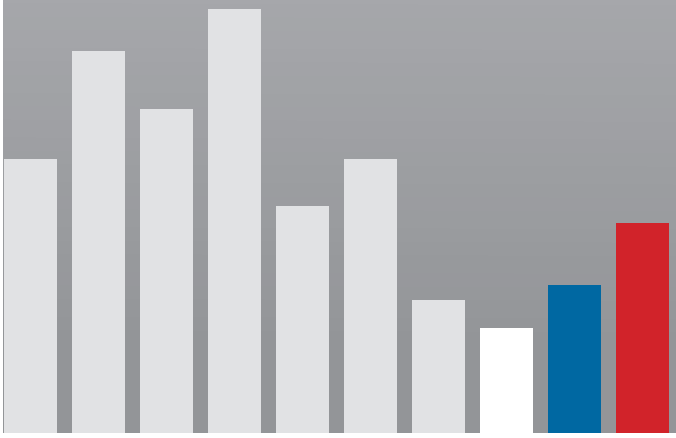
Fatherhood in Russia between 1970 and 2004

The male perspective of family and fertility behavior in a changing society



Dissertation zur Erlangung des akademischen
Grades doctor rerum politicarum (Dr. rer. pol.)
der Wirtschafts- und Sozialwissenschaftlichen Fakultät
der Universität Rostock

vorgelegt von Diplom Demograph David Alich, Rostock, Mai 2009

Acknowledgements

Zwischen dem fertigen Manuskript und der Abgabe dieser Dissertation stellten sich mir einige Hindernisse in den Weg, welche das nah geglaubte Ziel - die Abgabe und Verteidigung - plötzlich in weite Ferne rücken ließen. Prof. Dr. Michaela Kreyenfelds motivierenden Zuspruch und intensiver fachlicher Beratung habe ich es zu verdanken, dass heute diese Arbeit fertiggestellt ist und zur Verteidung vorgelegt werden kann.

Mein Studium der Soziologie begann ich 1997 an der Universität Leipzig. Der Zufall wollte es, dass ich schon hier Veranstaltungen bei Prof. Dr. Johannes Huinink besuchte, welcher mit seinen Forschungen zur Familiendemographie und –soziologie mein Interesse weckte und ein Jahr später, zeitgleich mit mir, an die Universität Rostock zur Demographie wechselte. Hier hatte ich die Möglichkeit meine Studien- und Forschungsinteressen mithilfe seiner Lehre und Betreuung weiter zu verfolgen. 12 Jahre nach dieser familiendemographischen Initialzündung bin ich umsomehr dankbar für seine lange und herzliche Begleitung.

Die Arbeit an dieser Dissertation begann im Oktober 2004, unmittelbar nach der Verteidigung meiner Diplomarbeit, welche ich bereits am Max Planck Institut für demographische Forschung (MPIDF) in Rostock schrieb. Prof. Dr. Jan M. Hoem, Direktor des MPIDF, bot mir in den folgenden Jahren die Möglichkeit in seiner Abteilung meine demographischen Forschungen zu vertiefen. Mithilfe seiner wissenschaftlichen und kollegialen Unterstützung, und durch die finanziellen Rahmenbedingungen am MPIDF ist diese Dissertation erst möglich gewesen.

Des Weiteren gilt mein allerherzlichster und bester Dank PD Dr. Dirk Konietzka, der mich seit meiner Diplomarbeit und über alle Jahre am MPIDF betreute. Als Mentor begleitete er mich von meinen ersten, empirischen Schritten in der demographischen Forschung, über meine ersten Vorträge und erste Publikation, bis hin zum Abschluss dieser Arbeit. Immer stand er mir dabei mit hilfreichen, tiefgründigen, kreativen und fachlich fundierten Kommentaren und Diskussionen zur Seite. Seine excellenten Theoriekenntnisse und hohen Anforderungen an wissenschaftliches Arbeiten stellten mich vor spannende Herausforderungen und prägten mich nachhaltig. Sie ließen mich manchmal zweifeln, aber meine eigenen Qualitätsstandards beständig wachsen. Danke!

Über alle wissenschaflichen und psychischen Hürden, die es in dieser Zeit zu meistern galt, halfen mir meine Familie, meine Kollegen am MPIDF, meine Freunde und die vielen Doktoranden, welche ich während meiner Tätigkeit für das PHDnet (Doktorandennetzwerk der Max Planck Gesellschaft) traf.

Meine Kollegen und Mit-Doktoranden am MPIDR halfen mir täglich mit freundschaftlicher und fachlicher Unterstützung. Ganz besonders gilt mein Dank: Maggie Kulik, Katja Köppen, Annett Fleischer, Sabine Schnabel, Esther Geisler, Sutay Yavuz, Cordula Zabel, Dora Kostova, Elke Loichinger und Harald Wilkoschewski. Weiterhin möchte ich Gerda Neyer, Hill Kulu und Gunnar Andersson für viele gute Ratschläge danken.

Mein Dank gilt überdies meinem Zwillingsbruder Tobias Alich, meinen Eltern Klaus und Gerburg Alich, die es zum Glück immer wieder schafften meinen Blick auch auf Themen außerhalb der Demographie zu lenken.

Außerdem möchte ich an dieser Stelle allen Menschen danken, die ich hier nicht erwähnen konnte oder die ich vergaß, die mir aber in den letzten Jahren begegnet sind und mir wichtige und vielfältige Anregungen gaben.

Abschließend möchte ich meinen allerliebsten Dank Linda Heddicke zukommen lassen. Sie half mir nicht zu verzagen und war in den letzten Jahren ein Teil meiner eigenen „demographic transitions“ und wird hoffentlich auch zukünftig dabei sein.

A. Table of Contents

B. Figures

C. Tables

Chapter I
Introduction

1. Fertility and family formation in changing societies

In many senses, the end of the 1980s and the 1990s were *the* period of change in the former Soviet Union and the whole of Eastern Europe in the second half of the 20th century. The old socialist system in Soviet Russia was fundamentally reformed and finally ceased to exist, and a new Russian Federation was established. This breakdown of the socialist system was accompanied by deeply rooted social, economic, and political changes, which altered individual life courses in nearly every possible way – and, of course, demographic behavior.

During the collapse of the old Soviet system and the rise of the new Russian state, period fertility indicators unexpectedly dropped to levels never observed before. In the 1990s, the Total Fertility Rate (TFR) declined to levels of around 1.3 children per female. At a level of 1.1, the decline reached its bottom in 1999. This drop was mainly due to two developments: first, the transition of young Russians to parenthood increasingly occurred later in life; second, the number of childless individuals rose, and parents increasingly had just one child instead of two or more children. Parallel union formation altered, as well. During the 1990s and the new millennium, young Russians increasingly formed non-marital cohabitations and postponed marriage to older ages. Consequently, marriage rates dropped sharply, whereas the share of non-marital unions grew significantly. This also applied to the proportion of children born out of wedlock. These patterns differed markedly from the relative homogenous and universal fertility and nuptiality characteristics of Soviet Russia.

Compared to other former socialist countries of Eastern Europe, Russia's fertility and nuptiality patterns have distinct country-specific characteristics. Russian fertility had already started to decline around 1988, even though the age at the transition to parenthood continued to fall until the mid-1990s. The same applied to marriage indicators and the age at the transition to marriage. Thus, fertility and marriage postponement were established significantly later than in other countries of the collapsed Eastern Block, and were also later than the declining TFR and marriage rate might have suggested. In some senses, these developments lagged slightly behind the

start of the societal transformation period at the end of 1980s and the beginning of the 1990s.

The complex and profound changes in family formation behavior of Russians progressed when the socialist regime of Soviet Russia collapsed, and the new Russian Federation was established. It was an era of deep economic crisis, political turmoil, and fundamental social and institutional restructuring and reorganization.

Politically, Soviet state socialism was characterized by the dictatorship of the Communist Party of the Soviet Union (CPSU) and its leaders. It entailed a state-planned economy based on extensive economic growth without any private sector involvement, and a collectivized agriculture. Soviet Russia's economic and political structures were strongly resistant to necessary reforms, and therefore became ineffective and unproductive, and posed threats for the Russian population in the 1970s and 1980s. In many respects, this system can be viewed as the antithesis of a market economy (Ericson 2001) and of democracy. However, the socialist system provided an extensive social welfare with freely provided education and health care, as well as ambitious family policies and full employment.

With the reforms of Michael Gorbachev, the political and economic system of the Soviet Union began to restructure towards a market economy and democracy. As a consequence, the old Soviet system finally ceased to exist at the beginning 1990s, when a new Russian Federation was established. Although the reforms and the institutional restructuring were intended to create better economic and political conditions, many of the changes moved the country and its people into deep crises. Inflation, skyrocketing unemployment, increasing poverty, wars with former Soviet Republics, political revolts, and a badly structured social system brought insecurity and "new" risks to Russia's people throughout the 1990s. The situation started to stabilize at the end of the 1990s, and considerable improvements occurred in the new millennium. However, Russia still cannot be seen as having a market economy or a fully functional democracy. Many Russians still suffer from poor living conditions, insufficient social support, unemployment, and poverty.

The social, political, and economic transformation left their mark on the demographic behavior individuals in a variety of ways: through an altered labor market and industrial sector, through the reorganization of the educational system and childcare institutions, through economic crises and upturns, through increased poverty risks and

new opportunities for obtaining wealth, and through changes in the social security system and in social policies.

The aim of this work is to provide essential insights into the question of whether, and in what ways, Russia's societal transformation altered the family formation and fertility behavior of young adults, in particular the fertility and nuptiality behavior of young men. Thus it focuses on two crucial demographic transitions: *first*, the transition to the first consensual union among Russian men, either non-marital cohabitation or marriage; and, *second*, Russian men's transition to fatherhood, i.e., to procreation and birth of the first biological child.

These family life transitions should be understood in the wider context of the individual's life course. They do not occur in isolation, but are completely embedded in and connected to other "non-demographic" transitions and events. Thus, fertility and nuptiality transitions are closely interrelated, and are strongly connected to micro-level determinants (e.g., men's education, military and, employment domains) and macro-level factors (e.g., the political, economic, and social context of society).

The observed trends in aggregated fertility measures (e.g. Avdeev and Monnier 1999; Vishnevskii 2001; Zakharov 2003), individual-level demographic research on Russian females, and recent fertility research in the context of the former Eastern Block showed that these family life transitions were strongly vulnerable to societal changes as they occurred in the Soviet Union and Russia in the period studied (e.g., Kantorová 2004b; Koytcheva 2006; Kulik 2004, 2005; Rieck 2006).

2. Why focus on men?

Long-term fertility research in demography has mainly focused on the fertility dynamics and behavior of women. An important reason for this focus was the direct link between women and their children. When family and parenthood were lifelong stable institutions, the analyses of female fertility patterns provided an almost complete picture of fertility dynamics. However, today's family and parenthood are more dynamic and multifarious. In recent decades, new family forms, such as stepfamilies, social parenthood, and patchwork families, have gained in importance in modern societies. Recent studies have shown that research on men and/or fathers

leads to a better understanding of fertility and family dynamics (Goldscheider and Kaufman 1996; Greene and Biddlecom 2000).

I believe that this is particularly the case if we wish to understand the mechanisms behind the profound changes in fertility and nuptiality patterns in Russia during the collapse of state socialism, the related crises, and the rise of the new Russian federation.

This is because, even after almost 70 years of state socialism[1] and ideologically guided gender policy, the Soviet/Russian society was (and still is) completely male-dominated. This also applies to family life and daily living. While it is certainly the case that, especially during the socialist era, females almost universally worked and provided a substantial part of economic wealth to society and family, this did not change any of the patriarchal power relations between Russian men and women. With the societal transformation of the 1990s, the male's role was emphasized, and yet deteriorated at the same time. First, the breakdown of the Soviet Union's political system entailed growing insufficiency of old family and social policies, and a crisis of publicly provided childcare services. These developments shifted family- and household-related work tasks back to the family, i.e., back to females. At the same time, the breadwinner role was increasingly assigned solely to men. Second, the economic crisis in the 1990s led to steeply rising levels of poverty, a devaluation of labor, and widespread unemployment. As a consequence, many Russians lived close to or even below the subsistence level. Thus, neither full employment nor the (ill-suited) social security system prevented people from falling into poverty. Under these conditions, it became very complicated for men to take on the main breadwinner role in a partnership, in a family, or as a father, and the conditions associated with the decision to enter into a non-maritial union or a marriage, or to have a child, became more demanding and more difficult to meet.

Thus, looking at the male role in Russian fertility and nuptiality patterns should add to our knowledge of how individuals and their demographic behavior respond to social, economic, and political changes, apart from classical female fertility research.

[1] The Union of Socialist Soviet Republics (USSR) was founded in December 1922.

2.1. Problems and concerns when incorporating men into demographic fertility research

Since the interest among demographers and sociologists in men, their reproductive life cycle, and fertility behavior is growing, barriers to incorporating males in fertility and family research are discussed. The discussion is based on the fact that it is more difficult to establish a direct link between a biological child and his or her father than for females and their offspring. This issue is often treated as a main obstacle to conducting reliable analyses and data about male fertility. In the following, the social arguments and methodological issues that arise in this debate are briefly discussed.

Social arguments: An important argument for relying on female fertility data only was the fact that marriage and the family were lifelong stable institutions in the industrialized world during a major part of the 20th century. In this "golden age of marriage," births out of wedlock, the formation of stepfamilies, and single parenthood were minor phenomena (van de Kaa 1987). If fertility almost exclusively happens in stable and long-lasting marital unions, it is sufficient to collect fertility information from women only. Some authors have even suggested that married women can report on their husbands' attitudes towards fertility and fertility-related activities (Bachrach et al. 1992; Goldscheider and Kaufman 1996; Sorensen 1998). Thus, demographic research in general has regarded men as somehow uninvolved in fertility, other than being economically important and impregnating women (Greene and Biddlecom 2000; Watkins 1993).

In recent decades, fertility patterns have been changing in the majority of modern societies. A rapid fall in overall fertility and rising ages at childbirth were accompanied by the weakening of the link between marriage and childbearing. Increased divorce rates and the spread of cohabitation, single parenthood, and stepfamilies show that lifelong stable marital unions have lost their dominance. By excluding men from fertility analyses, their importance in fertility decisions (not just within a stable partnership) is largely ignored. Therefore, given that men and women no longer experience a similar fertility and family life cycle (Greene and Biddlecom 2000), it is necessary to analyze men's fertility behavior and their outcomes in order to get a complete picture of fertility and its determinants.

Methodological concerns: Numerous methodological problems are mentioned in demographic literature when examining male fertility patterns. The five main issues

are as follows. 1. A mother and her children are much easier to link. The probability that women will forget or be unaware of their own biological children is smaller than for men (Toulemon 2001). 2. The length of a female's reproductive time span is well-defined, while a male's is vague (Shryock 1976). The same applies to the age when the fertile phase is finished. 3. A man is able to impregnate more than one woman at almost the same time. Thus, checking the quality and reliability of male fertility data is more complicated than for female data. 4. Women are easier to interview because they are more often at home (Goldscheider and Kaufman 1996).[2] 5. Men tend to underreport the number of their biological children, either intentionally or due to a lack of information (Duberstein Lindberg et al. 1998a).

Various studies have found serious problems when analyzing male fertility behavior because of the previously stated problems (Bledsoe, Lerner and Guyer 2000; Cherlin and Griffith 1998; Coleman 2000; Goldscheider and Kaufman 1996; Rendall et al. 1999). However, other research concludes that it is possible to obtain correct fertility data from men (Duberstein Lindberg et al. 1998b; Mott and Gryn 2001).

In this work, hypotheses concerning sex-specific fertility characteristics will be described and the above-mentioned problems will be discussed in detail. Empirical analyses will show that some of the concerns mentioned are relatively unproblematic, and that empirical research on fatherhood (at least with the dataset used) is possible.

3. Theoretical and methodological background

As noted above, the fertility decline and the changed union formation behavior in the Russian Federation are subjects of an ongoing demographic debate which did not find a final conclusion, nor provided a general and universally accepted explanation. This particularly applies to research in the context of fatherhood and men's family formation behavior, which so far barely exists for Russia.

In general, there are two kinds of approaches used in assessing the fertility decline and altered nuptiality behavior in Russia. The first type dates back to the beginning of the investigation of Russia's dynamic demographic pattern in the 1990s. It analyzes the phenomenon from the macro perspective, i.e., it relates developments in aggregated

[2] Despite changes in labor force participation of mothers throughout the industrialized countries, there is evidence that this is still the case.

demographic measures to economic, political, and social patterns; or it investigates tempo, period, and cohort effects. Prominent examples are the works of Zakharov (1997, 2003), Avdeev 2003), Avdeev and Monnier (1999, 2000), Phillipov and Kohler (2001), Scherbov and Van Vianen (2001, 2004), Barkalov (2005), Phillipov (2002), and Phillipov and Dorbritz (2003).

The second kind of approach focuses on the micro level, investigating the life courses of individuals to show how societal changes might have influenced the individual's nuptiality and fertility behavior. Examples of this line of research include the studies of Gerber and Berman (2005), Rieck (2006), Bühler (2004), Perelli-Harris (2006). However, studies following this approach are generally rare, and fertility and nuptiality research on Russia that incorporates men is even more unusual. The exceptions are Rieck (2005) and Gerber and Berman (2005).

The development of explanatory models for Russia's fertility and nuptiality dynamics in the 1990s and the new millennium are mainly rooted in the previously cited macro-level approaches. Three different approaches can be identified (see Philipov (2003) and Philipov and Dorbritz (2003)). The first is the *ideational change* or *Second Demographic Transition* approach. It describes the fertility and nuptiality developments in Russia as outcomes of a long-standing value change process, which accelerated with the societal transformation. Based on these altered individual perceptions, a "new" kind of union formation and parenthood behavior emerged which has significant similarities with Western European pattern of the Second Demographic Transition, as described by Van de Kaa (1987, 2001) and Lesthaege (1992). The *economic crisis argument* can be regarded as the second kind of explanatory model. It attributes the fertility and nuptiality changes mainly to the deteriorating economic conditions after the breakdown of the centrally planned Soviet economy. In other words: people facing rising risk and costs in terms of unemployment, poverty, inflation, and insufficient and dysfunctional social security and childcare systems are very likely to postpone or abandon parenthood, and to alter their union formation behavior. A third alternative approach characterizes Russia's transition in terms of discontinuity and disorderliness of societal, social, and economic institutions, which caused *social anomie* (Philipov 2003; Philipov and Dorbritz 2003). In other words, individuals experienced an overall feeling of insecurity and a lack of perspective and orientation, which made committing to nuptiality and fertility

decisions very difficult, and in turn led to postponement and avoidance of (marital) partnership formation and parenthood.

These hypotheses remain at the macro level, and do not provide sufficient (mirco-level) explanations for why individuals might choose specific family models under changing societal conditions. Furthermore, they are weakly linked to each other, and do not offer an integration of individual-level explanatory models.

However, to answer the question of why men's fertility and nuptiality patterns altered so drastically in the 1990s, it is necessary to assess Russia's transition as a multidimensional process which influenced individual life courses. These multiple dimensions must be considered theoretically and empirically.

Thus, the first objective of this study is to provide a theoretical framework which offers and links micro- and macro-level explanations of fertility and nuptiality behavior in order to explain Russian male's demographic behavior. The *life course approach* of Elder (e.g. see: Elder Jr. 1978, 1985; Elder Jr., Kirkpatrick Johnson and Crosnoe 2003) and the theoretical approach of Huinink (Huinink 1995b, 2001, 2002a) allow for such an analytical perspective. They connect the individual's demographic behavior to macro-level determinants (e.g., social, economic, political, and institutional changes and conditions), and to micro-level aspects (e.g., individual characteristics, abilities, capital, social networks, and values) and their evolution over time.

Second, the statistical tools used in this study have to be adequate to account for such a theoretical setup. Therefore, event history analysis is the method of choice (see the works of Hoem (1986; 1971), Courgeau and Lelièvre (1992), Yamaguchi (Yamaguchi 1991), Blossfeld, Hamerle et al. (1986), Blossfeld and Huinink (2001)). This method offers a means of modeling and analyzing the impact of various factors on demographic behavior, simultaneously and over time. In other words, event history analysis allows us to see how a particular event (e.g., educational attainment, employment changes) experienced by a man will alter the propensity of occurrence of a fertility or nuptiality transition will occur over his lifetime, i.e., that he will have a child or enter into a first partnership (marital or non-marital).

Event history analysis places particular demands on empirical data. Individuals and an individual's characteristics must be observed over all or parts of his or her life course. Thus, for this study, data were needed that related Russian men's family and fertility

transitions to other individual characteristics, such as education, employment, family background, etc. Data from the Russian Generation and Gender Survey (GGS) of 2004 and from the Russian Education and Employment Survey (EES) of 2005 fulfill these requirements. They are part of the international Generation and Gender Program (GGP). The GGP further entails a Contextual Database, which provides various information on macro-level indicators and institutional settings (e.g., unemployment rates, development of the GDP, family policies and laws, parameters of the educational system). The GGS provides retrospective information on the nuptiality and fertility histories of 7,036 females and 4,222 males[3], and a rich set of variables of other individual characteristics (nationality, mother tongue, family background, etc.). The EES represents a sub-sample of the GGS containing the education, employment and migration histories of 3,995 females and 2,460 males[3].

3.1. Definition of terms

In the following, the term "*Russia*" will refer to the territory of the Russian Federation before and after the breakdown of the Soviet Union. Thus, some republics belonging to the territory of the Soviet Union, but not to the territory of the Russian Federation, are not included in this work.

The term "*Russians*" (Russian men or women) is used for inhabitants of the previously described area, including different ethnic groups. If Russians as a separate ethnic group are examined, the term "ethnic Russians" will be used.

The term "*Eastern Block*" will refer to the previously socialist countries in Eastern Europe (including Russian or the Soviet Union), their successor states, and some of the former Soviet Republics. These states are: the German Democratic Republic (GDR) or East Germany, Poland, Czechoslovakia or the Czech Republic and Slovakia, Hungary, Bulgaria, Yugoslavia, Rumania, Latvia, Lithuania, Estonia, Ukraine, Georgia, and Belarus.

[3] Only valid cases introduced in the empirical analyses were counted. See Chapter V for details.

4. Outline

Chapter II introduces the theoretical foundations for the explanation of Russian males' nuptiality and fertility behavior. First (Chapter II, Section 2), the life course approach will be explained. It allows for an understanding of the ways in which individual lives are connected and constructed through different time dimensions, social circumstances, institutional settings, and personal decisions. Second (Chapter II, Section 3), the life course approach will be applied to demographic processes and further developed in order to draw a coherent micro-macro framework of demographic behavior. Next, theoretical considerations are applied to the subject of the study: Russian men's transition to their first child and to their first union (non-marital and marital). This includes clarifications of the concepts of opportunity structures, individual capital and resources, and individual dispositions, all of which may impede or motivate men's fertility and nuptiality decisions. On the basis of these three aspects, the cost and benefits of fatherhood, of cohabitation and of marriage are discussed (Chapter II, Section 4). Drawing on this discussion, a model of fertility and nuptiality decisions is elaborated. It describes these decisions in the three-dimensional space of resources, compatibility, and perspective problems. Subsequently (Chapter II, Sections 5 and 6), various micro- and macro-level determinants and their impact on Russian men's transition to fatherhood are discussed. By using multiple theoretical approaches, the influence of macroeconomic conditions, of public policies and the welfare state, of values and norms, of men's education, and of males' employment careers will be clarified. Finally (Chapter II, Section 7), the theoretical considerations are summarized, and a theoretical model of Russian men's fertility and nuptiality decisions developed by the author is presented.

Chapter III provides a description of the societal context in which demographic decisions occur. It first offers background (Chapter III, Section 2) about the political development in the Soviet Union and in the Russian Federation, from state socialism to the political system under Putin. Second (Chapter III, Section 3), economic characteristics and their development over historical time, from a state-planned economy to a form of market economy, are presented. The main focus is on economic crises and the development of unemployment and poverty in the Russian population. Third (Chapter III, Section 4), the chapter gives a review of the welfare state and

social policies before and after the collapse of the Soviet Union, i.e., social insurance, poverty relief, unemployment insurance, family policies, and the provision of childcare. Subsequently (Chapter III, Section 5) housing conditions are described. Fifth (Chapter III, Section 6), the educational system in the Soviet Union and in Russia is presented. Sixth (Chapter III, Section 7), the chapter provides a detailed picture of the characteristics and changes in the Russian and Soviet Army. The military has a strong impact on family formation among young males, since virtually all males are obliged to serve in the military. The chapter concludes (Chapter III, Section 7) with a detailed examination of Russian and Soviet gender roles, focusing on husbands and fathers.

Chapter IV reviews Russian nuptiality and fertility patterns based on aggregate data and vital statistics. First (Chapter IV, Section 2), it provides marriages rates, information about marriage timing, and figures on non-marital cohabitations. Next (Chapter IV, Section 3), fertility measures are presented. They contain period and cohort fertility rates, parity-specific developments, and information about fertility timing and non-marital children. In the following section (Chapter IV, Section 4), changes in family formation patterns between 1960 and 2004 are summarized. The last section of this chapter (Chapter IV, Section 5) contains the central research questions of this work, which are formulated based on the considerations and information presented in the previous chapters.

Chapter V introduces the data and methods used in the empirical analysis of the subsequent chapters. It describes (Chapter V, Section 2) the Russian GGS and ESS, and the merging of both datasets. It further provides a brief summary of the Contextual Database of the Generation and Gender Program. Second, it reviews the methods of event history analysis. Competing risk models and models with piecewise linear splines are thereby reviewed in detail. Third (Chapter V, Section 4), the events under study – namely, men's transition to having a first child and the transition to a first marriage or non-marital cohabitation – are defined.

Chapter VI contains the first part of the empirical analysis. Based on the data of the Russian GGS, the sex-specific differences between Russian women's and men's fertility reports are analyzed, since demographic theory suggests that there are systematic differences. In particular, four aspects will be examined: the length of men's and women's fertility life spans, sex-specific age and timing patterns, the

completed fertility and parity distributions of males and females, and their reporting (underreporting) behavior. After a revision of existing studies and theoretical approaches on these issues (Chapter VI, Section 2), the method and models will be presented (Chapter VI, Section 3). In the empirical analyses (Chapter VI, Section 4), fertility aggregated statistics are first compared, with one set of statistics taken from official vital statistics, and the other set drawn directly from the GGS data. Second, simple methods of event history analyses and survival analysis will be applied to the data of the GGS. When summarizing the results (Chapter VI, Section 5), it will be shown that sex-specific fertility differences are much weaker than previous demographic research has suggested, at least in the case of Russia. However, a more important result is that the data quality of Russian males' fertility reports in the GGS is sufficient for further empirical research, as presented in subsequent chapters.

Chapter VII presents the first half of the empirical core of this work. It examines Russian men's first union formation behavior, i.e., the transition to the first non-marital cohabitation, and to subsequent marriage or to the first direct marriage. Thereby, it will be analyzed how age, historical time, the change in societal circumstances (institutional, economic, and social), individuals' educational life course, their occupational career, main activity status and the procreation and birth of an own child determine the decision to enter into a certain partnership. Moreover, the following question will be addressed: To what extent does the rise in non-marital consensual unions alter the character of (marital) union formation in general? First, existing literature on these aspects will reviewed (Chapter VII, Section 2). Drawing on these studies and the developed theoretical approach (Chapter II), detailed hypotheses are formulated, to be validated or falsified in the empirical section. The next section (Chapter VII, Section 3) includes an outline of the statistical model, the selected sample, and a comprehensive description of the covariates used. The respondent's age, educational level, main activity status (occupation, employment, etc.), and fatherhood status, as well as the calendar year, will serve as the main explanatory variables in the model. They are allowed to vary over time (over the life courses of individuals). Religion, ethnicity, the number of siblings, and the region of birth will serve as background or control variables. In addition to addressing the impact of all the introduced covariates, the empirical investigation (Chapter VII, Section 4) disentangles men's transition to first cohabitation or direct marriage, and to

subsequent marriage or union dissolution. Moreover, the central issue is the comparison of all patterns across the period. Subsequently (Chapter VII, Section 5), the results are summarized and interpreted along with the research questions, the detailed hypotheses, the historical time dimensions, and following my formulated theoretical approach.

Chapter VIII follows the structure of Chapter VII closely. It examines Russian men's first procreation behavior and the transition to fatherhood. First (Chapter VIII, Section 2), it reviews existing research on this topic and formulates detailed hypotheses on the influences of age, historical time (the social, political, economic conditions in the society), education, employment or main activity status, and union formation behavior. Second (Chapter VIII, Section 3), it describes the chosen sample and provides a comprehensive outline of the event history and survival models used in the first step of the empirical analyses. Next (Chapter VIII, Section 4), the results for each covariate across different periods are presented. When the impact of marital status is examined, the event history model is extended by piece-wise linear splines. The chapter concludes by reviewing and interpreting the presented findings in the larger context of the formulated theoretical model, the hypotheses and research questions.

Chapter IX presents the results and an interpretation of the results for men's transition to a first union and to fatherhood. The discussion will focus mainly on how the two transitions are interrelated.

Chapter II
Theoretical Foundations of Men's Family and Fertility Behavior

1. Introduction

Demography is the study of demographic processes and events, such as migration, mortality, fertility, and nuptiality. The roots of demography are at the macro level, and its emphasis is on the statistical and numerical description and forecasting of population change and structure. However, demographic phenomena are based on the actions of individuals. This applies particularly to fertility and nuptiality. In explaining demographic developments, the fact that births and partnership formations are outcomes of individual decision-making in specific social contexts must be taken into account (Huinink 1995b: 193). Thus, explaining demographic processes requires the establishment of a micro and a macro level.

Explanations for demographic behavior *can only emerge from a body of explanatory theory: a set of interrelated concepts and positions which specify relevant entities and events, the relationship between them, and the underlying causal mechanisms* (de Bruijn 1999). In searching for theoretical foundations, demography turns to other disciplines, such as sociology, economics, and psychology. The *life course approach* of Glen Elder (1975, 1978), provides a framework for the explanation of demographic events and for the integration of various theories.

In the following, I will provide a general description of the multi-level setup of the *life course approach* and its application to demography and population studies. Subsequently, different theoretical concepts will be embedded in this theoretical framework and be applied to Russian men's transition to the first union and to fatherhood.

2. The life course approach

The life course approach entails multiple levels, from the macro structures and social institutions of society, to the micro experiences of individuals (Elder Jr. et al. 2003).

The *life course approach* develops five paradigmatic principles concerning the interplay of time, societal circumstances, and individual behavior (see: Elder Jr. et al. 2003; Willekens 1999)

1. *The principle of life-span development*: Human development and aging are lifelong processes. Over their whole lives, people may experience fundamental biological, psychological, or social changes in, for example, work orientation. By studying lives over substantial periods of time, our ability to understand the potential interplay between social change and individual development is increased.
2. *The principle of agency*: Individuals construct their own life courses through their choices and the actions they take given the opportunities presented and the constraints of history and social circumstances. Thus the planning and choices of individuals can have important consequences for future transitions and trajectories.
3. *The principle of time and place*: The life course of individuals is embedded and shaped by the historical times and places they experience over their lifetimes. A place possesses features of a geographic location and a specific form of culture. Among other factors, the place can alter the impact of a historical event. The same event or change may differ in substance and meaning across different regions and nations.
4. *The principle of timing*: The developmental antecedents and consequences of life transitions, events, and behavioral patterns vary according to their timing in a person's life. The meaning of an event changes if it occurs too early in time, or too late in the lives of individuals (e.g., leaving the parental home).
5. *The principle of linked lives*: Lives are lived interdependently, and socio-historical influences are expressed through this network of shared relationships. Thus larger social changes affect individuals through their interpersonal context, as new relationships that shape lives and transitions in one person's life often entail transitions for other people as well.

These principles demonstrate that the lives of individuals cannot be analyzed isolated from context. Life paths are outcomes of decision-making processes, which are influenced and embedded in a larger societal context, in social roles, in relationships to significant others, and in specific time dimensions. (Dykstra and van Willens 1999; Elder Jr. et al. 2003) The life course approach distinguishes three inherent dimensions of time (Dykstra and van Willens 1999). 1. *Biographical time* represents the chronological order of events in a person's life, and acknowledges that experiences earlier in life have an impact on choices made later. 2. *Historical time* captures the effect of historical change on individuals' lives. 3. *Social time* reflects the effects of the social age calendar, such as institutions and social norms and values.

The *life course approach* assesses the lives of individuals as sequences of *transitions* and *trajectories*, which represent the long and the short analytic scope. The term *transitions* or events refers to changes of status, role, or identity, both personally and socially. *Transitions* are always embedded in *trajectories* which give them a distinctive form and meaning. "*Trajectories consist of sequences of transitions and can be described as important passages in individuals' lives*" (Elder Jr. 1985). The time between single transitions is known as *duration*. (Elder Jr. 1985)

3. Demographic decisions in the life course

How can the *life course* approach be applied to the analyses of demographic data? Willekens (1999) phrases its basic application as follows:

"Demographic events are milestones in a person's life. In fact, most events that occur between birth and death and that have a notable impact upon a person's life are demographic. (...) These events change a person's situation and may require substantial lifestyle adjustment. They mark transitions between stages or episodes (...)." Willikens (1999: 23)

The objective of demographic life course analysis can be summed up in three principles: 1. to detect patterns in the timing and sequence of life (demographic) events, i.e., identify the life structure; 2. to explain the life structure by identifying underlying elementary processes and their interaction; and 3. to predict or reconstruct life histories from partial observations (Willekens 1999). This approach to

demography goes beyond pure description of demographic patterns. In order to explain why patterns exist, it is necessary to understand (the determinants of) decision-making processes, individual motivations, and their interactions with the societal context.

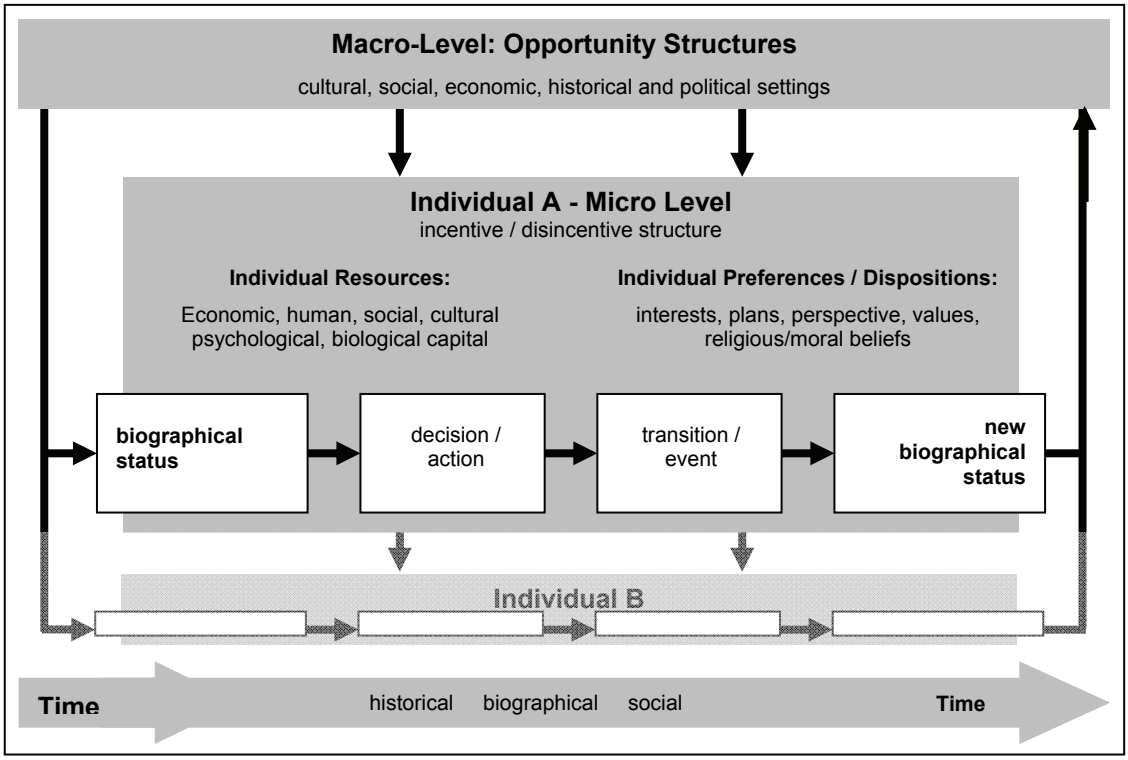


Figure 1: Theoretical outline of the macro-, meso-, and micro-dimension of demographic behavior, following the approaches of Huinik (2001) and de Brujin (1999)

In Figure 1, the theoretical framework based on the approach of Johannes Huinink (2001, 2002b) is displayed. This scheme will be used to explain how macro-, meso-, and micro-level characteristics are interrelated, and how they influence demographic transitions.

At the macro level, the societal structure is defined by specific cultural, social, economic, historical, and political settings. These form the *opportunity structure* of demographic transitions. Macro-level characteristics influence the constraints and opportunities of an individual's decision-making processes. On the other hand, demographic outcomes affect the macro level by altering the composition of populations (age, sex, ethnicity, etc.). The opportunity structure can vary between different countries, political regimes, population subgroups, and, of course, over time.

On the micro level, two kinds of determinants influence demographic behavior. First, *individual resources* enhance or impede demographic behavior. These include economic resources, human capital, social networks, goods, personal and psychological attributes, and abilities. Individuals' resources make demographic decisions "affordable", in verbatim sense, in psychological terms or in terms of pre-requirements. Second, *individual preferences or dispositions* alter demographic behavior according to an individual's plans, interests, perspectives, values, religious attitudes, and moral beliefs (Huinink 2001, 2002b; Huinink and Kreyenfeld 2004). They also shape the personal assessment of the individual's situation and the surrounding opportunity structure.

The meso level covers the individual's relationships with other persons (Huinink 2001, 2002b). These persons can be a partner, a husband, children, family members, or other significant people. Thus demographic decisions are shaped by the individual's interactions with significant others, e.g., within the partnership or the household.

Micro-, meso-, and macro-level structures change over biographical, historical, and social time. Thus opportunity structures and individual resources are assumed to be less stable, whereas individual dispositions and preferences might be more constant over time.

3.1. Demographic processes: The outcome of decisions

"The model of man [male or female, DA] *[...], is a motivated person, principally able – within limits set by uncertainty and biological, environmental and cognitive constraints – to outline her* [or his, DA] *life course by means of the capacity to interpret the world and her* [or his, DA] *own cumulative experiences, and by means of reduction and choices taking up the challenges to deal with whatever resources are scarce and whatever objectives are in high demand. Furthermore, in important aspects she* [or he, DA] *is dependent on others who, objectively speaking, live in an identical, changing and segmented, but not necessarily consistent environment that structures information on which each behavior is based."* de Bruijn (1999)

Demographic events like union formation, marriage, and childbirth can be viewed as the outcomes of individual decisions and choices (de Bruijn 1999; Huinink 1995b).

Every decision occurs under specific conditions, in which the individual is facing certain constraints and options (Huinink and Kreyenfeld 2004). Decisions are determined by the opportunity structure, individual resources, and individual preferences (see above and Figure 1).

To explain and understand demographic actions and choices, we must make some assumptions regarding their logic *(logic of individual actions* or "*Logik des individuellen Handelns*") (see: Huinink and Konietzka 2007). Three major points must be understood:

First: The sense and aim of an action. Individuals usually act to maximize their personal welfare or utility when resources are scarce. Thus, the sense and aims of demographic actions must be understood, e.g. the motivation to form a union formation and to become a parent.

Second: The costs and benefits of an action, such as the cost of union formation, partner commitment, and parenthood. Direct and indirect costs can thereby be distinguished. The investments of resources directly related to the achievement of a certain goal are treated as *direct costs*. On the other hand, *indirect costs* arise from losing other opportunities (*opportunity costs*) and from direct losses (*accompanying costs*).

Third: The context of the individual's action, or the position in the individual's life course, given different time dimensions and the societal context. Depending on the context, demographic transitions can have distinctive consequences for individuals, e.g., parenthood at young ages might negatively affect the individual's education and employment careers, whereas a birth at more typical ages might be less problematic, and be perceived as an important step in an individual's transition to adulthood.

3.2. Application to the subject of study

In this study, the occurrence and timing of family formation among Russian men is analyzed in a changing macro-level opportunity structure, before and after the collapse of the Soviet Union. The course of family formation is conceptualized as the outcome of choice processes in which young adults try to balance their family and fertility life goals with goals and opportunities in other life domains.

The demographic *events* analyzed in this study are the transition to the first child and the transition to the first union among Russian men.

Opportunity structures favor or discourage a certain kind of fertility and nuptiality behavior. On the societal level, the partner market; partnership, marriage, and divorce laws; family and social policies; and alimony regulations affect the economic and legal situation of different kinds of living arrangements.

On the meso level, family-relevant infrastructure, housing conditions and the housing market, the situation on the labor market, socio-cultural norms (e.g., male breadwinner, two-child family), and the embedding in social networks influence family formation behavior. (Huinink 1995b, 1998; Huinink and Konietzka 2007; Klein 1995)

On the *individual level,* economic capital (income), resources, well-being, and time affect fertility and nuptiality behavior. Furthermore, human capital, like participation in and level of education, employment status, and social networks determine the family formation process (Bernhardt and Goldscheider 2001; Callister 1999; Huinink 1995b). Psychological capital, biological/genetic resources, and the achieved biographical status may also be considered (Huinink 2001).

Among *individual dispositions,* psycho-social dispositions towards parenthood and partner commitment are highly relevant. Actor-specific preference structures provide ideals of what goals are important in an individual's life course, such as parenthood and union formation. *Individual dispositions* which influence family and fertility behavior include expectations, orientations, personal interests, plans, subjective needs, and perspectives, as well as values and religious and moral beliefs (Huinink 2001; Huinink and Konietzka 2007).

The goal of the following theoretical discussion is to specify the linkages between an individual's resources, personal characteristics, socialization background, social environment, and nuptiality and fertility behavior.

4. Fertility and family formation in the life course perspective

4.1. Costs, benefits, and motivation of union formation and fatherhood

First, the incentives and disincentives that affect nuptiality and fertility decisions must be clarified. Referring to the "value of children approach" (Nauck 2001; Nauck and Kohlmann 1999), and to the approach of Huinink (2001), the following incentives for childbearing *and* union formation can be identified:

1. *psychic and emotional benefits* from social interaction with the partner and/or children;
2. *socio-normative benefits* from completing the transition from adolescence to adulthood, and fulfilling the role as father, husband, or male breadwinner;
3. *economic benefits* from the children and/or partner, union type (e.g., income, labor, common household); and
4. *assurance benefits* in times of illness or retirement from the children and/or partner.

The disincentives include:

1. *investment costs* (direct costs), such as the partner search, marriage, formation of a new household, and childcare;
2. *opportunity costs*, like the time spent with the partner and on childcare, which cannot be spent in other life domains (labor, leisure);
3. *costs of social control* by the partner and/or children;
4. *negative externalities* from the actions of the partner and/or children; and
5. *separation costs,* which may include the formation of a new household, divorce costs, alimony for partner and/or support for children, psychological costs, and a new partner search.

Which are the most important incentives and disincentives for nuptiality and fertility decisions? In the 20th century, traditional social, economic, and cultural factors lost much of their relevance. Social capital and benefits as provided by the children and partners changed during the process of modernization. They no longer serve as skill- and material-oriented support, but as psychological and identity-sustaining support. (Huinink 1995) Developments of the market and the welfare state have weakened the economic, insurance, and socio-normative utility of childbirth and union formation.

Direct and indirect costs have also changed. Investment costs for partnership formation (e.g., payment of bride money or a dowry) and socio-normative costs (e.g., being single or living in non-marital cohabitations) have decreased (Huinink 1995b), while the direct costs of children have increased. The changed utility of children motivates direct investments in their "quality" and human capital, such as in their education (Becker 1993). Additionally, parenthood causes a wide range of opportunity costs (Lesthaeghe 1998), since resources for alternative consumption and time for other activities are needed for the upbringing of children.

What is left when the "traditional" utility of fertility and nuptiality fades? Johannes Huinink (1995b) emphasizes the emotional utility of the partner and parent roles. The birth of children and partnership formation create a special kind of social capital and emotional utility, i.e., the possibility of non-strategic communication and personal exchange (Huinink 2001). Intimate partnerships and parenthood cannot be substituted by other relationships between individuals, and are especially useful in meeting the need for *dialogic interaction* (Huinink 1995b).

Despite of their common features in terms of the emotional and psychological foundation of individuals, parenthood and the formation of intimate relationships have fundamental differences.

Children are the outcome of unions. Thus they can fulfill needs of personal endearment, emotional interaction, and the feeling of being needed. They promote the development of the parent's personal and social identities, and open new social contacts (Huinink 1995b; Nauck 2001; Nauck and Kohlmann 1999). Investments in children's "quality" can increase these benefits.

In contrast, the essential aspect of an intimate partnership is the "new" self-definition, self-affirmation, and self-actualization of two individuals (Beck-Gernsheim 1986; Berger and Kellner 1965). Needs for *romantic love* as an especially deep, trusting relationship between the partners are fulfilled. Thus *love* and *sexuality* are closely connected (Huinink 1995b). Both non-marital cohabitation and marriage produce this emotional and psychological utility, but are considerably different in terms of costs (e.g., separation, social control) and other kind benefits (e.g., assurance, economic resources, and fulfillment of social norms).

Compared to marriage, cohabitation involves less commitment to the partner. In societal and cultural frames, consensual unions are often weakly legally protected, and

occur outside of the realm of institutionalization and externally validated bonds (e.g., through significant others). This might decrease psychological and economic utility and socio-normative benefits. The decision to marry or to form a consensual union may also be indicative of an individual's bonding disposition, value perceptions, level of satisfaction, assessment of the current situation, and future life perspectives. (Huinink 1995b)

Even if cohabitation in many modern societies is widespread and accepted, demographic research has found that marriage is still an important goal in an individual's life, and is strongly connected to the realization of parenthood (for examples, see: Adler 1997; Dorbritz 2000; Huinink 2002a; Huinink 2002c; Kantorová 2004b; Koytcheva 2006; Kulik 2005).

4.2. Nuptiality and fertility decisions in a three-dimensional problem space

Fertility and nuptiality behavior rests on conscious decisions, i.e., union formation and parenthood are not predefined life aims, and individuals try to combine other life domains within them (Huinink 2002a).

Huinink (1995b, 2001, 2002a, 2002b, 2002c) describes the interplay between the macro-, meso-, and micro-levels of nuptiality and fertility decisions in three basic problems: 1. *the compatibility problem,* 2. *the resource or affordability problem,* and 3. *the perspective problem*.

Perspective Problem: It is assumed that an actor tries to get a reliable picture of the long-term consequences of fertility and nuptiality decisions. Future prospects and plans have to be more or less clear, and a "script of life" might exist. Reliable future perceptions can reduce insecurity of upcoming events. In this regard, Huinink (1995b) speaks of a *perspective problem*. The solution to this problem is an anticipatory perception of the future life course. As long as an individual's perspectives are unclear, fertility and nuptiality decisions occur in an environment of considerable uncertainty and high risk. They may be postponed or completely abandoned.

Resource Problem: An actor tries to assure a fertility or nuptiality decision in terms of expected and necessary resources at the moment and in the future (Huinink 1995b). The solution of the problem is the accumulation of economic, human, social, and cultural capital. It is important that children or partnership formation and maintenance

of a household are affordable, since they provide mainly psychological utility in modern societies (as shown above, Section 4.1.). The availability of resources, i.e., time, income, labor, and household work is a precondition of nuptiality and fertility decisions.

Compatibility Problem: Under the restriction of limited substitutability of the utility of family life and other life domains (market work, leisure, consumption, etc.) one can assume that actors seek to combine family life and competing life domains. If a person has only limited resources (time, money, labor, etc.) to invest, a *compatibility problems* occurs. To solve this problem, the actors need a perception of how different life domains are situated in relationship to each other, i.e., the hierarchy, importance, and parallelism of, for example, family and occupation, status acquisition, and personal bonds in the family, instrumental aims of consumption-oriented welfare production, and personal foundation and self-actualization (Huinink 1995b). Compatibility problems typically occur as opportunity costs, e.g., the costs of childlessness, being single, and distraction from non-family activities like market work, leisure, consumption (Huinink 2001). The *compatibility problem* is strongly connected to the *resource* and *perspective problem*, since sufficient resources and perspectives can decrease opportunity costs.

5. Union formation among men – non-marital cohabitation and marriage

To assess the peculiarity of the three emerging problems, the institutional and instrumental characteristics marriage and non-marital cohabitation have for male individuals must be clarified.

Marriage is a public commitment between two adults, and involves public recognition of the privileged relationship between husband and wife. Marriage as an institution is supported by social norms, religion, laws, and public policies. Almost all religions and conservative traditions sanctify marriage. They promote the establishment and maintenance of family relationships and the expression of love, intimacy, and childbearing within a marital union. Consequently, they discourage sexual intimacy and childbearing outside marriage (Aldous 1983; Bachrach and Sonenstein 1998a)

In contrast to marriage, non-marital cohabitation lacks many of these characteristics, and is seen as a post-traditional kind of partnership. In a broader historical and international perspective, its emergence is not a new phenomenon (Aries 1998; Rindfuss and Van den Heuvel 1990). However, its acceptance changed significantly during the second half of the 20th century, especially in European countries and the U.S. This prompted a large debate concerning the relative characteristics of non-marital cohabitation and marriage.

First, cohabitation may be seen as an *alternative to marriage*. Cohabitation is viewed as a voluntarily chosen partnership lacking a formalized legal structure. This approach assumes that individuals seek an alternative to the traditional institution of marriage, and are actively resisting the standard signification structure, which positions marriage as the only valid option. Individuals may oppose the traditional role models associated with marital unions. Therefore, cohabiting partners more often have egalitarian perceptions of gender roles e.g., in the distribution of labor and household work. Cohabiting women are more integrated in market work, and cohabiting men are more likely to take over household and family responsibilities (Huinink 1995b). Individuals may also choose the "weaker binding option" as a reflection of the increased and diverse risk and uncertainty that they face in their everyday lives (Mills 2000), not just from a short-term perspective, but in the long run (Toulemon 1997).

Second, cohabitation may be seen as the *last stage in the dating process*, as a *trail marriage*, or as a *pre-step to marriage*. Individuals seek to gain information about the marriageability of their partners (Bumpass and Sweet 1989; Oppenheimer 1988), or plan a subsequent marriage. In this case, cohabitation and marriage are not mutually exclusive categories, but cohabitation is the first stage in the process of a marital union formation (Mills 2000).

Third, cohabitation may be viewed as simply a different and deviant union formation. Cohabiters are "*poor marriage material.*" According to Booth and Johnson (1988), they are more likely to have personality problems, have unstable employment patterns, and display a general disregard for conventions. This normative interpretation of cohabitations may fail if many first relationships in a society and during a period of time are cohabitations (Mills 2000).

Fourth, Huinink (1995) proposes a time-dependent approach within the life course perspective. It integrates most of the discussed aspects because cohabitation can have

different meanings over the course of an individual's life. It provides an intimate partnership in life stages of uncertain perspectives, insufficient resources, and when the dating process is unfinished. Thus, cohabitation functions as a *temporary alternative* in life stages when marriage is not attractive or possible. This approach explains why marriage might be still a important life goal in modern societies, why non-marital relationships are less stable, why they are transformed into marriages, and why marriage is postponed into higher ages (Huinink 1995b).

5.1. Determinants of union formation behavior

Empirical and theoretical research on union formation behavior found a wide set of determinants. They can be identified as macro-/meso- (*opportunity structures*) and micro-level factors (*individual resources* and *individual preferences*).

On the macro and meso levels, I will refer to approaches which explain the influence of societal, cultural, social, economic, and political conditions on an individual's nuptiality behavior. On the micro level, theories about relevant actions concerning human capital and economic resources will be used.

5.1.1. Macro economic conditions

Macro-economic conditions—e.g., average wages, the Gross Domestic Product (GDP) and unemployment rates—have been found very useful in explaining the marriage patterns of males (Oppenheimer 1988; Oppenheimer, Kalmijn and Lim 1997; Rodgers and Thornton 1985). Especially in societies where the husband's economic role in the family remains of fundamental significance (as the male breadwinner), the timing and chances of young men's successful transitions to stable work careers and income levels are the major underlying factors of marriage decisions. Economic cycles, crises, and rapid changes in the labor market strongly influence economic prospects and job opportunities; thus macro-economic conditions particularly affect the resolution of the *resource* and *perspective* problems of union formation.

Deterioration in the labor market position of young males might be *the* explanation for the postponement or avoidance of marriage. Trends and differentials in women's

marriage timing have primarily been a function of young men's economic characteristics and job prospects (Oppenheimer 1988). According to Easterlin's (1987) approach on relative income (for a more detailed discussion see Section 6.1.5. in this chapter), economic pressure and low relative income make marriage less likely, hence individuals experience *relative deprivation* in their economic well-being. This particularly applies to traditional frames, in which males have to serve as the main breadwinner in the family. Post-traditional settings may weaken the impact of men's economic situations and of *relative deprivation*, since women also provide the economic resources and prospects necessary for a marriage. However, in more modern frames, economic crises hit both sexes (Pampel and Peters 1995), so that marriage conditions worsen for both sexes.

The correlation between macroeconomic factors and the likelihood of non-marital cohabitation is ambivalent. There are reasons to believe that the previously discussed arguments are also valid for cohabitations, since the formation of a common household is costly regardless of marital status. However, due to the lower level of commitment (emotional and economic), the less traditional role models, and the lower investment and separation costs involved, cohabitations are less sensitive to economic changes (Oppenheimer 2003). In times of general insecurity, living together may serve as an alternative to marriage, temporarily or in the long run (Kravdal 1999).

Even if mechanisms on the micro level are responsible for the described interrelation, a general feeling of insecurity and a lack of prospects due to economic crisis may itself promote the postponement or avoidance of nuptiality decisions.

5.1.2. Public policies, welfare state

Public policy, welfare state politics, and social security programs are able to level the consequences of *resource, perspective,* and *compatibility problems*. These factors greatly influence the choice between marital and consensual unions, in terms of economic advancement, juristic institutionalization, and social acceptance. The development of a welfare state can also free individuals from social control exercised by families and communities (van de Kaa 2001).

Family and social policies are country-specific outcomes of historical and cultural developments. They reflect norms and societal values on nuptiatiliy choices (Barlow

2004; Barlow and Probert 2004). Traditional marriage may be becoming less important in *social* terms, but the extent of *legal* restructuring away from marriage – what Théry (1994) has termed *démariage* – differs from country to country. Some societies continue to maintain marriage as the sole trigger for legal rights and responsibilities between men, women, and children. Others have created formal alternatives to marriage, while still others have conferred rights (and imposed responsibilities) on couples who have not formalized their relationships (Barlow and Probert 2004).

Welfare states can promote the institutionalization of a partnership by giving economic incentives. These can take the form of special taxes, social benefits, housing regulations, and direct payments, which may ease resource and perspective problems.

In addition, the juristic status of a union is regulated by the state. Traditionally, a marriage not only implies stronger commitment between the partners, but also legal recognition of the partnership by the state. This step usually entails the acceptance by the spouses of various rights and obligations, such as community property rights, succession rights, social security/insurance and pension rights, legal rights related to joint custody, and adoption rights. Marriage automatically assigns men to their biological children (Barlow 2004), whereas unmarried fathers must acquire the legal parental status by official registration procedures.

The separation and divorce costs associated with cohabitation and marriage are also important issues within welfare state regulations. Whereas unregistered non-marital cohabitations usually bear low institutional and economic separation costs, marital divorce must be registered by mutual agreement, handled by courts, and can result in high economic costs and losses (Barlow and Probert 2004; Huinink 1995b).

5.1.3. Values and norms – the Second Demographic Transition approach

The question of how societal values and norms influence union formation patterns is assessed in the Second Demographic Transition (SDT) approach by Lesthaeghe (1992) and van de Kaa (1987), and in their description of broadly similar fertility and nuptiality changes in the industrialized world, i.e., declining marriage rates, increasing divorce rates, emerging non-marital cohabitation, and decreasing birth rates (below the replacement level).

The underlying assumption of the SDT approach is that many industrialized countries have experienced deep social, cultural, and ideational changes (van de Kaa 2001), which have, in turn, altered demographic behavior. Referring to the changing value approach of Inglehart (1977) and his concept of shifts from *materialism* to *post-materialism*, van de Kaa (1987) argues that most European societies have experienced a fundamental shift from *conservatism* (*materialism*) towards markedly greater *progressiveness* (*post-materialism*)[4]. *Progressiveness* characterizes a tendency to embrace the new, look critically at the present, and largely disregard the past. *Conservatism* characterizes the converse tendency to stress the value of customs and tradition and oppose changes.

Concerning marriage and cohabitation behavior, van de Kaa (1987) diagnosed

---

"...a shift from the golden age of marriage to the dawn of cohabitation, and a shift from uniform to pluralistic families and households."

The *individualization of the life course* and *pluralization of life forms* go hand-in-hand with this value change. Traditional marriage loses its institutional and normative character, alternative forms of partnerships emerge, and the role of men and women in unions change. Timing, age, and sequencing norms getting weaker, and nuptiality careers become more diverse (Huinink and Wagner 1998; Strohmeier 1993).

What do such developments mean for a male's role in the family, and his motivation to form a certain kind of union?

Before the SDT, in conservative societal settings with weak individualization and pluralization, marriage should be regarded as the desired type of union formation. This would also imply traditional gender roles and work arrangements (Huinink and Wagner 1998), i.e., with men as the *main breadwinner* in the family, and women responsible for domestic and family tasks.

After the SDT, higher levels of individualization and pluralization should be prevalent. Alternative kinds of unions, e.g., non-marital cohabitation, living-apart-

[4] For a detailed description and conceptualization of the terms modernism and post-modernism, materialism and post-materialism, and their impact on family and fertility behavior see: van de Kaa, Dirk (2001): "Postmodern fertility preferences: From changing value orientation to new behavior", Population and Development Review.

together (LAT) or single living arrangements, should become more generally accepted. This decreases the normative character of marriage as a universal life aim of individuals and as a normative institution. Traditional role models in partnerships may also lose their strength (Huinink 1995b, 2002c; Huinink and Wagner 1998; van de Kaa 2001). Thus, male breadwinner perceptions may be replaced by more egalitarian partnership setups, like dual-earner strategies. Both partners actively participate in the labor force, and household and family work is more equally distributed between men and women.

Before the SDT, the solution of the *resource* and *perspective problem* is crucial, since males have to secure their position as the *male breadwinner* before forming a union, which should be a traditional marriage. Conversely, more progressive conditions during and after the SDT may weaken the importance of *resources* and future *perspectives*, since alternative kinds of unions become available. However, at the same time *compatibility* problems may be enforced, based in egalitarian and/or competing living arrangements.

Accordingly, van de Kaa (2001) shows that the probability of marrying is negatively correlated with progressive, post-materialist, and post-modern value orientations.

5.1.4. Males education – institution and level effect

The educational careers of men is one of the most important micro-level determinants of nuptiality behavior. It is an indicator of human capital, earning potential, and social stratification. The effect of education has two aspects. *First*, participation in education has an institutional effect. *Second*, the level of education measures human capital and future job prospects. (Huinink and Kreyenfeld 2004)

The *institutional effect* of education suggests that participation in education hinders union formation, but promotes the formation of partnerships with a relatively low level of commitment and rather short-term perspectives (Huinink 1995b). This particularly applies to participation in school education (primary and secondary education). Thus, during education the formation of non-marital cohabitation is more likely than marriage (Blossfeld 1995; Hoem 1986). This is also because education mainly occurs in life phases when males are legally not marriageable.

There are several reasons for the institutional effect. First, during education the majority of young males still live in a common household with their family of origin. The formation of their own household would require relatively high investments of material resources, which may be very scarce or simply not available (*resource problem*) (Huinink 1995b). Second, the major part of primary and secondary education occurs at teen and adolescent ages, when emotional and psychological orientations are settled, and when biographical opportunities are open. Union types with high commitment, investment costs, and social control are unattractive during periods of education. They would produce high opportunity costs, e.g., for future partner search, leisure, and consumption (*perspective and compatibility problem*) (Huinink 1995b). Third, the successful completion of at least school education marks a very important step in a male's transition to adulthood. Being out of education is generally a precondition for nuptiality decisions (Thornton, Axinn and Teachman 1995). Marriage, in particular, is frequently viewed as an adult status which is incompatible with the role of a student. Quitting education might be a solution to this problem, but would entail high opportunity costs. Fourth, male breadwinner perceptions make men in education unattractive marriage partners because of missing reliable material resources and insecure job prospects (*perspective problem*) (Huinink and Mayer 1995).

For explaining the *level effect of education,* the household economic approach of Becker (1993) provides a rich framework. Its crucial assumption is that a man and a woman economically benefit from forming a common household. They increase the utility of their household production by specializing in traditional sex-segregated work. While females are assumed to work in the non-market sector of family and household, males exclusively concentrate on market work and income. The economic theory supposes that the utility of this specialization is so high (eases *compatibility, resource,* and *perspective* problems), that individuals choose relationships with traditional gender-specific work division, i.e., marital partnerships.
If specialization is assumed, the household utility further increases if males are highly educated, since income and labor market perspective are strongly positively correlated with education. In this regard, highly educated men should be more likely to marry than their less-educated counterparts (Becker 1993), since they benefit the most from

traditional work arrangements. By contrast, less-educated men may form less traditional unions, i.e., cohabitations. The blind spots in this argumentation are that only instrumental and purely economic decisions are considered, and that sex-segregated work arrangements are regarded as the only option for increasing the couple's welfare production.

However, solutions of education related to *compatibility* and *perspective problems* are ambivalent.

On the one hand, men with higher levels education are able to allocate sufficient resources to their partnership, as well as to competing life domains. On the other hand, higher education generally opens a wider range of life opportunities (e.g., job prospects) which may compete with union formation. Thus, the opportunity costs that may arise include: 1. time spent with the partner or on household work, which is not available for other activities (leisure, consumption, education, or work); and 2. negative externalities of social control within the partnership, which hinder mobility and individual freedom of choice (Huinink 1995b). Traditional role models as ascribed to marriage may weaken the first kind of opportunity cost, but increase the second kind. Conversely, non-marital cohabitation decreases the costs arising from commitment, but increases costs of the first kind.

Higher education also reduces insecurity of future life *perspectives*, particularly in terms of employment and income. Nevertheless, as with the compatibility problem, *perspectives* become more complex, and the opportunity costs of choices rise as the number of choices increases.

Both the *institutional effect* and the *level effect* of education are shaped by an underlying age effect: simply, that the probability of union formation and/or marriage increases with growing age.

Individuals are older with longer participation in the educational system. This implies that highly educated persons are necessarily older than their less-educated counterparts when leaving educational institutions.

This may lead to two kinds of effects. First, even if union formation during education is unlikely, highly educated individuals may have higher risks for these events. Second, after finishing higher education, the probability of union formation should be

higher among these individuals than among those with lower levels of educational attainment due to a "catch-up" effect.

5.1.5. Men's employment status

A major part the discussed effects of education are linked to its implications for future job prospects, therefore education is seen as an indirect measure of economic prosperity and the human capital of men. Men's employment status covers this effect in a more direct way, and has additional meaning for the transition to adulthood and future life prospects. Demographic literature generally agrees that a man's economic position has a strong effect on his union formation behavior (Oppenheimer 1988, 2003; Oppenheimer et al. 1997).

Full-time work, stable employment, and high job status can resolve significant parts of the *resource* and *perspective problems*. Stable income and economic security promote the formation of a union, since marriage becomes affordable and the economic future appears less uncertain (Huinink 1995b). The principles of household economics suggest that marriage may have positive impact on the utility and resources of a couple when strict sex-specific work specialization in the household is considered (Becker 1993). Thus, employed men gain more from a marriage than from being single or living in non-traditional partnerships, e.g., cohabitations.

Labor force participation is an important part of a man's role as an adult person and as a full member of society. The transition from the end of education to the labor force is particularly important. This entry into a "new" life phase is strongly connected with perceptions of one's own adult status, self-esteem, self-sufficiency, and social image. Completion of education may promote the feeling of being "ready" for other important life decisions (Bandura 1997; Huinink 1995b; Oppenheimer 1988, 2003; Rotter 1966), such as the formation of an independent household, moving in with a partner, or marriage. By contrast, labor market failure and long phases of insecurity during this phase can cause postponement or avoidance of nuptiality decisions (Oppenheimer et al. 1997). Because of the differences between marriage and cohabitation (as shown in Section 4.3.1. in this chapter), this weaker applies to non-marital consensual unions (Thornton et al. 1995).

Opportunity costs of the nuptiality decisions of employed and non-employed males can be treated similarly to opportunity costs by educational level. Men have to decide whether to invest time in labor, household work, a partnership, or other life domains. It can be assumed that time not spent on labor is more limited and more costly for employed men than for non-employed men. One way to weaken the *compatibility problems* that may occur is traditional sex role segregation in the partnership, usually attributed to marriage. This would free employed men from household- and family-related work. The other solution is to choose a less committed type of union which is not as time-consuming and is less likely to hinder job mobility and independent decision-making processes (negative externalities of social control), i.e., non-marital cohabitations.

5.1.6. Fatherhood

When discussing the effect of fatherhood on men's union formation behavior, the argumentation is necessarily restricted to single men or males living in a non-marital consensual union. The questions of interest include the following. Does (anticipated) fatherhood motivate single men to marry or to form a consensual union? Are non-marital cohabitations transformed into marriage if procreation/conception occurs?
Traditional family norms and values may be the most important factors facilitating a marriage after procreation or birth, in order to "legitimate" the child within a marital union. This can result in so-called "shotgun marriages." Religious beliefs and societal traditions, in particular, may push individuals to bear children in a marital union. Deinstitutionalization of marriage, individualization, and pluralization of union formation (Huinink 2002c; Huinink and Wagner 1998) weaken this link, since other partnership forms become available and accepted, including for the socialization of children. Accordingly, the interrelation between procreation or childbearing and marriage decisions is an accepted indicator of societal and individual progressiveness. Changes in this interrelation - i.e., the decoupling of procreation and marriage - used to indicate shifts from traditional and conservative values to more modern values, or the onset of the SDT (Lesthaeghe 1992; van de Kaa 1987, and see Section 5.1.3. in this Chapter).

Another motivation for union formation among men after childbirth might be the desire to create a stronger link to their biological offspring. Because children usually remain in the mother's custody when parents stay single, the father's access to his children depends on the continuation of the relationship to the mother. Union formation commits males to their partners and to their offspring. Therefore, marriage provides a way to be (easily) legally associated and registered as a father (Thomson et al. 1998). The higher the level of commitment of a relationship, the more it provides secure prospects concerning child contact, and thus access to the emotional utility of fatherhood. Both aspects (legal and psychological) might encourage fathers to marry rather than enter into or remain in consensual unions.

Furthermore, children provide a source of social capital by creating a web of new ties with kin and other parents and institutions, and by marking the transition from adolescence to adulthood (Huinink 1995b; Schoen et al. 1996). Thus, children by themselves may enhance the probability of union formation and/or marriage among men.

Fatherhood not only enhances the probability of union formation, but may also decrease it. In what has been called the "hit-and-run strategy," young men may break up a relationship immediately after being informed of an unwanted pregnancy. This particularly applies to socially and economically disadvantaged men in dating or visiting unions with low levels of commitment. They may deny any kind of responsibility for child and mother, since responsible fatherhood would be likely to damage their future prospects and available resources. Men's uncertainty about paternity might be another reason in dating and visiting unions to avoid any kind of cohabiting union formation with the mother. (Thomson et al. 1998) An unwanted pregnancy can, in the latter situation, increase the risk that an existing union, especially a non-marital cohabitation, will end.

In addition to these motivational aspects, selection effects must also be taken into account. Planned pregnancies might occur among already very committed, but not cohabiting, couples who may be very likely to form a union in any case.

6. Transition to fatherhood and its determinants

The theoretical discussion of fertility behavior in the final decades of the 20th century was shaped by the question: Why are birthrates throughout Europe and other modern societies declining below the replacement level and stay there? Theoretical and empirical approaches dealing with this issue mainly focus on women's fertility behavior and its determinants. In the following, I will emphasize men's contributions to fertility decisions. In the process, opportunity structures, i.e., public policies and economic conditions; as well as individual characteristics, i.e., human capital and marital status; will be examined and discussed.

Fertility behavior is often directly connected to nuptiality decisions, and the transition to fatherhood commonly requires the existence of a union. However, within fertility decisions, *perspective, resource* and *compatibility problems* gain even more importance (Huinink 1995b).

6.1.1. Macroeconomic conditions

Changes in macroeconomic conditions have left their mark on childbirth behavior throughout the world. Economic developments on the macro level shape the societal opportunity structures, which in turn affect the occurrence and timing of the individual's fertility decisions. Thus questions concerning the affordability of children and the degree of certainty about the future life course (Huinink and Kreyenfeld 2004), which translate into the *resource* and *perspective problems* of the transition to fatherhood, have become increasingly important.

The approach of Easterlin (1961, 1971, 1987) relates economic changes on the societal level to fertility outcomes. The *relative income hypotheses* of Easterlin (1987) states that fertility decisions depend on the *relative income* of individuals. Two main factors influence these decisions: the *expected real market income* and individual's *economic aspirations*. While the real market income is directly connected to the situation on the labor market (job and income prospects) and to the economic conditions of the society, economic aspirations are formed during the socialization process, i.e., by the economic situation of the family of origin and by societal economic conditions during childhood and adolescent years. Based on these assumptions, Easterlin (1987) argues:

"*The same absolute income may look quite different to two couples with substantially disparate 'economic' socialization experience.*" Easterlin (1987: 41-42)

The arguments can be summarized as follows: at times when their income is declining or relatively low relative, labor market conditions are poor, or the economy is in recession or crisis, individuals will feel more economic stress and will be less prone to become parents (Easterlin 1987) because they are trying to maintain consumption and living standards similar to those they were raised in (Lesthaeghe 1998; Pampel and Peters 1995). In such cases, Easterlin speaks of *relative deprivation* (Easterlin 1961, 1971, 1987).

Easterlin's argumentation particularly applies to men, since he assumes a sexual division work between family and the labor force (Pampel and Peters 1995). The man's recent income experience and expectations shape the assessment of the couple's earnings prospects, and thus influences fertility decisions. However, with rising labor force participation and increasing incomes among females, the role of the male's earnings diminishes. A man's economic situation and prospects may no longer be the core economic determinants in a couple's fertility decisions (Pampel and Peters 1995).

The approach of Easterlin (1961, 1971, 1987) explicitly considers changes of cohort sizes, their impact on economic cycles, and their effects on fertility behavior. However, they can be applied to link economic changes on the macro level and fertility developments in general, regardless of whether their origins are wars, economic recessions, or political changes.

6.1.2. Public policies, family policies and welfare state

As an important part of an individual's opportunity structure, public and family policies influence the direct and indirect of costs of having children, and a man's incentive structure.

Generally, welfare regimes and their implications for fathers can be classified by their breadwinner typologies. They can either promote traditional male breadwinner frames

or motivate more egalitarian role models. This also relates to the question of whether policy regimes influence the realization of fatherhood in marital or in non-marital unions (Hobson and Morgan 2002).

There are different dimensions to consider when constructing a fatherhood regime typology: first, a man's rights to form a family, or the level of decommodifying social policies (Esping-Andersen 1999) that weaken a man's dependence on the market; second, a man's capacity to re-partner given his economic obligations to his children (Olah, Bernhardt and Goldscheider 2002); and, third, a man's rights to custody and to care for his children (Hobson and Morgan 2002).

The typology can be condensed to the dimensions of cash and care. The cash nexus covers policies concerning the following: economic obligations, transfer payments, subsidies, tax benefits, and individual income and social security. The care dimension covers policies regarding parental leave, care obligations, custody rights, and access to public childcare institutions (Hobson and Morgan 2002).

Taking into account these general differences, strong and weak male breadwinner regimes can be distinguished. *Strong male breadwinner regimes* are characterized by marginal involvement of men in unpaid care work, by the emphasis on moral framing and penalizing absent and marginalized fathers, by the man's normative role as the sole family provider, by the low labor market participation rates of females and mothers, and by strong obligations of divorced fathers and rigid restrictions on men's rights to joint custody (Hobson 2002). Furthermore, in terms of the classic welfare state typology of Esping-Andersen (1990, 1999), weak decommodification of men in the labor market and weak defamilialization of household and parenthood tasks characterize this traditional frame of welfare policies.

Weak male breadwinner regimes are characterized by the following: two-earner families, increased labor force participation of women, growing involvement of males in unpaid care work, weaker economic obligations for fathers after divorce, strong rights of custody for their children, and proactive family policies (Hobson and Morgan 2002). According to the typology of Esping-Andersen (1990, 1999), in these progressive regimes men and fathers should be less dependent on the market and on the family (higher decommodification and defamilialization).

Policy regimes with a strong emphasis on traditional male breadwinner roles should increase the importance of economic *resources* and *perspectives* when fatherhood is

anticipated, because they are the sole triggers of family and child well-being. *Compatibility problems* may arise from missing childcare institutions and a lack of social policies freeing men from the market dependence. However, traditional policy frames may encourage sex-segregated work arrangements in the family and in the market, which can resolve parts of the *compatibility problem* (see Chapter 5.1.2 and Huinink 1995b, 2001).

On the other hand, policy regimes with weak male breadwinner orientations may serve to reduce *resource, perspective,* and *compatibility problems*, since the welfare state amplifies a more equal distribution of responsibilities for market work, childcare, and household tasks between men and women, and might take over important parts of the provider role when resources and prospects are not sufficient or are insecure. The less traditional regimes promote active fatherhood (involving them in childcare and household tasks) (see Section 5.1.2 in this Chapter and Huinink 1995b, 2001).

