

## **Timing of cohabitation among native and foreign-origin women in Estonia**

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### **Topic**

The pattern of partnership behaviour and family formation has drastically changed in European countries since the 1960s. One of the central issues of this change has been the rising importance of unmarried cohabitation. There are several well elaborated studies addressing the trends in Europe (for instance Sobotka&Toulemon, 2008; Kalmijn, 2007; Surkyn&Lesthaeghe, 2004; Lesthaeghe&Neels, 2002; Manting, 1994). In many Eastern-European countries like Russia, Romania and Bulgaria, where just few decades ago cohabitation was more an exception than a rule, the recent studies have revealed the spread of cohabitation even as a form of entering into first union (Hoem&Kostova, 2008; Hoem *et al*, 2009). Studies about union formation in Estonia (Puur, Põldma, Sakkeus, 2008) and in all Baltic countries (Katus *et al* 2007; Katus *et al* 2008) report the same trend, and they also point out different timing across countries.

In terms of possible causes that have lead to changes in family formation trends, different explanations have been used. The changes could be connected to economic and social crisis, to the diffusion of western norms and values or the replacement of state socialist regimes in case of Eastern Europe (Frejka, 2008). When discussing all those possible explanations it is particularly important to ask about the timing of the changes in different societies. For instance in Estonia the shift from direct marriage to cohabitation started well before the fall of the state socialist regime, and followed a trajectory close to Scandinavian countries. Thus the emergence of cohabitation cannot be connected with political and economical change.

The main aim of this study is to compare the spread of cohabitation as a form of entering into first union among two population groups in Estonia - Estonian native population and population of foreign-origin. Presenting results separately for native and foreign-origin populations is a general practice in Estonia (e.g. Puur *et al* 2008; Katus *et al* 2002). This strategy is justified because the demographic patterns among those populations are different, sometimes even opposite "mirroring the characteristic features of long-term population development in Estonia,

on the one hand, and the regions of the Russian Federation and the other parts of the former Soviet Union, on the other hand.”(Puur *et al* 2008). In addition to comparative analysis of native and foreign-origin population, the study also raises a question of possible conversion of demographic behaviour over time. Some key variables that are frequently used to assess the process of integration of immigrants, such as local language skills, citizenship and place of birth were tested in regression analysis.

## **Data and method**

The study derives data from national survey that was carried out in the context of the Gender and Generations Survey (GGS). The survey builds on the life course approach. Estonian survey incorporated all the life history modules (see Puur *et al* 2008 and EKDK 2008), out of which partnership formation, childbearing, education and residential mobility are used in this study.

Event history dataset was prepared according to following specifications: the process starts at age 15 and is observed until age 45 or censored at the time of the interview when respondent hadn't entered the first union yet and was under age 45 at the time of interview. The number of respondents included to the analysis was 3543 native women and 1473 women of foreign origin. This makes the final sample size to be 5016 women.

The analysis of integration effect was limited only to those foreign-origin women who started their first union in Estonia<sup>1</sup> (n=1949); if the event took place before a person moved to Estonia the whole observation was excluded from the analysis. The occurrence and exposure matrix for all groups by type of union is introduced in Table 1.

A proportional hazard model with a piecewise-constant baseline hazard was applied. The age of a woman is used as a baseline hazard. Thus the effect of age and other time-varying covariates is kept constant for selected age-intervals and allowed to vary across intervals. Two proportional hazard models indicating the risk of direct marriage and the risk of cohabitation are estimated for native and foreign-origin women separately. Then two types of transition to first union are studied jointly as competing risks (see Figures 1 and 2 in Appendix). The statistical side of this type of analysis is described more precisely in studies by Hoem&Kostova (2008) and Hoem *et al* (2009).

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<sup>1</sup> Not sooner than 3 months after arriving to Estonia.

**Table 1: Time at risk distribution in different population groups by type of union.**

			DIRECT MARRIAGE		COHABITATION	
	Exposure time	No of subjects	Occurrences	O/E	Occurrences	O/E
	person-months			rate per 1000 p-m		rate per 1000 p-m
Native women	359 942	3 543	1 338	3.72	1 855	5.15
All foreign-origin women	135 517	1 473	940	6.94	427	3.15
Foreign-origin women who formed 1st union in Estonia	100 891	1 049	599	5.94	344	3.41
2nd generation foreign-origin women	41988	486	215	5.12	197	4.69

Note: Risk population - women with no partnership history between ages 15-45

Source: Own calculations based on Estonian GGS 2004-2005 data

## Results

### Different timing of cohabitation

While previous studies about Estonia used cohort as a unit of analysis, then in this study calendar period is applied. Calendar period is preferred, because it reveals the possible effect of change in political and economical regime better.

