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**The Influence Of Labor Market Participation And Educational Attainment On The
Transition To First Birth In Post-Communist Estonia¹**

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Abstract:

This paper examines the influence of educational attainment and labor market participation on the transition to first birth in Estonia before and after the collapse of the communist regime. According to the opportunity cost hypothesis, women with high educational attainment are expected to postpone childbirth after the transition because of their higher earning potential while according to the economic uncertainty hypothesis, lower educated women not participating in the labor market are expected to postpone the birth of their first child because they lack the necessary economic resources. These theoretical arguments are evaluated by applying exponential transition rate models of the transition to first birth to data from the Estonian Social Survey 2004. Results show that the effect of labor market participation differs between educational levels: while having a paid job appears to be an important prerequisite for childbirth for the highly educated, the opposite is found for the lower educated women.

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Introduction

The collapse of the Soviet Union in 1991 caused profound changes in the living conditions of people in Central and Eastern Europe. The transition from communism to market economy and the installation of democratic governments left virtually no area of life unaltered and for large parts of the population, the 1990s were a period of economic uncertainty and instability. Besides the economic and societal consequences of the transition, there have also been marked demographic consequences in the form of widespread postponement of births leading to a dramatic decline in period fertility rates. This caused the Central and Eastern European countries to plummet within a few years from fertility rates around replacement level to lowest-low fertility of less than 1.3 children per woman (Sobotka, 2004). In this study the transition to first birth before and after the transition in Estonia, one of the former Soviet republics, is studied. Estonia is a particularly interesting case to study the effect of the transition on fertility for several reasons. First, the societal transition was very radical and swift with Estonia developing from being a Soviet republic to a democratic market economy with very liberal policies within a short period. In fact, it has been one of the most successful examples of a transformation from a planned to a market economy due to very liberal policies with regard to foreign investment, the dismantling of unprofitable state enterprises and a low level of state protection. Estonia has experienced high levels of economic growth throughout the 1990s and the economic situation has been favorable also compared to the other former Soviet republics (Orazem and Vodopivec, 1999; Panagiotou, 2001).

Secondly, Estonia has experienced the transformation from the Scandinavian fertility pattern, characterized by relatively high mean age at first birth and high proportions of extramarital births to the fertility pattern typically observed as a result of the pro-natalist Soviet policies characterized by low mean age at first birth and first marriage, within decades. After the collapse of the Soviet union in 1991, fertility rates fell abruptly by more than 40% (Sobotka, 2004) and did not recover until roughly 2005. During this period, the proportion of non-marital births doubled from 25% in 1989 to 52% in 1999 and the mean age at first birth increased by almost one year (Sobotka, 2002). There is however a remarkable increase visible in the last years, with fertility rates reaching 1.63 children per woman in 2007, a value comparable to for example the Netherlands. This development can be attributed in part to the 'catching-up' effect of women who postponed having their first child during the turbulent period of the 1990s and also to the generous maternity leave introduced in 2004 which entails the payment of the full salary of persons working and paying taxes before childbirth for a period of 455 days³.

Theoretical background and hypotheses

The economic theory of fertility (Becker, 1991) emphasizes the changes in the costs of children as the determinant of fertility behavior. Children are assumed to be consumer goods and therefore compete with other household consumptions. This argument is especially relevant in the time of transition from a planned to a market economy where new consumption opportunities arise that compete with the costs brought about by a child. It is useful to distinguish between the direct and indirect costs of children; increases in the direct costs of children were caused by the decline in affordable state-run

³ Extended to 575 days in 2008, source: European Working Conditions Observatory

care facilities and state benefits for families. In the first years after the transition, the prices of childcare increased and the number of facilities decreased by 14% (Orazem and Vodopivec, 1999). Indirect costs refer to raised opportunity costs due to the higher earning potential for young and well educated people caused by increasing income disparity. In a study of the effect of the economic transition on employment and wages in Estonia, Noorkoiv and colleagues (1997) found that the returns to education increased rapidly during the first five years of independence, with wage gains as high as 75% for the highest educated compared to the least skilled workers. This increase in the returns to education occurred over all sectors and all age groups. When direct and indirect costs of children are considered together with the new consumption opportunities in Estonia in the 1990s, it is expected that *high educational attainment is associated with a lower transition to first birth in the period after 1991.*

The examination of the influence of human capital on first birth timing is conducted for female respondents only. This is in line with the theoretical argument that women invest more time in rearing children and therefore are more affected in their opportunity to participate in paid labor. It is expected that this argument does not hold for women who had their first child before the transition because the combination of paid work and family responsibilities was facilitated by various policies such as generous maternity leave programs and free child care facilities. Furthermore the incentive to invest in human capital was absent because income differences were small.