6.1.3. Societal values and norms – the Second Demographic Transition

The SDT approach (Lesthaeghe 1992, 1998; van de Kaa 1987) takes into account the impact of norms and values on male fertility patterns. Its basic idea is that decreasing fertility in most European countries is the result of changes in the value orientation of individuals – from modernism to post-modernism, from materialism to post-materialism, or from conservatism to progressiveness (Inglehart 1977). This has led to an erosion of authority and moral supervision of secondary groups, like churches, labor unions, and political parties. Increased freedom of choice and a growing number of options for individuals, the spread of pluralistic ideas, increasing gender equality, and the emancipation of minority groups in the population are the results of this development (Lesthaeghe 1992; van de Kaa 2001). On the other hand, people are confronted with various dilemmas when making fertility decisions, since *resources*, *perspectives,* and *compatibility problems* are reshaped (see also Section 5.1.3. in this chapter). Thus the spread of efficient contraception is the key factor in the occurrence of the SDT (van de Kaa 2001: 301). Its crucial dimensions are the

"...shift from the era of the king-child with parents to that of the king-pair with a child. Shift from preventive contraception to self-fulfilling conception. Shift from uniform to pluralistic families and households" (van de Kaa 1987: 11).

The SDT approach is mostly gender blind. However, it can be enhanced by a sex-specific perspective suggested by Bernhardt (2004). Generally, increases in divorce and cohabitation, as claimed by the SDT, make the father-child relationship much more complex, since fatherhood is no longer necessarily bound to the institution of marriage, and births out of wedlock are more common and accepted. More men may be "responsible fathers" (Kaufmann 1990)[5] and take up active parental roles, e.g., childcare (Bernhardt 2004). Since a main driving force behind SDT is assumed to be rapidly growing numbers of women entering higher levels of education and the labor force, this also implies that the dominance of male-breadwinner frames, with traditional sex-segregated work arrangements in society and in the family, diminishes. This has certain implications for the fertility decisions of men. The allocation of sufficient *resources* is very important in conservative frames, since males are assumed to be the main providers of income in the family. Consequently, fatherhood decisions may be postponed or abandoned when the resource problem cannot be resolved. The same applies to the men's future *perspectives*. This influence should be weaker as a value change towards greater progressiveness occurs. More egalitarian gender roles may also weaken men's perspective problems, since the family could rely on the labor of men and women. On the other hand, with an increase in the individual's freedom of choice and options (for both genders) the *perspective problem* might even double, and the transition to fatherhood becomes more problematic (Huinink 1995b).

[5] "Responsible fatherhood" increases the relevance of a norm on parenting and aspirations on "children's quality." Johannes Huinink argues: "*(...) an increasing number of parents want to be sufficiently sure that they can afford fulfilling their parental aspirations in a long term perspective – without losing to many opportunities to satisfy needs and desires in other life domains. (...) They decide on when and whether to enter parenthood to optimize it's expected psychological benefits. They might plan only to postpone the birth of a child avoiding the long-term commitment unless they are rather sure about their future life perspectives and waiting until they think they can afford to take the responsibility raising a child."* (Huinink 2001: 12)

The most important distinction between progressive and traditional frames is based in their implications for *compatibility problems* between fatherhood and other life domains, i.e., market work, consumption, leisure, etc. The solution of the *compatibility problems* in conservative settings lies in traditional sex-segregated work arrangements of marriage. This setup enables men to combine work and fatherhood aspirations. On the other hand, a growing number of, and easier access to, alternative life domains, more egalitarian partnership perceptions, and values of self-fulfillment attributed to post-traditional frames strongly increase *compatibility problems*. Consequently, the opportunity costs of a decision for fatherhood grow.

6.1.4. Men's education

Generally, the relationship between education and fertility behavior is one of the most intensively discussed topics in demography, largely because increases in levels of education among women are found to be related to decreasing fertility all over Europe. However, the effects on men's fertility behavior are significantly different. It has already been mentioned that education has an *institution effect* and a *level effect*. They operate similarly in nuptiality and fertility decision-making, but gain even greater importance at the transition to parenthood (Huinink 1995b). I am not going to repeat the detailed discussion of Section 5.1.4. in this chapter, but refer to the important differences.

The *institution effect* of education on men's fertility transitions is based in the incompatibility between educational participation and fatherhood. There are several reasons for this, and they most strongly apply to basic school education – given that young men already reached their fertile ages. The ability to allocate and accumulate sufficient *resources* to afford to have a family during education is highly restricted. Since having children causes higher and longer lasting costs than union formation, the solution to the *resource problem* is even more problematic (Huinink 1995b, 2001).
The *perspective problem*: The birth of a child produces a high level of commitment between the partners, and binds the child to the parents, and vice versa. These bonds cannot be easily dissolved, as in the case of marriage or cohabitation. The parent status is lifelong. Thus, fatherhood causes psychological, social, legal, and economic

responsibilities. Anticipation of these aspects is necessary for the male's fertility decisions. Especially when participating in the educational system, making predictions about future circumstances might be difficult, since final educational degrees have not yet been obtained, job opportunities are unclear, and the partner search is not finished (Huinink 1995b).

The *compatibility problem* between fatherhood and the educational system adds to the effects. The socio-normative role as a student makes a transition to fatherhood very unlikely. Usually students are not perceived as adult members of the society, and therefore lack the attributes which qualify them for father roles. This particularly applies to men in school education.

The *level effect of education* is based on the association between fertility decisions and the accumulation of human capital, and the time spent in the educational system (see Section 5.1.5 in this chapter).

Resource and *perspective problems* are easier to solve with higher levels of education. According to economic approaches, a male's education can be directly linked to his economic prospects, income, and job chances (Becker 1993; Ott 1998). High levels of education increase income and job prospects, and therefore should enhance the transition to fatherhood.

The implications of the educational level for the *compatibility problem* depend to a great extent on the level of traditionalism in partnerships and in the society. Especially in progressive frames, it is true that highly educated male individuals are often reluctant to become fathers because of their access to alternative life domains, job mobility, and perceptions about the *quality of children* (Becker 1993 and see Section 5.1.5. in this Chapter) (Olah et al. 2002). These men might have difficulties in resolving the *compatibility* of work, engagement in other activities, and parenthood (Huinink 2001:8: 8), and thus choose to forego fatherhood. The underlying assumption is that having children entails *opportunity costs* of involvement in household and family tasks, i.e., time, income that is not earned, and income which cannot be spent on other life domains (Becker 1993). The costs of fatherhood are usually higher for better-educated men than for their less-educated counterparts because they have more to lose. Thus human capital (education) is regarded as a proxy for potential income and job status. On the other hand, better-educated males

might have resources that allow them to respolve compatibility problems, e.g., "buying" child care services from the market.

6.1.5. Men's employment status

Major parts of the arguments used to explain educational effects can also be applied to the employment effects on a man's transition to fatherhood. It was already shown that a man's economic position is a key variable in his nuptiality behavior. Demographic theory suggests that it is even more relevant for fertility decisions, since the father's connection to his children is often portrayed as chiefly financial. In the majority of fertility-related studies, fathers are inexorably associated with providing (in an economic sense), and their job-induced absence is considered normal. Even if new roles of fatherhood emerge throughout Europe, the birth of children is associated with a man's fulfillment of the family provider role (Cohen 1993).

The resolution of the *resource* and *perspective problems* of the transition to fatherhood is directly influenced by job security and income. According to Easterlin (1971, 1987), the risk of *relative deprivation* (see Section 5.1.1. in this chapter) decreases with men's growing economic resources and improving job status, which, in turn, increase the likelihood of the transition to fatherhood. Drawing upon the household economic approach of Gary Becker (Becker 1993), fertility and employment status are linked via perceptions of the cost of children, forgone opportunities, and produced benefits. In this regard, the likelihood of a transition to fatherhood increases with rising job status and income. Becker's notion of *children's quality* might weaken this relationship. It is assumed that aspirations concerning children's education, living standards, future prospects, and consumption rise with income, and might lead to a reduction in the number of children. It is not clear whether this also decreases the probability of fatherhood in general.

Easterlin's and Becker's approach explains men's fertility decisions in traditional male-breadwinner frames. In progressive frames, resources and perspectives are less pre-defined. Huinink (2001) argues that if people want to have both a family and a rewarding work experience, it might be rational to reduce uncertainty concerning the future life course by ensuring stable economic prospects for *both* partners (Huinink

2001). Thus the *resource* and *perspective problems* for men might be weaker, and can be eased by the labor force participation of their partner.

This argument leads directly to the question of *compatibility* of fatherhood and working life. Whereas it is assumed that this problem usually does not occur in traditional frames, it is particularly important under post-modern conditions. Again, the argumentation considers the opportunity costs of fatherhood (see Sections 6.1.4, 5.1.5, and 5.1.6 in this chapter), which are assumed to hinder fertility decisions of men.

It has already been mentioned that a successful entry into the labor market is a very important step in the lives of young males (Huinink 1995b). Starting work marks the transition to adulthood for the individual himself, and for the social environment. It influences self-perceptions, self-esteem, self-sufficiency, and the general "masculinity" of young men (Bandura 1997; Rotter 1966). Entering the workforce thus promotes the feeling of "being prepared" for the role as a father in psychological, social, and economic senses, and enhances the transition to fatherhood (Hobson 2002).

6.1.6. Union formation

The demographic key parameters of unions are institutionalization, co-residence, and union duration, which are associated with the partners' strength of commitment, internal communication, emotional and economic utility, power relationship, social embeddedness, individual dispositions and resources, and sexual intercourse (see Section 5 in this chapter). Each of the dimensions has distinct influences on the fertility outcomes within the union (Thomson et al. 1998).

Partner commitment was already stated to be of strong positive impact on fertility decisions.[6] Commitment is regarded as voluntarily given in marital and non-marital partnerships, but there are indications (see Section 5 in this chapter) that marriage might involve higher levels of commitment because its institutionalization and social embeddedness may limit to some degree the ease with which the bond may be broken.

[6] In the following theoretical considerations, only conceptions after union formation are taken into account, since the aim is to explain the influence of union formation on the probability of a subsequent transition to fatherhood. The opposite case of conception before union formation is evaluated in paragraph 5.1.6.

The degree of commitment is likely to be associated with the level of investment in relationship-specific capital (economic and non-economic, including a shared flat, love, human capital, and social relationships) (Thomson et al. 1998). At the same time, increasing resources within the partnership should enhance the level of commitment.

Besides shared resources and investments in a partnership, commitment implies a shared understanding of the future, and it is likely to facilitate communication and emotional intimacy, as it refers to perceived closeness between the partners (Huinink 1995b; Thomson et al. 1998). In particular, the sexual aspects of the relationship are assumed to improve as a result of communication and intimacy, and may therefore increase the probability of men's transition to fatherhood (Thomson et al. 1998). Especially communication about future life aims, sex, pregnancy, and contraception should provide a strong basis for fertility decisions.

The different influences of non-marital cohabitation and marriage formation on the probability of fatherhood also depend on their varying levels of institutionalization, social embeddedness, and acceptance. To the extent that progressive non-marital cohabitations increase and replace traditional marriages (on the cultural and on the demographic level), and that these new forms are incorporated in laws and regulations (institutionalization of cohabitation and deinstitutionalization of marriage (Barlow and Probert 2004; Huinink 2002a, 2002c; Huinink and Wagner 1998)), marriage loses many of its "advantages" in the transition to fatherhood and the raising of children. The "advantages" of marriage are the legal or "legitimized" basis of parenthood, policy support, tax benefits, partner commitment, fulfillment of traditional role models, pooling of resources, etc.

Another reason why union formation is positively related to fertility is that union formation pre-supposes the solution of men's resource, perspective, and compatibility problems (see Section 5 in this chapter) by the pooling resources, by sharing the costs of living, by sex-specific work arrangements (easing opportunity costs), and by partner commitment. Since a solution to the three problems is assumed to be a pre-condition for fatherhood, union formation per se should increase the likelihood of men's fertility transitions. If it is further assumed that marriage formation requires more resources, more secure prospects, and eases compatibility problems (see Section

5 in this chapter), its effect on fatherhood should be considerably stronger when compared to consensual union.

Finally, a selection effect of cohabitation and marriage should produce a higher likelihood of fatherhood for males forming a marriage. Marital unions are expected to be selected primarily by males with traditional values and higher levels of family orientation (Huinink 1995b; Lillard, Brien and Waite 1995; Thomson et al. 1998), whereas consensual union are assumed to be chosen by individuals with more progressive dispositions, and who are less family-oriented.

7. Application to the subject of study

This chapter has shown how cultural, political, and economic conditions determine an individual's demographic behavior, i.e., men's nuptiality and fertility. It also included a discussion of how different individual characteristics and different kinds of human capital, e.g., education, employment, and marital status, could have an impact on men's family transitions. In the following, the theoretical link between the collapse of the Soviet Union and men's changed fertility and nuptiality behavior will be established.

The dissolution of Soviet state socialism constitutes a major macro-level change, and therefore involves drastically altered opportunity structures for individuals' fertility and nuptiality behavior (Elder Jr. 1978; Huinink 1995b; Willekens 1999). Consequently, I assume that the patterns of men's first union formation and first birth are strongly influenced by them and heavily depended on *when* (before or after the political turmoil) men decide to form a union or to have a child.

Various theoretical approaches have assessed this issue from the macro-level perspective. They will be presented in the following and critically discussed.

7.1. Existing macro-level approaches – ideational change, economic crisis, and social anomie

There are different approaches to dealing with nuptiality and fertility changes connected to the breakdown of the socialist Eastern Block and the accompanying social, political, and economic restructuring.

Economic crisis approach: This approach mainly refers to economic changes within the transition as the primary cause for the demographic developments. A deteriorating economic situation, educational expansion, the growing cost of children and of other life domains, rising economic uncertainty, costly new perspectives and new starts ("structural caesura," see Dorbritz 2003), are discussed as main causes for altered nuptiality and fertility behavior. It is likely that individuals placed under the pressure of any of these factors will develop existential fears and decide to postpone fundamental life course transitions, such as birth and union formation (Philipov 2002).
Ideational change approach: The "new" pattern of fertility and nuptiality trends is the result of long-standing ideational changes similar to those occurring in most parts of Western Europe, known as the SDT. This pattern developed before the transition, but gathered speed with the societal, economic, and political changes, either because the totalitarian regime was slowing down the development, or because the transition stimulated it (Philipov 2002). In this sense, Socialist Russia was a threshold of the SDT (Zakharov 1999, 2003). The Russian transformation process represented a change from a closed to an open society, in which new economic structures and technologies expanded. It entailed a devaluation of existing cultural traditions and standards, and had a variety of effects on family and union formation behavior (Dorbritz 2003). First, the dissolution of traditional (socialist) values may have increased individualism, including in fertility and nuptiality decisions. Second, the termination of traditional frames and societal institutions was accompanied by transfers of economic rationality to the family area, and thus was altering the incentive/disincentive structure of union formation and parenthood (Dorbritz 2003).
Disorderliness and social anomie: Phillipov (2002, 2003) and Dorbritz (Dorbritz 2003) describe the transition as a time of *discontinuity* and social crisis. *Discontinuity* is the major characteristic of the transition period. It is manifested through the reconstruction of political, social, economic, and civil organizations and institutions. Old institutions were entirely reorganized or demolished, and new ones were constructed. *Discontinuity* also threatens the security of jobs and income, and hence leads to a rise in economic hardship and impoverishment. (Philipov and Dorbritz 2003) Furthermore, a drastic transformation of society disrupts social norms. It promotes ideational shifts in norms, values, preferences, and attitudes. *Discontinuity* represents a time when previously existing norms and values are broken and newer

ones have yet to be settled. This leads to a weakening of the normative self-regulation of society, a phenomenon that is also called "social anomie." Anomie destroys orientation and increases uncertainty, not only in economic terms, but in the overall well-being of individuals (Philipov 2003). In such situations, people must make life decisions without reliance on society, traditions, or the state.

"When confronted with a sudden rise in anomie and disorderliness and the resulting uncertainty, people will tend to postpone and reject crucial irreversible events, such as birth and marriage, or will make them reversible where possible, so will prefer cohabitation to marriage (...). (Philipov 2003: 163)

According to Philipov (2002, 2003), the three approaches do not necessarily exclude each other. Russian fertility and nuptiality patterns could be the result of economic pressure, of ideational change, social anomie, or a combination of all these. However, so far there is no consistent argumentat for how they would work together.

7.2. Critique and summary of the author's approach

The disorderliness, the ideational, and the economic change approaches attempt to explain why fertility patterns alter under profoundly changing societal conditions by emphasizing very specific aspects of Eastern Europe's and Russia's transitions, i.e., deteriorating economic conditions, value changes, and the psychological insecurity of the individual and the society as a whole. However, all approaches tend to ignore the explanatory power of the others.

Furthermore, the arguments of all three approaches remain at the macro level. They do not offer coherent explanations of why individuals should decide for a certain nuptiality and fertility behavior under the changed macro-level conditions. Thus, they do not provide the theoretical link to the individual level.

The theoretical framework used in this work and the multi-level setup of the life course approach provide a solution for both problems. *First*, it enables an integration of all aspects of macro-level changes during the collapse of the Soviet Union into one explanatory model, i.e., economic crisis, value change, and institutional restructuring. *Second*, it provides the possibility of linking the macro-level developments to

individuals' behavior on the micro level. In the following, it will be shown how this can be done.

The dissolution of the Soviet Union was a multi-dimensional process involving a wide range of political, economic, institutional, and social changes. (as it will be shown in detail subsequently in Chapter III). It was the interrelation of these changes which made the transformation so drastic, and the behavioral changes so extreme. Similarly, the altered nuptiality and fertility behavior of males cannot be explained by relying on just one aspect of the transition. Rather, these changes must be seen as the outcomes of individual decisions under specific interactions of cultural, social, economic, historical, and political conditions (opportunity structure), and their changes over time (according to the theoretical model given in Section 3 in this chapter). Ultimately, they shape the incentive and disincentive structure of fatherhood and men's union formation, and structure the solution to the resource, perspective, and compatibility problems.

The previous sections provided detailed theoretical evidence of how men's fertility and nuptiality behavior should be influenced by institutional and economic conditions, as well as by values and norms, and why men with different levels of education and employment characteristics should behave in dissimilar ways. In the following, I will offer bridge hypotheses to link Russia's societal transformation to individual nuptiality and fertility behavior on the basis of the previously provided theoretical evidence.

Economic change: The breakdown of Soviet state socialism was accompanied by a deep economic recession. As a result, real wages dropped, while unemployment and inflation increased (the economic development of the Soviet Union and Russia will be described in detail in Chapter IV, Section 3.). As outlined in Sections 5.1.1 and 6.1.1 (in this chapter), this crisis should have caused strong feelins of relative deprivation among individuals, as real incomes deteriorated compared to the socialist period, and economic prospects became increasingly uncertain. If individuals judge their economic situation to be deficient, it is very likely that they will not see any possibility for resolving the resource and perspective problems of union formation and parenthood. Thus, they will postpone or forego marriage and procreation.

Besides the obvious crisis, the economic transformation entailed changes in the value of human capital and in the benefits of employment. As will be shown subsequently (Chapter III), the state-regulated Soviet economy homogenized educational differences on the labor market (concerning income, job security, and job prospects) and provided full employment to virtually everybody. Homogenization, as well as guaranteed employment, ceased to exist after the economic transformation. In this process, the value of education (human capital) for individuals' resources and chances on the labor market increased (see Chapter III), whereas the pure value of employment decreased (devaluation of labor due to low incomes will be discussed in Chapter III).

As suggested in Section 5.1.4. (in this chapter), under these new circumstances highly educated males should be more able to accumulate sufficient resources and to obtain more secure prospects than less-educated individuals. As a result, better-educated males should be more likely to resolve the resource and perspective problems of marriage decisions, and marriage might be more attractive for them. By contrast, less-educated individuals would choose to cohabit. According to Section 6.1.4. (in this chapter), this argument can be also be applied to men's fertility decisions.

Similarly, the theoretical link to men's employment status was established in Sections 5.1.5. and 6.1.5. (in this chapter). However, since employment decreased in value after the transition, the resolution of perspective and resource problems might become more difficult even for employed individuals. Furthermore, the compatibility aspect of fatherhood may be presumed to be increasingly relevant under the new market conditions.

Institutional change: The very nature of the Soviet Union's dissolution was an institutional restructuring on the political, economic, and social levels.

As it will be shown subsequently in Chapter IV, this restructuring involved major shifts in laws which previously privileged marriage and discouraged non-marital cohabitations. According to Section 5.1.2 (in this chapter), such shifts away from marriage (demarriage) should promote the formation of consensual unions and hinder marriages because of the altered costs, duties, and benefits of marital and non-marital union formation. Presumably, higher costs (of formation and dissolution), stronger legal commitment and duties, and less legal support for marriage relative to

consensual unions, should decrease men's incentives to marry, while emphasizing the disadvantages of marriage. As a result, the resolution of the resource, perspective, and compatibility problems associated with marriage formation should become more difficult, while they should ease for non-marital cohabitation. Consequently, the characteristics of union formation should shift away from a preference for marital unions towards a preference for consensual unions.

Institutional changes may also be responsible for Russian men's altered fertility behavior. Following the arguments in Section 6.1.2, such changes can be called continuance or shifts in welfare and fatherhood regimes, i.e. from traditional strong "male breadwinner" societies, to more progressive, weak "male breadwinner" regimes. If the institutional conditions after the dissolution of the Soviet Union are found to be more traditional than before (as will be demonstrated in Chapter IV), and if men experience stronger commodification and familialization, then men's transition to fatherhood should become increasingly loaded with preconditions in the nexus of cash and care. Fatherhood should become more costly in terms of economic capital, income, and time. Hence, resolving the perspective, resource, and compatibility problems of fatherhood should be increasingly difficult. As a result, it is postponed or foregone.

In addition to changed family policies and marriage regulations, institutional changes in other state-regulated sectors affected men's nuptiality and fertility decisions. According to Sections 5.1.4 and 6.1.4 (in this chapter), the educational structure should have a major impact on the timing of marriage and the realization of parenthood, since the very nature of the educational system is incompatible with other life domains. If education becomes a commodity of increasing value during the transition, it is very likely that its incompatibility with union formation and parenthood increases. Hence, if the educational system changes, the strength of the compatibility problem should also change. Similarly, the institutional impact of Soviet/Russian military service on men's nuptiality and fertility behavior can be assessed.

Ideational change: Many authors (Hoem et al. 2007; Philipov and Dorbritz 2003; Zakharov 2003) believe that an ideational change in the Soviet Union, similar to the SDT, was and is strongly involved in the new fertility and nuptiality pattern.

However, so far no definite proof of these clams has been provided. Instead, demographic outcomes (and behavior) were interpreted in the light of changing values and a transition from traditionalism to higher degrees of progressiveness. In Sections 5.1.3 and 6.1.3, it was shown how individuals may behave given certain types of norm and value regimes.

Regarding men's nuptiality behavior, the SDT approach suggests that value changes make consensual unions an attractive union formation opportunity which formerly was not accepted by society, by families, and by the individuals themselves. Hence, nuptiality choices should become more heterogeneous and individualistic. Men may become more likely to form non-marital cohabitations when changes to more modern and progressive values occur, whereas marriage should lose its normative character. Consequently, the spread of traditional male-breadwinner-type unions (typically marriages) should decrease. If marriage is viewed as more binding and costly in terms of perspectives and resources on the one hand, but as easing compatibility problems on the other (according to Section 5 in this chapter), then men may increasingly choose the option of forming consensual unions when requirements for marriage are not met.

Men's fertility behavior is based on partially dissimilar motivational aspects (see Section 4, in this chapter), According to Section 6.1.3, a value change similar to the SDT is a shift away from emphasizing resource and perspective problems, towards placing a higher importance on compatibility problems. Nevertheless, a certain level of secure resources and perspectives remain a precondition of fatherhood. In other words, whereas the direct costs (resources and perspectives) of children remain stable or increase slightly, the indirect costs (opportunity costs: lost income, time, etc.) grow significantly. As a result, the decision for children becomes even more difficult in these progressive frames than under a traditional value regime, and might be more often foregone or postponed.

Furthermore, changes from traditionalism to more modern perceptions typically lead to a greater emphasis on values of self-actualization via education and employment (see Sections 5.1.4, 5.1.5, 6.1.4, and 6.1.5 in this chapter), and thus exacerbate compatibility problems (opportunity costs) of labor or education with union formation and fatherhood.

To summarize, I see Russia's transformation as a three-dimensional process entailing institutional, economic, and value changes. Furthermore, I doubt the explanatory power of approaches which explain altered nuptiality and fertility behavior through relatively imprecise macro concepts like "social anomie and disorderliness" (Philipov and Dorbritz 2003), "economic, existential fears and general feelings of insecurity" (Philipov and Dorbritz 2003) or "value transition thresholds" (Zakharov 2003). Therefore, I suggested a theoretical model which explained men's fertility and nuptiality behavior in a three-dimensional problem space (resources, perspectives, and compatibility) under a changing opportunity structure, i.e., evolving economic systems, institutional settings, and normative and value perceptions. Hence, Russian men's changed union formation and fertility behavior should be understood as a micro-level adaptation and adjustment process to the new societal conditions.

The aim of this work is to empirically identify and explain the pattern of these changes in relation to men's first union formation and men's initial entry into fatherhood. In other words: *In what ways was the family formation process of men influenced by the changing societal conditions before and after the breakdown of the Soviet Union?*

Chapter III
Societal Context

1. Introduction

The previous theoretical considerations (Chapter II) showed that men's fertility and nuptiality behavior is shaped by opportunity structures and their changes across time, i.e., specific cultural, social, economic, historical, and political conditions.

This chapter provides an overview of the opportunity structure men faced in the Soviet Union and the Russian Federation. Thus the economic, political, and social development will be described. The following description takes into account the developments from the 1960s through the early years of the new millennium. The time frame is extended if necessary.

First, this chapter evaluates the general political development in the Soviet Union and during its transformation to the Russian Federation. This section focuses on political structures relevant for institutional control over the individual's behavior and decision-making processes. Second, macro-economic conditions before, during, and after the political transformation will be presented. Of main interest are developments on the labor market, the privatization of state-owned companies, and the level of poverty. Third, social policies and social security settings in the Soviet Union and the Russian Federation will be discussed, including family support policies and unemployment protections. The implications of pronatalist policies are illustrated in the process. Fourth, the housing market and conditions will be examined, particularly during the privatization of state-owned housing. Fifth, the early childhood care and educational system will be described. Subsequently, the changing characteristics of military service will be summarized. The seventh part is devoted to an evaluation of men's roles in Russian society and the family. In the course of this evaluation, the ideological construction of Soviet socialist gender equality will be challenged.

2. Political development and transformation – from the Soviet Union to the Russian Federation

The history of Russia from 1921 to 1991 is essentially the history of the Soviet Union, which was established in December 1921 by the leaders of the Russian Communist Party, also known as "Bolsheviks." At that time, the SU included the Russian, Ukrainian, Belorussian, and Transcaucasian republics. Under the regime led by Stalin, the Baltic countries were also "incorporated" into the Union[7] (Nichol 1998).

The political system of the Soviet Empire was based on the one-party rule of the Communist Party (Communist Party of the Soviet Union: CPSU) from its very first moment until its dissolution in 1991. The political and ideological directions were strongly formed by various leaders of the party, e.g., Joseph Stalin (1922 to 1953) and Nikita Khrushchev (1953 to 1964).

In an economic sense, the era of Stalin was characterized by centralization, industrialization, and collectivization. Its main political attributes were terror against political and cultural subgroups, and repressive control of the society. This also included a restructuring of the power in the Communist Party.

The phase ended with Stalin's death, when Khrushchev came into power. His reforms in the agricultural and in the administrative sectors were not successful. However, he abandoned Stalin's terror and eased the level of state interference in individuals' lives (Skallerup and Nichol 1998).

The next leader of the CPSU and the Soviet Union was Leonid I. Brezhnev. After a short phase of collective leadership, he came into power 1964. Whereas Khrushchev and Stalin carried out many reform experiments in the industrial and agricultural sectors, the Brezhnev period was characterized by stagnation and aversion to change. Nevertheless, he considerably increased Soviet military strength. (Skallerup and Nichol 1998) After his death in 1982, the "short-term leaders" Yuri Andropov (from 1982 to 1984) and Konstantin Chernenko (from 1984 to 1985) followed. They continued the ineffective patchwork policy against the increasingly crumbling economy and political structures (Skallerup and Nichol 1998).

[7] Following the Nazi-Soviet Nonaggression Pact (also called Hitler-Stalin Pact or Molotov-Ribbentrop Pact) of 1939, the Soviet Army entered eastern Poland as well as military bases in the Baltic states which were granted after the USSR had threatened the three countries with military invasion.

During these periods, major disadvantages of the socialist system became obvious. State power was the monopoly of the party apparatus, while the relations between the center and the periphery were based on "indirect rule" and "clientelism.".This system often degenerated into feudal-clan relationships and produced organized criminal structures, which did not tolerate any kind of opposition (Tishkov 1991).

Under the leadership of Mikhail S. Gorbachev (from 1985 to 1991), significant changes in the economy, party leadership, and ideology occurred. The reforms of Gorbachev marked the beginning of Russia's transition period. His policy of *glasnost* ("transparency") started in 1985, freeing the media to a large extent from censorship (Mason 1988). People were allowed public access to information after decades of government repression. In 1987, the political and economic system was restructured (*perestroika,* "restructuring"). The economic reforms included a reduction in the role of central planning, the decentralization of decision making, an expanded position of market mechanisms, and increased opportunities for private initiatives in services and production. The political changes included greater pluralism of opinions in the political arena, competitive and secret elections for state bodies, and enhancements in the political role of workers in state enterprises through "self management" (Mason 1988). The March 1989 election of the Congress of People's Deputies (CPU) marked the first time that voters of the Soviet Union ever chose the membership of a national legislative body. Even though the elected congress consisted of 87% CPSU members, the election represented the beginning of the end of the one-party system and the dictatorship of the CPSU. In a series of humiliations that followed, the party was separated from the government. It was stripped of its leading role in society and its function in overseeing the national economy. In this period of restructuring, Gorbachev was elected to positions equivalent to the "head of the Soviet Union" three times, though by 1991 he ended up as the head of a weak rump government. (Skallerup and Nichol 1998)

Ultimately, the changes of the Gorbachev era resulted in the dissolution of the Soviet Union and the breakdown of state socialism in Eastern Europe at the beginning of the 1990s. The Cold War[8] between the socialist and capitalist blocks of the world finally ended.

[8] The term "Cold War" refers to the period of conflict between the Soviet Union and the United States and their allies between 1947 and 1993. It included a massive nuclear and conventional arms race,

In June 1991, Boris N. Yeltsin was elected as the first Russian president, even though the Soviet Union still existed and Gorbachev was still in office. Yeltsin's power grew quickly, especially during the collapse of the August 1991 coup of Soviet hardliners. In 1991, most of the Soviet republics (Ukraine, Belarus, the Baltic States, etc.) declared their independence from the Soviet Union, and Yeltsin's attempts to form a new confederation failed. Finally, on December 21, 1991, the 1922 treaty of union creating the Soviet Union was annulled. The Soviet Union ceased to exist. Russia gained international recognition as its principal successor. (Nichol 1998)

The "new" Russia was led by Yeltsin, who used his position to implement radical economic reforms which caused a deep economic restructuring and crisis (see detailed discussion in the third paragraph of this chapter). In the first years of Yeltsin's term, several attempts were made to better adjust politics to Russia's multi-ethnic and federal structure, i.e both the 1992 Federation Treaty and the 1993 constitution of the Russian Federation declared the establishment of a federal democracy (Lynn and Novikov 1997).

The deep-rooted reform course taken by Yeltsin did not last long. The first compromises had already become necessary by December 1992. The opposition to his policies reached its peak in October 1993, when nationalist and communist opponents attacked the "White House" (Russian parliament building) and temporarily occupied Moscow. The conflict was preceded by a violent dismissal of the Russian parliament, and Russia's young movement towards democracy was dealt its first blow (Nichol 1998).

In the subsequent years, Yeltsin's politics lingered between the reformation and restoration of old structures, but he maintained the basic democratic idea. He also built a closer relationship with the West, particularly in terms of financial support, although the war in Chechnya was a source of serious diplomatic conflicts. (Donath 2004)

In 1996, Yeltsin was elected as the president of the Russian Federation for the second time. This victory was only possible with the massive support of Russian finance oligarchs. In the period immediately following the elections, Russia experienced an

rivalry in science, industry, and technological developments, proxy wars, etc. For both economies it was very costly.

For a more detailed discussion, see, for example: Fred Halliday, "Cold War" *The Oxford Companion to the Politics of the World*, 2e. Joel Krieger, ed. Oxford University Press Inc. 2001

economic upturn, as well as new attempts at reform. This phase was accompanied by Russia's entry into the G7, by the signing of a cooperation pact with the European Union, and by entry into an agreement in principle with NATO (Donath 2004).

These positive developments did not prevent ongoing political struggles and instability between 1997 and 1999. The formerly unified financial oligarchs became opponents in the fight for economic resources. Yeltsin changed his prime minister five times between 1997 and 1998, and his ill health led to open discussions concerning his successor. The political instability culminated in a second economic catastrophe in August 1998 (Donath 2004). In August 1999, Yeltsin finally nominated the chief of the secret service, Vladimir Putin, as the new prime minister.

After Yeltsin's sudden resignation from office in December 1999, Putin became the new president of the Russian Federation. In the period that followed, he won the sympathy and trust of the Russian people with his straightforward position in the Chechen conflict, and through state-directed media campaigns. Consequently, he won the presidential elections in March 2000 with a large majority.

The political legacies bequeathed to Putin were a decentralized political system and a nascent federalist structure, which, however, prevented the disintegration of the Russian Federation. Putin's entry into office as Russia's president, and the founding of his "United Russia" party (in December 2001), marked the turning point of this development. His attempts to rein in the power of the regions and his efforts to establish a unitary state in opposition to the general principles of federalism (Konitzer and Wegren 2006) led to partial re-assertion of state control over important economic sectors (e.g., energy and oil), and growing suppression of free media and public opinions. Despite Russia's positive economic development under Putin, experts believe that these policies have hindered economic growth. Nevertheless, his political direction also reflects the belief of many Russians that autocracy is the most viable form of government for their country, because it is too large and diverse to survive the rule of a more pluralist system (National Intelligence Council 2007).

During his first term, Putin experienced two major domestic crises: first, the escalation of the Chechen conflict, which led to hostage-taking and terrorist attacks in Russia (e.g., in Beslan and Mocow's Dubrowska Theater); and, second, the sinking of the nuclear submarine Kursk. Both challenged his credibility among the Russian

people. However, Putin's reelection in March 2004 was a matter of course, since alternative candidates faced large disadvantages in their election campaigns.
The described the discontinuous political developments and demonstrate that Russia has failed to consolidate democracy since the initial reforms of Gorbachev. Its political system must still be seen as a partial democracy (Robinson 2003).

3. Macroeconomic characteristics – from a state-planned socialist economy to a market economy?

The principles of the Soviet economy date back to the beginning of Stalin's era. After unsuccessful tries to centralize and industrialize the Soviet economy between the late 1910s and the end of the 1920s, Stalin introduced the first "Five Year Plan" for building a socialist, centralized economy in 1928. It led to state control over all existing companies, and to collectivization of farms (Skallerup and Nichol 1998).

	1928-40	1950-60	1960-70	1970-75	1975-80	1980-85
GNP growth rate	5.8	5.7	5.2	3.7	2.6	2.0

Table 1: GNP growth rate of the Soviet Union 1928 to 1985; Source: Ofer (1987, 1778-9) in Allen (2001)
Note: Figures for the 1940s have been omitted because of the strong influence of the Second World War.

Starting from a very low economic level, the Soviet policies were effective in creating steep economic growth for nearly 50 years, until the beginning of 1970s (see Table 1). In the development of the Gross National Product (GNP), the Soviet Union was one of most successful economies of the world between 1928 and 1970. Its growth was mainly based on the massive investments of Soviet government in heavy industry and soft budget constraints[9], big increases in employment, expansion of acreage, and growing productivity (Allen 2001), combined with the mobilization capacity of the command system (Harrison 2003). However, this rapid economic growth was accompanied by a disastrous mismanagement and demotivation within collectivized

[9] "Soft budget constraints" - a term coined by Janos Kornai (1979), which means the re-financing of loss-making enterprises. They were one of the most important incentive problems of socialist economies.
For more details see: Kornai, J. 1979. "Resource-constrained versus demand-constrained systems " *Econometrica* 47:801-819.

agriculture, resulting in a famine between 1928 and 1932, when millions of Soviet people died. Furthermore, despite the economic upturn, the Soviet Union did not achieve Western standards of living or comparable increases in private consumption (Allen 2001).

Growth began to slow in the 1960s, and it fell considerably after 1970 (as Table 1 reveals). There were multiple reasons for this turning point. The external reason was the ongoing Cold War, which diverted substantial research and development resources from civilian to the military sector, and thus decreased innovation and productivity progress in civil industry. The internal reason was the end of the surplus labor economy due to full employment and fully exploited natural resources. In this situation, Soviet leaders failed to implement appropriate economic policies, to increase productivity, and to use resources effectively (Allen 2001).

These failures resulted in an economy characterized by the following: *first*, an overbuilt industry featuring too much heavy industry, too little light industry, and too few consumer goods and services; *second*, a strongly state-subsidized job market which impeded structural change (share of state enterprises in 1985: 93.3%); and, *third*, an extensive social welfare system closely linked to the place of employment, covering the majority of the Soviet population. Russians were used to economic security (even on a relatively low level) and unemployment basically did not exist. (Sachs et al. 1994) This old system embodied in many respects the antithesis of a market economy (Ericson 2001).

These features held during the 1970s and 1980s, until Gorbachev began the politics of *perestroika*. Despite efforts to restructure the Soviet economy, labor productivity - already the economy's biggest problem - continued to decline, sinking to unprecedentedly low levels (Tikhomirov 2000). The planned state economy collapsed completely in the aftermath of Yeltsin's deep-rooted economic reforms in October 1991 (Cooper 1998).

The chief objectives of the major Russian reforms at the beginning of the 1990s were the reversal of the negative trends in the country's economy, thus making the system more flexible and reactive to change and increasing productivity, and, ultimately, raising living standards. This reform was carried out principally through the privatization of state-owned property and the creation of market type institutions, i.e., banking and trade. (Tikhomirov 2000)

Despite the intentions behind these economic reforms, they led in practice to a dramatic move away from relatively stable economic conditions, and towards uncertainty and economic instability (Lokshin and Popkin 1999). Figure 2 illustrates this failure through the development of the real Gross Domestic Product (GDP), which decreased from the start of the reforms in the beginning of the 1990s through the end of the 1990s. Two major economic crises hit the Russian population between 1992 and 1994, and in 1998 (as Figure 2 reveals).

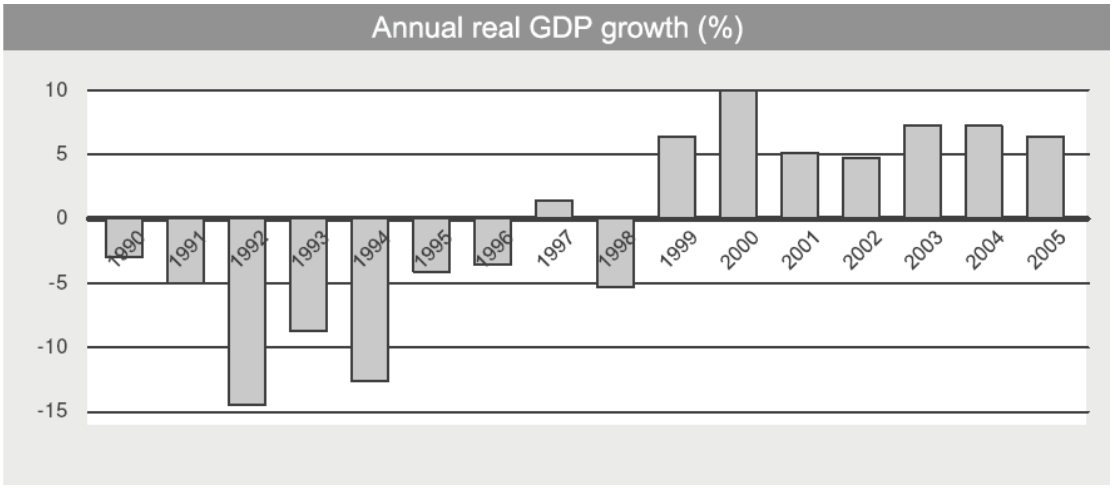


Figure 2: Annual growth of the GDP 1990 to 2005; Source: World Bank - Country Brief Russia (2007)

Shortly after the dissolution of the Soviet Union, the government lifted price controls on 90% of consumer goods and 80% of intermediate goods. This led to inflation. In the beginning it caused only a moderate increase in the prices of energy and food staples. In the following years (1992 and 1993) the government explosively expanded money supply and credits, which induced hyperinflation. Retail prices increased by 2,520% in 1992, by 840% in 1993 and still by 224% in 1994. Tighter fiscal policies ended this crisis in 1995 to 1996. Additionally, control of inflation was aided substantially by the failure to pay wages to workers in state enterprises, thus leading to a depression of demand.(Cooper 1998)

The second crisis took place in August 1998 with the financial collapse of Russia's economy. Long-term failures of Russian reforms were responsible for this development, particularly in the privatization of state-owned properties. Despite changed ownership and the elimination of state control, state subsidies continued

because half of the industrial enterprises were insolvent, and the industrial and agricultural sectors were in decline. Massive hidden unemployment, as well as low labor productivity, were characteristic of Russia's economy throughout the 1990s. To avert an even more severe social crisis, Russia's government steeply increased the national debt. As a consequence, its external debt grew 3.7 times between 1992 (US$40 billion) and 1999 (US$147 billion). Until the end of 1998, repayment was constantly postponed. Resulting debt repayments in 1999 were already equal to the population's total income for two months. (Tikhomirov 2000) These factors, combined with a set of policy announcements (on August 17, 1998) which entailed a devaluation of the ruble against the U.S. dollar, led to a flight of foreign investors and capital from the Russian economy (DIW and IfW 2001). The consequences for the Russian population were again drastic inflation, loss of savings due to illiquidity, closure and bankruptcy of several big Russian banks, and a general fall in economic activity (investments, supply of labor, etc.) (Hanson 1999).

A strong economic upturn followed the last economic collapse in 1999 and the new millennium. The Russian economy improved considerably for the first time since the dissolution of the Soviet Union (see Figure 2). The sources of this increase clearly were the devaluation of the ruble, which eliminated import competition, and the upturn in oil prices. Furthermore, Russia's economy after 1998 had growth advantages: a technological backlog for which it had the human resources to make up, and a substantial margin of under-utilized capacity. (Hanson 2007) A drastic reduction of real wages also contributed to the economic upturn (DIW and IfW 2001).

3.1. From "not existing" to "real" unemployment

The Soviet government claimed that unemployment was liquidated in the 1930s, thus it also not did not appear in official Soviet statistics. However, interview studies suggest that, even in socialist times, unemployment existed, although the levels were very low, i.e., between 1% and 2% (Gregory and Collier Jr. 1988). This was mainly structural unemployment, and short- or medium-term employment. The latter might be ascribed to waiting times in the official job market placement system after education, and to Soviet manpower planning (Gregory and Collier Jr. 1988).

The employment situation deteriorated heavily in Russia with the economic reforms of the 1990s, particularly due to failures in the privatization of state-owned companies. Moreover, the reforms redistributed jobs from the state to the private sector, from manufacturing industries to services and finance, and from large to small and medium-sized enterprises. This restructuring produced a steep growth in unemployment (Gerber 2002).

Official unemployment measures strongly underestimated the real level of Russian unemployment, since there were few incentives to register. Unemployment payments were a minor source of income, and large state subsidies to inefficient and unproductive enterprises masked hidden unemployment (Arhangelsky 1998; Füllsack 2001). The share of registered unemployment in total unemployment ranged between 15% and 37 % in the 1990s, and fell below 20% in the new millennium (Goskomstat 2007).

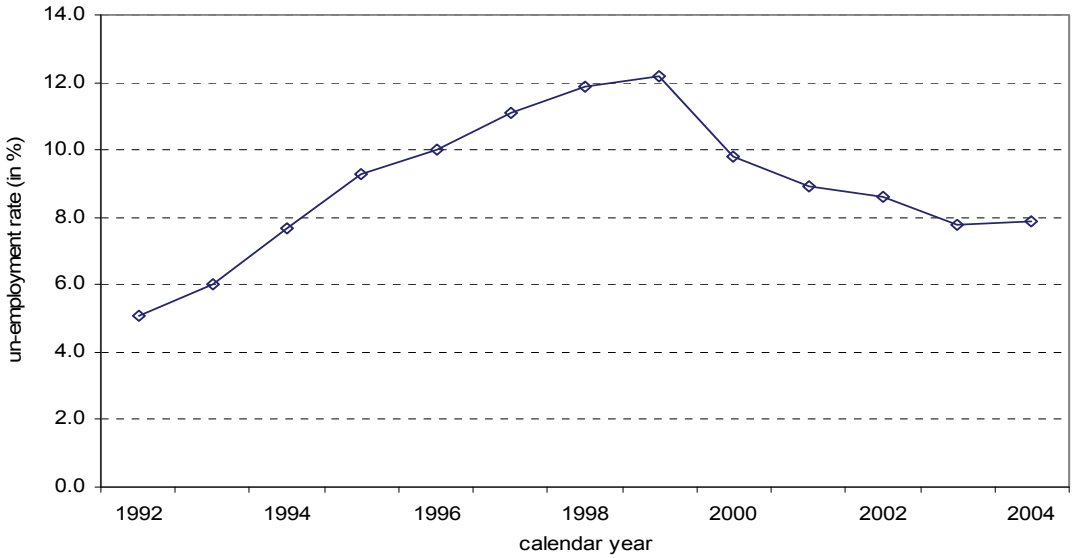


Figure 3: Annual development of the unemployment rate 1992 to 2004; Source: Federal State Statistics Service (2005)

Note: unemployment includes registered and unregistered unemployment (Data: Russian Surveys on Employment and All-Russia population census)

Nevertheless, Russia's surveys on employment and the All-Russia population census carried out by the Federal State Statistics Service provide reliable estimates of registered and unregistered unemployment (see Figure 3). The census shows that the unemployment problem seriously emerged at the beginning of the 1990s. The level of unemployment grew steeply from the beginning of the transition period until the end

of the 1990s. The percentage of unemployed laborers more than doubled from 1992 onwards, and reached a level of 9.1 million, or 12.4% of the Russian workforce, in the aftermath of the economic crisis of 1998.

Changes in mainly three sectors contributed extensively the rising unemployment. First, the traditional labor-intensive industries (coal mining, steel production, textiles) reduced their workforce substantially during the course of privatization. Second, the state-financed scientific sector was hit strongly. Third, the educational labor sphere was targeted by the rising unemployment (Füllsack 2001).

Parallel to the economic upturn in the new millennium, the unemployment rate fell below 8% (Figure 3). General economic recovery, investments, decreasing imports, and low real wages (cheap labor) were the main reasons for this improvement.

Unemployment rates differed between Russian men and women, between age groups, and between educational groups. Official statistics show that females had lower unemployment rates than males, e.g., in 1995: 9.7% (males) and 9.2% (females); in 2000: 10.2% (males) and 9.4% (females). These differences are misleading since housewives and mothers on maternity leave were not included in the statistics. Women were further found to be much more seriously affected by long-term unemployment than men (Foley 1997; Kartseva 2005, ROSSTAT 2004).

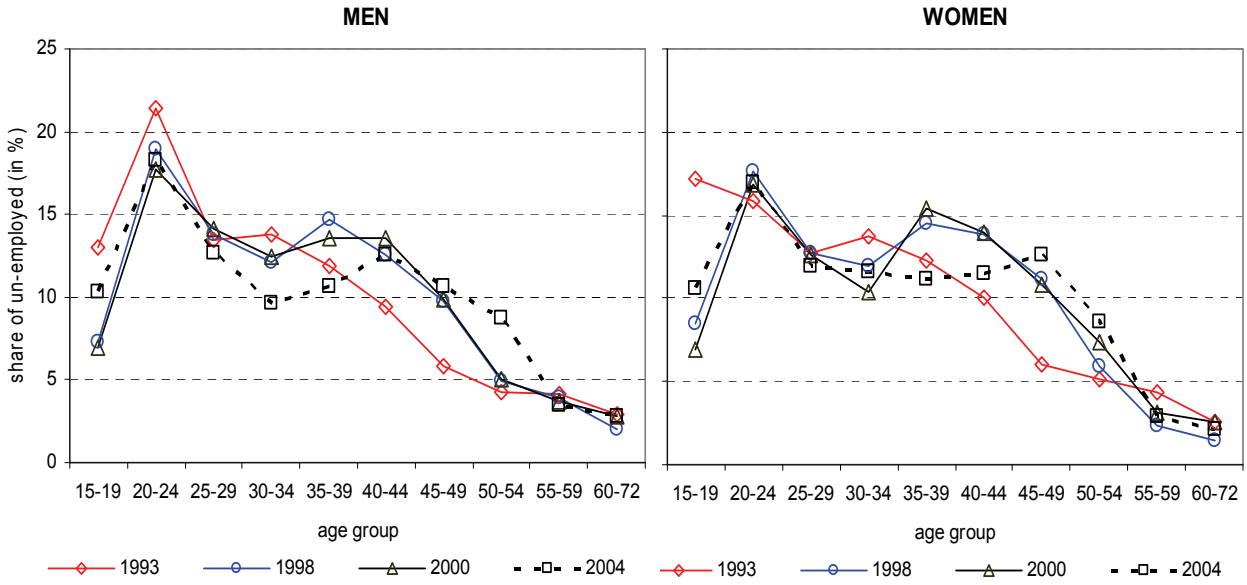


Figure 4: Share of unemployment over age groups – 1993, 1998, 2000 and 2004; Source: Generation & Gender Contextual Database

Note: unemployment includes registered and unregistered unemployment

Figure 4 presents the distribution of unemployment by age and sex between 1993 and 2004. Young people (ages 20 to 24) had the highest risk of being unemployed over all years. The pattern was more pronounced for males, and in the early 1990s. In later periods, the unemployment distribution became slightly u-shaped, i.e., people aged 20 to 24, and people in their late thirties and forties were most likely to be unemployed.

Education and human capital were found to be more important for individual employment prospects after the economic transition (Gerber 2000, 2002); hence less-educated individuals faced higher unemployment risks and longer unemployment spells than highly educated persons. By contrast, higher education increased individuals' abilities to deal with the new conditions on the labor market (Kartseva 2005).

It was shown that unemployment considerably increased during the course of reforms in the 1990s, and started to decrease in the new millennium, when Russia's economy started to recover. Unemployment differed greatly over gender, age, population subgroups, and was determined by human capital. Since social benefits were very low (shown subsequently in Paragraph 4.1) unemployment was associated with high risks of poverty (ILO et al. 2001); this particularly applied to households with children (Prokofieva and Terskikh 1998).

3.2. Labor market, employment, and "working poor"

The most important feature of the socialist labor market was full employment in state-owned companies, through the price of this was low productivity. The government's control over hiring policies and wages served as a powerful means of homogenizing incomes and keeping them close to the subsistence level (Mikhalev 1996). This produced a very homogenous earning pattern among social strata, i.e., across educational and occupational groups.

The socialist labor market collapsed with the dissolution of the Soviet Union and the economic reforms in the beginning of the 1990s. In addition to the problems caused by increased unemployment, the employed population faced a deep crisis. Drastically decreased real wages caused an extension of poverty beyond its "common" borders or the traditionally poor—i.e., refugees, unemployed, large families, single parents, and pensioners—leading to a strong increase in the numbers of "working poor" (ILO et al.

2001). These are employed people who nonetheless have incomes below the subsistence level.

Table 2 illustrates the development of this group by two measures: the value of real wages relative to 1990, and the percentage of the minimum wage relative to the subsistence level of the working population. The decline of real wages reached its lowest point in 1999 at a level of 27% of the value of 1990. The same applies to the second measure. In 1999, the minimum wage only accounted for 8% of the subsistence level. In the new millennium the situation improved, but real wages in 2004 were still 45% lower than in 1990, and the minimum wage was the equivalent of just a quarter of the subsistence level.

calendar year	real wages, relative to 1990 (in %)	share of minimum wage, relative to subsistence level working population (in %)
1990	100.0	-
1991	96.6	-
1992	64.9	33
1993	65.2	26
1994	60.0	18
1995	43.2	14
1996	49.0	17
1997	51.4	18
1998	44.7	15
1999	27.0	8
2000	32.0	10
2001	38.4	16
2002	44.5	22
2003	49.4	23
2004	54.8	25

Table 2: Development of real income, subsistence level and average wage over calendar year; Source: Federal State Statistics Service (2005)

The proportion of people with incomes below the subsistence level have ranged between 30% and 20% since the beginning of the 1990s until recently (Federal State Statistics Service - Rosstat 2005).

Despite the growth in the numbers of people with very low incomes, the highest incomes rose steeply after 1990. The income range had already widened in the middle of the 1990s, when the gap between the highest 10% and the lowest 10% increased threefold compared to 1990 (Prokofieva and Terskikh 1998). Also, official numbers show that the concentration of income at the highest levels increased following the

economic transformation. In 1992, 20% of the population with the highest income accounted for 38.3% of money from all incomes. This proportion increased to 46.4% in 2004. (Federal State Statistics Service - Rosstat 2005)
Another characteristic of Soviet and Russian employment was the lack of part-time work arrangements among Russian men. Even after abolishing the full-employment policy of the Soviet Union, part-time employment virtually did not exist. Thus full-time work (40 hours and more) was and still is the most common kind of employment (revealed by estimates from the Russian EES, own estimations not shown here).

To summarize, the main characteristics of the Soviet and Russian economy during the transition period can be described as follows. *First*, the two big economic crises induced deep mistrust in state-guided liberal economic reforms and created high economic losses and uncertainties. *Second*, decreased real wages, low productivity, and illiquidity of big companies (no wage payments) devalued labor on a large scale. *Third*, so far the growing economy has not brought about a better standard of living for most of the Russian people. In the words of President Vladimir Putin: Russia is a rich country still inhabited by poor people (Semler 2001).

4. The Soviet and Russian welfare state – from universal coverage to insufficiency

The foundation of the social security system in Soviet Union or Russia dates to the first two decades of the 20th century. From this time onwards, the Soviet Union has slowly built its security system from post-revolutionary redistribution policies to a "New Economic Policy," which shifted the responsibility for the social insurance to the National Trade Union Organization (in 1933). The stabilization of the standard of living and a growing national economy led to substantial improvements in the pension system in the 1950s. It expanded the eligibility mechanism to universal coverage of Soviet workers in the following years. The state socialist social security institutions included universal and free healthcare, pension provision, maternity leave regulations, childcare services and benefits, heavily subsidized housing and daily consumption goods, free education and vocational training, workers' compensation, and disability

benefits (Arhangelsky 1998; Mikhalev 1996). The whole system was 100% state-funded through general taxes[10].

Two important features marked the Soviet welfare system: *first*, a strictly observed right to a job, which made unemployment virtually non-existent and unemployment insurance superfluous, and which connected social security mostly to the workplace and enterprises (Mikhalev 1996; Zelenev 2002); and, *second*, very low social risks for individuals, as the state was involved in basically every important life sphere "from cradle to the grave" (education, job placement, childcare, pension, etc.) (Mikhalev 1996; Zelenev 2002).

Since the beginning of the 1990s, Russia's social security system has increasingly come under structural and financial pressures. The cornerstone of the Soviet social protection, i.e., the centralized, rigid system of guaranteed employment, ceased to exist (Zelenev 2002). Crashes and privatizations of companies, related dismissals, increasing unemployment, decreasing wages, and growing poverty challenged the financial pillars of the social security system, since Russia's social state expenditures rose sharply (Sederlof 2000), even as the number of payers and the GDP decreased steadily (Arhangelsky 1998).

These developments forced a rapid institutional and financial reorganization of the Soviet Union's social security system in the first half of the 1990s. It was divided into four separate sectors: the Pension Fund, the Federal Employment Fund, the Compulsory Medical Insurance Fund, and the Social Insurance Fund (Tchikmatcheva 1998). Funding by the state alone was abandoned, and income-indexed insurance payments were introduced. However, the new system still retains many features from the socialist period, is full of contradictions (Zelenev 2002), and must be characterized as insufficient and ill-suited to the new societal conditions (Curtis and Leighton 1998; Mikhalev 1996; Sederlof 2000). Thus, coherent strategies to deal with income poverty, mass unemployment, and poverty risks of families (individuals or couples with children) are so far missing, as it will be shown subsequently.

[10] Financing reforms of the national health care system were already initiated in 1987 in the course of *perestroika*. They established an obligatory health insurance payment for all Russian employees. However, the reform did not pass the Russian parliament before 1991.
For details see: Arhangelsky, V.D. 1998. "Modern Russian Social Security." *Social Service Review* 72(2):251-268.

4.1. Unemployment insurance and poverty reliefs

Russia's Federal Employment Fund was established in 1991. Since the Soviet government guaranteed universal employment, no institution of this kind existed before (Zelenev 2002).

Since its initial stages, unemployment benefits had been provided to virtually everybody seeking a job (men ages 16 to 59; women ages 16 to 54), with variations in the level of benefits. Whereas new entrants in the job market received a benefit equal to the minimum wage, those who became unemployed were eligible to receive 75% of their previous average wage in the first three months, 60% in the following four months, and 45% thereafter, with a cap set at 12 months (Mikhalev 1996). The qualifying conditions were 26 weeks of full employment over the last 12 months, or an equivalent part-time job. The minimum monthly allowance was as high as 30% of the local minimum subsistence level. However, the maximum was not permitted to exceed 150% of the regional average wage. In 2003, the entitlement to employment benefits was extended to cover a second year, providing for another 12 months of payments equal to 30% of the local minimum subsistence level. (Generation and Gender Program - Contextual Database 2007; SSA and ISSA 2000, 2004)

Because a large proportion of the Russian population earned low average wages, unemployment benefits were usually far below regional subsistence levels. They mostly functioned as insufficient and underfunded poverty benefits. So far, unemployment insurance and the payment of benefits had failed to facilitate job shifts or to prevent workers from falling into poverty upon separation from employment (Sederlof 2000). Young people, women, and less-educated individuals were thus most likely to become reliant on these inadequate unemployment benefits, since they had the highest risk of unemployment following the economic transformation.

Despite the drastic increase in poverty after 1990 and insufficient unemployment benefits, neither adequate provision nor a coherent social assistance scheme for poverty relief was established. Instead, the old system of large numbers of categorical benefits and privileges remained (Zelenev 2002). They were scattered over the four social insurance funds, and usually were not income-tested or dependent on individual

premiums.[11] Moreover, the need of recipients was not the decisive factor for benefits; instead they were provided to people belonging to certain categories (Arhangelsky 1998; Zelenev 2002).

Due to shortfalls in Russia's federal budget throughout the 1990s, many of these federally mandated privileges and benefits remained unfunded (Sederlof 2000), and inflation drastically reduced the value of benefits (Curtis and Leighton 1998). Consequently, the real financial contribution of social assistance to a household's and individual's income was very small or even neglible (Zelenev 2002). Thus, these benefits did not provide meaningful protection against poverty or sufficient support (Lokshin and Popkin 1999).

4.2. Family policies and provision of childcare

Like every other sector of the Soviet or Russian welfare state, family policies also underwent changes during the transition period, shifting away from socialist universalism towards a more neo-familialistic model (Teplova 2007).

4.2.1. Before 1990

As an important part of the Soviet Union's socialist population policy, family policy was driven by two important goals: *first*, demographic growth through policies that were strongly parity-specific and favored births of higher orders (Barkalov 2005); and, *second*, economic growth through attempts to satisfy the labor demand by facilitating women's employment, thus resolving the tension between mothers and workers (Ispa 1994; Rostgaard 2004; Teplova 2007). To achieve these goals, the state provided free access to childcare and a set of maternity regulations. Indirect support also came from comprehensive campaigns, which emphasized the state's role as the guarantor for children's well-being, and the psychological and social status benefits of children (Barkalov 2005).

[11] Many Russians still enjoy numerous benefits from the state. At the federal level alone there are about 150 types of entitlements (social benefits, subsidies etc.), which are provided through more than 200 categories of recipients within the population. As a result, about 70% of Russians are entitled to social payments and benefits. (Zelenev 2002, Arhangelsky 1998)
See: Zelenev, S. 2002. "Social Protection Imperatives in Post-Socialist Russia." *Paper at the 9th International Congress of BIEN, Geneva September 2002*.

Established in 1970, maternity leave regulations incorporated job security during the whole period of leave for all mothers (fathers were not entitled). They were eligible for 16 weeks of maternity leave around the birth of a child (56 days before and after delivery). During this time, they received 100% of their previous salary. After having a baby, women were entitled to childcare leave. After 1977, the duration of the leave depended on parity (six months for the first child, seven months for the second child, eight months for the third child) and included a payment of 100% of the minimum wage. Furthermore, the system provided a lump sum payment for second and higher-order births. Within these programs, flexible rules for part-time employment and the sharing of leave between the parents were not possible (Generation and Gender Program - Contextual Database 2007).

The explicit advancement of higher parities changed with a decree made on January 22, 1981. It extended the leave regulation to women of lower parities by introducing benefits regardless of birth order. In addition to the existing maternity leave entitlement, post-maternity leave was introduced, which also provided payments until the child reached one year of age, and covered 40% of the official minimum wage. Furthermore, unpaid leave with job security was granted until 1.5 years after delivery, and the birth grant was increased significantly and extended to all parities. (Barkalov 2005; Generation and Gender Program - Contextual Database 2007)

The provision of virtually free childcare was the second pillar of Soviet family policy. Public pre-school childcare was widespread and highly subsidized by central and local government budgets. Access to childcare services was thereby tied to labor force participation. (Teplova 2007). State-owned enterprises were in charge of support for women and the provision of childcare (Teplova 2007). Children of single mothers and children from large families were given priority at admission (Stropnik 2003).

Soviet (and Russian) pre-school education was divided into nursery and kindergarten. Before the reform of the system in 1995, nurseries covered children from the ages of two months to three years. Kindergartens were pre-schools within the educational system for children between the ages of three and seven. In 1959, a combined nursery-kindergarten was introduced (Generation and Gender Program - Contextual Database 2007). All childcare institutions were state-funded. They covered over one-third (in 1989: 37%) of all children under age three. Kindergarten enrollment was close to 80% (in 1989) among children ages three to seven (Unicef 1999).

Family policy in the Soviet Union can be characterized as pronatalist and universal. It eased the compatibility problem of parenthood and employment through childcare provision and maternity leave regulations, thus providing economic and social assistance to families. However, it failed to address gender equality issues (see also Section 6 in this chapter) beyond the scope of the labor market[12], by ascribing maternity leave laws only to women, and promoting a "classic" ideology of motherhood (Teplova 2004) and fatherhood.

4.2.2. After 1990

Although the family policies of previous periods were still in place at the beginning of the 1990s, their impact had to be judged against substantially diminished overall incomes, high inflation rates, and increased economic insecurity (Barkalov 2005). At the beginning of the transformation phase, maternity leave and child benefits were not regularly indexed for inflation, and their purchasing power steeply declined (Stropnik 2003, 2004).

Between 1991 and 1993, maternity leave benefits became income-indexed to the average wage of the last 12 months preceding the month when the maternity leave started (in case of unemployment related to monthly minimum wage). After 1991, the whole parental leave of 18 months was paid in this manner (Stropnik 2003). The childbearing grant also increased to 100% of one monthly minimum wage. It was further raised to 300% in 1992, and to 500% in 1993. (Generation and Gender Program - Contextual Database 2007)

A major reform of the maternity leave program started in 1995. Paid leave was extended to 140 days around the delivery (70 days before and after). The payment was tied to the average wage for a working woman (they received 100% of the former payment), the minimum wage for unemployed women, and the value of an education scholarship for students (Arhangelsky 1998; SSA and ISSA 2004). After the maternity leave, an additional payment for monthly childcare of 500 rubles was given

[12] Gender equality on the labor market only means similar employment chances for men and women, since the Soviet economy was characterized by highly sex segregated employment branches and a typical gender wage gap.
For details see: Teplova, T. 2004. "Social Reforms in Russia: Labour Market Implications." *Conference: Welfare state restructering: processes and social outcomes"* RC19:1-30.

to employed mothers, and of 70 rubles to unemployed mothers. The benefit was paid until the child reached the age of 18 months. The leave period could then be extended for additional 18 months. Benefits were no longer paid during this period, but women were entitled to a small child allowance. The majority of women took three years of maternity leave, but the maternity allowance actually covered less than 25% of real expenditures. (Ouvarova 2004)

In the course of reforms, the lump sum payment for childbirth was constantly raised: in 1995, to 10 monthly minimum wage payments; and, in 1996, to 12 monthly minimum wage payments. Since the start of the new millennium, the payment has been fixed: 1,500 rubles in 2001, 4,500 rubles in 2002, and 6,000 rubles in 2005. These basic payments could be topped up by local authorities, and supplementary payments to this grant, normally associated with birth order, were provided in many regions of the Russian Federation. (Generation and Gender Program - Contextual Database 2007; SSA and ISSA 2004).

Moreover, since the reforms in 1995 childcare leave may be partly or fully used by the father (as well as other relatives or guardians). Parents may also engage in part-time work or work at home while receiving leave benefits (Generation and Gender Program - Contextual Database 2007; Unicef 1999).

Despite childbirth grants, the financial support for mothers or fathers with children was very low after 1990, and did not protect families or single parents from falling into poverty. Low average wages levels and periods of hyperinflation steadily decreased the real value of maternity leave and childcare benefits.

Russia's childcare system went through numerous changes, too. According to official statistics, the number of childcare institutions declined from 87.9 thousand in 1990, to 53.3 thousand in 2000, and to 47.8 thousand in 2004 (Generation and Gender Program - Contextual Database 2007). In particular, the number state-owned nurseries dropped. The main reasons for this decline were serious financial shortages at the federal and regional levels (Stropnik 2003), and the privatization of state-owned companies, which were formerly in charge of childcare provision (Teplova 2007). Additionally, costs and eligibility requirements for the remaining state-owned childcare centers increased. The lack of private childcare institutions and the tendency to push former state care roles back to the family further emphasized degenerating childcare conditions (Teplova 2007).

Consequently, between 1990 and 2004 the number of children in childcare institutions halved, from nine million to 4.4 million children. In 1997, only 20% of children up to age three were enrolled in nurseries, and 65% of children between ages three and seven attended kindergartens. In 2004, the total proportion of enrolled children under age six was 57.7%. Predictably, a growing share of childcare was provided at home by mothers and other relatives, e.g., grandparents (Teplova 2007).

Despite worsening childcare conditions in general, unwed and single parents were granted easier excess to kindergartens, nurseries and schools if there is competition for free places. After 1995, they further received increased child benefits, i.e., 150% of the basic allowance between 1995 and 2002, and 200% of the basic allowance after 2002. However, this policy became restricted to parents with incomes below the subsistence level in 2001. On the other hand, married couples could take advantage of various tax deductions.

Despite offering some support for unmarried couples and lone parents, the characteristics of the Russia's family policies in the 1990s and new millennium represented a pronounced a shift towards neo-liberalism and familialism. Demographic and economic pressures gave rise to the idea of "bringing women back home," which became very popular among Russian policymakers and in the society. The state's commitment to supporting the full-employment of women declined substantially. However, despite these neo-familial policies, most of the families rely on two incomes, and women and men therefore have to combine work and family life, albeit under more difficult circumstances. (Teplova 2007)

5. Housing conditions

During Soviet times, housing was primarily regarded as a social good. After 1977, the Soviet constitution guaranteed citizens the right to housing (Alexeev 1988). The housing system was controlled by the state. the majority of flats and houses were owned by the state (e.g., 75% in urban areas) or state housing agencies, while a minority were privately owned (Morton 1984).

Housing conditions in the Soviet Union were among the poorest of the industrialized societies. In 1960, for example, 40% of families lived communally. The situation

improved in the following 20 years, but, in 1980, around 20% of the (urban) population still lived communally. (Morton 1984)

The fact that, between 1973 and 1982, over six million more marriages were formed in the Soviet Union than housing units were built further illuminates the serious housing shortage. Consequently, newlyweds had little chance of moving into their own apartments, and were destined to live with in-laws, often for a long time. Access to unshared apartments was strictly monitored by the state authorities. The only official way to move to a new flat was to join a waiting list. In 1974, for example, Moscow's list included 180,000 families and 590,000 individuals. To discourage new households from forming, unmarried individuals with or without a partner who wished to live apart from their extended families commonly were denied a place on the list. (Morton 1984)

These shortages created a black-market and exchange system. Apartments, though government-owned, belonged for all practical purposes to the registered individuals living in them and could even be passed to children (occupation right). Consequently, public housing units became a commodity on the exchange market. Bribes were another common way to "speed up" official procedures related to waiting lists (Morton 1984). Thus, the system generated corruption and substantial differences and inequalities (Nechemais 1981) between cities and rural regions, western and eastern areas, and individuals with and without unofficial "access" to the system. Generally, Soviet's political, military, security, economic, scientific, cultural, and educational elite were most favored by the housing system. (Morton 1984)

After the breakdown of the socialist system, the government started to privatize the housing market, assuming that ownership should increase people's willingness to spend money to maintain and improve housing facilities, which were formerly financed by the state (Kosareva and Struyk 1993). Privatization was thus expected to improve housing conditions and decrease state housing stock and costs.

The privatization started July 1991. In a first step, tenants of municipal and departmental housing were allowed to purchase their units (Kosareva and Struyk 1993). The transfer to private ownership was free, since the tenants received a voucher free of charge (value of the voucher: flat size in square meters, times the price of an average quality square meter in the residential city). In 1992, large-scale housing privatization began, and reached its peak in 1994. Afterwards, the process

slowed down noticeably. In 1996, approximately 55% of the housing stock was already privately owned (Guzanova 1997). Despite the initial idea behind the privatization, the share of dilapidated housing rose over the 1990s, to reach almost 3% of all housing stock in the new millennium (United Nations 2004).

The availability of apartments, especially for young people, changed, but only a little, since the privatization process produced two distinctive groups of owners: pensioners (biggest group) and relatively wealthy persons.

With the establishment of the new "Housing" program in 2002, the Russian government tried to solve these problems. Vladimir Putin himself said that state funds should be used to provide housing to everyone who needs it, and made the construction of new housing a national priority (Russia-Media 2006). The "Housing" program contains two sub-programs: *first*, a program that grants housing to young families (Generation and Gender Program - Contextual Database 2007); and, *second*, a program that frees cities from dilapidated housing (United Nations 2004).

However, in 2006, approximately 30% of Russian families still lived in shared flats, and 80% of young Russian people considered their housing situation to be problematic (Russia Media 2006). Even the newly emerging middle class could not easily afford new flats since prices were often too high, especially in bigger cities.

6. The Russian education system

The regulation and control of almost all areas of the lives of individuals were key features of the Soviet political system. The institutionalization of individual lives began with early childcare and school education. Education was thereby presumed to be a collective good, to be allocated for the maximum benefit of the total society. Consequently, personal aspirations for specific educational training were considered secondary. The state had total control over the distribution of education and over the criteria for educational selection. (Gerber and Hout 1995; Titma, Brandon Tuma and Roosma 2003; Titma and Saar 1995)

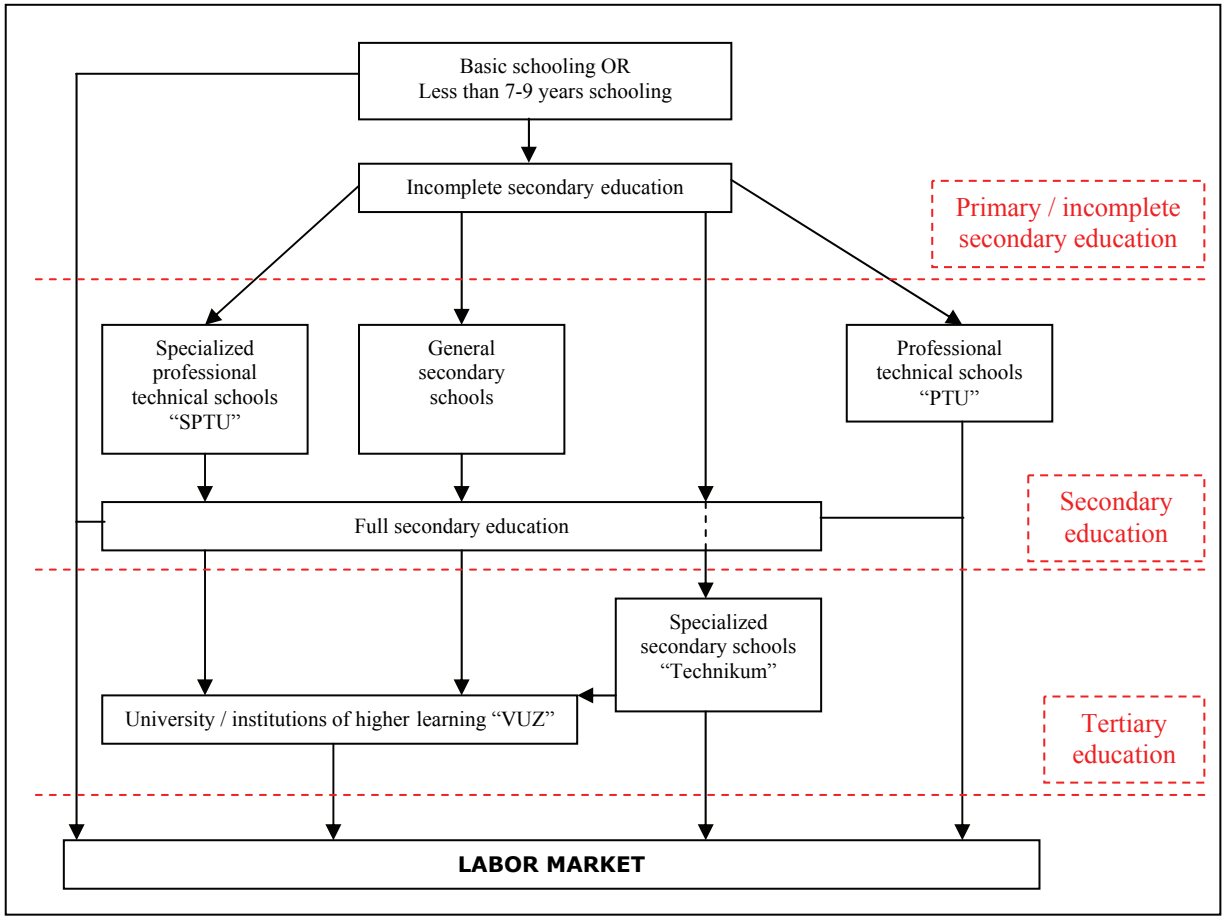


Figure 5: The Soviet/Russian educational system; Source: Generation and Gender Program – Contextual Database (2007), Gerber and Hout (1995), Titma and Saar (1995)

After the breakdown of the socialist system, state control eased, and individual abilities and choices started to shape educational live courses. Nevertheless, the main educational tracks from primary, to secondary, and tertiary education were very similar before and after the changes. In the following the educational structure and its changes will be described (see Figure 5).

