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# BABY BOOM OR BUST? CHANGING FERTILITY IN POST-COMMUNIST CZECH REPUBLIC AND SLOVAKIA

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## Abstract

Transition from a centrally planned to a market oriented economy alters the incentives individuals face as they make consumption and time allocation decisions. Families must reevaluate their fertility plans as a result of new wage structures, reduced government subsidies of the costs of raising children, and uncertainty from a changed economic environment. Using micro-data from 1984 and 1993 in the Czech Republic and Slovakia, this paper estimates a dynamic stock adjustment model, relating observed drops in fertility post-Communism to new wages, prices, and risks. Because transition will have affected only those born in the three years prior to the 1993 data, considering children under age three isolates these effects. Earnings influence total demand for children during Communism through substitution effects for women's earnings and income effects for men's. In all four data sets, earnings levels have little effect on fertility timing, though age and job uncertainty do effect the probability of having young children, particularly following Communism. Earnings changes across regime also impact fertility timing decisions, though the effects are different in the Czech Republic and Slovakia.


## *I. INTRODUCTION*

After Communism, new economic policies and institutions confront people with an altered set of opportunities, costs and constraints. In response to these new incentives, people may change their behavior. Among the many changed outcomes, the collapse of Communism generates several forces that may affect families' fertility decisions. In an effort to link these factors to observed outcomes, this essay investigates fertility before and after the change from a centrally planned to a more market-oriented economy in the Czech Republic and Slovakia.

Offering background information to the issues considered in this paper, the final report of the 1993 Czech Republic Health Survey estimated fertility to be 1.87 children per woman between the ages of 15 and 44 for the three year period from 1990 to 1992, which is similar to

fertility rates of other European countries. The survey also provides evidence of a strong preference for a two child family. Like in other Eastern European countries, child-bearing is heavily concentrated between the ages of 20 and 29 years in the Czech Republic.

Fertility rates have not been constant over time, however. From approximately 2.0 children per woman in 1960, they rose to a high of approximately 2.5 in the mid-1970s (United Nations Demographic Yearbook, various years). Since that time, fertility in the Czech Republic has been dropping steadily but gradually. As a result, to distinguish any fall in fertility associated with the end of Communism, that change must be quite dramatic or be concentrated among families with particular characteristics. This research will seek to identify specific characteristics of people whose new fertility decisions may be attributed to specific aspects of regime change.

The paper is organized as follows. Section II presents a framework for studying fertility changes during and after a major regime change. Section III discusses the data and presents descriptive statistics that illustrate the phenomenon of changing fertility. Section IV presents the findings of this research. Section V summarizes.

## *II. THEORY/HYPOTHESES*

The analysis begins with the assumption that families did not anticipate the collapse of Communism. With known monetary and time costs (wages) of raising children, families planned their fertility, arriving at an optimal pattern of when they would have children and how many children they would have. When the Communist regime disintegrated, however, there was an unforeseen change in these costs. Thus, families reconsidered their optimization problems, taking into account that they had partially completed another fertility plan based on different costs. Though the following analysis will not present analytic solutions to the two inter-linked problems people faced during and after the end of Communism, it will provide a framework for considering families' responses.

To model the baseline fertility decision during the Communist era, this research follows the framework adopted by Wolpin (1984) and Rosensweig and Schultz (1985) and most recently presented in Ahn (1995). However, for the Communist era it is assumed that there is no uncertainty in wages, prices or reproduction technology. At time t=1 a family decides its plan of desired fertility for t=1 to T, where T is the known number of years of fecundity. It develops that plan by maximizing the expected value of an intertemporally separable utility function with the following arguments: the number of children born in time t, $k_t$; the total number of children born into the family up to time t, $K_t$; the consumption of a composite commodity good, $x_t$; and the non-work time of the wife, $l_t$. Each family also has a specific preference for children $m$, which summarizes the relative tastes for the woman's non-work time, consumption and children.

$$\max E_{t=1}\left[\sum_{t=1}^{T} d^{t-1} U\left(k_t, K_t, x_t, \ell_t^F; m\right)\right] \qquad [1]$$
$$\text{where } K_t = \sum_{i=1}^{t-1} k_i$$

In every period, the family faces a within-period income constraint based on a vector of woman's wages $\overline{W}^F = \left(\overline{W}_1^F, \ldots, \overline{W}_t^F, \ldots, \overline{W}_T^F\right)$, the husband's income $\overline{V} = \left(\overline{V}_1, \ldots, \overline{V}_t, \ldots, \overline{V}_T\right)$ and the monetary cost of children, $\overline{C} = \left(\overline{C}_1, \ldots, \overline{C}_t, \ldots, \overline{C}_T\right)$.

$$\overline{W}_t^F\left(1-\ell_t^F\right)+\overline{V}_t = x_t + \overline{C}_t\left(K_t + k_t\right) \qquad [2]$$

The result of the family's optimal fertility plans under Communism can be summarized by vectors for whether $\left(k_t = 1\right)$ or not $\left(k_t = 0\right)$ the family chooses to have a child at each time t, the amount of non-market time which the woman consumes, and the amount of good x consumed. Each of these demand vectors are functions of the women's wage, the husband's income, the costs of children and families' taste for children.

$$\begin{aligned}
&\bar{k} = \left(\bar{k}_1, \bar{k}_2, \ldots, \bar{k}_T\right) = \bar{k}\left(\bar{W}^F, \bar{V}, \bar{C}, m\right) \\
&\text{where } \bar{K}_T = \sum_{i=1}^{K} \bar{k}_i = \bar{K}_T\left(\bar{W}^F, \bar{V}, \bar{C}, m\right) \\
&\bar{\ell}^F = \left(\bar{\ell}^F{}_1, \bar{\ell}^F{}_2, \ldots, \bar{\ell}^F{}_T\right) = \bar{\ell}^F\left(\bar{W}^F, \bar{V}, \bar{C}, m\right) \\
&\bar{x} = \left(\bar{x}_1, \bar{x}_2, \ldots, \bar{x}_T\right) = \bar{x}\left(\bar{W}^F, \bar{V}, \bar{C}, m\right)
\end{aligned} \qquad [3]$$

At time t*, Communism ends, where t* varies by household because different families will be of different ages when the external event affects them. At that time, there is an unforeseen change in women's wages, men's income, and the cost of child care. The values are represented by new time-specific wage and price vectors, $W^*, V^*, \text{ and } C^*$, respectively. In response to the change, the family needs to re-address its dynamic optimization problem for the time, T-t*, remaining. It must factor in that up until time t*, the family already had a certain number of children $\bar{K}_{t^*} = \sum_{i=1}^{t^*} \bar{k}_i$ under the Communist regime. The number of children born during Communism then becomes a state variable to which the family must respond in its utility optimization,

$$\begin{aligned}
&\max E\left[\sum_{t=t^*}^{T} d^{t-1} U\left(k_t, K^*{}_t, x_t, \ell_t^F; m, \bar{K}_{t^*}\right)\right] \\
&\qquad \text{where } K^*{}_t = \bar{K}_{t^*} + \sum_{i=t^*}^{t-1} k_i
\end{aligned} \qquad [4]$$

subject to a within-period income constraint commensurate with post-Communist prices:

$$W_t^{*F}\left(1 - \ell_t^F\right) + V_t^* = x_t + C^*\left(K^* + k_t\right) \qquad [5]$$

The solution of this post-Communist optimization problem is:

$$\begin{aligned}
&k^* = \left(k_{t^*}^*, k_{t^*+1}^*, \ldots, k_T^*\right) = k^*\left(W^*, V^*, C^*, m, \bar{K}_{t^*}\right) \\
&\ell^{*F} = \left(\ell_{t^*}^{*F}, \ell_{t^*+1}^{*F}, \ldots, \ell_T^{*F}\right) = \ell^{*F}\left(W^*, V^*, C^*, m, \bar{K}_{t^*}\right) \\
&x^* = \left(x_{t^*}^*, x_{t^*+1}^*, \ldots, x_T^*\right) = x^*\left(W^*, V^*, C^*, m, \bar{K}_{t^*}\right)
\end{aligned} \qquad [6]$$

Although there are tools available to solve these dynamic optimization problems (see for example, Hotz and Miller (1993)), longitudinal data is necessary for estimating such structural models. However, as discussed below in Section III, the data available for this study is four cross-sections, two for the Communist period and two for transition. While still assuming that families plan their fertility according to a process similar to that modeled above, a simpler framework will better represent the empirical work that follows. If women's wages, men's income and child-care costs are fixed during both the Communist period and post-Communism, the vectors $\overline{W}^F, \overline{V}, \overline{C}, W^{*F}, V^*, and\ C^*$ can be considered scalars. Following a simplified framework, a linear form of the total demand for children from [3] would appear as follows:

$$\overline{K}_T = a_0 + a_1\overline{W}^F + a_2\overline{V} + a_3\overline{C} + m \qquad [7]$$

An extensive fertility literature suggests that as women's wages -- thus the time cost of children -- increase, women substitute away from having now more expensive children: we expect $a_1$ to be negative. As the income available to the family increases, however, they will demand more children, so $a_2$ should be positive if men do not have primary responsibility for raising children and their earnings can be interpreted as proxying family income. Further, with increasing direct costs of caring for children, the demand for children should decrease: $a_3$ should be negative.

The timing decision, or the demand for a child within any period t during Communism, can be represented as a function of the time remaining until T and the difference between the overall demand for children and the number of children born thus far:

$$\begin{aligned}\overline{k}_t &= \overline{k}\left(T-t, \overline{K}_T - \overline{K}_t\right) \\ &= g_{T-t}\left[\left(a_0 + a_1\overline{W}^F + a_2\overline{V} + a_3\overline{C} + m\right) - \sum_{g=1}^{t-1}\overline{k}_g\right]\end{aligned} \qquad [8]$$

If families follow the multi-period optimization model as described in [1] to [3], there is no simple relationship between the wages that women or men are offered and the time they choose to have children. However, as the time toward the end of fecundity approaches and some unmet demand for children continues, the likelihood of a woman having children increases: $\gamma$ increases with age.

