.e. the rest of the UI eligibility period which ranges between 3 and 9 months depending on the age of unemployed), and finally, the period after exhaustion of UI which is eventually covered by SA (providing that the household income satisfies the means-test). If a person is not eligible for UI, his/her unemployment spell can be covered by SA from the very beginning (providing that the household income satisfies the means-test). The guaranteed minimum net household income is determined by MLS.

The analysed household types are the following: single adult, two adults, two adults with one child and two adults with two children. In the latter two cases, we distinguish also by the age of children (four age categories corresponding to those used in the construction of MLS). Given that the effects on replacement ratios are directly proportional to the number of children and their age, we only present graphically the results for the two extremes of age categories for children, i.e. up to 6 years old and 15 and more years old children. From the point of view of income position of the household we modelled two cases: labour income of the employed household member and former labour income of the unemployed one is equal to: (a) minimum wage or (b) average wage.

When constructing the replacement ratios, we had to take into consideration lots of technicalities which we will not describe in details (for example, income tax and social contributions payments, adjustments of MLS, rules for the means-test procedure, administration of children allowances, development of minimum and average wage, etc.) .

The household composition enters into calculation through the construction of MLS which determines the means-tested limit for SA eligibility. The amount of the MLS is based on number and age of household members. Taking into consideration the MLS for particular household types and children allowances as described above, we calculated income replacement ratios that the households experience in the course of unemployment spell of one household member. The results are summarised in Table 3. Clearly, for households with low labour income (around minimum wage) the replacement ratios remain almost constant, disregarding whether the unemployed receives UI with higher replacement rate, UI with lower replacement rate, or SA. This is caused by the fact that their net labour income always falls below the household MLS and the household is brought to the level of MLS by some kind of SA payment. Paradoxically, for low income households with dependent children, the replacement ratio is even

slightly higher under SA than under UI. This is due to the way of administration of children allowances.

The results contained in Table 3 suggest that for an unemployed in some household types there is really strong disincentive to accept a job. The most exposed to disincentives in this sense are the households with low potential labour income and with dependent children.

3. DATA

In our analysis of unemployment exit rates we use the data from eight subsequent waves of the Slovak Labour Force Survey (LFS) conducted quarterly in 1994 and 1995. In each quarter, the LFS sample consists of approximately 10,000 households (which represent about 0.1 per cent of all Slovak households), or 30,000 individuals. The survey is performed with 20 per cent rotation. Therefore, we can trace unemployed for utmost five subsequent quarters. For each unemployed we check his or her status in the subsequent quarters. We allow for three mutually exclusive states: unemployment, employment and out-of-labour force (OLF). From these three states we derive whether for an unemployed individual between two subsequent quarters there occurred no transition from unemployment, a transition from unemployment to job or a transition from unemployment to OLF.

We merged eight quarterly LFS samples from 1994 and 1995 by personal identification numbers. We selected those persons who became unemployed in 1994 or the first 2 quarters of 1995. We omitted persons who became unemployed in the last 2 quarters of 1995 because they do not have sufficient time to exit from unemployment between their moment of inflow and the end of 1995. We also selected those who entered the sample as unemployed if they responded that they had been unemployed (actively seeking a job) for less than three months. In this way we obtained an inflow sample consisting of all persons who entered the sample and/or unemployment during the period of 1994 - first half of 1995. The average quarterly inflow ranged between 200 - 300 persons. The total sample consists of 1630 individuals, of which 930 are males and 700 are females. (The characteristics of sample composition and the magnitude of censoring are described in Appendix 1.) On average 36% of the unemployed leave unemployment within 2 quarters, while on average 53% leave unemployment within a year.

The duration of a spell of unemployment is defined as the period of time elapsed between the quarters of inflow into and outflow from unemployment. Because of the 20 per cent sample rotation, we cannot trace individuals for more than five subsequent quarters. Therefore, the unemployment spells which were not completed by an exit to employment or OLF up to the fifth quarter of their duration are censored at that length. The right-censoring is due to sample attrition

between subsequent quarters or at the end of the observation period (end of 1995). Given that we have information about the start of the unemployment spell, there is no left-censoring in our sample.