The basic course of general education covered three stages, and most Soviet/Russian schools offered all three levels in one (until "full secondary education"). At the age of seven, children usually leave the preschool institutions and enroll in compulsory elementary schools. Until 1970, this primary education lasted four years and four grades, typically until the age of 10. Thereafter, primary education comprised the first three grades until age nine (Gerber and Hout 1995; Titma and Saar 1995).

Primary or lower-secondary education followed ("incomplete secondary" education). Until 1958 pupils, finished "incomplete secondary" education with the seventh grade (around age 13); after 1958, it was extended to the eighth grade (around age 14)

(Generation and Gender Program - Contextual Database 2007; Gerber and Hout 1995). Full secondary education comprised the last two or, respectively, three grades until the tenth grade, and provided the required qualification for entering institutions of higher learning. With the Education Act of 1974, full secondary education and 10 years of schooling became compulsory (Generation and Gender Program - Contextual Database 2007).

In 1986, the age at school entry was lowered to six, and full secondary education was extended to age 11. Thus, the duration of education was prolonged from 10 to 11 years in a full secondary school, and from eight to nine years at a general school, including primary and lower secondary levels. However, structural problems constrained real changes in the starting ages of Russian pupils (age seven), and also the duration of school education remained generally the same (10 years in full secondary education, and eight years in compulsory education), since in practice students moved from the third to the fifth grades, skipping the fourth grade.

In 1992, Russia's educational system was reformed again. The new Law on Education lowered the upper age of compulsory education from 17 to 15, and reduced the schooling duration from 11 to nine years (in practice, from 10 to eight years because the fourth grade was skipped). However, more than 60% of students continued to remain in school for the previously required 11 years (in practice, 10 years). This led to drastic regulations which authorized school officials to expel students 14 years of age or older who were failing their courses. As a result, by the end of 1992, about 200,000 students had been expelled, and two to three times that number (between 400,000 and 600,000 students) had dropped out of school education. (Generation and Gender Program - Contextual Database 2007).

The vocational school track paralleled and partially extended general secondary education. Vocational schools were initially designed to teach manual skills. Since their final establishment between the mid-1950s and 1970s they can be divided into three basic types: 1. vocational schools (professional technical schools: PTU), 2. specialized vocational schools (specialized professional technical schools: SPTU), and 3. pecialized secondary schools ("Technikum"). Schools of the second and third types offered general secondary curricula and diplomas. "Technikum" institutions provided a low level of tertiary education which qualified graduates to work as technicians,

nurses, librarians, and elementary school teachers (Generation and Gender Program - Contextual Database 2007; Gerber and Hout 1995; Titma and Saar 1995).

Higher education at the university level offered a broad range of disciplines in the arts and sciences, while concentrating on the theoretical aspects of the given field. Institutes and polytechnics were more specialized, and stressed specific applied disciplines, e.g., engineering, education, and medicine (Generation and Gender Program - Contextual Database 2007). All these institutions were lumped under "higher educational establishment" (VUZ). A completed secondary education, or "full secondary degree" was the entrance requirement for VUZs.

Tertiary education was free during Soviet times, but students had to pass additional entrance exams to qualify for VUZs after 1972. Furthermore, individuals were not free to choose a subject of study; instead, the choice was monitored by the state according to centrally supervised labor demand and economic plans (Gerber 2000). Moreover, the overwhelming majority of VUZ students came directly from general secondary education, since graduates from specialized secondary schools were required to work for at least three years before continuing their education, and were often badly prepared for the entrance exams (Gerber and Hout 1995). Consequently, entrance to higher education was strongly competitive, and was regarded as highly selective. Subsequent graduate training could be pursued at all universities, selected institutes, and polytechnics. Many pursued their studies on a part-time basis, while continuing to work in their field. Two advanced degrees, the "candidate of science" and the doctor of science, were available (Generation and Gender Program - Contextual Database 2007).

The system of higher education was maintained after the collapse of socialism. However, state control over educational choices eased considerably, and the foundation of private universities diversified Russia's educational system and impacted the economic sector, at least for a financially privileged social strata. However, the economic turmoil led to decreasing enrollment rates in tertiary education and to increasing educational stratification. (Gerber 2000)

Full-time higher education usually took four to 5.5 years of study, depending on the area of specialization, e.g., 5.5 years for medicine, five years for engineering, 4.5 years for agriculture, and four years for law, history, journalism, or art (Generation

and Gender Program - Contextual Database 2007). Thus, a common age at graduation from a VUZ was 21.

7. Military service – prestige, education, and hazing problems

Military service became universal and obligatory in the Soviet Union under the Constitution of 1936. The draft age was between 19 and 27, and the age limit for reservists was set at 50 years (Nikolaieff 1949). All male Soviet citizens in these age ranges were required to serve in the military, regardless of their religion, racial and national identity, education, and social status (Generation and Gender Program - Contextual Database 2007). Obligatory military training was introduced in all educational institutions, including secondary schools. (Nikolaieff 1949)

Until 1991, the regular length of military service was 24 months. Sailors and foremen in the navy or sea divisions had to serve 36 months. Men with higher education were obliged to a military service of 12 months. In Soviet times, exemptions from duty only applied to those who were ineligible for military service, as declared by a special commission. Postponement of the draft up to age 20 was permitted for students in basic and secondary education, and in certain family circumstances. (Generation and Gender Program - Contextual Database 2007)

Despite these rigid draft rules and strong ideological emphasis on the Soviet military in the aftermath of World War II and during the Cold War (Wesson 1971), many young men tried to avoid being drafted. Contrary to the public picture of the Soviet military, bullying and hazing by older and more senior soldiers (so-called: *dedovshchina*), growing crime rates in the military forces, drug abuse among recruits, ethnic divisions that resulted in serious conflicts (i.e., bullying, physical torture, and humiliation), and the austere living conditions of the Soviet army (housing, food, hygiene) greatly eroded the willingness to serve.

The "tradition" of *dedovshchina* was probably the most important reason why young men sought to avoid the draft. It consisted of control exercised by senior soldiers over fresh recruits. In the best case, hazing was used to force young soldiers to perform unpleasant jobs. In the worst—but also not uncommon—cases, *dedovshchina* entailed physical abuse, brutally sadistic punishments, and psychological torture, sometimes ending in severe physical and psychological injuries, desertions, death or suicide, and

intentional fragging. Many young males feared this risk, and dodged the draft through legal and illegal means. Desertion became increasingly common. These trends continued to rise during the 1970s and 1980s, and reached mass-phenomenon levels during the Afghanistan war. Draft-dodging and desertion were socially supported by parents, peers, and even local authorities. (Gross 1990)

The educational system and Soviet military forces were strongly linked by research, teaching (military specialists and military patriotic education), training, and conscription procedures (Cooper 1989). While some higher educational institutions had military faculties, the majority of institutions had military departments responsible for those tasks (Cooper 1989). Until the beginning of the 1980s, students in full-time higher education could obtain deferments to postpone military service until graduation, and were obliged to serve for a short period following completion. After 1982, these privileges were seriously restricted, and only students in forms of higher education considered to be of national importance were entitled to deferment and shortening. For the majority of students, this meant service for 24 months and an interruption of their studies at age 18 (in or after the first year) (Cooper 1989). In 1987, when Gorbachev started *perestroika,* the draft policy was seriously questioned, and in 1988 deferment was reintroduced for a larger number of higher education institutions (Cooper 1989).

The practice of *dedovshchina,* as well as forced educational interruptions, damaged the prestige of obligatory military service. However, official statements and surveys emphasized that this was different for military careers beyond obligatory service, because military careers were expected to offer a relatively privileged status in terms of pay, promotion opportunities, and social benefits. In reality, particularly during the 1970s and 1980s, the opposite was the case. Young officers suffered from housing conditions inferior to the already poor civilian standards, as well as from limited career opportunities and corrupt structures. Furthermore, attitudes towards fertility and nuptiality deteriorated due to a lack of childcare facilities, poor employment opportunities for women, insufficient school education, and a short supply of healthy food. These problems were more pronounced on military bases outside of big cities. (Gross 1990)

The acceptance and prestige of military careers varied significantly over population subgroups. Males from rural areas, as well as men with lower levels of education,

viewed military career opportunities more positively than their counterparts from larger cities, or with higher education (Gross 1990). Hence military careers served as an important alternative when prospects were poor and there was a lack of other options.

With the dissolution of the Soviet Union, the Soviet army became the army of the Russian Federation. Its retreat from most of the countries of the Eastern Block involved structural changes, a reduction of manpower, a decreased military budget, as well as the search for a new identity. Military forces were also seriously affected by the economic crises and redistribution of the federal budget. (Baxter 1998)

As a result, the regular duration of military service was reduced in 1991 to 24 months for all kind of forces. For highly educated men or males in higher education, the duration was reduced to 12 months. (Generation and Gender Program - Contextual Database 2007)

During the 1990s, Russia's military underwent certain reforms. However, they failed to better the living conditions and prospects of recruits and military professionals (Arbatov 1998). The problems in Russia's military forces continued to grow because of the unsuccessful but ongoing war in Afghanistan, financial shortages, increasing crime rates, and persistence of old Soviet structures that did not fit the social and political requirements (Baxter 1998). As a result, severe hazing of new recruits (*dedovshchina*) reached its peak in the mid-1990s. In 1994, an estimated 2,500 soldiers died and another 480 committed suicide as a direct result of hazing (Baxter 1998). This led to skyrocketed numbers of draft dodgers and desertions, and to strong approval of such behavior in the society. Military service was increasingly perceived as a drag on (human) resources and human lives. But successful strategies for avoiding military service were not equally distributed in the population. Thus, less-educated, poor, and rural men were more likely to lack strategies and resources for draft dodging, e.g., tertiary education, alternative service, or bribe payments to military authorities (Lokshin and Yemtsov 2005).

Despite the serious worsening of military service conditions in recent decades, the strict policy of separating young recruits completely from the home environment (often by sending them to the opposite border of the country) eased. In a growing

number of cases, recruits were allowed to leave military barracks during the weekends to return home.

The conditions in Russia's military forces started to improve in 2000 under Vladimir Putin. He introduced coherent military reform strategies concerning finances, resources, manpower, living conditions, and international positioning (Arbatov 1998; Rogov 2001). Since these reforms, military duty has included a number of vacation days: 20 days for basic soldiers, and 30 days for soldiers and officers of higher ranks. In extraordinary cases, the servicemen could ask for 10 days of extra vacation. Entitlement to vacation may be enhanced as an award, or reduced as a punishment.

The right to replace military duty with an alternative form service was declared in 1993 and was finally implemented in 2002, when the Russian federal law introduced the right to alternative civil service. Its duration is 1.75 times the military service term, and thus takes 42 months. For graduates of higher education, service length is reduced to 21 months. A reduced alternative civil service (1.5 times regular durations) is provided if it is served in organizations of the armed forces. (Generation and Gender Program - Contextual Database 2007).

8. Soviet and Russian gender roles

Historically, Russian society has been strongly grounded in patriarchal gender roles, i.e., men headed up families, were the main breadwinners, and ruled the economic and political spheres; while women were expected to be responsible for household and children.

At the establishment of the socialist Soviet Union, traditional gender roles were seriously challenged by the goal of creating a "classless society" (Goodwin and Emelyanova 1995) and the rising demand for labor (Teplova 2007). In 1938, the Constitution of the USSR codified that the new Soviet women had equal rights with men in all spheres of economic, state, cultural, social and political life. This gender equality in law and official regulations was accompanied by a very different gender reality (Goodwin and Emelyanova 1995), involving various forms of discrimination against females and preserving most of the patriarchal societal structures.

First, despite women's mobilization for the labor market, Soviet policy measures and ideologies failed to encourage shared responsibility for domestic work between men

and women. (Teplova 2007) Men's share of household and family work remained very low. Consequently, females were loaded with the double burden of work and family.

Second, the Soviet system attached a special societal meaning to females and motherhood. It was understood that women should be mothers at least once in their lives (Rotkirch 2000), and that they should handle the family and household duties. The maintenance of happy, well-kept homes and the raising of children were tasks mainly attributed to females (Teplova 2004), while males were viewed as responsible for the intellectual guidance of the household and family.

Third, regardless of equal access to full-time employment, the Soviet labor force was strongly gender-segregated and entailed a distinctive gender wage gap. Thus men were usually better paid than females. Men tended to be employed in physically exhausting jobs (e.g., heavy industry and mining), in engineering and science, and in administrative and in political leadership positions. Females largely worked in teaching, caring, and medical jobs. (Curtis and Leighton 1998)

Fourth, in the private sphere, Soviet mothers were usually seen as more supportive and nurturing, while the father was more demanding and authoritarian, as well as frequently withdrawn and distant. Often such distinctive family behaviors were enforced by men's drinking habits and alcohol abuse (Nemtsov 2005). Furthermore, perceptions that men should spend time with their sons and mothers with their daughters, and instruction from an early in "how to behave like a boy or a girl," served to transfer traditional gender-role stereotypes from one generation to the next. (Goodwin and Emelyanova 1995)

Fifth, Soviet family policies were established to lessen the tension between women's full-time employment, household work, and child care obligations. As described in Section 4.2 (in this chapter), these supports entailed extensive and free institutional childcare, broad work security, comprehensive maternity leave regulations, and financial support. However, at no point were Russian men or fathers incorporated in these policies. Institutional motivation for family engagement among men did not exist.

To conclude, gender roles in the USSR can best be described as: "An ideology of equality which existed in law and statutes, and a patriarchal ideology which operated in real life" (Khotkina 1994).

Awareness of gender roles during Soviet times are crucial to understanding their development in Russia after the dissolution of the Soviet Union. The 1990s and the new millennium were characterized by a movement towards more traditional segregated gender roles in the labor market, in the household and in the family.

First, the economic restructuring of the labor market, as well as increasing unemployment, encouraged the development of stronger gender differences in Russian society. Compared to Soviet times, a higher share of female jobs became situated in low-paid spheres of light industry, services, health care, and education (Teplova 2007). Moreover, females were more likely than men to be long-term unemployed (see Section 3.1, in this chapter). Both developments increased the household's, the family's, and the woman's dependence on the man's job and income. Thus, the man's role as the family breadwinner and traditional role allocation were emphasized.

Second, the demographic crisis in the 1990s and growing pressure from the labor market increased neo-liberal policy efforts to bring women back home and "free" them from working. Russian policy makers believed that this would ease tensions in the labor market, and would reduce male unemployment. Consequently, many policies were changed to encourage homemaking and to expand part-time, low-wage, and low-skill work for women. On the other hand, policy makers offset out to resolve the demographic problems, believing that traditional gender roles would increase fertility levels. (Teplova 2007). Ideological support for these beliefs came from two different directions. While liberal politicians emphasized new individual rights by providing women the "option" of staying at home (not permitted in Soviet times), nationalist forces saw the promotion of women's reproductive function as the key factor for the nation's wealth and future (Teplova 2007).

The decreasing number of institutional childcare facilities, as well as extended maternity and childcare leave regulations and benefits, can be seen as the result of the new "neo-liberal" Russian family policy (see Paragraph 4.2 in this chapter). Long childcare leaves, commonly taken by mothers in connection with parental leave benefits (or in-home care giving benefits), weakened women's attachment to the labor force, while strengthening the refamilialization of care (Teplova 2007) and the traditionalization of gender roles in the family and in the labor market. The superficial incorporation of males in family policies also promoted traditional gender roles.

Third, the described developments after the dissolution of the USSR significantly reinforced women's individual perceptions of themselves as potential mothers and homemakers, and strengthened the man's position in the household as the breadwinner and decision maker. An increasing number of women came to assume that their primary responsibilities were childcare and housework. Women were also found to report traditional views on gender roles, in stark contrast to the former socialist ideology of "women as workers." Recent studies on gender perceptions have found that role models like "male breadwinner" and "housewife" became more relevant in individual perceptions in the 1990s and the new millennium than in the periods before (Ouvarova 2004; Stropnik 2004).

Consequently, a growing share of women made being a homemaker their primary occupation. This applies in particular to married women and women with children (Teplova 2007). Regardless of whether the choice of such family models was involuntary or not, it increased pressure on males to earn enough to support their partner and children, and thus reinforced the male role as the sole breadwinner in the household. Again, this applied more strongly to husbands and fathers than to their unmarried and childless counterparts.

Despite this socialist history, high rates of female labor force participation, and political liberalization since the collapse of the Soviet Union, Russian society still has strong patriarchal characteristics. In this sense, the political, economic, and social transition was not a "back-shift" to more traditional gender *perceptions*, but it brought existing structures again to the societal surface. Socialist ideas of a "classless society" and "women as workers" ceased to exist, making room for traditional gender roles. Thus, the transition was a "back-shift" to more traditional gender *behavior* (not perceptions), particularly in the labor market and in the family.

These arrangements might serve to ease men's opportunity costs (e.g., through missed income and career opportunities) when they have a family, and increase their gains from partnerships through sex-segregated work arrangements – particularly in more traditional kinds of unions, such as marriage. On the other hand, it increases direct and indirect costs of family and union formation for males, since the male breadwinner role stronger requires greater security of resources and prospects, and places men under greater economic and psychological pressure.

Chapter IV
Macro Demographic Pattern of Fertility and Nuptiality Behavior

1. Introduction

This chapter is devoted to a description of the USSR's and Russia's fertility and nuptiality developments over the last four decades (between 1960 and 2004). Relatively high fertility rates, universal marriage and first birth patterns, and early family and union formation were typical until the end of 1980s, when Russian's nuptiality and fertility behavior started to undergo a dramatic change. The 1990s and the new millennium are characterized by low fertility, shrinking numbers of marriages, and an increasing share of non-marital partnerships and births. Furthermore, the start of the typical Russian's fertility and nuptiality career is increasingly postponed into higher ages.

The following presentation focuses on period patterns. Aggregated measures will be used to illustrate the demographic processes. Official fertility measures, in particular, fail to provide information about males. However, they are sufficient for a description of the main trends.

When possible the description is enriched with available data on male fertility and nuptiality behavior from official statistics, but are mainly from the author's own estimations based on the Russian GGS (2004).

2. Union formation

2.1. Marriage

2.1.1. Marriage rates

Marriage was, and still is, a very common demographic phenomenon in Russia. Figure 6 illustrates the development of the crude marriage rate over the last five

decades. Starting from a relatively high level in the 1950s[13], the marriage rate dropped between 1960 and 1965, from a level of 12.5 marriages per 1,000 inhabitants (in 1960), to a level of 8.6 (in 1964 and 1965). Over the next 10 years, the rate recovered and stayed relatively stable until the mid-1980s (10 to 11 marriages per 1,000 inhabitants), when a new decline started. This decrease gained momentum with the beginning of the 1990s. Around 1995, it reached its lowest point at half of the level of 1960 (approximately six marriages per 1,000 inhabitants). The second half of the 1990s and the start of the new millennium was characterized by a small recovery of the marriage rate.

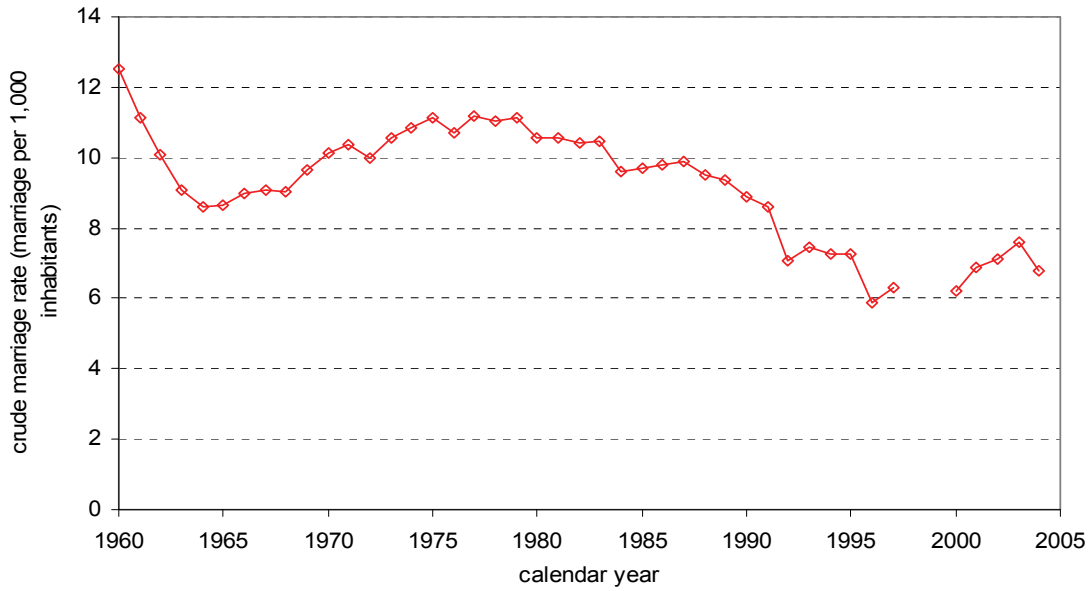


Figure 6: Crude marriage rate: 1960 to 2004; Source: Avdeev and Monnier (2000), Russian Population Center (2006)

Note: Data were not available for 1998 and 1999

Comparing the crude marriage pattern (Figure 6) with more detailed findings on first marriages (Figure 7), it is evident that only a small degree of the marriage dynamics until the 1990s was related to changes in first marriage behavior.

Figure 7 provides first marriage data of Russian males and females. The graph shows the popularity of marriage in Russia – between 90% and 95% of all Russian were married once in their life. From 1960 until 1990, the first marriage rate has almost

[13] Shortly after the Second World War, the marriage rate strongly increased, mainly due to the legitimization of already existing unions among couples who had postponed marriage. Furthermore, the entrance to the marriage market of the large birth cohorts of 1935 to 1940 led to high marriage rates. (Avdeev and Monnier 1999, 2000).

always been over 0.90 (for men) and over 0.95 (for women). Men's first marriage pattern varied until the beginning of the 1970s, entered a stable phase between 1972 and 1979 (app. 1.0), declined thereafter until 1984 (to 0.86), and then showed a small increase. The increase in the 1980s (to 0.96) was ended by a steep decline in the first marriage rate in the first half of the 1990s, reaching its lowest point in 1996, at 0.58. In the new millennium, the rate recovered to a level of around 0.7. The first marriage pattern of females was much more stable compared to that of males. After a decline in the 1960s (1960: 1.2 and 1968: 1.01), it varied at around 1.0 until the beginning of the 1990s. The very different marriage trends for males and females in the 1960s and 1970s can be explained by the imbalances in the marriage market linked with the succession of depleted and full cohorts in the aftermath of the Second World War (Avdeev and Monnier 1999, 2000; Scherbov and Van Vianen 2001, 2004).

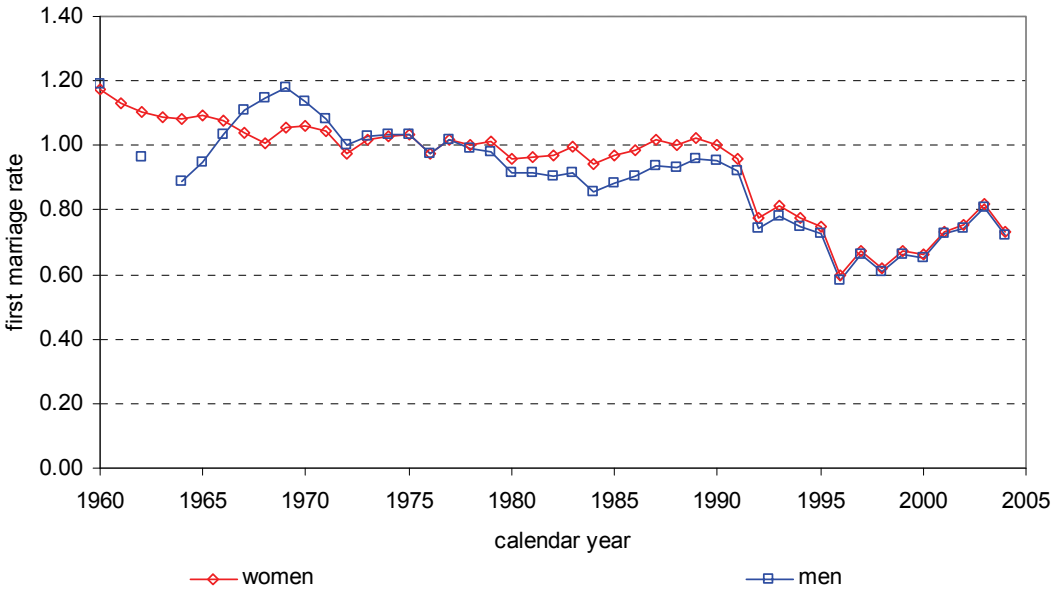


Figure 7: First marriage rate of Russian males and females: 1960 to 2004; Source: Avdeev and Monnier (2000), COE – Statistic Yearbook (2004), Russian Population Center (2006)

The differences between the crude and first marriage rates indicate that the proportion of first marriages among all marriages was shrinking over time. According to estimates of Avdeev and Monnier (2000), remarriages accounted for shares ranging from 8% in 1960 and between 25% and 30% in 1985 to 1997.

2.1.2. Marriage timing

Generally, Russian men and women tend to marry at very young ages, and males enter their first marriage around two years later than females (see Figure 8). Since the 1960s, the age at first marriage declined constantly until 1975 for males (1960: 26.5 years, 1975: 24.3 years); and until the beginning of the 1990s for females (1960: 24.3 years, 1992: 21.8 years). Thus the end of the 1970s and the 1980s mark a relatively stable phase for both sexes. After 1994, the age at marriage started to increase strongly. Until 2004, the male age rose 2.2 years to 26.1. The female age rose about 1.5 years, to 23.3.

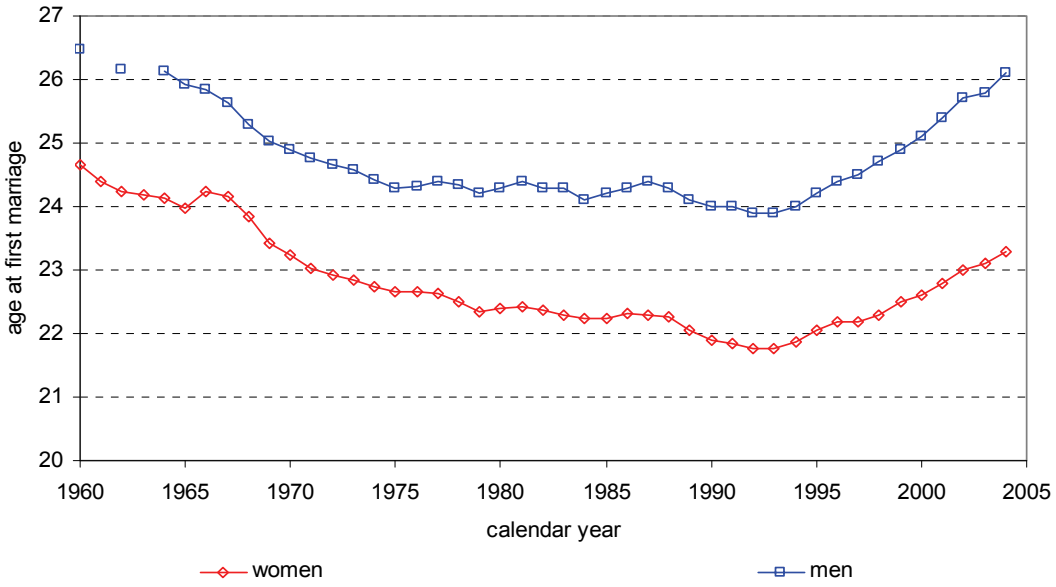


Figure 8: Age at first marriage for Russian males and females: 1960 to 2004; Source: Avdeev and Monnier (2000), COE – Statistic Yearbook (2004), Russian Population Center (2006)

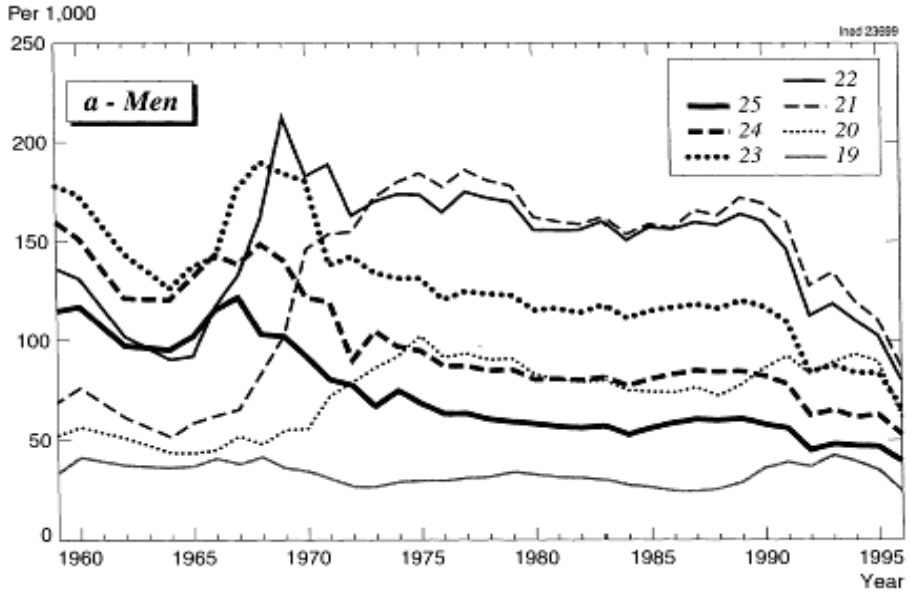


Figure 9: Age-specific first marriage rates for males: 1960 to 1996; Source: Graph taken from: Avdeev and Monnier (2000)

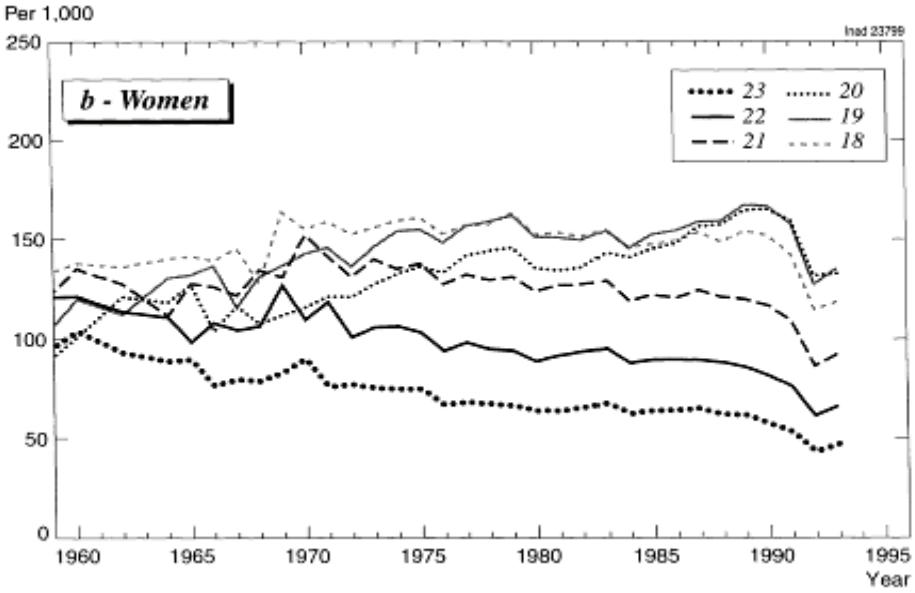


Figure 10: Age-specific first marriage rates for females: 1960 to 1993; Source: Avdeev and Monnier (2000)

Figure 9 and Figure 10 give age-specific fertility rates for Russian men and women. Russian men's marriage rate peaked at the ages of 23 and 24 in the late 1960s. Thereafter, men were most likely to marry at ages 21 and 22. This male marriage trend reflects the imbalance of the marriage market linked with the succession of depleted cohorts (World War II) and full cohorts (Avdeev and Monnier 2000). Thus, 19- and 20-year-old Russian men have the lowest first marriage rates in all periods.

The pattern held until mid-1995, but the differences between the ages became significantly smaller. Furthermore, the age groups were differently affected by the decline around 1990. It is strongest for the 21-to 23-year-olds, and moderate in the oldest age groups (24 and 25). The youngest males married even more frequently at the beginning of the 1990s, and the decline started around 1993.

Women's first marriage timing patterns are considerably different (see Figure 10). First, the youngest Russian women (ages 18 and 19) have the highest first marriage rates over the whole period of observation, despite the fact that, by the 1980s, 20-year-olds had caught up. Second, the distance between the age layers is growing over time.

2.2. Non-marital cohabitation

Aggregated official measures for non-marital cohabitations during Soviet times and in the Russian federation are not available. Consequently, there is no clear answer to the question of whether the decline in marriage can be attributed to rising non-marital cohabitations. A common way to assess the popularity and acceptance of alternative kinds of partnerships using official statistics is to rely on the number of births out of wedlock, which will be presented later in this chapter (see Figure 20). Demographic literature also provides some minor insights into the cohabitation patterns of Russians and their developments over time. Studies of DaVanzo (2001), Gerber and Berman (2005), Philipov and Jasilioniene (2007) and Tolts, Antonova and Andreev (2006) have found that Russian men and women have increasingly chosen to cohabit since the 1980s. A growing share of Russians are living in cohabitation, and a rising proportion of Russians experienced a consensual union at least once in their lifetimes.

Figure 11 illustrates this development with data from the Survey of Stratification and Migration in Russia (Gerber and Berman 2005), and with the author's own estimations based on the Russian GGS (2004). Even if the results are significantly different, they point to the same trend. These figures show that a rising proportion of Russians live in consensual unions. This increase started in the 1980s, and thus began before the breakdown of the Soviet Union. In the 1960s and 1970s, around 4% of Russian males and females lived in a cohabitation. Until 2004, the percentage virtually doubled.

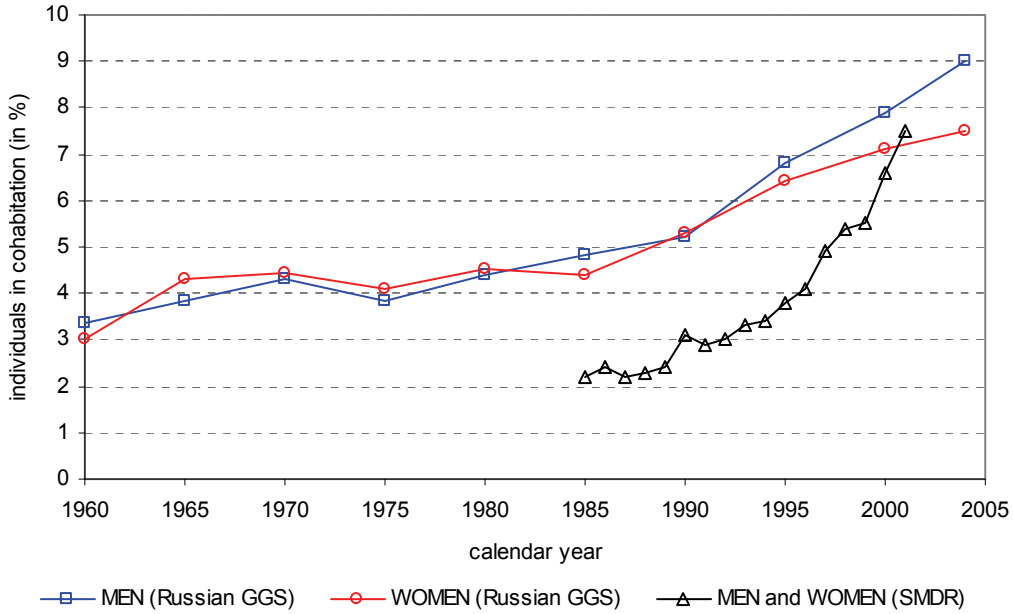


Figure 11: Proportion of individuals aged 16 to 50 in cohabitation: 1960 to 2004 at the start of the corresponding year; Source: Gerber and Berman (2005): Survey of Stratification and Migration Dynamics in Russia (SMDR); Russian GGS (2004) - own estimations

Note: Estimates from the GGS display the share of individuals in their first cohabitation.
Estimates from the SMDR display the share of individuals in any cohabitation.

A study by Philipov and Jasilioniene (2007) examined this development by using life table methods and data of the Russian GGS (see Table 3). Their results show that cohabitation is and was a common way to enter a first union among Russian males and females during the 1980s, 1990s, and the new millennium. Between 1985 and 1989, 35% of males and 34% of females had experienced a first cohabitation by age 40. The proportion steeply increased to shares of 66% (for males) and 63% (for females) between 1999 and 2003.

	Individuals experiencing 1st cohabitation by age 40 (in %)		**Mean age**	
period	**MEN**	**WOMEN**	**MEN**	**WOMEN**
1985 to 1989	35	34	22.9	21.6
1990 to 1994	47	46	23.2	20.9
1999 to 2003	66	63	23.3	21.5

Table 3: Russian males and females experiencing a cohabitation as their first union; Source: Philipov and Jasilioniene (2007: 30, Table 5.6a)

Note: Results from competing risk life table – entry into marriage as competing event

Furthermore, the results demonstrated that first non-marital cohabitations generally occurred at lower ages than first marriages (also see Figure 8). These age patterns are confirmed by findings from the Russian Micro-Census of 1994 (Avdeev and Monnier 2000; Vishnevskii 2001).

From the period perspective, consensual unions accounted for a small share of unions in the whole population. Less than 10% of Russians lived in a non-marital cohabitation by the year 2000. However, life table calculations showed, starting in the 1980s, one-third of Russians had experienced a union of this kind at least once in their lives. In the new millennium, a majority of the population had done so.

3. Fertility developments

3.1. Period and cohort fertility, parity specific developments

In the following, the period specific perspective will partially be extended to the birth cohort pattern in order to assess the strength of timing effects and parity specific developments.

Fertility was relatively high in the Soviet Union in the 1950s and at the beginning of the 1960s. After the fertility shock during the Second World War, the Total Fertility Rate (TFR) recovered in 1949 to a level of around 2.5 children per women (Scherbov and Van Vianen 1999). Figure 12 presents the period fertility between 1960 and 2004. After a short relatively stable period, when the TFR was higher than the reproduction level of 2.1 children per female, it decreased between 1960 and 1967 to a value of around two. In the following years until the mid 1970s, the rate was quite stable, but another decrease occurred between 1975 and 1980. In 1981, the TFR started to grow considerably. This increase lasted until 1987 (TFR: 2.2) (Vishnevsky 1999). Following the end of the 1980s, and with the breakdown of the Soviet Union around 1990, a precipitous drop in fertility occurred, hitting its lowest point in 1999 at a TFR of 1.1 children per female. The strongest downward trend occurred between 1987 and 1993, though the decline slowed over the following six years (until 1999). The year 2000 marked a turning point in Russia's recent fertility history. In the following years, the TFR increased slightly to reach a level of 1.34 in 2004.

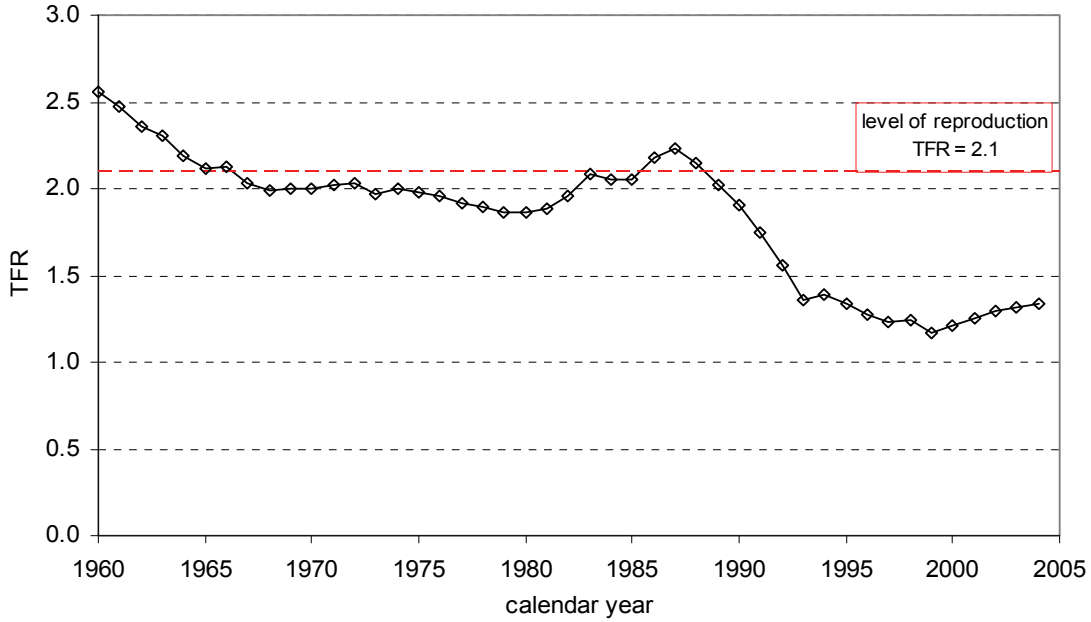


Figure 12: Total Fertility Rate (TFR): 1960 to 2004; Source: COE (2004), Demographic Yearbook Russia (2005)

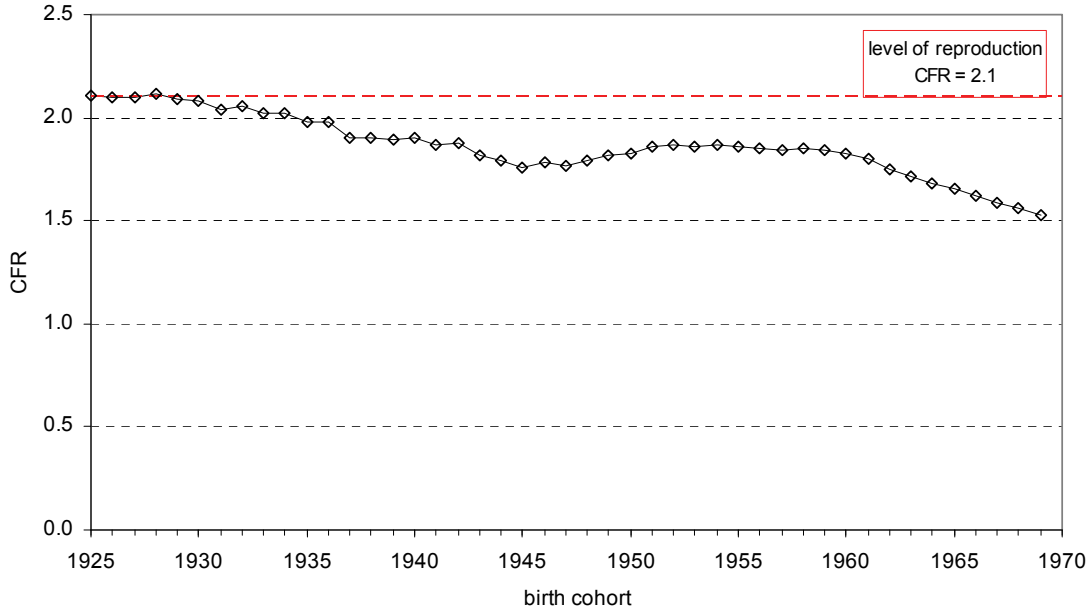


Figure 13: Completed fertility rate (CFR): 1925 to 1970; Source: 1925 to 1957: Scherbov and Van Vianen (2001: 284, Table I), 1958 to 1969: COE (2004)

Even if the cohort fertility (completed fertility rate – CFR: see Figure 13) shows similar trends, its changes are less pronounced compared to the TFR. It declined from a level around 2.1 children per woman in the birth cohorts of the 1920s and 1930s, to a value of 1.76 for women born in 1945. After a short increase until the middle of the

1950s, followed by a stable phase until the cohort of 1960, the completed fertility decreased constantly. In the cohort of 1969, only 1.5 children per woman were born.

The differences between the TFR and CFR indicate the following: first, the variation in period fertility is presumably strongly determined by changes in the timing of births; and, second, the fertility decline in the 1990s is over-emphasized by the TFR, as the CFR indicates a weaker decrease in fertility.

The TFR and the CFR do not show how individuals are distributed over parities; nor do they provide any information about male fertility outcomes. Figure 14 therefore presents the distribution of live births by order over calendar years. Since 1960, the share of higher-order births among all live births declined, with exception of a short period in the 1980s. Whereas in 1960 30% of all births were of third or higher orders, their share declined to 12% in 1998. The proportion of second births increased from the 1960s (around 30%) until the end of the 1980s (around 40%). Since then, and in the 1990s, their share declined again to around 30%. The shrinking proportion of third- or higher-order births led to growth in the share of first births from the 1960s (around 40%) until 1980 (54%). In the 1980s, their proportion declined again to a level of around 40%. In 1988, a second increase started, reaching its peak in 1995 at a level of 59%. Thereafter, the proportion of first births remained stable at this high level.

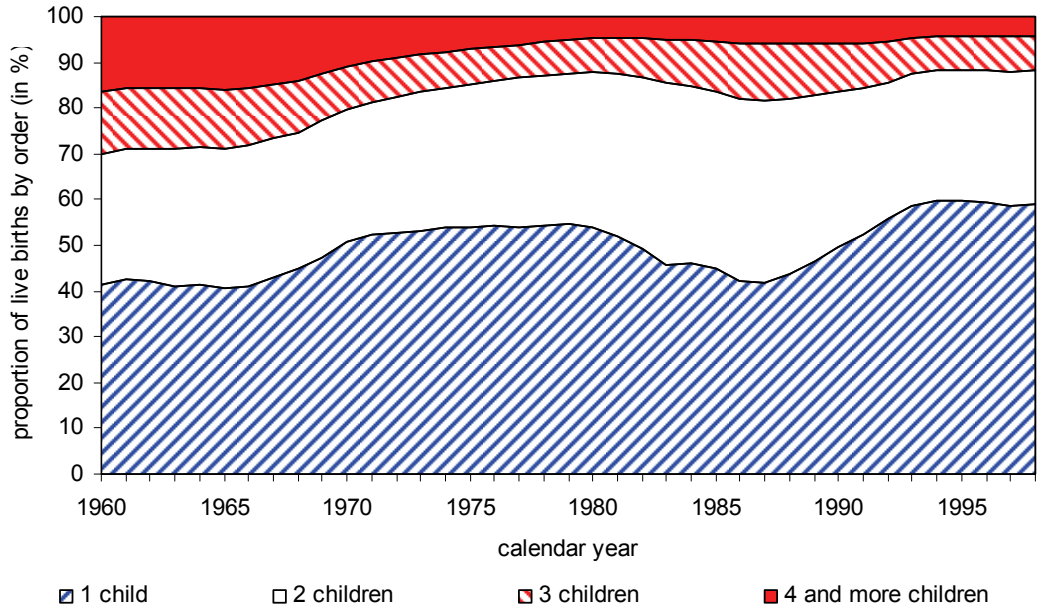


Figure 14: Distribution of live births by order per female, relative to total number of births: 1960-1998; Source: COE (2004)

Figure 15 and Figure 16 illustrate parity specific developments from the cohort perspective for Russian males and females, which basically show a similar pattern[14]. The changes over birth cohorts are less pronounced compared to period developments. The proportion of males and females with three and more children constantly declined from one-third of the whole population in the cohorts of the 1920s, to approximately 10% in the cohorts at the end of the 1960s. The share of individuals with two children rose until the birth cohorts at the end of the 1960s, from around 40% to over 50%. In the cohorts of the 1960s, the share of people with two children declined, and the proportion of one-child parents increased strongly for the first time, from a level around 30% in the cohorts between 1925 and 1960, to approximately 40% at the end of the 1960s. Figure 15 and Figure 16 also illustrate the share of childless individuals. Their proportion in the whole population remained relatively low over all birth cohorts, at around 10%.

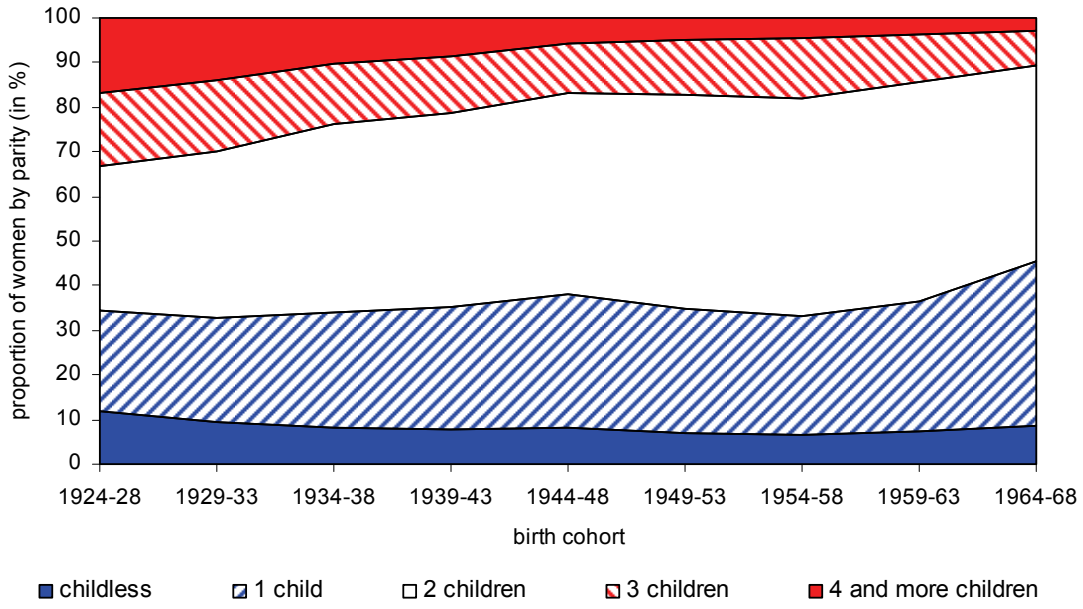


Figure 15: Parity distribution over birth cohorts, females: 1924 to 1968; Source: Zakharov (2003: 5, Table 3)

Note: preliminary estimates for cohorts 1959 to 1968

[14] The results for males presented in Figure 16 are based on own estimations using the Russian GGS (2004). Because of small case numbers (due to mortality) in the oldest cohorts (1923 to 1930), their pattern might be biased.

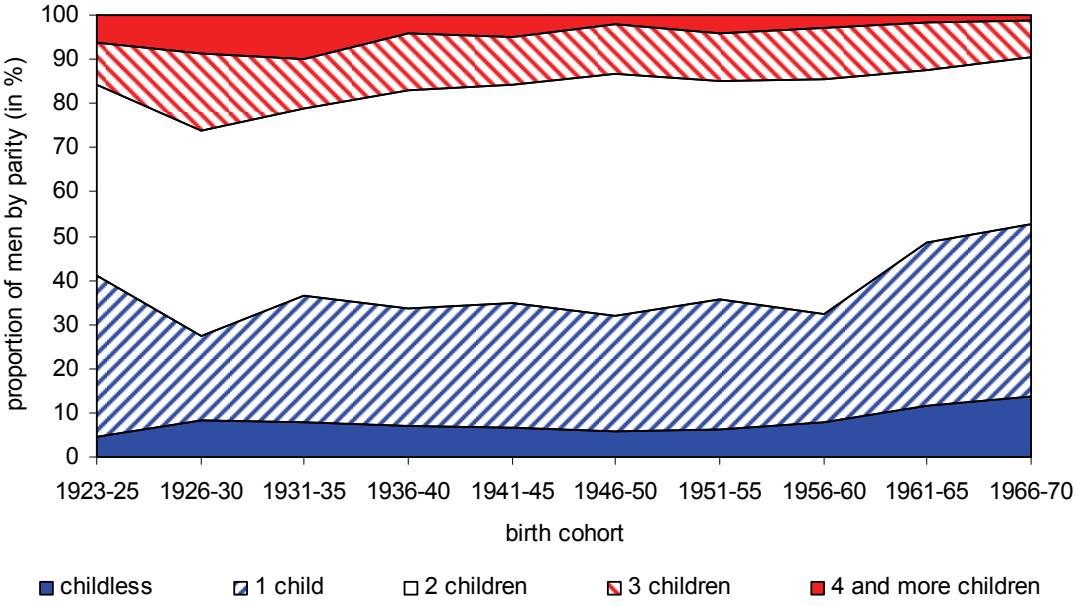


Figure 16: Parity distribution over birth cohorts, males: 1923 to 1970; Source: Russian GGS (2004) – own estimations

Note: preliminary estimates for cohorts 1961 to 1970

3.2. Fertility timing

In addition to the number of children born to Russian men and women, the timing of births also determine fertility patterns. Period developments, in particular, strongly depend on when children are born. Figure 17 displays various aggregated age measures between 1960 and 2004 from official statistics (only available for females), and from the author's own estimations (presented for men and women). The mean age at childbirth among women decreased strongly until 1980, from 28.1 years in 1960 to 25.7 years in 1980. Subsequently, it stabilized at this level and increased slightly until 1987, to 26 years. It further declined and reached its lowest point in 1994, at 24.7 years. Since then, the age has risen steeply, reaching a value of 26.1 in 2002.

The development of the age at first birth displays a similar pattern (Figure 17). Russian males and females experienced parenthood about one to 1.2 years earlier at the end of the 1970s than at the beginning of the 1960s (females: ages 24 to 23; males: ages 25.6 to 24.4). This decrease was considerably weaker compared to mean ages over all births, which decreased in the same period by about 2.5 years. In the following period, the age pattern at first birth stabilized at a level of around 23 years for females and around 24.6 for males. At the end of the 1980s and until the mid-1990s, a decline occurred (see official data of COE (2004)).

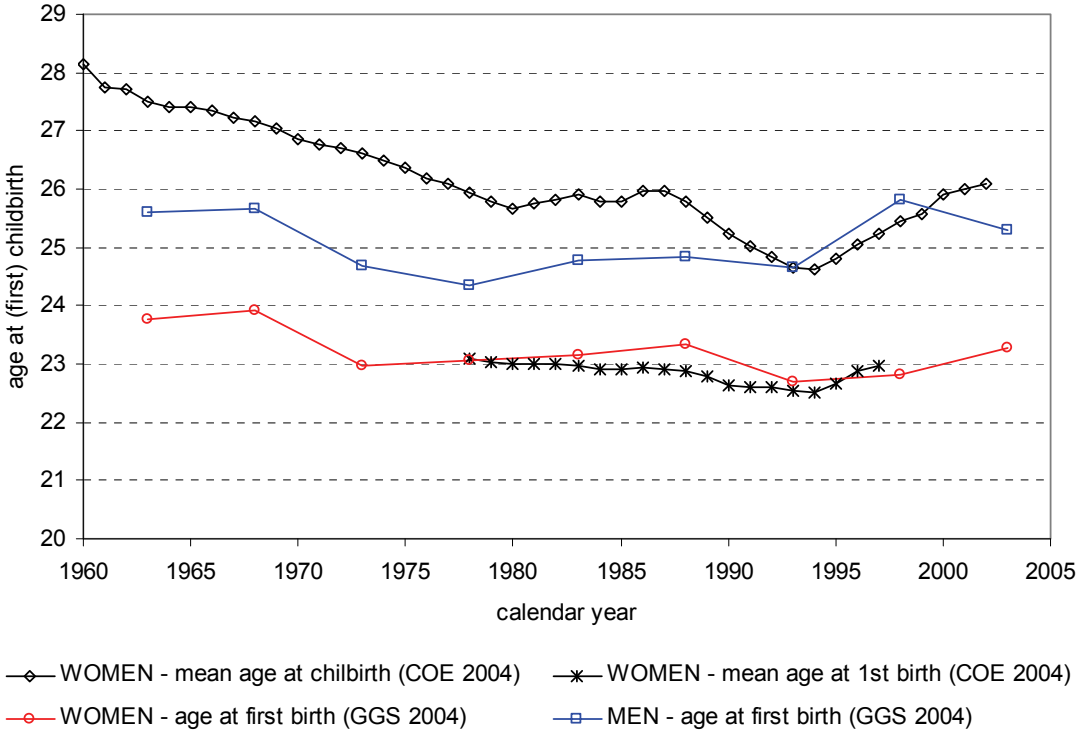


Figure 17: mean age at (first) childbirth by period: 1960 to 2004; Source: COE (2004), Russian GGS (2004) – own estimations

Note: Mean ages at first birth (GGS 2004) are five-year averages assigned to the middle year of the interval

The year 1995 was the turning point in this trend, when the age at first birth started to rise. Thus Russian males and females began to postpone fertility considerably.

These changes in fertility age patterns and fertility levels are also shown by the age specific fertility rates (ASFR) in Figure 18 for females, and in Figure 19 for males. Females were most likely to give birth between the ages of 20 and 24. This concentrated pattern was particularly pronounced from the mid-1970s until the beginning of the 1990s. Subsequently, the birth risk declined and the differences between the age groups 20 to 24 and 25 to 29 declined significantly. Furthermore, a large proportion of women under age 20 gave birth.

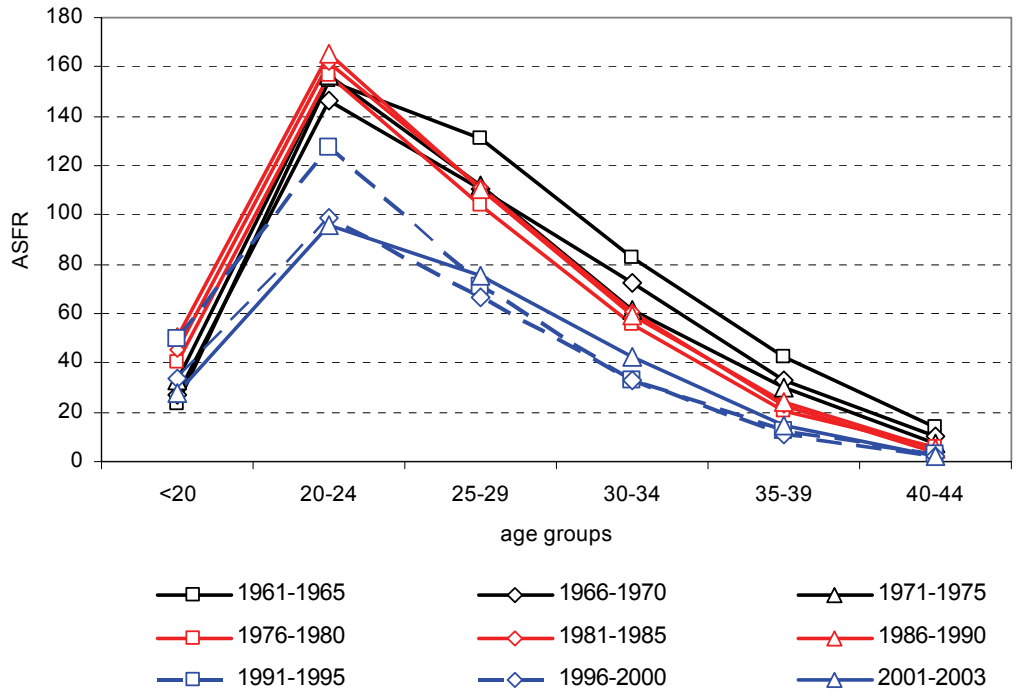


Figure 18: Age specific fertility rates in 5-year age groups, women: 1961 to 2003; Source: Zakharov (1997: 23, Table E), Zakharov (2003: 16, Table 16), Demographic Yearbook Russia (2005)

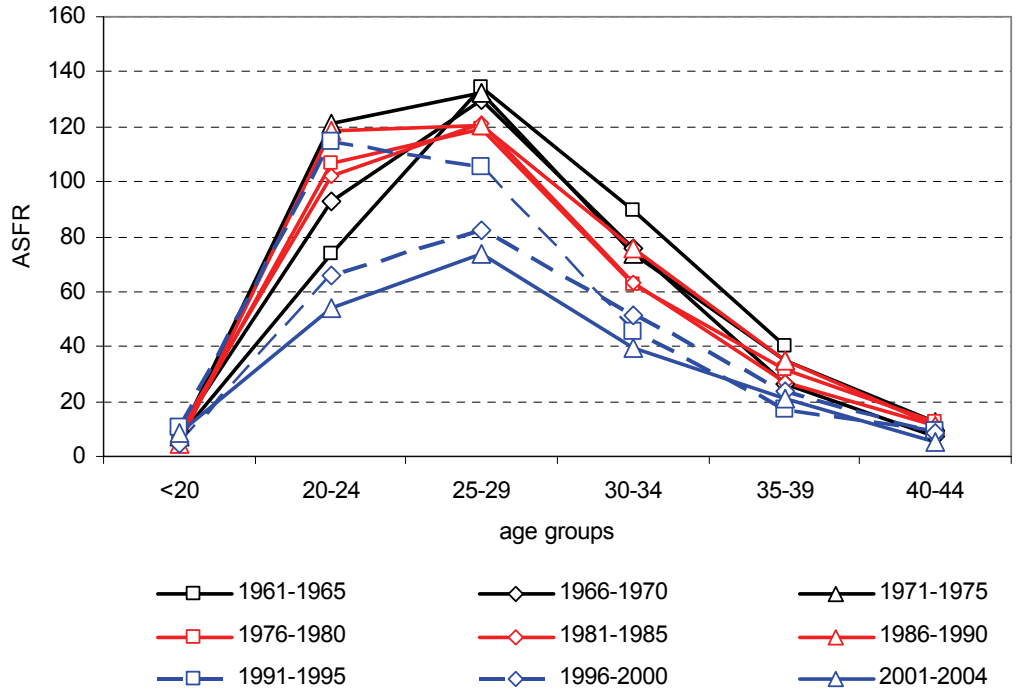


Figure 19: Age specific fertility rates in 5-year age groups, women: 1961 to 2004; Source: Russian GGS (2004) – own estimations

Male Russians experienced the birth of their children at higher ages than females, most likely in the second half of their twenties, with the exception of the beginning of

the 1990s. This age difference was already shown in the mean age at first birth, and accounts for their later start. However, the male data follow the trends of the "official" female data closely. There is clear trend towards having children at younger ages from 1960 to 1995. Thereafter, fertility rates dropped sharply in the age groups between 20 and 29, but increased slightly for males between the ages of 30 and 34. Male fertility was reduced and postponed, and the age range of first fatherhood widened starting in the mid-1990s.

3.3. Non-marital children

Russia's nuptiality and fertility pattern started to alter at the end of the 1980s. Hence it is not surprising that the interaction between childbearing and union formation behavior altered, too. The share of children born outside a marriage increased after 1985, as Figure 20 reveals. In the first five years, it grew moderately, from a level of 11% in 1985 to 13.5%. After 1990, non-marital childbearing skyrocketed. Between 1990 and 2002, its share more than doubled. Thus today, approximately one-third of all births in Russia occur outside of marriage (Philipov and Jasilioniene 2007).

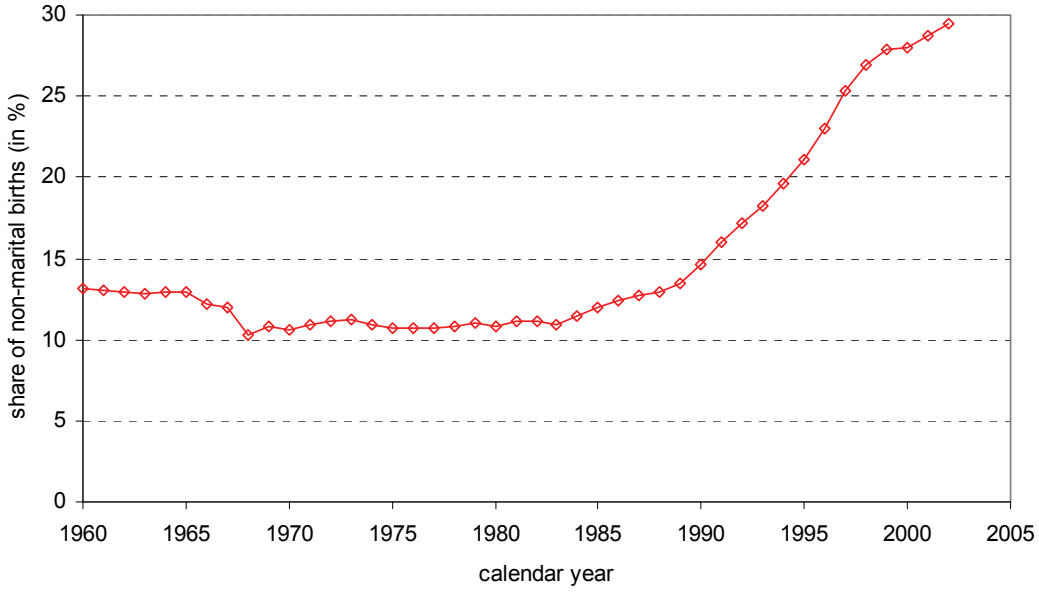


Figure 20: Share of non-marital births of total number of births (1960 to 2002); Source: COE (2004)

Since official estimates on non-marital cohabitation are not available for the Soviet period and early Russia, the share of non-marital childbearing is used to assess the spread of consensual unions. Thus, Figure 20 also indicates a growing proportion of non-marital cohabitations since the 1980s. Meanwhile, an increasing number of children born out of wedlock are officially registered by both parents instead of a single parent, usually the mother (Philipov and Jasilioniene 2007).

4. Summary – family formation between 1960 and 2004

The Soviet or Russian union formation patterns are dominated by nearly universal marriage at a very low age until the beginning of the 1990s. In the 1960s, most of Western Europe developed aging and decreasing marriage patterns, in sharp contrast to the trends occurring in the Soviet Union (Avdeev and Monnier 1999, 2000; Darsky and Scherbov 1995; Gerber and Berman 2005; Micevska and Stark 2004; Scherbov and Van Vianen 2001, 2004; Vishnevsky 1996; Zakharov 2003). The age at first marriage continuously decreased, whereas the first marriage rate stayed stable at a very high level. Marriage in general, and at very young age, was a long-lasting social norm in the Soviet Union and Russia over many generations (Philipov and Jasilioniene 2007). Accordingly, non-marital cohabitations were not widespread in the population as "real" long-term partnerships, but had some relevance at younger ages and as a temporary kind of union.

During the socialist period, marriage and parenthood were strongly connected, and birth out of wedlock very seldom occurred. Despite the dominance of marital childbearing, conception outside of marriage was a relatively common phenomenon (Barkalov 2005; Philipov and Jasilioniene 2007). Change began at the end of the 1980s, when the number of cohabitations (Vishnevsky 1996), as well as the share of non-marital childbearing, started to increase seriously.

The first half of the 1990s can be regarded as the final turning point in the Russian nuptiality pattern. Marriage rates fell drastically, and the age at first marriage increased rapidly. At the same time, the share of young males and females in consensual unions rose steeply, particularly before entering a first marriage. The parallel increase in the age of marriage indicates first marriage postponement, whereas non-marital cohabitations tend to replace very early marriages (Avdeev and

Monnier 1999, 2000; Gerber and Berman 2005; Philipov and Jasilioniene 2007). In the course of these developments, the prevalence of non-marital childbearing also strongly increased, which indicates a decoupling of marriage and fertility trends (at least at the marco level).

Fertility developments in Russia were more complex. However, in line with the presented fertility indicators, and according to the words of the Russian demographer Alexandre Avdeev, fertility in the Soviet Union and in Russia since the early 1960s can be described as "everybody, early, few and quickly" (Avdeev 2001).

Parenthood was universal for men and women in the Soviet Union, as well as in the Russian Federation. The 1960s, 1970s, and 1980s were characterized by extremely low levels of childlessness (Zakharov 1999, 2003).

From the 1960s until the beginning of the 1990s, the early start of fertility was another general pattern in Russia (Scherbov and Van Vianen 1999, 2001; Zakharov 1997). The majority women and men experienced first-time parenthood in the first half of their twenties. The decreasing age at childbirth at the beginning of the 1960s and 1970s was accompanied by a shrinking number of third and higher-order births, and by a real reduction in age at childbearing (Zakharov 1999). In contrast to developments in Western Europe and the U.S., Russian births occurred increasingly early throughout the whole period.

The next characteristic pattern was the short spacing of subsequent births, in particular the transition from the first to the second child (Scherbov and Van Vianen 2001; Zakharov 1997), which added to the steeply declining age at childbirth. Consequently, the family formation and family extension process was finished early (Zakharov 1999).

Although the transition to parenthood was universal, rapid, and occurred at young ages, the commonly desired number of children was two. This two-child norm was already established by late 1960s (Avdeev 2001; Scherbov and Van Vianen 2001; Zakharov 1999, 2003), when the share of third and higher-order births declined, and the proportion of families with one or two children increased significantly (Zakharov 2003). Together with the early start and the close spacing of births, this pattern can be called the "stopping model" of Russian fertility (Avdeev 2001). Consequently, below-replacement fertility was already established in the late 1960s, with the exception of the baby boom in the 1980s (Avdeev 2001, 2003).

The steep fertility decline in the 1990s cannot be understood without a consideration of the fertility developments in the 1980s. As described in Chapter III, various pro-natalist policies (increased paid maternity leave, lump sum payments, change of the definition of large families, etc.) were instituted at the beginning of 1980s by the Soviet government. They led to a further reduction in the age at childbearing, but mainly to an even closer spacing of first, second, and third births. Consequently, period fertility increased significantly, but only temporarily, whereas cohort fertility virtually did not change. (Barkalov 2005; DaVanzo and Grammich 2001; Scherbov and Van Vianen 1999)

The year 1988 marked the end of the short baby boom, when fertility started to decline. Initially, this trend compensated for the previous fertility increase (DaVanzo and Grammich 2001; Vishnevsky 1996; Zakharov 1999, 2003). Since the two-child norm prevailed, many Russians already had their planned number of births. In the 1990s, more and more quantum effects contributed to the decline, particularly the reduction in second and third births (Avdeev 2001; Barkalov 2005; Kalabikhina 2006; Philipov and Jasilioniene 2007).

Furthermore, the decrease in the age at childbirth and first birth reversed in the mid-1990s for the first time in recent Russian history, which added to the declining fertility (Scherbov and Van Vianen 2001; Zakharov 1997, 2003). However, the age at childbearing remained relatively low compared to other Eastern and Western European countries (Avdeev 2001; Philipov and Jasilioniene 2007). The postponement of births seriously started at the end of the 1990s and in the new millennium (Spielauer, Koytcheva and Kostova 2007), and partially offset the recovery of period fertility (Zakharov 1999, 2003).

Despite decreasing fertility, the proportion of childless individuals increased only slightly after the mid-1990s (Billari and Kohler 2002; Dorbritz 2000). Its level was still moderate and below the standards of many other European countries (Alich 2006; Kalabikhina 2006), because the share of families with one child increased strongly (Avdeev 2001, 2003).

5. Research questions

This purpose of this study is to go beyond a pure description of fertility and nuptiality pattern of Russian males, providing explanations for *why* macro-level fertility patterns changed so drastically over the past five to four decades by analyzing a very specific part of fertility and nuptiality behavior, i.e., men's transition to a first union, and men's transition to a first biological child. The research focus of this study thus covers three main directions.

First, it shall provide a detailed evaluation of period trends in first union formation and first procreation behavior of Russian males on the individual level, and across individual characteristics. It will investigate in what ways the previously described nuptiality changes and fertility crisis are responses to altered economic, institutional, or social opportunity structures.
In other words, formulated as questions: How did Russian men's family formation behavior change over the period? How did the economic, institutional and social changes affect men's nuptiality and fertility decisions? Are there clear pre- and post-socialist patterns?

Second, this study will investigate how education and the employment characteristics of Russian men influence their nuptiality and fertility decisions. Furthermore, it will analyze to what extent men's education and employment witnessed significant changes concerning itsvalues and perceptions towardsfamily formation decisions - during the Soviet Union's transition to the Russian Federation. The direction, as well as the strength of change will be assessed as the outcomes of individual adaptation processes to altered opportunity structures, e.g., in the educational system and on the labor market.
In other words, and formulated as questions: How do men's employment status and education influence their first union formation and first procreation behavior? Is the impact of education and employment on fertility and nuptiality influenced by the societal transformation? What is the explanation for the patterns?

Third, two processes form the core of the theoretical and empirical analyses in this work, i.e., a man's first union formation in a common household, and the procreation and birth of his first child. Together these processes are viewed as a man's first family formation. However, their interrelation, i.e., the impact of union formation on procreation and the effect of procreation on union formation, is not constant over time, but is subject to permanent change. In particular, the SDT approach uses the interaction of certain nuptiality and fertility behaviors as an indicator to prove the existence of large-scale value changes. Thus, the study will be investigate whether marriage leads to childbearing, if childbearing causes marriage, and to what extent non-marital cohabitations replace marriage in this context.
In other words, and formulated as questions: Which kind of union formation (marital or non-marital) promotes a man's transition to fatherhood? How does this interrelation change over the societal transformation? Is this change an outcome of a value change, as posited by the SDT approach?