At time t*, families will have a new demand for children based on new incentives they face following regime change:

$$K_T^* = a_0 + a_1 W^{*F} + a_2 V^* + a_3 C^* + m \qquad [9]$$

If the demand for children is adequately captured by the woman's wage, husband's income and the direct costs of child care, an individual family should not have different demand coefficients between the two regimes. Thus, if we could measure the total demand for children following Communism, one would again expect a negative coefficient on woman's wage, a positive coefficient on husband's income, and a negative coefficient on the direct cost of child care.

However, at time t* families will be adjusting to changed incentives or the difference between $\overline{K}_T$ *and* $K_T^*$. These differences will have implications for their fertility timing. Those who are close to age T or families for whom there was a drop in total children demanded will be less likely to have children at time t*, particularly if they have had children already. Conversely, those for whom there was an increase in demand for children across regime will be more likely to have children at time t*, particularly if they are nearing age T. The following represents this relationship:

$$\begin{aligned} k_t^* &= g_{T-t}\left(K_T^* - \overline{K}_T\right) \\ &= g_{T-t}\left[a_1\left(W^{*F} - \overline{W}^F\right) + a_2\left(V^* - \overline{V}\right) + a_3\left(C^* - \overline{C}\right)\right] \end{aligned} \qquad [10]$$

where the second line results from substituting [7] and [9] assuming constant total demand coefficients. This assumption ignores that after transition, a total demand function like [9] will not hold exactly because some of the costs and benefits of children have already accrued to the family between time t=1 and t=t*.

Equation [10] has implications for who will be giving birth in the time period immediately following Communism. In general, changes in fertility will be larger for older women closer to age T, for they have less time to adjust between the total number of children they demanded under Communism and those they demand afterwards. Those women whose wages have increased after Communism will have fewer children immediately following the transition, though the degree of the effect varies with age. Those whose husbands have increased their income will be more likely to have children during the transition. Finally, those for whom the direct costs of child-care have increased will have fewer children during transition.

While equation [10] has family-specific implications, many institutional changes have general effects on all families, for during post-Communist transition, governments change their involvement in the economy. Under Communism they subsidized the direct costs C* of raising children. For example, they provided (or required firms to provide) child-care facilities at low or no costs, offered generous maternity leave and benefits, and offered child allowances to families with children. These social policies provided incentives for families to have more children and for women to work. With Communism's end, governments no longer maintain these policies. As child-care facilities become more costly in Central and Eastern Europe, maternity benefits more parsimonious, and child benefits smaller, the direct costs of children C* increase. As a result, one expects fertility to decline across all families.

Finally, though not modeled in this framework, the dramatic change of regime generated significant uncertainty about the future. Families that might have previously felt

secure about their lifetime stream of income or their ability to afford children could be deterred by the uncertainty which an altered economic environment generates. If families are risk averse, this would reduce fertility. This research will seek to identify these effects in microeconomic data.

## *III. DATA*

This research uses microeconomic data from the following four times and countries: the 1984 Czech Republic, 1984 Slovak Republic, 1993 Czech Republic and 1993 Slovakia. For the Communist period, the 1984 Social Stratification Survey provides the data. Reporting information for both republics of the Czecho-Slovak Socialist Republic, the 1984 data records information about 18,000 households. Each household provided responses regarding their income and benefits which was verified through a separate employer questionnaire.

Although the Communist and post-Communist survey projects investigate similar issues, because the previous regime designed the 1984 survey and collected the data, the focus of questions and probable accuracy of responses differ between 1984 and 1993. The post-Communist data for both the Czech Republic and Slovakia result from a multi-country comparative research project entitled "Social Stratification in Eastern Europe 1993." In May 1993 the project collected information from 5600 households in the Czech Republic and 4900 in Slovakia. Based on a sample frame from the most recent micro-census, the sample selection procedure specified that respondents be randomly chosen from within the household (not necessarily the household head) and be between 20 and 69 years of age.

Though not specifically designed to investigate fertility issues, these surveys do include questions about the sex and year of birth of each child living in the household. The 1993 survey includes a complete family listing, including information about all children born. From this retrospective information, we can generate the total number of children in a family,

their ages, and their birth spacing. The drawbacks of this type of information include that respondents will not report information about children who have died, and they may incorrectly recall births that occurred many years ago. Unfortunately, the 1984 survey does not include this in-depth family roster. However, it does contain information about the total number of children under age three, from ages three to five, from five to nine, and the total number of children in the household. Household rosters for both the 1984 and 1993 surveys could introduce bias in the measurement of fertility if some respondents did not report children who have moved out of the house. Particularly in the 1984 data, the total number of children in the household decreases as the age of the woman increases over 40, which one would expect if their upper-teen aged children had left the household. For this reason, the analysis will be based only on women age 38 or younger. Appendix 1 includes descriptive statistics for all variables used in the analysis, using samples consisting of women aged 21 to 38 in each of the four data sets.

Based on the 1993 microdata, Figure 1 presents preliminary information about fertility trends that support the UN Demographic Yearbook figures. For each year in both the Czech Republic and Slovakia, each data point represents the total number of children born in that year divided by the total number of women between the ages of 15 and 45 at that time, multiplied by 1000[1]. In general, fertility rates have been higher in the Slovak Republic than in the Czech Republic, though they were similar at their high points in the mid-1970s. From that high point, fertility dropped more rapidly in the Czech Republic than in Slovakia. Dating the post-Communist transition from November 1989, its fertility effects will likely appear in the data points for 1990, 1991 and 1992. It appears that fertility was beginning to fall between 1990 and 1993, though it will be difficult to distinguish that fall from a 15 year trend of declining fertility.

Using data from 1984 and 1993, one can compare the fertility timing decisions of women in 1993, three years and eight months after the end of Communism, with those of women in 1984 whose child-bearing decisions were made during Communism. In the 1993 data, children conceived immediately following the regime change would be two years and eleven months old. Thus, comparing the number of children under three in the two data sets, there is some evidence of whether fertility decreased between 1989 and 1993 compared to a Communist-era comparison period from 1981 to 1984. Conversely, children over age three when the 1993 data were collected would have been conceived before the regime change, *i.e.*, when incentives affecting fertility were not measurably different from those existing in 1984. Differences in the number of these older children should help illuminate changes in fertility not linked to the post-Communist regime change. For women under age 38, Table 1 presents age-specific descriptive statistics about children under age three, the total number of children, and the number of children over age three.

The first section of Table 1 offers evidence that fertility rates decreased following Communism. In 1984 in the Czech Republic and Slovakia, women under age 38 had an average of 0.26 and 0.30 children in the previous three years, respectively. In 1993, the mean number of young children was 0.07 and 0.06, respectively, representing drops of 73% and 79%. The age breakdown indicates that, regardless of year or country, younger women are more likely to have young children, as we would expect if most women bear children in their twenties in these countries. For example, in the 1984 Czech data women aged 24 to 26 had a mean of 0.56 young children while women aged 36 to 38 had many fewer, 0.04. The fertility effects of the regime change does not follow a clear age pattern: the percent decrease in young children does not decrease monotonically as age increases. However, it does appear that older women have reduced their fertility less dramatically than have younger women. For example, in the Czech Republic women between the ages of 24 to 26 had 80% fewer children in the

previous three years, while women between the ages of 36 and 38 reduced their fertility by only 38%. A similar pattern obtains in Slovakia. One would expect this pattern if young women are delaying their childbearing during the uncertainty following communism, while older women may feel they cannot delay if they wish to have an as-yet-unmet desired number of children.

The second section of Table 1 presents descriptive statistics of total children. Based on the decreasing fertility trend illustrated by Figure 1, we expect the total number of children to decrease between 1984 and 1993. However, when comparing the two data sets, the mean number of children across ages decreases markedly only in the Czech Republic (-16%); it increased in Slovakia (4%). Age-specific means help to explain this in the Czech Republic, though that breakdown makes little difference in Slovakia. Among women younger than age 35 in the Czech Republic, the total number of children decreases, as one would expect if fertility has been dropping. The fact that the decrease is larger in magnitude among younger women suggests a trend of women waiting until they are older to have children. Between 1984 and 1993, total children increases for women between the ages of 36 and 38. This may be due to the low means of total children for these women in 1984: these women were in their twenties in the late 1960's and early 1970's, when fertility rates were low.

Assuming the transition from Communism affected only fertility in the three years prior to 1993, data on the total number of children over age three, Table 1's third section, allows one to compare the data from the two time periods, eliminating those children conceived after Communism. If differences in these figures were to represent the decreasing fertility trend as suggested by Figure 1, one would expect mean numbers of children over age 3 to decrease between 1984 and 1993. In the Czech data, the mean number of older children decreases 6%. However, in the Slovak data, the mean number of children increased by 21% between the two time periods[2]. Age specific differences do not help explain the increase in the

mean number of older children in Slovakia, for the increases in the number of older children are particularly large among younger women.

The descriptive statistics in Table 1 provide evidence that women altered their fertility patterns following the end of Communism in the Czech Republic and Slovakia, and that the patterns of change were different in the two republics. The analysis in this paper will seek to identify some of the factors to explain these changes in terms of women's characteristics, new wages offers, variation in the number of children over age three, measures of uncertainty, and district variation in labor market conditions.

## *IV. EMPIRICAL ANALYSIS*

Theory suggests that the relative cost of a women's time *vis-à-vis* that of a man's should affect her decision to have children. Therefore, it is important to generate some measure of young women's opportunity cost of time by estimating the income that each woman could earn in the labor market. Following the analysis from Chase (1995a), earnings for women under age 38 are predicted. To compare wife's wages with those of their husbands, it is also necessary to predict the wages that a man married to each woman would receive. Assuming the potential experience, education and region are equivalent for respondents and men they (potentially) marry[3], coefficients for men are used to predict the log earnings of potential husbands. Tables 2a and 2b include women's and men's regression results for the Czech Republic and Slovakia, respectively. As noted in Chase (1995a), the return to education increased between 1984 and 1993, particularly for men, and the return to experience fell. During Communism, there were few regional earnings disparities, while after regime change, there are significant differences between Prague and Bratislava, the excluded categories, and the other regions. For example, controlling for education and experience, women working in Prague earned significantly more than women working in any other region.