The change in the patterns of first union formation over the period of 1960-2004 is visualised in Figures 1 and 2 (see Appendix). All rates displayed in the figures are relative to the level of direct marriage among native women in 1960-1964. The difference between pattern of native women and foreign-origin women is prominent (Figure 1 in Appendix). In case of Estonian native population the standardized marriage rate shows constant falling trend since 1960 and almost disappears as a form of entry into first union in the middle of 1990s; at the same time the cohabitation became more common form of starting a first-union already at the first half of 1970s, being a subject of extensive rise ever since. In case of foreign-origin population, who formed their first union in Estonia, the marriage rate stayed in the level of 1960 until 1980s and then dropped quite sharply; cohabitation became more common form of entry into first-union only in 1990s, two decades later than in the case of Estonians, but quite similarly to the trend reported in case of Russia (Hoem *et al*, 2009).

Figure 2 (see Appendix) is included to demonstrate the relevance of analysing native population and foreign-origin population separately. When the groups are not distinguished, as was done while estimating the model reported in Figure 2, then two different patterns are blurred into one that doesn't give correct information about neither of the groups. The fact that the model does

control the impact of status of origin doesn't give sufficient effect in terms of understanding the processes in the society.

### Integration of foreign-origin women

Knowing the diversity in Europe in terms of the patterns of first union formation, particularly the different role of cohabiting unions, and assuming that the socialization environment has crucial and long-lasting role in family-related decisions, the different pattern of first union formation between native and foreign-origin women in Estonia is not surprising. What is not so simple to answer is the question whether there will be any convergence in behaviour while immigrants are already settled in a country of destination. This question was tackled in the study as well.

It is important to note that this part of the study excludes those foreign-origin women who formed their first union outside Estonia. The impact of three additional variables that are often used as markers of integration - place of birth, citizenship and Estonian language skills, was tested.

In case of foreign-origin women the **place of birth** (whether a person was born in Estonia or not) is a basis for distinguishing first and second+ generation. It appeared that the rate of entering into any type of first unions is much lower for those who were born outside Estonia compared to those foreign-origin women who were born in Estonia (Table 2 in Appendix). This means that the place of birth captures mainly the effect of migration - those who move will demonstrate lower intensity of union formation due to the interruption caused by migration<sup>2</sup>. For this reason the place of birth will be considered as a control variable not as variable to measure integration.

The effect of adding **citizenship**, **Estonian language skills** and combined variable of **level of integration**<sup>3</sup> to the model is demonstrated in Table 2 (see Appendix). It appears that there will be no statistically significant effects. The slight (statistically not significant) impact that the level of integration has is in expected direction - less integrated women have lower rate of cohabitation and higher rate of marriage compared to those who rank high in integration variable.

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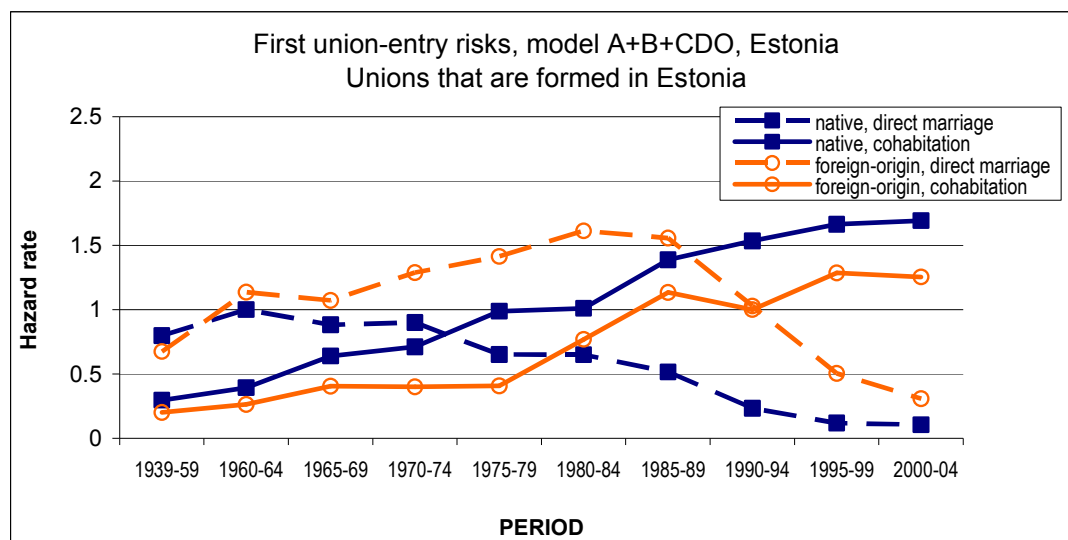
<sup>2</sup> This variable started to have an effect when the influence of living arrangements was controlled (whether a person has left childhood household or not).