In order to answer my research questions, and in line with the theoretical framework, a multi-variate event history approach will be used in the empirical analyses. Furthermore, in a first step, and as a precondition for detailed analyses, the reliability and quality of Russian men's fertility reports will be empirically checked.

Chapter V
Data and Methods

1. Data

1.1. The Russian Generation and Gender Survey (GGS)

Data of the recently collected Russian Generation and Gender Survey (GGS) are used in the empirical analyses. The survey is part of the international Generation and Gender Program (GGP). The interviews were conducted between June and August 2004. A stratified sample technique was used. The data were collected on the basis of the 10 geographical regions of the Russian Federation (excluding St. Petersburg, Moscow City, and Moscow Oblast) and on the basis of modified "*raions*" (counties). Finally, the whole dataset contained 11,258 valid cases for the empirical analyses in this study. Men and women were questioned separately. The majority of respondents were females, with 7,036 (62.5%) valid cases. The number of valid cases among men was 4,222 (37.5%) (Independent Institute for Social Policy 2004). The respondents were taken from the birth cohorts 1923 to 1988. Correspondingly, the age distribution varies between 16 and 82. Unfortunately, the response rate in the most urbanized regions (Moscow and St. Petersburg) of Russia was very low. In both cities, it did not exceed 15% (Independent Institute for Social Policy 2004). Furthermore, analytical weights were applied to the data.

The collection of fertility and partnership histories was one of most important goals of the GGS program. Therefore, two kinds of fertility tables were used in the analyses: 1. children in the household, and 2. children currently not in the household. All children were identified in terms of their relationship to the respondent (biological, fostered, adopted, etc.). The structure of the partnership table allows for cross-checking for common biological children with every mentioned partner. Questions about child support and allowances were asked in a separate part of the questionnaire. The structure of the questionnaire fulfills most of the criteria deemed to be necessary for the collection of reliable male fertility data (Alich 2007).

In the empirical analyses of fertility data quality and of the fertility reporting behavior of Russian males, the full GGS sample is used.

1.2. The Russian Education and Employment Survey (EES)

Furthermore, data from the Russian Education and Employment Survey (EES) were used to add complete educational histories to the GGS data. The EES was conducted in 2005, and it represents a sub-sample of the Russian GGS. It contains 6,455 persons, of which 2,460 are males and 3,995 are females. The EES questionnaire consists of 199 items on education and employment careers, as well as on social and demographic indicators.

Whereas the fertility measures showed good correspondence with the official Russian statistics, the structure of the population by educational attainment did not display sufficient closeness. In particular, there was an over-representation of the less-educated. However, the age sex structure within the tertiary degrees proved to fit rather well well. The employment reports of the EES are proven to be a good representation of official social-economic statistics. The structure of the employed by branches of economy displayed sufficient coincidence. (Soroko and Konietzka 2006)

1.3. Merging of the GGS and EES

Both datasets were merged via the unique identification number of the respondents in both surveys. In the following analyses, respondents who were not represented in both surveys will be excluded from the used sample. After considerable cleaning, the number of respondents who were finally included in the analysis is 6,032 – thus, 2,292 men and 3,740 women, with 4,657 first biological children (men: 1,579; women: 3,078).

From the merged dataset, only males are selected for the empirical analyses of men's transition to the first non-marital cohabitation and first marriage (Chapter VII), and for the empirical analyses of the men's transition to first conception (Chapter VIII).

1.4. The Contextual Database of the GGP

The Contextual Database is a part of the Generation and Gender Program. It was constructed to complement the data collection of the GGS and EES (on the individual level) with macro-level data. The Contextual Database contains information on laws and policies that affect age and sequencing norms, as well as the consequences and

risks associated with the central life course events studied in the GGP. It also contains indicators of general gender and generational relations, and a range of social, economic, and political indicators (Spielauer 2006). The database is organized into 15 topics: demography, economy, labor and employment, parental leave, pension, childcare, military, unemployment, tax benefits, housing, legal aspects, education, health, elderly care, political system and culture (Generation and Gender Program - Contextual Database 2007).[15]

Information from the Contextual Database was used in the description of the societal context (Chapter III).

2. Method: event history analyses

The applied theoretical framework of the life course approach stresses that events in individual life courses are determined by various time dimensions, opportunity structures, and individual resources and dispositions (see Chapter II, Section 2). Event history analysis provides the methodological frame to account for these interrelations in the empirical analysis of life course transitions (Blossfeld et al. 1986). Formally, the life course can be described as a stochastic process with a continuous time axis and a multidimensional state space (Blossfeld and Huinink 2001).

Event history analysis is *the* statistical tool used to analyze longitudinal or life course data (Blossfeld et al. 1986) as provided by the Russian GGS and EES. This form of analysis is used to model multidimensional time dependence of events (Mayer and Huinink 1990), and thus allows us to consider the interrelation between biological, social, and historical time, as conceptualized by the life course approach (see Chapter II, Section 2).

It is concerned with the pattern and correlates of the occurrence of events (Yamaguchi 1991). Particularly for social sciences and demography, which deal with the analysis and explanation of individual lives, it provides an analytical instrument to account for timing, occurrence, and *non*-occurrence of important events, such as birth, death, or union formation. According to Yamaguchi (1991), event history analysis can be defined as the study of non-experience of one (or more) events during a period at risk. This means that the subject of interest is a duration starting from the moment when an

[15] The GGP Contextual Database can be accessed freely under www.demogr.mpg.de

individual becomes exposed to the risk of experiencing a particular event. This duration ends when the event occurs, or when the observation period ends without the occurrence of an event (e.g., at the end of a study, or at the age at the interview). In these cases, the duration is censored.

2.1. Censoring

In particular, the ability to deal with certain kinds of censoring and truncation is a major advantage of event history analysis (Yamaguchi 1991). Figure 21 illustrates both kinds of left-truncation and right-censoring (*A* and *C*) compared to an uncensored observation (*B*). All subjects are under observation from T_0 to T_1. T_0 represents the start of the observation period, i.e, in this study a certain calendar year, from which point on the life course of individuals is observed. T_1 represents the end of the observation period, i.e., in our case the time of interview, when individuals have reached a certain age from which their life course is retrospectively recorded. *x* represents the occurrence of the event(s) of interest.

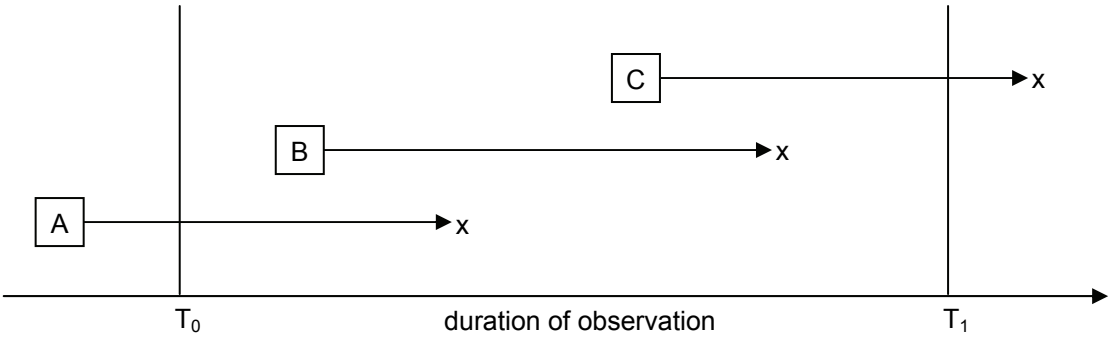


Figure 21: Left-truncation, right-censoring, and not censored observation;
Note: x = occurrence of event(s) of interest

In example *A,* the case of left-truncation is illustrated: An individual becomes exposed to the risk of experiencing the event of interest before the observation period starts. In this study, this would mean the following: a man reaches the age of 15, and thus become exposed to the "risk" of parenthood and union formation before a certain calendar year. In example *C* right-censoring is displayed. A subject becomes exposed to the risk in the period of observation, but the event of interest occurs outside of the

interval. In this work, this would imply that a man reaches age 15 in the period of observation, and thus becomes exposed to the "risk" of union formation or fatherhood, but that the event has not occurred until the time of interview. In contrast to examples *A* and *C*, in case *B* an individual is observed from entering the "risk" period until the occurrence of the event.

2.2. Formalization of analysis

Most event history models are defined by the expression of the *hazard rate* or the *transition rate,* or the *intensity* of an event as a specific function of relevant time dimensions and measured covariates. In non-formal terms, these rates measure the *probability per unit of time* that an event or transition occurs in an infinitesimal interval of time among those individuals *at risk* during the particular time interval, conditional on the assumption that this event not yet having occured. (Mayer and Brandon Tuma 1990)

Mathematically (following Yamaguchi 1991 and Courgeau and Lelièvre 1992) a given hazard rate *h(t)* is specified by:

$$h(t) = \lim_{t \to 0} \frac{P(t < T \leq t + \Delta t \mid T \geq t)}{\Delta t} = \frac{f(t)}{S(t)} \qquad \text{(I)}$$

Where:

$$P(t < T \leq t + \Delta t \mid T \geq t) \qquad \text{(II)}$$

is the probability that a given event occurs during in the time interval *(t, t + Δt)*, given that the event did not occur before *t*.

The hazard rate is also defined by the ratio of the density probability function *f(t)* and the survivor function *S(t)*. Which are defined by:

$$S(t) = P(T \geq t) = \exp\left(- \int_0^t h(s)ds \right) = \exp\left[- H(t) \right] \quad \text{(III)}$$

$$f(t) = \frac{P(t < T \leq t + \Delta t)}{\Delta t} = h(t) \exp\left(- \int_0^t h(s)ds \right) \quad \text{(IV)}$$
$$= h(t) \exp\left[- H(t) \right] = h(t) S(t)$$

H(t) is the integral of the conditional density and is called the integrated or *cumulative hazard function*, which correspondingly can be defined as:

$$H(t) = \int_0^t h(s)ds = -\log S(t) \quad \text{(V)}$$

In event history analysis, the *hazard rate* or *intensity*, and the *cumulative hazard function* are commonly modeled, whereas the survivor and density function are seldom used.

For an estimation of the hazard rate from real data, the hazard function might be combined into a likelihood function (i.e., the likelihood, or the probability of observing the occurrences as they were effectively collected (Courgeau and Lelièvre 1992)). A critical assumption when constructing likelihood functions for hazard rate estimations is that that individuals' times at risk (duration) and censoring times are independent (Klein and Moeschberger 1997). Considering this, the likelihood function for a sample of *n* subjects can be defined as:

$$L = \prod_{i=1}^{n} \left[f_i(t_i) \right]^{\delta_i} \left[S_i(t) \right]^{1-\delta_i} = \prod_{i=1}^{n} \left[h_i(t_i) \right]^{\delta_i} S_i(t_i)$$
$$= \prod_{i=1}^{n} \left[h_i(t_i) \right]^{\delta_i} \exp\left[- H_i(t_i) \right] \quad \text{(VI)}$$

Where: t_i is the duration or time at risk for the i^{th} individual / subject

δ_i indicates whether the duration or time at risk of an individual is completely observed (not censored $\delta_i = 1$) or not (censored $\delta_i = 0$)

the subscript *i* for the survivor, hazard and cumulative hazard functions indicate that they depend on the values of other covariates which are specific to each subject or individual

Thus the data from a sample of *n* subjects consists of subject specific pairs: (t_i, δ_i), $i = 1, \ldots, n$ and individual specific hazard and survivor functions.

There are certain variants of defining the shape of the hazard function, i.e., non-parametric, parametric, and semi-parametric models.[16] In this work a *non-parametric* modeling approach will be used as a first step of analysis and description of data. The applied Kaplan-Meier survival function (Kaplan and Meier 1958) estimates the S(t) of a transition from one state to another without making a hypothesis about its shape (Blossfeld et al. 1986). However, it has several shortcomings when the heterogeneity of populations is considered (Blossfeld and Rohwer 2001). First, with an increasing number of subgroups, a point is rapidly reached at which it is difficult to estimate and compare survival functions due to the small number of cases in the subgroups. Second, even if estimation is possible, the interpretation of these functions and their differences becomes very complex. Third, to reduce complexity, covariates must be grouped with a significant loss of information. Fourth, multi-episode processes can hardly be analyzed using this model. The Kaplan-Meier approach assumes that the characteristics affecting the survival function are constant over time, and that the transition probability is therefore only affected by *time constant covariates*. This assumption is not theoretically justified (see Chapter II, Sections 2 and 3), hence forces of social change also depend on changes over time (Blossfeld and Rohwer 2001). Thus, survival functions and hazard rates are also dependent on *time varying covariates*. To illustrate this problem, I will give examples linked to my research questions.

Time constant covariates measure individual characteristics which are constant over whole lives or across the period of observation. T thus, they influence the hazard

[16] For a detailed description and formal representation of the three different approaches see:
Courgeau, D.and É. Lelièvre. 1992. *Event History Analsis in Demgraphy*. New York: Oxford University Press.
Blossfeld, H.-P.and G. Rohwer. 2001. *Techniques of Event History Modeling - New Approaches to Causal Analysis*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

function independent of time. In this work, covariates, like the sex of a respondent, the region of birth, or the age at union formation, are time constant covariates which influence the probability of a transition to fatherhood or to a union independently of the age of the respondent or the union duration.

Time varying covariates: The individual's education is a prominent counter example to time constant characteristics (Hoem 1986; Kravdal 2001; Kreyenfeld 2002). Education changes over the whole life courses of individuals, and particularly strongly during their teens and twenties, when first union formation and first births may also take place. When education is assumed to be constant over a lifetime, and to have a constant influence on fertility and nuptiality decisions, these changes and their impact are disregarded. The concept of "multiple clocks" (Lillard 1993) illustrates this problem from another point of view. It assumes that, by finishing or starting an educational career, a new clock starts which measures a "social age" according to the time spent in, or the time that has elapsed since, participation in education. This social age affects fertility and nuptiality decisions.

2.3. Non-parametric proportional hazard models

To overcome the shortcomings of the previously discussed hazard models, the empirical analysis will be extended by non-parametric proportional hazard models, namely, a multiplicative intensity regression model with a piecewise-constant baseline hazard. It allows the incorporation of various time constant and time dependent covariates.

In such a model, the hazard rate is defined by a baseline hazard $h_{ijk}(t)$ and by sets of time dependent ($\gamma_h c_{hk}(t)$) and time independent ($\beta_h b_{hj}$) covariates. The baseline hazard is assumed to be constant over predefined time intervals (splits), which can vary across these time periods. The coefficients of the covariates affect the hazard function in a multiplicative manner, thus they shift the baseline hazard proportionally without altering its shape.[17]

The mathematical specification of the log risk can be specified as follows:

[17] However, the use of a piece-wise constant model allows for a partial relaxation of this assumption. Hence, it allows us to model interactions between the baseline function and other covariates by using software like Stata, EvHA, or aML.

$$\ln h_{ijk}(t) = h_0(t) + \sum_{h=1}^{m} \beta_h b_{hj} + \sum_{k=1}^{n} \gamma_h c_{hk}(t)$$

$$= \qquad \text{(VII)}$$

$$\mu_{ijk}(t) = a_i(t) + \exp\left[\sum_{h=1}^{m} \beta_h b_{hj} + \sum_{h=1}^{m} \gamma_h c_{hk}(t) \right]$$

In the following this formula will be further simplified for the purpose of readability of the applied models, to:

$$\mu_{ijk}(t) = a_i(t) * \beta b_j * \gamma c_k(t) \qquad \text{(VIII)}$$

where: $a_i(t)$ is the baseline intensity, βb_j represents the effect of time constant covariates, and γc_k defines the effect of time varying covariates.

So far, this model considers a transition from one status to another single state. In my analysis, it is applied to Russian men's transition to first procreation (see Figure 22). However, it will be subsequently shown that hazard functions and hazard regression techniques can be extended to multiple decrements or "competing risks."

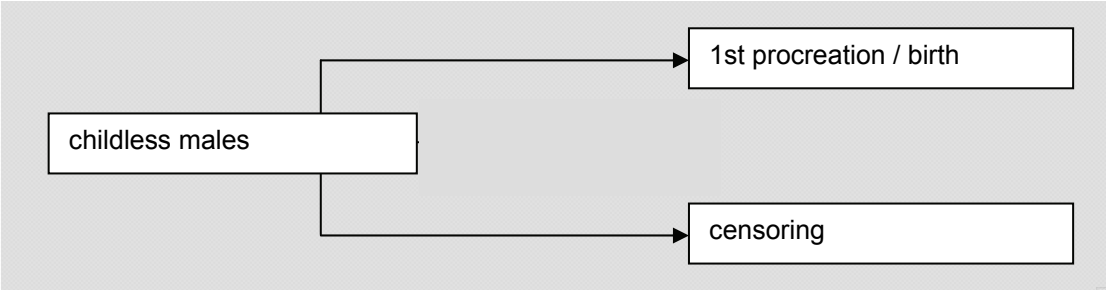


Figure 22: Males' transition to first procreation and to fatherhood – single decrement

2.4. Models with multiple decrement – "competing risks"

Not all processes end with the occurrence of a single event, but are determined by two or more end states, e.g., life ends by multiple causes of death. In event history terminology, this means that individuals can move from a given origin state to any one of a set of destination states - "multiple risks" (Blossfeld and Rohwer 2001). Then the calculation of the case-specific hazard rate $h_c(t)$ can be defined as follows (Klein and Moeschberger 1997):

$$h_c(t) = \lim_{t \to 0} \frac{P(t < T \leq t + \Delta t, \delta = c \mid T \geq t)}{\Delta t} \qquad \text{(IX)}$$

where: δ, ($\delta = c$, $c = 1, \ldots, K$) is an indicator of the specific risk K, which caused the end of the observation for an individual. The density function, the survival function, the cumulative hazard function, and the likelihood function are derived in a manner similar to formulas II to VI (for detailed description see: Klein and Moeschberger 1997). Also analogous to the single risk setup, Kaplan-Meier survival estimations will be applied in the empirical analyses to calculate "competing risks" survivals.

The competing events to be analyzed in this work are: first, Russian men's transition from singlehood to direct marriage, or to a non-marital cohabitation (see Figure 23); and, second, the transition from living in a non-marital cohabitation to marriage or to union dissolution (see Figure 24).

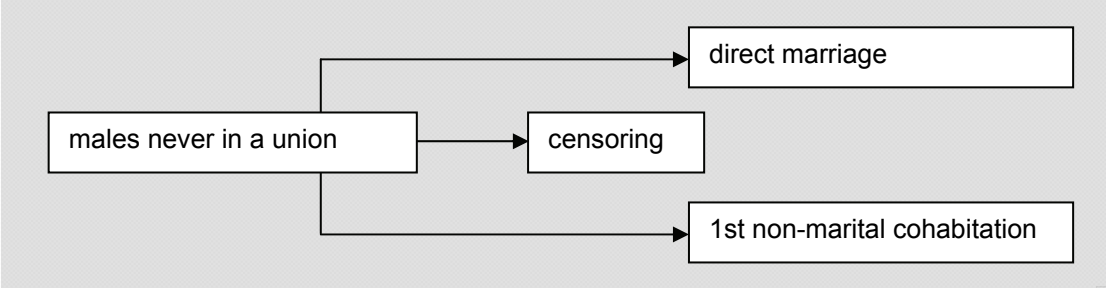


Figure 23: Male's transition to first union – multiple decrements "competing risks"

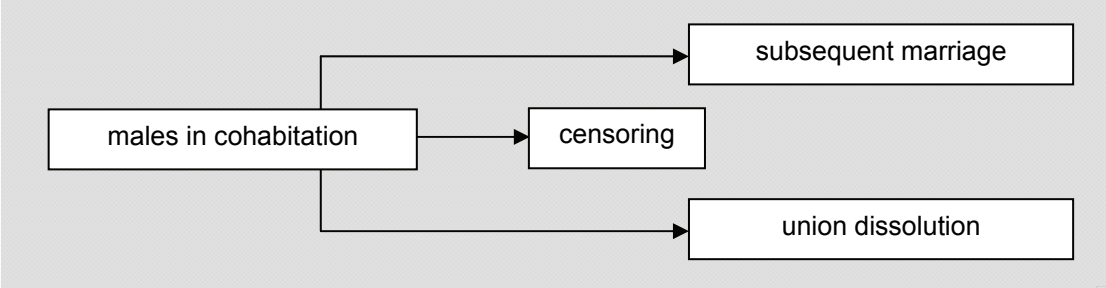


Figure 24: Males transition from first cohabitation – multiple decrements "competing risks"

To analyze both transitions in a multiplicative intensity regression model with a piecewise-constant baseline hazard, and to compare the impact of time constant and time varying covariates directly, an extended version of the single decrement case (see above Section 2.3 in this Chapter) is used as supposed by Hoem and Kostova (2007). Since this technique is innovative and crucial for the empirical part in this work, it will be explained in more detail. The subsequent explanation follows Hoem's and Kostova's publication closely, and the analytical procedure is thereby explained by using the first set of competing risks (see Figure 23).

Suppose that, besides the baseline intensity (age of the respondent – *Factor A*) there are only two covariates, namely a fixed *Factor B* and a time-varying *Factor C*. Further suppose that only a single decrement works in the basic model, e.g., direct marriage formation. The effect of age is assumed to be constant over given intervals (denoted as *i(t)*). An individual (*h*) has a fixed value of *Factor B* (j_h) and the time dependent value $k_h(t)$ on *Factor C*. Then, at time *t*, this individual's direct marriage transition intensity has the format:

$$\mu_h(t) = a_{i(t)} b_{j_h} c_{k_h(t)} \qquad \text{(X)}$$

The constants b_1, b_2, and so on are the effects of *Factor B,* and the constants c_1, c_2 and so on are the effects of *Factor C*. To get identifiable parameters, a baseline level j_0 on *Factor B* and a baseline level k_0 on *Factor C* are picked, thus $b_{j0} = 1$ and $c_{k0} = 1$. This makes b_j the transition risk for an individual with level *j* on *Factor B*, relative to the corresponding risk for an individual with level j_0 on the same factor. Similarly c_k is the transition risk an individual with level *k* on *Factor C*, relative to the corresponding risk with level k_0 on *Factor C*, when controlled for *Factor A* and *B*. The function $a_{i(t)}$ represents the baseline intensity, which is the effect of age in a group of individuals that have the baseline levels j_0 and k_0 on the two *Factors B* and *C*, thus $a_{i(t)} = \mu_h(t)$ if $b_{j_h} = 1$ and $c_{k_h(t)} = 1$. If the role of the individual respondent *h* and time dependence on *t* of the time-varying covariates, the intensity formula can be simplified as:

$$\mu_{ijk} = a_i(t) * b_j c_k *(t) \qquad \text{(XI)}$$

For every individual *h* the observations consist of his occurrences D_{hijk} and exposures R_{hijk}. D_{hijk} is the number of transition recorded, i.e., the number of direct marriages, while an individual has $i(t) = i$, $j_h = j$, and $k_h(t) = k$. For each individual most occurrences $D_{hijk} = 0$, until a direct marriage is recorded for individual *h*, when *Factor A* has level *i*, *Factor B* has level *j*, and *Factor C* has level *k.* Then one $D_{hijk} = 1$. Correspondingly, individual *h* is observed as exposed to the risk of direct marriage for R_{hijk} months during periods when all three factors have levels *i*, *j*, and *k*, respectively.
The likelihood of the observations for all respondents can be established as follows. All individuals are aggregated, so that $D_{ijk} = \sum_h D_{ijkh}$ and $R_{ijk} = \sum_h R_{ijkh}$. Then the likelihood is:

$$\Lambda = \exp\left\{ -\sum_i \sum_j \sum_k R_{ijk} a_i b_j c_k \right\} \prod_i \prod_j \prod_k \left\{ a_i b_j c_k \right\}^{D_{ijk}} . \qquad \text{(XII)}$$

By maximizing Λ[18] with respect to the three sets of parameters, one gets the maximum likelihood estimators $\hat{a}_i$, $\hat{b}_j$ and $\hat{c}_k$. The presented model is extended trivially to more than two covariates plus baseline intensity, and to situations where covariates operate in interactions. In my model, four time varying covariates and four time fixed covariates are introduced.
As a first step, a simple proportional-risk model of union formation for marital and non-marital union is separately calculated. On occasion, it happens that the effects of a covariate are roughly the same for two competing risks, e.g., the effects of activity status. This enables a combination of the data for the two risks, to analyze them jointly. Mathematically this is done by introducing an extra subscript (δ) for the cause of decrement – either direct marriage or non-marital cohabitation, thus:

$$\mu_{h\delta}(t) = a_{i(t),\delta} b_{j_h} c_{k_h(t),\delta} \qquad \text{(XIII)}$$

[18] I used the statistical software package STATA for data preparation and EvHA for the maximum likelihood estimation and competing risk analysis.

For the intensity of decrement δ, with $\delta = 1$ for the entry into an non-marital cohabitation and $\delta = 2$ for a direct marriage. In the simplified format one gets:

$$\mu_{ijk\delta}(t) = a_{i\delta} * (t) b_{j\delta} * c_{k\delta}(t) \qquad \text{(XIV)}$$

Correspondingly to the two types of decrement two occurrences matrices $D_1 = \{D_{ijk1}\}$ and $D_2 = \{D_{ijk2}\}$, but there will be only one matrix of exposures, namely the same matrix R as before. Although two competing risks are introduced into the model, an individual of course has the same months-exposed-to-risk for both types of decrement. This also holds in the aggregate. The combine occurrences and exposures matrices can be described as follows:

$$D_* = \begin{pmatrix} D_1 \\ D_2 \end{pmatrix} \text{ and } R_* = \begin{pmatrix} R \\ R \end{pmatrix} \qquad \text{(XV)}$$

The exposure matrix R appears twice. Using the combined occurrence and exposure matrices corresponds formally to entering the type of decrement as an extra *Factor D* in the analysis. The definition of $\mu_{hi\delta}(t)$ above would then correspond to operating with *Factor D* in a two-way interaction with each of the factors *A*, *B*, and *C*. The result would be the same as in separate analyses of the two decrements.

Suppose first that $b_{j1} = b_{j2}$ for all *j,* and that also $c_{k1} = c_{k2}$ for all *k*. In other words, suppose that *Factors B* and *C* have the same effect on both decrements. For the moment, similar assumptions are not made for *Factor A*. Thus, so far it is allowed that each transition intensity has its own profile, defined by the two sets of parameters $\{a_{i1}\}$ and $\{a_{i2}\}$. Operating with model where *Factor D* appears in interaction with *Factor A,* but not in interaction with the *Factors B* and *C,* would then produce estimated $\{\hat{a}_{i1}\}$, $\{\hat{a}_{i2}\}$, $\{\hat{b}_j\}$, and $\{\hat{c}_k\}$ of the various effects, thereby exploiting the fact that *Factors B* and *C* have the same effects for both decrements.

Suppose alternatively that $a_{i1} = a_{i2}$ for all age intervals *i* and $c_{k1} = c_{k2}$ for all *k*, but $b_{j\delta}$ may depend on the kind of decrement δ and on the level *j* on *Factor B*. To attain identifiable parameters let $b_{j_0 1} = 1$. It is not necessary to set also $b_{j_0 2} = 1$. Simple

substitution of the parameters into the intensity formulas gives $\mu_{ijk\delta} / \mu_{ij_0k1} = b_{j\delta}$. This shows that, under these conditions, $b_{j\delta}$ can be interpreted as the risk of entering a union of type δ when *Factor B* has level j (for any choice of levels i and k on *Factors A* and *C*), relative to the corresponding risk on entry into the same type of union when *Factor B* has level j_o. Similarly, b_{j1} / b_{j2} becomes the risk of entering a union of type 2, relative to the risk of entry into a union of type 1, because $\mu_{ijk\delta} / \mu_{ij_0k1} = b_{j1} / b_{j2}$. In my analysis this means the risk of having a direct marriage relative to the risk of forming a non-marital cohabitation.

The general models used for the analyses following in Chapter VII can be described as follows:

$$\begin{aligned} &1.\ \mu_{ijk\delta}(t) = a_{i\delta} * (t) b_j * c_k(t) \\ &2.\ \mu_{ijk\delta}(t) = a_i(t) * b_{j\delta} * c_k(t) \\ &3.\ \mu_{ijk\delta}(t) = a_i * (t) b_j * c_{k\delta}(t) \end{aligned} \qquad \text{(XVI)}$$

Where a_i represents the baseline intensity, age of the respondent, b_i represents a set of time-constant covariates, and c_k is a set of time-varying covariates. In Model 1, the baseline intensity $a_{i\delta}$ is interacted with the type of decrement δ, whereas the time-varying and time-constant are not interacted. In Model 2, only one of the time-constant variables appear in an interaction with the kind of union formation, and in Model 3 the interaction applies only to one of the time-varying covariates. Various other interactions between time-fixed and time-varying covariates are used in the analysis. Detailed model descriptions will follow in Chapter VII and VIII.

2.5. Piecewise linear models - splines

In the previously explained hazard regressions, the baseline hazard intensity was modeled as piecewise constant. The underlying assumption that the hazard risk is constant in certain intervals can be relieved by a piecewise linear spline transformation. A spline transforms a variable into a vector of new variables. Similar

to categorical variables which are divided into dummy variables, each new variable represents the original variable on a specific segment of its range, but its estimated effect is no longer constant, but piecewise linear (Lillard and Panis 2003). Thus, it allows the hazard risk to decrease or increase between the user defined spline points (also: nodes, knots, bending points).

According to Lillard and Panis (2003), the baseline log hazard pattern is based on the following transformation of the spell duration *t*:

$$T(t) = \begin{pmatrix} \min[t, \nu_1] \\ \max[0, \min(t - \nu_1, \nu_2 - \nu_1)], \ldots, \\ \max[0, \min(t - \nu_{n-1}, \nu_n - \nu_{n-1})], \\ \max[t - \nu_n] \end{pmatrix} \quad \text{(XVII)}$$

With the corresponding hazard regression model:

$$\mu_{ijk}(t) = a_i T(t) * b_j * c_k(t) \quad \text{(XIIX)}$$

A major advantage of such a model is that it offers the inclusion of overlapping splines (also known as: conditional splines or kick-in splines). The term "overlapping splines" refers to hazard models in which dependencies on multiple durations may combine to form the baseline hazard (Lillard and Panis 2003). Thus, these splines offer another possibility to measure the effect of time-varying characteristics and multiple clocks. By definition, time-varying covariates change discretely from one subinterval to the next (even if they are continuous, e.g., time, income etc.), consequently, their effect on the hazard consists of discrete jumps. Conditional splines relax this assumption and model time-varying characteristics as continuously changing duration patterns. Accordingly formula XIIX can be extended to:

$$\mu_{ijkm}(t) = a_i T(t) * b_j * c_k(t) * d_m T(t) \quad \text{(XIX)}$$

Where $d_m T(t)$ represents a set of conditional splines, with user-defined nodes.

In this work, a piecewise linear hazard regression and the concept of overlapping splines will be applied to the analyses of men's transition to a first child in order to distinguish the impact of time since direct marriage formation, time since formation of the first consensual union, and time since a subsequent marriage. In Chapter VIII, Section 4.5.1, a detailed description of the applied model will be provided.

3. Events under study – definitions

This study focuses on two demographic events which are the very first steps in Russian men's family formation process: first, the transition to the first union; and, second, the transition to the first child. In the following, I will define both transitions according to the applied theory and the data restrictions of the Russian GGS and EES.

3.1. First union formations

The first event under study (analysis will follow in Chapter VII) is men's first union formation. Presumably, every man is at risk of entry into a union from an initial point, which is defined as age 15 or as age at 1970 in the case of left-censoring. The exposure to the risk of union formation ends when the event occurs, when the respondent reaches age 45, or when the observation is right-censored at date of interview.

Two competing events are defined as first union formation: namely, direct marriage and the first non-marital cohabiting union.

A *direct marriage* is defined as a man's first "official marriage" (legally registered), which was not preceded by any other marriage or cohabiting union. Marriages which were formed two months after moving in together in a common household were considered to be direct marriage, since it is very likely that the individuals already planned to marry when they moved in together. Only heterosexual marriages are considered in this study.

The formation of a *first consensual union* is defined as the first time a man moves into a household together with a female partner. Only relationships which lasted at least three months were considered. Furthermore, bi-local or living apart together (LAT)

unions were excluded, since only households with truly coresidential partners were counted.

Subsequent marriage preceded by a first non-marital cohabitation is the second aspect of men's first union formation which is analyzed in this work. It is defined as a marriage of two heterosexual partners who had already lived in a non-marital cohabitation (as defined above) for at least three months before the marriage occurred. Consequently, the individual is exposed to the risk of a subsequent marriage after two months of living in a consensual union. The risk of a direct marriage thereby competes with the risk of a union dissolution. The risk duration ends with the occurrence of one of these events, or is censored at 10 years of union duration, age 45, or the time of the interview.

3.2. First child

The second event under study is Russian men's transition to a first child. In this study (Chapter VI and VIII), only biological children were considered in the analysis; thus, stepchildren, foster children, adopted children, or children from previous partners were excluded.

When investigating the female fertility pattern, it is a common practice to backdate the first birth seven or nine months in order to take into account the time between childbirth and conception (Kreyenfeld 2002, 2004). I will follow this approach, too. By backdating the birth of the first biological child for seven months, the time of procreation is introduced as men's transition to fatherhood. Hence I assume that men were aware of the pregnancy of the female partner at this time, and therefore acted based on this knowledge.

Males were assumed to become exposed to the risk of a first procreation (which leads to a birth) when they were childless at age 15, or at their age in 1970 (left-censored cases). The risk duration ended when a first procreation occurred. The observations were right-censored, when a respondent reached age 45 or the date of the interview without having biological children.

Chapter VI
Men's Fertility Data in Demographic Research

1. Introduction

Demographic studies assume that male fertility behavior is different from female behavior in many ways: men presumably have a longer reproductive life span, men tend to start their fertility career later than women, the variety of the number of biological children born to men is assumingly larger compared to that of women, and men tend to underreport their fertility outcomes. These aspects are rather neglected in empirical demographic research, and are often considered obstacles to incorporating men in fertility and family demography. I will investigate the differences between male and female fertility patterns in terms of age, timing, parity, and childlessness. Thus the analysis in this chapter is driven by two goals: first, to compare the fertility age, timing, and parity pattern of men and women; and, second, to check the reliability of Russian male fertility reports of the Russian GGS (2004) against those of women. Thus it will be shown that the sex-specific differences in fertility outcomes, fertility patterns, and fertility reporting behavior, as assumed in demographic literature, contain only minor empirical evidence. Thus female fertility patterns will be used as a benchmark, since they are assumed to be unbiased.

The country-specific context of Russia since the 1990s was and is shaped by dramatic changes in political, social, and economic conditions. Their impact on fertility is not discussed in this chapter. This will be the purpose of the subsequently presented parts (Chapter VII and Chapter VIII).

2. Hypotheses: Men becoming fathers – women becoming mothers. What is the difference?

Analyses of the sex-specific differences in fertility behavior are even rarer than research on male fertility or fatherhood. I refer to the discussion of four sex-specific differences:

1. The length of a fertile time span,
2. Age and timing pattern of fertility,
3. Completed fertility and parity distributions (childlessness vs. multiple parenthood), and
4. Underreporting behavior.

1. The first issue of interest is the length of the male's reproductive life span. Whereas women usually enter puberty between the ages of 12 and 14 and finish their fertile phase between the ages of 40 and 50, the time frame for men is less clearly defined. They usually reach puberty two years later, but their procreative capacity is not really limited. Even if there is evidence that male fertility declines with age, it can last a lifetime (Bledsoe et al. 2000; Coleman 2000).

In medical and biological studies, this issue is well-examined and discussed. In demographic publications, however, it is more often assumed than proved empirically (Bachrach and Sonenstein 1998b; Driscoll et al. 1998; Greene and Biddlecom 2000; Hogan and Goldscheider 2000; Shryock 1976). Exceptions are the studies of Brouard (1977), Ravanera and Rajulton (2003), and Paget and Timaeus (1994). All the authors agree that men have a significantly longer fertility life span than women.

What kind of implications does this issue have for demographic research concerning male fertility behavior? Estimating men's completed fertility or men's final number of children would require data from men at older ages than for women (Coleman 2000). Furthermore, if a man wants to reproduce after age 50, he needs a younger woman (most likely under age 45) to fulfill his desire. Consequently, the longer reproductive life span of males could lead to a more dynamic marriage/union formation and dissolution pattern, and an elevated age difference in couples (Cherlin and Griffith 1998).

My first hypothesis is that men may have a longer procreative phase compared to their female counterparts (*"fertile time span" hypothesis*). Thus, older age groups (older than age 45) have to be taken into account to estimate males with a completed number of biological children, the final share of childless men, and men's age at childbearing.

2. Men start their family and fertility career two to three years later than women. The gap applies to men's start into fatherhood, as well as to their marriage and partnership formation patterns (Coleman 2000; Hogan and Goldscheider 2000). It is assumed that these patterns could partially be attributed to biological differences between the sexes, e.g., the later start into puberty and the length of the procreative life span (Coleman 2000). Furthermore, partner market theories stress two main mechanisms. First, a relatively stable birth or marriage age generates a standard age gap between men and women, due to age-specific sex ratios between people without a partner and/or childless individuals (Klein 1995). Second, a constant age gap over different cultures and time implies a "historical perpetuation." Regardless of the initial reasons (economic constraints, values, norms, traditions, or institutions) for the age difference, it is repeated through following generations because of pre-defined demographic conditions and opportunity structures (Klein 1995). Nevertheless, the age gap changes if the demographic composition of a population is altered (e.g., by wars, birth booms, birth drops).

The evaluation of this hypothesis appears trivial. However, it has important methodological and theoretical implications. Men and women of the same age are not equally fertile (especially not during their teenage years). Males and females do not have the same age-specific probability of finding a partner or becoming parents. Changing fertility-relevant societal conditions (e.g., social policies) would affect men and women at different ages. Hence, when comparing cohort-specific fertility measures, the common age difference should be taken into account. Males should be related to two- or three-year-younger females, and vice versa.

My second hypothesis is that the sex-specific age difference between Russian men and women at the birth of their first biological child is around two years. Men are assumed to be two years older than their female counterparts (*"age gap" hypothesis*). This pattern has already been shown for Russian marriage behavior. The age difference is expected to have been relatively stable over time, with exceptions in the

1940s, 1950s, and the birth cohorts of the 1920s and 1930s, due to the Second World War (Scherbov and Van Vianen 1999, 2001).

3. Men have a greater diversity in the number of biological children born compared to women. In other words, some men have a relatively large progeny size, whereas others have only a few children or remain childless (Andersson 2000; Bledsoe et al. 2000; Coleman 2000; Toulemon 2001). Previous studies argue that this is valid, even if most modern societies have imposed normative monogamy, thus minimizing the variance in the reproduction and progeny size distribution which is observed in polygamous societies (Coleman 2000).

Why may such a polarization occur? Modern societies have imposed different kinds of cultural and social norms on the mating system, mainly behavioral principlesand legislation which forbid polygamous partnerships. Therefore, a polarization pattern between childless men and fathers of many children should no longer be strong in these societies. However, previous studies in demography and sociology have found that men with higher levels of education, income, and social status have more children (Bernhardt and Goldscheider 2001; Callister 1999), but only in one union or within serial monogamy. In other words, men who are able to fulfill the role as a "breadwinner" for a family are more attractive marriage partners and fathers (Kalmijn and Luijkx 2005). Nevertheless, among certain ethnic or religious groups, special marriage regulations (e.g., payment of bride money) could lead to a higher proportion of childless and/or unmarried men, due to a lack of opportunities to accumulate enough resources (e.g., money).

My third hypothesis is, therefore, that a polarization of progeny size among Russian men should be observable. A larger number of men (compared to women) will remain childless, whereas some males reproduce more often than their female counterparts (*"polarization" hypothesis*).

4. Misreporting and underreporting of male fertility is probably the most important topic when examining male fertility behavior. Most of the studies about male fertility stress that men underreport their fertility, even if they are interviewed directly (Goldscheider and Kaufman 1996; Mott and Gryn 2001; Rendall et al. 1999; Toulemon 2001). The percentage of males who underreport female fertility reports

ranges between 3% and 20% (Duberstein Lindberg et al. 1998a). The reported numbers of biological children could be biased due to intentional or unintentional misreporting. Whereas unintentional misreporting is due to fathers (often young fathers) who are not informed of their paternity, and due to the fact that men tend to forget children in some cases, intentional misreporting is caused by pressure through social norms, the partner, or legislation (Duberstein Lindberg et al. 1998a).

The factors which influence unintentional misreporting behavior are uncertain. According to previous studies, age at fatherhood, commonality of a child's and a father's residence over the life course, the education of the father, the marital status, and the family size influence misreporting behavior in general (Cherlin and Griffith 1998; Duberstein Lindberg et al. 1998a; Mott and Gryn 2001). The higher the number of sexual partners over men's life courses adds to the complexity of this problem (Bledsoe et al. 2000; Coleman 2000). In addition, the methodological setup of questionnaires and surveys influences the quality of the estimates. Duberstein et al. (1998) argue that the reliability of male fertility reports could be improved by asking on a partner-specific basis, on the basis of sexual behavior, and by an explicit data collection related to non-residential children. Unintentional misreporting should occur less often with such a setup. By asking the respondent separately from the partner, and by decoupling questions about payment of child support and questions about non-residential children, one can reduce intentional misreports (e.g., due to fear of punishment and social pressure) as well.

My fourth hypothesis is that only minor differences between female and male fertility reports occur if the structure of the questionnaire (which will be discussed in the following) accounts for these issues (*"no underreporting" hypothesis)*. However, to estimate the completeness of a male's fertility, two key assumptions are necessary: 1. the total number of births of men and women from the same population should be equal, when averaged over a suitable time interval and over the same birth cohorts, assuming the sex ratio is not completely unbalanced; and 2. women's fertility reports are correct and complete (Rendall et al. 1999).

3. Method and models

In the first part of the empirical analyses, I examine my hypotheses by using fertility-aggregated statistics. Period and cohort measures are presented. Some of them are taken from official statistics (e.g., Council of Europe). Since most of the official statistics do not contain fertility information concerning males, self-estimated aggregate statistics will be presented, too.

In the next step, hazard regression models are displayed to cross-check age and parity-specific fertility patterns. First, survival curves will be presented. In the last part, the corresponding piece-wise constant baseline intensities, interacted with sex and controlled for region of residence, are shown. The parity-specific models can be written as:

$$\mu(t)_i = a_{iW}(t) * a_{iM}(t) * c_i$$

where $\mu(t)_i$ is equivalent to the intensity of first ($i = 1$), second ($i = 2$) or third ($i = 3$) birth, which is affected by time factor $a_{iW}(t)$ or $a_{iM}(t)$ (W = women; M = men; t = duration in months since age 12 or previous birth; for occurrences and an exposure table, see Table Appendix, Section 7: Table 8) which is interacted with the sex of the respondent. Region of residence (c_i) is introduced as a time constant covariate.

4. Empirical analyses

4.1. Sex differences in aggregate measures

In Figure 1, the Total Fertility Rate as provided by the official statistics (Demographic Yearbook 2004 (Council of Europe 2004)), as well as an estimated female and male TFR based on the data of the Russian GGS are presented. The measures were conducted by calculating the age-specific number of births and number of respondents for five-year period intervals.

Figure 25 reveals that, after a considerable decrease by 1967, the TFR shows a very stable pattern at around two children per woman for approximately 20 years, followed by a short increase in the 1980s (1987: 2.23), and a tremendous drop at the beginning of the 1990s, which hit its bottom in 1999 (1.17) . The estimated measures with GGS data closely follow these trends up to the middle of the 1980s, but at a lower level.

They further show considerable differences between the sexes during this time. The differences increase at the end of the 1980s. Whereas the estimated male TFR follows the general trend, the female estimates are much higher. I argue that this could be due to an overrepresentation of highly fertile young women in the sample. As a previous survey study by Kreyenfeld (2002) for Germany showed, women are more often at home and are consequently easier to reach by the interviewers.

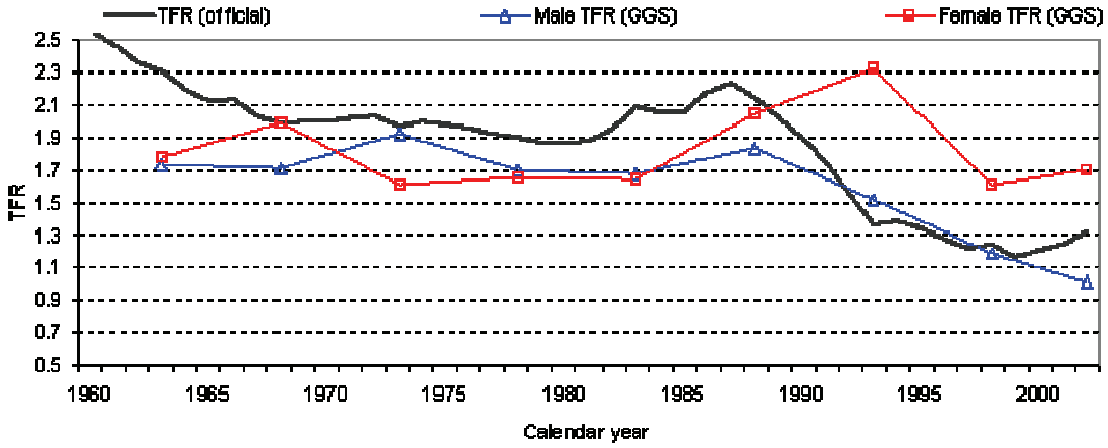


Figure 25: Total Fertility Rate – TFR - (1960 to 2004); Sources: COE – Demographic Yearbook (2004), Russian GGS (2004) – own estimations

However, even if the trends in the presented measures are similar, using the TFR only is an incomplete proof of sex differences and the reliability of the data, since it is very sensitive to timing effects and does not show cohort-specific patterns.[19]

The cohort-specific analyses will focus on the birth cohorts up to 1970.[20] Figure 26 presents the Completed Fertility Rate (CFR) taken from the Demographic Yearbook (2004) and from estimations of Scherbov and Van Vianen (Scherbov and Van Vianen 2001). Furthermore, the average number of biological children of Russian men and women was estimated by using the GGS (for a detailed description of the distribution of respondents by birth cohorts and parity, see Table Appendix in Section 7: Table 5 and Table 6).

[19] The calculation of the TFR on the basis of event-history-data (cohort design) can be biased, since older birth cohorts interviewed (and their fertility reports) might be positive or negative selected by their mortality.

[20] It is assumed that the majority of respondents from these cohorts already had their final number of children by the date of the interview (see Figure 8 and Figure 9)

The corresponding graphs in Figure 26 display moving averages (2nd order). Since the cohorts in the middle of the 1930s up to the beginning of the 1960s, the estimated male and female CFR followed each other at a similar level (1.7 to 1.9 children per person), with the exception of the individuals born around 1945. In the older cohorts before 1935, men (e.g., 1939: 2.1 children) reported considerably more biological children than women (e.g., 1929: 1.8 children). I argue that this could be explained by a retrospective selection bias due to WWII and the Civil War (Scherbov and Van Vianen 1999, 2004). Many men from the cohorts of the 1920s and the beginning of the 1930s died in the war. Women were not similarly affected. The war led to a highly differential sex-specific mortality pattern, and to imbalanced sex ratios on the partner market, as previous studies on Russian marriage behavior had shown. The sex difference around the cohorts of 1945 can be explained by another effect of WWII. Large female birth cohorts around 1940 were confronted with a smaller number of males between 1943 and 1945. Both situations led to a very low proportion of men who never married, and to a higher proportion of unmarried women. Since parenthood during this time was directly connected to marriage, very few men remained childless. (Avdeev and Monnier 2000; Scherbov and Van Vianen 2001, 2004).

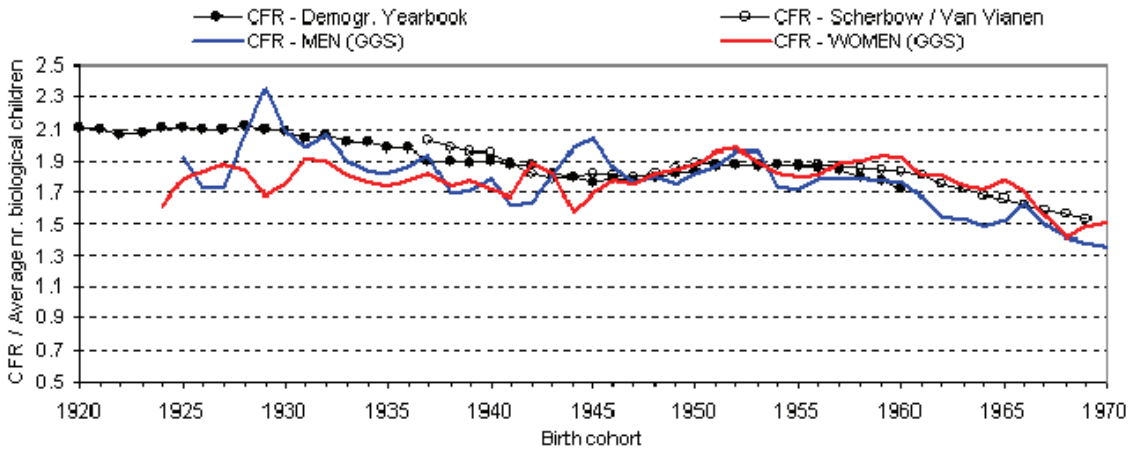


Figure 26: Completed Fertility Rate (cohorts: 1920 to 1969) and average number of biological children (2nd order moving average over cohorts: 1925 to 1975); Sources: Demographic Yearbook (2004), Scherbov and Van Vianen (2001); Russian GGS (2004) – own estimations

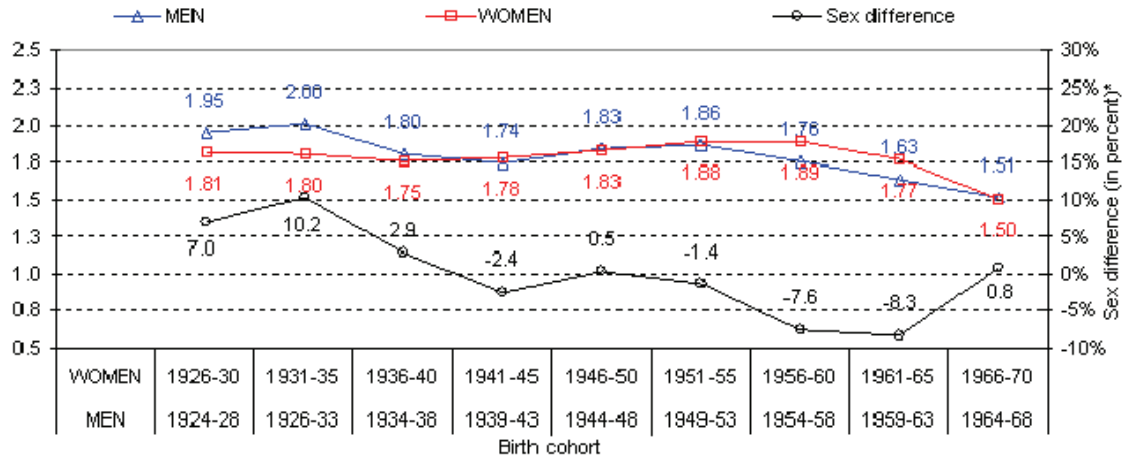


Figure 27: Sex differences in average number of biological children; Source: Russian GGS (2004) – own estimations;

Note: *positive values = men reporting more biological children than women
negative values = women reporting more biological children than men

Dating from the cohort of 1945, the fertility reports of the Russian GGS are a good approximation of the official measures. They stabilized at a level of around 1.8 children up to the 1960 cohort, and slightly decreased thereafter (1970: 1.6 children; censoring may be part of the explanation). This applies more to women than to men. Men's final numbers of children are always a bit lower than those of their female counterparts. This might point to underreporting by men.

Figure 27 shows the sex differences in detail. Given that men are, on average, two years older than women when they become fathers for the first time, female birth cohort groups are related to males two years older (e.g., females from cohorts 1941 to 1945 to males from cohorts 1939 to 1943). To account for random variation between single-year birth cohorts, the respondents were grouped in five-year cohort intervals (for distribution of respondents, see Table Appendix, Section 7: Table 7). The sex difference is smaller than in Figure 2, and less variation occurs in the graphs. However, the patterns are similar.

Whereas men in the oldest cohorts report more biological children than their female counterparts, this pattern changes following the cohorts of the 1940s. I argue that the cohorts between 1924 and 1935 are biased by WWII. After excluding these cohort groups (males: 1924 to 1933, females: 1926 to 1935) and averaging the sex differences over the cohorts from 1936 to 1970 (females) and from 1934 to 1968

(males), the average difference is 2.3%. This means that men report 2.3% fewer children than their female counterparts.

To sum up, according to the presented aggregate statistics, Russian men report having fewer biological children than women. The sex differences in the number of biological children are considerably smaller than studies from Toulemon (2001) or Rendall (1999) would suggest.

Figure 28 displays the percentages of childless men and women by five-year birth cohort groups and the sex differences for the birth cohorts up to 1970 (for women) and 1968 (for men). Again, female cohorts are compared with male cohorts two years older. Childlessness is generally uncommon among Russians, and, up until the birth cohorts of 1970, it remained at a level of around 10%. This applies to both men and women, with only minor differences. The results presented in Figure 28 show that sex-specific differences are most pronounced among respondents from the birth cohorts after 1960. However, by averaging sex-specific childlessness over the female birth cohorts between 1936 and 1970 and thecorresponding men of the cohorts from 1934 to 1968 (not biased by WWII), the overall difference is 2.6%. The stable level of reported childlessness and the small sex differences support the assumption that the Russian GGS provides estimates of good quality for male fertility, compared to previously discussed studies and used samples (Rendall et al. 1999; Toulemon 2001).

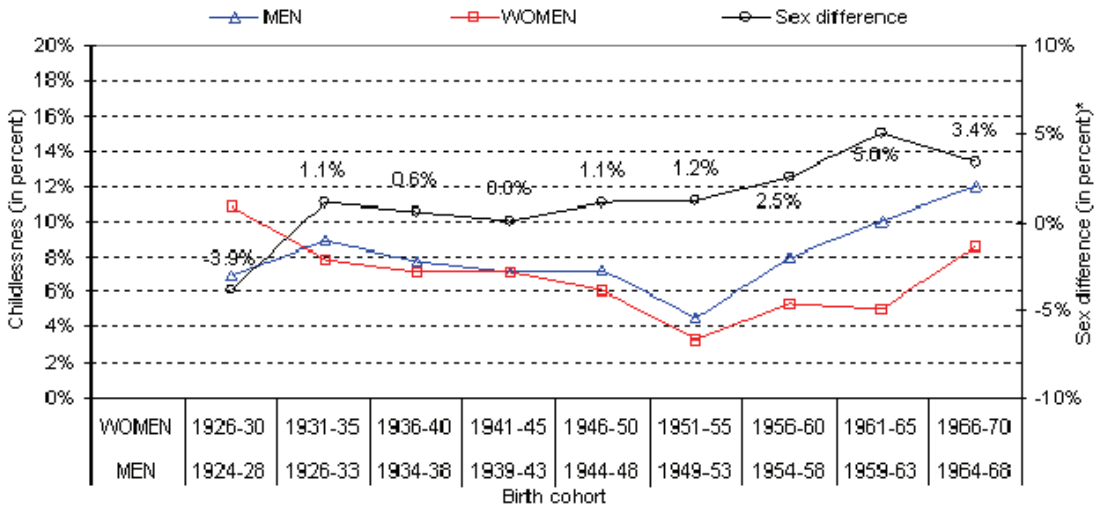


Figure 28: Reported childlessness, at interview (cohorts 1923 to 1987) and occurring sex differences; Source: Russian GGS (2004) – own estimations;

Note: * positive values = men reporting a higher level of childlessness
negative values = women reporting a higher level of childlessness

Furthermore, parity-specific distributions of Russian men and women for different birth cohorts are estimated (Figure 29 and Figure 30) to examine whether a higher proportion of men are fathering a large number of biological children. In spite of differences in the two youngest cohort groups (again, biased by the WWII), the distribution over the births cohorts of childless men and women on the one hand, and fathers and mothers with more than three children on the other, is very similar. The two-child family dominates Russian society in all birth cohorts, and the number of individuals with more than three biological children is constantly declining from the oldest to the youngest cohorts, whereas the proportion of one-child families is increasing. There is no evidence for a polarization effect, i.e., that more males than females have three or more biological children.

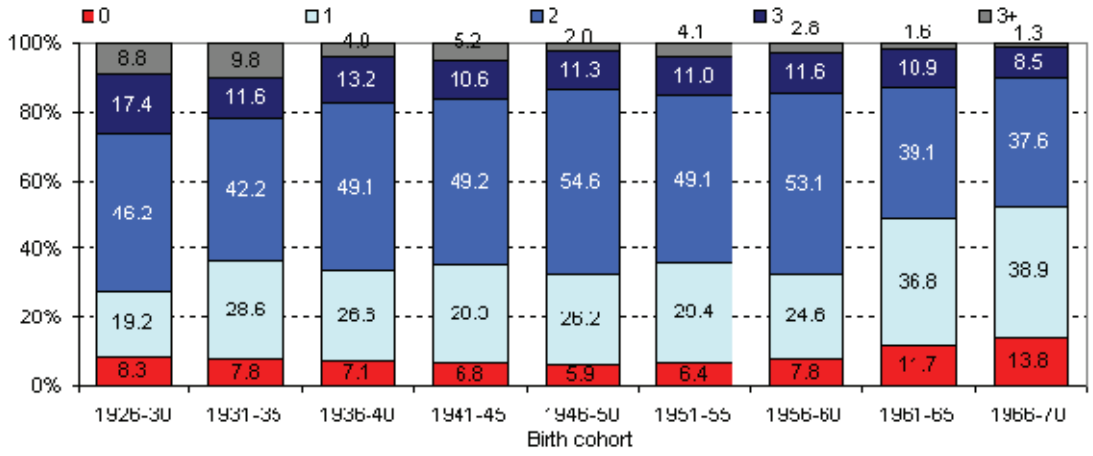


Figure 29: Men – Parity-specific distributions (cohorts 1923 to 1970); Source: Russian GGS (2004) – own estimations

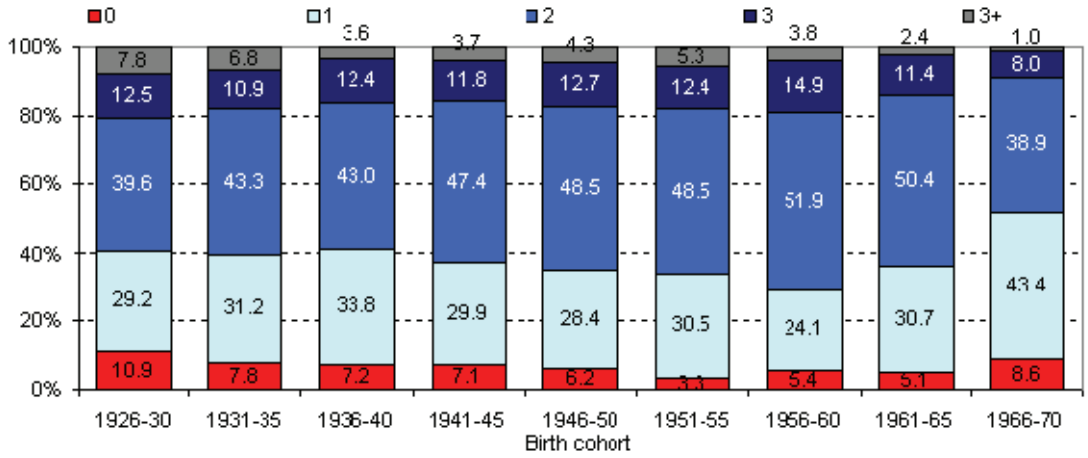


Figure 30: Women – Parity-specific distributions (cohorts 1923 to 1970); Source: Russian GGS (2004) – own estimations

In the next section, sex-specific age characteristics are examined. In Figure 31 the median age at first birth, estimated from the Russian GSS, and the sex-specific differences for different calendar years (five-year groups) are presented. Throughout the 1950s and up to the mid-1960s, the age at first birth was relatively stable for both sexes (men: app. 25; women: app. 23). At the end of the 1960s, it significantly declined (two years). Afterwards, from 1970 to the end of the 1980s, it again entered a stable phase (men: app. 23; women: app. 21). The age patterns at the end of the 1940s were different. During this time, the first birth took place earlier in life (women: 21.3; men: 21.6) and the age difference between men and women was much smaller compared to the following periods.

Between 1992 and 1999, the age difference between the sexes increased. This was mainly due to increased first birth ages among Russian men, whereas women's ages at first childbirth stayed stable. In the new millennium, the age gap has again decreased. Generally, the sex-specific age difference over all periods is very stable. It ranges at around two years, i.e., Russian men are usually two years older than women when they first become parents. Whereas the small age differences and the low age at first childbirth among males after WWII could be mainly explained by an unbalanced sex ratio, the explanation of the occurring differences in the 1990s most probably requires a more detailed analysis of factors on the individual, as well as on the societal, level.

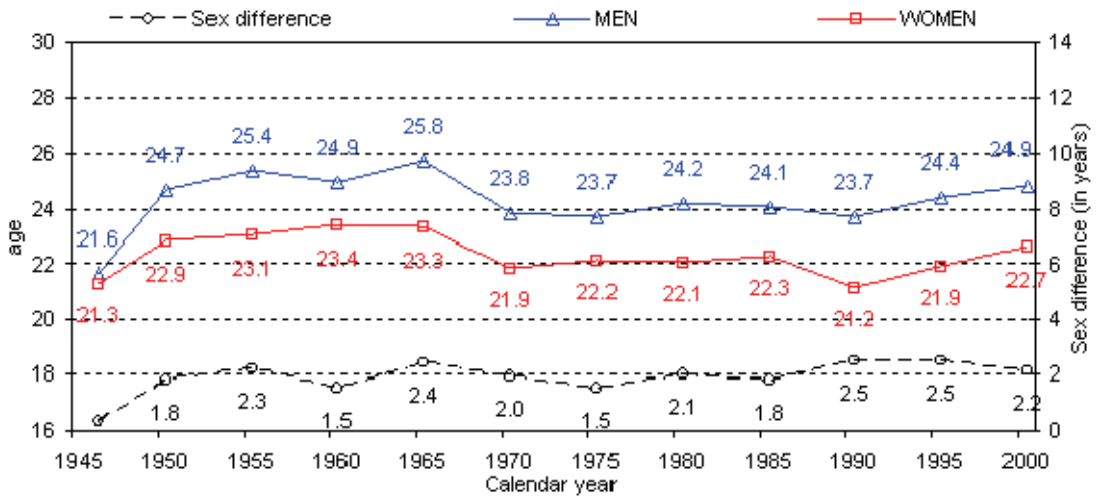


Figure 31: Median age at first birth (period 1946 to 2004); Sources: Russian GGS – own estimations

The age differences between Russian males and females, from the cohort perspective, are displayed in Figure 32. They are similar to the previous results. Men's median age at first birth stayed very stable over all birth cohorts (1920s, 1930s: app. 26; 1950s, 1960s, 1970s: app. 24) but it declined two years in the cohorts of the 1940s. By contrast, women's ages at first birth constantly declined, with the exception of in the 1940s, where they slightly increased. The average age gap between the sexes over the birth cohorts from 1936 to 1970 was 2.14 years, i.e., on average men were 2.14 years older than their female counterparts. However, in the oldest cohort group, men were younger than women at their transition to parenthood, due to the imbalance in the partner market after WWII.

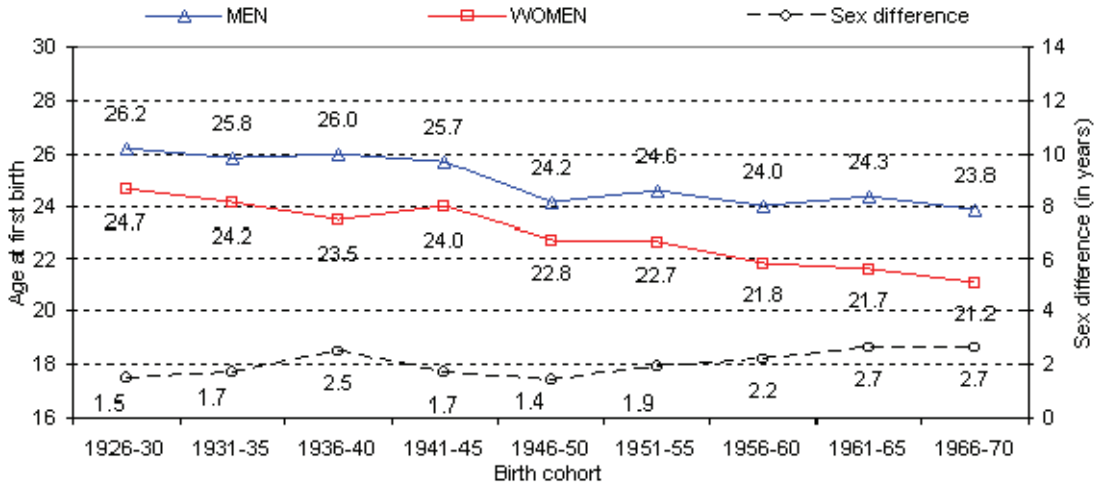


Figure 32: Median age at first birth (cohorts 1926 to 1970) – K-M-estimates; Source: Russian GGS (2004) – own estimations

Birth cohort	Age at 1st birth 10th percentile		Age at last birth 90th percentile		Interval length	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
1926-30	22.17	20.83	40.92	41.67	18.75	20.83
1931-35	23.42	20.25	44.25	39.50	20.83	19.25
1936-40	22.58	19.83	44.67	38.33	22.08	18.50
1941-45	22.67	20.00	41.92	41.67	19.25	21.67
1946-50	21.25	19.42	41.42	37.58	20.17	18.17
1951-55	21.75	19.25	40.67	36.67	18.92	17.42
1956-60	21.42	19.50	40.50	35.50	19.08	16.00
1961-65	21.50	19.17	43.83	35.58	22.33	16.42
1966-70	21.25	18.67	…	…	…	…

Table 4: Age at first birth 10th percentile, 90th percentile age at last childbirth – KM estimates (cohorts 1923 to 1970); Source: Russian GGS (2004) – own estimations

The increase of the age gap between Russian males and females in the birth cohorts around 1940 is explained by the large male birth cohorts of the years around 1940. When entering the partner market, they were confronted with the extremely small female generations of the WWII years (1943 and 1944) (Scherbov and Van Vianen 2004).

In Table 4, the 10th percentile of the age at first birth, the 90th percentile of the age at last birth, and the distance between both estimates are displayed. The table shows that Russian men are reproduced at older ages and for a longer period of time than females, with the exception of the two oldest cohort groups and the birth cohorts around 1945. Again, these exceptions are related to the described effects of WWII. Similar to the age at first birth, the upper age border decreased over the cohorts for both sexes. For 90% of female and male respondents from the birth cohorts between 1926 and 1965, the age at last birth did not exceed 45 years.

4.2. Sex differences in parity-specific transition models

In Figure 33, Kaplan-Meier survival functions for the transition to the first birth are presented. In order to follow the logic of the previously shown aggregated measures, I estimated separate graphs for the cohorts between 1936 and 1970. Previous cohorts are not introduced in the models in order to avoid biases due to the effects of WWII. First, the presented findings concerning the sex-specific age differences are confirmed. In general, men experience the transition to the first child significantly later than women. Even if the age difference at first birth varies between the different cohorts, the average difference between the sexes is approximately two years (cohorts up to 1970). Whereas women start their main transition phase around the age of 19 and finish this phase at 28, Russian men become fathers for the first time between the ages of 21 and 30. Furthermore, the distribution of childless men and women varies. The average variance over the cohorts between 1936 and 1970 is 2.2% (females: 5.6%; males: 7.8%). Similar to the results from the aggregated measures, the survival functions show reliable estimates for the generations up to 1970, even if men tend to report biological children significantly less often.

In Figure 34, the survival curves for the transitions to the second birth are presented. No remarkable sex-specific differences occur. Sixty-nine percent of all Russian one-

child fathers and 68% of all Russian one-child mothers from the birth cohorts between 1936 and 1970 experience a second birth. Thus, only one-third of Russian one-child parents have no subsequent births. The timing patterns relative to the subsequent births are the same for the sexes. Eight years after the first birth, the main transition phase to the second birth is finished, and 60% ended up having a second child.

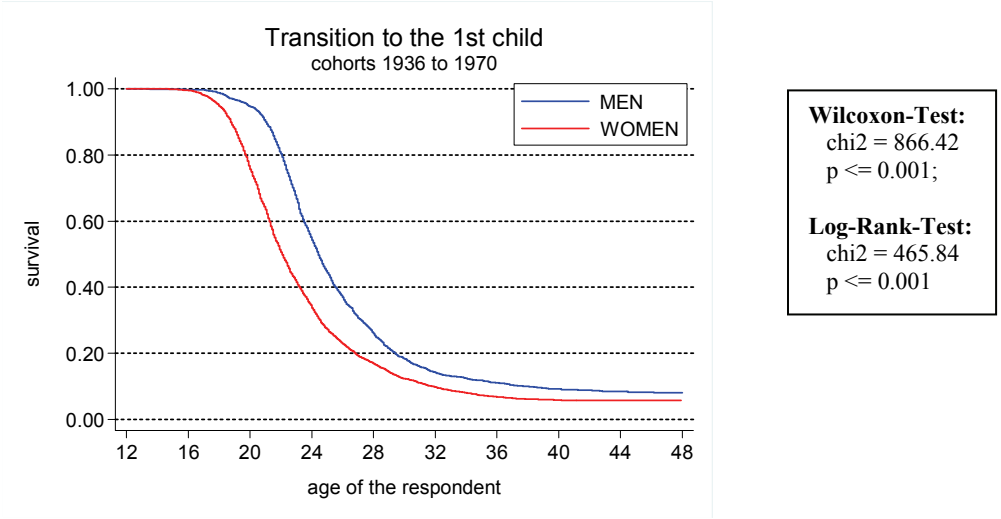


Figure 33: Transition to the first child – K-M-estimates; Source: Russian GGS (2004) – own estimations

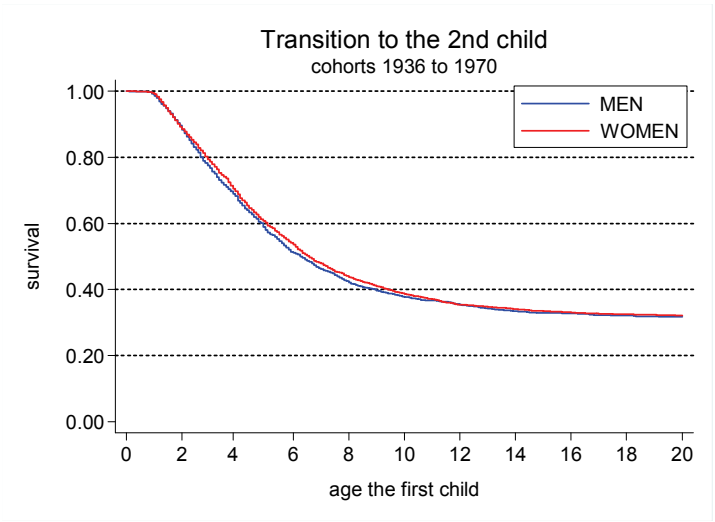


Figure 34: Transition to the second child – K-M-estimates; Source: Russian GGS (2004) – own estimations

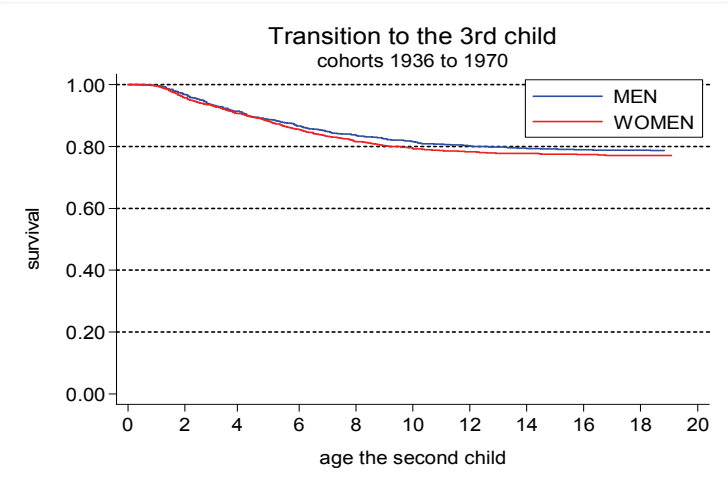


Figure 35: Transition to the third child – K-M-estimates; Source: Russian GGS (2004) – own estimations

The transition to the third birth (Figure 35) also shows similar sex-specific patterns. Seven years after the previous birth, the main transition phase to the third child is finished. This applies to Russian women as well as to Russian men. Only a minority of all two-child parents have more children: less than one-third of of this group experience subsequent births. This illustrates the strong dominance of the two-child family in Russia.

Figure 35 also shows that two-child mothers are more likely than their male counterparts to have a third child. In the birth cohorts between 1936 and 1970, the sex-specific difference is 1.5% (females: 22.9 %; males: 21.4 %).

The last two survival functions show that Russian men and women have very similar fertility timing patterns. Once they have started their reproductive careers, almost no differences occur. Moreover, there is no evidence for a male parity polarization pattern.

In Figure 36, the baseline intensities for Russian men and women and their transition to the first child are presented. The process time is the age of the respondent, starting from age 12. The process ends at first birth, and cases are censored at the time of the interview. The male transition phase starts approximately two years later than the female one. The risk of first birth peaks for women between ages 20 and 24, whereas for men it is highest between 22 and 28. Since the risk of a first birth declines afterwards to a value around zero at the age of 48 for males as well as for females, there is no evidence that men have markedly higher risks of a first birth at older ages.