4. STATISTICAL MODEL

We use a proportional hazard model with a flexible baseline hazard. The hazard rate is assumed to be constant within time intervals but is allowed to differ between time intervals. The specification of the hazard rate is as follows:

$$\theta(t; x_i) = \exp(\beta'x_i + \sum_k \lambda_k \cdot I_{ki}(t)) \quad (1)$$

where t is unemployment duration measured in quarters and x is a vector of explanatory variables. Furthermore, i refers to individuals and I_k , $k=1, \dots, 5$ are time-varying dummy variables which are one in quarterly time intervals. Finally, β and $\lambda_1, \dots, \lambda_5$ are parameters to be estimated.

The duration dependency coefficients indicate whether or not conditional on the explanatory variables the exit rate changes over the duration of unemployment. These changes may occur because of employers' behaviour, workers' behaviour or a combination of both. If employers prefer short term unemployed to long term unemployed then the exit rate to a job steadily declines over the duration of unemployment. If the unemployed worker is discouraged by remaining unemployed and decreases search intensity the exit rate will also decline. It may also be that the rules of the benefit system influence the exit rate. Unemployed may be inclined to leave unemployment just before there is a drop in their benefit. In this case there is no continuous change in the exit rate but a sudden jump. So, from the pattern of duration dependence we may get information about the effect of financial incentives which change over the duration of unemployment. The hazard rate specified in equation (1) is a 'single risk' hazard rate, that is it describes the outflow from unemployment without a distinction between possible destinations. In fact, we consider the case in which an unemployed worker faces two 'risks': one of completing his/her unemployment benefit period by finding a job, the other of completing of the unemployment benefit period because of withdrawal from the labour force. We estimate the coefficient of both hazard rates separately. When estimating the coefficients of the 'job finding hazard rate' the observed durations until a regular job is found are considered to be completed durations while the durations until an exit out of the labour force or durations which have not yet been completed are considered to be right-censored. The estimation of the coefficients of the 'out of the labour force' hazard rate is done in a similar way.

The explanatory variables we use refer to age, marital status, education, family size, number of children, previous labour market

position and the district unemployment rate. (See appendix 2 for a definition of the variables). A lot of these variables are related to the labour market position of the individuals, i.e. the availability of vacant jobs. Some variables are related to the benefit system. We found the direct information on the benefit of the worker was either unavailable or seemed to be unreliable. Indirect variables for the effect of benefits are education, the size of the family and the presence of children within the family.

The density function of completed unemployment durations is specified as:

$$f(t; x_i) = \theta(t; x_i) \cdot \exp\left[-\int_0^t \theta(s; x_i) ds\right] \quad (2)$$

As indicated we do not have exact information about the length of the unemployment spell, but we know the spells by interval. So we know whether the completed unemployment duration was smaller than 1 quarter, 1-2 quarters, 2-3 quarters, 3-4 quarters, 4-5 quarters.

If we define an indicator variable d_i that is equal to 1 if the duration is completed and is equal to 0 otherwise the loglikelihood is specified as:

$$\text{Log}L = \sum_{d_i=1} \text{Log}\left(\int_0^t f(t; x_i) dt\right) + \sum_{d_i=0} \text{Log}[1-F(t; x_i)] \quad (3)$$

where $F(t)$ is the distribution function of $f(t)$.

5. ESTIMATION RESULTS

We estimated the parameters of the model using maximum likelihood. We estimated separated models for males and females. Table 4 presents for both males and females estimation results for hazard rates to a job and hazard rates to out of the labour force.