Besides the change in the direct and indirect costs of children, the evaluation of stability of future earnings is an important factor which influences fertility behavior (Mills et al., 2005). The rise in unemployment, high inflation and the drastically reduced state support in the first years after the transition created a high degree of uncertainty in large parts of the population. Estonia introduced very low levels of state support, the replacement rate of unemployment benefits was 10% and employment protection legislation was very weak (Noorkoiv et al., 1997). Therefore unemployment posed a serious financial threat, especially to women who are lower educated and therefore have a more vulnerable labor market position. A rational response to these conditions for the group of unemployed women is the postponement of children. According to this economic uncertainty hypothesis, *not having a paid job is expected to lower the transition to first birth.*

Data and Methods

The data used in this analysis come from the Estonian Social Survey, which was administered in 2004 as part of the European Union Statistics on Income and Living Conditions (EU-SILC) aiming at collecting comparable cross-sectional and longitudinal multidimensional micro data on income, poverty and social exclusion (EUROSTAT, 2007). A national sample of households was selected consisting of 3.993 households with 8.906 individual respondents.

The sample analyzed consists of 2766 women born between 1954 and 1986 of whom 1765 had a first birth in the period under observation. The dependent variable is the duration from age 15 to first conception in months. For respondents who did not have a first child, the period under observation ends at age 40 or the interview date (2004), whichever occurred first. The resulting dataset of 242739 person-months is analyzed using exponential transition rate models. Explanatory variables included as time constant

factors are educational attainment, ethnicity, and birth cohort of the respondent. Furthermore, age, age squared, marital status, educational participation, working status and an indicator of the historical period before and after 1991 are included as time varying covariates. In order to test the hypothesized effects of educational attainment and working status after the transition, interaction effects of historical period with high educational attainment and working status as well as an interaction of all three indicators is included in Model 2 (see Table 1).

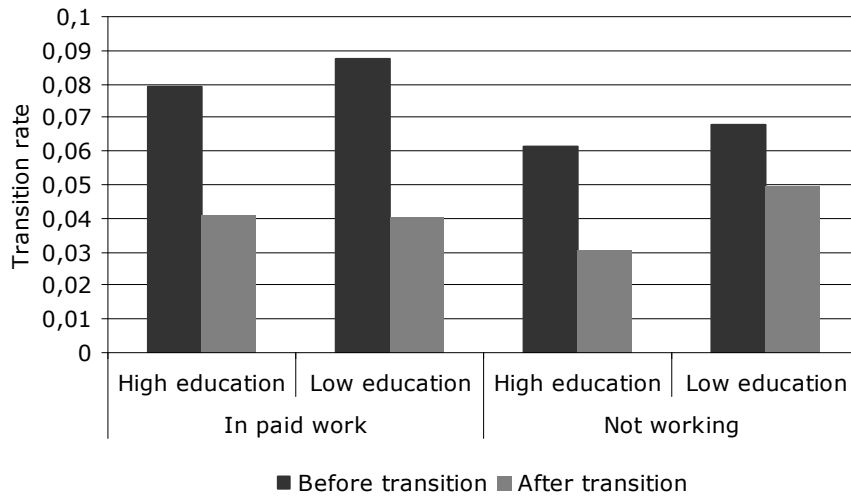
Results and Discussion

Preliminary results show that compared to women who are single, married and cohabiting women have a higher transition to first birth. Not being a native Estonian is associated with a lower transition to first birth, the same accounts for women who are participating in the educational system. Compared to the reference cohort of women born between 1971 and 1976, the cohorts born in the 1950s and after 1976 show a lower transition to first birth. This effect reflect the pro-natalist policies in the Soviet Union during the 1970s and 1980s and the subsequent drop in fertility after the dissolution of the communist system. High educational attainment is associated with a lower transition to first birth, even when the times spent in educational system are controlled for. The indicator of historical period shows a negative effect, reflecting the postponement of births in the first period of independence. The results of the interaction effects are presented in graphical form to facilitate interpretation (see Figure 1).