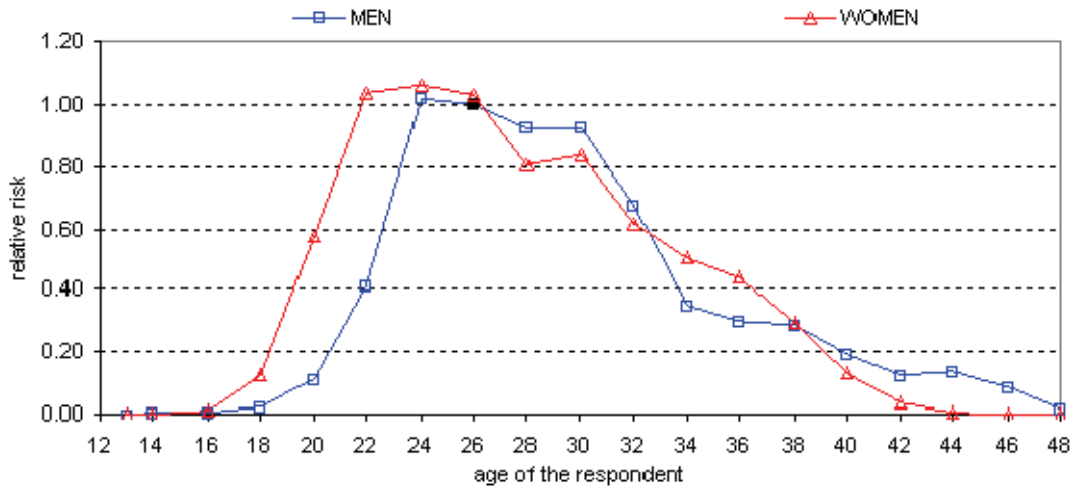


Figure 36: Transition to the first child – baseline intensities (cohorts 1936 to 1970); Source: own estimations – Russian GGS (2004)

Note: controlled for area of residence
values relative to men at age 24

Figure 37 shows the baseline intensity of the transition to the second birth by sex. The process time is the age of the first child, ending at the second birth or at the time of the interview for censored cases. Only small sex-specific differences occur. It confirms that the fertility timing pattern of the second birth is nearly the same for Russian men and Russian women. The highest risk for a second birth is observable between one and six years after the first birth. and it peaks when the first child reaches age five. Afterwards, the risk constantly declines and reaches a level of around zero 18 years after the previous birth. This applies to women as well as to men. Consequently, the time frame when family extension usually occurs is more or less similar for both sexes.

The baseline function of the transition to the third birth is presented in Figure 38. The age of the second child is used as the process time, which ends at the birth of the third child or at the time of the interview for censored cases. Again, the differences between the sexes are only minor. Timing patterns, as well as the length of the timeframe when a third birth most probably occurs, is nearly the same for Russian men and women. The risk of a third birth peaks shortly (two to three years) after the previous birth, and declines fast. This pattern is more pronounced for females than for males. However, 18 years after the birth of the second child, the propensity for a subsequent birth is close to zero for the sexes.

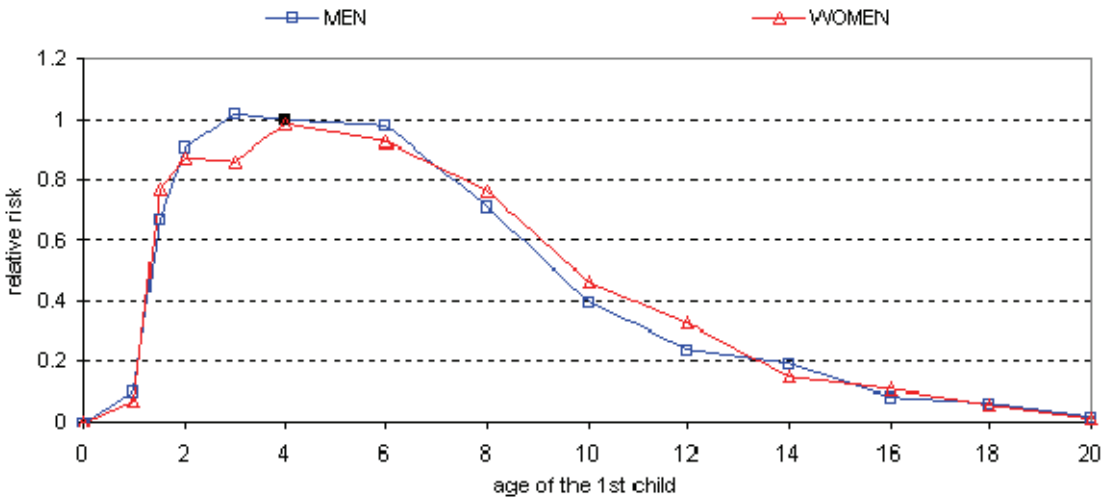


Figure 37: Transition to the second child – baseline intensities (cohorts 1936 to 1970), Source: own estimations – Russian GGS (2004):

Note: controlled for area of residence
values relative to men's 1st child age 3

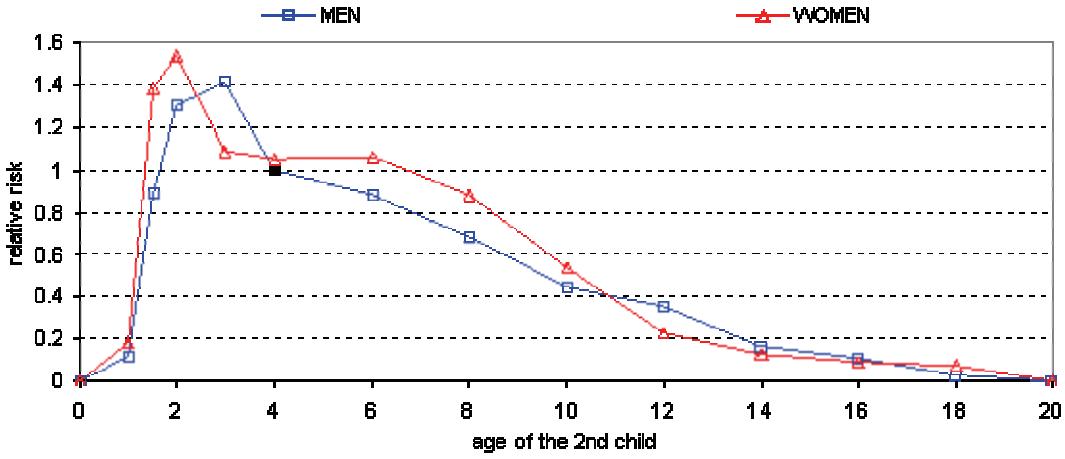


Figure 38: Transition to the third child – baseline intensities (cohorts 1936 to 1970), Source: own estimations – Russian GGS (2004)

Note: controlled for area of residence
values relative to men's 2nd child age 3

5. Discussion

The goal of this chapter was to evaluate the differences between Russian male and female fertility behavior in respect to four hypotheses. Although sex-specific differences are often viewed as problematic when analyzing male fertility, it was shown that these differences are much weaker than other demographic studies have

suggested. Data of the Russian GGS (2004) were used to conduct aggregated fertility measures, survival functions, and hazard regression models for men and women.

1. *"fertile time span" hypothesis*: Neither the evaluation of the aggregate statistics, nor the transition to the first, the second, and the third birth, allude to the assumption that Russian men have a much longer reproductive life span in comparison to their female counterparts, even if men have the biological ability to become fathers at older ages. Consequently, the age at which the fertility of Russian males is completed is not different from women's ages. It is reasonable to assume that both sexes finished their reproductive careers at age 49, or even earlier (see Table 1).

This pattern should be related to two issues. First, it was shown that the male fertility pattern in Russia was generally characterized by a start of the reproductive career at an early age, by short birth intervals, and by an early finish. Second, the strong dominance of the two-child family in Russia further adds to the explanation. Russian fertility behavior may be described with four words: "Everybody, early, ew, and quickly." (Avdeev 2001: 9)

These patterns can be explained by very stable country-specific family formation characteristics and homogenous reproductive behavior: 1. relatively early marriage and the first birth are closely connected; 2. the desired number of children has been, and still is, stable over the last 60 years at a level of around two; and 3. the family formation (first child) is quickly completed, with short spacing between marriage and first birth, and between the subsequent births (Zakharov 1997, 1999). So far, such patterns have only been described for Russian females. However, they are similarly applicable to men.

2. *"Age gap" hypothesis*: The estimation of the age at first birth (by period and birth cohort), the survival functions, and the corresponding baseline intensities confirm the hypothesis that Russian men start their fertility career two years later than Russian females. This also applies to their first union formation (Scherbov and Van Vianen 2001, 2004). Moreover, no sex-specific timing differences in the transition to the second and third births occur. Once Russian males and females have started their family formation, the family extension follows nearly the same timing pattern relative to the previous birth.

The stable age gap can be explained by different factors. 1. Males become sexually mature approximately two years later than their female counterparts. 2. According to

marriage market theories, relatively stable ages at first birth and "historical perpetuation" generate a stable age distance within the range of two to three years. This age gap is only widened or closed if high barriers (economic or social) to enter a (marital) partnership are imposed on men or women, e.g., payment of high bride money or dowry; the achievement of a certain social position, etc. Even if the presented models did not account for such factors, the results suggest that these barriers are small in Russia. 3. From the Russian cohorts of WWII, it is known that in times of crisis and demographical change, the age gap is not fixed (Avdeev and Monnier 1999). I focused on the birth cohorts between 1940 and 1970. Thus, respondents who entered the partner market in a phase of relatively stable demographic, political, and economic conditions were included. The sex-specific age gap was stable for around two years.

3. *"Parity polarization" hypothesis*: The presented findings did not support the hypothesis that men have a greater diversity concerning the number of children born compared to women. I did not find a polarization between men with no or few children, and males with a relatively large progeny size. Even if a higher level of reported childlessness among Russian males was observed, a concentration in higher parties was absent.

Socially imposed monogamy, early and rapid family formation, and a relatively small number of biological children (like in the majority of European societies) are the main reasons that no polarization effect is observable in Russia. Very young ages at marriage and the prevalence of the two-child family in Russia confirm this argument. The question of whether polarizationpatterns occur between different societal groups—e.g., ethnic, religious, educational, employment status etc.—may be to be addressed in subsequent studies.

4. *"No underreporting" hypothesis*: To clarify whether Russian men underreport their fertility outcomes, or to what extent the male Russian data of the GGS are reliable, was one of the most important aims in this study. Only minor differences between the number of biological children reported by males and females were expected, since the questionnaire setup should weaken biases of intentional and unintentional misreporting (Duberstein Lindberg et al. 1998a). Nevertheless, the estimations of the TFR, the level of childlessness, the CFR and the various parity-specific transition models allude to the assumption that, in the Russian GGS, men also tend to report

fewer biological children than their female counterparts. Russian respondents report approximately 2% fewer children than do females. The underreporting bias is small compared to previously conducted studies (Goldscheider and Kaufman 1996; Mott and Gryn 2001; Rendall et al. 1999; Toulemon 2001). This means that, assuming men and women should have the same completed fertility when averaging over a sufficient time span, the Russian GGS is relatively weakly biased due to male misreporting behavior. Consequently, it provides reliable estimates of male fertility patterns. This finding suggests that future research on male fertility may be conducted using this dataset.

The parity-specific transitions are not affected by misreporting to the same extent. The transition to the first birth seems to be especially biased. The few studies on male misreporting behavior point out its association with births out of wedlock, with non-residential children, and with births early in the life course (Bledsoe, Lerner, and Guyer 2000; Cherlin and Griffith 1998; Rendall et al. 1999). In Russia, a first birth usually occurs at young ages. Consequently, the more pronounced underreporting pattern at the transition to the first child is likely to be due to (unintentional) misreports of young men, who have a higher risk of non-marital births, of children living apart, and of bi-local partnerships (LATs - living apart together).

The most important outcome of this chapter for the following sections of this work is that reliable demographic analyses with Russian men's fertility reports from the GGS (2004) are possible, without necessarily also taking into account womens' reports.

6. Appendix tables

Parity	MEN		WOMEN		TOTAL	
	#	%	#	%	#	%
0	260	8.6	324	6.3	584	7.2
1	890	29.5	1583	30.8	2473	30.3
2	1412	46.9	2405	46.8	3817	46.8
3	343	11.4	625	12.2	968	11.9
3+	107	4	205	4	312	4
4	*81*	*2.7*	*131*	*2.6*	*212*	*2.6*
5	*16*	*0.5*	*37*	*0.7*	*53*	*0.7*
6	*3*	*0.1*	*23*	*0.4*	*26*	*0.3*
7	*3*	*0.1*	*10*	*0.2*	*13*	*0.2*
8	*4*	*0.1*	*1*	*0.0*	*5*	*0.1*
9	*1*	*0.0*	*2*	*0.0*	*3*	*0.0*
Total	**3013**	**100.0**	**5141**	**100.0**	**8154**	**100.0**

Table 5: Distribution of respondents by sex and number of biological children (birth cohorts 1926 to 1970); Source: Russian GGS (2004);

Note: absolute weighted numbers and percent

Birth cohort	MEN		WOMEN		TOTAL	
	#	%	#	%	#	%
1926-30	176	6.1	312	6.3	488	6.2
1931-35	182	6.3	315	6.3	497	6.3
1936-40	271	9.3	562	11.3	834	10.6
1941-45	168	5.8	321	6.5	490	6.2
1946-50	386	13.3	602	12.1	988	12.5
1951-55	416	14.3	728	14.7	1144	14.5
1956-60	491	16.9	897	18.1	1389	17.6
1961-65	424	14.6	700	14.1	1124	14.3
1966-70	395	13.6	526	10.6	920	11.7
Total	**2909**	**100**	**4963**	**100.0**	**7874**	**100.0**

Table 6: Distribution of respondents by sex and 5-year birth cohort groups (cohorts 1926 to 1970); Source: Russian GGS (2004);

Note: absolute weighted numbers and percent

Birth cohort	MEN	
	#	%
1924-28	119	4.5
1929-33	176	6.6
1934-38	219	8.2
1939-43	214	8.1
1944-48	259	9.7
1949-53	378	14.2
1954-58	468	17.6
1959-63	454	17.1
1964-68	370	13.9
Total	**2658**	**100**

Table 7: Distribution of male respondents by "shifted" 5-year birth cohort groups (cohorts 1924 to 1968), Source: Russian GGS (2004);

Note: absolute weighted numbers and percent

1st Birth	Time at risk	Rate	Events	Respondents
Male	738127.5	0.00435	2274	4398
Female	996216.3	0.00575	3988	6804
Total	1734343.8	0.00516	6262	11202
2nd birth				
Male	373557.4	0.00506	1436	3166
Female	746551.4	0.00450	2534	5639
Total	1120108.8	0.00469	3970	8805
3rd birth				
Male	712909.0	0.00057	305	1870
Female	1231079.5	0.00061	594	3308
Total	1943988.5	0.00060	899	5178

Table 8: Exposures and occurrences by sex for the transitions (birth cohorts 1936 to 1970) to first, second and third birth; Source: Russian GGS (2004)

Chapter VII
First Union Formation Behavior of Russian Men

1. Introduction

The formation of first unions in Russia has changed fundamentally over the last two decades. Today, marriage is still common; however, non-marital cohabitations have gained more and more importance for young people. Most of what is known about Russian's family formation patterns stems from studies dealing with marital unions, and are mostly concentrated on females. Only a few studies incorporate men and consensual union, and use multivariate event history techniques, which allow for a detailed analysis of the impact of individual level determinants on first union formation behavior.

The goal of this study is to gain insights into the general pattern of first union formation and how it is influenced by Russian men's education, employment, and fatherhood status. Thus the following questions will be addressed:

1. Was the increase in cohabitation offsetting the decreasing marriage and first marriage rates?
2. What is the meaning of cohabitation for Russian men? Is it a pre-phase, alternative, or a temporary living arrangement?
3. What is the impact of education and employment on the decision for cohabitation or direct marriage, and what is the impact of their timing?
4. Which kind of union is formed when a first procreation occurs, or when children are born?
5. To what extent can the changed partnership formation behavior be attributed to the collapse of the socialist system in the Soviet Union?

In the first part of this chapter, I will discuss various empirical studies which deal with the determinants of men's nuptiality behavior. Drawing on the contextual and theoretical background (see Chapter II, Section 5), they will help to formulate hypotheses concerning men's education, employment status, fatherhood status, and the impact of societal conditions on the timing and kind of Russian men's first partnership. In the second step, I am going to present the data, models, and variables.

Third, the empirical findings are presented and described. The chapter finishes with a summary and interpretation of the results.

2. Previous studies and hypothesis

4.1. Direct marriage or first cohabitation – period effects

The development of union formation behavior over calendar time has various dimensions (see Chapter II, Section 5). *First*, which kinds of union are formed in different periods? How does the prevalence of marital and non-marital unions change? *Second*, when do individuals form a union of a certain kind, i.e., how old are they? *Third*, how are period pattern of nuptiality behavior are influenced by institutional changes, economic developments, and value changes?

Previous empirical findings from Western Europe and the U.S.: In all regions of Western Europe, marriage rates declined between 1970 and 1995. Postponement and decrease of marriages, and the increasing proportion of non-marital cohabitations led to significant changes in nuptiality patterns (Schoenemaeckers and Lodewijckx 1999). The leading countries of this development were Sweden, Norway, and Denmark (see studies of: Bernhardt and Hoem 1985; Hoem 1980; Hoem and Rennermalm 1985; Kravdal 1999; Noack 2001), followed by Central European countries, e.g., West Germany, France, Netherlands, Great Britain (see studies of: Barlow 2004; Glatzer 1997; Huinink and Konietzka 2003; Klein, Lengerer and Uzelac 2002; Liefbroer 1991; Mills 2000; Toulemon 1997; Vaskovics and Rupp 1992). The Southern European countries were the "latest" ones in this process, e.g., Italy, Spain, and Portugal (Di Giulio and Rosina 2007; Schröder 2006). While cohabitations were too rare to have a societal impact in the 1950s and 1960s, they became more common and generally accepted in the 1970s and 1980s, particularly among young people. In many countries, consensual unions have largely captured the former role of premarital courtship and the initial stages of formal marriage, and to a considerable extent have even taken over the prerogatives of the latter as a setting for procreation (Hoem 1980). Many authors attribute the similar developments to Europe's Second Demographic Transition und its underlying value changes (Lesthaeghe 1992; van de Kaa 1987 and see Chapter II, Section 5.1.3.). Despite the similarities, there are considerable country-

specific differences which are usually attributed to different opportunity structures, i.e., institutional settings and support, and cultural varieties (Esping-Andersen 1999; Huinink and Konietzka 2003).

Empirical findings in the context of the Eastern Block: The former socialist countries of Europe show more diverse nuptiality patterns when compared to each other and to the Western hemisphere. In many of them in the 1970s and 1980s, cohabitation was still rare and young direct marriage was the common form of first union formation. The breakdown of the political system in the 1990s was accompanied by a decreasing number of marriages (especially direct marriages) and an increasing number of cohabitations. Studies in the context of the Czech Republic, Bulgaria, Romania, and the Baltic states confirmed this pattern using individual level data (Hoem et al. 2007; Hoem and Kostova 2007; Kantorová 2004b; Kostova 2007; Koytcheva 2006; Mills and Trovato 2000; Philipov and Jasilioniene 2007). However, there are counter examples to these developments, e.g., in East Germany as well as in Hungary, marriages decreased and consensual unions were relatively common even before the change of the political system (Huinink and Konietzka 2003; Kulik 2005; Spéder 2005), and in Poland cohabitation still is an uncommon form of partnership (Kulik 2004). The discussion about which mechanisms were responsible for the developments and their diversity is not yet finished. Whereas some demographers refer to the SDT approach and a trend towards changing family values and norms, and growing individualism, which probably started before the breakdown of socialism (Zakharov 2003) - others see altered economic and societal conditions as the main reasons for these shifts, and thus attribute different family behavior to an adaptation to changed societal settings (Philipov and Dorbritz 2003).

The Russian Context: Studies on Russia using individual level data (Gerber and Berman 2005; Mills 2000; Philipov and Jasilioniene 2007) and the aggregated measures presented in Chapter IV (Section 2) already showed that first marriage rates stayed very stable and at an almost universal level until the end of the 1980s, and declined steeply afterwards. At the same time, the prevalence of consensual unions rose. This trend began in the 1980s, and the development sped up afterwards. However, the already very young age at first marriage continued to decline until the mid-1990s.

Hypotheses: Young and universal marriage patterns were, until the beginning of the 1990s, strongly affected by the Soviet policy system, ideological campaigns, and traditional value orientations (see Chapter III, Sections 4.2, 5, and 8). They created incentives to marry directly and young, e.g., by providing access to and advantages on the housing market for married couples, and by providing a high degree of certainty about job and income prospects. With the breakdown of the socialist system, Russia's institutional structure changed greatly. Generally, state control over an individual's life course eased, and institutionalization of societal structures decreased. This should have altered Russian male's nuptiality pattern strongly, considering that consensual unions and non-marital parenthood started to emerge already in the 1980s.

Accordingly, I expect the direct marriage intensities to decrease at the beginning of the 1990s, after a relatively stable phase between in the 1970s and 1980s. The decline is expected to be stronger in the second half of the 1990s and to continue in the new millennium. The likelihood of forming a non-marital cohabitation is expected to grow after the end of the 1980s, and, from the 1990s, a steady and steep increase should be observable.

4.2. Education

Many arguments concerning the influence of education on union formation behavior apply to marriage as well as to cohabitation. As discussed in Chapter II (Section 5) both kinds of unions share features of intimate relationships, and carry similar implications concerning the investment of time, economic resources, emotional support, costs, and utility. However, cohabitations can be regarded as less committing and less costly than marriage. Thus, the effect of education is expected to be different. Namely, the negative institutional effect (compatibility problems when in education) and the positive level effect of education (increased resources and future prospects with higher educational levels) should be stronger for marriage than for non-marital cohabitation (see Chapter II, Section 5.1.4).

Previous empirical findings in Europe and the U.S.: For the United States, Marini (1978) showed that education is the most important variable affecting a male's transition to marriage, due to its impact on adult, work, and family roles. She finds that higher education strongly increases the age at marriage. Oppenheimer (2003)

investigated the characteristics of marriage and cohabitation during men's career development processes in the USA. She used educational attainment as an indicator of young men's long-term socioeconomic characteristics. Higher education strongly promoted marriage formation – either from cohabitation or a single state. According to the results of Oppenheimer (2003: 141), the enrollment in education hindered the formation of a union regardless of its civil status. Further evidence for the U.S. can be find in the studies of Goldscheider and Waite (1986); Teachman, Polonko, and Leigh (1987); Thornton, Axinn, and Teachman (1995); Lichter and colleagues (1992); and Forste (2002). Education's strong, positive-level effects, coupled with negative effects of school enrollment at younger ages, suggest that education operates via the timing of marriage (postponing it until education is complete) and via accumulated human capital (men with better earning and job prospects marry more often).

Somewhat similar findings were carried out for Swedish females by Jan Hoem (1986). He showed that students had much lower marriage intensities than non-students; this also applied to cohabitation intensities. In addition, an underlying age effect was found: i.e., older students were found to be more likely form a union (marital and non-marital) than younger students. This was attributed to the less beneficial economic situation (in education), the greater time pressure (in education and in higher ages), and the different direction of interests between students and non-students (Hoem 1986: 125-127). A level effect of education on the risk of forming a consensual union was not observed, since non-marital cohabitation was an almost universal pattern in Sweden (Hoem 1986: 130).

Empirical findings on nuptiality decisions of young European males, their educational enrollment, and attainment are provided for West Germany (Huinink 1995a; Tölke 2005) and the Netherlands (Liefbroer 1991, 1999). For the latter, Liefbroer found that male students are far more likely to form non-marital relationships than to marry. Non-students had a generally higher union formation propensity, but males with dissimilar educational levels did not have different nuptiality behavior. Findings from West Germany were similar. The level of education did not have an independent effect on the male's transition to first marriage. When employment characteristics are controlled for, education lost its positive impact (Huinink 1995a: 225; Tölke 2005: 110). The employment status, rather than men's educational levels, was the decisive

factor for marriage formation. Furthermore, strong negative effects of educational enrollment were observed.

Empirical findings in the context of the Eastern Block: A first study on East European men's nuptiality behavior and its connection with educational attainment was carried out by Olah and Fratczack (2003) on Poland and Hungary. Although they controlled for men's employment status, there was a strong positive effect of men's education on the propensity for a first marriage. This applied to both countries, and was attributed to the higher attractiveness (on the marriage market) of better-educated males. Enrolled students had very lowest likelihood of forming a marital union. Unfortunately, consensual unions were not incorporated in the analysis.

Various studies on females considered consensual unions. In Bulgaria (Hoem and Kostova 2007), being in education strongly reduced marital and non-marital union formation. The higher the educational level, the more likely a marriage was for Bulgarian women, whereas its impact on cohabitation was rather constant. Another study on Bulgarian nuptialty patterns (Koytcheva 2006) found similar results, but disentangled the educational effects before and after the breakdown of state socialism. The institutional effect of education did not change over the period, but had a level effect. Namely, after 1990, highly educated women were less likely to form non-marital cohabitations (and were more likely to form a marriage) compared to all other educational levels. This was attributed to the positive impact of education on economic prosperity and higher attractiveness on the partner market. Kantorová (2004a, 2004b) examined first union formation of women in the Czech Republic before and after its transition in the 1990s. The negative enrollment effect of education was getting stronger after 1990 for any kind of union formation. By contrast, no effects of women's educational levels were found (models included employment status).

The Russian Context: Gerber and Berman (2005) provide a comprehensive study on the determinants of Russian men's (and females') marriage and cohabitation behavior between 1985 and 1991, and between 1992 and 2001. The likelihood of forming a consensual or a marital union was strongly reduced by educational enrollment. Its effect on marriage was less pronounced for university students before 1992, compared to other students. In subsequent years, this pattern reversed. The enrollment effect on consensual union formation was the opposite in both periods. A male's educational

level was found to have a positive, but slightly u-shaped effect on his marriage propensity; this pattern holds over both analyzed periods. By contrast, consensual union formation was negatively influenced by educational level.

Hypotheses: The Soviet and Russian educational system is regarded as highly competitive and stratified (Gerber 2000; Gerber and Hout 1995 and see Chapter III, Section 6.), hence men's educational levels directly affect future job chances, and, consequently, the resolution of perspective and resource problems regarding union formation (see Chapter II, Sections 4.2 and 5.1.4). However, guaranteed full employment for men across all educational levels during Soviet times should have suppressed major educational differences. This changed after the collapse of state socialism. As a result, individuals' education and future job prospects, and, thus, the resolution of resource and perspective problems, became strongly linked.

I expect to find a strongly negative impact of enrollment in education on the transition to the first union among Russian males in general. This effect may only be weakly influenced by the breakdown of the Soviet Union. The negative impact of being in education should be stronger for direct marriage than for non-marital cohabitation, since less costly and less committing unions are assumed to be more compatible with educational enrollment.

Men with different educational levels should form their first union in different ways. Highly educated males should marry more often than they cohabit outside of marriage, whereas less-educated men should behave in the opposite way. Marriage is regarded as more costly and committing than cohabitation, and better-educated men are assumed to be able to afford a marriage more easily (while the opposite is the case for the less-educated). The impact of education is expected to vary over the period. Higher education should support the decision to marry more strongly in the 1990s and in the new millennium than in the years before.

4.3. Employment

The theoretical considerations of Chapter II (Sections 4.2 and 5.1.5) claimed that employment influences men's nuptiality behavior because of its economic implications, its role at the transition to adulthood, and its influence on the future life course.

Previous empirical findings in Europe and the U.S.: In the Netherlands, Liefbroer (1991) founds that males are generally more likely to start a union with non-marital cohabitations, whereas the differences regarding employment status were only marginal. Results from Kalmijn and Luijkx (2005) are different, and show that job mobility, occupational status, job and employment changes, and the unemployment rate explained important parts of Dutch men's transition to a first union. Generally, there was a strong effect of employment on marriage. Thus non-employment was not as strong an impediment to cohabitation as it was to marriage. Long-term non-employment and becoming non-employed had a stronger negative effect on the transition to marriage than on cohabitation. However, an immediate change from non-employment to employment increased only the likelihood of cohabitation. To increase the probability of marriage, a longer history of employment was needed.

The results of Teachman, Polonko, and Leigh (1987) for American males showed that wage levels and full-time work positively affected marriage probabilities (Simpson 1998). Unemployment had negative effects. Similar positive income effects were discovered in a bi-national study among Swedish and American men (Bernhardt and Goldscheider 2001).

In her study of nuptiality among American men, Oppenheimer (2003) used earnings and work experience to model the effect of men's career development on cohabitation and marriage behavior. White men's income influenced their transition to marriage positively. In high-income groups, the probability of a direct marriage was higher than among men with lower earnings, who rather chose to cohabit before they married. Men with higher incomes were less likely to enter cohabitations in general. The findings on work experience suggested that individuals whose work stability had deteriorated were less likely to marry, but more likely to cohabit. This strongly supports the idea that, although marriage was discouraged by labor market instability, cohabitation provided something of a fallback strategy for American men. In an earlier study, Goldscheider and Waite (1986) already showed that a male's employment was one of the strongest predictors of marriage for American men. Difficulties in becoming employed affect marriage chances of young men, and contribute to differences in marriage patterns across calendar years.

In a Swedish study, Bracher and Santow (1998) found a similar positive impact of economic independence on men's first cohabitation and marriage formation. The

probability of marrying directly was thereby more strongly affected. Similar findings were carried out by Kravdal (1999) for Norwegian males. He argues that marriage still requires a stronger economic underpinning than consensual unions.

Findings on West German men point in similar directions. Huinink (1995) and Tölke (2005) showed that full employment and positive career movements increased men's first marriage propensities, whereas employment interruptions and part-time work decreased them. Both authors asserted that stable employment (in terms of resources and prospects) was a necessary precondition for men's marriages in West Germany, since men were still regarded as the main breadwinners.

Empirical findings in the context of the Eastern Block: Again, the study of Olah and Fratczak (2003) is one of the examples of studies which examine the impact of employment status on first marriage behavior of East European males. Full employment increased men's likelihood of a first marriage strongly in both countries, whereas non-employment had a negative effect. This was explained by men's higher economic status, which presumably positively affect their "marriageability." Kulik (2004) also incorporated men in her study on consensual unions in Poland. Thus employed males had a significantly higher risk of entering a cohabitation than non-employed individuals. However, neither the first nor the latter study examined marital and non-marital unions simultaneously.[21]

Russian context: A study of Gerber and Berman (2005) provides a first overview of the effects of Russian men's employment status on their nuptiality behavior. It showed that unemployed men had a higher risk of forming a cohabitation than of marrying. This pattern remained unchanged over the period, but increased its significance after 1991. Unemployment had the opposite effect on men's marriage propensity, i.e., employment increased the risk of a marriage strongly. Thus the difference between unemployed and employed men decreased over period.

Hypotheses: Whereas the Soviet labor market can be characterized as highly regulated and institutionalized, and as entailing minor employment uncertainty, the new Russian employment situation has rather the opposite features, i.e., high risks of unemployment, spread of devalued labor ("working poor"), large dynamics and

[21] In this regard, the first union formation behavior of East European females is much better researched. However, a woman's employment is found to impact her nuptiality behavior very differently than a man's. See, for example: Kantorová (2004b), Koytcheva (2006), Kulik (2005).

flexibility requirements (see Chapter III, Sections 3.1, 3.2, and 4.1). Considering my theoretical approach (see Chapter II, Section 5.1.5), the previously presented empirical studies and the crucial importance of the man's breadwinner role in the Russian family (see Chapter III, Section 8), I expect to find a general positive impact of employment on Russian men's union formation. Its effect on direct marriage is thereby expected to be much stronger than in non-marital unions. Unemployed men should be more likely to form a consensual union and be less likely to marry.

Period effects are expected to occur due to the changed economic and labor market conditions, and due to the increased prevalence (and acceptance) of non-marital cohabitations in Russia. Employment is expected to lose parts of its positive impact on direct marriages and to increase its effect on cohabitation, since employment (after 1990) does not necessarily imply sufficient income, resources, or perspectives (devaluation of labor) to form a marriage. Consensual unions presumably serve as a union formation alternative under economic stress and in unstable positions.

4.4. Pregnancy of the partner and childbirth

Union formation and fertility are strongly connected. A first conception, procreation, or a first birth outside of a co-residential union strongly promotes the formation of a cohabiting partnership (marital or non-marital). As considered in Chapter II (Section 5.1.6) the legitimation of children via marriage, the institutionalization of fathers' bonds to their biological offspring, and the sequencing (social, religious, etc.) norms are the factors which strengthen this interaction. A strong connection between procreation, birth, and marriage thereby is used as an indicator of traditional value orientations. By contrast, the formation a non-marital unions in case of non-marital procreation may reflect higher progressiveness (see Chapter II, Sections 5.1.3 and 5.1.6).

Previous empirical findings in Europe and the U.S.: Studies in the U.S. American context clearly show that pre-marital births increased the likelihood of marriage for white men (Teachman et al. 1987; Zavodny 1999). In the Swedish context, Bracher and Santow (1998) examined the effects of pregnancy and birth on the probabilities of first non-marital cohabitation, first, and subsequent marriage. Their results confirm that the likelihood of direct marriage increases the most if the male's female partner is

pregnant, while the probability of a first cohabitation grew significantly weaker. Also, in West Germany, Huinink (1995) found that a first procreation strongly promotes men's entry into marriage; this was attributed to the incentive and disincentive structure of German law and traditional social norms.

Empirical findings in the context of the Eastern Block: Findings on Hungarian and Polish males show that their likelihood of entering into a first marriage strongly increased when a premarital procreation occurred. This effect turned negative when the child was delivered before marriage formation. (Olah and Fratczack 2003) Further studies on East European men's nuptiality do not exist to my knowledge.

Nevertheless, many studies on females showed that conception almost necessarily led to the formation of a union (marital or non-marital). The probability of marrying directly was much higher than of non-marital union formation. Kantorova (2004b) clearly found this connection in the Czech Republic, Koytcheva (2006) in Bulgaria, Kulik (2005) in Hungary, and Mills and Trovato (2000) in Latvia. Especially in the short interval between conception and birth, the marriage probability was very high. The formation of non-marital cohabitations in this interval was also very likely, but the effect was less pronounced. The studies disentangled different patterns before and after the societal changes in 1990s. Kantorova (2004b) found that pregnancy in the period between 1990 and 1997 was still a strong "push-factor,",but pre-union pregnancies were generally less likely than before 1990. Kulik (2005) and Koytcheva (2006) showed that the influence of pre-marital pregnancies on marriage risk decreased with the changes in the 1990, whereas the number cohabitations formed during pregnancy increased.

The findings of Hoem and Kostova (2007) for Bulgaria support these results and add period trends. The authors clearly showed that pregnancy increased the risk of direct marital union formation much more strongly than of non-marital unions. This impact decreased over the period, whereas the effect of conception on cohabitation increased strongly. Since the changes had already started before the breakdown of the socialist regime, the authors attributed them to ideational and cultural changes, which were not necessarily connected to political and economic developments. This conclusion is supported by a multinational study on Romania, Bulgaria, Hungary, and Russia (Hoem et al. 2007). The authors believe that the SDT is responsible for the loosened connection between pregnancy and marriage formation.

Russian context: Studies on Russia showed that the share of non-marital conceptions and procreation grew strongly with the collapse of the Soviet Union (see Chapter III, Section 3.3; Tolts, Antonova and Andreev 2006; Philipov and Jasilioniene 2007), while the prevalence of marriages after such conceptions decreased (Hoem et al. 2007). In an effort to explain these developments, Hoem and colleagues (2007) referred to the SDT and the related value changes. Philipov and Jasilioniene (2007) also showed that males and females increasingly experienced the birth of first children out of wedlock in the 1990s and in the new millennium, and, thus, in non-marital cohabitations. However, births in marital unions are still the most common ones. The authors attributed this phenomenon to the persistence of traditional attitudes towards parenthood in the Russian society, which contradicts the idea of the SDT as stated by Hoem and colleagues.

Hypotheses: Generally, a first procreation is expected to increase the probability of union formation, thus males anticipating fatherhood should be more likely than others to form a union. The traditional Russian union formation pattern (young and early), the societal dominance of marriage, sequencing norms of family formation (see Chapter IV) and housing policies (see Chapter III, Section 5) should strongly promote direct marriages among men whose female partners are pregnant. With the societal transition, rising acceptance of cohabitation, weakening of sequencing norms, and a more liberal housing market, the impact of procreation on direct marriage may decrease over the period, whereas anticipated fatherhood should also increase the likelihood of forming a non-marital cohabitation. In other words, men awaiting fatherhood will become less likely to establish a direct marriage, but more likely to enter into a consensual union.

4.5. First cohabitation – subsequent marriage or union dissolution?

When the nuptiality career of young males is started by cohabitation, the question of whether this union is subsequently converted to marriage arises. By examining this transition, I aim to describe Russian men's non-marital cohabitations in terms of a pre-marital state, a temporary alternative, or a real alternative to marriage. By defining the role of consensual unions, Russia stage in the SDT could also be assessed.

Moreover, I argue that the theoretical and empirical discussion in the previous sections and Chapter II can be applied to the determinants of this transition as well.

Historical time: Studies in Western Europe have indicated that, with increasing numbers of consensual unions, the meaning of them has also changed, i.e., it becomes a real alternative to marriage. Consequently, determinants of marital and non-marital unions have become more equal, and non-marital unions have been increasingly incorporated into law (e.g., family policies). Individuals were less likely to start their nuptiality careers with a direct marriage, but when a marriage was formed, it was often preceded by cohabitation. Examples for such developments are seen in Germany, Sweden, Norway, Netherlands, France, and Great Britain (Barlow 2004; Hoem 1980; Huinink 2002c; Liefbroer 1999; Noack 2001; Toulemon 1997; van de Kaa 1987; Vaskovics and Rupp 1992). Findings on the Czech Republic, Bulgaria, Hungary, and Russia suggest similar patterns (Kantorová 2004b; Koytcheva 2006; Kulik 2005; Philipov and Jasilioniene 2007; Spéder 2005).

The aggregated indicators already showed that, despite the increasing numbers of cohabitation, most males marry once in their lives, and marriage still is the most common kind of union in the Russian society (see Chapter IV, Section 2). I assume that Russian men are very likely to convert a non-marital partnership into a marriage. Thus, non-marital cohabitation should mainly work as a temporary alternative to, or pre-phase of, marriage. However, first marriage patterns indicate that the likelihood of subsequent marriages may also decrease over the period.

Duration of cohabitation: The duration of non-marital cohabitations strongly affects the probability of a subsequent marriage. Studies in the context of the Eastern Block e.g., Czech Republic, Bulgaria, Hungary, Latvia (Kantorová 2004b; Koytcheva 2006; Kulik 2005; Mills and Trovato 2000) showed that non-marital cohabitations were very likely to be turned into a marriage, especially shortly after the union formation.

Based on general Russian nuptiality trends, previous findings, and the study of Philipov and Jasilioniene (2007), Russian men's likelihood of getting married is supposed to be the highest shortly after the start of cohabitation, and is expected to decrease afterwards. Accordingly, the risk of union dissolution is supposed to be higher the longer a non-marital cohabitation lasts. The effect of duration should vary over the period (lower marriage risk after 1990), since the postponement of first marriages occurred and cohabitation became more widespread and accepted.

Education and employment status: Employment, as well as educational levels, are supposed to have positive effects on the likelihood of a subsequent marriage. According to the arguments made in Section 2.2 and 2.3 (of this chapter), regarding the theoretical considerations (see Chapter II, Section 5), and studies on East European females (e.g., Czech Republic: Kantorová 2004b, Bulgaria: Koytcheva 2006, Hungary: Kulik 2005) education and employment characteristics should indicate Russian men's marriagability in terms of their transition to adulthood, their resources, and their future prospects, i.e., their ability to fulfill traditional breadwinner perceptions. Therefore, Russian males not participating in the educational system, respondents with high educational levels, and employed individuals are expected to have the highest probability of converting a non-marital cohabitation into a marriage.

Pregnancy of the partner and childbirth: As shown in studies on females, conception and childbirth are assumed to be key factors in transforming a cohabitation into a marriage (Bracher and Santow 1998; Hoem and Rennermalm 1985; Kantorová 2004b; Koytcheva 2006; Kulik 2005). The theoretical, as well as the empirical arguments, are assumed to be similar to the previous discussion in Section 2.4 in this chapter and in Chapter II, Section 5. The transformation of a consensual union into a marriage at conception or childbirth is used as an indicator of progressivness and traditional social norms (as referred to in the SDT approach; see Chapter II, Section 5.1.3), thus it reflects the acceptance of non-marital cohabitations as an appropriate environment for raising children (Bracher and Santow 1998).

Soviet and Russian family values are regarded as traditional (see Chapter III). Therefore, anticipated fatherhood and the birth of a child should strongly increase the likelihood of marriage after cohabitation. On the other hand, it is expected that conception strongly reduces the risk of union dissolution. These patterns should be less pronounced after the collapse of the Soviet Union, when cohabitation became more widespread and accepted.

5. Models and data

5.1. Analytical model

In the following event-history analyses, hazard regressions will be applied to investigate Russian men's transition to their first union and their transition out of their first consensual union as a function of an underlying risk modified by a vector of covariates.

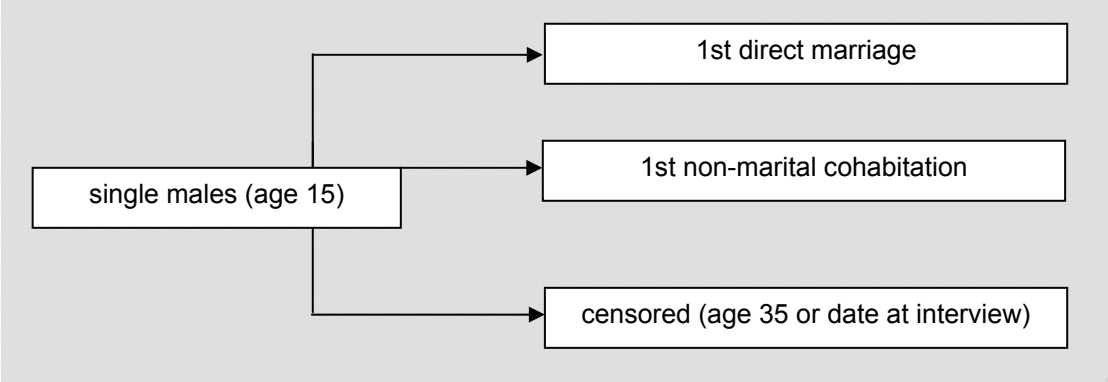


Figure 39: State diagram of analyzed transition to the first union of Russian men

As described in Chapter V (Section 2.2), men's transition to the first union is modeled in the framework of a competing risk setup, i.e., single Russian men can either experience the formation of first non-marital cohabitation or the formation of direct marriage (see Figure 39, and, for a detailed definition, see Chapter V, Section 3.1). If they remain without a partner in the observation period, they will be censored at the date of the interview, or, correspondingly, at age 45.

The event-history model can be written as follows, where $\mu_{1,2}(t)$ is men's propensity for a first union formation (subscript: 1 = marital; 2 =non-marital):

$$\mu_{1,2}(t) = \left[\begin{array}{c} a(t) + \gamma_1 c_1(t) + \gamma_2 c_2(t) + \gamma_3 c_3(t) + \gamma_4 c_4(t) \\ + \beta_5 b_5 + \beta_6 b_6 + \beta_7 b_7 + \beta_8 b_8 \end{array} \right]$$

and where covariates are the following:

$a(t)$	baseline intensity – duration since age 12 (time var)
$\gamma_1 c_1(t)$	first conception/birth (time varying)
$\gamma_2 c_2(t)$	educational level of the respondent (time varying)

$\gamma_3 c_3(t)$	activity status (time varying)
$\gamma_4 c_4(t)$	calendar year (time varying)
$\beta_5 b_5$	region of birth
$\beta_6 b_6$	ethnicity
$\beta_7 b_7$	number of siblings
$\beta_8 b_8$	religion of the respondent

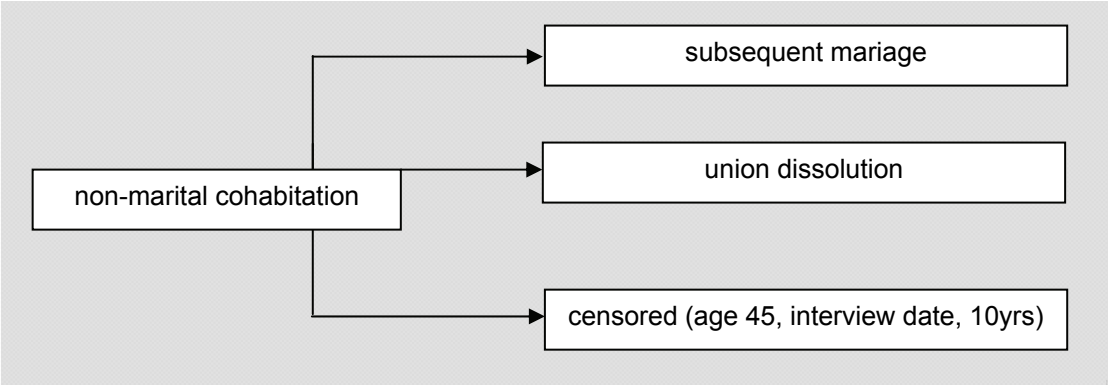


Figure 40: State diagram of analyzed transition from Russian males first non-marital cohabitation

Correspondingly, the transition from the first non-marital union of Russian males can be described. This trajectory will be also modeled as the outcome of a competing risk setup, i.e., men in non-marital cohabitation can either experience a subsequent marriage or union dissolution (for a detailed definition of the events see Chapter V, Section 3.1). In a case where the consensual union continues, it is censored at age 45, after 10 years of union duration, or at the date of the interview (see Figure 40).

The event-history model can be written as follows, where $\mu_{1,2}(t)$ is men's propensity for a first union formation (subscript: 1 = subsequent marriage; 2 = union dissolution):

$$\mu_{1,2}(t) = \left[\begin{array}{c} a(t) + \gamma_1 c_1(t) + \gamma_2 c_2(t) + \gamma_3 c_3(t) + \gamma_4 c_4(t) \\ + \beta_5 b_5 + \beta_6 b_6 + \beta_7 b_7 + \beta_8 b_8 \end{array} \right]$$

Where covariates are the following:

$a(t)$	baseline intensity – union duration in months
$\gamma_1 c_1(t)$	first conception / birth (time varying)
$\gamma_2 c_2(t)$	educational level of the respondent (time varying)
$\gamma_3 c_3(t)$	activity status (time varying)
$\gamma_4 c_4(t)$	calendar year (time varying)
$\beta_5 b_5$	region of birth
$\beta_6 b_6$	ethnicity
$\beta_7 b_7$	number of siblings
$\beta_8 b_8$	religion of the respondent

5.2. Sample selection

Data containing information from the Russian GGS and EES were used in the empirical analysis (see Chapter V, Section 1.). The cleaned GGS-dataset consisted of 4,223 men. The final number of men entered the analysis was 2,235. Since full education and employment histories were used in the analysis, only men interviewed in the GGS and EES were entered in the model (excluded men were not interviewed in the EES: 1,754). Furthermore, men from St. Petersburg and Moscow were excluded because of the serious underreporting problem (see Chapter V, Section 1.1.).

The focus of the analysis was restricted to the changes in first union formation pattern occurring before and after 1990. Therefore, I excluded men born before 1945 and union formations before 1970 in order to avoid biases from the generations of the Second World War[22]. For detailed information see Table 9.

The sample contained 1,781 first union formations of Russian men between 1970 and 2004:664 non-marital cohabiting unions and 1,116 direct marriages. A total of 456 male life histories were censored at the end of the observation period or at age 45 without experiencing a first conception. For detailed information see Table 10.

[22] For a detailed discussion of this problem see: Scherbov, S.and H. Van Vianen. 2001. "Marriage and Fertility in Russia of Women Born between 1900 and 1960: A Cohort Analysis." *European Journal of Population* 17:281-294.

1st union formation: excluded cases	MEN
total number	4223
1st birth before age 14	16
children with previous partners not reported in birth histories	9
end of 1st union before start of 1st union	5
respondents from Moscow & St. Petersburg	385
born before 1945	874
union formation before 1970	2090
not interviewed in the EES	1754
total number entering the analysis	**2235**

! Note: All cases are left censored in 1970 !

Table 9: Excluded cases and total number of respondents entering the analysis; Source: Russian GGS and EES (2004) – own calculations

1st union formations	N	%
total number of men	2235	100.0
first unions	1781	79.6
1st non-marital cohabitations	664	29.7
1st marriages	1115	49.9
censored at date of interview / age 45	456	20.4

Table 10: Distribution of first union formations; Source: Russian GGS and EES (2004) – own calculations

5.3. Covariates

Two kinds of covariates were used in the event-history analysis. Fixed covariates measuring individual characteristics assumed not to change over time (age of respondent) were as follows: number of siblings, ethnicity, place of birth, and religion. Covariates varying by the age of the respondent were as follows: level of education, main activity status, calendar period, procreation, and birth of a child. All events were reported by calendar year and month. The occurrence of an event was attributed to the middle of the respective month. The analyzed period of men's lives started at age 14 and ended at age 45. According to the described event-history techniques, time intervals (spells) are created when a time varying covariate changed (see Chapter V, Section 2). Within these spells, the time varying covariates were assumed to be constant.

	men			cohabitation		direct marriage	
	N	%	exposure time (person months)	occurrences	%	occurrences	%
total numbers	2235	100.0	246683	664	100.0	1116	100.0
time varying covariates							
age of the respondent							
15 to 19			142583	137	20.6	100	9.0
20 to 24			69873	372	56.0	794	71.1
25 to 29			19284	117	17.6	188	16.8
30 to 34			7588	27	4.1	27	2.4
35 to 45			7355	11	1.7	7	0.6
education [23]							
missing	413	18.5	33671	120	18.0	107	9.6
no degree	1690	75.5	69635	37	5.6	17	1.5
low	118	5.3	6617	38	5.7	49	4.4
medium	1067	47.7	64451	151	22.7	355	31.8
vocational medium	876	39.2	56840	263	39.5	436	39.1
high	288	12.9	15469	56	8.4	152	13.6
main activity status							
missing	393	17.6	15849	19	2.9	6	0.5
in basic education	1698	75.9	74271	44	6.6	27	2.4
in higher education	358	16.0	17825	30	4.5	81	7.3
military service	1205	53.9	32088	70	10.5	75	6.7
not employed	1248	55.8	17899	48	7.2	55	4.9
employed	1766	78.9	88751	454	68.3	872	78.1
first conception and birth							
childless	2235	100.0	238535	606	91.1	944	84.6
7 months bf. birth	257	11.5	748	23	3.5	124	11.1
3 months bf. birth	110	4.9	311	4	0.6	18	1.6
1st birth	89	4.0	7089	32	4.8	30	2.7
calendar period							
1970-79	996	44.5	65182	72	10.8	307	27.5
1980-84	918	41.0	38102	73	11.0	214	19.2
1985-89	961	43.0	39368	87	13.1	208	18.6
1990-94	950	42.5	37246	143	21.5	197	17.7
1995-99	904	40.4	37576	139	20.9	123	11.0
2000-04	657	29.4	29209	151	22.7	67	6.0

Table 11: Description of time varying covariates included in the analytical model; Source: Russian GGS and EES (2004) – own calculations

	men			cohabitation		direct marriage	
	N	%	exposure time (person months)	occurrences	%	occurrences	%
total numbers	2235	100.0	246683	654	100.0	1109	100.0
time constant covariates							
religion							
Russian Orthodox	1481	66.2	160651	459	69.0	728	65.2
Muslim	163	7.3	20910	16	2.4	110	9.9
Others	19	0.8	2511	6	0.9	7	0.6
no answer	574	25.7	62611	184	27.7	271	24.3
ethnicity						0	
Russian	1786	79.8	192279	555	83.5	869	77.9
UKR/BL/M	40	1.8	4371	15	2.3	22	2.0
Finno-Un	65	2.9	7689	29	4.4	23	2.1
Kavkasia	133	5.9	17843	10	1.5	95	8.5
Asian	55	2.5	7178	14	2.1	27	2.4
Tatar	44	2.0	5294	9	1.4	24	2.2
European	11	0.5	1050	4	0.6	5	0.4
others	11	0.5	1017	5	0.8	6	0.5
missing	92	4.1	9962	24	3.6	45	4.0
number of siblings							
no siblings	401	17.9	46141	114	17.1	191	17.1
1 sibling	958	42.8	102170	287	43.2	444	39.8
2 siblings	444	19.8	48441	139	20.9	224	20.1
3 and more siblings	434	19.4	49931	125	18.8	257	23.0
region of birth							
center city	522	23.3	56903	175	26.3	200	17.9
other town	632	28.3	68558	203	30.5	293	26.3
urban-type community	209	9.3	23314	60	9.0	113	10.1
rural area	858	38.4	96215	220	33.1	506	45.3
missing	16	0.7	1693	7	1.1	4	0.4

Table 12: Description of time constant covariates included in the analytical model; Source: Russian GGS and EES (2004) – own calculations

Table 11 and Table 12 present the distribution of Russian males over certain characteristics, the occurrences of non-marital cohabitations, and direct marriages, and exposure time in the categories of each covariate. The exposure time is measured in months at risk for a first union formation.

The Tables can be read as follows. The first two rows provide the number and proportion of men experiencing a certain time varying characteristic, e.g., 2,235 individuals or 100% of all respondents were childless in the period of observation. Correspondingly, the next row gives the cumulative amount of time (in person months) that men in a specific state were exposed to the risk of direct marriage or first cohabitation; e.g., childless males were exposed to this risk for 238,535 person months. Further right in the table, the occurrences and proportion of cohabitations and

direct marriages across covariates are displayed, e.g., 606 males formed a first consensual union childless, which accounts for 91.1% of all first cohabitations; 944 men married directly when they were childless, which makes 84.6% of all direct marriages.

Education: The educational variable was constructed from the educational histories collected in Russian EES, and varies over time. It is a categorical variable with six levels. The category "no degree" refers to the time in a man's life without any finished educational degree. Every other level refers to a finished step in men's educational life courses. "Low education" covers all men with the highest degree from primary school or less, and includes men with professional training, but without any other education. "Medium education" covers all individuals with the highest degree from general secondary schools. "Vocational medium education" includes the respondents with highest education from specialized professional technical schools (SPTU) and professional technical schools (PTU). Individuals with finished university education or a "Technikum" degree are subsumed in "higher education." Furthermore, a "missing" category is introduced.[23]

Main activity status: This status was established by combining education, employment information, and records on men's military service (since 2002, also the civil service). It distinguishes between periods of educational enrollment, military service, and employment on a time-varying basis. "In basic education" includes the time when men are enrolled in primary, secondary, and vocational schools. "In tertiary education" refers to the time when males are enrolled in university education and higher (tertiary) vocational education ("Technikum").[24] Men are assumed to be in education until they reach their highest level of education, and as long they are reporting education as their main activity. At the moment when they are leave the educational system or do not report education as their main activity, they can be either "not employed," "employed," or in "military service." "Military service" includes all men fulfilling their military duty or civil service. Commonly, this takes place after

[23] In 187 cases, any secondary degree was missing for respondents with tertiary degrees (university and Technikum students). Since they necessarily have to have a secondary degree, it was computed. The secondary degree was assumed to be obtained at age 17 (most common age when finishing secondary education) in June of the corresponding year.

[24] The classification of two separate categories for enrollment in basic and higher education refers to the work of Gerber (2000a, 2000b, 2005). He shows that the institutional settings of primary, secondary, and tertiary education in Russia influencing nuptiality behavior differently. For a detailed description of the educational system, see Chapter IV, Parts 5.1 and 5.2.

school education or during the first years of higher education (see Chapter III, Section 7).

Normally, Russian men work full-time, or 40 hours per week or more. Other work arrangements are very unusual, even in the period of economic transformation in the 1990s and the new millennium (see Chapter III, Section 3.2). Thus, the status "employed" covers all men working more than 35 hours per week (more than seven hours per day). Men working fewer than 35 hours while being neither in education nor employed are coded as "not employed". Thus the employment category covers all kinds of employment.

First conception and childbirth: The effect of childlessness and the conception and birth of the first child is measured with a time varying covariate. The first conception was assumed to occur seven months before the birth for two reasons: first, to also cover the conception of early births; and, second, to account for the fact that some men might not be aware of the pregnancy when the actual conception occurs (nine months before the birth). The other points of distinction are three months before the birth and the date of birth.

Calendar period: Calendar period is introduced into the models in two ways. First, it is used as a basic interaction variable with three levels, to distinguish between the effects of the covariates between 1970 and 1989, 1990 and 1994, and 1990 to 2004. According to Philliopov and Jasilioniene (2007), the categories should reflect the pre-transition nuptiality pattern (1970 to 1989), the nuptiality behavior of the transition phase (1990 to 1994), and the post-transition pattern (1995 to 2004). Second, the period covariate is used with six levels in order to measures changes over calendar time more detailed, i.e., in five-year and 10-year intervals.

As further variables, *religion*, *number of siblings, region of birth* and *ethnicity* were introduced in the models as time constant covariates. They serve as control variables and will not be considered in the discussion of the results. *Religion*: The impact of religion is assumed to be constant over the life course. The covariate distinguishes four categories: "Russian Orthodox," "Muslim," "other religions," and "no answers." A further distinction is not feasible since other religions are very rare. The majority of Russian males are in the first and in the last category. *Region of birth* covers a five-categorical distinction between rural and urban areas. It is chosen due to a lack of information about the type of the region of residence until age 15. *Number of siblings*

is intended to measure the impact of deviant (from most common two-child families) family sizes on nuptiality behavior. It is grouped into four categories. The covariate measuring *ethnicity* distinguishes eight different groups and a missing category.

6. Empirical results

6.1. Direct marriage or first cohabitation – period and age pattern

The aggregate measures presented in Chapter IV (Section 2) already showed changing nuptiality patterns in Russia. But it is still unclear to what extent men's cohabitation behavior is responsible for this development.

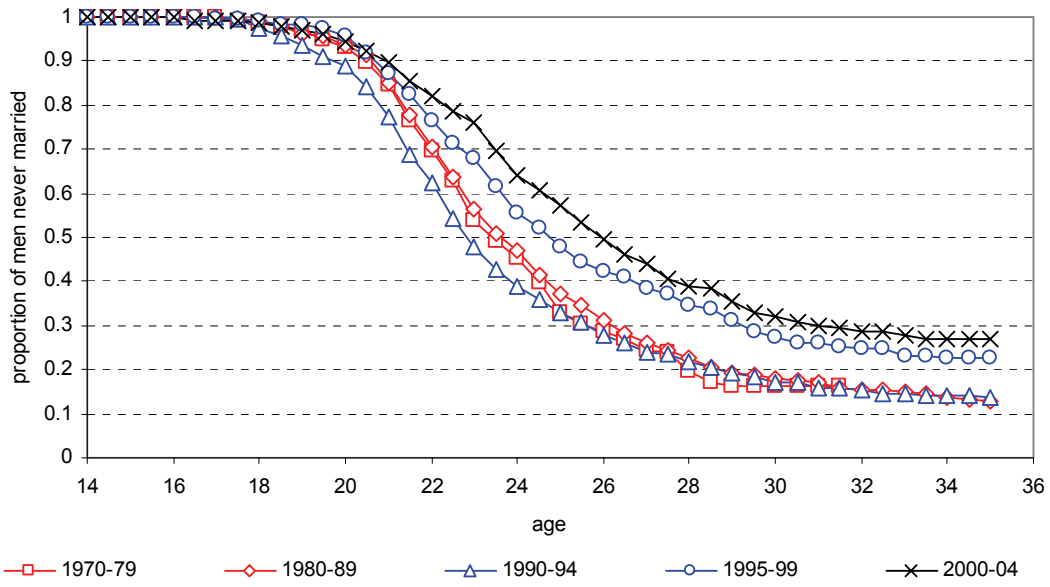


Figure 41: Transition to the first marriage for selected historical periods; Source: Russian GGS and EES (2004) – own estimations

Notes: estimates from Kaplan-Meier survivor function
Wilcoxon-Test: chi2(4) = 62.68, Pr>chi2 = 0.00
Log-Rank-Test: chi2(4) = 60.52, Pr>chi2 = 0.00

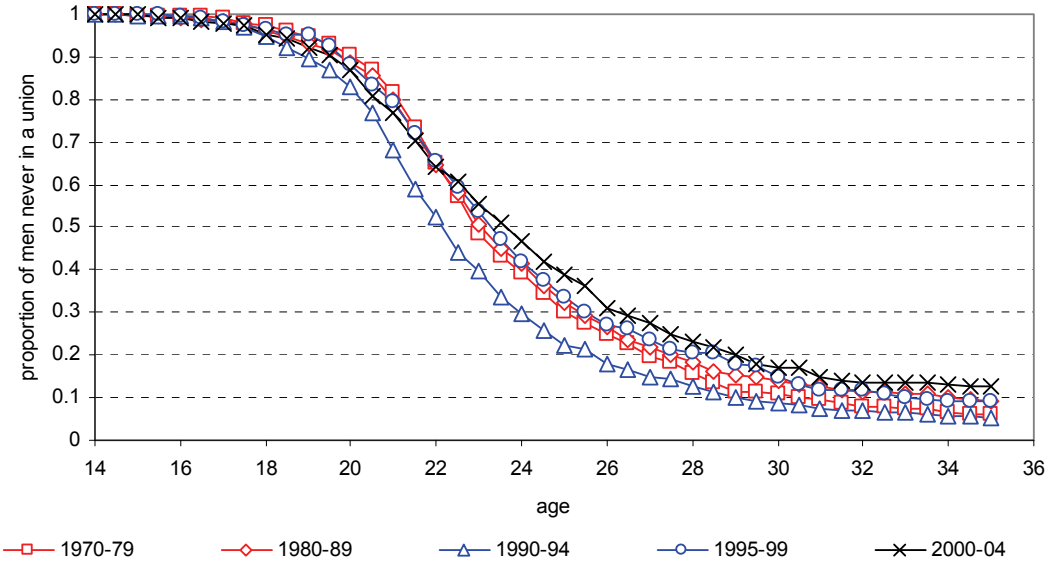


Figure 42: Transition to the first union for selected historical periods; Source: Russian GGS and EES (2004) – own estimations

Notes: estimates from Kaplan-Meier survivor function

Wilcoxon-Test: chi2(4) = 36,62, Pr>chi2 = 0.00

Log-Rank-Test: chi2(4) = 31.59, Pr>chi2 = 0.00

Figure 41 shows Russian men's transition to a first marriage, and reveals that its risk started declining in the mid-1990s. While it was almost universal in the 1970s and 1980s (around 13% remained unmarried), the share of men without a first marriage reached over 20% after 1995. Additionally, a strong postponement of first marriages is observable. In the 1970s and 1980s, 50% of all Russian males experienced a first marriage by age 23.5, and, atthe beginning of the 1990s, even earlier (at 23). The age rose to 24.5 between 1995 and 1999, and finally to 26 in the new millennium. At the beginning of the 1990s, the pattern of very early and universal marriage did not stop. Compared to all other periods, first marriage occurred at the earliest between 1990 and 1995.

Males can enter their first union either via direct marriage or non-marital cohabitation. Figure 42 presents this transition to the first union. During the 1970s, 10% of the respondents did not experience a union until age 35. In the 1980s and 1990s the percentage was only 7%. It increased again to over 10% in the new millennium. Between the 1980s and the new millennium, unions were thereby formed 1.5 years later. Compared to first marriages, Russian men's first union formation pattern

changed remarkably littleover the period. The share of men not in a union is lower, and the postponement effects are also much smaller. This already indicates that the formation of consensual unions accounts for a major part of the decline in first marriages. However, so far the distribution of marital and non-marital partnerships among first unions has remained unclear.

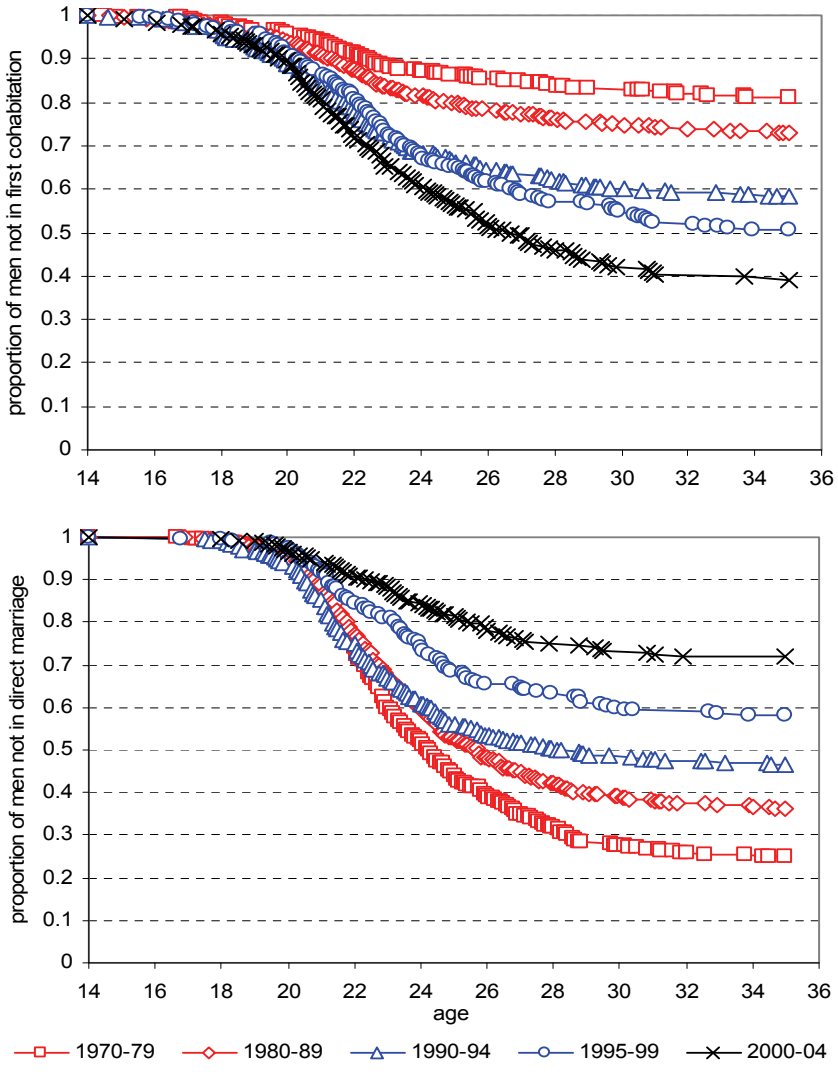


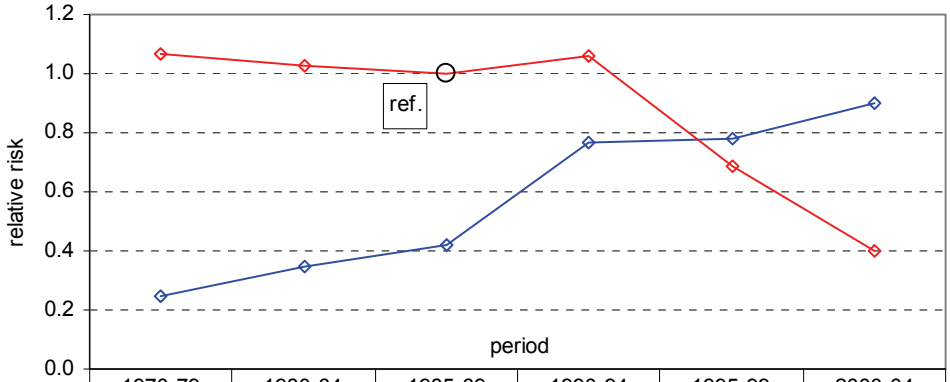
Figure 43: Transition to the first union until age 35 for selected historical periods – competing risk of entering a direct marriage vs. 1st cohabitation; Source**:** Russian GGS and EES (2004) – own estimations

Notes: estimates from Kaplan-Meier survivor function[25]

[25] The computations of competing risks were performed by using *Stata*, Release 9.2 (Stata Corp 2007) and the Stata-module *stcompet* developed by Convello and Boggess (2004).

Therefore, Figure 43 disentangles the transition to the Russian males' first non-marital cohabitation and direct marriage in a competing risk setup. In contrast to Figure 41 and Figure 42, the differences over the period are much more pronounced. There are clear trends. *First*, the share of direct marriages among first unions constantly decreased over period. In the 1970s, 75% of all male respondents married directly (until age 35); in the 1980s, 64% did so. This decrease accelerated in the 1990s, and the share of direct marriage was 54% (1990 to 1994) and 42% (1995 to 1999). In the new millennium, only 28% started their first union in this way.

Second, direct marriage was postponed to older ages, e.g., between 1970 and 1979 25% experienced this event by age 21.9, while in the 1980s this age was 22.3, and in the new millennium it reached 28.8. The only exception to this trend was at the beginning of the 1990s, when direct marriages were preponed, and a quarter of all male respondents experienced marriage by the age of 21.1. *Third*, the number non-marital cohabitation formed until age 35 rose across all observed periods, starting from a share of 19% in the 1970s, 28% in the 1980s, 42% in the first half of the 1990s, 50% between 1995 and 1999, and 61% in the new millennium. *Fourth*, cohabitation tended to occur younger ages, e.g., by age 22, 9% of male respondents started a first cohabitation in the 1970s, 12% in the 1980s, 22% between 1990 and 1994, and 28% in the new millenium. Here the exception was the second half of the 1990s, when first cohabitations were postponed (19.2% at age 22).



	1970-79	1980-84	1985-89	1990-94	1995-99	2000-04
cohabitation	0.25	0.35	0.42	0.77	0.78	0.90
direct marriage	1.07	1.03	1.00	1.06	0.69	0.40

Figure 44: Transition to the first union for selected historical periods; Source: Russian GGS and EES (2004) – own calculations

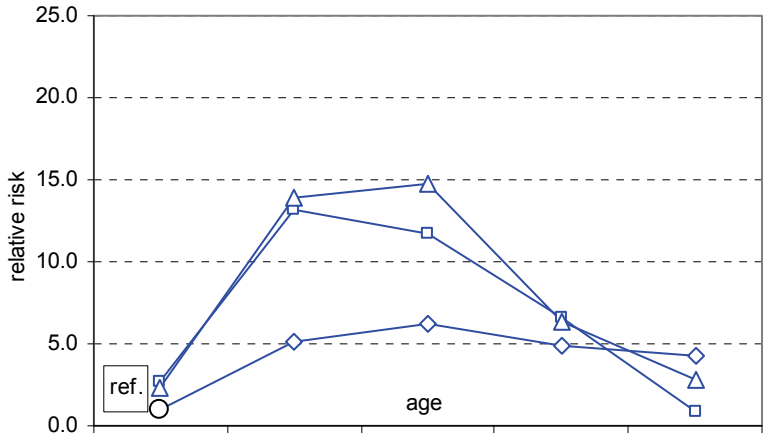
Notes: hazard regression model – competing risks direct marriage and first cohabitation (controlled for covariates Table 11 and Table 12)
ref. = reference category (1.00)

Fifth, it is crucial to emphasize that the decline of direct marriages and the increasing share of non-marital cohabitations as first unions had already occurredbefore the breakdown of the Soviet Union.

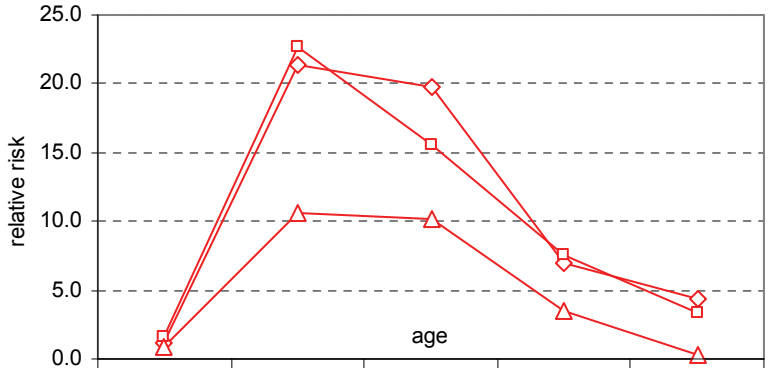
Figure 44 presents period trends on the basis of hazard regression estimates from the model described in Section 3.1. (in this Chapter). The period trends are controlled for the covariates presented in Table 11 and Table 12; however, the pattern basically did not change, compared to a model without any controls (not shown here).

As also observed in Figure 43, there was a steady decline in direct marriage risk and a constant increase in the likelihood of non-marital cohabitation. Even if these patterns had already emerged in the 1980s, they gained more strength in the 1990s. Since the mid-1990s, first union formation by a censual union was more likely than a direct marriage. The increased direct marriage risk in the beginning of the 1990s can be attributed to the described preponement effect. Similarly, the increasing risk of forming a first cohabitation between 1995 and 2004 was suppressed by the slight postponement.

Figure 45 gives a detailed description of age patterns over historical time in three broader calendar year intervals. The propensity for forming a non-marital first union was relatively homogenously distributed over the age groups in the 1970s and 1980s. This changed in the 1990s. Between 1990 and 1994, it peaked in the age group 20 to 24. Subsequently, the peak shifted to 25 to 29, but the union formation risk did not decline in the younger age group. On the contrary, direct marriage risk between 1970 and 1989 was concentrated between 20 to 29, and peaked slightly in the first half of men's twenties. In the beginning of the 1990s, men 25 to 29 years of age married less often, whereas the marriage risk remained high for younger individuals. Afterwards, between 1995 to 2004, the risk stabilized at a low level in age groups between 20 to 29.