<sup>3</sup> Level of integration is defined 'high' if a person has Estonian citizenship and is fluent in Estonian, it is 'low' if either of the variables has a different value. The person who doesn't speak Estonian and doesn't have Estonian citizenship is defined as 'not integrated'.

## References

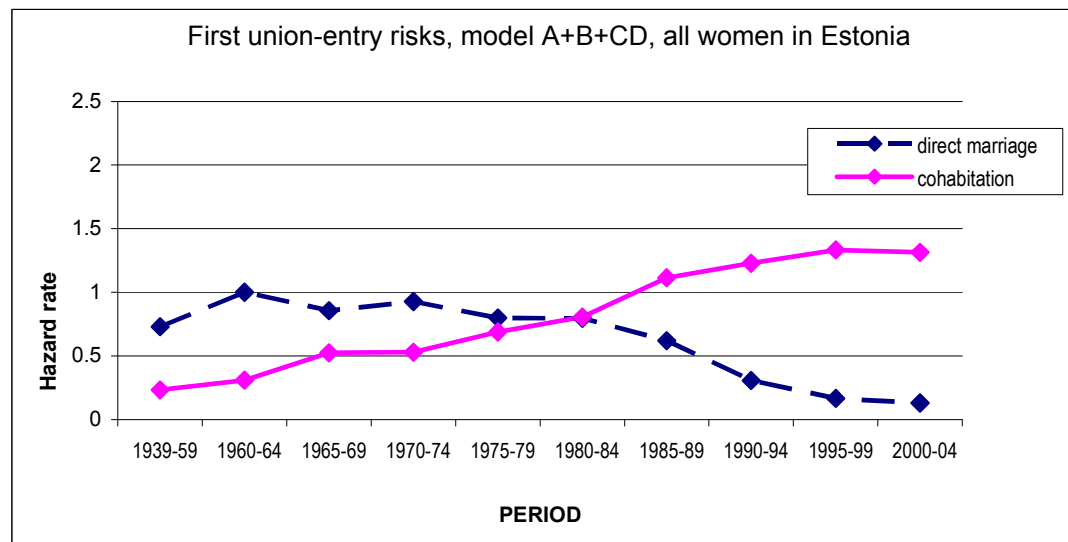
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**Figure 1:** Trends in the rates of first union formation, by type of union. Women in Estonia by status of origin, born in 1924-83. Rates relative to that of direct marriage of native women in 1960-64. Standardized for age of woman, pregnancy-parity status, education, household status, region where grow up, type of childhood home.



Source: Own calculations based on Estonian GGS 2004-2005 data

**Figure 2:** Trends in the rates of first union formation, by type of union. All women in Estonia, born in 1924-83. Rates relative to that of direct marriage in 1960-64. Standardized for age of woman, pregnancy-parity status, education, household status, region where grow up, type of childhood home.



Source: Own calculations based on Estonian GGS 2004-2005 data

Following the logic proposed by Hoem *et al* 2009, the specification of models should be read as follows: A stays for age, B for background variables, C for calendar period, D for decrement type (i.e. type of union) and O for status of origin. CD and CDO refer for interaction between variables.

**Table 2: Transition to first union by type of union. Relative risks for control variables. Models test the impact of integration variables. Women of foreign-origin who formed their 1st union in**