**Regressions Measuring Stocks of Children**

To estimate whether the determinants of total demand for children are similar in the 1984 and 1993 data, subtracting from the 1993 measure those children born since the regime change, Tables 3a and 3b present ordinary least squares estimates of the total number of children over age three in households of women between ages 21 and 38[4] for the Czech Republic and Slovakia, respectively. Though every child recorded in the dependent variable was born before the regime change, the time trend of decreasing fertility may lead to differences between this fertility measure across data sets. Each of the specifications includes a set of five age dummies, where the youngest category, women aged 21 to 23 is excluded. Specification A includes a woman's predicted log earnings and those of their likely husbands[5], which allows us to analyze directly the different effects on fertility of women's and men's earnings. Because of a dramatic change in the relationship between human capital and earnings between 1984 and 1993, the predicted earnings from the 1993 earnings regressions would bear little relation to ones fertility decisions before the end of Communism. Rather, the structure of earnings from 1984 are likely more appropriate to generate predicted earnings for those children. Thus, for the predicted earnings in 1993 Specification A{84}, the coefficients used to predict earnings result from 1984 earnings regressions. For comparison, Tables 3a and 3b also include Specification A'{93}, which uses predicted earnings from the 1993 earnings coefficients as regressors.

The ordinary least squares regressions on the number of children over age three suggest that, controlling for the fertility effects of the regime change, there were not dramatic changes in the determinants of desired number of children between the 1984 and 1993 data in Slovakia, though the coefficients for the Czech Republic did change. Except for in the 1993 Czech data, the larger is a woman's earnings, the fewer children over age three: the coefficients on women's predicted log earnings are negative and significant according to both

the 1984 data sets (-3.23 in the Czech Republic and -5.99 in Slovakia) and the 1993 Slovakia fertility data based on 1984 earnings structure (-8.40). According to these coefficients, during the Communist regime, women reduced their total demand for children when their time cost of having those children increased. Following this interpretation, however, it is surprising that there is a positive and significant coefficient on women's earnings predicted using 1984 earnings structure (1.18) in the 1993 Czech fertility data.

While there is some evidence for a substitution effect between the value of a woman's time and the number of children during the Communist period, there is even stronger evidence of the dominance of an income effect between the value of a man's time and fertility, as one would expect if men do not offer significant time to child-rearing but provide family income that allows more children. Each of the coefficients on men's predicted log earnings is positive and significant. In the Czech Republic, the 1984 coefficient is 2.06 vs. 0.90 from the 1993 data; in Slovakia, the 1984 coefficient is 1.95 vs. 5.25 from the 1993 data. These coefficients suggest that as husbands earn more income, families can afford to have more children.

If fertility rates were constant for women of different ages, one would expect the total number of children to increase with age. Supporting this expectation, nearly all age dummies in each of these specifications are positive and significant, and they increase in magnitude with age. For example, in Specification A for the 1984 Slovak data, the age dummy coefficients increase from 0.33 for the 24 to 26 year old group to 0.75 to 1.27 to 1.35 to 1.70 for the 36 to 38 year old group.

Where Specification A is the result of two estimation stages, a first stage to generate predicted earnings and a second to estimate effects on total older children present, Specification B presents reduced form regressions that include all the variables determining earnings and fertility, including education, experience, experience squared and regional

dummy variable. However, the coefficients on the regional dummy variables used to predict earnings but not older children are not reported in Specification B of Tables 3a and 3b.

The reduced form estimates presented in Specification B illustrate that during Communism, more educated women demanded fewer children. Each of the coefficients on education is negative and significant. In the Czech Republic in 1984 and 1993, respectively, the coefficients are -0.07 and -0.10; in Slovakia they are -0.15 and -0.11. Thus, in Slovakia, for every year of education, a woman demands 0.11 fewer children.

Education might have different fertility effects on women of different ages. To explore this possibility, Specification C presents interaction terms between the age dummies and years of education. Based on F-tests of the hypothesis that all the education-age interactions are equal, only for the Czech 1984 data can we reject the hypothesis. In that case, education has a particularly strong deterrent effect on the number of children a woman has had if she is age 24 to 29. This is not surprising if women wait to start having children until after they have left school: more educated women will have had shorter time to bear children, and will have a smaller number of children over age three.

**Fertility Timing Probits**

As stated above, considering whether a woman had a child in the last three years allows one to distinguish changes in fertility timing since the end of Communism. Thus, for women between ages 21 and 38, this research compares for 1984 and 1993 the determinants of a woman having any children less than three years old. Because nearly all women in each of the surveys have either no children under age three or only one child[6], ordinary least squares regressions would be inappropriate for testing hypotheses on standard errors. Instead, Tables 4a and 4b present probits for the Czech Republic and Slovakia, respectively, using the same specifications as Tables 3a and 3b. However, in Specification A{93}, rather than using the coefficients from 1984 earnings regressions to predict 1993 women's and men's log earnings,

in Tables 4a and 4b the 1993 predicted earnings are based on the 1993 earnings coefficients. The comparison Specification A'{84} is based on earnings predicted using 1984 coefficients. This comparison should illuminate changes in the factors determining fertility timing across regime change, correcting for changes in earnings structure between 1984 and 1993. The 1984 data provides a Communist-era baseline for comparison.

Consonant with the above discussion of descriptive statistics, the proportion of women who had a child in the previous three years dropped between 1984 and 1993: it fell from 0.23 to 0.07 in the Czech Republic, and from 0.26 to 0.06 in Slovakia. The analysis in these tables suggest that both during and after Communism, earnings did not have a significant effect on whether or not a woman had a child in the prior three years.

While earnings did not play a significant role in fertility timing decisions, this analysis suggests that age did. Despite insignificant effects of earnings, chi-squared statistics for the 1984 analysis are large in Specification A (331.55 for the Czech Republic and 97.40 for Slovakia), so the model explains a significant portion of the variation in probability of having a young child. Most of that explanation comes through the age dummies. Compared to the excluded category of women aged 21 to 23, women in the Czech Republic are more likely to have children between the ages of 24 and 26: the coefficient on the dummy for women of those ages is positive (0.12) and significant. In both the Czech Republic and Slovakia, the coefficients are negative and significant for women over age 32. During the Communist period, women chose to have their children when they were in their twenties, regardless of their or their husband's earnings.

A similar age pattern obtains in the 1993 data. In the Czech Republic the coefficients on the two oldest age categories are negative and significant, though in Slovakia, none of the negative coefficients is significant relative to the excluded category of women age 21 to 23. It is misleading to say that the age effects are less important in the 1993 data than in the 1984

data simply because these coefficients are of smaller magnitude, because the two slope coefficients are measured at different probabilities. For example, the 1984 Slovak coefficients are measured at a predicted probability of 0.26, where the slope of the normal distribution is fairly steep, while the 1993 coefficients are measured at a predicted probability of 0.06, where the distribution is flat. According to the analysis of the 1993 data, age continues to play a significant role in whether or not a woman will have had a child in the past three years in the Czech Republic, though not in Slovakia.

Specification B shows that in all but the 1993 Slovak data set, a woman's education does not have a significant effect on the probability that she recently had a child: the coefficient on the education variable is only significant in the 1993 Slovak data (0.008). Specification C shows education can have differential effects on different age groups, though the F-test of whether education effects are equal across age groups is significant only for the 1984 data. In both the 1984 data bases as well as the 1993 Czech data base, education has a negative and significant effect on the probability that a woman recently had a child if she is between the ages of 21 and 23: the coefficients are -0.04 in the 1984 Czech data, -0.05 in the 1984 Slovak data, and -0.02 in the 1993 Czech data. There are also positive and significant effects on recent fertility of education if she is close to age 30. For older age groups, *e.g.*, 27 to 32 year-olds in the Czech 1984 data, education has a positive effect on recent fertility. Similar to findings discussed in relation to Tables 3a and 3b, if a woman waits to have children until after she finishes her education, then better educated young women will have a lower probability of giving birth, and older women who are better educated will have children later than others.

## Including Older Children

If families decide how many children they would like to have and then determine the spacing of those children based on short-term considerations of the cost of children, an

important determinant of their current fertility decisions would be the number of children they have had prior to the current period. Tables 5a and 5b include the actual and predicted number of children over age three as a predictor of whether or not there are any children under age three. Specification D includes the actual number of older children as well as predicted log earnings and age dummies. However, if after controlling for earnings and age there is a distribution of the total number of children demanded, those women who have a greater preference for children will likely have more older children. They will also have a higher probability of having had children in the past three years. Thus, by including actual children in Specification D, we introduce a variable correlated with the error term and bias our estimates.

Specifications E and F are intended to address this problem by including predictions of how many children over age three one would expect a woman to have, based on her human capital characteristics. For reasons of identification discussed below, the predicted number of older children is based on different specifications for the 1984 and 1993 data. For the 1984 data, older children are predicted based on the 1984 Specification B in Tables 3a and 3b, which is a reduced form specification including education, experience, as well as age and regional dummies. For the 1993 data, they are predicted from 1993 Specification A{84} in Table 3a and 3b, which includes earnings predicted using 1984 earnings coefficients as well as age dummies. Specification E in Tables 5a and 5b includes the predicted number of children over age three, predicted earnings of men and women, and age dummies. While it would be more consistent to predict older children using the same specification for both 1984 and 1993, if one were to predict older children for 1984 using earnings coefficients predicted from the 1984 data, Specification E for the 1984 analysis would be identified only by the non-linearity of the probit's functional form: in that case, the same variables would determine the number of children over age three and the probability of having children under age three. In the 1993 data, a similar problem does not arise, for the 1984 coefficients were used to predict earnings

in the older children regression, and the 1993 model is identified. Specification F excludes predicted earnings, but includes variables interacting age dummies and years of education. Both Specifications E and F include Hausman specification tests for whether the predicted children variable is exogenous. For all but the 1984 Czech data, the test statistic is significant according to a Chi-squared(1) distribution, so we are justified in treating older children as endogenous and predicting them.

According to the coefficients presented in Specification D of Tables 5a and 5b, including actual older children has a negative and significant effect. The coefficients are -0.06 and -0.04 for the Czech Republic in 1984 and 1993, respectively, and -0.04 and -0.03 for Slovakia. In the 1993 Czech and Slovak data, the predicted older children variable has a negative and significant effect on the probability of recently having a child: the coefficients are -0.21 and -0.13, respectively. Thus, while the woman with exogenous characteristics equal to the mean of the 1993 Czech data has 0.051 probability of having a child under age 3, if she had another child over age 3, then the probability would fall approximately 20%, to about 0.04. In the 1984 data, predicted children have an insignificant effect in the Czech Republic, and a positive and significant effect in Slovakia.