	15 to 19	20 to 24	25 to 29	30 to 34	35 to 45
cohabitation 1970-1989	1.00	5.16	6.24	4.85	4.32
cohabitation 1990-1994	2.74	13.20	11.66	6.62	0.84
cohabitation 1995-2004	2.33	13.85	14.80	6.34	2.80



	15 to 19	20 to 24	25 to 29	30 to 34	35 to 45
dir. marriage 1970-1989	1.13	21.34	19.70	7.00	4.32
dir. marriage 1990-1994	1.64	22.72	15.55	7.57	3.36
dir. marriage 1995-2004	0.88	10.56	10.20	3.46	0.35

Figure 45: Transition to the first union for selected historical periods – age pattern; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks direct marriage and first cohabitation (not controlled for any other covariate)
ref. = reference category (1.00)

To conclude, cohabitation substitutes a major part of the decline in direct marriages over the period. Thus the transition rates to the first union declined; however, the proportion of Russian males who did not experience a union until the age of 35 did not rise considerably. Furthermore, the age characteristics of direct marriage, as well as of first non-marital cohabitation, altered. Whereas cohabitation became a choice for younger people, direct marriages were postponed. Compared to the fundamental

changes of *how* young Russian males' entered a union, the share of singles changed remarkably little.

6.2. Education

Males with varying levels of education may enter their first union differently. There are two aspects to the influence of education on union formation: enrollment in education and educational attainment (see Chapter II, Section 5.1.4). In this part, I will present differences in union formation behavior according to men's attained educational degrees.

Table 13 shows the effect of education, while controlling for other individual characteristics. Generally, education influenced non-marital cohabitation and direct marriages very differently. Men with no degree had the lowest risk of first union formation in general (relative risks for cohabitations: 2.18; and direct marriage: 1.00), but tended to cohabit more often. The propensity for a direct marriage was strictly positively influenced by educational level. Men with higher educational degrees had an around 20% higher risk of entering into a direct marriage than men with all other educational degrees.[26] By contrast, the propensity for cohabitation was negatively influenced by men's educational levels. The risk peaked in the lowest-educated group. Highly educated males had the lowest risk of forming a non-marital cohabitation. Their risk of forming a union of this kind was 50% lower than among less-educated males, and 10% lower than among medium-educated men. Furthermore, men with vocational medium degrees differed from men with a usual secondary school degree. Males with combined vocational and secondary educations were more likely to form a consensual union.

The full model (Table 13) does not allow us to distinguish age patterns of first union formation by educational degrees or period comparisons. Therefore, Figure 46 shows the results of an interaction model between education and calendar year. It contains six different graphs for cohabitation and direct marriage for the following periods:

[26] The differences between the educational degrees in % can be simply obtained by dividing the relative risks to compare against each other.
Example: direct marriage of low educated = 5.48; direct marriage of highly educated = 6.69
6.69 / 5.48 = 1.28
Thus, highly educated males have a 28 % higher risk of experiencing a direct marriage compared to their low educated counterparts.

before 1990, 1990 to 1994, and 1995 to 2004. The results for the time between 1990 and 1994 have to been interpreted with caution, since there were not enough cases in all categories to obtain robust results.

	cohabitation	direct marriage
	RR	RR
age (baseline intensity)		
15 to 19	1.37	1.00 ref.
20 to 24	3.32	7.09
25 to 29	3.30	5.30
30 to 34	2.01	2.01
35 to 45	0.83	0.53
time varying covariates		
education		
missing	5.06	4.51
no degree	2.18	1.00 ref.
low	4.25	5.48
medium	2.38	5.60
vocational medium	3.34	5.56
high	2.46	6.69
main activity status		
in basic education	1.63	1.00 ref.
in higher education	0.91	2.46
military service	1.09	1.17
not employed	1.56	1.79
employed	1.87	3.59
missing	1.12	0.36
first conception and birth		
childless	0.64	1.00 ref.
7 months bf. birth	3.70	19.93
3 months bf. birth	1.53	6.88
1st birth	0.69	0.67
calendar period		
1970-79	0.23	1.00 ref.
1980-84	0.33	0.97
1985-89	0.39	0.94
1990-94	0.72	1.00
1995-99	0.73	0.65
2000-04	0.85	0.38
Log-likelihood:-10338.87		
degrees of freedom: 47		

RR = relative risk; ref. = reference category
(table continuing)

Table 13: Transition to the first union – time varying covariates - single interactions with type of decrement; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks direct marriage and first cohabitation (not controlled for any other covariate)
ref. = reference category (1.00)

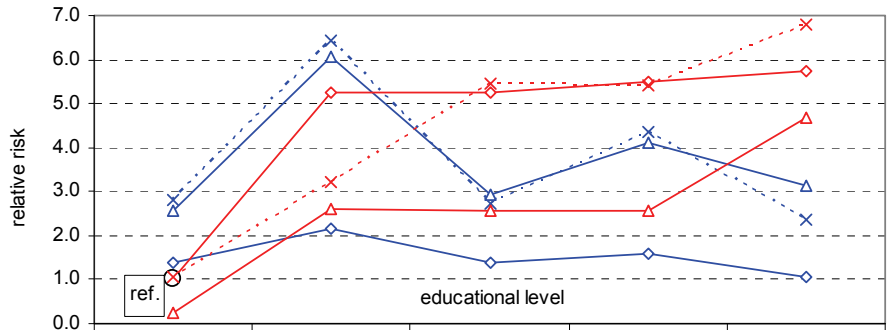
	cohabitation	direct marriage	
	RR	RR	
time constant covariates			
religion			
Russian Orthodox	0.63	1.00	ref.
Muslim	0.19	1.33	
Others	0.46	0.53	
no answer	0.64	0.95	
ethnicity			
Russian	0.64	1.00	ref.
UKR/BL/M	0.70	1.03	
Finno-Ungric	0.74	0.59	
Kavkasian	0.11	1.07	
Asian	0.40	0.77	
Tatar	0.35	0.94	
European	1.26	1.58	
others	1.22	1.47	
missing	0.57	1.07	
number of siblings			
no siblings	0.59	1.00	ref.
1 sibling	0.73	1.14	
2 siblings	0.72	1.16	
3 and more siblings	0.60	1.23	
region of birth			
center city	0.88	1.00	ref.
other town	0.79	1.15	
urban-type community	0.72	1.36	
rural area	0.60	1.37	
missing	1.14	0.65	
Log-likelihood:-10338.87			
degrees of freedom: 47			

RR = relative risk; AR = Absolute risk; ref. = reference category

Table 13: Transition to the first union – time constant covariates – single interactions with type of decrement; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks direct marriage and first cohabitation
ref. = reference category (1.00)

Before 1990: In the state socialist period, direct marriage was very common among men of all educational degrees. Almost no educational differences in the direct marriage pattern occurred, despite a very weak elevated marriage risk for highly educated men. However, males without any educational degree had a risk of marrying directly that was more than five times lower than that of males with any degree. First cohabitations were not a widespread kind of partnership, and showed weak negative educational gradients, i.e., highly educated males had the lowest risk of forming a consensual union. Thus, males with no degree were the only group with a higher risk (38%) of forming a consensual union than of marrying directly.



	no degree	low	medium	vac. medium	tertiary
cohabitation 1970-89	1.38	2.15	1.38	1.60	1.07
cohabitation 1990-94	2.81	6.43	2.74	4.35	2.36
cohabitation 1995-2004	2.56	6.07	2.95	4.12	3.15
dir. marriage 1970-89	1.00	5.23	5.24	5.48	5.73
dir. marriage 1990-94	1.05	3.21	5.47	5.42	6.79
dir. marriage 1995-2004	0.23	2.60	2.56	2.57	4.68

Figure 46: Transition to the first union over historical time – education pattern; Source: Russian GGS and EES (2004) – own calculations
Notes: hazard regression model – competing risks direct marriage and first cohabitation (controlled for all covariates in Table 13)
ref. = reference category (1.00)

1990 to 1994: The impact of education started to change at the beginning of the 1990s. Especially for less-educated men, direct marriage became less likely, whereas its risk increased in the highly educated group. In addition, the educational effect on cohabitation behavior changed strongly. Particularly the first cohabitation risk for lower-educated individuals peaked, e.g., less-educated males had a cohabitation risk that was 2.36 times higher than that of medium-educated men. With the exception of lower-educated men, direct marriage was still the most common kind of first union for all educational groups.

1995 to 2004: The positive impact of education on direct marriage developed the form of a staircase, with a homogenous middle section containing low and medium degrees. Thus, highly educated men had direct marriage propensity that was about 1.8 times higher than that of all other degrees, and men in this group were the only ones who were more likely to marry directly and not to form non-marital cohabitation. The negative educational effect on cohabitation was similar to the beginning of the 1990s. Moreover, men with no educational degree were most unlikely to marry directly, but were more likely to form a consensual union.

	1st quartile age at …					
	1st cohabitation			direct marriage		
	1970 to 1989	1995 to 2004	difference	1970 to 1989	1995 to 2004	difference
no degree	26.3	22.4	-3.9	22.8	24.7	1.9
low	23.1	21.3	-1.8	21.5	22.3	0.8
medium	27.5	23.4	-4.1	22.1	24.4	2.3
vac. medium	26.3	22.6	-3.7	21.9	23.3	1.4
tertiary	33.6	22.3	-11.3	22.4	23.4	1.0
total	26.3	22.2	-4.2	22.3	23.8	1.5

Table 14: 1st quartile (25%) age at first cohabitation and direct marriage by period – educational pattern; Source: Russian GGS and EES (2004) – own estimations

Notes: Results of KM-Survival analysis of the transition to first union formation

After presenting the relative risks of union formation across educational groups, Table 14 provides the age pattern across educational levels by giving the first quartile of the transition to first consensual union and direct marriage. Before 1990, the age at first cohabitation was very heterogeneous among the educational groups (ranging from 23.1 for low-educated to 33.6 for highly educated). Males with the lowest level of education were the youngest at their first non-marital union formation, and highly educated men had the highest age. After 1995, the prevalence of consensual unions increased strongly. And, at the same time, men's ages at consensual formation decreased and became more homogenous. The strongest preponement occurred among highly educated males, followed by men with medium or no degrees. The decrease was the weakest among lower-educated individuals.

For men's direct marriages, the opposite development can be observed in Table 14. In the 1970s and 1980s, direct marriage occurred relatively early across all educational groups. However, the age at direct marriage was higher among better-educated individuals (low: 21.5, tertiary: 22.4 - not considering individuals with no degree). After 1995, with a general postponement and decrease of the age at direct marriages, the age pattern became more heterogeneous. Direct marriages were postponed the most among the medium-educated and "no-degree" groups (2.3 and 1.9 years). Lower- and highly educated men postponed direct marriages only weakly (0.8 and one year).

In addition, the number of singles varied across educational degrees as Table 15 reveals. Again, before 1990, the level of singlehood was low and relatively equally distributed across educational levels (between 6.3% and 8.7%). However, the share of singles increased slightly with the level of education. This changed after 1995.

Whereas in the medium- and less-educated groups the proportion of single males rose or remained on the same level (increased between 0.1% and 8.5%), it declined among highly educated men (decline of 4.2%).

	singles (at age 45)		
	before 1990	after 1995	difference
no degree	4.7	13.2	8.5
low	6.3	6.4	0.1
medium	7.7	12.2	4.5
vac. medium	7.2	8.1	0.9
tertiary	8.7	4.4	-4.2
total	4.8	8.5	3.7

Table 15: Share of singles at age 45, transition to first union - educational pattern; Source: Russian GGS and EES (2004) – own estimations

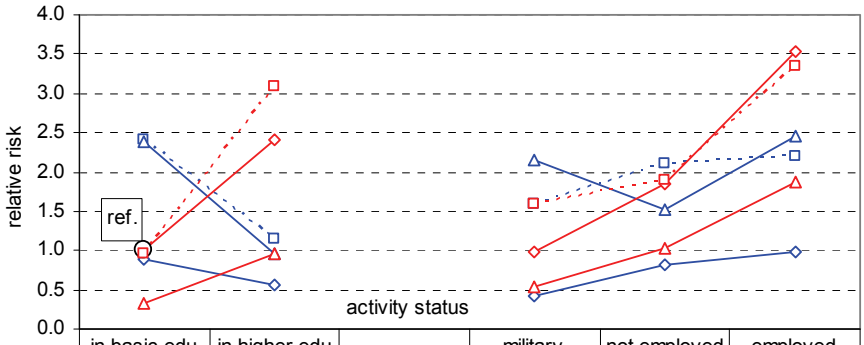
Notes: Results of KM-Survival analysis of the transition to first union formation

To conclude, the first union formation of Russian men is influenced by educational attainment. The educational age pattern and proportion of single men across educational degrees differed strongly between non-marital cohabitation and direct marriage. The nuptiality differences in respect to men's education were weak during socialist times, increased in the beginning of the 1990s, and became very pronounced in the period between 1995 and 2004. The educational pattern of union formation changed from homogenous and concentrated, to heterogeneous and wider. Thus first union formation by non-marital cohabitation, as well as singlehood, became more widespread in the lower-educated groups than among highly educated men. Moreover, consensual unions emerged first in the low- and medium-educated groups; such patterns are known as "non-marital cohabitation from the bottom."

At a glance, the increased risk of starting a first union as a cohabitation among highly educated males can mainly be attributed to a preponement of consensual union formation. However, relatively early direct marriage remained the main option in this group. By contrast, the increase in the same propensity in the lower-educated group is based in a real increase in the number cohabiters, accompanied by decreasing likelihood of direct marriage and growing singlehood. This similarly applies to medium-educated individuals.

6.3. Activity status and employment

Table 13 shows that men's first union formation behavior was determined by activity status and employment characteristics. Full-time employed men had the highest risk of forming a first union regardless of its legal status over all observed periods. This effect was more pronounced for direct marriages. Among males not in education, military servicemen had the lowest risk of a union formation.



	in basic edu	in higher edu		military	not employed	employed
cohabitation 1970-89	0.90	0.56		0.43	0.83	0.99
cohabitation 1990-94	2.42	1.14		1.59	2.10	2.19
cohabitation 1995-2004	2.39	0.96		2.15	1.53	2.46
dir. marriage 1970-89	1.00	2.40		0.99	1.84	3.54
dir. marriage 1990-94	0.97	3.08		1.59	1.89	3.34
dir. marriage 1995-2004	0.32	0.96		0.54	1.04	1.88

Figure 47: Transition to the first union over historical time – activity status; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks direct marriage and 1st cohabitation (controlled for all covariates in Table 13)
ref. = reference category (1.00)

As Figure 47 reveals, the period between 1995 and 2004 was the only exception to this pattern. Not employed men had a lower risk of cohabitation formation than men in military service. Generally, the relative differences between non-employed and employed men changed over period (comparing 1970 to 1989, and 1995 to 2004). At the transition to the first cohabitation, the difference grew about 42%, whereas it decreased slightly for direct marriages (difference decreased about 9%).[27] Thus,

[27] Differences of direct marriage risk between non employed and employed men:
3.54 / 1.84 = 1.92 (before 1990)
1.88 / 1.04 = 1.81 (after 1995)
1.92 – 1.81 = 0.09 => 9% difference between the periods
Differences of first cohabitation risk between non-employed and employed men:
0.99 / 0.83 = 1.19 (before 1990)

consensual union formation became more strongly influenced by men's employment status after 1995. Differences between military servicemen and employed men stayed the same in their direct marriage behavior, i.e., employed males were 3.5 times more likely to form a direct marriage compared to military servicemen; but they decreased strongly for consensual union formation (decrease of 116%).[28] In contrast to the 1970s and 1980s, between 1995 and 2004 men in military service were almost as likely to cohabit as employed males.

Table 13 also showed that participation in basic education strongly hindered direct marriages, whereas men in higher education were more likely to enter a marital union directly. By contrast, participating in higher education reduced the risk of a cohabitation more strongly than basic education. This pattern remained stable over the period, as Figure 47 illustrates. Nevertheless, when comparing the direct marriage propensity of men in higher and basic education with employed individuals, it shows that educational enrollment much more strongly hindered marital union formation between 1995 and 2004 than in the periods before. For example, whereas direct marriage was 3.5 more likely among employed individuals than among men in basic education in the 1970s and 1980s, it was 5.8 times more likely after 1995.[29] For the formation of non-marital cohabitations, the opposite development can be observed; it became more compatible with educational enrollment.

To sum up, after attaining employment, men are very likely to form direct marriages as well as consensual unions. Consequently, non-employed males formed first unions less often. This pattern remained stable over the whole period of observation. By contrast, military servicemen and men in education changed their nuptiality behavior over time. After 1995, men in the military were able to form consensual unions, which was not possible before; however, direct marriage remained incompatible with

---

2.46 / 1.53 = 1.61 (after 1995)
1.19 – 1.61 = 0.42 => 42% difference between the periods

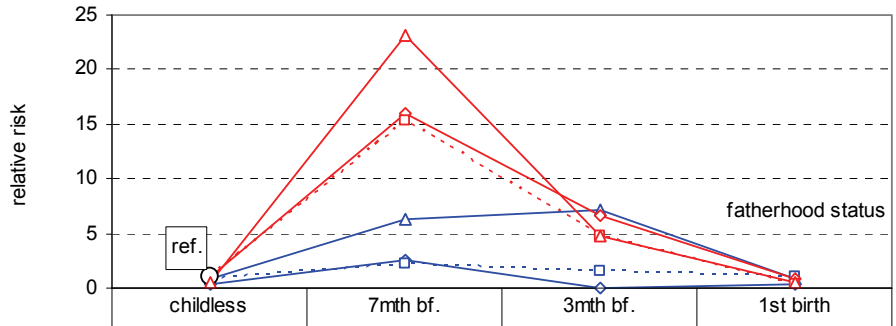
[28] Differences of first cohabitation risk between military servicemen and employed men:
3.54 / 0.99 = 3.57 (before 1990)
0.54 / 1.88 = 3.48 (after 1995)
3.57– 3.48 = 0.09 => 9% difference between the periods
Differences of direct marriage risk between military servicemen and employed men:
0.99 / 0.43 = 2.30 (before 1990)
2.46 / 2.15 = 1.14 (after 1995)
2.30 – 1.14 = 1.16 => 116% difference between the periods

[29] Differences of direct marriage risk between men in basic education and employed men:
3.50 / 1.00 = 3.50 (before 1990)
1.88 / 0.32 = 5.80 (after 1995)

military service. Direct marriage formation in basic and higher education became less likely after 1995, but men increasingly formed consensual unions during educational enrollment.

6.4. Fatherhood

Marital births were the most common fertility pattern in Russia during the 1970s and 1980s. Even after 1990, the majority of births took place after marriage. However, pre-marital pregnancies became increasingly common. The results presented in the following graphs and in Table 13 provide answers to the question: How does anticipated fatherhood influence the risk of forming a first union?



	childless	7mth bf.	3mth bf.	1st birth
cohabitation 1970-1989	0.34	2.48	0.00	0.33
cohabitation 1990-94	0.80	2.29	1.59	1.04
cohabitation 1995-2004	0.83	6.32	7.11	0.82
dir. marriage 1970-1989	1.00	16.01	6.67	0.77
dir. marriage 1990-94	1.07	15.30	4.76	0.26
dir. marriage 1995-2004	0.46	23.16	4.74	0.49

Figure 48: Transition to the first union over historical time – effect of fatherhood status; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks direct marriage and 1st cohabitation (controlled for all covariates in Table 13)
ref. = reference category (1.00)

The results in Table 13 demonstrate that fatherhood had different meanings for marital and non-marital union formation. Although its effect was shaped similarly for consensual and marital union, it was much more pronounced for the latter. Generally, men tended to marry directly when their female partner became pregnant; the marriage risk seven months before the birth was 20 times higher than among childless individuals. The risk of forming a non-marital cohabitation at this time was only 3.7

times higher. After this peak, the risk of union formation decreased rapidly for both kinds of unions, and at childbirth no differences between marital and non-marital union formation can be observed.

In Figure 48, men's fatherhood status is interacted with historical time. Basically, the patterns over all periods were very similar to the model presented in Table 13. Men anticipating fatherhood were more likely to marry than to cohabit over all periods. Childless males and males at childbirth had the lowest likelihood of entering a union.

Before 1990, the propensity for cohabitation formation was very low, but peaks similarly to marriage seven months before the birth. At this time, men had a 6.5 times higher risk of marrying directly than of forming a consensual union. Compared to the 1970s and 1980s, neither marriage patterns nor cohabitation patterns changed in the first half of the 1990s. Major changes have occurred since 1995. In particular, the propensity for forming a consensual union rose strongly, but the likelihood of direct marriage also increased. However, the difference between both kinds of union formation nearly halved, e.g., a direct marriage seven months before the birth between 1970 and 1989 was 6.5 times more likely than a first consensual union formation; this value decreased to 3.6 after 1995.[30] The risk of forming a non-marital cohabitation (after 1995) was thereby more homogenously distributed over the time of pregnancy compared to marital union formation.

6.5. First cohabitation – subsequent marriage or union dissolution

Hazard regression techniques in a competing risk setup were also used to analyze whether non-marital cohabiting men either formed a marriage or dissolved the union. In Table 16 the distribution of subsequent marriages, union dissolutions, and censored cases is displayed. Out of 2,235 males, 665 experience a non-marital cohabitation. As expected, most of the first cohabitations (52%) were turned into marital unions, and only minority of cohabitations were dissolved (16%). Over 30% of cohabitations were censored at the time of the interview, or at 10 years after their start without dissolution or marriage.

[30] Differences of the risk of a direct marriage and a first cohabitation seven months before the birth:
16.01 / 2.48 = 6.45 (before 1990)
23.16 / 6.32 = 3.66 (after 1995)

outcomes of 1st cohabitation	N	%
total number of men	2237	
in first cohabitation	665	100.0
subsequent marriage	345	51.9
union dissolution	106	15.9
censored at date of interview / 10 years after union start	214	32.2

Table 16: Distribution subsequent marriages and union dissolutions in first cohabitations - Source: Own calculations Russian GGS and EES 2004

Figure 49 describes Russian men's transition from their first cohabitation to subsequent marriage or union dissolution by means of survivor functions. It shows that a subsequent marriage was the most common outcome of a Russian man's first non-marital cohabitation, although its propensity decreased over period. In the 1970s, nearly 80% of all cohabitations resulted in a marriage. After 2000, only 60% followed this pattern.

Furthermore, the transition to marriage was postponed over the period, as Table 17 reveals. The median union duration nearly tripled between 1970 and 2004: i.e., it rose significantly from the 1970s (15 months) to the 1980s (30 months), stayed at a relatively stable level between 1980 and 1999 (ranging from between 28 and 30 months), and again increased strongly in the new millennium (43 months). On the other hand, in terms of duration pattern and prevalence, the transition to union dissolution changed very little. Over the all periods between 1970 and 2004, the share of dissolved unions did not increase considerably, i.e., approximately 20% of all non-cohabiting unions are dissolved. The only exception is the second half of the 1990s, when approximately 30% of consensual unions ended by disruption. However, the timing pattern changed slightly. As Table 17 shows, the union duration until disruption (first percentile: when 10% of all first cohabitations are dissolved) tended to decrease across the period of observation.

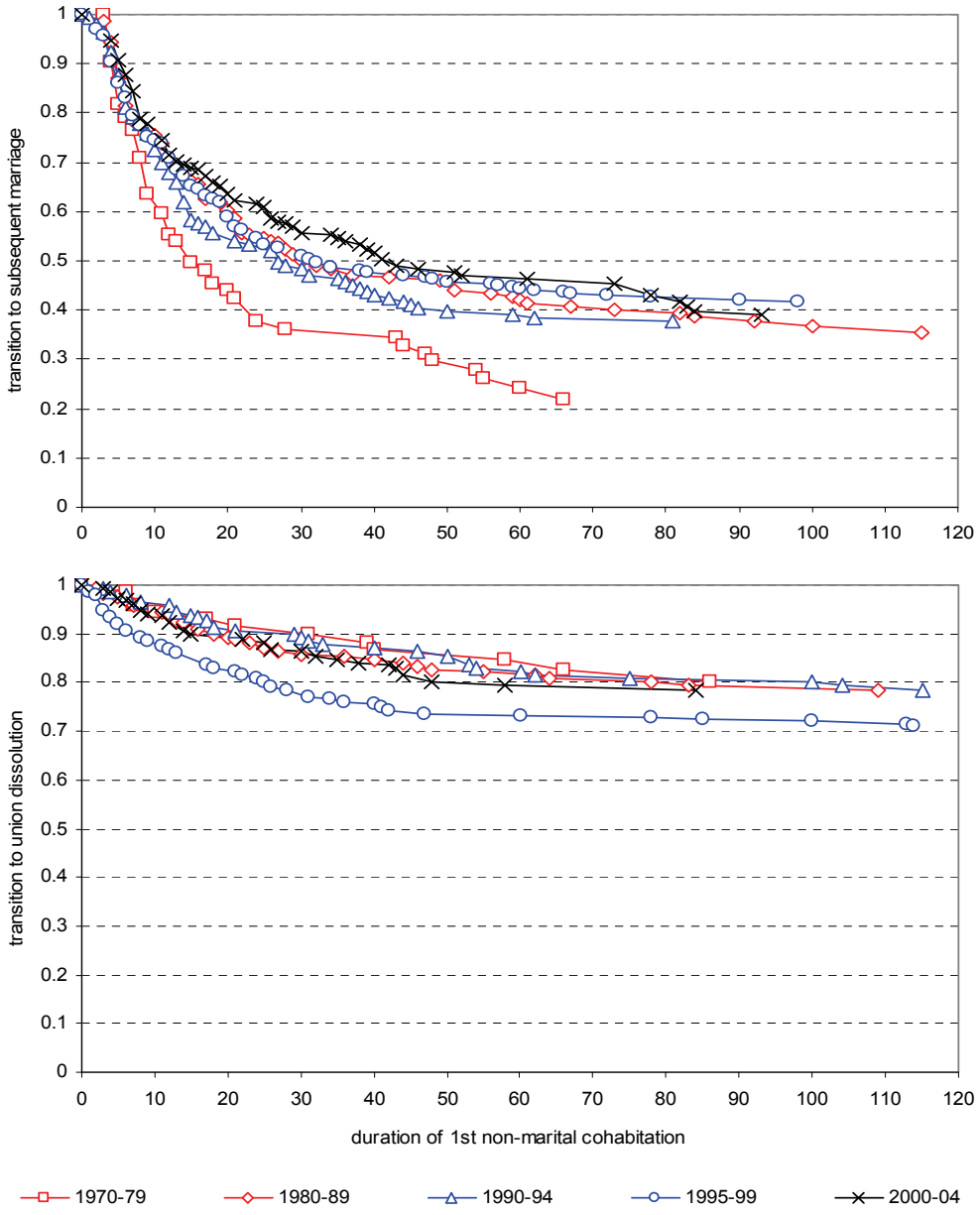


Figure 49: Transition from first non-marital cohabitation subsequent marriage or union dissolution – competing risk; Source**:** Russian GGS and EES (2004) – own estimations
Notes: estimates from Kaplan-Meier survivor function[31]

[31] The computations of competing risks were performed by using *Stata*, Release 9.2 (Stata Corp 2007) and the Stata-module *stcompet* developed by Convello and Boggess (2004).

	union duration in months		
	subsequent marriage		union dissolution
	1st quartile 25%	median duration 50%	1st percentile 10%
1970-79	7	15	31
1980-89	10	30	18
1990-94	9	28	29
1995-99	10	32	8
2000-04	11	43	15

Table 17: Transition from first non-marital cohabitation to subsequent marriage or union dissolution by period – competing risk; Source**:** Russian GGS and EES (2004) – own estimations
Notes: estimates from Kaplan-Meier survivor function

For the following hazard regression models on men's transition from first cohabitation, Table 18 and Table 19 provide the distribution of individuals across certain characteristics, occurrences, and exposures.

In Table 18, the time-varying covariates are displayed. In the first two rows, the number and proportion of men experiencing a certain time-varying characteristic is shown, e.g., 598 individuals or 89.9% of all respondents in first cohabitation were childless for at least one month. Correspondingly, the next rows give the cumulative time (in person months) and the percentage of time in which men in a specific state were exposed to the risk of marriage and union dissolution; e.g., childless males were exposed to this risk for 12,172 person months, which makes 45.8% of the total exposure time. Farther right in the table, the occurrences and proportion of subsequent marriage and union dissolutions across covariates are displayed; e.g., 157 childless males married after living in a non-marital cohabitation, which accounts for 45.5% of all subsequent marriages; 81 childless men dissolved their non-marital union, which makes 76.4% of all union dissolutions.

Table 19 provides the distribution of men across the time-constant variables introduced in to the hazard regression model. Table 20 presents the full model for the transition from first cohabitation to subsequent marriage or union dissolution. Despite the covariates used in the previous model on men's transition to a first union, it also contains respondents' ages at union formation.

	men in 1st cohabitations				subseq. marriage		union dissolution	
	N	%	exposure time		occur	%	occur	%
			person months	%	rences		rences	
total numbers	665	100.0	26566	100.0	345	100.0	106	100.0
time varying covariates								
education								
missing	119	17.9	3947	14.9	55	15.9	23	21.7
no degree	33	5.0	391	1.5	4	1.2	4	3.8
low	42	6.3	2083	7.8	20	5.8	6	5.7
medium	162	24.4	5484	20.6	78	22.6	17	16.0
vocational medium	294	44.2	11371	42.8	151	43.8	41	38.7
high	83	12.5	3290	12.4	41	11.9	12	11.3
main activity status								
in basic education	40	6.0	504	1.9	4	1.2	5	4.7
in higher education	39	5.9	681	2.6	14	4.1	5	4.7
military service	186	28.0	4218	15.9	36	10.4	16	15.1
not employed	139	20.9	2717	10.2	26	7.5	16	15.1
employed	543	81.7	17638	66.4	261	75.7	52	49.1
missing	33	5.0	808	3.0	8	2.3	9	8.5
first conception and birth								
childless	598	89.9	12172	45.8	157	45.5	81	76.4
7 months bf. birth	310	46.6	1073	4.0	84	24.3	0	0.0
3 months bf. birth	231	34.7	673	2.5	28	8.1	1	0.9
1st birth	236	35.5	12648	47.6	80	23.2	21	19.8
calendar period								
1970-79	71	10.7	1575	5.9	37	10.7	5	4.7
1980-84	101	15.2	2358	8.9	39	11.3	10	9.4
1985-89	138	20.8	3675	13.8	53	15.4	13	12.3
1990-94	205	30.8	5628	21.2	66	19.1	13	12.3
1995-99	241	36.2	6228	23.4	61	17.7	27	25.5
2000-04	282	42.4	7102	26.7	93	27.0	35	33.0

Table 18: Description of time varying covariates included in the analytical models; Source: Russian GGS and EES (2004) – own calculations

	men in 1st cohabitations			subseq. marriage		union dissolution	
	N	%	exposure time	occurrences	%	occurrences	%
total numbers	665	100.0	26566	345	100.0	106	100.0
time constant covariates							
religion							
Russian Orthodox	458	68.9	18320	234	67.8	69	65.1
Muslim	16	2.4	655	7	2.0	5	4.7
Others	6	0.9	130	4	1.2	1	0.9
no answer	184	27.7	7461	104	30.1	28	26.4
age at union formation							
15-19	137	20.6	5216	71	20.6	40	37.7
20-24	372	55.9	14510	200	58.0	43	40.6
25-29	117	17.6	5270	60	17.4	13	12.3
30-34	27	4.1	1203	14	4.1	4	3.8
35-45	11	1.7	367	4	1.2	3	2.8
region of birth							
center city	175	26.3	5166	94	27.2	41	38.7
other town	202	30.4	8508	98	28.4	29	27.4
urban-type community	60	9.0	2116	36	10.4	7	6.6
rural area	220	33.1	10506	117	33.9	26	24.5
missing	7	1.1	270	4	1.2	0	0.0
number of siblings							
no siblings	113	17.0	4261	62	18.0	17	16.0
1 sibling	287	43.2	10827	147	42.6	48	45.3
2 siblings	139	20.9	6281	70	20.3	21	19.8
3 and more siblings	125	18.8	5197	70	20.3	17	16.0

Table 19: Description of time constant covariates included in the analytical models; Source: Russian GGS and EES (2004) – own calculations

Without interacting the type of decrement with any of the covariates, it shows that non-marital cohabiting men were 3.4 times more likely to marry than to dissolve their union.

Historical time: After controlling for men's education, activity status, fatherhood status, age at union formation, and individual backgrounds, the propensity for a subsequent marriage was still higher than for a union dissolution across all periods of observation. The marriage propensity decreased over all periods until 1999, and increased slightly in the new millennium. At the same time, the union dissolution risk increased steadily, with a short interruption between 1990 and 1994. It almost doubled between 1970 and 2004.

	subsequent marriage	union dissolution
	RR	RR
(10) union duration (baseline intensity)		
0 to 6 months	1.00 ref.	0.20
7 to 12 months	1.26	0.25
13 to 18 months	0.85	0.29
19 to 24 months	0.92	0.21
25 to 36 months	0.59	0.33
37 to 60 months	0.46	0.26
61 to 84 months	0.32	0.08
85 to 120 months	0.08	0.04
time varying covariates		
(2) education		
missing	0.99	0.41
no degree	1.00 ref.	1.00
low	0.96	0.29
medium	1.17	0.25
vocational medium	1.19	0.32
high	1.32	0.39
(3) main activity status		
in basic education	1.00 ref.	1.25
in higher education	3.77	1.35
military service	3.40	1.51
not employed	3.47	2.13
employed	4.74	0.95
missing	2.64	2.97
(4) first conception and birth		
childless	1.00 ref.	0.52
7 months bf. birth	5.38	0.00
3 months bf. birth	2.94	0.10
1st birth	0.89	0.23
(5) calendar period		
1970-79	1.00 ref.	0.14
1980-84	0.87	0.22
1985-89	0.92	0.23
1990-94	0.71	0.14
1995-99	0.68	0.30
2000-04	0.77	0.29
Log-likelihood:		

RR = relative risk; AR = Absolute risk; ref. = reference category

(table continuing)

Table 20: Transition from first consensual union – time varying covariates – single interactions with type of decrement; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution
ref. = reference category (1.00)

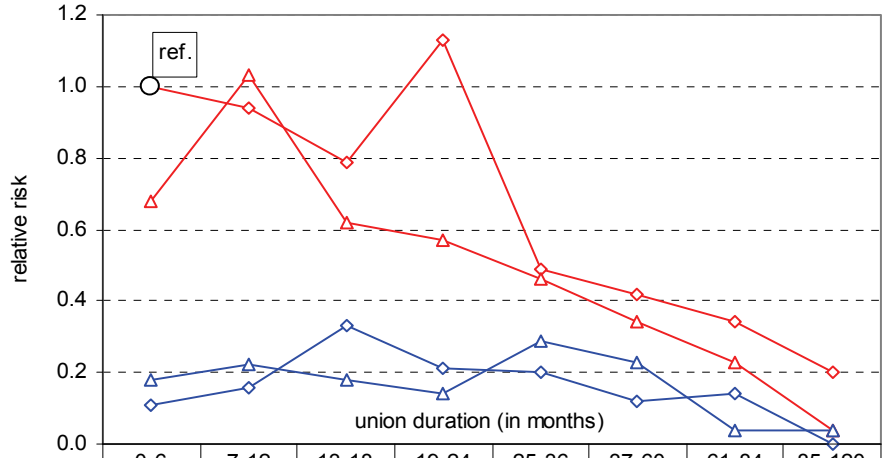
	subsequent marriage	union dissolution
	RR	RR
time constant covariates		
(6) religion		
Russian Orthodox	1.00 ref.	0.29
Muslim	0.87	0.62
Others	1.69	0.42
no answer	1.11	0.30
(7) age at union formation		
12-14	1.00 ref.	0.56
15-19	1.03	0.22
20-24	0.85	0.18
25-29	0.95	0.27
30-35	0.66	0.49
(8) region of birth		
center city	1.00 ref.	0.44
other town	0.73	0.21
urban-type community	1.01	0.20
rural area	0.75	0.17
missing	1.29	0.00
(9) number of siblings		
no siblings	1.00 ref.	0.27
1 sibling	0.92	0.30
2 siblings	0.83	0.25
3 and more siblings	1.01	0.24
Log-likelihood:		

RR = relative risk; AR = Absolute risk; ref. = reference category

Table 20: Transition from first consensual union – time constant covariates – single interactions with type of decrement; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution
ref. = reference category (1.00)

Union duration: The duration of first cohabitation has a clear negative effect on the risk of subsequent marriage (Table 20). The longer a union has lasted, the lower the marriage propensity of males in that union. Males married most frequently in the first year after they formed a consensual union. Compared to subsequent marriage, men were not likely to dissolve a consensual union. Men's dissolution risk was stable at a low level in the first five years after union formation, and declined strongly if the union lasts longer.



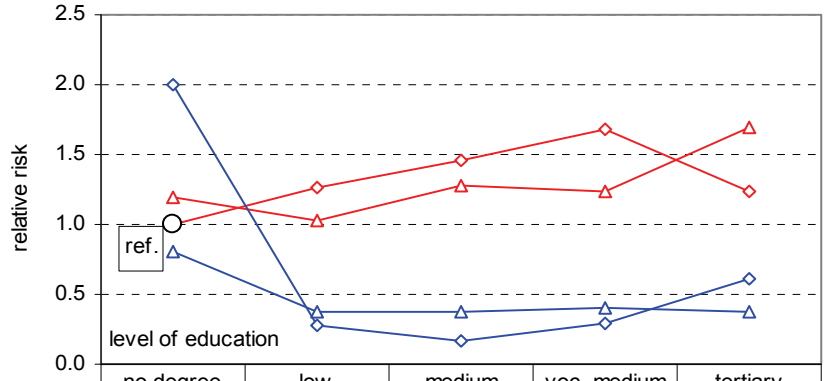
	0-6	7-12	13-18	19-24	25-36	37-60	61-84	85-120
bf. 1990 subseq. marr	1.00	0.94	0.79	1.13	0.49	0.42	0.34	0.20
af. 1990 subseq. marr	0.68	1.03	0.62	0.57	0.46	0.34	0.23	0.04
bf. 1990 dissolution	0.11	0.16	0.33	0.21	0.20	0.12	0.14	0.00
af. 1990 dissolution	0.18	0.22	0.18	0.14	0.29	0.23	0.04	0.04

Figure 50: Transition from first consensual union over historical time – effect of union duration; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution (controlled for all covariates in Table 20)
ref. = reference category (1.00)

The impact of union duration varies before and after 1990 (see Figure 50) Males before 1990 tended to marry later than males after 1990, i.e., the risk of a subsequent marriage peaked between 19 and 24 months before 1990, whereas it was highest between seven and 12 months after 1990. Moreover, before 1990 men generally married more often when they lived in a consensual union. By contrast, men postponed union dissolution. Before 1990, men were most likely to dissolve their first consensual union in its second year, while after 1990, men were most likely to end it after between three to five years of union duration.

Education: The impact of a man's educational level (in the full model: see Table 20) on his subsequent marriage propensity was strictly positive, i.e., men with no educational degrees or low education were the least likely to marry, whereas men with higher education married more often (difference of 32%). In line with this pattern, men with no educational degree dissolved their consensual union far more often than men with any kind of finished education.



	no degree	low	medium	voc. medium	tertiary
subseq. marriage bf. 1990	1.00	1.26	1.46	1.68	1.23
subseq. marriage after 1990	1.20	1.03	1.28	1.24	1.70
union dissolution bf. 1990	2.00	0.28	0.17	0.29	0.61
union dissolution after 1990	0.80	0.38	0.38	0.40	0.38

Figure 51: Transition from first consensual union over historical time – effect of educational level; Source: Russian GGS and EES (2004) – own calculations

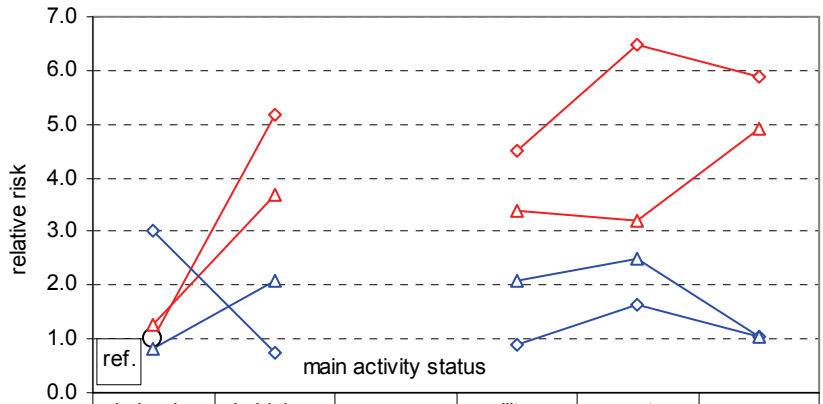
Notes: hazard regression model – competing risks subsequent marriage and union dissolution (controlled for all covariates in Table 20)
ref. = reference category (1.00)

There are some pronounced differences from the model in Table 20 when men's nuptiality behavior before and after 1990 is analyzed separately (see Figure 51). First, males with no educational degree before 1990 were two times more likely to dissolve their consensual union than to marry. This pattern reversed in the 1990s and in the new millennium, i.e., men with no degree were 50% more likely to marry. Second, tertiary-educated males after 1990 had the highest marriage transition rate. By contrast, before 1990 these highly educated men behaved more similarly to their lower-educated counterparts, and males with medium-level degrees were more likely to marry. Third, after 1990 males with different educational degrees did not have different union dissolution propensities, whereas in the 1970s and 1980s they behaved differently, i.e., men with high and low levels of education dissolved their union most often.

Main activity status: The results in Table 20 point in the same direction as the results on transition to first union. With the exception of individuals in basic education, men are generally more likely to marry than to dissolve a union. Employed males had the highest propensity for getting married, and the lowest likelihood of dissolving their union. Non-employed males showed the opposite pattern. Compared to all other groups, they had the highest risk of union dissolution, and were least likely to marry.

Moreover, being in higher education promoted subsequent marriages, whereas men in basic education were 3.7 times less like to marry. Military servicemen behaved similarly.

Figure 52 shows that men in different main activity statuses behaved dissimilarly before and after 1990. The positive effect of participation in higher education on men's marriage propensity decreased in the 1990s and the new millennium by 41%. Furthermore, these males became increasingly likely to dissolve their consensual unions.[32] This also applied to non-employed males and military servicemen. After 1990, their transition marriage rate decreased by over 50% and 32%, whereas their union dissolution propensity increased by 55% and 2.3 times. Moreover, when compared to employed males, after 1990 military servicemen started to behave differently from them, and became more likely to dissolve a union. Marriage and dissolution patterns of employed males thus changed relatively little.



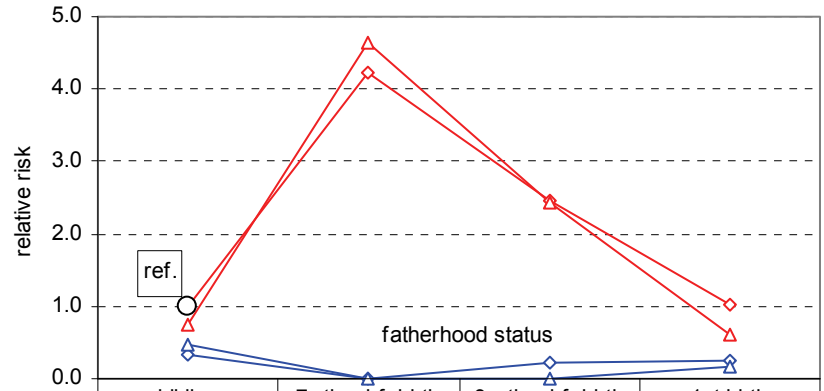
	in basic education	in higher education		military service	not employed	employed
subseq. marriage bf. 1990	1.00	5.19		4.49	6.47	5.89
subseq. marriage after 1990	1.25	3.67		3.38	3.21	4.93
union dissolution bf. 1990	3.00	0.74		0.90	1.62	1.04
union dissolution after 1990	0.83	2.10		2.10	2.50	1.05

Figure 52: Transition from first consensual union over historical time – effect of main activity status; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution (controlled for all covariates in Table 20)
ref. = reference category (1.00)

[32] The findings on men participating in education have to be interpreted with caution; since their case number is relatively small (see Table 18).

Anticipated fatherhood and first birth: As observed at the transition to the first union, anticipated fatherhood strongly increased the likelihood of a subsequent marriage, and this pattern remained constant over the whole observed period (see Table 20 and Figure 53). Compared to childless individuals, men with pregnant female partners were over four times more likely to marry. The risk of union dissolution during partners' pregnancies was close to zero. Interestingly, males behaved differently when the pregnancy continued. They married less often, whereas they became more likely to dissolve their union.

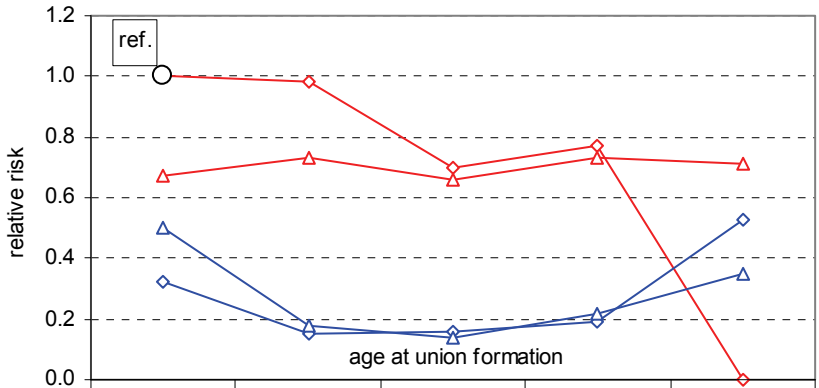


	childless	7mths. bf. birth	3 mths. bf. birth	1st birth
subseq. marriage bf. 1990	1.00	4.24	2.46	1.02
subseq. marriage after 1990	0.75	4.63	2.43	0.61
union dissolution bf. 1990	0.34	0.00	0.22	0.26
union dissolution after 1990	0.46	0.00	0.00	0.16

Figure 53: Transition from first consensual union over historical time – effect fatherhood status; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution (controlled for all covariates in Table 20)
ref. = reference category (1.00)

Age at union formation: Generally, the effect of men's age at union formation was positive negative for subsequent marriage, and rather u-shaped for union dissolution (see Table 20). Men who formed their first consensual union at young ages were more likely to transform it into a marriage compared to those who did so later in live. The same applied to men's dissolution propensity when the partnership was formed between the ages 15 and 29. However, if men entered their union between 30 and 45, they were as likely as men between ages 15 and 19 to dissolve their union.



	15-19	20-24	25-29	30-34	35+
subseq. marriage bf. 1990	1	0.98	0.7	0.77	0
subseq. marriage after 1990	0.67	0.73	0.66	0.73	0.71
union dissolution bf. 1990	0.32	0.15	0.16	0.19	0.53
union dissolution after 1990	0.5	0.18	0.14	0.22	0.35

Figure 54: Transition from first consensual union over historical time – effect of age at union formation; Source: Russian GGS and EES (2004) – own calculations

Notes: hazard regression model – competing risks subsequent marriage and union dissolution
(controlled for all covariates in Table 20)
ref. = reference category (1.00)

As Figure 54 shows, the union dissolution pattern depending on age at union formation was relatively similar before and after 1990, whereas marriage pattern altered. Before the breakdown of the Soviet Union, men entering a union at the common ages between 15 and 24 were the most likely to marry afterwards. Afterwards, the marriage propensity declined steadily (men ages 25 to 34 were about 25% less likely to marry than the reference category). Thus, men entering a first non-marital union after 35 were the least likely to marry their partner. After 1990, the marriage risk was distributed equally over all ages. Thus, men entering consensual unions in different life stages became alike in their subsequent marriage behavior.

7. Interpretation and Summary

In this chapter the formation of first unions in the life course of Russian males was investigated. At the beginning, five questions were asked and various hypothesis were formulated. I will now provide answers to these questions.

Did the increase in cohabitation throughout the 1990s and the new millennium offset the decreasing marriage and first marriage rates?

Survival analysis of the transition to Russian men's first union (marital and non-marital) showed that the percentage of men experiencing no union in their lives only rises slightly over the period, and after the breakdown of the Soviet Union. Before 1990 approximately 6%, and after 1990 approximately 12% stayed single. First union formation is still almost universal.

Despite these rather weak changes, the investigation of the competing events of direct marriage and first non-marital cohabitation showed that the characteristics of first union formation changed strongly across calendar years. Since the beginning of the period of observation in 1970, men steadily became less like to marry directly, but increasingly choose to cohabit in consensual unions. This trend gained momentum in the 1990s and in the new millennium, when the majority of males chose to form a consensual union rather than to marry directly. In the 1970s, 75% of males chose a direct marriage, and 19% started a non-marital cohabitation. From 2000 to 2004, only 28% married and 61% first cohabited. These patterns remained stable in the multivariate analysis (hazard regression models) after controlling for education, main activity, fatherhood status, individual background, and age.

Moreover, men's age patterns at consensual and marital union formation altered. When considering only first unions, regardless of their civil status, the age at first union formation at first decreased (until the mid-1990s) and increased strongly afterwards (from 1995 to 2004). Men's direct marriage behavior followed this pattern, whereas the age at first non-marital cohabitation decreased constantly.

To conclude, the rising number of cohabitations offsets the major part of the decline in first direct marriages. As shown in the analysis of the transition from first cohabitation to subsequent marriage or union dissolution, most of the non-marital unions are later turned into a subsequent marriage. Accordingly, the overall decline in

first marriage rates is considerably weaker than the direct marriage pattern would suggest. However, over the period there is a slightly increasing share of singles and of longer-lasting non-marital cohabitations.

Moreover, early non-marital cohabitations took over the role of early direct marriages. Whereas young Russian men in the 1970s and 1980s merely chose to marry directly, in the 1990s and the new millennium they merely cohabited out of wedlock before they married. This leads to the next question.

What is the meaning of cohabitation for Russian men – as pre-phase to marriage, an alternative to marriage, or as a temporary life form?

The answer to this question is ambivalent. I argue that the non-marital cohabitation of Russian males covers characteristics from all three aspects, but in different periods.

Russian men's cohabitation as pre-phase of marriage: During the 1970s and the 1980s, direct marriages dominated Russian men's nuptiality decisions. If a non-marital cohabitation was formed, it usually was immediately transferred into a marriage (most likely in the first two years). The risk of a subsequent marriage was generally much higher than for a union dissolution. Thus, most Russian men in cohabitation tended to marry, but did not dissolve their first cohabitation or did not remain in a consensual union. Accordingly, males' decision to cohabit outside marriage was only weakly influenced by education or employment characteristics, whereas the procreation of child almost universally led to subsequent marriage.

Russian men's cohabitation as a temporary alternative to marriage: Enrollment in education, low educational attainment, and participation in military service increased men's likelihood of forming and maintaing a consensual union without marrying, particularly in the 1990s, and in the new millennium. Men in such life stages should have minor or no income, uncertain job chances, or simple no possibility to search for and marry a partner. Hence they should experience (at least temporary) compatibility problems, and problems when trying to accumulate resources or secure perspectives necessary for a marriage (see Chapter II, Section 5). During these phases, cohabitation might work as a cooping strategy to benefit from the utility of an intimate partnership, without the relatively high costs and commitment of marriage. Thus the remaining dominance of first marriages as well as the increasing age at marriage indicate that the

decision to marry might be only postponed, until resource, compatibility, and perspective problems are resolved.

Russian men's cohabitation as a "real" alternative to marriage: The results provided only weak evidence that cohabitation started to serve as a real alternative to marriage. If one assumes that in this case marriage and consensual union formation would become more similar (see Chapter II, Section 5), the results disprove this assumption. The differences between men choosing first marriage and men choosing cohabitation remained fundamental over all periods, e.g., in their educational characteristics and main activities. Nevertheless, growing non-marital parenthood, as well as the finding that men increasingly form consensual unions after procreation, indicate that this might change in the future.

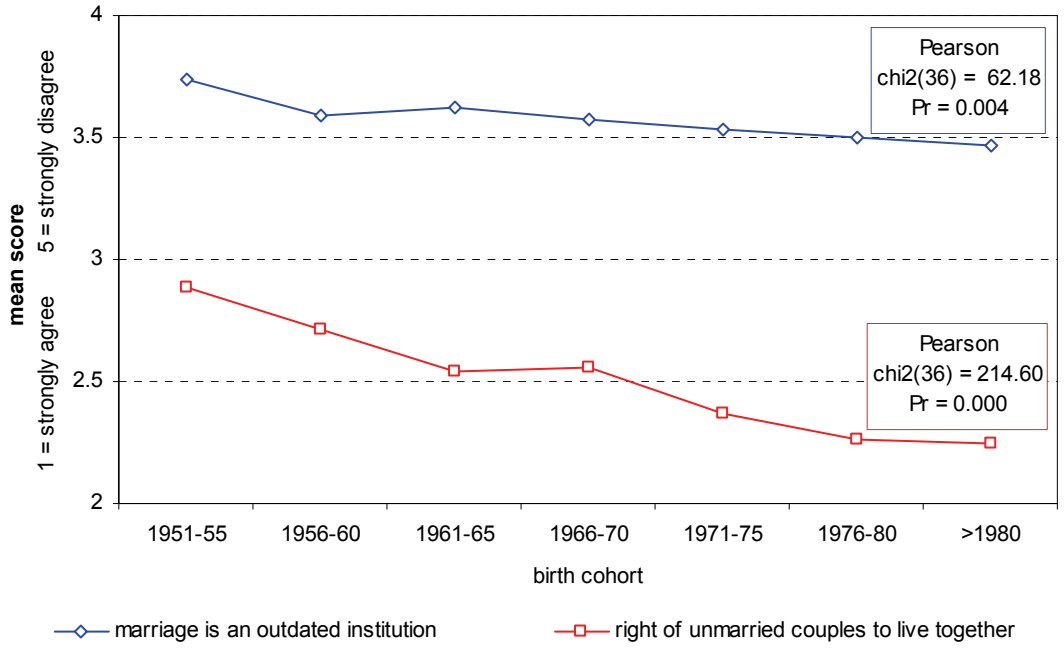


Figure 55: Opinions about marriage among Russian men over birth cohort – mean scores on two questions [33]; Source: Russian GGS and EES (2004) – own calculations

Notes: Likert-Scale; cohort difference highly significant (p <= 0.01) for both questions

[33] **The results in** Figure 55 are only meaningful and useful for interpretation purposes under the assumption that opinions about marriage at the time of the interview (at least) reflect opinions over the whole life of the respondent!

To conclude, with rising prevalence and acceptance of non-marital cohabitation in Russia, it changed its characteristics from a pure pre-phase to marriage in the 1970s and beginning 1980s, to a temporary alternative in certain life phases, when future perceptions, resources, and economic well-being are uncertain. However, the majority of Russians marry at least once in life. Across periods, cohabitation not only increased its share among first union formations, but also changed its meaning.

Figure 55 supports this point of view. It shows that marriage did not lose much of its social dominance over time (Question: Is marriage an outdated institution?). It is still the ideal model and the most desired kind of union among Russian men. By contrast, the acceptance of non-marital unions turns from slight disagreement in the oldest cohorts to weak agreement in the youngest cohorts (Question: Is it normal when an unmarried couple lives together, even if they don't plan to marry?). Thus, despite growing acceptance of consensual union, men are still likely to get married.

What kind of union is formed when children are conceived and born – cohabitation or first marriage?

If the female partner of a Russian man became pregnant, they were very likely to form a direct as well as a subsequent marriage. This supports the hypotheses of Section 2.3 (in this Chapter). In the time between conception and first birth, men married far less often and behaved more similarly to childless men, especially at the time of birth. Also in line with my hypotheses, this pattern was less pronounced in the 1990s and in the new millennium.

I interpret the changing nuptiality behavior of men's anticipation of fatherhood in the light of the SDT approach, i.e., as the result of value changes from traditionalism to progressiveness.

The high marriage risk at the time of the conception of a child indicates that births out of wedlock were not wanted, but non-marital pregnancies were going to be "legalized" by marriage before the birth occurred. Either single men chose to marry directly when they were going to become fathers (so-called "shotgun marriages"), or men in consensual unions decided to transform their partnerships into marriage. According to my hypotheses, this should be a result of the traditional family and

social values, and sequencing norms in the Soviet Union and Russia (see also Chapter IV), which perceived young, universal marriage and usually marital births as the "normal" case. Moreover, the institutional effect of the socialist housing market (getting access to state owned housing via marriage: see Chapter III, Section 5), presumably promoted marriage decisions when a pregnancy occurred during Soviet times.

Furthermore, rising procreation *and* childbirth in consensual unions, and non-marital union formation after conception *and* childbirth indicate that sequencing norms, the traditional institution of marriage, as well as traditional family values eased over the period of observation, and particularly after 1990, whereas individualization and pluralization of unions and union formation (with and without children) rapidly grew. The reforms of the Russian housing system thereby alleviated the formation of non-marital cohabitations, by decoupling marriage and the provision of housing (see Chapter III, Section 5.).

What is the impact of education and employment on the decision for cohabitation or marriage and its timing?

Aiming at an explanation of the influence of human and economic capital and future perspectives on males' nuptiality behavior, men's union formation behavior in different stages of education and employment was analyzed. The results showed that education and employment were key factors in men's nuptiality decisions across the period of observation. The level of education and employment status were positively associated with men's likelihood of a direct or subsequent marriage. Accordingly, high levels of education as well as employment decreased the propensity to form a non-marital cohabitation, or to resume a non-marital union without marrying subsequently.

A central finding was that the importance of education amplified after 1990. Thus, the impact of men's human capital on their nuptiality behavior increased. In the 1970s and 1980s, it mainly mattered for men's marriage decisions if any educational degree was obtained. Men with no degree were very unlikely to marry, whereas lower-, medium- and higher-educated men had similarly high marriage propensities. This changed completely with the beginning of the 1990s and even stronger after 1995. Subsequently, highly educated men had a much higher propensity to marry than all

other educational degrees, and they were the only group which was more likely to marry directly than to cohabit. Accordingly, less-educated males preferred the formation of a consensual union and did marry directly less often.

Also important is the finding that, after 1995, participation in higher education decreased its positive impact on direct and subsequent marriage. The incompatibility of marriage and basic education also grew. By contrast, males in education became more likely to form non-marital cohabitations.

Employed males had the highest risk of first cohabitation and a direct marriage, compared to all other respondents. This did not change before and after 1990. However, after 1990 the likelihood of forming a consensual grew strongly, so that employed and non-employed males became more likely to cohabit than to marry. At the same time, the formation of consensual unions became increasingly influenced by employment, i.e., employed males were more likely to form non-marital unions than non-employed men.

These results match most of the formulated hypotheses on education and employment status from Sections 4.2 and 4.3 (in this Chapter). However, the findings on males enrolled in education contradict the assumption that educational participation per se would have a negative effect on first marriage behavior (see Section 2.2 in this chapter).

I argue that men's nuptiality behavior regarding their education and employment characteristics and the changes over period can be explained by the following arguments:

The male breadwinner effect: In Russian traditional gender perceptions and gender attributes, men and women are assigned to different life spheres. Even if women during state socialism until today were widely involved in the labor market, men were assigned to the "male breadwinner" role in the household (see Chapter III, Section 8). In the 1990s and the new millennium, women's position on the labor market eroded (see Chapter III, Section 3.) and traditional gender roles were emphasized by certain policy efforts (e.g., sex-segregated work, etc., see Chapter III, Section 8.). Consequently, couples' well-being became increasingly dependent on Russian men's ability to fulfill the "breadwinner" role in the household, and thus on their economic resources and human capital and perspectives, i.e., on getting a good education, on a successful transition to the labor market, and on employment. As shown, this

particularly applied to marital unions. Therefore, Russian men married when they had sufficient resources and prospects. The formation of non-marital cohabitation thereby often functioned as a temporary alternative to marriage when the marriage preconditions were not met.

The human capital effect: The different pattern before and after the breakdown of the Soviet Union, which manifested since 1995, allude to the conclusion that the collapse of the socialist state economy, the deep economic reforms in the beginning of the 1990s, the hyperinflation crisis between 1992 and 1994 (see Chapter III, Section 3) enforced the association between human capital (i.e., education) and individual economic wellbeing (e.g., income, job prospects). If it is assumed that economically wealthier males are more likely to marry than others, it can be explained why males with higher educational degrees after 1995 were more likely to marry than their less-educated counterparts.

The devaluation of labor effect: On the other hand, it was shown that even full-time employment did not mean sufficient income after 1990 (see Chapter III, Section 3.2), thus having a job did not necessarily provide sufficient resources for marriage formation. Additionally, during the economic transition in the 1990s, a higher number but less selective group of men became non-employed (see Chapter III, Section 3.1). Presumably these are some of the reasons why the marriage differences between employed and non-employed did not rise before and after 1990, and why employed males in the 1990s and the new millennium became increasingly likely to form consensual unions.

At a glance, the results showed that the resolution of the perspective, resource, and compatibility problems became increasingly dependent on men's education and employment characteristics, and thus were of growing relevance for nuptiality decisions under the altered societal conditions from the beginning of the 1990s.

Can the changing nuptiality pattern be attributed to the collapse of the socialist system in the Soviet Union?

In other words: Was the Soviet Union, and is the Russian political, social, and economic system altering the nuptiality decisions of males? Can the obvious changes in marriage and cohabitation behavior interpreted as an adaptation process to new

economic requirements, or was the political breakdown enforcing a large-scale value change that altered men's union formation pattern?

Controlling for education, employment, parental status, and individual background characteristics did not reduce the period effect in the multivariate models. Consequently, I assume that drastic period changes in the economic, political, and social system of Russia, as well as long-lasting value changes, are the reasons for the changing nuptiality behavior of men between 1970 and 2004.

There are hardly any doubts that the breakdown of the Soviet Union was and still is involved in the "new" Russian nuptiality pattern, characterized by growing and high prevalence of non-marital cohabitation and decreasing marriage rates. According to the results presented in this chapter, I argue that the adaptation pattern to the altered economic, structural, and social conditions in the 1990s and in the new millennium, as well as long-lasting changes in the perception of non-marital cohabitations, were responsible for these developments. In many senses, temporary cohabitation and cohabitation as a precursor for marriage fit to the societal realities after state socialism; but, on the other hand, the changed cohabitation pattern had already occurred well before the collapse of the Soviet Union.

The stable phase before 1990: The period of socialism entailed stable and universal first marriages (prevalence and timing), but these were increasingly formed through a first non-marital cohabitation. Thus, men tended to form a first union less often as a direct marriage, but married after living in a consensual union.

The characteristics of the Soviet period were high security of resources and prospects in all important sectors of individuals living, i.e., education, employment, social security, etc. On state-regulated and pre-defined educational tracks Russian men and women were guided into the labor market and to guaranteed full employment (see Chapter III, Sections 3.1 and 6). Thus, after an educational degree and a job had been obtained, future propects were highly certain. This should have promoted men's decision to form a union at young ages after completing education, or directly upon entering the labor market, or even while in education (as shown for males participating in tertiary education).

Men's decisions in favor for a direct marriage are assumed to be a result of the following. First, Soviet housing conditions for young couples (see Chapter III, Section

5)made it impossible for not married couples and for singles to obtain their own flat, and forced them to live together with their parents or other relatives. It was necessary to marry in order to get on the official "housing list," which regulated the distribution of available flats. Second, traditional gender perceptions, combined with socialist ideology should have suppressed individualization of union formation behavior (see Chapter III, Sections 2 and 8), and thus should have helped to preserve early, universal, and direct marriages, while leaving little space for the development of alternative (non-marital) kinds of unions. The situation began to change in the mid-1980s, with the term of Michael Gorbachev, who started *perestroika* and *glasnost*, which essentially provided free access to information, pluralization of opinions in the political, social and economic sectors, and generally eased state control over individuals' life courses. I argue that the increasing share of non-marital partnerships and births during the 1980s reflect these societal developments, which provided room for the realization of changing union formation perceptions, i.e., traditional family and societal value orientations shifted to higher progressiveness and individualization.

The intermediate phase between 1990 and 1994: The first half of the 1990s was characterized by steeply declining direct marriage rates and increasing first non-marital cohabitations rates. At the same time, men's transitions to first marriage (in general) did not change considerably. Moreover, at the beginning of the 1990s, marital and non-marital unions were formed earliest across the whole period of observation. This was reason why direct marriage propensities did not reflect the declining transition rates. I believe that the reasons for this specific pattern lay in the structural changes of the educational system, the housing market, the military, and the economic sector.

1. The educational system effect: In 1992, Russia's educational system was drastically restructured (see Chapter III, Section 6). The reforms lowered the age of compulsory schooling from 17 to 15 years, and reduced the school entrance age to six years. This led to dropouts and expulsions of 600,000 to 800,000 pupils. Consequently, a huge number of individuals entered the labor market and further educational tracks earlier than usual. This early "finishing" of school education should have promoted first union formation at younger ages than in the prior periods, and thus increased the

propensity for first non-marital cohabitations (in addition to growing transition rates) and direct marriages (despite declining direct marriage rates).

2. The military service effect: In 1992, the Russian military service was also reformed. Relevant for mens' nuptiality behavior was the reduction of service duration to two-thirds of its former length (36 to 24 months for normal recruits; for details see Chapter III, Section 7). Since military service was highly incompatible with union formation (as shown in Section 4.3 and 4.5, in the chapter), this reform "freed" young men earlier than in prior periods from this burden, and thus it should have increased the proportion of men who were able to search for a partner and to form a union. Moreover, the unattractiveness of military service (hazing, living conditions, prestige, Afghanistan War, etc.; see Chapter III, Section 7) reached its peak in the beginning of the 1990s. As a consequence, the number of draft dodgers skyrocketed, and thus the number of unattached young men in their best union formation ages also rose.

3. The housing market effect: In 1991, the privatization of the state-owned Russian housing market started, and reached its peak between 1992 and 1994 (see Chapter III, Section 5). It aimed at an improvement in the housing conditions of Russia's population. This largely failed at the beginning of the reforms, but official regulations of the housing sector eased considerably (e.g., marriage to enter the waiting lists). Consequently, the ability to obtain their own flat and to form a cohabitation rose, in particular for young not married couples.

4. The economic reform and crisis effect: In the first half of the 1990s, major economic reforms and crises hit the Russian population. The failure of the Big Russian Reform under Boris Yeltsin led to the total collapse of Russia's economy in October 1991. This led to hyperinflation (between 1992 and 1994), strongly increasing unemployment (insufficiently covered by social insurances), devaluation of labor, and an increasing number of poor people (see Chapter III, Sections 3, 3.1, 3.2). Despite some subsequent improvement, the economic situation of the Russian population, their economic resources, and their prospects detoriated throughout the first half of the 1990s, and the deeply rooted changes did not take hold. I assume that, in this situation, the decision to marry directly declined among men, and was replaced by first non-marital cohabitations because of their lower commitment, lower union formation and separation costs, and less binding perspectives (see Chapter II, Section 5), while providing similar emotional and psychological benefits. This "new"

nuptiality behavior became possible because of the already growing acceptance of consensual unions in the Russian population in the periods before, however, increasing numbers of non-marital cohabitations themselves further stimulated this trend towards acceptance (and vice versa).

The changed period since 1995: Men's nuptiality behavior in the second half of the 1990s and in the new millennium was characterized by further decreases in direct marriages and increases in first consensual union formation, by a notable decline in first marriage (thus, an increase in the number of never-married men), a moderate postponement of first union formation in general, and a strong postponement of direct marriages. For the first time in the observed period, men were more likely to form a non-marital cohabitation than to marry directly. At the same time, men in different educational groups started to behave significantly differently, e.g., highly educated males were more likely to marry directly than to cohabit, whereas men with any other degree had a higher propensity to form a consensual union. Moreover, men's school enrollment became less compatible with marriage, but influenced consensual unions in the opposite way. The same applied to military servicemen. On the other hand, the differences between employed and non-employed males did not grow. Furthermore, men who became fathers increasingly did not choose to marry, but tended to live in consensual unions.

I argue that the described nuptiality pattern can be attributed to the following economic, institutional, and social characteristics of this period, some of which were already established in the first half of the 1990s (see above):

1. The military service effect: The reduction of military service length had an intermediate timing effect (as described above) on men's nuptiality behavior; however, in the long term the Russian military reforms mainly eased the service's compatibility with union formation, e.g., since 2000 military service regularly entails vacation days. Furthermore, in 2002, an alternative civilian service was introduced for young men of draft age (see Chapter III, Section 7). Due to the possibility of returning home (occasionally or every night), vacation regulations, as well as alternative service, the chances increased of combining the partner search or the maintenance of a cohabiting union and military service.

2. The housing market effect: The privatization of the housing market continued until 1999, and, similar to the period between 1990 and 1994 (see above), the reforms should have enhanced the ability of young not married males to form a cohabitation. Additionally, in 2002 a new housing program focusing on the housing needs of young families should have further promoted men's first union formation in a common household, regardless of whether it was marital or non-marital.

3. The economic crisis AND stabilization effect: Russia's recession (industry, labor market, state budget etc.; for details see Chapter III, Section 3) continued until 1998/99, and entailed a second bout of hyperinflation in 1998. In the subsequent years, the economy stabilized and started to recover; real wages increased and the unemployment rate fell (not for the ages between 20 and 25). Nevertheless, for the majority of Russians the (personal) economic situation did not improve much, but stabilized at a low level. The same applied to social security, unemployment benefits, and poverty relief. They remained insufficient and scattered (see Chapter III, Section 4) but more stable than in the periods than before. I argue that this stabilization led to an adjustment in men's nuptiality behavior to the new economic, social, and institutional conditions.

If it is (again) assumed that cohabitation provides a less costly and committing alternative to marriage (Chapter II, Section 5) than temporary or pre-marital cohabitation, it should suit men with scarce resources, uncertain prospects, and compatibility problems more than a marriage. In the reformed Russian economy, these problems were emphasized for males in education, less-educated men, and non-employed individuals. I believe that these men adjusted their nuptiality behavior to this situation and postponed or dropped marriage decisions in favor of consensual union formation until they accumulated sufficient resources (e.g., reaching full-time employment, higher wages, etc.), until they have secure prospects (e.g., obtaining a higher educational degree, etc.), and until their nuptiality becomes compatible with institutional constraints (e.g., leaving the educational system, finishing military service, etc.). In this sense, the new nuptiality pattern fit to societal, and particularly to the economic conditions of the 1990s and the new millennium after the breakdown of Russia's socialist system.

The underlying value change effect: The previously provided explanations can help to clarify why males in certain situations and life phases might choose to marry or to form a consensual union. However, this implies that they have a choice, which is not limited by traditional norms and values. Hence, I believe that men's adaptation to the new societal conditions only became possible because of a deeply rooted and long-lasting value change, as supposed by the SDT approach (see Chapter II, Section 5.1.3). It was a consistent period pattern that men increasingly formed first consensual unions. This behavior emerged well before any deep-rooted changes in Russia's political, economic, and institutional structure occurred. Thus, the developments cannot be completely linked to altered institutional and economic settings after the collapse of the Soviet Union, although they might be responsible for promoting or holding back modernization and individualization of men's union formation behavior.

Chapter VIII
Transition to Fatherhood of Russian Men

1. Introduction

The breakup of the Soviet Union in the 1990s was accompanied by a sharp fertility decline. It was already shown that, not only changes in fertility timing, but also a quantum decline were involved in this decrease (see Chapter IV). There has been an intense discussion among demographers about the ways in which the societal transition was and is effecting the fertility behavior of Russians (Philipov and Dorbritz 2003).

Many studies have shed light on this issue, dealing with fertility changes in European formerly socialist countries around the transition in the 1990s (e.g,Avdeev 2001; Barkalov 2005; Kantorová 2004a; Koytcheva 2006; Philipov 2003; Sobotka 2004; Zakharov 2003). However, studies on the individual level, as well as studies on men's contribution to the fertility change, are rare in the Russian context.

In this study, I will focus on the impact of men's individual characteristics (and their changes over time) on their transition to fatherhood. The following analyses will be guided by the following research questions:

1. Can the decreasing birthrate be attributed to a declining propensity of first conception among Russian men?
2. What triggered the declining propensity of the transition to fatherhood – postponement of first time fatherhood or increasing childlessness?
3. What impact did individuals' education and employment have on the decision for fatherhood?
4. What is the impact of men's civil status on their transition to the first child?
5. Can the altered male fertility pattern (or first conception pattern) be attributed to the collapse of the socialist system in the Soviet Union?

In the first part of this Chapter, I am going to discuss various empirical studies dealing with fertility behavior of males in the European and U.S. American context. Drawing on the contextual and theoretical framework (see Chapter II, Section 6; Chapter III.) they will serve to formulate hypotheses concerning the impact of men's education, employment status, civil status, and the impact of societal conditions on men's fetility decisions. In the second step, I am going to present the data, models, and variables.

Third, the empirical findings are presented and described. The chapter finishes with a summary and interpretation of the results.

2. Previous studies and hypothesis

2.1. Period effects – postponement and reduction

Period changes in fertility are the outcome of altered fertility timing (changes in the age at childbirth), and changes in the total number of children per individual. Demographic studies showed that changes in family policies, economic developments, value changes, or altered societal conditions affect fertility patterns over calendar years (see Chapter II, Section 6).

Empirical findings from Western European countries: Almost all Western European countries experienced a fertility decline in the second half of the 20th century, and reached fertility levels below replacement, also known as "lowest low fertility" (Billari and Kohler 2002; Dorbritz 2000; Sobotka 2004), e.g., Italy and Spain. The main causes for the fall in fertility were postponement of childbearing to higher ages, decreasing numbers of large (more than two children) families, and growing levels of childlessness.