With respect to the exit to a job age does not seem to be very relevant. Being single has a negative effect on every exit rate. However only for single males the exit rate to a job is significantly smaller than the exit rates of their married counterparts. Education is important. Higher educated workers have a higher exit rate to a job than lower educated workers. The presence of children does not seem to affect the exit rates out of unemployment. There are also differences in exit rates between districts, with low unemployment district having significantly higher exit rates than high unemployment regions. The previous labour market status also matters. Those unemployed who previously had a job have a higher exit rate to a job than for example school-leavers. Workers who previously had a job have lower exit rates to out of the labour force. Duration dependence in the exit to a job is not important in the first three quarters. Only after three quarters the individual exit rates to a job decline. There is no duration dependence in the exit rate to out of the labour force. Finally, we investigated whether an unobserved heterogeneity component specified as a

discrete distribution with two point of support was present in the hazard rate but we did not find any indication of this.

What comes out of our analysis is that the variables that represent potential disincentive effects do not seem to affect the exits out of unemployment. Neither the benefit variables nor the variables representing the presence of children have coefficients which are significantly different from zero. However, it could be that the variables we use are too limited, for example because for many individuals we simply have no information about their benefit position. In order to investigate the effect of financial incentives and the role of the benefit system in more detail, we performed separate analyses for four groups of workers of the hazard rate to a job. These four groups are distinguished by sex and by education where high educated workers are assumed to have a high potential income and therefore a potentially low replacement ratio. Therefore high educated workers have big financial incentives to leave unemployment and find a job. If a worker receives a benefit then the financial incentives may change over the duration of unemployment for example because the unemployment benefit expires and is replaced by a subsistence benefit. For high educated workers this will imply a drop in benefits, while for low educated workers with dependent children this effect does not occur. It appeared that the estimated coefficients of the group of low educated workers are very similar to the estimated coefficients of high educated workers. Also, there are hardly any differences between the four groups occur in the pattern of duration dependence. In fact from a likelihood ratio test it appears that it the split between high and low educated workers does not improve the estimation results. From this we conclude that there is a difference in exit behaviour between high and low educated workers. However, this difference does not seem to be related with the difference in benefit position. It could simply be that there are more vacancies for high educated workers.

6. CONCLUSIONS

The Slovak benefit system has a complex structure with unemployment benefits, social assistance and family support as its main components. The system seems has potentially large disincentive effects with respect to the outflow from unemployment to a job. This is especially the case for low educated unemployed and high educated unemployed who have young children. However, it is not clear that the potential disincentive effects actually discourage workers in the search and job acceptance behaviour to the extent that they are reluctant to leave unemployment and go back to work. It may be that unemployed workers do not take the current disincentive effects into account because they evaluate their current position from a life time perspective. If so, they are more interested in a labour market career with the prospect of eventually getting into a high wage job. Even if

there is no direct instantaneous gain from accepting a job there may be a long term gain if workers move up the job ladder. If the long term perspective dominates short term considerations then current disincentive effects do not matter.

In this paper we investigated whether the potential disincentive effects of the Slovak benefit system have an actual meaning. Using data from subsequent labour force surveys we investigated the determinants of the outflow from unemployment to a job and the determinants of the outflow to out of the labour force. We find that single unemployed, highly educated unemployed and unemployed living in low unemployment districts have higher exit rates both to a job and to out of the labour force. The characteristic with a distinctly different effect on both exit rates is the previous labour market position. Unemployed coming from a job have a higher exit rate to a job and a lower exit rate to out of the labour force. We also find that there are fluctuations in the hazard rate over the duration of unemployment. However, these fluctuations are not very informative. There do not seem to be disincentive effects of the benefit system. The direct indicators of the type of unemployment benefit do not affect the exit rates. Furthermore, neither for high educated workers nor for low educated workers the presence of young children influences the exit rates. So, also the indirect indicators do not influence the unemployment exit rates. All in all we conclude that although there are potential disincentive effect in the Slovak benefit system we find no evidence that these potential effects materialise. The job finding behaviour of Slovak unemployed does not seem to be influenced by the structure of the benefit system.