These results show that even though there is a drop in the first birth rate for all groups, it is especially the lower educated women in paid work who experienced lower transitions to first birth after the transition. This might be explained by the reversed wage structure before and after the transition. During communism, income differences were small, but manual workers were relatively advantaged compared to higher educated groups. After independence was regained, differences in income between educational groups rose fast, with large wage gains for the higher educated. Furthermore, work seems to be a prerequisite for childbirth for highly educated women, while the opposite is the case for the lower educated. Women with low educational attainment who do not participate in the labor market show the fastest transition to first birth. These preliminary results show a more complex picture than was expected in the hypotheses. While paid work is an important prerequisite for the higher educated, for lower educated women with bleak labor market perspectives, having a child might offer the opportunity to take on the role of being a housewife and mother as an alternative to paid employment (Mills et al., 2005). This argument is especially relevant since during communism women were expected to participate in paid employment while at the same time having the main responsibility for childrearing and household duties (Hansson, 2001). Thus even though the official policy under the communistic regime prescribed gender equality in all areas of society, roles within the household remained traditional. These preliminary results will be further investigated by a more detailed examination of activity status in order to differentiate between the effect of being unemployed and being a housewife. Also occupational class will be included in order to have a more reliable proxy of income than educational attainment. This will also help to disentangle the effect of opportunity costs versus economic need, i.e., whether the relative large negative effect of lower education

in working women can be explained by this group being concentrated in ‘bad’ jobs after the transition.

Figure 1: Transition rate to first birth by working status, educational attainment and historical period



Note: Transition rates calculated for women aged 21, married, ethnic Estonian, born between 1961 and 1976

Table 1: Results of exponential transition rate model of duration to first birth

	<i>Model 1</i>	<i>Model 2</i>
Age	2.675 ^{***} (0.200)	2.623 ^{***} (0.197)
Age ²	0.979 ^{***} (0.00153)	0.980 ^{***} (0.00154)
Educational attainment		
No vocational or professional education after secondary education (ref)	1	1
Vocational education after secondary education	0.852 [*] (0.0650)	0.857 [*] (0.0654)
Higher professional / tertiary education	0.876 [*] (0.0495)	0.903 (0.0596)
Ethnic Estonian (ref = yes)	0.911 ⁺ (0.0507)	0.916 (0.0510)
In paid work (ref = not working)	1.151 [*] (0.0729)	1.296 ^{***} (0.0995)
In education (ref = not in education)	0.367 ^{***} (0.0288)	0.375 ^{***} (0.0296)
Marital status		
Single (ref)	1	1
Cohabiting	4.365 ^{***} (0.324)	4.374 ^{***} (0.324)
Married	5.548 ^{***} (0.330)	5.487 ^{***} (0.327)
Separated	2.064 ^{**} (0.498)	2.086 ^{**} (0.503)
Cohort 1954 - 1960	0.646 ^{***} (0.0810)	0.656 ^{***} (0.0829)
Cohort 1961 - 1965	0.946 (0.115)	0.965 (0.119)
Cohort 1966 - 1970	0.914 (0.0928)	0.951 (0.0978)
Cohort 1971 – 1976 (ref)	1	1
Cohort 1976 - 1981	0.848 (0.0974)	0.800 ⁺ (0.0933)
Cohort 1981 - 1987	0.468 ^{***} (0.0792)	0.386 ^{***} (0.0687)
Historical period 1991-2004	0.523 ^{***} (0.0553)	0.734 [*] (0.106)
Historical period 1991-2004 * Working status		0.628 ^{***} (0.0827)
Historical period 1991-2004* Higher professional / tertiary education		0.678 [*] (0.126)
Historical period 1991-2004* Higher professional / tertiary education * Working status		1.649 [*] (0.349)
N	2766	2766
Log likelihood	-1342.2	-1335.5
LR chi square (df)	2852.45 (16) ***	13.56 (3) ***

Notes: Exponentiated coefficients; Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Estonian Social Survey, calculations by author

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