**Uncertainty Measures**

The effects of the collapse of Communism on fertility has been analyzed primarily through changes in the structure of earnings levels for men and women. However, an important aspect of the transition is that it introduced significant uncertainty into people's lives, uncertainty that could alter plans with regard to household size or fertility timing. Tables 6a and 6b attempt to measure some uncertainty effects. These tables include two uncertainty variables: whether or not the respondent changed jobs in the last four years, and the district-level unemployment rate, which proxies the amount of job uncertainty which a person faces in their local labor market[7].

Specification G includes dummy variables for if a person changed jobs, *i.e.*, if they were employed at the time of the survey and held their latest job for less than four years[8]. According to descriptive statistics on these uncertainty variables (presented in Appendix 1), more people had recently changed jobs in the 1993 data than in the 1984 data, though the difference is more pronounced in the Czech Republic than in Slovakia. In the 1984 Czech data, 38% of respondents changed jobs in the previous four years, while 42% had in 1993; in the 1984 Slovak data 35% changed jobs and 41% had in 1993. While Specification G does not include predicted older children, Specification H does. Specification I includes district-level unemployment rates, which is available only for the 1993 data, since unemployment did not officially exist during the Communist period and therefore was unmeasured.

In all four data bases presented in Tables 6a and 6b, Specifications G and H show that having changed jobs in the past four years has a negative and significant effect on the probability of having young children. In absolute terms, that uncertainty effect does not seem to have changed between 1984 and 1993: for example, in the Czech Republic the coefficient on the "Changed Jobs" dummy is -0.07 in the former and -0.09 in the latter. However, because the 1993 slope coefficient is in relation to a much lower base probability, where the slope of the distribution is much flatter, the uncertainty associated with changing jobs has a much larger relative effect after Communism. In neither the 1993 Czech nor 1993 Slovak data does the unemployment rate have a significant effect on fertility timing.

## Earnings Differences

Equation [10] suggests that fertility timing decisions following Communism should not depend primarily on men's and women's earnings levels, but rather on the amount of change in earnings that individuals experienced between when they initially planned their fertility and when they reevaluate post-Communism. Table 7 presents fertility timing probits for the transition period in both the Czech Republic and Slovakia, incorporating measures of earnings

changes between the structures that existed in 1984 and those existing in 1993. The new independent variables are "Women's Earnings Differences" and "Men's Earnings Differences", which measure for each individual the difference between (log) earnings predicted using the 1984 coefficients and those predicted using 1993 coefficients.

Specification J includes only women's and men's earnings differences and age dummies. From [10] we expect that as women's earnings differences get more positive, the probability that a family would have a child in the transition period would decrease. Presumably those families' total demand for children fell across regime change, so they would have no need to have more children to adjust to their post-Communist total demand for children. Consonant with this expectation, in Slovakia, the coefficient on women's earnings differences is negative and significant (-0.31). However, in the Czech Republic, the coefficient is positive and significant (0.50), which suggests that those women whose earnings increased across regime change are more likely to have children during the transition. This puzzle might result from income effects of women's earnings, if including predicted male earnings does not adequately control for the household's income.

According to [10], one expects that in families where men received a large increase in earnings between 1984 and 1993, there will be a positive effect on children born during transition, assuming that men's income proxies for a dominant income effect. In Specification J concerning the Slovakia, the positive effect of increased male earnings is insignificant. The coefficient is negative and significant (-0.29) in the Czech Republic.

Woman's and men's earnings difference coefficients are of the same sign and significant in Specification K, which includes predicted older children and a dummy for those who have changed jobs, though the coefficients are of somewhat smaller magnitude. As in previous tables, each of these uncertainty variables has negative and significant coefficients,

for those who already have older children or who have recently faced job uncertainty are less likely to have had children recently.

To measure the ways that earnings differences might have differential effects on respondents of different ages, as presented in equation [10], Specification L includes interaction terms between women's and men's earnings differences and the respondent's age. In Slovakia, the Men's Earnings*Age interaction coefficient is negative and significant: for older women, increases in husband's earnings deters transition-era fertility more than it does for younger women. Including these interaction terms changes the earnings differences coefficients for Slovakia, making the women's coefficient more negative and the men's more positive. In the Czech Republic, the interaction terms are insignificant and the earnings differences alone have no significant effect.

## *V. SUMMARY*

Fertility dropped in the three years following Communism in the Czech Republic and Slovakia. Under Communism, wife's and husband's earnings affected people's long-term decisions about how many children they had. Increased women's earnings had a negative effect on total demand for children, for women were substituting away from children as the time cost of those children increased. By contrast, increased men's earnings had a positive effect on demand for children, for men's earnings had an income effect allowing families to demand more children.

After Communism, however, changes in economic conditions and the costs of raising children that accompany post-Communist economic transition lead people to alter their fertility behavior. Descriptive statistics suggest women are having fewer children. However, the data do not offer evidence that post-Communist earnings structures in themselves changed fertility

timing: in none of the probit analysis for children under age three does men's or women's earnings level have a significant effect.

However, there is an important change in the determinants of fertility timing related to the number of children present in the household and to changing responses to job uncertainty. In the 1984 data, the number of predicted older children has no effect on fertility timing in the Czech Republic and a positive and significant effect in Slovakia. By contrast, in the 1993 data, the coefficient on predicted older children is negative and significant. Those families that already had some children were choosing not to have additional children in the transition period. While the uncertainty associated with changing jobs has a deterrent effect on the probability of recently having a child, the relative magnitude of that effect is larger after Communism, as one would expect given increased labor market uncertainty.

While there is little theoretical or empirical justification for earnings levels to affect fertility timing decisions, one might expect individuals whose earnings changed across regime to alter when they would choose to have children. The paper offers a theoretical justification for expecting those women whose earnings increased the most to be less likely to have children during transition. There is empirical evidence for this effect in Slovakia, though earnings differences have a positive effect on fertility timing in the Czech Republic, a puzzle which merits further analysis.

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[1] Because survey respondents were limited to those between the ages of 20 and 69, the denominator for the last five years did not include all women from age 15 to 35. However, because the births of those women would not be recorded, and the Czech Fertility Survey suggests that most child-bearing is concentrated between the ages of 20 and 25, this omission should not seriously bias these descriptive statistics.

[2] This difference may be due to a bad match between the 1984 and 1993 samples, so that women included in the latter have more children.

[3] Among married women, the correlation between (potential) experience of husbands and wives ranges from 0.89 to 0.93. The correlation between years of education ranges from 0.48 to 0.63.

[4] While the 1984 data include respondents from age 15 to 20, the 1993 data do not. Thus, to allow appropriate comparisons between the two time periods, the analysis is based on samples of women from age 21 to 38.

[5] Rather than using predicted earnings of potential husbands, another option would be to condition on marriage, including in the analysis only those women who have husbands and then using the husband's experience and education to predict their earnings. However, the decision to marry is likely to be closely linked to the decision to have children. Rather than condition on that non-random sample of women who have chosen to marry, this analysis will proceed with the set of all women respondents.

[6] In the 1993 data, effectively all respondents had either one or no children under age three. In the 1984 data, 97.6% of Czech respondents and 96.5% of Slovak respondents had under two children.

[7] An alternative measure of uncertainty is the variance of income for the education-experience cell of which each respondent is a member. One would expect that those whose education and experience put them in a cell with large disparities of earnings face greater uncertainty. Surprisingly, however, when this variance term was included in the fertility probits, the coefficient was positive significant. Rather than measuring uncertainty, this variable may be reflecting what Mincer (1974) found: that earnings variance increases with education and experience.

[8] While it is possible that the decision whether or not to change jobs could be made simultaneously with the decision whether to have children, this analysis will not try to identify the potentially endogenous variable of whether or not people changed jobs.

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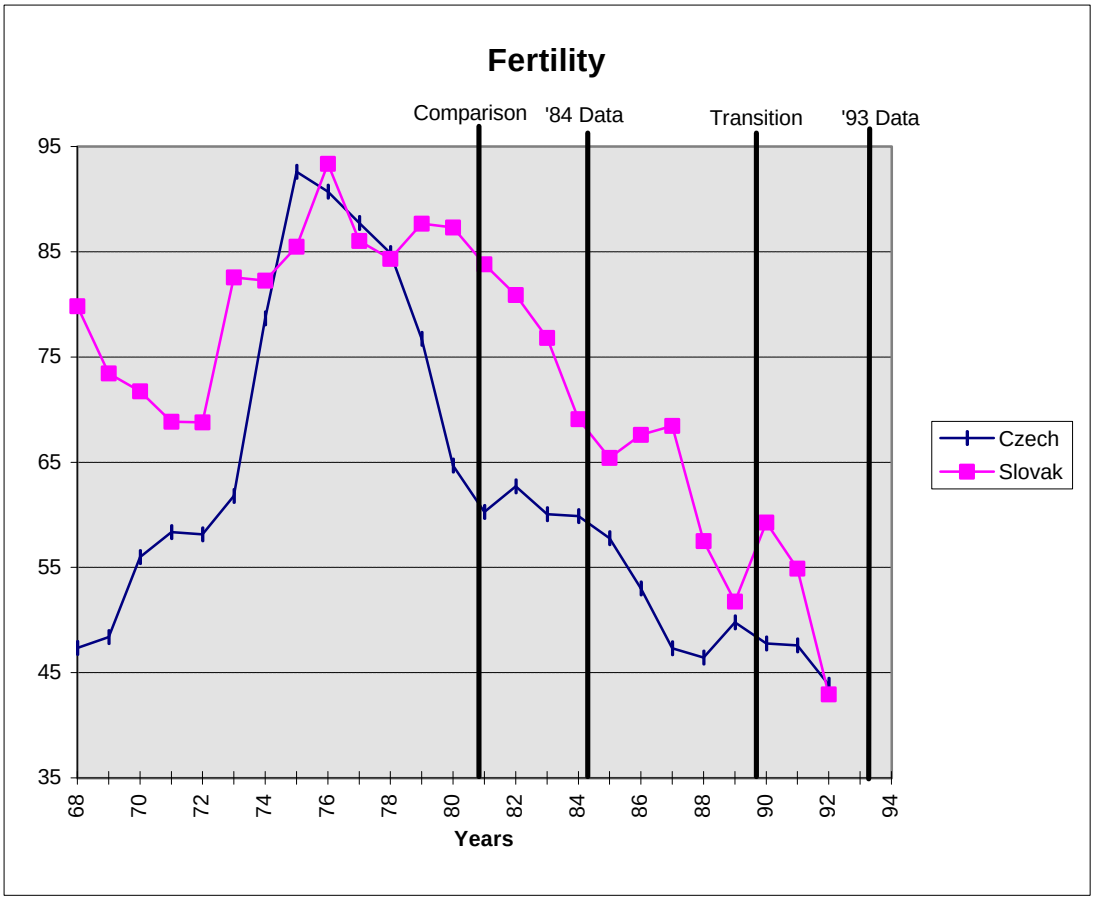
FIGURE 1
FERTILITY TRENDS
IN THE CZECH REPUBLIC AND SLOVAKIA