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Table 1

| Comparison of unemployment insurance (UI) and unemployment assistance (UA) | |
|--|--|
| Eligibility conditions | |
| UI | UA |
| At least 15 years of age Registered at LO Actively co-operating with LO 12 months of work experience during previous 3 years (several exemptions exist) | At least 15 years of age Registered at LO Actively cooperating with LO Household income below MLS |
| Entitlement period | |
| 6 months for 15-29 years old 8 months for 30-44 9 months for 45-49 12 months for 50+ | Unlimited, based on the means-test |
| Calculation of benefits | |
| First 3 months - 60 per cent of average net earnings during the last quarter of employment Rest of the eligibility period - 50 per cent For school leavers - 45 per cent of minimum wage during the whole eligibility period | Payments are made up to the household MLS |
| Ceiling on benefits | |
| 1.5-multiple of minimum wage | Household MLS |
| Notes: MLS = Minimum living standard LO = Labour office | |

Table 2 Development of minimum living standard (MLS) and minimum wage (all amounts are in Slovak crowns per month)

| MLS by household type (net) | 1991 | 1992 | 1993 | 1994 | 1995 |
|-----------------------------|-------|-------|-------|-------|-------|
| 1 adult | 1 700 | 1 700 | 1 980 | 1 980 | 2 180 |
| 2 adults | 3 050 | 3 050 | 3 510 | 3 510 | 3 850 |
| 2 adults+1 child 0-6 | 4 100 | 4 100 | 4 710 | 4 710 | 5 190 |
| 2 adults+2 children 0-6 | 4 500 | 4 500 | 5 160 | 5 160 | 5 650 |
| 2 adults+1 child 15+ | 5 000 | 5 000 | 5 720 | 5 720 | 6 320 |
| 2 adults+2 children 15+ | 5 800 | 5 800 | 6 620 | 6 620 | 7 240 |
| Minimum wage (gross) | - | 2 000 | 2 200 | 2 450 | 2 450 |
| Average wage (gross) | 3 748 | 4 519 | 5 261 | 6 088 | 7 144 |

Source: Ministry of Labour, Social Affairs and Family of SR, own calculations

Table 3

| Evolution of replacement ratio over unemployment spell | | | | | | |
|--|-------------|-------------|------|-------------|-------------|------|
| Labour income = minimum wage | | | | | | |
| | 1994 | | | 1995 | | |
| | UI 1 period | UI 2 period | UA | UI 1 period | UI 2 period | UA |
| Adult single | 0,90 | 0,90 | 0,90 | 0,98 | 0,98 | 0,98 |
| 2 Adults | 0,78 | 0,77 | 0,77 | 0,83 | 0,83 | 0,83 |
| 2 Adults+child up to 6 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 | 0,98 |
| 2 Adults+child 15+ | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 |
| 2 Adults+2 children up to 6 | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 |
| 2 Adults+2 children 15+ | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 |
| Labour income = average wage | | | | | | |
| | 1994 | | | 1995 | | |
| | UI 1 period | UI 2 period | UA | UI 1 period | UI 2 period | UA |
| Adult single | 0,60 | 0,50 | 0,39 | 0,60 | 0,50 | 0,38 |
| 2 Adults | 0,80 | 0,75 | 0,50 | 0,81 | 0,77 | 0,51 |
| 2 Adults+child up to 6 | 0,81 | 0,76 | 0,51 | 0,81 | 0,79 | 0,51 |
| 2 Adults+child 15+ | 0,81 | 0,76 | 0,51 | 0,81 | 0,80 | 0,58 |
| 2 Adults+2 children up to 6 | 0,82 | 0,76 | 0,53 | 0,77 | 0,81 | 0,57 |
| 2 Adults+2 children 15+ | 0,82 | 0,76 | 0,60 | 0,83 | 0,82 | 0,60 |

Table 4 Estimation results; hazard rates to a job and hazard rates out of the labour force (t-values in parenthesis)