Age	DIRECT MARRIAGE				COHABITATION			
	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 1	MODEL 2	MODEL 3	MODEL 4
15-16	0.06 ***	0.06 ***	0.06 ***	0.06 ***	0.30 ***	0.30 ***	0.31 ***	0.31 ***
17-18	0.44 ***	0.44 ***	0.44 ***	0.44 ***	0.89	0.89	0.89	0.89
19-20	1	1	1	1	1	1	1	1
21-22	1.16	1.16	1.15	1.15	1.05	1.05	1.06	1.05
23-24	1.31 **	1.32 **	1.30 *	1.31 *	1.05	1.05	1.07	1.06
25-26	0.92	0.94	0.93	0.93	0.87	0.87	0.88	0.88
27-28	0.69	0.70	0.69	0.69	0.75	0.75	0.75	0.75
29-30	0.46 **	0.46 **	0.46 **	0.46 **	0.61	0.61	0.62	0.62
31-34	0.24 ***	0.24 ***	0.24 ***	0.24 ***	0.38 **	0.38 **	0.38 **	0.38 **
35+	0.05 ***	0.05 ***	0.05 ***	0.05 ***	0.31 ***	0.31 ***	0.32 ***	0.32 ***
<b>Period</b>								
1939-59	0.73 *	0.73 *	0.73 *	0.73 *	0.69	0.69	0.69	0.69
1960-64	1	1	1	1	1	1	1	1
1965-69	0.88	0.87	0.87	0.87	1.42	1.42	1.42	1.42
1970-74	0.85	0.85	0.85	0.85	1.52	1.51	1.52	1.52
1975-79	0.90	0.89	0.89	0.88	1.69	1.69	1.71	1.70
1980-84	1.06	1.06	1.07	1.07	3.19 ***	3.20 ***	3.18 ***	3.20 ***
1985-89	0.95	0.95	0.95	0.95	4.19 ***	4.19 ***	4.17 ***	4.19 ***
1990-94	0.62 **	0.62 **	0.62 **	0.62 **	3.42 ***	3.42 ***	3.37 ***	3.40 ***
1995-99	0.29 ***	0.29 ***	0.29 ***	0.29 ***	4.46 ***	4.45 ***	4.36 ***	4.41 ***
2000-04	0.16 ***	0.16 ***	0.16 ***	0.16 ***	4.18 ***	4.17 ***	4.08 ***	4.13 ***
<b>Parity-pregnancy status</b>								
Childless, not pregnant	1	1	1	1	1	1	1	1
Childless, pregnant	10.66 ***	10.53 ***	10.61 ***	10.62 ***	3.82 ***	3.81 ***	3.75 ***	3.77 ***
Mother	0.53 *	0.52 *	0.53 *	0.53 *	0.65	0.65	0.65	0.65
<b>Region where grow up</b>								
Rural	0.74 ***	0.74 ***	0.75 **	0.75 **	1.08	1.08	1.07	1.07
Urban	1	1	1	1	1	1	1	1
<b>Education</b>								
In education	0.68 ***	0.67 ***	0.67 ***	0.67 ***	0.70 **	0.69 **	0.68 **	0.69 **
Primary or lower	0.73 **	0.73 **	0.73 **	0.73 **	1.44 **	1.44 **	1.45 **	1.45 **
Secondary	1	1	1	1	1	1	1	1
Tertiary	1.26	1.23	1.24	1.24	0.70	0.69	0.67	0.68
<b>Household status</b>								
Lives at childhood hh	1	1	1	1	1	1	1	1
Has left childhood hh	5.77 ***	5.80 ***	5.81 ***	5.82 ***	3.36 ***	3.36 ***	3.37 ***	3.36 ***
<b>Childhood with both parents</b>								
Yes	1	1	1	1	1	1	1	1
No	0.90	0.90	0.90	0.90	1.20	1.20	1.19	1.19
<b>Place of birth</b>								
Estonia	1	1	1	1	1	1	1	1
Other	0.61 ***	0.63 ***	0.63 ***	0.63 ***	0.59 ***	0.60 ***	0.59 ***	0.60 ***
<b>Citizenship</b>								
Estonian		1	1			1	1	
Other		0.89	0.86			0.98	1.04	
<b>Estonian language skills</b>								
Fluent			1				1	
Satisfactory or no command			1.17				0.81	
<b>Level of integration</b>								
High				1				1
Low				1.22				0.92
Not integrated				1.02				0.88
Initial LL	M0inM1	M1inM2	M2inM3	M1inM4	M0inM1	M1inM2	M2inM3	M1inM4
	-1060.48	-1060.48	-1060.48	-1060.48	-837.67	-837.67	-837.67	-837.67
LL	-410.39	-409.55	-408.92	-408.41	-654.61	-654.59	-653.74	-654.29
G	20.11	1.69	1.25	3.96	12.29	0.03	1.70	0.65
Prob > chi2	0.00 ***	0.19	0.26	0.14	0.00 ***	0.86	0.19	0.72

Source: Own calculations based on Estonian GGS 2004-2005 data

\*\*\* p<0.01; \*\* p<0.05; \* p<0.1