Fertility Measure = 1000 x (# births in a given year)/(# women aged 15 to 45 in that year)
Source: 1993 Social Stratification Surveys

# TABLE 1
## NUMBER OF CHILDREN (BY AGE)

(Standard Deviations in Parentheses)

| | CZECH REPUBLIC | | | SLOVAKIA | | |
|---|---|---|---|---|---|---|
| | 1984 | 1993 | Change | 1984 | 1993 | Change |
| Children Under Age 3 | 0.26 | 0.069 | -73% | 0.30 | 0.065 | -79% |
| | (.49) | (.26) | | (.54) | (.25) | |
| + Age 21 - 23 | 0.41 | 0.10 | -75% | 0.40 | 0.086 | -79% |
| | (.60) | (.32) | | (.59) | (.28) | |
| + Age 24 - 26 | 0.56 | 0.11 | -80% | 0.45 | 0.085 | -81% |
| | (.63) | (.32) | | (.62) | (.28) | |
| + Age 27 - 29 | 0.35 | 0.092 | -74% | 0.41 | 0.056 | -86% |
| | (.53) | (.29) | | (.57) | (.23) | |
| + Age 30 - 32 | 0.22 | 0.059 | -73% | 0.23 | 0.056 | -76% |
| | (.45) | (.24) | | (.49) | (.23) | |
| + Age 33 - 35 | 0.083 | 0.040 | -51% | 0.15 | 0.063 | -60% |
| | (.29) | (.20) | | (.40) | (.24) | |
| + Age 36 - 38 | 0.044 | 0.028 | -38% | 0.10 | 0.043 | -55% |
| | (.21) | (.16) | | (.40) | (.20) | |
| Total Children | 1.70 | 1.43 | -16% | 1.71 | 1.78 | 4% |
| | (.97) | (1.03) | | (1.27) | (1.27) | |
| + Age 21 - 23 | 1.11 | 0.70 | -37% | 1.27 | 1.38 | 8% |
| | (.95) | (.95) | | (1.20) | (1.34) | |
| + Age 24 - 26 | 1.64 | 1.16 | -29% | 1.42 | 1.62 | 14% |
| | (1.13) | (.83) | | (1.12) | (1.17) | |
| + Age 27 - 29 | 1.75 | 1.47 | -16% | 1.62 | 1.76 | 9% |
| | (.90) | (.90) | | (1.09) | (1.26) | |
| + Age 30 - 32 | 1.85 | 1.49 | -19% | 1.89 | 1.84 | -3% |
| | (.89) | (.98) | | (1.28) | (1.24) | |
| + Age 33 - 35 | 1.93 | 1.81 | -6% | 1.94 | 2.00 | 3% |
| | (.87) | (.91) | | (1.15) | (1.21) | |
| + Age 36 - 38 | 1.82 | 1.89 | 4% | 2.35 | 2.03 | -13% |
| | (.93) | (1.02) | | (1.57) | (1.28) | |
| Children Over Age 3 | 1.45 | 1.36 | -6% | 1.41 | 1.71 | 21% |
| | (.97) | (1.04) | | (1.23) | (1.29) | |
| + Age 21 - 23 | 0.70 | 0.30 | -57% | 0.87 | 1.29 | 49% |
| | (.78) | (.94) | | (1.12) | (1.36) | |
| + Age 24 - 26 | 1.08 | 1.05 | -3% | 0.97 | 1.53 | 58% |
| | (.98) | (.84) | | (1.00) | (1.20) | |
| + Age 27 - 29 | 1.40 | 1.38 | -1% | 1.22 | 1.71 | 41% |
| | (.91) | (.94) | | (.99) | (1.26) | |
| + Age 30 - 32 | 1.63 | 1.43 | -12% | 1.66 | 1.78 | 7% |
| | (.89) | (.98) | | (1.22) | (1.26) | |
| + Age 33 - 35 | 1.85 | 1.77 | -4% | 1.78 | 1.94 | 9% |
| | (.85) | (.90) | | (1.15) | (1.23) | |
| + Age 36 - 38 | 1.77 | 1.86 | 5% | 2.25 | 1.99 | -12% |
| | (.91) | (1.02) | | (1.41) | (1.28) | |
| N(women age 21 - 38) | 2312 | 1020 | | 1305 | 988 | |

TABLE 2a
DETERMINANTS OF (LOG) EARNINGS
Czech Republic
(Absolute Values of T-Statistics in Parentheses)

| | WOMEN UNDER AGE 38 | | MEN UNDER AGE 38 | |
|---|---|---|---|---|
| | 1984 | 1993 | 1984 | 1993 |
| Years of Education | 0.034 | 0.046 | 0.016 | 0.049 |
| | (13.86) | (7.28) | (7.08) | (8.33) |
| Experience | 0.005 | -0.019 | 0.047 | 0.013 |
| | (1.06) | (1.72) | (9.29) | (1.08) |
| Experience Squared | 0.042 | 0.102 | -0.122 | -0.014 |
| | (1.95) | (2.05) | (5.63) | (.27) |
| Central Bohemia? | -0.026 | -0.14 | 0.030 | -0.12 |
| | (.99) | (2.46) | (1.18) | (2.26) |
| South Bohemia? | -0.046 | -0.25 | -0.020 | -0.18 |
| | (1.52) | (3.86) | (.69) | (2.77) |
| West Bohemia? | -0.019 | -0.05 | 0.004 | -0.17 |
| | (.68) | (.81) | (.13) | (3.15) |
| North Bohemia? | 0.007 | -0.14 | 0.035 | -0.020 |
| | (.28) | (2.65) | (1.41) | (.39) |
| East Bohemia? | -0.043 | -0.23 | -0.016 | -0.18 |
| | (1.70) | (4.16) | (.65) | (3.18) |
| North Moravia? | -0.012 | -0.17 | 0.090 | -0.18 |
| | (.54) | (3.58) | (4.04) | (3.96) |
| South Moravia? | -0.023 | -0.14 | -0.013 | -0.11 |
| | (1.01) | (3.14) | (.59) | (2.45) |
| Constant | 7.00 | 1.62 | 7.39 | 7.74 |
| | (154.27) | (76.21) | (163.92) | (72.20) |
| R-squared | 0.14 | 0.13 | 0.17 | 0.13 |
| Number of Observations | 1913 | 693 | 1951 | 735 |

TABLE 2b
DETERMINANTS OF (LOG) EARNINGS
Slovakia
(Absolute Values of T-Statistics in Parentheses)

| | WOMEN UNDER AGE 38 | | MEN UNDER AGE 38 | |
|---|---|---|---|---|
| | 1984 | 1993 | 1984 | 1993 |
| Years of Education | 0.027 | 0.045 | 0.018 | 0.051 |
| | (9.48) | (8.02) | (6.34) | (10.61) |
| Experience | 0.038 | -0.004 | 0.066 | 0.006 |
| | (6.02) | (.41) | (9.62) | (.69) |
| Experience Squared | -0.13 | 0.030 | -0.216 | -0.022 |
| | (4.46) | (.67) | (7.20) | (.52) |
| West Slovakia? | -0.048 | -0.23 | -0.013 | -0.13 |
| | (1.84) | (4.23) | (.49) | (2.53) |
| Central Slovakia? | -0.046 | 0.29 | -0.025 | -0.11 |
| | (1.82) | (5.41) | (.92) | (2.17) |
| East Slovakia? | -0.030 | 0.30 | -0.025 | -0.23 |
| | (1.17) | (5.35) | (.92) | (4.44) |
| Constant | 7.03 | 7.64 | 7.29 | 7.75 |
| | (127.32) | (77.56) | (129.35) | (82.76) |
| R-squared | 0.12 | 0.14 | 0.16 | 0.16 |
| Number of Observations | 1054 | 620 | 1044 | 777 |