| | Males to job | Females to job | Males to out of lab. force | Females to out of lab. force |
|-------------------------------|-------------------------|---------------------------|---|---|
| Constant | -1.04 (2.0)* | -0.64 (1.1) | -0.58 (0.5) | -1.89 (1.1) |
| Age 30-45 | -0.21 (1.2) | -0.19 (0.9) | -1.68 (2.1)* | -0.39 (0.6) |
| Age 45+ | -0.25 (1.2) | 0.59 (1.8) | -0.01 (0.0) | 0.54 (0.9) |
| Single | -0.34 (2.0)* | -0.20 (0.9) | -0.36 (0.6) | -0.01 (0.0) |
| Widow/divorced | -0.10 (0.3) | -0.14 (0.5) | - | 1.37 (1.2) |
| Secondary educ | 0.40 (2.3)* | 0.48 (2.5)* | 0.81 (1.4) | 0.43 (1.1) |
| Academic educ | 0.82 (2.8)* | -0.01(0.0) | 1.20 (1.5) | -0.49 (0.4) |
| Family size 3-4 | 0.27 (1.4) | -0.20 (0.7) | -0.58 (1.3) | -0.24 (0.4) |
| Family size 5-6 | 0.32 (1.4) | -0.32 (1.1) | -0.91 (1.6) | -0.10 (0.1) |
| Family size 6+ | 0.39 (1.2) | -0.59 (1.2) | -1.94 (1.3) | -0.44 (0.4) |
| Child 0-6 years | -0.27 (1.6) | -0.13 (0.6) | -0.23 (0.4) | -0.18 (0.4) |
| Child 6-10 years | -0.33 (1.9)* | -0.13 (0.7) | 0.51 (1.0) | 0.24 (0.6) |
| Child 10-15 years | -0.21 (1.3) | 0.04 (0.2) | -0.03 (0.1) | 0.12 (0.3) |
| From job | 0.46 (2.5)* | 0.13 (0.7) | -0.75 (2.1)* | -0.76 (2.1)* |
| Log(u%) | -0.42 (3.2)* | -0.47 (2.9)* | -0.68 (2.4)* | -0.94 (2.5)* |
| 1-2 Quarters | 0.11 (0.9) | 0.27 (1.6) | -0.58 (1.5) | -0.05 (0.1) |
| 2-3 Quarters | -0.22 (1.3) | -0.21 (0.9) | -0.34 (0.7) | -0.20 (0.5) |
| 3-4 Quarters | -0.89 (3.0)* | -0.71 (2.4)* | -0.59 (0.9) | -1.88 (1.6) |
| 4-5 Quarters | -0.28 (0.8) | - | -0.22 (0.3) | - |
| Loglikelihood | -891.1 | -598.9 | -238.7 | -201.6 |
| No observations | 930 | 700 | 930 | 700 |
| Loglikelihood no Dur. Dep. | -899.2 | -602.4 | -240.5 | -204.8 |

APPENDIX 1 SAMPLE COMPOSITION

| | Observations | Censored (per cent) | Mean duration (a) |
|---------|--------------|------------------------|-------------------------|
| Total | 2153 | 66.7 | 2.63 |
| 1Q 1994 | 381 | 70.5 | 2.89 |
| 2Q 1994 | 213 | 64.5 | 2.71 |
| 3Q 1994 | 297 | 67.0 | 2.48 |
| 4Q 1994 | 284 | 56.2 | 2.40 |
| 1Q 1995 | 251 | 51.8 | 2.18 |
| 2Q 1995 | 204 | 57.8 | 2.07 |
| 3Q 1995 | 275 | 78.8 | 0.80 |
| 4Q 1995 | 248 | 95.1 | 0.00 |

Notes: (a) Kaplan - Meier estimated. duration in quarters

APPENDIX 2 - DEFINITION OF VARIABLES

All variables are dummy variables (with value 1 where indicated and value 0 for the reference group) except log (u%)

Age 30-45: age is between 30 and 45 years

Age 45+ : age is over 45 years

Reference group: age below 30 years

Single

Widow/divorced

Reference group: married

Secondary educ: skilled or secondary education with or without examination

Academic educ: university level

Reference group: primary or no education

Family size 3-4, Family size 5-6, Family size 6+

Reference group: family consisting of 1-2 persons

Child 0-6 years, Child 6-10 years, Child 10-15 years

Reference group: family with no children or children above 15 years

From job: previous labour market position was having a job

Reference group: previous position: school, housekeeping, maternity leave or retired

Log(u%): logarithm of district unemployment percentage in December 1993.