Together with altering nuptiality patterns, these changes (see Chapter IV, Section 2) are often assessed as Europe's Second Demographic Transition (Lesthaeghe 1992; van de Kaa 1987; 2001 and see Chapter II, Section 6.1.3.). However, marked national variations in these trends are observable.

There are various ways to approach West European fertility differences. One criterion might be the country-specific "onset" of the SDT, thus the spread of progressive value orientations, which changed individuals' fertility behavior (see Chapter II, Section 6.1.3.)

Another prominent way is to link the observed heterogeneity to different welfare state settings, i.e., to family and social policy regimes, which may promote or hinder fertility decisions (see Chapter II, Section 6.1.2.). Key factors are growing emancipation, increasing female education and labor force participation, values of gender equality, and the compatibility question of fertility. (Esping-Andersen 1999; Gauthier 2001; Neyer 2003; Pfau-Effinger 1999) It has been demonstrated that policy changes can have strong impact on period fertility patterns, in particular on timing and

spacing of births, e.g., speed-premium in Sweden (Andersson, Hoem and Duvander 2006).

In many respects, Scandinavian countries (e.g., Sweden and Denmark) were forerunners concerning the "new" fertility pattern. They were followed by Central European Countries (e.g., France and Germany) and Southern Europe (e.g., Italy and Spain) (Blossfeld 1995; Dorbritz 2000; Huinink 2002a, 2002c; Schoenemaeckers and Lodewijckx 1999; Sobotka 2004).

Accordingly, studies on men's fertility behavior in West Europe revealed decreasing likelihoods of a transition to first-time fatherhood over time (for West Germany: (Huinink 1995a; Schmitt 2005; Tölke 2005; Tölke and Diewald 2003); for Italy: (Necci 1999); for Spain: (Miret-Gamundi 2000); for France: (Toulemon and Lapierre-Adamcyk 2000); for Denmark: (Kamper-Jörgensen, Keiding and Knudson 2004)).

Empirical findings in the context of the Eastern Block: In many respects, period fertility patterns in the countries formerly belonging to the Eastern Block are different. Especially the 1970s and 1980s were characterized by relatively stable and high fertility around replacement level (Frejka and Sardon 2003; Philipov 2002, 2003; Philipov and Dorbritz 2003; Sobotka 2004). These patterns might be attributed to pro-natalist population policies, or to a wide range family programs adopted in most of the socialist countries, to social homogeneity, and to policy measures which tend to lessen the conflict between paid work and parenthood (Macura and MacDonald 2003). However, the main fertility traits in the previously socialist countries can be summarized in five points. First, a strong two-child family norm existed. Second, individuals became parents in relatively young ages. Third, once the first child was born, subsequent births followed immediately (close birth spacing). Consequently, family formation and extension was finished fast. Fourth, a very low proportion of individuals stayed voluntarily childless. Fifth, the majority of children were born in marital unions. An exceptional case is Slovenia, which shared many features of Western European fertility developments. (Macura and MacDonald 2003).

With the collapse of state socialism, these fertility patterns changed strongly. Since the beginning of the 1990s, fertility dropped in almost all countries of the Eastern Block, ages at childbearing rose, and the share of extramarital births increased. Country-specific differences became more pronounced than before 1990. Examples of national studies examining these issues more closely are: the Czech Republic

(Kantorová 2004b), Bulgaria (Koytcheva 2006; Spielauer et al. 2007), East Germany (Conrad, Lechner and Werner 1996; Kreyenfeld 2004), Hungary (Olah and Fratczack 2003), and Poland (Hall and Elliot 1999; Olah and Fratczack 2003; Philipov and Kohler 2001). The few studies examining these developments from the perspective of males focus on East Germany (Kurz 2005; Pohl 2000; Schmitt 2005; von der Lippe 2004), Poland, and Hungary (Olah and Fratczack 2003).

The discussion of whether the SDT, the new economic conditions, or the altered institutional settings are responsible for the fertility developments has not come to a final conclusion (for a summary see (Philipov and Dorbritz 2003) and Chapter II, Section 7). However, recent studies of Kantorova (2004) and Koytcheva (2006) using individual-level data (of females) claim that the interplay of economic, institutional, and cultural factors shaped fertility patterns during the transition period.

Empirical findings in the Russian context: As described in Chapter IV, the period fertility development of the Soviet Union and Russia was characterized by an early established two-child norm, a universality of parenthood, and a steadily declining age at first birth (Avdeev 2001; Barkalov 2005; Philipov and Jasilioniene 2007; Zakharov 1997, 2003). Moreover, it was strongly shaped by pro-natalist policies introduced in the 1980s (Barkalov 2005; Zakharov 1999, and see Chapter III, Section 4), which further reduced the age at first birth and decreased the time distance between the births after parity one. The subsequent fertility decline in the first part of the 1990s was paralleled by a further decrease in the age at first birth. Fertility postponement started in the second half of the 1990s. The reasons for this decline are still unclear, and were not sufficiently researched so far, with individual level data (Hoem et al. 2007; Philipov and Dorbritz 2003; Zakharov 2003).

Hypotheses: I expect to find stable, but slightly increasing first birth risks of Russian men in the 1960s and 1970s, due to decreasing mean ages at first birth. The 1980s should show a more pronounced increase because of the pronatalist policy measures introduced by the Soviet government. Since the universality of the transition to the first child did not change strongly after the collapse of the Soviet Union, only a moderate decline should occur until the mid-1990s. The downturn should gain strength in the second half of the 1990s, when voluntary childlessness and, particularly, the postponement of parenthood became more prevalent. The decline is expected to continue until the end of the observation period in 2004.

2.2. The impact of education

Men's education strongly shapes their future life course. It directly effects the availability and the security of economic resources and perspectives (see Chapter II, Section 6.1.4) These perspectives and resources as assumed to grow with educational levels. With better resources and prospects, and thus, with a higher level of education, the likelihood a transition to fatherhood should increase. By contrast, participation in education should impede men's transition parenthood because of compatibility problems and insufficient resources and perspectives (see Chapter II, Section 6.1.4).

Empirical findings from Western European countries and the U.S.: The interrelation between education and fatherhood differs across countries. Toulemon and Lapierre-Adamcyk (2000) for France, Ravanera and Rajulton (2003) in Canada, and Bernhardt and Goldscheider (2001) in the U.S. and Sweden found that the propensity for fatherhood was lower for highly educated men than lower-educated individuals, when income or employment characteristics were controlled. This association was mainly attributed to timing differences between higher and lower educational degrees (Bernhardt and Goldscheider 2001; Ravanera and Rajulton 2003). Furthermore, Bernhard and Golscheider (2001) believe that family roles push men to earn, whereas increased education also links to the development of interests that are less compatible with family roles.

In contrst to the latter studies, Oloáh, Bernhardt and Goldscheider (2002) investigated co-residential paternal roles in Sweden, the U.S. (and Hungary), without controlling for men's income or employment status. The results showed that highly educated Swedish men had a higher probability of living in a marriage with biological children, compared to living in consensual union with or without children, in single parenthood, or in a marriage without children. However, these results were not supported by the findings for U.S. men. Highly educated American men were less likely to live with children in and outside of marriage. They tended to avoid forming commited families.

A study of Huinink (1995a) on West German men contradicts most of the previous results. He finds a positive impact of education on the likelihood of becoming a father, even after controlling for income and socioeconomic status. This findings are supported by Kurz (2005). Another study by Schmitt (2005) on childlessness also reveals that men with lower or with higher education were more likely to stay childless compared to medium-educated individuals (no multivariate analyses). On

the other hand, Tölke (2005) did not find a significant effect of educational level on men's transition to fatherhood after controlling for various occupational (career) characteristics.

Empirical findings in the context of the Eastern Block: Demographic studies on females showed that increasing importance of human capital in phases of economic recession and growing economic insecurity amplified the impact of education on fertility outcomes in the former socialist countries (e.g., see Kantorova 2004a; 2004b; Koytcheva 2006; Philipov 2002).

The link between men's education and fertility decisions in the context of the former socialist countries is an under-researched issue. However, a qualitative study focusing on the transition to fatherhood in East Germany was carried out by von der Lippe (von der Lippe 2004). He found a u-shaped educational effect on the transition to first birth. Thus, individuals with low and high levels education had the highest risk of a first birth, whereas men with medium education showed the lowest. These effects were not independent from other covariates. After controlling for age, social and family background, and psychological dimensions, it became positive. A multi-national study of Olah, Bernhardt, and Goldscheider (2002) includiing findings from Hungary. They also found a positive effect of high education on the probability of father biological children, not controlling for any income or employment characteristics.

Empirical findings in the Russian context: So far there has been no research on the interrelation between education and fatherhood in Russia. Only Rieck (2005) examined the desire for children among Russian males after the collapse of the socialist system. For men with no children there was no effect of highest educational attainment on their desire for children (after controlling for various economic factors: income, occupational status, subjective financial well-being, and family status).

Many of the studies discussed above contradict the hypothesis derived in the theoretical discussion (see Chapter II, Section 6.1.4), finding a negative or no effects of higher education on men's transition to parenthood. I argue that this has two reasons. *First*, controlling for men's economic characteristics, like income and socio economic status, changes the effect of education. Men's educational level directly effects future resources and perspectives, and, thus, employment characteristics.

Hence it reflects the impact of those characteristics on the transition to fatherhood. By explicitly considering income, employment status, etc. in the analytical models, this effect of education disappears (Olah et al. 2002). *Second*, the countries studied represent different cultural settings and opportunity structures. Eastern European countries and Russia thereby form a relatively traditional group (see also Chapter III) where men's education stands for human capital, economic prospects, and job perspectives, and not for a certain kind of more progressive value orientation (as proposed by Bernhardt and Goldscheider (2001)), which challenge the compatibility of fatherhood with other life domains and future plans.

Hypotheses: The Soviet educational system was strongly regulated and competitive, especially for tertiary degrees. However, the socialist ideology suppressed educational effects on the individual's economic status (e.g., income differences) and employment situation (see Chapter IV). Even for very low-educated individuals, unemployment was not relevant. With the economic crisis and rapidly changing societal conditions in 1990s, the competition in the educational system changed little, but the importance of human capital (education) rose, particularly concerning job prospects and income. Thus, economic resources, future prospects, and the reduction of uncertainty became more strongly related to men's education.

Consequently, three dimensions of educational effects are expected to be found. *First* (*institutional effect*), being a student should generally impede a male's transition to fatherhood, due to compatibility problems, uncertain resources, and perspectives. *Second* (*level effect of education*), higher education should increase human capital, economic potential (income, socioeconomic status), but it is time intensive. Thus, highly educated males should be more likely to become fathers, because it resolves future perspective and resource problems. Consequently, lower education should reduce men's likelihood of becoming a parent. Furthermore, higher- educated men should be more likely to postpone fatherhood, since it takes longer to obtain higher educational degrees. Postponement should be less relevant for low-educated males. *Third* (*period effect of education*), the effect of education is expected to be different before and after the Soviet Union's or Russia's transition in the 1990s. Since education gained more importance for employment prospects, income, etc. after 1990, I expect to find bigger differences across educational groups in their propensity to

become fathers. The educational level effect should thereby be less pronounced during socialism, but should be more visible during and after the transition.

2.3. Employment

Most of what is known about men's employment characteristics and family formation derives from studies on their marriage behavior (see discussion in Chapter VII and theoretical considerations in Chapter II).

Empirical findings from West European countries and the U.S.: From a study of Bernhardt and Goldscheider (2001), it is known that, in Sweden and the U.S., income has positive effects on men's transitions to fatherhood. Results of a study on Canadian men (Ravanera and Rajulton 2003) found the same positive effect. Findings for France (Toulemon and Lapierre-Adamcyk 2000) point in a similar direction: men reaching a stable professional position have a higher propensity for first procreation than other males. For West Germany, analogous findings were reported by Huinink (1995a), Kurz (2005), Schmitt (2005), Tölke (2005), and Tölke and Diewald (2003). They showed that higher income, full or permanent employment, as well as socioeconomic status increased the likelihood of men's transitions to fatherhood. Generally, these effects were interpreted in the context of the "male breadwinner model". For many men (and women) the birth of children only becomes an option when men are established on the labor market, and, thus, when they are able to fulfill this role model.

Findings from the U.S. of Marsiglio (1993) contradict the previously described pattern, and suggest that adolescent men with lower socioeconomic status have higher risks of becoming fathers. In contrast, the higher their status, the more likely men are to avoid paternity because of its interference with work, education, and leisure opportunities.

Empirical findings in the context of the Eastern Block: Unfortunately studies on the interrelation of men's employment and their fertility pattern in former socialist countries in Europe do not exist to my knowledge. However, in a broad study on Eastern Europe, Phillipov (2002) suggests that job prospects and income resources are of increasing relevance for fertility decisions, but the authors did not provide empirical evidence. Studies on fertility among East European women did not show

consistent results on this interrelation (for examples see: Kantorová 2004b; Koytcheva 2006; Kreyenfeld 2001).

Empirical findings in the Russian context: The interaction between Russian men's fertility patterns and employment characteristics have also not been analyzed so far (examples of relevant studies on females are (Bühler 2004; Kharkova and Andreev 1999; Kohler 2001; Rieck 2006). However, Rieck (2005) analyzed Russian men's desire for children. Among other covariates, the author considered the income of the household, men's employment status and working hours. Income shows a clear negative effect on childless men's desire for children, whereas the impact of employment status is rather u-shaped. Childless employed males and childless homemakers had the highest desire for children. A higher number of working hours also increased the men's wish for children.

Hypotheses: In Soviet times, the Russian labor market was characterized by guaranteed full employment, very high female employment rates, and relatively small income differences between occupations and educational groups. All this changed with Russia's transition to a market economy, as unemployment grew, labor was largely devaluated, large numbers of females dropped out of the labor market, and income heterogeneity strongly increased (see: Chapter III, Sections 3.1, 3.2 and Foley 1997; Füllsack 2001; Gregory and Collier Jr. 1988; Lokshin and Popkin 1999).

Therefore, the interrelation between employment and fatherhood should be two-fold. *First*, taking into account the traditional role model of Russian males as family breadwinner (see Chapter III, Section 8), the economic importance (resources and perspectives) of employment for fatherhood, and the key role of employment at young men's transition to adulthood, I expect to find a strong positive effect of full employment on the propensity of a transition to fatherhood before and after 1990. *Second*, considering the economic and institutional changes, this effect is expected to be differently expressed before and after Russia's transition. Obtaining (full) employment was crucial for men in the Soviet system who wished to become full members of the socialist society (see Chapter III, Section 8), since unemployment virtually did not exist. However, in reality, unemployment existed due to waiting times or structural reasons, e.g., disability (see Chapter III, Section 3.1). The step to employment should therefore be considered as a minimum precondition for

fatherhood, and, consequently, employment should have strongly increased men's transition to fatherhood. Since the 1990s, widespread unemployment and increased proportions of "working poor" decreased the direct economic value of employment, and eased the selectivity of unemployment (see Chapter III, Section 3.1.). In terms of prospects and resources, employment and unemployment became more similar for more people. Consequently, I expect that the positive impact of employment on men's likelihood of becoming fathers is weaker after 1990 than during the 1970s and 1980s.

2.4. Union formation

In the past, demography used marriage indicators as a way ofpredicting fertility behavior on the societal level. With the occurrence of alternative kinds of partnerships (in particular, non-marital cohabitation) and increasing childlessness ,such predictions are very problematic and unreliable. Nevertheless, union formation (regardless of its institutionalization) is virtually necessary for the conception of a child, since it requires an intimate sexual relationship (at least temporarily). The influence of union formation on men's transition to fatherhood has a different dimension (see Chapter II, Section 6.1.6.). *First*, marriage formation before the birth but after conception is used as an indicator of traditional norms and values (see SDT approach (Lesthaeghe 1992; van de Kaa 1987, 2001); individualization and pluralization of life forms (Huinink 2002a, 2002c; Huinink and Wagner 1998); Chapter II, Sections 5.1.3., 5.1.6.), since it points out the necessity of "legitimated" births (through marriage). *Second*, marital or non-marital union formation before childbirth might indicate the partner's commitment, and therefore select family-oriented individuals (Huinink 1995b). *Third*, traditional marriage formation before the transition to parenthood increases the man's utility because of pooled resources and eased opportunity costs (through sex-segregated work arrangements) (Huinink 1995b; Thomson et al. 1998). *Fourth*, living in a union before childbirth provides the possibility of an easier legal (registered) linkage between men and their biological offspring (Bachrach and Sonenstein 1998a)

.

Empirical findings from Western European countries and the U.S.: Bachrach and Sonenstein (1998) and Thomson and colleagues (1998) provide a comprehensive overview of studies on the interplay between fatherhood and men's union formation

behavior, particularly for the U.S. Their reviews show that marital and non-marital fatherhood are widely discussed in the U.S., with strong emphasis on the differences between socioeconomic strata and ethnicity (blacks, whites, Hispanics, etc.). The results point out that the combined influence of sexual frequency (higher in non-marital cohabitations), pregnancy intentions (higher in marriages), contraception (contraceptive communication and use is higher in marriages, resulting in lower rates of unwanted pregnancies), and occurrence of traditional gender attitudes (marriages carry more traditional value orientations), communication and union satisfaction (married persons are found to be happier), appeared to produce higher pregnancy rates in more committed co-residential unions. Since married couples make a stronger commitment by subjecting themselves to the legal requirements of marriage, their fertility is considerably higher compared to consensual unions. Consequently, married males had higher probabilities of a transition to fatherhood. Men in dating unions and singles were the least likely to have their own biological children.

The study of Ravanera and Rajulton (2003) about Canadian men's fertility also shows that cohabiting men are less likely to have a first birth than married males. Single men had the lowest likelihood. The impact of marital status varied only slightly between the different birth cohorts.

There are few studies from Western Europe investigating the effects of partnership status on the transition to the first birth for males. Toulemon and Lapierre-Adamcyk (2000) results on France, however, show that cohabiting couples have a considerably lower propensity of a first birth. The authors carried out separate models for the first two years of the union and longer union durations. The positive effect of union formation loses its significance after the first two years of the union.

Empirical findings in the context of the Eastern Block: To my knowledge, there are very few demographic studies examining the linkage between men's union formation behavior and fertility outcomes in the context of the Eastern Block. Nevertheless, various studies on females exist.

Kantorová (2004b) examined the influence of first union formation on the first birth before and after 1990 in the Czech Republic. Olah and Fratczack (2003) used a similar approach to analyze the probability of a first birth in marital unions for Hungarian and Bulgarian females. For the three countries, the authors found that particularly marriage strongly increased the probability of a first birth. The positive

effect is the strongest in the first two years of union duration. In the Czech Republic, Poland, and Hungary, the impact of union formation was stronger in the period before the political turnaround. For Czech females in the 1990s, the effect was influenced by educational levels, i.e., highly educated women lived longer in unions without any children, whereas women with low education levels tended to get pregnant immediately after the union formation (Kantorová 2004b).

With a very similar approach, Koytcheva (2006) analyzed the dramatic decline in first birth rates and changing union formation behavior in Bulgaria during the societal transition. Bulgaria used to be a stronghold of universal, uniform, and early family formation, including the preference for marriage followed by the birth of two children. However, 1990 was not the turning point of the pattern. Rather, a continuous decrease in the importance of marriage and its relation to first birth occurred over the periods. Nevertheless, women who form a marriage still have a higher risk of first conception compared to the formation of a consensual union. The findings are supported by studies of Hoem and colleagues (Hoem et al. 2007; Hoem and Kostova 2007). Philipov and Jasilioniene (2007) also revealed this pattern for males.

Findings from East Germany point in the same direction (Huinink and Konietzka 2003; Kreyenfeld and Konietzka 2004). East Germany has a long tradition of non-marital births and non-marital family forms, and thus the interrelation between marriage and childbearing is comparatively weak. This development already started before the collapse of the socialist system. As early as in the 1970s, the number of non-marital births started to rise. Nevertheless, marriage is still common when a first child is born, but it is not closely connected.

Empirical findings in the Russian context: Phillipov and Jasilioniene (2007) showed that, in the 1980s, Russian males and females almost universally experienced the birth of their children in a first marriage. This did not change in the beginning of the 1990s, directly after the transition. However, in the new millennium childbearing in non-marital unions occurs to approximately 25% of all Russian mothers and fathers. This indicates that marriage loses it monopoly concerning parenthood. According to Rieck (2005), fertility intentions are also strongly connected to union status. The author revealed that, among childless Russian males, newlyweds had the highest childbearing intentions, closely followed by men in consensual unions. Since these are

intentions, cohabiting males might marry in the future and have their children in a marital union.

Studies focusing on the union formation pattern among Russian women and its influence on fertility behavior also found a strong connection between marriage and childbearing, which eases over calendar time. The decoupling started after the collapse of the Soviet Union in the second half the 1990s, and gained strength in the new millennium (Philipov and Jasilioniene 2007; Tolts et al. 2006). Consequently, the spacing between union formation and conception grew considerably during and after Russia's transition. Aggregate data suggest that the interval ranged between one and two years during Soviet times (Scherbov and Van Vianen 2001). For the period after 1989, Spielauer and colleagues (Spielauer et al. 2007) showed the birth of children follows usually in the first three years after union formation; unfortunately, the study does not disentangle non-marital cohabitations and marital unions.

It was revealed that marriages increased the likelihood of a transition to parenthood more strongly than do non-marital cohabitations. It was also shown that, in the majority of countries, this effect lost its strength over time (period and cohort).

Since there is little empirical evidence for men in the context of former socialist countries, it is not easy to assess upon which motivational aspects or selection effects this interrelation is based. However, considering the theoretical argumentation (see Chapter II, Section 6.1.6), and findings from the U.S., Western Europe, and on East European females the following may be expected to trigger the positive effect of union and marriage formation on men's transition to fatherhood: 1. the onset of the SDT (changes in traditional values and norms towards more progressive attitudes); 2. the spread, increasing acceptance, and legislation of alternative life forms with and without children (individualization and pluralization of life forms); 3. the selection of higher and lower family-oriented individuals into certain kinds of unions; and 4. the solution of the resource, perspective, and compatibility problems at union formation.

Hypotheses: I assume that the formation of a marital union will strongly increase the probability of a transition to fatherhood. Thus a direct marriage should be seen as the most selective and traditional kind of union formation, which increases the likelihood of men's transition to fatherhood the most, compared to consensual unions and subsequent marriages.

These patterns are expected to change over calendar time. Namely, before 1990 and in the second half of the 1990s, marriage may raise male fertility the most, whereas non-marital unions might be less important for a transition to fatherhood. Since the second half of the 1990s and after 2000 marriage, is expected to lose some of its impact, while the effect non-marital cohabitations should increase. Independent of the union's civil status, the risk of a birth is assumed to peak closely after union formation, and to decrease by union duration.

3. Models and data

3.1. Analytical model

In the following analyses, event history analyses (proportional hazard regression techniques) are applied to analyze the transition to the first biological child of Russian men as a function of an underlying risk modified by a vector of covariates.

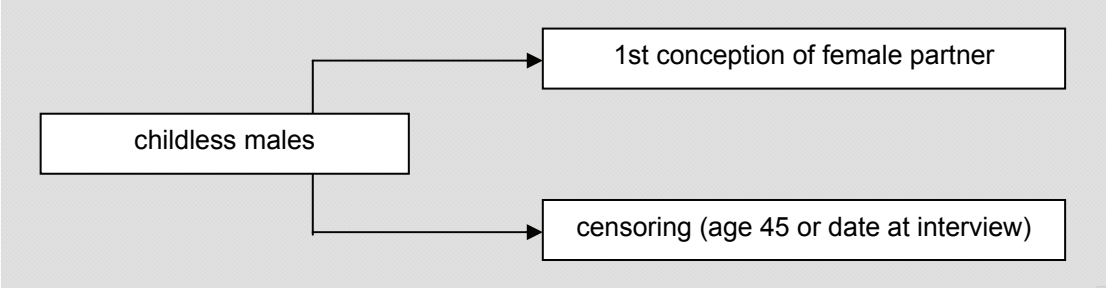


Figure 56: State diagram of Russian men's transition to first time fatherhood

Men's transition to first procreation is modeled in a single decrement piecewise constant hazard regression (non-parametric model). In this transition, childless males can either experience a first procreation, or are censored at age 45, or at the date of interview (if no first conception occurs).

The event-history model can be written as follows (for a detailed description of the applied method see Chapter V, Section 2.3), where $\mu_{ijk}(t)$ is the time dependent propensity of males to transition to first conception:

$$\mu_{ijk}(t) = a_i(t) * \beta b_j * \gamma c_k(t)$$

and covariates are the following (for a detailed description see Section 3.3. in this Chapter):

$a_i(t)$ baseline intensity – duration since age 15 (time varying piecewise constant)

βb_j represents a set of time constant covariates:

- region of birth
- ethnicity
- number of siblings
- religion of the respondent

$\gamma c_k(t)$ represents a set of time constant covariates:

- marital status
- educational level of the respondent
- activity status
- calendar year

3.2. Sample selection

In the following empirical analyses, data from the Russian GGS and EES were used. Starting with a number of 4,223 male respondents, I excluded cases with a first birth before age 14 and respondents with children of former partners, who are not reported in the birth histories. As done previously (see Chapter VII, Section 3.2. and Chapter V), respondents from Moscow and St. Petersburg are not included. Furthermore, the analysis is restricted to respondents who are interviewed in the GGS and EES. In order to restrict the time horizon, I also do not consider first births and life histories before 1970 (left-truncation in 1970) and respondents born before 1946. The final number of men entering the analyses of men's fertility behavior was 2,239. For a detailed description, see Table 9.

transition to first conception: excluded cases	MEN
total number	4223
1st child before age 14	17
1st child before 1970	773
children with previous partners not reported in birth histories	9
1st union end before 1st union started	5
respondents from Moscow & St. Petersburg	385
born before 1946	874
not interviewed in the EES	1754
total number entering the analysis	**2244**

! Note: All cases are left censored in 1970 !

Table 21: Excluded cases and total number of respondents entering the empirical analysis; Source: Russian GGS and EES (2004) – own calculations

1st births	N	%
total number of men	2244	100.0
1st conceptions	1573	70.1
censored	671	29.9

Table 22: Distribution of 1st conception among Russian males in the empirical analysis; Source: Russian GGS and EES 2004 – own calculations

A total of 2,244 males in the final sample had 1,572 first procreations (approximately 70%) which resulted in the birth of first biological children. Accordingly, nearly 30% of men (672 cases) entering the analyses did not experience fatherhood until age 45 or the date of the interview, and are censored at the age at the interview or age 45. See Table 10 for details.

3.3. Covariates

Similarly to the analyses of men's transition to the first union, time-fixed and time varying covariates were introduced to the model. Characteristics assumed to not change with the age of the respondent are: number of siblings, ethnicity, religion and place of birth. Covariates varying over time are participation in education, level of education, employment status, calendar period and marital status. All events are reported by calendar year and month. The occurrence of an event is attributed to the middle of the respective month. The analyzed period of men's lives starts at age 14 and ends at age 45. According to described event-history techniques time intervals

(spells) are created when a time varying covariate changes. Within the spells, the time varying covariates are constant.

Table 11 (time varying covariates) and Table 12 (time constant covariates) show the distribution of Russian males, the occurrences of first conceptions, and exposure time in the categories of each covariate. The exposure time is measured in the months an individual was exposed to the risk of first procreation.

	men			1st conception	
	N	%	exposure time (in person months)	occurrences	%
total numbers	2244	100.0	285656	1573	100.0
time varying covariates					
education					
high	349	15.6	20192	230	14.6
no degree	1693	75.4	70173	25	1.6
low	123	5.5	8725	80	5.1
medium	1082	48.2	72713	427	27.1
vocational medium	916	40.8	75041	629	40.0
missing	415	18.5	38812	182	11.6
main activity status					
not employed	1274	56.8	17816	47	3.0
employed	1928	85.9	123006	1321	84.0
in education	1728	77	94271	107	6.8
military service	1245	55.5	34148	86	5.5
missing	394	17.6	16415	12	0.8
marital status					
single	2236	99.6	238543	306	19.5
direct marriage	906	40.4	18444	793	50.4
1st cohabitation	600	26.7	12298	287	18.2
subsequent marriage	155	6.9	4588	106	6.7
union disruption	168	7.5	11783	81	5.1
calendar period					
1970-79	1001	44.6	68918	321	20.4
1980-84	981	43.7	42640	273	17.4
1985-89	1038	46.3	44275	281	17.9
1990-94	1042	46.4	44693	297	18.9
1995-99	1042	46.4	46253	220	14.0
2000-04	827	36.9	38877	181	11.5

Table 23: Description of time varying covariates included in the analytical models; Source: Russian GGS and EES (2004) – own calculations

	men			1st conception	
	N	%	exposure time	occur rences	%
total numbers	2244	100.0	285656	1573	100.0
time constant covariates					
religion					
Russian Orthodox	1487	66.3	186449	1046	66.5
Muslim	163	7.3	22936	117	7.4
Others	20	0.9	3043	11	0.7
no answer	574	25.6	73228	399	25.4
ethnicity					
Russian	1793	79.9	224733	1251	79.5
UKR/BL/M	40	1.8	5028	35	2.2
Finno-Un	65	2.9	8720	43	2.7
Kavkasia	133	5.9	19831	100	6.4
Asian	55	2.5	7452	37	2.4
Tatar	44	2.0	5743	29	1.8
European	11	0.5	1271	9	0.6
others	11	0.5	1083	10	0.6
missing	92	4.1	11795	59	3.8
number of siblings					
no siblings	403	18.0	53223	264	16.8
1 sibling	961	42.8	116583	640	40.7
2 siblings	446	19.9	57495	314	20.0
3 and more siblings	434	19.3	58355	355	22.6
region of birth					
center city	522	23.3	67019	302	19.2
other town	637	28.4	80165	413	26.3
urban-type community	209	9.3	27196	162	10.3
rural area	860	38.3	109348	685	43.5
missing	16	0.7	1928	11	0.7

Table 24: Description of time constant covariates included in the analytical model; Source: Russian GGS and EES (2004) – own calculations

The tables can be read as follows: The first two rows provide the number and proportion of men experiencing a certain time varying characteristic, e.g., 1,274 individuals or 56.8% of all respondents were at least once not employed during the period of observation. Correspondingly, the next row gives the cumulative time (in person months) of how long all men in a specific state were exposed to the risk of first procreation, e.g. non-employed men were exposed to this risk for 17,816 person months. Further right in the table, the occurrences and proportion of first procreations across the covariates is displayed, e.g., 47 males conceived a first child when they were not employed, which accounts for 3% of all first procreations.

Education and *main activity status*: Both variables were constructed from the education and employment histories collected in Russian EES and vary over time.

Their classifications were already described when analyzing men's transition to the first union (for details please see Chapter VII, Section 3.3.). However, the activity status covariate was used with a different coding. Namely, the categories "in basic education" and "in higher education" were collapsed to one category, "in education." This was necessary since too few procreations occurred in education.

Marital status: According to the classification used in the analyses of nuptiality behavior in Chapter VII, men's marital status is classified by five dimensions and varies by the age of the respondent. "Single" covers all men who had not experienced a union formation so far. "Direct marriage" includes all men who had formed their first marriage without any previous non-marital cohabitation. "Cohabitation" covers all males who have had a first cohabitation, and "subsequent marriage" classifies men who married out of this first cohabitation. Finally, the category "union disruption" includes all males who dissolved their first consensual or marital union.

Calendar period: Calendar period is introduced into the models in two ways. First, it is used as basic interaction variable with three levels, and distinguishes the periods between 1970 and 1989, between 1990 and 1994, and from 1995 to 2004. Second, it is introduced as a covariate with seven levels, which measures the changes over calendar time in five-year intervals. It starts from 1970 and ends at the date of interview in 2004.

As further control variables *religion, number of siblings, region of birth,* and *ethnicity* were introduced in the model as time constant covariates. However, their effects will not be discussed in detail (for a comprehensive description see Chapter VII, Section 3.3).

4. Empirical results

4.1. Period effects

It was already shown in Chapter IV, that period the Russian fertility changed strongly over the calendar year, i.e., fertility dropped in the 1990s to unexpectedly low levels, mainly due to a reduction of second and higher order birth, to postponement of fertility at higher ages, and to a indirect response of the increased period fertility of the 1980s.

Figure 57 reveals the period trends in Russian men's transition to first procreation by means of Kaplan-Meier survival functions. Compared to fertility patterns over all parities, men's transition to fatherhood changed relatively weakly over the period. Until 1995, only approximately 10% of Russian males stayed childless. In the first half of the 1990s, the transition to first-time parenthood occurred in the youngest age across all observed periods.

After 1995, two main developments are observable. *First*, the number of childless males increased to almost 20% until the beginning of the new millennium. However, this means that 80% of Russian males experience fatherhood in their life, which is still an overwhelming majority. *Second*, the transition to fatherhood is postponed to higher ages. Before 1995, 50% of all males experienced a first procreation by age 24 to 25, in the period between 1995 and 1999 they were almost 26 years old, and after 2000 their age at first procreation reached 27.

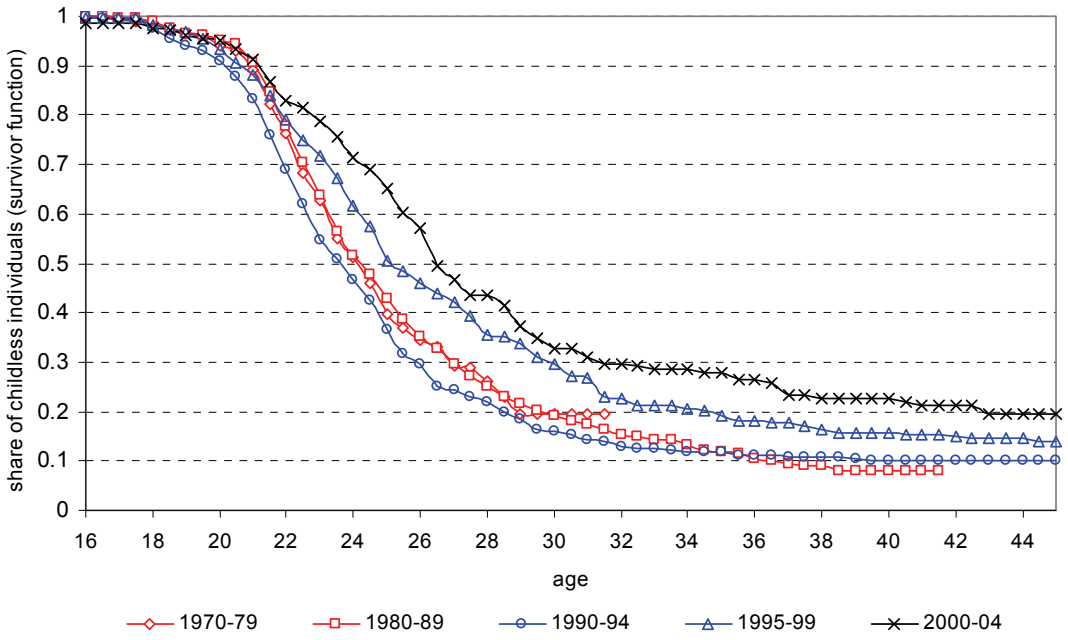
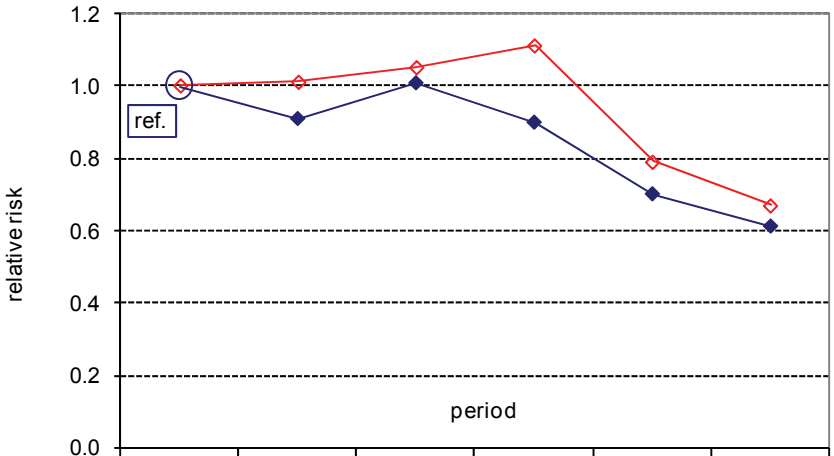


Figure 57: Survival function - transition to first conception for selected periods; Source: Russian GGS (2004) – own calculations

Notes: estimates from Kaplan-Meier survivor function



	1970-79	1980-84	1985-89	1990-94	1995-99	2000-04
not controlled for marital status	1.00	1.01	1.05	1.11	0.79**	0.67***
controlled for marital status	1.00	0.91	1.01	0.90	0.70***	0.61***

Figure 58: Transition to first conception for selected periods; Source: Russian GGS and EES (2004) - own calculations

Notes: two separate hazard regression models controlled and NOT controlled for civil status (other control variables see Table 25)
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1

The period patterns already described are mirrored by the results of the hazard regression shown in Figure 59 and Table 25. After a relatively stable phase in the 1970s and in the beginning of the 1980, the propensity of a transition to fatherhood increased until the mid-1990s. Afterwards, a significant decline occurred. Between 2000 and 2004, the risk of fatherhood halved compared to the period between 1990 and 1994. It is important to note the similarities to the developments in first marriage risks, presented in Chapter VII, Section 4.1.

The period pattern changes when marital status is introduced to the model (see blue line in Figure 58). The propensity of first procreation declines earlier, in the beginning of the 1990s, and its level is lower. This indicates that first union formation behavior and men's transition to fatherhood are strongly interrelated. A significant part of the relative stable period pattern is related to Russian men's union formation behavior. Namely, the relatively high first procreation propensity in the first half of the 1990s might be due to high prevalence of early and direct marriage, which decreased significantly in subsequent periods (see Chapter IV and VII). Because of this strong interaction, all of the following analysis will be modeled separately, with and without controlling for marital status.

At a glance, the survival analysis showed that the decreasing prevalence of first-time parenthood is only partially responsible for the general fertility decline in Russia in the 1990s. Fatherhood remained a universal life course event for males, even in the recent periods, 80% of men still became fathers. Nevertheless, first procreations were clearly postponed after the second half of the 1990s.

4.2. Age pattern

The general model in Table 25 shows that men's main transition phase to fatherhood is located between the age of 20 and 24. In this age group, the risk of having a first conception resulting in a first birth is almost twice as high as in the neighboring age groups. The transition propensity peaks shortly and sharply.

Figure 59 presents the propensity of first procreation depending on age for different periods, without controlling for marital status. Between 1970 and 1994, the age pattern changed weakly. Men aged between 20 and 24 had the highest risk of experiencing a first procreation, followed by men between 25 and 29 years of age. In the older age groups, the propensity was much lower. The age pattern altered after 1995. Generally, men's first procreation propensity was much lower compared to the previous periods. The risk peaked at higher ages, i.e., between ages 25 and 29. This indicates a postponement of men's first procreation.

By introducing the time varying covariate controlling for men's marital status, the postponement effect diminished. Even if the propensity of a transition to fatherhood was still much smaller after 1995 compared to the previous periods, it also peaked in the age group 20 to 24, and the age differences were less pronounced. Thus, age patterns and especially the postponement of Russian men's first procreation are strongly determined by a postponement in their nuptiality decisions.

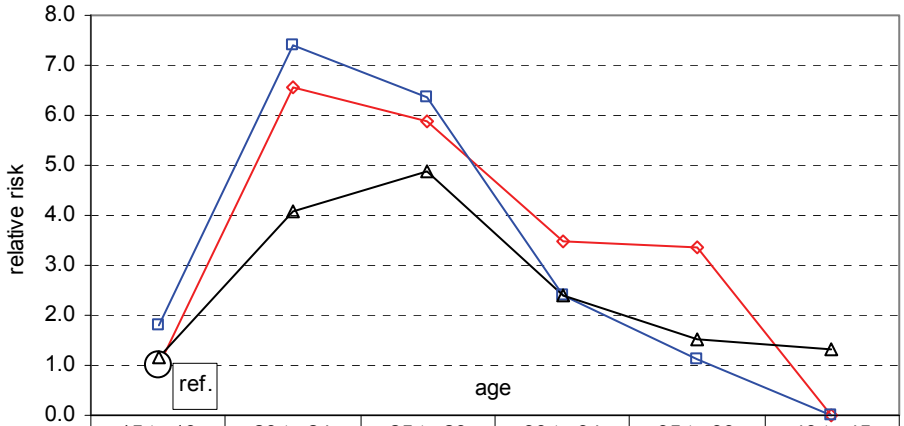
	1st procreation		
	RR	AR per 1,000	
age (baseline intensity)			
15 to 19	1.00	0.3495	
20 to 24	2.11	0.7352	
25 to 29	1.37	0.4765	
30 to 34	0.64	0.2230	
35 to 39	0.43	0.1484	
40 to 45	0.31	0.1086	
time varying covariates			
education			
missing	0.96		
no degree	0.41	***	
low	0.98		
medium	1.00	ref.	
vocational medium	0.88	*	
high	1.04		
main activity status			
not employed	1.00	ref.	
employed	1.79	***	
in education	1.17		
military service	1.04		
missing	0.72		
marital status			
not married	1.00	ref.	
direct marriage	21.22	***	
1st cohabitation	13.53	***	
subsequent marriage	14.39	***	
1st union disruption	5.57	***	
calendar period			
1970-79	1	ref.	
1980-84	0.91		
1985-89	1.02		
1990-94	0.90		
1995-99	0.70	***	
2000-04	0.61	***	

	1st procreation	
	RR	
time constant covariates		
religion		
Russian Orthodox	1.00	ref.
Muslim	0.98	
Others	0.74	
no answer	0.97	
ethnicity		
Russian	1.00	ref.
UKR/BL/M	0.84	
Finno-Un	1.07	
Kavkasia	0.81	
Asian	1.24	
Tatar	1.79	***
European	1.11	
others	2.58	
missing	0.89	
number of siblings		
no siblings	1.00	ref.
1 sibling	1.10	
2 siblings	0.89	
3 and more siblings	0.94	
region of birth		
center city	1.00	ref.
other town	0.99	
urban-type community	1.15	
rural area	1.28	***
missing	1.36	

Log-likelihood: 108.466
RR = relative risk; AR = Absolute risk; ref. = reference category

Table 25: Transition to the first procreation; Source: Russian GGS and EES (2004) – own calculations

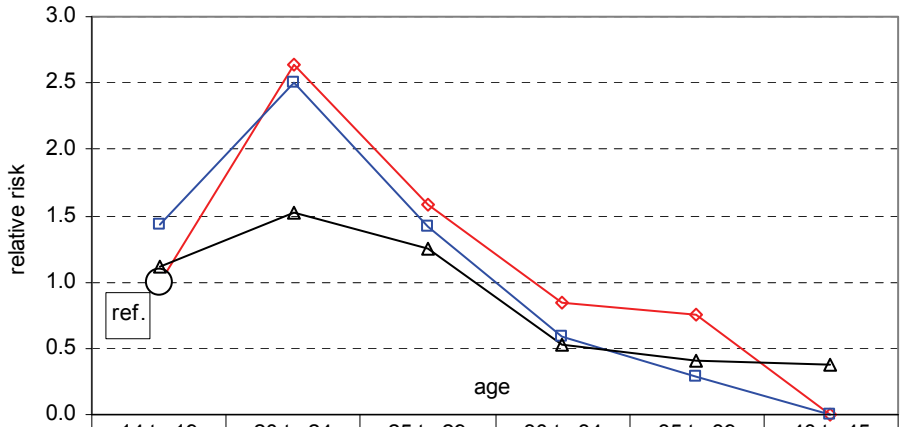
Notes: non-parametric proportional hazard: multiplicative intensity regression with piecewise constant baseline hazard
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1



	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 45
1970-89	1	6.55	5.89	3.5	3.36	0
1990-94	1.81	7.41	6.36	2.41	1.14	0
1995-2004	1.17	4.09	4.88	2.39	1.51	1.31

Figure 59: Transition to first procreation for selected historical periods – age pattern; Source: Russian GGS and EES 2004 – own calculations

Notes: hazard regression model (NOT controlled for marital status);
ref. = reference category (1.00), missing values category is not shown here



	14 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 45
1970-89	1.00	2.64	1.58	0.85	0.76	0.00
1990-94	1.43	2.50	1.42	0.59	0.28	0.00
1995-2004	1.11	1.53	1.25	0.53	0.41	0.37

Figure 60: Transition to first procreation for selected historical periods – age pattern; Source: Russian GGS and EES (2004) – own calculations

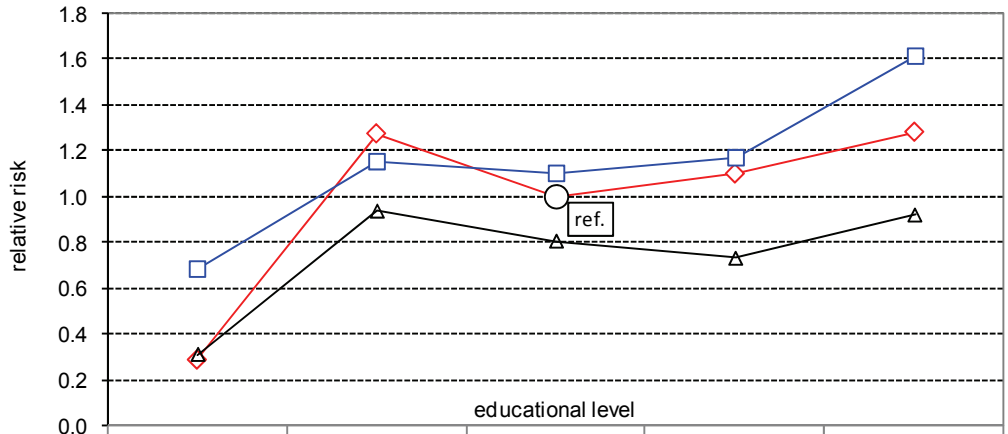
Notes: hazard regression model (control variables see Table **25**);
ref. = reference category (1.00), missing values category is not shown here

4.3. Education

The findings from the full model presented in Table 25 show that the education of Russian males has had a relatively constant effect (not considering individuals with no degree) on the propensity of a first procreation after controlling for marital status, employment status, period pattern, and several other individual characteristics. Once an educational degree has been obtained, the procreation risk increases strongly. However, men with vocational medium degrees and without any finished educational degrees were the least likely to transition to fatherhood status.

Figure 61 (model not controlled for marital status) reveals that the previously described general effect of education is different over historical time. With the exception of the period between 1990 and 1994, men with low or tertiary education tend to have the highest propensity to become fathers (slightly u-shaped effect).

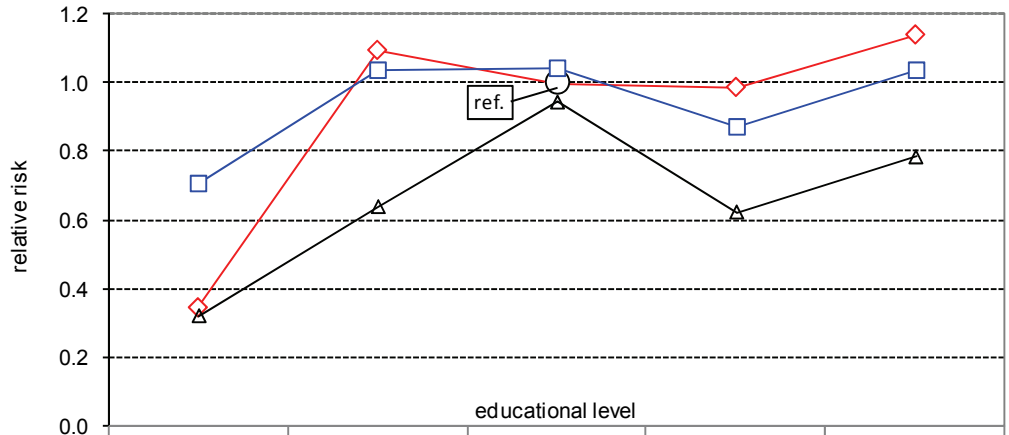
After controlling for union status (as shown in Figure 62) this pattern changes remarkably.



	no degree	low	medium	voc. medium	tertiary
1970-89	0.29 ***	1.27	1.00 ref.	1.10	1.28 ***
1990-94	0.69	1.15	1.10	1.17	1.62 ***
1995-2004	0.31 **	0.94	0.81	0.73 ***	0.92

Figure 61: Transition to first procreation for selected historical periods – educational pattern; Source: Russian GGS and EES (2004) – own estimations

Notes: hazard regression model (NOT controlled for marital status);
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1
missing values category is not shown here



	no degree	low	medium	voc. medium	tertiary
1970-89	0.35 ***	1.09	1.00 ref.	0.99	1.14
1990-94	0.70	1.04	1.04	0.87	1.04
1995-2004	0.32 **	0.64 *	0.94	0.62 ***	0.78 *

Figure 62: Transition to first procreation for selected historical periods – educational pattern; Source: Russian GGS and EES (2004) – own estimations

Notes: event history model (control variables see Table **25**);
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1
missing values category is not shown here

Before 1990: The slightly u-shape pattern holds for the 1970s and 1980s, however, it is not significant. During Soviet times, it mainly mattered that men had a finished educational degree, regardless of its level. Consequently, men without any educational degree had the lowest procreation risk.

1990 to 1994: In the first half of the 1990s, vocational medium- and highly educated males became less likely to experience fatherhood, whereas the effect for other educational groups did not change. However, the differences between high-, medium- and low-educated men, as well as to the subsequent period, remained insignificant.

1995 to 2004: Since the second half of the 1990s, the educational effect changed its shape more markedly. The propensity of a transition to fatherhood declined strongly among less-educated males. In addition, the propensity difference between men with higher and men with lower levels of education rose (the highly educated were 23% more likely to experience a first procreation than the lower-educated. This effect was proved to be significant.). Thus, vocational medium- and tertiary-educated males witnessed a steep decline, too. However, the procreation propensity of medium-educated men stayed at a remarkably stable level.

	median age at 1st procreation			childlessness (at age 45) in %		
	before 1990	after 1995	difference	before 1990	after 1995	Difference
low	22.8	25.2	2.3	11.0	19.8	8.8
medium	24.8	26.3	1.5	13.8	15.8	2.0
vocational medium	24.0	26.3	2.3	7.7	20.5	12.8
tertiary	25.2	26.5	1.3	3.8	12.3	8.5
total	24.3	26.2	1.9	7.9	17.0	9.1

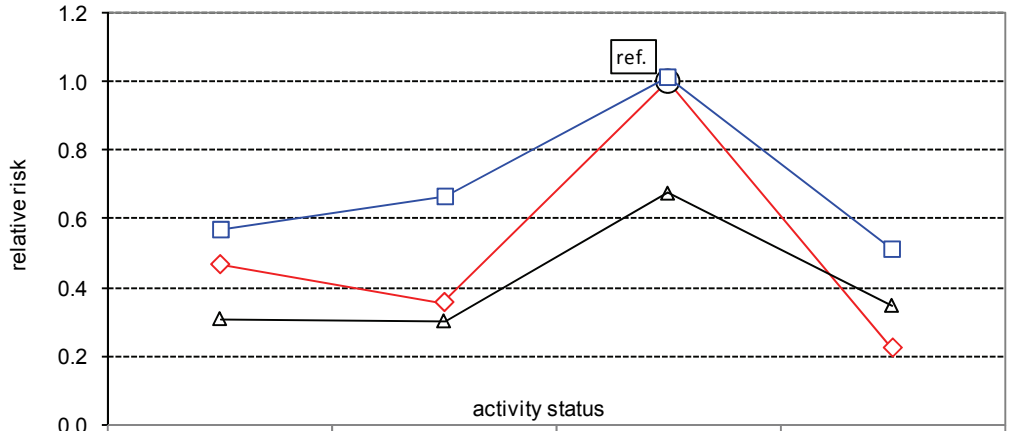
Table 26: Median age at 1st procreation and level of childlessness by period – educational pattern; Source: Russian GGS and EES (2004) – own estimations

Notes: Results of KM-Survival analysis of the transition to first procreation;

I argue that two mechanisms might be responsible for the decline among lower and higher educated men: irst, a real increase in the number of childless men; and, second, a strong postponement of first procreation (see Table 26).

It is shown in Table 26 that the first procreation is postponed in all educational groups, when comparing the period before 1990 and after 1995. For medium- and tertiary-educated males the age increased the least. However, tertiary-educated men were older than men with medium and lower levels of education when becoming fathers. This applies to the time before and after Russia's transition. Interestingly, men with one of the three highest educational degrees have very similar age patterns after 1995. Nevertheless, they stay childless to a different extent. Men with tertiary education have the lowest risk of being childless at the age of 45 in both periods, but the level of childlessness has increased strongly since Russia's transformation, in line with the development among lower-educated males. The level of childlessness is the highest, and its change over time is the strongest, for vocational medium-educated men.

As revealed by the differences between Figure 61 and Figure 62, the impact of education on men's first fertility transition is largely suppressed by their nuptiality behavior, particularly after 1990. By accounting for men's union formation behavior, the u-shaped educational pattern and the positive effect of higher education disappears and becomes negative. Considering the findings from Chapter VII, Section 4.2 on men's nuptiality behavior, the higher procreation propensity among lower-educated males should be caused by their higher likelihood to form a consensual union early in life. By contrast, the higher fatherhood transition propensity of highly educated males should be due to their higher marriage likelihood.



	in education	not employed	full time	military service
1970-89	0.47 ***	0.36 ***	1.00 ref.	0.22 ***
1990-94	0.57 **	0.67	1.01	0.51 ***
1995-2004	0.31****	0.30 ***	0.68 ***	0.35 ***

Figure 63: Transition to first procreation for selection historical periods – main activity pattern; Source: Russian GGS and EES (2004) – own calculations

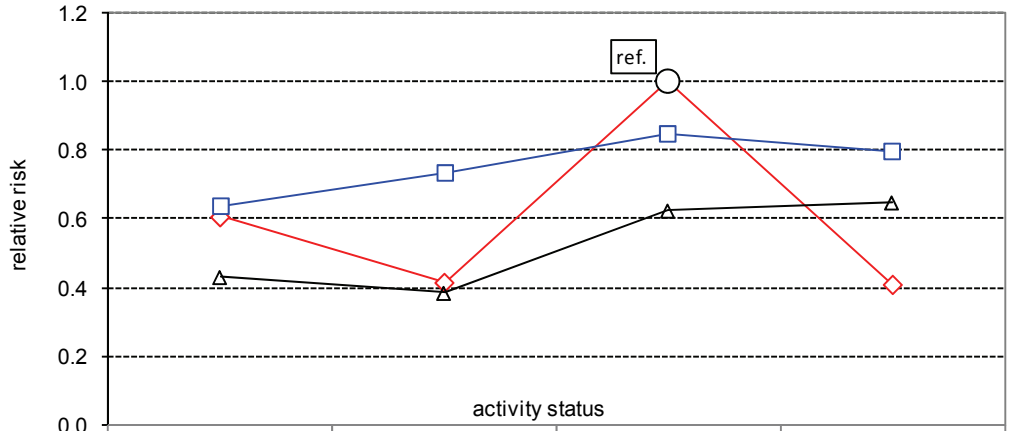
Notes: hazard regression model (NOT controlled for marital status)
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1
missing values category is not shown here

4.4. Main activity status: education, military service and employment

The following section explores the time varying effect of men's main activities on their risk of experiencing a first procreation. Basically, three main activities are considered: participation in education, employment (status), and military service. Since the categories exclude each other, they are combined in one variable.

Without considering any interactions, the results in Table 25 show that participation in school education, non-employment, and military service are high barriers of entry fatherhood. Accordingly, by reaching full employment men become very likely to procreate.

Figure 63 and Figure 64 contain interaction models of men's activity status and the different time periods. Figure 63 presents the impact of men's main activity status without accounting for their marital status. In Figure 64, men's nuptiality characteristics are added to the model.



	in education	not employed	full time	military service
1970-89	0.61 ***	0.42 ***	1.00 ref.	0.41 ***
1990-94	0.64 *	0.73	0.85 **	0.79
1995-2004	0.43 ***	0.39 ***	0.62 ***	0.65 **

Figure 64: Transition to first procreation for selection historical periods – main activity pattern; Source: Russian GGS and EES (2004) – own estimations

Notes: hazard regression model (control variables see Table **25**);
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1
missing values category is not shown here

Before 1990: Participation in military service and non-employment hindered Russian men's transition to first procreation the most. Participation in education had a less negative impact on men's transition to fatherhood, and employed men had the greatest likelihood of a first procreation (Figure 63). Thus the influence of all activities varied significantly from the effect of full-time employment.

By introducing marital status to the model, these patterns did not change much, although the distance between full-time employment and all other main activities decreased slightly (Figure 64).

1990 to 1994: Compared to a successful transition to full employment, all other main activities significantly reduced men's first procreation propensity in the first half of the 1990s. Nevertheless, non-employed men became more likely to procreate, as in the 1970s and 1980s (Figure 63).

The inclusion of men's nuptiality characteristics did change the effect of men's main activity status. Their participation in military service lost its negative impact on the transition to fatherhood. Furthermore, it suppressed the positive effect of full employment (Figure 64). Hence, men with different main activities behaved more similarly than in the periods before.

1995 to 2004: Only a successful transition to employment increased men's propensity for a first procreation, when not controlling marital status (Figure 63). It elevated the risk more than two times compared to all other categories. Compared to the socialist period, men in education were less likely to become fathers, whereas military servicemen were more likely. This pattern again changed when the respondent's marital status was introduced to the model: namely, it suppressed the procreation differences between employed males, men in education, and non-employed individuals. Furthermore, it increased the positive effect of military service on men's first procreation propensity.

To summarize, the presented results showed four main aspects. *First*, the effect of men's main activity on first procreation behavior is largely determined by their civil status. Namely, men in full employment are generally more likely to form a union (see Chapter VII, Section 4.3.), and union formation increases the propensity of a first procreation. The reverse applies to non-employed men.
Second, the positive effect of full employment on men's first procreation propensity significantly decreased across the analyzed calendar years for about 40 % (from 1.00 to 0.6). Thus, employed men were less likely to become fathers in the 1990s than in periods before, whereas the first procreation propensity for non-employed men remained on a very similar level
Third, the institutional effect of educational enrollment decreased over the period. During Soviet times, participation in education was more compatible with fatherhood than in the 1990s. In the 1970s and 1980s, men in education were 50% more likely to procreate compared to non-employed individuals. This difference decreased to 10% between 1995 and 2004.
Fourth, the institutional effect of military service changed from negative (during Soviet times) to positive (in the 1990s and the new millennium). Thus, military duty became more compatible with fatherhood.

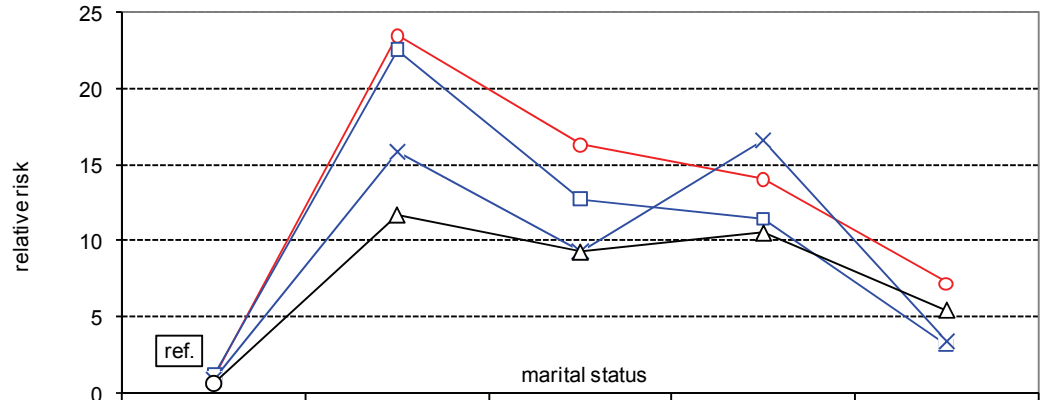
4.5. Marital status

In this section, the effect of union formation on the transition to fatherhood is examined. As already pointed out, partnership formation and partnership status are

very important characteristics when analyzing men's transition to fatherhood. Introducing it to the model changes the impact of many other covariates. In the first step, I will discuss how men's nuptiality behavior influenced their procreation over different calendar years. In the second step, I will present a detailed view on the timing pattern of union formation and its impact on men's first procreation.

Figure 65 displays the relative risks of a transition to fatherhood by five different marital statuses over historical time. In contrast to the previous graphs, the years between 1995 and 2004 are further divided into two period groups, in order to allow for a more detailed evaluation of the period development.

Before 1990: The pattern in the 1970s and 1980s shows clearly that men most likely entered fatherhood after having a direct marriage. Compared to single males, a direct marriage increased the likelihood of a first procreation over 23 times. The experience of a first non-marital cohabitation also raised the likelihood of procreation, but less strongly (app. 17 times). This applied to subsequent marriages, too (app. 14 times). Men in cohabitation were more strongly exposed to a first procreation than males in subsequent marriages. Fatherhood in a direct marriage was 66% more likely than in subsequent marriage. Finally, union disruption decreased the procreation risk strongly.



	single	direct marriage	cohabitation	subsq. marriage	union disruption
1970-89	1.00 ref.	23.50 ***	16.34 ***	14.11 ***	7.22 ***
1990-94	1.24	22.60 ***	12.76 ***	11.48 ***	3.20 ***
1995-99	0.96	15.90 ***	9.36 ***	16.62 ***	3.41 ***
2000-04	0.68 *	11.78 ***	9.33 ***	10.59 ***	5.51 ***

Figure 65: Transition to first procreation for selection historical periods – main activity pattern;
Source: Russian GGS and EES (2004) – own estimations
Notes: event history model (control variables see Table **25**);
ref. = reference category (1.00); significance levels: * p <= 0.01, ** p <= 0.05, *** p <= 0.1

1990 to 1994: The previously described patterns remained stable in the first half of the 1990s. In particular, the effect of direct marriages did not change, whereas the propensity in all other categories decreased, although the relative differences stayed on a similar level.

1995 to 1999: Since 1995, remarkable changes in the interaction between union status and first procreation occurred. The difference between men having direct marriages or subsequent marriages completely diminished. However, the relative difference between any kind of marital union and non-marital cohabitation only changed weakly. Men who chose to marry were more likely to become fathers compared to singles, divorced men, or men in any other kind of union.

2000 to 2004: The new millennium was characterized by a change towards equality concerning procreation propensities in non-marital and marital unions. Formation of any kind of union increased the likelihood of men's first procreation approximately 10 times (compared to single men). Furthermore, union disruption did not suppress the risk of a transition to fatherhood as strongly as in previous periods.

To summarize the developments: during the 1970s, 1980s and 1990s marriage increased Russian men's first procreation propensity the most. Marrying directly was thus the most common pathway to fatherhood until the end of state socialism. The differences between direct marriages and subsequent marriages diminished over time and equalized in the beginning of the 1990s. In the second half of the 1990s and the new millennium, the procreational differences between marital and consensual unions also ceased to exist.

4.5.1. Union formation and the timing of first procreation - spline models

The previously shown model presented the net effects of different kinds of unions on men's transition to parenthood. However, it did not evaluate the impact of nuptiality timing patterns on first procreation risks. Therefore, the following models show the effect of union formation, as well as of the time elapsed since union formation. The same classification of union status as used before is applied, but time-dependent conditional splines are introduced for the baseline function, the effect of time since formation of direct marriage, first non-marital cohabitation, and first subsequent marriage (f Chapter 6, Section 2.5). In a separate categorical covariate, it was further

controlled whether a union was dissolved or not. The mathematical representation of applied model can be written as follows:

$$\mu_{ijkm}(t) = a_i T(t) * b_j * c_k(t) * d_m T(t)$$

Where $\mu_{ijkm}(t)$ is the propensity of male first transition to fatherhood (measured by procreation, seven months before the birth). This risk depends on the respondent's age $a_i T(t)$, which is represented as a piecewise linear spline. Furthermore, the procreation propensity depends on a set of time varying $c_k(t)$ (education, activity status and period), and time constant covariates b_j (ethnicity, religion, number of siblings, place of birth), as used in the models before, and on a set of three piecewise linear splines.
So that the model can be also written as:

$$\mu_{ijkm}(t) = a_i T(t) * b_j * c_k(t) * d_1 T(t - co) * d_2 T(t - dm) * d_3 T(t - sm)$$

The three time dependent linear splines are:

- $d_1 T(t - co)$ enters the model only when a man starts to live in cohabitation and indicates the starting time and duration of the union.
- $d_2 T(t - dm)$ enters the model only if males are living in a direct marriage. This spline contains the information of marriage date and duration.
- $d_3 T(t - sm)$ conditions on a male's experience of a marriage preceded by a cohabitation, thus it contains the date when the cohabitation was transformed into a marriage and the duration of it.

All splines consist of an intermediate effect at union formation (constant) and the effect of union duration.
The period distinction used in the following analysis is restricted to a fewer number of categories compared to Figure 65, since the case number is too small for a more detailed analysis by union duration. Therefore, I chose to present the pattern of the main trends emerging before and after 1995. As already illustrated in Figure 65, changes of the interrelation between fertility and nuptiality decisions mainly started in 1995.

Table 27 contains the results of the previously described model, where the splines for age and the conditional splines for cohabitation, direct marriage, and subsequent marriage are interacted with the calendar. The values have to been understood as slopes of linear functions between the given spline points. However, the results from this table are difficult to interpret. Therefore, a graphical representation follows in Figure 66 and Figure 67.

			1st procreation	
			before 1995	**after 1995**
constant			-9.3301	
age (piecewise linear baseline intensity)				
slopes:		12 to 15	0.000	0.020
		15 to 20	0.051	0.033
		20 to 25	0.003	-0.001
		25 to 30	-0.009	0.002
		30 to 35	-0.005	-0.008
		35 to 40	-0.016	-0.004
		40 to 45	--	0.019
1st union start by cohabitation				
constant:	union formation		2.94	2.88
slopes:	duration	0 to 6 months	0.08	0.06
		6 to 12 months	-0.09	-0.10
		12 to 24 months	-0.06	-0.04
		24 to 48 months	0.00	0.01
		48 to 72 months	-0.02	-0.04
		72+ months	0.00	-0.01
1st union start by direct marriage				
constant:	union formation		3.55	3.10
slopes:	duration	0 to 6 months	0.04	0.09
		6 to 12 months	-0.09	-0.04
		12 to 24 months	-0.02	-0.04
		24 to 48 months	-0.05	-0.01
		48 to 72 months	0.02	-0.02
		72+ months	0.00	-0.01
1st cohabitation transferred subsequent marriage				
constant:	union formation		0.24	0.85
slopes:	duration	0 to 6 months	0.07	0.03
		6 to 12 months	-0.04	-0.05
		12 to 24 months	-0.01	-0.02
		24 to 48 months	-0.04	0.01
		48+ months	0.01	0.00
log-likelihood			-7346.24	

Table 27: Transition to first procreation: Effects of 1st union formation interacted with calendar year; Source: Russian GGS and EES (2004) – own estimations

Notes: hazard regression model (control variables see Table **25**)

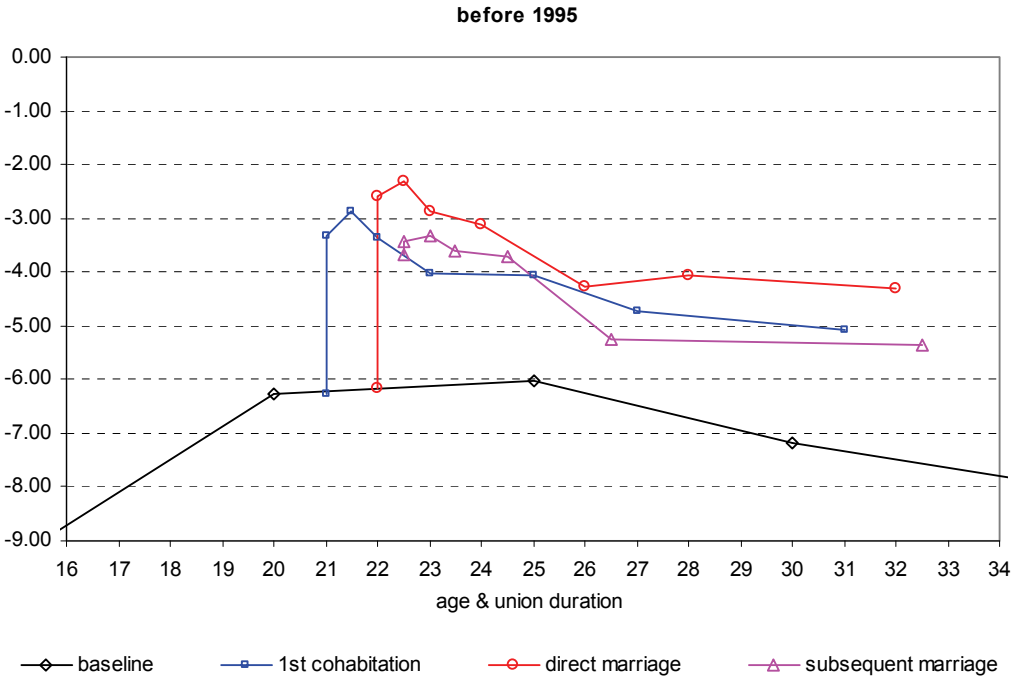


Figure 66: Intensities of first procreation before 1995 by marital status of the respondent; Source: Russian EES (2006), Russian GGS (2005), own estimations

Note: controlled for union dissolution, educational level, activity status, religion, region of birth, ethnicity

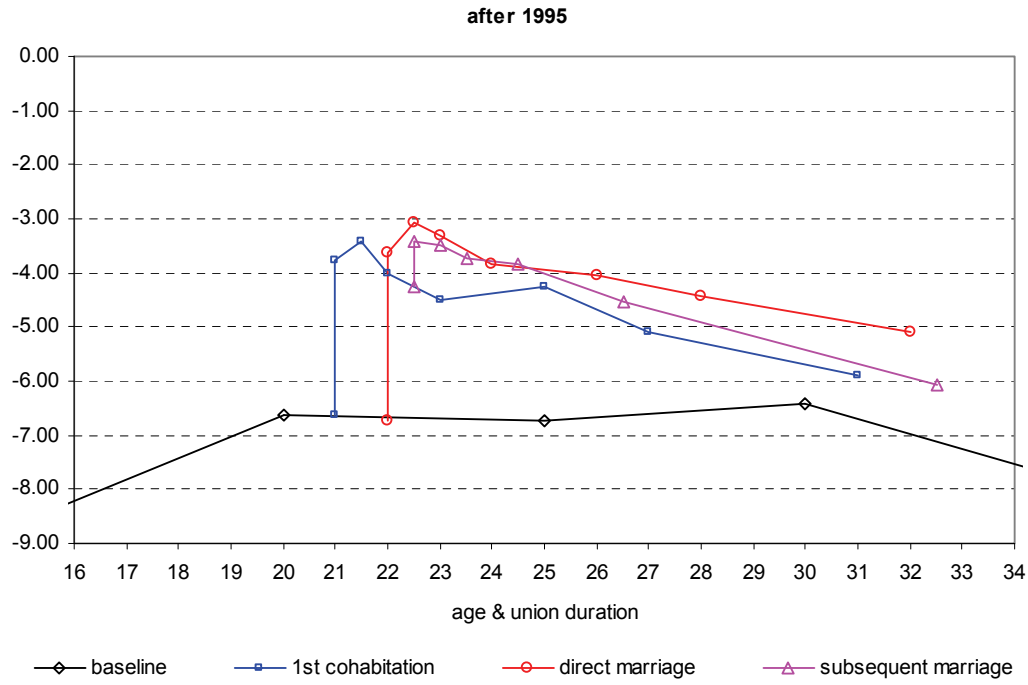


Figure 67: Intensities of first procreation after 1995 by marital status of the respondent; Source: Russian EES (2006), Russian GGS (2005), own estimations

Note: controlled for union dissolution, educational level, activity status, religion, region of birth, ethnicity

Figure 66 and Figure 67 basically show four different life histories. Two men lived before 1995 (see Figure 66). One of them started to cohabit at the age of 21, lived 1.5 years in this censual union, which was then (at the age of 22.5) transformed to marriage. The second male married directly at the age of 22. Furthermore, two other males lived after 1995 (see Figure 67). One of them also married directly at the age of 22, whereas the other started to cohabit at the age of 21 and married subsequently at the age of 22.5. The results of Figure 66 and Figure 67 should be understood in this manner.[34]

Generally, regardless of its civil status or period, first union formation had an immediate positive effect on Russian men's first procreation risk. It peaked in the first year after partnership formation, and declined afterwards. However, at no time in the observation period did the procreation propensity fall back to the level of single individuals. Furthermore, men marrying directly had the highest likelihood of a transition to fatherhood over the whole observed union duration. This applied to both periods.

Before 1995: The formation of a direct marriage had the strongest positive impact on men's propensity for a first procreation, followed by the formation of a non-marital cohabitation, whereas a subsequent marriage had a notably weak impact. Within the first two years of a marital union, the first procreation risk strongly decreased. Subsequently it stayed at a relatively stable level. This did not apply to non-marital unions. In consensual unions, the risk steadily declined by union duration. Subsequent marriages increased the risk of a male's transition to fatherhood only temporarily (for about two years) above the level of consensual unions.

After 1995: The differences between subsequent marriage and direct marriage decreased compared to the periods before. In the first two years of the partnership, both kinds of marriage influenced men's transition to fatherhood equally. Only in the long run did directly married individuals have a higher first procreation risk, compared to subsequently married men and non-marital cohabiting respondents. The propensity for a first procreation decreased steadily by union duration for marital and non-marital unions. The strongly pronounced decrease after four years of marriage duration, as observed before 1995, did not occur anymore.

[34] Ages at direct marriage, first cohabitation, and subsequent marriage used in the simulation are chosen for the purpose of a more clearly graphical representation. However, they reflect common Russian age patterns at men's family formation (see Chapter III).