TABLE 3a
TOTAL CHILDREN OVER AGE 3: OLS ESTIMATES
Czech Republic
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | | |
|---|---|---|---|---|---|---|---|
| | A. | B. | C. | A.{84} | A'.{93} | B. | C. |
| Women's Predicted Log Earnings | -3.23 | -.- | -.- | 1.18 | -1.11 | -.- | -.- |
| | (12.72) | | | (6.85) | (2.27) | | |
| Men's Predicted Log Earnings | 2.06 | -.- | -.- | 0.90 | -0.55 | -.- | -.- |
| | (5.60) | | | (4.28) | (1.06) | | |
| Years of Education | -.- | -0.067 | -.- | -.- | -.- | -0.10 | -.- |
| | | (6.72) | | | | (5.07) | |
| Experience | -.- | 0.12 | -.- | -.- | -.- | -0.005 | -.- |
| | | (4.50) | | | | (.11) | |
| Experience Squared | -.- | -0.50 | -.- | -.- | -.- | -0.046 | -.- |
| | | (4.58) | | | | (.27) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.027 | -.- | -.- | -.- | -0.19 |
| | | | (1.04) | | | | (4.58) |
| Years of Education*Age 24-26 | -.- | -.- | -0.13 | -.- | -.- | -.- | -0.068 |
| | | | (7.43) | | | | (1.83) |
| Years of Education*Age 27-29 | -.- | -.- | -0.13 | -.- | -.- | -.- | -0.10 |
| | | | (8.34) | | | | (3.40) |
| Years of Education*Age 30-32 | -.- | -.- | -0.085 | -.- | -.- | -.- | -0.075 |
| | | | (5.41) | | | | (2.56) |
| Years of Education*Age 33-35 | -.- | -.- | -0.045 | -.- | -.- | -.- | -0.087 |
| | | | (2.84) | | | | (3.08) |
| Years of Education*Age 36-38 | -.- | -.- | -0.041 | -.- | -.- | -.- | -0.095 |
| | | | (2.68) | | | | (3.98) |
| Age 24-26? | 0.29 | 0.18 | 1.57 | 0.33 | 0.48 | 0.53 | -0.95 |
| | (3.72) | (1.97) | (4.49) | (3.10) | (4.53) | (3.71) | (1.43) |
| Age 27-29? | 0.53 | 0.34 | 1.84 | 0.54 | 0.83 | 0.92 | -0.15 |
| | (5.68) | (2.76) | (5.50) | (4.90) | (7.35) | (4.66) | (.24) |
| Age 30-32? | 0.77 | 0.53 | 1.57 | 0.53 | 0.92 | 1.03 | -0.44 |
| | (7.74) | (3.31) | (4.69) | (4.52) | (7.83) | (3.95) | (.72) |
| Age 33-35? | 1.05 | 0.77 | 1.35 | 0.80 | 1.28 | 1.39 | 0.023 |
| | (8.83) | (3.98) | (4.02) | (6.68) | (10.95) | (4.34) | (.04) |
| Age 36-38? | 1.15 | 0.85 | 1.24 | 0.82 | 1.39 | 1.50 | 0.17 |
| | (9.24) | (3.65) | (3.71) | (6.82) | (13.05) | (3.86) | (.31) |
| Constant | 8.62 | 0.93 | 0.99 | -15.21 | 14.01 | 1.67 | 2.81 |
| | (3.11) | (5.23) | (3.20) | (5.57) | (7.73) | (5.21) | (5.76) |
| Regional Controls Included? | No | Yes | No | No | No | Yes | No |
| F-Test:Ed*Age are equal | -.- | -.- | 6.78 | -.- | -.- | -.- | 1.31 |
| R-squared | 0.22 | 0.23 | 0.22 | 0.22 | 0.23 | 0.24 | 0.24 |
| Number of Observations | 2305 | 2305 | 2305 | 1018 | 1018 | 1018 | 1018 |

# TABLE 3b
# TOTAL CHILDREN OVER AGE 3: OLS ESTIMATES
## Slovakia
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | | |
|---|---|---|---|---|---|---|---|
| | A. | B. | C. | A.{84} | A'.{93} | B. | C. |
| Women's Predicted Log Earnings | -5.99 | -.- | -.- | -8.40 | 0.82 | -.- | -.- |
| | (10.07) | | | (9.92) | (1.14) | | |
| Men's Predicted Log Earnings | 1.95 | -.- | -.- | 5.25 | -2.63 | -.- | -.- |
| | (2.46) | | | (9.37) | (3.80) | | |
| Years of Education | -.- | -0.15 | -.- | -.- | -.- | -0.11 | -.- |
| | | (9.72) | | | | (5.12) | |
| Experience | -.- | -0.066 | -.- | -.- | -.- | -0.013 | -.- |
| | | (1.64) | | | | (.25) | |
| Experience Squared | -.- | 0.053 | -.- | -.- | -.- | 0.056 | -.- |
| | | (.30) | | | | (.27) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.11 | -.- | -.- | -.- | -0.11 |
| | | | (3.01) | | | | (2.88) |
| Years of Education*Age 24-26 | -.- | -.- | -0.16 | -.- | -.- | -.- | -0.16 |
| | | | (5.43) | | | | (3.99) |
| Years of Education*Age 27-29 | -.- | -.- | -0.11 | -.- | -.- | -.- | -0.14 |
| | | | (5.18) | | | | (3.82) |
| Years of Education*Age 30-32 | -.- | -.- | -0.12 | -.- | -.- | -.- | -0.087 |
| | | | (5.27) | | | | (2.17) |
| Years of Education*Age 33-35 | -.- | -.- | -0.13 | -.- | -.- | -.- | -0.11 |
| | | | (5.73) | | | | (2.86) |
| Years of Education*Age 36-38 | -.- | -.- | -0.14 | -.- | -.- | -.- | -0.085 |
| | | | (5.52) | | | | (2.78) |
| Age 24-26? | 0.33 | 0.35 | 0.67 | 0.12 | 0.28 | 0.233 | 0.77 |
| | (2.46) | (2.61) | (1.28) | (.93) | (1.99) | (1.22) | (1.20) |
| Age 27-29? | 0.75 | 0.81 | 0.48 | 0.39 | 0.54 | 0.50 | 0.79 |
| | (4.45) | (4.54) | (.99) | (2.93) | (3.90) | (1.93) | (1.27) |
| Age 30-32? | 1.27 | 1.42 | 0.97 | 0.48 | 0.60 | 0.59 | 0.28 |
| | (6.28) | (6.04) | (2.00) | (3.69) | (4.48) | (1.75) | (.42) |
| Age 33-35? | 1.35 | 1.64 | 1.23 | 0.59 | 0.76 | 0.73 | 0.68 |
| | (6.28) | (5.61) | (2.52) | (4.54) | (5.71) | (1.78) | (1.06) |
| Age 36-38? | 1.70 | 2.21 | 1.75 | 0.56 | 0.76 | 0.71 | 0.42 |
| | (8.13) | (6.00) | (3.50) | (4.63) | (6.15) | (1.45) | (.72) |
| Constant | 30.26 | 2.63 | 2.06 | 23.22 | 16.41 | 2.53 | 2.56 |
| | (7.07) | (9.56) | (5.11) | (11.32) | (7.44) | (6.80) | (5.72) |
| Regional Controls Included? | No | Yes | No | No | No | Yes | No |
| F-Test:Ed*Age are equal | -.- | -.- | 0.48 | -.- | -.- | -.- | 0.60 |
| R-squared | 0.23 | 0.24 | 0.24 | 0.14 | 0.09 | 0.09 | 0.09 |
| Number of Observations | 1298 | 1298 | 1298 | 998 | 998 | 998 | 998 |

# TABLE 4a
## ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
## Czech Republic
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | | |
|---|---|---|---|---|---|---|---|
| | A. | B. | C. | A.{93} | A'.{84} | B. | C. |
| Women's Predicted Log Earnings | 0.19 | -.- | -.- | -0.037 | -0.22 | -.- | -.- |
| | (1.64) | | | (.29) | (3.73) | | |
| Men's Predicted Log Earnings | -0.15 | -.- | -.- | 0.065 | -0.080 | -.- | -.- |
| | (.89) | | | (.47) | (1.08) | | |
| Years of Education | -.- | -0.004 | -.- | -.- | -.- | -0.002 | -.- |
| | | (.85) | | | | (.32) | |
| Experience | -.- | 0.002 | -.- | -.- | -.- | 0.009 | -.- |
| | | (.17) | | | | (.86) | |
| Experience Squared | -.- | -0.138 | -.- | -.- | -.- | -0.068 | -.- |
| | | (2.58) | | | | (1.59) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.044 | -.- | -.- | -.- | -0.020 |
| | | | (3.96) | | | | (1.86) |
| Years of Education*Age 24-26 | -.- | -.- | -0.003 | -.- | -.- | -.- | -0.001 |
| | | | (.49) | | | | (.10) |
| Years of Education*Age 27-29 | -.- | -.- | 0.023 | -.- | -.- | -.- | 0.004 |
| | | | (3.66) | | | | (.50) |
| Years of Education*Age 30-32 | -.- | -.- | 0.021 | -.- | -.- | -.- | 0.012 |
| | | | (3.13) | | | | (1.65) |
| Years of Education*Age 33-35 | -.- | -.- | 0.002 | -.- | -.- | -.- | 0.000 |
| | | | (.16) | | | | (.00) |
| Years of Education*Age 36-38 | -.- | -.- | 0.012 | -.- | -.- | -.- | 0.005 |
| | | | (1.22) | | | | (.72) |
| Age 24-26? | 0.12 | 0.16 | -0.21 | 0.008 | 0.033 | 0.013 | -0.093 |
| | (3.19) | (3.63) | (2.34) | (.31) | (1.29) | (.38) | (1.33) |
| Age 27-29? | -0.006 | 0.085 | -0.34 | -0.008 | 0.039 | 0.001 | -0.11 |
| | (.16) | (1.50) | (5.34) | (.32) | (1.28) | (.01) | (1.81) |
| Age 30-32? | -0.10 | 0.065 | -0.37 | 0.032 | 0.022 | -0.007 | -0.15 |
| | (2.22) | (.88) | (5.78) | (1.28) | (.66) | (.12) | (2.64) |
| Age 33-35? | -0.20 | 0.008 | -0.35 | -0.048 | 0.008 | 0.001 | -0.12 |
| | (4.79) | (.09) | (4.82) | (1.97) | (.25) | (.01) | (1.77) |
| Age 36-38? | -0.24 | 0.065 | -0.43 | -0.061 | 0.001 | 0.028 | -0.18 |
| | (5.80) | (.55) | (5.74) | (2.72) | (.04) | (.26) | (2.37) |
| Observed Probability | 0.23 | 0.23 | 0.23 | 0.068 | 0.068 | 0.068 | 0.068 |
| Predicted Probability | 0.19 | 0.19 | 0.19 | 0.061 | 0.051 | 0.057 | 0.059 |
| Regional Controls Included? | No | Yes | No | No | No | Yes | No |
| F-Test:Ed*Age are equal | -.- | -.- | 34.84 | -.- | -.- | -.- | 6.49 |
| Chi-squared | 331.55 | 358.44 | 370.31 | 16.68 | 38.48 | 28.89 | 23.50 |
| Number of Observations | 2305 | 2305 | 2305 | 1018 | 1018 | 1018 | 1018 |

# TABLE 4b
# ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
## Slovakia
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | | |
|---|---|---|---|---|---|---|---|
| | A. | B. | C. | A.{93} | A'.{84} | B. | C. |
| Women's Predicted Log Earnings | 0.26 | -.- | -.- | -0.11 | 0.26 | -.- | -.- |
| | (1.12) | | | (.84) | (1.84) | | |
| Men's Predicted Log Earnings | -0.23 | -.- | -.- | 0.17 | -0.10 | -.- | -.- |
| | (.77) | | | (1.34) | (1.01) | | |
| Years of Education | -.- | -0.010 | -.- | -.- | -.- | 0.008 | -.- |
| | | (1.57) | | | | (1.84) | |
| Experience | -.- | 0.012 | -.- | -.- | -.- | 0.020 | -.- |
| | | (.72) | | | | (2.01) | |
| Experience Squared | -.- | -0.194 | -.- | -.- | -.- | -0.066 | -.- |
| | | (2.54) | | | | (1.66) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.049 | -.- | -.- | -.- | -0.002 |
| | | | (3.43) | | | | (.33) |
| Years of Education*Age 24-26 | -.- | -.- | -0.006 | -.- | -.- | -.- | 0.006 |
| | | | (.55) | | | | (.93) |
| Years of Education*Age 27-29 | -.- | -.- | 0.015 | -.- | -.- | -.- | 0.004 |
| | | | (1.85) | | | | (.57) |
| Years of Education*Age 30-32 | -.- | -.- | 0.017 | -.- | -.- | -.- | 0.013 |
| | | | (1.84) | | | | (1.62) |
| Years of Education*Age 33-35 | -.- | -.- | 0.009 | -.- | -.- | -.- | 0.011 |
| | | | (.88) | | | | (1.70) |
| Years of Education*Age 36-38 | -.- | -.- | -0.017 | -.- | -.- | -.- | 0.000 |
| | | | (1.21) | | | | (.02) |
| Age 24-26? | 0.041 | 0.067 | -0.29 | -0.001 | 0.004 | -0.034 | -0.064 |
| | (.79) | (1.26) | (2.22) | (.06) | (.20) | (1.23) | (.84) |
| Age 27-29? | 0.029 | 0.11 | -0.38 | -0.026 | -0.024 | -0.062 | -0.064 |
| | (.45) | (1.45) | (3.76) | (1.13) | (1.26) | (2.03) | (.81) |
| Age 30-32? | -0.11 | 0.031 | -0.41 | -0.026 | -0.025 | -0.071 | -0.10 |
| | (1.47) | (.33) | (4.48) | (1.14) | (1.33) | (1.92) | (1.57) |
| Age 33-35? | -0.16 | 0.073 | -0.40 | -0.026 | -0.027 | -0.073 | -0.10 |
| | (2.26) | (.59) | (4.26) | (1.17) | (1.51) | (1.64) | (1.58) |
| Age 36-38? | -0.22 | 0.13 | -0.34 | -0.035 | -0.034 | -0.082 | -0.052 |
| | (3.48) | (.77) | (3.16) | (1.66) | (1.91) | (1.40) | (.57) |
| Observed Probability | 0.26 | 0.26 | 0.26 | 0.063 | 0.063 | 0.063 | 0.063 |
| Predicted Probability | 0.25 | 0.24 | 0.24 | 0.056 | 0.048 | 0.058 | 0.059 |
| Regional Controls Included? | No | Yes | No | No | No | Yes | No |
| F-Test:Ed*Age are equal | -.- | -.- | 20.75 | -.- | -.- | -.- | 3.60 |
| Chi-squared | 97.40 | 115.32 | 118.08 | 6.70 | 25.59 | 14.37 | 10.79 |
| Number of Observations | 1298 | 1298 | 1298 | 998 | 998 | 998 | 998 |

TABLE 5a
ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
ACTUAL AND PREDICTED OLDER CHILDREN
Czech Republic
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | |
|---|---|---|---|---|---|---|
| | D. | E. | F. | D. | E. | F. |
| Actual Children Over Age 3 | -0.056 | -.- | -.- | -0.424 | -.- | -.- |
| | (5.66) | | | (4.83) | | |
| Predicted Children Over Age 3 | -.- | -0.10 | 0.009 | -.- | -0.21 | -0.21 |
| | | (.78) | (.11) | | (4.12) | (4.43) |
| Women's Predicted Log Earnings | -0.006 | -0.16 | -.- | -0.084 | 0.003 | -.- |
| | (.05) | (.34) | | (.75) | (.03) | |
| Men's Predicted Log Earnings | -0.040 | 0.078 | -.- | 0.045 | 0.115 | -.- |
| | (.24) | (.23) | | (.37) | (.90) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.043 | -.- | -.- | -0.021 |
| | | | (3.19) | | | (1.90) |
| Years of Education*Age 24-26 | -.- | -.- | -0.002 | -.- | -.- | 0.005 |
| | | | (.20) | | | (.62) |
| Years of Education*Age 27-29 | -.- | -.- | 0.024 | -.- | -.- | 0.005 |
| | | | (2.34) | | | (.79) |
| Years of Education*Age 30-32 | -.- | -.- | 0.022 | -.- | -.- | 0.016 |
| | | | (2.26) | | | (2.53) |
| Years of Education*Age 33-35 | -.- | -.- | 0.002 | -.- | -.- | 0.007 |
| | | | (.20) | | | (.97) |
| Years of Education*Age 36-38 | -.- | -.- | 0.013 | -.- | -.- | 0.012 |
| | | | (1.17) | | | (1.82) |
| Age 24-26? | 0.14 | 0.15 | -0.22 | 0.031 | 0.18 | -0.079 |
| | (3.74) | (2.66) | (2.22) | (1.26) | (3.23) | (1.19) |
| Age 27-29? | 0.024 | 0.050 | -0.34 | 0.029 | 0.33 | -0.067 |
| | (.59) | (.59) | (4.90) | (1.02) | (3.36) | (.87) |
| Age 30-32? | -0.059 | -0.028 | -0.37 | 0.003 | 0.29 | -0.11 |
| | (1.30) | (.26) | (5.23) | (.11) | (2.83) | (1.88) |
| Age 33-35? | -0.16 | -0.14 | -0.36 | -0.001 | 0.43 | -0.064 |
| | (3.68) | (1.08) | (4.45) | (.04) | (2.91) | (.68) |
| Age 36-38? | -0.21 | -0.18 | -0.43 | 0.015 | 0.40 | -0.093 |
| | (4.63) | (1.45) | (5.52) | (.58) | (2.78) | (1.06) |
| Observed Probability | 0.23 | 0.23 | 0.23 | 0.068 | 0.068 | 0.068 |
| Predicted Probability | 0.19 | 0.19 | 0.19 | 0.051 | 0.051 | 0.048 |
| Hausman Tests: Exogeneity of "Actual Children Over Age 3" | -.- | 0.37 | 0.54 | -.- | 3.21 | 3.41 |
| Chi-squared | 363.94 | 332.15 | 370.32 | 43.28 | 40.73 | 50.76 |
| Number of Observations | 2305 | 2305 | 2305 | 1018 | 1018 | 1018 |

TABLE 5b
ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
ACTUAL AND PREDICTED OLDER CHILDREN
Slovakia
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | |
|---|---|---|---|---|---|---|
| | D. | E. | F. | D. | E. | F. |
| Actual Children Over Age 3 | -0.042 | -.- | -.- | -0.031 | -.- | -.- |
| | (3.56) | | | (4.74) | | |
| Predicted Children Over Age 3 | -.- | 0.32 | 0.24 | -.- | -0.13 | -0.21 |
| | | (3.54) | (2.14) | | (4.00) | (4.41) |
| Women's Predicted Log Earnings | 0.002 | 2.25 | -.- | -0.072 | -0.24 | -.- |
| | (.01) | (3.70) | | (.60) | (1.75) | |
| Men's Predicted Log Earnings | -0.15 | -0.89 | -.- | 0.083 | -0.010 | -.- |
| | (.48) | (2.52) | | (.71) | (.08) | |
| Years of Education*Age 21-23 | -.- | -.- | -0.015 | -.- | -.- | -0.033 |
| | | | (.68) | | | (3.22) |
| Years of Education*Age 24-26 | -.- | -.- | 0.024 | -.- | -.- | -0.027 |
| | | | (1.38) | | | (2.68) |
| Years of Education*Age 27-29 | -.- | -.- | 0.044 | -.- | -.- | -0.028 |
| | | | (2.78) | | | (2.89) |
| Years of Education*Age 30-32 | -.- | -.- | 0.047 | -.- | -.- | -0.022 |
| | | | (2.79) | | | (2.09) |
| Years of Education*Age 33-35 | -.- | -.- | 0.040 | -.- | -.- | -0.021 |
| | | | (2.25) | | | (2.24) |
| Years of Education*Age 36-38 | -.- | -.- | 0.017 | -.- | -.- | -0.031 |
| | | | (.83) | | | (3.32) |
| Age 24-26? | 0.057 | -0.063 | -0.29 | 0.009 | 0.030 | -0.028 |
| | (1.08) | (1.13) | (2.16) | (.39) | (1.09) | (.29) |
| Age 27-29? | 0.064 | -0.18 | -0.40 | -0.007 | 0.041 | 0.012 |
| | (.94) | (2.28) | (4.01) | (.30) | (1.17) | (.09) |
| Age 30-32? | -0.060 | -0.32 | -0.45 | -0.006 | 0.055 | -0.036 |
| | (.78) | (3.75) | (4.97) | (.28) | (1.48) | (.34) |
| Age 33-35? | -0.12 | -0.35 | -0.44 | 0.002 | 0.093 | -0.020 |
| | (1.59) | (4.18) | (4.77) | (.10) | (2.00) | (.18) |
| Age 36-38? | -0.18 | -0.37 | -0.39 | -0.010 | 0.084 | 0.13 |
| | (2.56) | (4.74) | (3.83) | (.49) | (1.87) | (.76) |
| Observed Probability | 0.26 | 0.26 | 0.26 | 0.063 | 0.063 | 0.063 |
| Predicted Probability | 0.24 | 0.24 | 0.24 | 0.050 | 0.055 | 0.052 |
| Hausman Tests: Exogeneity of "Actual Children Over Age 3" | -.- | 3.98 | 2.50 | -.- | 2.61 | 2.90 |
| Chi-squared | 110.34 | 110.08 | 122.62 | 32.49 | 23.14 | 31.13 |
| Number of Observations | 1298 | 1298 | 1298 | 998 | 998 | 998 |

TABLE 6a
ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
UNCERTAINTY VARIABLES
Czech Republic
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | |
|---|---|---|---|---|---|---|
| | G. | H. | I. | G. | H. | I. |
| Women's Predicted Log Earnings | 0.22 | -0.20 | NA | 0.005 | 0.025 | 0.038 |
| | (1.94) | (.43) | | (.05) | (.29) | (.42) |
| Men's Predicted Log Earnings | -0.23 | 0.046 | | 0.032 | 0.076 | 0.071 |
| | (1.37) | (.14) | | (.30) | (.79) | (.74) |
| Predicted Children Over Age 3 | -.- | -0.13 | | -.- | -0.15 | -0.15 |
| | | (.94) | | | (3.86) | (3.87) |
| **Uncertainty Variables** | | | | | | |
| Changed Jobs in Last 4 Years | -0.072 | -0.072 | | -0.090 | -0.762 | -0.076 |
| | (3.95) | (3.99) | | (5.60) | (5.44) | (5.41) |
| District Level Unemployment | -.- | -.- | NA | -.- | -.- | 0.17 |
| | | | | | | (.54) |
| Age 24-26? | 0.10 | 0.14 | | 0.005 | 0.13 | 0.14 |
| | (2.65) | (2.45) | | (.24) | (3.00) | (3.02) |
| Age 27-29? | -0.017 | 0.050 | | -0.002 | 0.27 | 0.28 |
| | (.42) | (.60) | | (.12) | (3.23) | (3.26) |
| Age 30-32? | -0.11 | -0.025 | | -0.021 | 0.23 | 0.23 |
| | (2.50) | (.23) | | (1.07) | (2.68) | (2.70) |
| Age 33-35? | -0.21 | -0.13 | | -0.033 | 0.35 | 0.36 |
| | (5.09) | (1.05) | | (1.75) | (2.73) | (2.75) |
| Age 36-38? | -0.25 | -0.18 | | -0.047 | 0.30 | 0.31 |
| | (6.08) | (1.41) | | (2.88) | (2.47) | (2.48) |
| Chi-squared | 347.42 | 348.30 | | 61.98 | 82.46 | 82.66 |
| Number of Observations | 2305 | 2305 | | 1018 | 1018 | 1018 |

TABLE 6b
ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
UNCERTAINTY VARIABLES
Slovakia
(Absolute Values of T-Statistics in Parentheses)

| | 1984 | | | 1993 | | |
|---|---|---|---|---|---|---|
| | G. | H. | I. | G. | H. | I. |
| Women's Predicted Log Earnings | 0.326 | 2.20 | NA | -0.11 | -0.23 | -0.26 |
| | (1.38) | (3.61) | | (.82) | (1.70) | (1.98) |
| Men's Predicted Log Earnings | -0.35 | -0.96 | | 0.17 | -0.003 | -0.041 |
| | (1.15) | (2.69) | | (1.36) | (.03) | (.33) |
| Predicted Children Over Age 3 | -.- | 0.31 | | -.- | -0.12 | -0.14 |
| | | (3.35) | | | (3.94) | (4.16) |
| **Uncertainty Variables** | | | | | | |
| Changed Jobs in Last 4 Years | -0.062 | -0.053 | | -0.047 | -0.043 | -0.042 |
| | (2.23) | (1.90) | | (3.10) | (3.03) | (2.98) |
| District Level Unemployment | -.- | -.- | NA | -.- | -.- | -0.35 |
| | | | | | | (1.44) |
| Age 24-26? | 0.029 | -0.067 | | -0.004 | 0.025 | 0.026 |
| | (.56) | (1.20) | | (.19) | (.94) | (.98) |
| Age 27-29? | 0.021 | -0.18 | | -0.028 | 0.033 | 0.045 |
| | (.32) | (2.22) | | (1.29) | (1.00) | (1.28) |
| Age 30-32? | -0.11 | -0.32 | | -0.028 | 0.045 | 0.061 |
| | (1.57) | (3.64) | | (1.32) | (1.29) | (1.59) |
| Age 33-35? | -0.17 | -0.34 | | -0.029 | 0.078 | 0.10 |
| | (2.35) | (4.07) | | (1.37) | (1.79) | (2.11) |
| Age 36-38? | -0.23 | -0.36 | | -0.037 | 0.072 | 0.10 |
| | (3.59) | (4.63) | | (1.87) | (1.69) | (2.02) |
| Chi-squared | 102.45 | 113.74 | | 16.90 | 32.92 | 35.03 |
| Number of Observations | 1298 | 1298 | | 998 | 998 | 998 |

TABLE 7
ANY CHILDREN UNDER AGE 3: PROBIT ESTIMATES
PREDICTED 1984-1993 EARNINGS DIFFERENCES
1993 Only
(Absolute Values of T-Statistics in Parentheses)

| | CZECH REPUBLIC | | | SLOVAKIA | | |
|---|---|---|---|---|---|---|
| | J. | K. | L. | J. | K. | L. |
| Women's Earnings Differences | 0.50 | 0.42 | -0.04 | -0.31 | -0.19 | -0.76 |
| | (3.04) | (3.13) | (.07) | (2.42) | (1.79) | (1.77) |
| Men's Earnings Differences | -0.29 | -0.29 | 0.011 | 0.12 | 0.050 | 0.59 |
| | (2.15) | (2.34) | (.02) | (1.48) | (.69) | (1.97) |
| **Uncertainty Variables** | | | | | | |
| Predicted Children Over Age 3 | -.- | -0.13 | -0.15 | -.- | -0.043 | -0.044 |
| | | (1.59) | (1.78) | | (2.77) | (3.07) |
| Changed Jobs in Last 4 Years | -.- | -0.081 | -0.080 | -.- | -0.035 | -0.030 |
| | | (5.46) | (5.44) | | (3.01) | (2.97) |
| **Earnings Differences*Age Interactions** | | | | | | |
| Women's Earnings*Age | -.- | -.- | 0.017 | -.- | -.- | 0.020 |
| | | | (.85) | | | (1.42) |
| Men's Earnings*Age | -.- | -.- | -0.011 | -.- | -.- | -0.019 |
| | | | (.64) | | | (1.89) |
| Age 24-26? | 0.018 | 0.12 | 0.108 | -0.001 | 0.005 | 0.007 |
| | (.76) | (1.72) | (1.63) | (.03) | (.24) | (.33) |
| Age 27-29? | 0.007 | 0.24 | 0.21 | -0.024 | -0.010 | -0.004 |
| | (.28) | (1.65) | (1.53) | (1.26) | (.56) | (.18) |
| Age 30-32? | -0.02 | 0.20 | 0.149 | -0.024 | -0.009 | -0.003 |
| | (.74) | (1.39) | (1.12) | (1.30) | (.47) | (.12) |
| Age 33-35? | -0.029 | 0.29 | 0.23 | -0.025 | -0.004 | -0.002 |
| | (1.33) | (1.34) | (1.12) | (1.35) | (.22) | (.06) |
| Age 36-38? | -0.042 | 0.24 | 0.16 | -0.025 | -0.004 | -0.007 |
| | (1.98) | (1.16) | (.85) | (1.35) | (.18) | (.17) |
| Chi-squared | 29.72 | 75.69 | 76.56 | 26.41 | 43.10 | 47.73 |
| Number of Observations | 1018 | 1018 | 1018 | 998 | 998 | 998 |

# APPENDIX 1
# DESCRIPTIVE STATISTICS
## Women Between Age 20 and Age 38
(Standard Deviations in Parentheses)

| | CZECH REPUBLIC | | SLOVAKIA | |
|---|---|---|---|---|
| | 1984 | 1993 | 1984 | 1993 |
| **Fertility Indicators** | | | | |
| Children Under Age 3 | 0.26 | 0.07 | 0.30 | 0.06 |
| | (.49) | (.26) | (.54) | (.25) |
| Children Over Age 3 | 1.45 | 1.36 | 1.42 | 1.71 |
| | (.97) | (1.04) | (1.23) | (1.29) |
| **Age Dummies** | | | | |
| Age 21-23? | 0.15 | 0.19 | 0.19 | 0.18 |
| Age 24-26? | 0.13 | 0.14 | 0.16 | 0.14 |
| Age 27-29? | 0.17 | 0.14 | 0.18 | 0.15 |
| Age 30-32? | 0.18 | 0.15 | 0.17 | 0.16 |
| Age 33-35? | 0.18 | 0.17 | 0.16 | 0.16 |
| Age 36-38? | 0.20 | 0.21 | 0.13 | 0.21 |
| **Human Capital Variables** | | | | |
| (Log) Monthly Earnings | 7.50 | 8.01 | 7.53 | 7.94 |
| | (.29) | (.39) | (.27) | (.37) |
| | [1913] | [695] | [1054] | [618] |
| Years of Education | 11.04 | 12.07 | 11.40 | 11.81 |
| | (2.60) | (2.34) | (2.94) | (2.64) |
| Experience | 11.41 | 11.01 | 10.10 | 11.03 |
| | (5.47) | (5.73) | (5.29) | (5.66) |
| Changed Jobs in Last 4 Years | 0.38 | 0.42 | 0.35 | 0.41 |
| **Regional Dummies** | | | | |
| Prague? | 0.13 | 0.25 | -.- | -.- |
| Central Bohemia? | 0.10 | 0.08 | -.- | -.- |
| South Bohemia? | 0.06 | 0.07 | -.- | -.- |
| West Bohemia? | 0.08 | 0.07 | -.- | -.- |
| North Bohemia? | 0.14 | 0.11 | -.- | -.- |
| East Bohemia? | 0.11 | 0.09 | -.- | -.- |
| North Moravia? | 0.20 | 0.16 | -.- | -.- |
| South Moravia? | 0.19 | 0.18 | -.- | -.- |
| Bratislava? | -.- | -.- | 0.14 | 0.08 |
| West Slovakia? | -.- | -.- | 0.28 | 0.36 |
| Central Slovakia? | -.- | -.- | 0.29 | 0.31 |
| East Slovakia? | -.- | -.- | 0.29 | 0.25 |
| Number of Observations | 2312 | 1020 | 1305 | 988 |