To summarize, the estimates from the spline models supported the previous findings. However, it was shown that union duration mattered for men's transition to fatherhood. Males were most likely to procreate in the first two years of a newly formed relationship. If a first procreation did not take place within these two years, men became increasingly unlikely to become fathers. In other words, the longer a union lasted, the less likely a first procreation became. This behavior is more pronounced in marital unions, and particularly applies to the periods before 1995. Nevertheless, the impact of union duration on men's procreation behavior varied considerably between consensual unions andsubsequent and direct marriages.[35]

5. Interpretation and discussion

In the previous sections, Russian men's transition to first biological fatherhood was investigated. Five guiding questions and several hypotheses were formulated at the beginning of this chapter; they will structure the following interpretation and the discussion of the results.

Can the decreasing birthrate be attributed to a declining probability of first procreations among Russian men?

Contrary to the period development of the TFR (see Chapter VI, Section 3), the first half of the 1990s was characterized by relatively high transition rates to first-time fatherhood. The decline in men's first procreation propensities and transition rates started in the second half of the 1990s. Consequently, I argue that the decline of the TFR between 1990 and 1995 was mainly due to a reduction in second-order and higher-order births, and was not an effect of changes in men's first procreation pattern. In the second half of the 1990s and in the new millennium, males began to postpone their first procreation and stayed increasingly childlessness (see results in Sections 4.1 and 4.2, in this Chapter). Thus, the further decreasing and very low TFR since 1995 should be a major outcome of these trends.

It was further shown that period fertility and period nuptiality trends were strongly interrelated (see Sections 4.1. and 4.2. in this Chapter). Namely, I believe that the high

[35] The effects of all other covariates (education, activity status, ethnicity, religion, number of siblings, and region of birth) introduced in the model are not discussed and shown here, since they did not change compared to the model presented in Table 25.

first procreation intensities between 1990 and 1995 were an outcome of the low (and further decreasing) age at union formation of males and the dominance of marriage formation (see also Chapter VII), which increased the likelihood of a first procreation (see also the subsequent discussion on the interaction between nuptiality and procreation).

What influenced the declining propensity of the transition to fatherhood – postponement of first-time fatherhood or increasing childlessness?

Over the period of observation, the main transition phase to fatherhood moved from the beginning of men's twenties to the middle or end of their twenties. Whereas men's procreational age pattern in the 1970s and 1980s remained relatively unchanged, at the end of the 1980s and the beginning of the 1990s men became fathers earlier in life than in the periods before. Postponement of fatherhood emerged in the second half of the 1990s. Thereafter, men's ages at the transition to fatherhood increased strongly. This was shown by survival analyses and multivariate hazard regression models (see Section 4.2 in this chapter). It was also shown that this postponement effect strongly depended on respondents' marital behavior. Postponed union formation (in particular, marriage formation at higher ages, see Chapter VII, Section 4.1 and 4.2) leads to delayed first procreation.

When postponement of first procreation emerged, the proportion of childless males also rose considerably, i.e., since the mid-1990s (see survival curves in Section 4.1 in this Chapter). Starting from a level of around 8% between 1970 and the beginning of the 1990s, it grew to a level of 20% in the new millennium.

Thus, the answer to the initial question is ambiguous. Postponement, as well as increasing childlessness, were found to affect the propensity of a man's first transition to fatherhood, and the influence of both factors varied over the period.

What impact did individuals' education levels and employment status have on the decision for fatherhood?

First, I hypothesized that a man's employment status should cover important aspects of his economic resources and his successful transition to adulthood (see Chapter II, Section 6.1.6) and should increase his propensity for a first procreation.

The strong positive effect of employment (compared to individuals in education and not-employed respondents) on men's transition to fatherhood shows that economic resources, secure prospects, as well as a successful transition to adulthood mattered strongly for men at the transition to fatherhood. Phases of non-employment and participation in education, and, thus, periods of economic insecurity and unclear prospects, reduced the likelihood of a transition to fatherhood. These patterns were shown to be stable over the period. In this regard, the relative importance of men's labor market participation for biological fatherhood did not change before, during, and after Russia's economic transformation phase. Reaching full employment status was, and still is, a precondition for Russian men's transition to fatherhood. When controlling for men's marriage behavior, the employment effect on procreation got considerably weaker. Thus, employment status strongly affects the ability of men to form a union (see Chapter VII), which then increases the likelihood of a first procreation.

Second, it was hypothesized in Section 2.3. (in this chapter) that the positive impact of full employment (compared to non-employed and males in education) on men's first procreation risk will be stronger before 1990 than after 1990. This hypothesis was supported. Employed men had a lower likelihood of having a first procreation during and after Russia's economic transition than during state socialism. How could that be explained?

The *heterogeneity* effect: As shown in Chapter III (Section 3.2) the level of unemployment rose considerably in the 1990s. Thus, the group of people who were not employed grew, as did the duration of non-employment. Before the transition phase, unemployment among men mainly consisted of individuals in waiting phases between education, military service, and employment, and of males who failed at the transition to a job. Both groups were highly selective. Whereas the first group consisted of the short-term unemployed and young people, the latter group would have consisted of individuals serious problems (health, political issues, etc.), since full employment was obligatory for everybody in the Soviet economy. These males would have had a very low level of human and social capital, which presumably decreased their likelihood of finding a partner and fathering their own biological children.

During and after the economic and institutional restructuring in Russia, the risk of being inactive in the labor market spread beyond the borders of those two groups, and

affected a very broad range of Russia's population. Consequently, the selectivity of non-employment decreased and the group of non-employed males became more heterogeneous. Thus, it included not only "poor" and "short-term waiting" males, but also other males, who generally might have better chances of forming a family.
The *devaluation of labor* effect: The economic transformation in Russia was accompanied by a strong devaluation of labor (see Chapter III, Section 3.2). The proportion of employed individuals with incomes below the subsistence level grew strongly in the 1990s, periods of hyperinflation caused the value of incomes to deteriorate, and the privatization of state-owned companies caused payment failures. Consequently, being (fully) employed did not necessarily entail sufficient coverage of living costs, and did not imply the resolution of the resource or the perspective problems of fatherhood.

Third, according to my hypothesis (see Section 2.2 in this chapter) participation in education can be considered to be a serious obstacle for a transition to fatherhood (*institutional effect of education*). This effect was weaker during Soviet times. It indicates that compatibility problems, and, thus, opportunity costs of fatherhood, rose under the new economic conditions. On the one hand, institutional support, such as freely available childcare, diminished, and fatherhood became more costly in terms of time and economic resources, which should be scarce during education. On the other hand, education (human capital and future prospects) became more important. If fatherhood is assumed to hinder successful completion of an education, the rising costs of forgone opportunities (and not accumulated human capital) increased in the new economic and social conditions. Participation in education and fatherhood became less compatible.

Fourth, a man's educational level was assumed to indicate his human capital and his economic potential, and, thus, his ability to solve the resource and perspective problems of fatherhood (see Chapter II, Section 6.1.5). It was hypothesized that highly educated males should be more likely to become fathers, compared to medium- and lower-educated indivuduals. Furthermore, it was supposed that they would be more likely to postpone their first procreation (*educational level effect*, see Section 2.2, in this chapter). Both aspects were supported by the empirical results. Despite

similar procreation propensities of men with lower or higher levels education, highly educated males were the oldest group when having a first procreation, but they were the least likely to stay childless. By contrast, lower-educated men became fathers relatively young, although a higher proportion of them remained without any biological children. This difference remained stable over the period, and appears to support the interpretation that highly educated men are better able to accumulate enough resources and secure prospects to become fathers, whereas men with lower educational degrees experience problems in doing so. However, childlessness and postponement of first procreation increase over the period (see Section 4.3, in this chapter).

Fifth, the *period effect hypothesis* of increased heterogeneity between differently educated males concerning the transition to fatherhood was supported by my findings (see Sections 2.2 and 4.3 in this chapter). The 1970s and 1980s were characterized by big differences between men with no educational degree and males with any kind of degree. This difference remained strong after 1990, but, additionally, the variation between the low, medium, and high degrees increased, particularly after 1995. Compared to lower-educated and vocational medium-educated males, highly educated individuals had the highest propensity for becoming fathers. This can be related to two developments: first, in the observed periods, highly educated males postponed fatherhood the least; and, second, their level of childlessness grew relatively little.

The increasing educational heterogeneity showed that men's education mattered strongly in the new social and economic conditions, and affected their resources and prospects on the labor market. Consequently, education shaped their transition to fatherhood (see theoretical consideration in Chapter II, Section 6.1.5).

Lower-educated males, who are supposed to have relatively low levels of human capital, less secure prospects, and who are more likely to experience economic stress, refrained from or strongly postponed first procreation, particularly under the new societal conditions. The opposite behavior was observed for highly educated men. I attribute this pattern to their better abilities to deal with the resource and perspective problems of fatherhood, especially in the new economic and institutional conditions.

What is the impact of marriage and non-marital cohabitation on men's first procreation risk?

Russian men's union status was found to be the most important characteristic influencing their first procreation risk. Union formation had a strong immediate effect on first procreation risks, regardless of its civil status (see Section 4.5.1, in this chapter). However, the strength of this effect varied between different kinds of unions and over the period (see Section 4.5, in this chapter). Furthermore, it was shown that men's nuptiality behavior heavily interacted with the effects of main activity status, educational level, and calendar year (see Sections 4.3 and 4.4, in this chapter).

In the line with the formulated hypothesis (see Section 2.5 in this chapter), the risk of first procreation after a direct marriage declined steeply over the period of observation. However, the likelihood of experiencing the transition to fatherhood after formation of first cohabitation or subsequent marriage also declined over time. Compared to subsequent marriages and first non-marital union formations, direct marriage lost its dominant impact on first procreation risks over the period. In the new millennium, the differences between the different kinds of union are very small. Nevertheless, the risk of experiencing a first procreation without having a cohabiting union (marital or non-marital) was and is very low.

The findings showed that the face of fatherhood changed strongly during the 1990s and the new millennium – from a rather homogenous to more heterogeneous pattern, and, thus, to a more individualistic nuptiality behavior. The dominating sequencing norm "single – direct marriage – first procreation" diminished, and made room for various kinds of other family formation patterns, particularly for concensual unions and subsequent marriages.

I argue that the meaning of non-marital cohabitation has changed over time, not only to a new "quantum" (as shown in Chapter VII), but to a new "quality." Non-marital unions are of increasing relevance for anticipated fatherhood, considering that procreation after union formation indicates planned parenthood. The period pattern might be regarded as a value change away from traditional fertility and nuptiality norms and behavior, towards more progressive perceptions.

In addition to cultural aspects, institutional settings also shape the interrelation between union formation and fatherhood. Low quality and cramped housing conditions and an officially regulated housing market during Soviet times and at the

beginning of the 1990s hindered family formation in a common household (Morton 1984). Marriage was almost necessary to "get on the list" for an apartment (see Chapter III, Section 5). Thus, direct marriage was a strategy, and sometimes the only way, to obtain suitable living conditions for a family with children, particularly before procreation took place. With the reforms of the 1990s, the housing market was deregulated and privatized. This opened housing slots for consensual unions, and might have helped people to realize desires for children raised in an independent household without (direct) marriage.

Various *interaction effects* of Russian men's nuptiality and their procreation behavior are crucial for the understanding of fertility dynamics in the period of observation.

First, young and universal marriage (mostly direct marriage) until the first half of the 1990s also led to early and universal transitions to fatherhood. However, by accounting for this very specific Russian nuptiality pattern, the high first procreation propensity between 1990 and 1995 eased (see Section 4.1. in this chapter). Thus, without early and universal marriage, the likelihood of a transition to fatherhood would have already decreased since the beginning of the 1990s. This points to the strong interrelation between marriage and first procreation in Russian society.

Second, a big part of the positive effect of men's employment on their first procreation risk can be attributed to the increased likelihood of forming a union, particularly marital unions (direct or subsequent marriages) (see Section 4.4, in this chapter; and Chapter VII, Sections 4.3 and 4.5). Furthermore, it showed that the negative effect of military service after 1990 is mainly due to its incompatibility with union formation. By accounting for this effect, the likelihood of procreation during military service is very similar to that of employed males. This change also shows the impact of institutional changes over the period, namely, the reform of military service at the beginning of the 1990s (for details see Chapter III, Section 7).

Third, a portion of the positive effects of lower- and higher-educated males (especially after 1990) are due to particularities in their nuptiality behavior (see Sections 4.3, in this Chapter; and Chapter VII, Section 4.2). Lower-educated males tended to form non-marital cohabitation early in their lives, whereas Russian men with higher education were likely to form direct marriages. Both kinds of nuptiality decisions increase the likelihood of a first procreation strongly (see Sections 4.5 and 4.5.1, in this chapter).

Can men's altered first procreation pattern be attributed to the collapse of the socialist system of the Soviet Union?

Again (like in Chapter VII, Section 5) the crucial point in this question is: To what extent did political, social, and economic conditions in the Soviet Union shape Russian men's first procreation behavior? Thus, can the decrease of first-time fatherhood in the 1990s and the new millennium be interpreted as an adaptation process to new economic, social, and institutional requirements? Or are the period changes a result of altered family values among Russian men?

The breakdown of the Soviet Union was accompanied by declining first procreation risks, i.e., rising levels of childlessness and increasing ages at the transition to fatherhood. All individual characteristics considered in the empirical analysis influenced male fertility behavior and altered strongly across the period, i.e., employment status, participation in education, enrollment in military service, educational attainment, age of the respondent, and marital status.

However, the introduction of all these individual characteristics in the event history models only weakly reduced the negative period trend in men's first procreation propensities. Therefore, I argue that the decreasing likelihood of becoming a father relates to the changed societal conditions after Russia's transition.

The strongest changes in men's first procreation behavior and its determinants occurred after the middle of the 1990s, whereas the effects in the period between 1990 and 1994 did not show a consistent pattern. In line with the arguments outlined in Chapter VII (Section 5), the beginning of the 1990s seems to mark an intermediate period.

The stable phase before 1990: In all important sectors (politics, institutions, economy, and social life) this period was characterized by high levels of stability and low levels of change (see Chapter III). Full employment, state-owned companies and institutional family support (particularly freely provided childcare) reduced the perspective, compatibility, and resource problems associated with fatherhood (see Chapter II, Sections 6.1.1 and 6.1.2 for the theoretical background). The low level of educational differentiation in fertility behavior, relatively high procreation risks during education, and the strong impact of full-time employment in this period support this point of view. At the same time, however, the incompatibility of military

service and fatherhood, and the dominant impact of direct marriage, show the importance of cultural and institutional constraints under which young Russians became fathers (see Chapter III).

The most important set of institutional characteristics were the socialist family policy approach of the Soviet government, which may be characterized as universal and pronatalist (see Chapter III, Section 4.2.1). A good example of their impact are the high and stable first procreation patterns seen in the 1980s. I suggest that these patterns were a result of the policy reforms since 1981, i.e., extended maternity leave regulations, prolongation of job security after birth, increased birth grants for all parities, and abandoned parity advancement. Although they were mainly addressed to females, I argue that they also provided strong incentives for men's early and universal transition to fatherhood. Combined with a very traditional view of gender roles in everyday life (see Chapter III, Section 8), these policy measures should have strongly decreased the perspective, resource, and compatibility problems associated with a man's decision for a first procreation.

The intermediate phase between 1990 and 1994: The first half of the 1990s was characterized by dramatic changes in the political, institutional, and economic conditions in Russia: the official dissolution of the Soviet Union, large-scale privatization of companies and the housing market, hyperinflation, decreasing and insufficient family support, collapse of the social security system, reforms of the educational system, and restructuring of military service (see Chapter III for a detailed description). Nevetheless, the procreation propensity did not fall immediately. However, the theoretical considerations in Chapter II (Sections 6.1.1, 6.1.2, and 6.1.3) indicated that these changes in societal conditions significantly affected men's transition to fatherhood.

The first set of indicators presented should be seen as positive triggers on men's first procreation propensity.

1. The educational system effect: As described in Chapter III (Section 6) and in Chapter VII (Section 5) in 1992, Russia's educational system underwent a restructuring, which significantly lowered the school finishing age of many individuals. This should have increased men's first union formation propensity (see Chapter VII), and, hence, men's first procreation propensity (see Section 4.1, in this

chapter), if we assume that both processes are strongly interrelated (as already shown previously in this chapter and Chapter VII, Section 5). However, after controlling for men's nuptiality characteristics, the first procreation propensity was found to have already decreased in the first half of the 1990s. Thus, the change in the educational system increased men's first procreation risk indirectly via their union formation behavior.

2. The military service effect: In the course of military reforms since 1992 and the related shortening of military duty to 24 months (see Chapter III, Section 7), the service became more compatible with men's first procreation (see Section 4.4, in this chapter) and young men were freed from military duties one year earlier than before. The latter should have had a positive impact on their propensity to become relatively young fathers. Although military service was still a major obstacle for men's transition to fatherhood, this incompatibility was mainly founded in the negative impact of military duty on union formation propensity (see Chapter VII, Section 4.4; and Section 4.4. in this chapter: the negative effect of military service disappeared after controlling for civil status).

3. The housing market effect: The privatization of the housing market between 1991 and 1994 might be another reason for the relatively high first procreation propensity in this period, since it enhanced young men's chances of forming an independent household and cohabiting union (see Chapter III, Section 3). I argue that this caused a preponement of family formation, thus increased the propensity for a transition to fatherhood between 1990 and 1994.

To sum up, the latter three effects should have indirectly lowered the age at men's transition to their first procreation, despite decreasing prevalence of fatherhood in the first half of the 1990s. Thus, these effects may provide explanations for why the propensity for first procreation did not immediately decline in this period (see Section 4.1, in this chapter).

In the next step, determinants on the decreasing prevalence of fatherhood will be discussed.

4. Family policy effect: Most of the family policy measures introduced in the socialist period were still in place in the first half of the 1990s. However, the value of financial support payments diminished greatly because of the hyperinflation and the decreasing payments from taxes (decreased incomes, increasing unemployment). Furthermore,

the number of state-funded childcare facilities fell sharply, while their costs increased and the proportion of private nurseries and kindergarten grew slowly. (see Chapter III, Section 4.2.2.) Consequently, direct and opportunity costs of fatherhood should have increased. Despite the general period trend, the low first procreation propensity of men in education (see Section 4.3 in this chapter) might also be interpreted as an outcome of this constellation. Students usually had limited time and economic resources, and, thus, when the provision of childcare and economic support facilities decreased, fatherhood and participation in education became incompatible.

5. Social policy effect: Since the beginning of the 1990s, the cornerstone of the socialist social protection – guaranteed full employment – ceased to exist (see Chapter III, Section 4). This forced a rapid reorganization of old social policy structures. The large-scale reforms nevertheless failed to solve the most pressing issues, i.e., income poverty, family poverty, and (hidden) mass unemployment. Hyperinflation and shortfalls in the federal budget led to an intensification of these problems and reduced the value of social assistance to a negligible source of income. I argue that this should have further decreased the likelihood of becoming a father among the most vulnerable groups of men, i.e., the "working poor" and non-employed individuals. The reduction of the difference in procreational behavior between employed and non employed males (see Section 4.4, in this chapter) may be interpreted as a result of the dysfunctional institutional restructuring.

6. The economic reform and crisis effect: At first, the economic reforms under Boris Yeltsin mainly reshaped employment and income distributions, and induced hyperinflation (between 1992 and 1994). Large proportions of males dropped out of the official labor market, and labor and income were devalued (see Chapter III, Sections 3, 3.1, and 3.2). Under these circumstances, even fully employed males would have increasingly failed to accumulate sufficient resources and prospects necessary for a first procreation. Thus, men with and without full employment displayed more similar first procreation patterns (see Section 4.4, in this chapter). Furthermore, in this greatly deteriorated economic situation, the gains from higher education should have been relatively low, since prospects and living conditions were bad for almost everybody in every economic sector (see Chapter III, Section 3). Consequently, males with dissimilar levels of education should still have had

relatively similar first procreation patterns. The results (see Section 4.3, in this chapter) provided evidence for this assumption.
The period between 1990 and 1994 seems to form an intermediate phase, when old and new fertility behavioral strategies and outcomes were mixed, and new (fertility) behavioral strategies were not established yet.

The changed period since 1995: The second half of the 1990s and the new millennium were associated with profound changes in men's procreational behavior. The transition to first-time fatherhood was postponed to higher ages, and the proportion of childless men continued to increase. Consequently, men's first procreation propensity dropped strongly between 1995 and 1999, and continued to fall in the new millennium. In addition, the impact of individuals' education, activity status, and civil status altered strongly (as previously discussed).
I attribute a major part of these changes to the specific social, institutional, and economic settings in the period between 1995 and 2004. In the following, I group the relevant societal conditions of the new Russia into three categories: social policies, family policies, and economic development.

Social policy and institutional effects: In Yeltsin's second term, and under the new Russian President Putin (since 1999), social institutional support for people in need did not improve significantly. Until the end of the observation period (2004), reforms failed to address adequate reorganization of Russia's social policy (see Chapter III, Sections 2 and 4). Like in the first half of the 1990s, the situation for the Russian poor did not change much after 1995. Real wages and minimum wages decreased until 1999, and increased only slowly thereafter (see Chapter III, Section 3.2). The proportion of "working poor" increased and remained high. The same applied to the spread of unemployment. It grew strongly until 1999 and decreased afterwards, but remained at a high level. The risk of being unemployed was particularly high among men between the ages of 20 and 29. This pattern remained unchanged between 1995 and 2004 (see Chapter III, Section 3.1). At the same time, poverty relief and unemployment benefits remained scattered and insufficient. Thus, they did not prevent people from falling below the subsistence level or into poverty. Furthermore,

the Russian welfare system failed to support unemployed individuals in reentering the labor market.

These social and institutional settings strongly affected men's transition to fatherhood. High risk of poverty, unemployment, and insufficient poverty prevention should have increased young men's perspective and resource problems dramatically. Thus, a postponement or avoidance of fatherhood (as observed) could be a strategy for dealing with these conditions, and for avoiding high direct and indirect costs (opportunity costs), and long-lasting economic, social, and psychological commitment towards a family and children. Since the chances of becoming "working poor" were high, this also applied to employed individuals (see Section 4.4, in this chapter). However, as shown by the results (see Sections 4.3 and 4.4, in this chapter) and the previous discussion, the most vulnerable groups were young, less-educated and non-employed men, and individuals with no educational degree.

Despite these impacts of social policies, the increased compatibility between fatherhood and military service can be regarded as a key example of an institutional effect. Russia's policies directly affected the opportunities to procreate by supporting the maintenance of a partnership (see Section 4.4, in this chapter).

Family policy - ideological and institutional effects: The Russian system of family support, maternity leave, childcare, and child benefits was fundamentally reformed in 1995. These changes contributed substantially to the decreased likelihood of a first procreation among men.

The publicly funded Russian childcare system (nurseries and kindergartens) experienced serious financial shortages. As a result, the number of free and/or cheap childcare places decreased substantially, and the number of private institutions grew (see Chapter III, Section 4.2.2). Because of this, children became more "expensive" through direct (cost for childcare) and indirect costs (opportunity costs if childcare was not available or too expensive, and had to be provided by the family).

In the course of reforms, maternity leave was extended to 140 days around the birth. Paid childcare leave was introduced. It contained 1.5 years with payment, and an additional 1.5 years without payment. Despite the fact that these payments did not cover more than a quarter of the real living costs, a large proportion of females took the full leave period. (see Chapter III, Section 4.2.2) On the other hand, even though

men were incorporated into the new leave regulations, they usually never used this opportunity. As a consequence, the economic pressure (resources and perspectives) on men preparing to be fathers increased, since their income had to been judged against the needs of a family.

A third pillar of the reforms was the steadily and steeply growing birth grant (see Chapter III, Section 4.2.2). Driven by politicians' pronatalist demographic ideas, it became a substantial contribution to the family budget, and can be considered to be one of the few measures which decreased the direct cost of fatherhood (at least in the short term).

Generally, Russia's family policy experienced a remarkable shift towards neo-liberalism and towards traditional role allocation within the family and society (see Chapter III, Section 8). As a consequence, the "male breadwinner model," the "housewife," and the "good mother" raising her children at home increasingly became politically promoted and individually accepted role models.

Such traditional family models might help to resolve men's incompatibility problems (and exacerbate them for females), but they increase men's resource and perspective problems (see Chapter II). This was particularly problematic because the economic reality required the incomes of both partners to maintain a family. Thus, the new Russian family policy increased the preconditions for fatherhood in basically every sense, i.e., income, job prospects, job opportunities, education, and psychological security (Alich 2005). Given these pressures, men would have been very likely to reject or postpone fatherhood between 1995 and 2005.

Economic conditions and reform effects: Despite a weak economic upturn in 1996, the second half of the 1990s was characterized by worsening economic conditions, and the major crisis of August 1998 (among other features, it brought a second round of hyperinflation). The negative economic trend finally reversed in 1999 and in the new millennium, when the Russian economy grew and stabilized. However, the major sources of growth and stabilization were cheap labor (see devaluation of labor and "working poor"), a productivity decline, a weak ruble, and rising oil prices – and (again) a centralization of control over the economy. Thus, the liberalization of the economic system, which started at the end of the 1980s (under President Gorbachev) and continued in the 1990s (under President Putin) substantially failed (see Chapter

III, Sections 2 and 3). Furthermore, Russia's economic growth did not directly improve individual living conditions for the majority of Russia's population.

These economic developments help to explain procreation patterns among men since 1995. They might particularly explain why men's fatherhood propensity decreased so dramatically between 1995 and 1999 (even if important individual characteristics are controlled for; see Section 4.1, in this chapter). In particular, the hyperinflation crisis in 1998 should have further damaged young men's economic prospects, resources, and perspectives. Consequently, young men became very unlikely to meet the conditions for resolving the perspective and resource problems associated with fatherhood, i.e., to fulfill the economic needs and to provide a secure future for a family. This trend continued into the new millennium, but weakened slightly.

The effects of an individual's educational level and main activity status also reflect the new economic reality and its impact on a young man's decision to become a father. *First*, the devaluation of labor decreased the procreational differences between employed and non-employed males. As a result, the likelihood of having a child became more similar between these two groups after 1995 than it was in the socialist period. *Second*, the increasing value of human capital (i.e., education) on the labor market enhanced job prospects for better-educated individuals. Consequently, highly educated men postponed fatherhood because of their longer stay in education. However, they were less likely than lower-educated men to remain childless. *Third*, I argue that one of the reasons for the increased incompatibility between participation in education and fatherhood was the growing (economic) importance of an educational degree. This made a disruption of education due to the birth of an own child very costly in terms of individual future opportunities.

Finally, I argue that the shift away from a very traditional direct marriage pattern closely connected to birth, towards a growing share of non-marital procreation and more progressive and individual family behavior (see also Chapter VII), was supported by the broad social changes and increased individual freedom introduced by Gorbachev at the end of the 1980s (see Chapter III, Section 2).

Chapter IX
Summary and Conclusions

This study was carried out in order to describe and explain Russian men's fertility and nuptiality behavior between 1960 and 2004 – across a period of dramatic political, economic, institutional, and social change. This work provides a very important and new aspect to demographic research on Russia, since (so far) there has been no comprehensive research dealing with the "male side" of Russia's fertility and nuptiliaty change.

It was shown how Russian men's decisions for or against fatherhood, and their decisions for non-marital cohabitation or marriage, contributed to the changed surface of aggregate fertility and nuptiality measures, and to a new demographic face of the Russian society. The study analyzed and presented sets of factors that profoundly determine men's fertility and nuptiality decisions. The interpretation of the findings was based on a comprehensive theoretical framework, entailing the micro- and macro-levels of men's demographic processes and behavior.

The *first* research question asked in what ways Russia's fertility and nuptiality changes were a response to altered economic, institutional, or social opportunity structures.[36]

Chapters VII and VIII provided a comprehensive description of macro-level factors that influence men's fertility and nuptiality behavior on the economic, institutional, and social levels. In addition, a detailed interpretation of these findings was provided.

It was shown that the economic developments in Russia left their mark on men's fertility and nuptiliaty behavior, particularly in the 1990s. The main mechanisms found to be responsible for this pattern were: the devaluation of labor the increased importance of human capital (education); the spread of unemployment and the increased risk of poverty; the two major financial crises, which led to a devaluation of "real" capital and income; and the increased direct and indirect costs of time, effort,

[36] Detailed formulation of the research questions according to Chapter IV, Section 5: How did Russian men's family formation behavior changed over the period? How did the economic, institutional, and social changes affect men's nuptiality and fertility decisions? Are there clear pre- and post-socialist patterns?

and investments in a family or partnership, particularly for better-educated and employed males.

Institutional structures and changes indentified to be strongly involved in men's changing family and fertility behavior were as follows: A. the educational system: incompatibility of the system, privatization and changes in the age structure when achieving a certain degree; B. the military service: incompatibility, hazing, universality of draft, and changes in the duration of service and draft ages; C. the housing market: housing conditions and opportunies and pre-conditions for forming an independent household, D. family policies: re-traditionalization and re-enforcement of the male breadwinner and the female family roles, increased costs and decreasing coverage of childcare, incorporation of men in family leave regulations, financial support for children/families with children (birth grant, child payments); E. social policies: end to societal full employment poverty relief, unemployment benefits insufficiently large to protect individuals and families from poverty (working poor), scattered social benefits and entitlements.

The social value structures and the social institutions that were found to have a significant impact on male fertility and nuptialty behavior were mainly Russia's male-dominated society and family life, which were shown to be resistant to socialist Soviet ideology and policies.

The *second* research question asked how Russian men's educational and employment characteristics affect their nuptiality and fertility decisions over time. I argued that the strength of period change (regarding these factors) could be assessed as individual adaptation processes to altered opportunity structures.[37]

The empirical investigations and the following interpretation of the results revealed that men's educational and employment characteristics strongly shaped men's fertility and nuptiality behavior across all periods observed. Thereby the follow relative traditional patterns: i.e., (highly) educated and especially employed men have higher chances of marrying (directly or subsequently) and becoming fathers, even if they

[37] Detailed formulation of the research questions according to Chapter IV, Section 5: How does a man's employment status and education influence his first union formation and first procreation behavior? Is the impact of educations and employments on fertility and nuptiality influenced by the societal transformation? What is the explanation for the patterns?

tend to postpone these decisions to higher ages. However, across the period of observation, the employment status and educational levels of individuals gained greater importance for men's transition to fatherhood and for the transition to a first union following the breakdown of Soviet state socialism. Russian society moved away from educational and employment homogeneity regarding men's fertility and nuptiality patterns (during Soviet times) towards heterogeneity (after the collapse of the socialist system).

The *third* main goal of this study was to describe the impact of men's transition to fatherhood on their nuptiality transitions (cohabitation and marriage), and, conversely, the effect of men's nuptiality decisions on their fertility behavior. The strength of the interrelation of these processes was used to indicate value changes as described by the SDT approach.[38]

Russian men's preferences for starting a union changed clearly over time – from direct marriage to non-marital cohabitation. Furthermore, the results of Chapter VII and VIII pointed to a very strong interrelation between men's consensual union formation (marital or non-martial) and their transition to fatherhood. However, the form of this interrelation altered strongly over the period of observation, shifting from a very traditional to a more progressive pattern. Thus, procreation became more weakly related to marriage, but more strongly related to non-marital cohabitation, and vice versa. Furthermore, non-marital consensual unions were increasingly chosen by individuals facing temporary, insecure, poor, or incompatible life domains and phases. These developments had already started to occur well before the 1990s. In my view, this shows that an underlying value change or individualization process was and is occurring in Russia, which provides individuals with the chance to choose a certain family life form that fits their current living conditions and opportunity structures – in other words, a life that fits their current perspectives, resources, and opportunities.

[38] Which kind of union formation (marital or non-marital) promotes men's transition to fatherhood? How does this interrelation change over the societal transformation? Is this change an outcome of a value change, as supposed by the SDT approach?

References

Adler, M.A. 1997. "Social Change and Declines in Marriage and Fertility in Eastern Germany." *Journal of Marriage and the Family* 59(1):37-49.

Aldous, J. 1983. "Problematic Elements in the Relationship Between Churches and Families." Pp. 67-80 in *Families and Religion: Conflict and Change in Modern Society*, edited by W.V. D'Antonio and J. Aldous. Beverly Hills, CA: Sage Publications.

Alexeev, M. 1988. "Market vs. Rationing: The Case of Soviet Housing." *The Review of Economics and Statistics* 70(3):414-420.

Alich, D. 2006. "Male Fertility - The Case of Russia." *Presentation at the EPC Liverpool 2006*.

—. 2007. "Differences Between Male and Female Fertility in Russia - An evaluation of basic pattern and data quality using the first wave of the Russian GGS." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP-2007-017:1-30.

Allen, R.C. 2001. "The Rise and Decline of the Soviet Economy." *Canadian Journal of Economics* 34(4):859-881.

Andersson, G. 2000. "Focus on Population Subgroups - Men and Their Demographic Behaviour." Pp. 83-85 in *Generations and Gender Programme - Exploring the future research and data collection options*, edited by United Nations Economic Commission for Europe. New York: United Nations.

Andersson, G., J.M. Hoem, and A.-Z. Duvander. 2006. "Social differentials in speed-premium effects in childbearing in Sweden." *Demographic Research* 14(4):51-70.

Arbatov, A.G. 1998. "Military Reform in Russia: Dilemmas, Obstacles, and Prospects." *International Security* 22(4):83-134.

Arhangelsky, V.D. 1998. "Modern Russian Social Security." *Social Service Review* 72(2):251-268.

Aries, P. 1998. *Die Geschichte der Kindheit*. München: DTV.

Avdeev, A. 2001. "The extend of the fertility decline in Russia: Is the one child family here to stay?" *IUSSP Seminar on "International Perspectives on Low Fertility: trends, theories and policies"*.

—. 2003. "On the way to one-child life: are we beyond the point of no return? Some considerations concerning the fertility decrease in Russia." Pp. 139-164 in *Population of Central and Eastern Europe. Challenges and Opportunities - European Population Conference Warsaw*, edited by I.E. Kotowska and J. Jóźwiak. Warsaw: Statistical Publishing Establishment.

Avdeev, A.and A. Monnier. 1999. "La Nuptialite Russe Depuis La Guerre: Facteurs Structurel et de Comportement." *Congres Europeen de la Population, La Haye* Session B-2: "Household and Families in Europe: Case Studies":1-19.

—. 2000. "Marriage in Russia: A Complex Phenomenon Poorly Understood." *Population: An English Selection* 12:7-49.

Bachrach, C.and F. Sonenstein. 1998a. "Male Fertility and Family Formation: Research and Data Needs on the Pathways to Fatherhood." Pp. 1-36 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation and Fatherhood.* , edited by Federal Interagency Forum on Child and Family Statistics. Washington D.C.: Federal Interagency Forum on Child and Family Statistics.

—. 1998b. "Report of the Working Group on Male Fertility and Family Formation." Pp. 1-36 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation and Fatherhood.* , edited by Federal Interagency Forum on Child and Family Statistics. Washington D.C.: Federal Interagency Forum on Child and Family Statistics.

Bachrach, C.A., J. Evans, S.A. Ellison, and K. Shepherd Stolley. 1992. "What price do we pay for single sex fertility surveys?" *paper presented at the Annual Meeting of the Population Association of America, Denver*.

Bandura, A. 1997. *Self-efficacy. The exercise of control*. New York: Freeman & Co.

Barkalov, N.B. 2005. "Changes in the Quantum of Russian Fertility During the 1980s and Early 1990." *Population and Development Review* 31(3):545-556.

Barlow, A. 2004. "Regulation of Cohabitation, Changing Family Policies and Social Attitudes: A Discussion of Britain Within Europe " *Law & Policy* 26(1):57-86.

Barlow, A.and R. Probert. 2004. "Regulating Marriage and Cohabitation: Changing Family Values and Policies in Europe and North America - An Introductory Critique." *Law & Policy* 26(1):1-11.

Baxter, W. 1998. "Chapter 9: The Armed Forces." in *Russia : A Country Study* edited by L.o.C. Federal Research Division and G.E. Curtis. Washington, DC: Federal Research Division, Library of Congress.

Beck-Gernsheim, E. 1986. "Bis daß der Tod Euch scheidet? Wandlungen von Liebe und Ehe in der modernen Gesellschaft." *Archiv für Wissenschaft und Praxis der sozialen Arbeit* 17:144-173.

Becker, G.S. 1993. *A Treatise on the Family*. Havard: Havard University Press.

Berger, P.L.and H. Kellner. 1965. "Die Ehe und die Konstruktion der Wirklichkeit." *Soziale Welt* 16:220-235.

Bernhardt, E.M. 2004. "Is the Second Demographic Transition a useful concept for demography?" Pp. 25-28 in *Vienna Yearbook of Population Research*, edited by G. Feichtinger. Vienna: Verlag der Österreichischen Akadamie der Wissenschaften.

Bernhardt, E.M.and F.K. Goldscheider. 2001. "Men, Resources, and family living: The determinants of union and parental status in the United States and Sweden." *Journal of Marriage and Family* 63:793-803.

Bernhardt, E.M.and B. Hoem. 1985. "Cohabitation and Social Background: Trends Observed for Swedish Women Born between 1936 and 1960." *European Journal of Population* 1:375-395.

Billari, F.C.and H.-P. Kohler. 2002. "Patterns of Lowest-Low Fertility in Europe." *Working Paper at the Max Planck Institute for Demographic Research Rostock* 4.

Bledsoe, C., S. Lerner, and J.I. Guyer. 2000. *Fertility and the Male Life-Cycle in the Era of Fertility Decline*. New York: Oxford University Press.

Blossfeld, H.-P. 1995. *The new role of women: family formation in modern societies*. Boulder, Colorado: Westview Press.

Blossfeld, H.-P., A. Hamerle, and K.U. Mayer. 1986. *Ereignisdatenanalyse - Statistische Theorie und Anwendung in den Wirtschafts- und Sozialwissenschaften*. Frankfurt/New York: Campus Verlag.

Blossfeld, H.-P.and J. Huinink. 2001. "Lebensverlaufsforschung als sozialwissenschaftliche Forschungsperspektive: Themen, Konzepte, Methoden und Probleme." *BIOS* 14(2):5-31.

Blossfeld, H.-P.and G. Rohwer. 2001. *Techniques of Event History Modeling - New Approaches to Causal Analysis*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.

Booth, A.and D. Johnson. 1988. "Premarital Cohabitation and Marital Success." *Journal of Family Issues* 9:255-272.

Bracher, M.and G. Santow. 1998. "Economic independence and union formation in Sweden." *Population Studies* 52:275-294.

Bühler, C. 2004. "Additional Work, Family Agriculture, and the Birth of the First and Second Child in Russia at the Beginning of the 1990s." *Population Research and Policy Review* 23:259-289.

Bumpass, L.L.and J. Sweet. 1989. "National Estimates of Cohabitation." *Demography* 26(615-625).

Callister, P. 1999. "No Job, No Wife? - Fathers, Paid Work and Changes in Living Arrangements in New Zealand." Pp. 116-132 in *Perspectives on Fathering II*, edited by S. Birks and P. Callister. Palmerston North: Massey University - Centre for Public Policy Evaluation.

Cherlin, A.and J. Griffith. 1998. "Methodological Issues in Improving Data on Fathers." Pp. 1-27 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation and Fatherhood.*, edited by Federal Interagency Forum on Child and Family Statistics. Washington D.C.: Federal Interagency Forum on Child and Family Statistics.

Cohen, T.F. 1993. "What Do Fathers Provide?" Pp. 1-22 in *Men, Work and Family*, edited by J.C. Hood. Newbury Park
London: SAGE Publications.

Coleman, D.A. 2000. "Male Fertility Trends in Industrial Countries: Theories in Search of Some Evidence." Pp. 29-60 in *Fertility and the Male Life-Cycle in the Era of Fertility Decline*, edited by C. Bledsoe, S. Lerner, and J.I. Guyer. New York: Oxford University Press.

Conrad, C., M. Lechner, and W. Werner. 1996. "East German Fertility After Unification: Crisis or Adaptation." *Population and Development Review* 22(2):331-358.

Cooper, J. 1989. "The Military and Higher Education in the USSR." *Annals of the American Academy of Political and Social Science* Vol. 502, Universities and the Military:108-119.

Cooper, W. 1998. "Chapter 6: The Economy." in *Russia : A Country Study* edited by L.o.C. Federal Research Division and G.E. Curtis. Washington, DC: Federal Research Division, Library of Congress.

Council of Europe. 2004. *Demographic Yearbook*. Strasbourg Cedex: Council of Europe Publishing.

Courgeau, D.and É. Lelièvre. 1992. *Event History Analsis in Demgraphy*. New York: Oxford University Press.

Curtis, G.E.and M. Leighton. 1998. "Chapter 5: The Society and its Environment." in *Russia : A Country Study* edited by L.o.C. Federal Research Division and G.E. Curtis. Washington, DC: Federal Research Division, Library of Congress.

Darsky, L.and S. Scherbov. 1995. "Marital Status Behavior of Women in the Former Soviet Republics." *European Journal of Population* 11(1):31-62.

DaVanzo, J.and C.A. Grammich. 2001. *Dire Demographics - Population Trends in the Russian Federation*. Santa Monica, CA: RAND Corporation.

de Bruijn, B. 1999. *Foundation of demographic theory - Choice, process, context*. Amsterdam: PDOD Thela Thesis.

Di Giulio, P.and A. Rosina. 2007. "Intergenerational family ties and the diffusion of cohabitation in Italy." *Demographic Research* 16(14):441-468.

DIWand IfW. 2001. "Russian Economic Recovery in Jeopardy." *Economic Bullentin* 38(2):53-72.

Donath, D. 2004. "Die politische Entwicklung der Russischen Föderation." in *Deutsche Gesellschaft für Auswärtige Politik e.V.*

Dorbritz, J. 2000. "Europäische Fertilitätsmuster." *Zeitschrift für Bevölkerungswissenschaft* 25(2):235-266.

—. 2003. "Social, political and economic tranformation." Pp. 21-46 in *Demographic Consequences of Economic Transition in Countries of Central and Eastern Europe*, edited by D. Philipov and J. Dorbritz. Strasbourg Cedex: Council of Europe Publishing.

Driscoll, A., K. Moore, W. Mosher, M. O'Connell, and S. Ventura. 1998. "Indicators of Male Fertility, Family Formation and Sexual Behavior." Pp. 1-13 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation and Fatherhood*, edited by F.I.F.o.C.a.F. Statistics. Washington D.C.: Federal Interagency Forum on Child and Family Statistics.

Duberstein Lindberg, L., F. Lund Sonenstein, G. Martinez, and J. Marcotte. 1998a. "Completeness of Young Fathers' Reports of Fertility." *Journal of Economic and Social Measurement* 24:15-23.

Duberstein Lindberg, L., C. Nathanson, J. Pleck, and K. Wolpin. 1998b. "Integrating Theoretical Perspectives on Gender, Union Formation and Fertility." Pp. 1-14 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation, and Fatherhood*, edited by S. Federal Interagency Forum on Child and Family. Washington D.C.: Federal Interagency Forum on Child and Family Statistics.

Dykstra, P.and L. van Willens. 1999. "Introducation: The Life Course Approach as an Interdisziplinary Framework for Population Studies." Pp. 1-22 in *Population Issues - An Interdisciplinary Focus*, edited by L. van Wissen and P. Dykstra. New York: Kluwer Academic / Plenum Publishers.

Easterlin, R.A. 1961. "The American Baby Boom in Historical Perspective." *American Economic Review* 51:869-911.

—. 1971. "Does Human Fertility Adjust to the Environment." *The American Economic Review* 61(2):399-407.

—. 1987. *Birth and Fortune - The Impact of Numbers on Personal Welfare*. Chicago & London: The University of Chicago Press.

Elder Jr., G.H. 1978. "Family History and the Life Course." Pp. 17-64 in *Transitions - The Family and the Life Course in Historical Perspective*, edited by T.K. Hareven. New York: Academic Press.

—. 1985. "Perspectives on the Life Course." Pp. 23-49 in *Life Course Dynamics - Trajectories and Transitions, 1968-1980*, edited by G.H. Elder Jr. Ithaca: Cornell University Press.

Elder Jr., G.H., M. Kirkpatrick Johnson, and R. Crosnoe. 2003. "Handbook of the Life Course." Pp. 3-19 in *The Emergence and Development of Life Course Theory*, edited by J.T. Mortimer and M.J. Shanahan. New York: Kluwer Academic / Plenum Publishers.

Ericson, R.E. 2001. "Does Russia Have A "Market Economy"?" *East European Politics and Societies* 15(2):291-319.

Esping-Andersen, G. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.

—. 1999. *Social Foundations of Postindustrial Economies*. New York: Oxford University Press.

Federal State Statistics Service - Rosstat. 2005. *Russia in Figures - Official Publication*. Moscow: Federal State Statistics Service - Rosstat.

Foley, M.C. 1997. "Determinants of Unemployment Duration in Russia." *Center Discussion Paper - EGC Yale University* 779.

Forste, R. 2002. "Where are all the men? A conceptual analysis of the role of men in family formation." *Journal of Family Issues* 23:579-600.

Frejka, T.and J.-P. Sardon. 2003. "Fertility trends and prospects in Central and Eastern Europe: the cohort perspective." Pp. 91-116 in *Population of Central and Eastern Europe. Challenges and Opportunities - European Population Conference Warsaw*, edited by J. Jóźwiak and I.E. Kotowska. Warsaw: Statistical Publishing Establishment.

Füllsack, M. 2001. "Official Figures and Unofficial Realities: Employment Rates and Their Significance in Russia." *Europe-Asia Studies* 53(4):613-625.

Gauthier, A.H. 2001. "The Impact of Public Policies on Families and Demographic Behaviour." *Paper at the ESF/EURESCO Conference: The second demographic transition in Europe*.

Generation and Gender Program - Contextual Database. 2007. "Russia." Rostock: Max-Planck-Institut for demographic research.

Gerber, T.P. 2000. "Educational Stratification in Contemporary Russia: Stability and Change in the Face of Economic and Institutional Crisis." *Sociology of Education* 73(4):219-246.

—. 2002. "Structural Change and Post-Socialist Stratification: Labor Market Transitions in Contemporary Russia." *American Sociological Review* 67(5):629-659.

Gerber, T.P.and D. Berman. 2005. "Union Formation in Russia, 1985-2001." *Paper presented at the Annual Meeting of the Population Association of America, Philadelphia*:22.

Gerber, T.P.and M. Hout. 1995. "Educational Stratification in Russia During the Soviet Period." *The American Journal of Sociology* 101(3):611-660.

Glatzer, W. 1997. *Nichteheliche Lebensgemeinschaften - Eheähnlich oder allternativ? Stand der Forschung in Deutschland 196/97*. Wiesbaden: Bundesinstitut für Bevölkerungsforschung.

Goldscheider, F.K.and G. Kaufman. 1996. "Fertility and Commitment: Bringing Men Back In." *Population and Development Review* 22:87-99.

Goldscheider, F.K.and L.J. Waite. 1986. "Sex Differences in the Entry Into Marriage." *The American Journal of Sociology* 92(1):91-109.

Goodwin, R.and T. Emelyanova. 1995. "The Perestroika of the Family? Gender and Occupational Differences in Family Values in Modern Day Russia." *Sex Roles* 32(5/6):337-351.

Goskomstat of Russia. 2005. *The Demographic Yearbook of Russia*. Moscow: Goskomstat.

Greene, M.E.and A.E. Biddlecom. 2000. "Absent and problematic men: Demographic accounts of male reproductive roles." *Population and Development Review* 26(1):81-115.

Gregory, P.R.and I.L. Collier Jr. 1988. "Unemployment in the Soviet Union: Evidence from the Soviet Interview Project." *The American Economic Review* 78(4):613-632.

Gross, N. 1990. "Youth and the Army in the USSR in the 1980s." *Soviet Studies* 42(3):481-498.

Guzanova, A.K. 1997. "The Housing Market in the Russian Federation: Privatization and its Implications for Market Development." *World Bank Policy Research Working Paper* No. 1891.

Hall, T.W.and J.E. Elliot. 1999. "Poland and Russia one Decade after Shock Therapy." *Journal of Economic Issues* 33(2):305-314.

Hanson, P. 1999. "The Russian Economic Crisis and the Future of Russian Economic Reform." *Europe-Asia Studies* 51(7):1141-1166.

—. 2007. "The Russian Economic Puzzle: Going Forwards, Backwards or Sideways?" *International Affairs* 83(5):869-889.

Harrison, M. 2003. "Post-War Russian Economic Growth: Not a Riddle." *Europe-Asia Studies* 55(8):1323-1329.

Hobson, B. 2002. *Making Men into Fathers - Men, Masculinities and the Social Politics of Fatherhood*. Stockholm: Stockholm University.

Hobson, B.and D. Morgan. 2002. "Introduction." Pp. 1-33 in *Making Men into Fathers - Men, Masculinities and the Social Politics of Fatherhood*, edited by B. Hobson. Stockholm: Stockholm University.

Hoem, J. 1980. "Starting Age and Subsequent Birth Intervals in Cohabitational Unions in Current Danish Cohorts, 1975." *Demography* 17(3):275-295.

—. 1986. "The impact of education on modern family- and union initiation." *European Journal of Population* 2:113-133.

Hoem, J.M. 1971. "Point estimation of forces of transition in demographic models." *Journal of the Royal Statistical Society Series B-Statistical Methodology* 33(2):275-276.

Hoem, J.M., A. Jasilioniene, D. Kostova, and C. Muresan. 2007. "The second demographic transition in selected countries in Central and Eastern Europe: union formation as a demographic manifestation." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2007-026:9.

Hoem, J.M.and D. Kostova. 2007. "First unions in Bulgaria: A joint analysis of marital and nonmarital union formation." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2007-020:1-20.

Hoem, J.M.and B. Rennermalm. 1985. "Modern Family Initiation in Sweden: Experience of Women Born between 1936 and 1960." *European Journal of Population* 1:81-112.

Hogan, D.P.and F. Goldscheider. 2000. "Men's flight from children in the US? A historical perspective." *Population Association of Amerika*.

Huinink, J. 1995a. "Education, Work, and Family Patterns of Men: The Case of West Germany." Pp. 247-262 in *The New Role of Women: Family Formation in Modern Societies*, edited by H.-P. Blossfeld. Boulder: Westview Press.

—. 1995b. *Warum noch Familie? Zur Attraktivität von Partnerschaft und Elternschaft in unserer Gesellschaft*. Frankfurt am Main: Campus Verlag.

—. 1998. "Ledige Elternschaft junger Frauen und Männer in Ost und West." Pp. 301-320 in *Der Transformationsprozeß. Analysen und Befunde aus dem Institut für Soziologie*, edited by R. Metze, K. Mühler, and K.-D. Opp. Leipzig: Universitätsverlag Leipzig.

—. 2001. "The Macro-Micro Link in Demography - Explanations of Demographic Change." *Presentation at the EuroConference "The Second Demographic Transition in Europe", Bad Herrenalb*:1-21.

—. 2002a. "Familie und Familienformen im Wandel - eine soziologische Betrachtung." Pp. 105-134 in *In Hoffnung widerstehen*, edited by F.W. Busch and R. Külblin. Oldenburg: BIS.

—. 2002b. *Nuptialität und Fertilität II - Theorie und Empirie des Wandels der Lebensformen: Script zur Vorlesung*. Rostock.

—. 2002c. "Polarisierung der Familienentwicklung in europäischen Ländern im Vergleich." Pp. 49-73 in *Elternschaft heute - Zeitschrift für Familienforschung, Sonderheft 2*, edited by N.F. Schneider and H. Matthias-Bleck. Opladen: leske + budrich.

Huinink, J.and D. Konietzka. 2003. "Lebensformen und Familiengründung – Nichteheliche Elternschaft in West- und Ostdeutschland in den 1990er Jahren." Pp. 65-93 in *Partnerschaft und Familiengründung - Analysen der dritten Welle des Familiensurveys*, edited by J.H. Marbach and W. Bien. Opladen: Leske und Budrich.

—. 2007. *Familiensoziologie - Eine Einführung*. Frankfurt: Campus Verlag.

Huinink, J.and M. Kreyenfeld. 2004. "Family Formation in Times of Social and Economic Change: An Analysis of the 1971 East German Cohort." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2004-013.

Huinink, J.and K.U. Mayer. 1995. "Gender, Social Inequality, and Family Formation." Pp. 168-199 in *Gender and Family Change in Industrialized Countries*, edited by K.O. Mason and A.-M. Jensen. Oxford: IUSSP/Oxford University Press,.

Huinink, J.and M. Wagner. 1998. "Individualisierung und Pluralisierung von Lebensformen." in *Die Individualisierungsthese*, edited by J. Friedrichs. Opladen: Leske + Budrich.

ILO, J.-V. Gruat, E. Ivanova, S. Misikhina, L. Ovcharova, and T. Tchetvernina. 2001. "Russian Federation: Unemployment, the working poor and social consequences." *ILO Moscow Paper*.

Independent Institute for Social Policy. 2004. *Generation and Gender Survey - Field Work in Russia - Technical Report of the Main Study*. Moscow: Independent Institute for Social Policy.

Inglehart, R. 1977. *The silent revolution: Changing values and political styles among western publics*. Princeton: Princeton University Press.

Ispa, J. 1994. *Child Care in Russia - In Transition*. Westport: Bergin & Garvey.

Kalabikhina, I.E. 2006. "Fertility in Russia." *EPC Liverpool*.

Kalmijn, M.and R. Luijkx. 2005. "Has the reciprocal relationship between employment and marriage changed for men? An analysis of the life histories of men born in the Netherlands between 1930 and 1970." *Populations Studies* 59(2):211-231.

Kamper-Jörgensen, M., N. Keiding, and L.B. Knudson. 2004. "Age, Period and Cohort Effects on First-Child Fertility in Danish Men." *Research Reports, Department of Epidemiology Research - Copenhagen*.

Kantorová, V. 2004a. "Education and Entry into Motherhood: The Czech Republic during State Socialism and the Transition Period (1970-1997)." *Demographic Research* Special Collection 3:245-274.

—. 2004b. *Family Life Transitions of Young Women in a Changing Society: First Union Formation and Birth of First Child in the Czech Republic, 1970-1997*. Prague: Charles University.

Kaplan, E.L.and P. Meier. 1958. "Non-parametric estimation from incomplete observations." *Journal of the American Statistical Association* 53:457-481.

Kartseva, L.V. 2005. "The Model of the Family Under the Conditions of the Tranformation of Russian Society." *Russian Social Science Review* 46(4):59-75.

Kaufmann, F.-X. 1990. *Zukunft der Familie - Stabilität, Stabilitätsrisiken und Wandel der familialen Lebensformen sowie ihre gesellschaftlichen und politischen Bedingungen*. München: Verlag C.H.Beck.

Kharkova, T.L.and E.M. Andreev. 1999. "Socio-economic differentiation of fertility in Russia." *European Population Conference* Session E2.

Khotkina, Z. 1994. "Women in the Labour Market: Yesterday, Today and Tomorrow." in *Women in Russia. A New Era in the Russian Feminism*, edited by A. Posadskaya. Moscow: Verso.

Klein, J.P.and M.L. Moeschberger. 1997. *Survival Analysis - Techniques for Censored and Truncated Data*. New York: Springer.

Klein, T. 1995. "Heiratsmarkt und "Marriage Squeeze" - Analysen zur Veränderung von Heiratsgelegenheiten in der Bundesrepublik." *Familie im Brennpunkt von Wissenschaft und Forschung*:357-367.

Klein, T., A. Lengerer, and M. Uzelac. 2002. "Partnerschaftliche Lebensformen im internationalen Vergleich." *Zeitschrift für Bevölkerungswissenschaft* 3:359-379.

Kohler, H.-P. 2001. "Fertility Decline in Russia after 1990: The Role of Economic Uncertainty and Labor Market Crises." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2001-013:1-22.

Konitzer, A.and S.K. Wegren. 2006. "Federalism and Political Recentralization in the Russian Federation: United Russia As the Party of Power." *Publius* 36(4):503-522.

Kornai, J. 1979. "Resource-constrained versus demand-constrained systems " *Econometrica* 47:801-819.

Kosareva, N.and R. Struyk. 1993. "Housing Privatization in the Russian Federation." *Housing Policy Debate* 4(1):81-100.

Kostova, D. 2007. "The rise of cohabitation in Bulgaria: who are the forerunners of the new family model?" *Paper presented at the Annual Meeting of the Population Association of America*:30.

Koytcheva, E. 2006. *Social-Demographic Differences of Fertility and Union Formation in Bulgaria Before and After the Start of the Societal Transition*. Rostock: University of Rostock.

Kravdal, Ö. 1999. "Does marriage require a stronger economic underpinning than informal cohabitation?" *Population Studies* 53:63-80.

—. 2001. "The High Fertility of College Educated Women in Norway: An Artefact of the Seperate Modelling of Each Parity Transition." *Demographic Research* 5:188-214.

Kreyenfeld, M. 2001. *Employment and Fertility - East Germany in the 1990s*. Rostock: University of Rostock.

—. 2002. "Time-squeeze, partner effect or selfselection? An investigation into the positive effect of women's education on second birth risks in West Germany." *Demographic Research* 7:16-41.

—. 2004. "Fertility decisions in the FRG and GDR - An analysis with data from the German fertility and family survey." *Demographic Research* Special Collection 3(Article 11):274-318.

Kreyenfeld, M.and D. Konietzka. 2004. "Angleichung oder Verfestigung von Differenzen? Geburtenentwicklung und Familienformen in Ost- und Westdeutschland." *Berliner Debatte Initial. Sozial- und geisteswissenschaftliches Journal* 15(4):26-41.

Kulik, M.C. 2004. "The emergence of cohabitation in Poland?" *Poster presented at the Annual Meeting of the Population Association of America, Boston*.

—. 2005. "The emergence of cohabitation as a first union and its later stability: the case of Hungarian women." *MPIDR Working Paper* WP 2005-031:30.

Kurz, K. 2005. "Die Familiengründung von Männern im Partnerschaftskontext." Pp. 178-197 in *Männer - Das 'vernachlässigte' Geschlecht in der Familienforschung*, edited by A. Tölke and K. Hank. Wiesbaden: VS Verlag für Sozialwissenschaften.

Lesthaeghe, R. 1992. "Der zweite demographische Übergang in den westlichen Ländern: Eine Deutung." *Zeitschrift für Bevölkerungswissenschaft* 3:313-354.

—. 1998. "On Theory Development: Application to the Study of Family Formation." *Population and Development Review* 24:1-14.

Lichter, D.T., D.K. McLaughlin, G. Kephart, and D.J. Landry. 1992. "Race and the Retreat From Marriage: A Shortage of Marriageable Men?" *American Sociological Review* 57(6):781-799.

Liefbroer, A.C. 1991. "The choice between a married and unmarried union by young adults - a competing risk analysis." *European Journal of Population* 7:273-299.

—. 1999. "From Youth to Adulthood: Understanding Changing Patterns of Family Formation from a Life Course Perspective." Pp. 53-85 in *Population Issues - An Interdisciplinary Focus*, edited by L.J.G. van Wissen and P.A. Dykstra. New York: Kluwer Academic / Plenum Publishers.

Lillard, L.A. 1993. "Simultaneous equations for hazards - Marriage duration and fertility timing." *Journal of Econometrics* 56:189-217.

Lillard, L.A., M.J. Brien, and L.J. Waite. 1995. "Premarital Cohabitation and Subsequent Marital Dissolution: A Matter of Self-Selection?" *Demography* 32(3):437-457.

Lillard, L.A.and C.W.A. Panis. 2003. *aML Multilevel Multiprocess Statistical Software, Version 2.0*. Los Angeles, California: EconWare.

Lokshin, M.and B.M. Popkin. 1999. "The Emerging Underclass in the Russian Federation: Income Dynamics, 192-1996." *Economic Development and Cultural Change* 47(4):803-829.

Lokshin, M.and R. Yemtsov. 2005. "Who Bears the Costs of Russia's Military Draft?" *Policy, Research Working Paper of The World Bank* no. WPS 3547:33.

Lynn, N.J.and A.V. Novikov. 1997. "Refederalizing Russia: Debates on the Idea of Federalism in Russia." *The Journal of Federalism* 27(2):187-203.

Macura, M.and A.L. MacDonald. 2003. "Fertility and fertility regulation in Eastern Europe: from the socialist to the post-socialist era." Pp. 35-90 in *Population of Central and Eastern Europe. Challenges and Opportunities - European Population Conference Warsaw*, edited by I.E. Kotowska and J. Jóźwiak. Warsaw: Statistical Publishing Establishment.

Marini, M.M. 1978. "The Transition to Adulthood: Sex Differences in Educational Attainment and Age at Marriage." *American Sociological Review* 43(4):483-507.

Marsiglio, W. 1993. "Adolescent males' orientation toward paternity and contraception." *Family Planning Perspectives* 25(1):22-31.

Mason, D.S. 1988. "Glasnost, Perestroika and Eastern Europe." *International Affairs* 64(3):431-448.

Mayer, K.U.and N. Brandon Tuma. 1990. "Life Course Research and Event History Analysis: An Overview." Pp. 3-22 in *Event History Analysis in Life Course Research*, edited by K.U. Mayer and N. Brandon Tuma. Wisconsin: The University of Wisconsin Press.

Mayer, K.U.and J. Huinink. 1990. "Alters-, Perioden- und Kohorteneffecte in der Analyse von Lebensverläufen oder: Lexis a de." in *Ende der Schichtungssoziologie und Sozialpsychologie? Sonderband der Sozialen Welt*, edited by P.A. Berger and S. Hradil. Göttingen: Schwartz & Co.

Micevska, M.and O. Stark. 2004. "The Russian Marriage Drama." *Paper presented at the Econometric Society 2005 World Congress - University College of London*:27.

Mikhalev, V. 1996. "Social Security in Russia under Economic Transformation." *Europe-Asia Studies* 48(1):5-25.

Mills, M. 2000. *The Transformation of Partnerships - Canada, the Netherlands, and the Russian Federation in the Age of Modernity*. Amsterdam: THELA THESIS.

Mills, M.and F. Trovato. 2000. "A Comparative Analysis of the Effect of Pregnancy in Cohabiting Unions on Formal Marriage in Canada, The Netherlands, and Latvia: A Causal Event History Approach to Interdependent Processes." *Paper prepared for FFS Flagship Conference Partnership and Fertility – A Revolution?, 29-31 May 2000, Brussels, Belgium.* 29-31 May 2000,.

Miret-Gamundi, P. 2000. "Fathers and Families in Contemporary Spain: From Dictatorship to Democracy." Pp. 275-290 in *Fertility and the Male Life Cycle in the Era of Fertility Decline*, edited by C. Bledsoe, S. Lerner, and J.I. Guyer. New York: Oxford University Press.

Morton, H.W. 1984. "Housing in the Soviet Union." *Proceedings of the Academy of Political Science* 35(No. 3, The Soviet Union in the 1980s):69-80.

Mott, F.L.and T.A. Gryn. 2001. "Evaluating male fertility data: Who reports consistently and what are the analytical implications." *Population Association of Amerika*.

National Intelligence Council. 2007. "The Putin Era in Historical Perspective." *Conference Report - National Intelligence Council*:1-5.

Nauck, B. 2001. "Der Wert von Kindern für ihre Eltern - "Value of Children" als spezielle Handlungstheorie des generativen Verhaltens und von Generationenbeziehungen im interkulturellen Vergleich." *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 23(3):407-435.

Nauck, B.and A. Kohlmann. 1999. "Values of Children - ein Forschungsprogramm zur Erklärung von generativem Verhalten und intergenerativen Beziehungen." Pp. 53-73 in *Aktuelle Forschungsfelder der Familienwissenschaft*, edited by F.W. Busch, B. Nauck, and R. Nave-Herz. Würzburg: Ergon Verlag.

Necci, S. 1999. "Men, Family Formation and Reproduction." *IUSSP - Policy and Research Paper* No. 17.

Nechemais, C. 1981. "The Impact of Soviet Housing Policy on Housing Conditions in Soviet Cities: The Uneven Push from Moscow." *Urban Studies* 18:1-8.

Nemtsov, A. 2005. "National Experiences - Russia: Alcohol yesterday and today." *Addiction - Society for the Study of Addiction* 100:145-149.

Neyer, G. 2003. "Family Policies and Low Fertility in Western Europe." *Working Paper at the Max Planck Institute for Demographic Research Rostock*.

Nichol, J.P. 1998. "Chapter 7: Government and Politics." in *Russia : A Country Study* edited by L.o.C. Federal Research Division and G.E. Curtis. Washington, DC: Federal Research Division, Library of Congress.

Nikolaieff, A.M. 1949. "Universal Military Service in Russia and Western Europe." *Russian Review* 8(2):117-126.

Noack, T. 2001. "Cohabitation in Norway: An accepted and gradually more regulated Way of Living." *International Journal of Law, Policy and the Family* 15:102-117.

Olah, L.S., E.M. Bernhardt, and F.K. Goldscheider. 2002. "Coresidential parternal roles in three countries: Sweden, Hungary and the United States." Pp. 34-75 in *Making men into fathers - Men, maculinities and the social politics of fatherhood*, edited by B. Hobson. Stockholm: Stockholms Universitet.

Olah, L.S.and E. Fratczack. 2003. "Gendering family formation. First marriage and first birth in Hungary and Poland." Pp. 219-250 in *Population of Central and Eastern Europe. Challenges and Opportunities - European Population Conference Warsaw*, edited by I.E. Kotowska and J. Józwiak. Warsaw: Statistical Publishing Establishment.

Oppenheimer, V.K. 1988. "A Theory of marriage timing." *American Journal of Sociology* 94(3):563-591.

—. 2003. "Cohabiting and Marriage during Young Men's Career-Development Process." *Demography* 40(1):127-149.

Oppenheimer, V.K., M. Kalmijn, and N. Lim. 1997. "Men's Career Development and Marriage Timing During a Period of Rising Inequality." *Demography* 34(3):311-330.

Ott, N. 1998. "Der familienökonomische Ansatz von Gary S. Becker." Pp. 63-90 in *Gary Beckers ökonomischer Imperialismus*, edited by I. Pies and M. Leschke. Tübingen: Mohr Siebeck.

Ouvarova, L. 2004. *The Situation of Women in Russia*. Moscow: Russian Academy for Public Administration under the President of Russian Federation.

Pampel, F.C.and H.E. Peters. 1995. "The Easterlin Effect." *Annual Review of Sociology* 21:163-194.

Perelli-Harris, B. 2006. "The Influence of Informal Work and Subjective Well-Being on Childbearing in Post-Soviet Russia." *Population and Development Review* 32(4):729-753.

Pfau-Effinger, B. 1999. "Change of the family policies in the socio-cultural context of European societies." *Comparative Social Research* 18:135-159.

Philipov, D. 2002. "Fertility in times of discontinuous societal change: the case of Central and Eastern Europe." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2002-024:1-28.

—. 2003. "Possible Explanations of Demographic Changes in Central and Eastern Europe." Pp. 151-164 in *Demographic Consequences of Economic transition in Countries of Central and Eastern Europe*, edited by D. Philipov and J. Dorbritz. Strasbourg Cedex: Council of Europe Publishing.

Philipov, D.and J. Dorbritz. 2003. *Demographic Consequences of Economic Transition in Countries of Central and Eastern Europe*. Strasbourg Cedex: Council of Europe Publishing.

Philipov, D.and A. Jasilioniene. 2007. "Union formation and fertility in Bulgaria and Russia: a life table describtion of recent years." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2007-005:60.

Philipov, D.and H.-P. Kohler. 2001. "Tempo Effects in the Fertility Decline in Eastern Europe: Evidence from Bulgaria, the Czech Republic, Hungary, Poland, and Russia." *European Journal of Population* 17:37-60.

Pohl, K. 2000. "Fatherhood in East and West Germany: Results of the German Fertility and Family Survey." Pp. 257-274 in *Fertility and the Male Life-Cycle in the Era of Fertility Decline*, edited by C. Bledsoe, S. Lerner, and J.I. Guyer. New York: Oxford University Press.

Prokofieva, L.and L. Terskikh. 1998. "Standards of Living and Family Structure in a Period of Social Transformation - Russia in the 1990s." *Population: An English Selection* 10(2):483-494.

Ravanera, Z.R.and F. Rajulton. 2003. "Fertility of Canadian Men: Levels, Trends, Correlates." *Paper for the PAA 2003 - Minnesota* 03-06.

Rendall, M.S., L. Clarke, H.E. Peters, N. Ranjit, and G. Verropoulou. 1999. "Incomplete reporting of men's fertility in the United States and Britain: A research note." *Demography* 36(1):135-144.

Rieck, D. 2005. *Der Einfluss gesellschaftlicher und ökonomischer Rahmenbedingungen auf den Kinderwunsch russischer Männer*. Rostock: University of Rostock.

—. 2006. "Transition to second birth - the case of Russia." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP-2006-036.

Rindfuss, R.R.and A. Van den Heuvel. 1990. "Cohabitation: A Precursor to Marriage or an Alternative to Being Single?" *Population and Development Review* 16(4):703-726.

Robinson, N. 2003. "The Politics of Russia's Partial Democracy." *Political Studies Review* 1:149-166.

Rodgers, W.L.and A. Thornton. 1985. "Changing Pattern of First Marriage in the United States." *Demography* 22(2):265-279.

Rogov, S. 2001. *The Evolution of Military Reform in Russia, 2001*. Alexandria, Virginia: Center for Strategic Studies.

Rostgaard, T. 2004. "Family Support Policy in Central and Eastern Europe - A Decade and a Half of the Transition." *Early Childhood and Family Policy Series* 8:1-37.

Rotkirch, A. 2000. *The Man Question - Loves and Lives in Late 20th Century Russia*. Helsinki: University of Helsinki - Department of Social Policy.

Rotter, J.B. 1966. "Generalised expectancies for internal versus external control of reinforcement." *Psychological Monographs* 80(1).

Russia Media. 2006. "The challenges on the housing market for young people in Russia."

Sachs, J., W.T. Woo, S. Fischer, and G. Hughes. 1994. "Structural Factors in the Economic Reforms in China, Eastern Europe, and the Former Soviet Union." *Economic Policy* 9(18):101-145.

Scherbov, S.and H. Van Vianen. 1999. "Fertility Change in Russia since 1930: data and estimates." *Population Research Centre - Working Paper* 99-2:1-14.

—. 2001. "Marriage and Fertility in Russia of Women Born between 1900 and 1960: A Cohort Analysis." *European Journal of Population* 17:281-294.

—. 2004. "Marriage in Russia. A reconstruction." *Demographic Research* 10(Article 2):28-60.

Schmitt, C. 2005. "Kinderlosigkeit bei Männern - Geschlechtsspezifische Determinanten ausbleibender Elternschaft." Pp. 18-43 in *Männer - Das 'vernachlässigte' Geschlecht in der Familienforschung*, edited by A. Tölke and K. Hank. Wiesbaden: VS Verlag für Sozialwissenschaften.

Schoen, R., Y.J. Kim, C. Nathanson, J. Fields, and N.M. Astone. 1996. "Why do Americans want children?" *Hopkins Population Center Papers on Population* WP 96-09.

Schoenemaeckers, R.C.and E. Lodewijckx. 1999. "Demographic Behaviour in Europe: Some Results from FFS Country Reports and Suggestions for Further Research." *European Journal of Population* 15:207-240.

Schröder, C. 2006. "Cohabitation in Italy: Do parents matter?" *Genus* 62(3-4):53-85.

Sederlof, H.S.A. 2000. "Russia - Note on Social Protection." *Conference and Seminar on "Investment Climate and Russia's Economic Strategy", Moscow, April 2000*.

Semler, P. 2001. "The Russian Economy: Progress and Challenge." *Bullentin of The Atlantic Council of the United States* XII(1):1-6.

Shryock, H.S.S.J.S. 1976. *The Methods and Materials of Demography*. San Diego: Academic Press.

Simpson, H. 1998. "The Wizard of Evergreen Terrace." *The Simpsons* 10(2):205.

Skallerup, T.and J.P. Nichol. 1998. "Chapter 2: Historical Settings: 1917 to 1991." in *Russia : A Country Study* edited by L.o.C. Federal Research Division and G.E. Curtis. Washington, DC: Federal Research Division, Library of Congress.

Sobotka, T. 2004. *Postponement of childbearing and low fertility in Europe*. Amsterdam: Dutch University Press.

Sorensen, E. 1998. "Nonresident Fathers: What We Know and What's Left to Learn?" Pp. 1-9 in *NURTURING FATHERHOOD: Improving Data and Research on Male Fertility, Family Formation, and Fatherhood*, edited by Federal Interagency Forum on Child and Family Statistics: Federal Interagency Forum on Child and Family Statistics.

Soroko, E.and D. Konietzka. 2006. "Report of the external validation of the "Education and Employment Survey" on Russia." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2006-028:1-13.

Spéder, Z. 2005. "The rise of cohabitation as first union and some neglected factors of recent demographic development in Hungary." *Demográfia* 48:77-103.

Spielauer, M. 2006. "The Contextual Database of the Generation and Gender Program: Conceptual Framework and Content." *Working Paper at the Max Planck Institute for Demographic Research Rostock*.

Spielauer, M., E. Koytcheva, and D. Kostova. 2007. "First and Second Births in First and Second Unions: A Decomposition of Fertility Decline in Bulgaria and Russia Since the 1989 Economic and Political Transition." *Working Paper at the Max Planck Institute for Demographic Research Rostock* WP 2007-001:1-19.

SSAand ISSA. 2000. Pp. 190-192 in *Social Security Programms throughout the world - 2000 Europe*. Geneva: SSA, ISSA.

—. 2004. Pp. 190-192 in *Social Security Programms throughout the world - 2004 Europe*. Geneva: SSA, ISSA.

Strohmeier, K.P. 1993. "Pluralisierung und Polarisierung der Lebensformen in Deutschland." *Aus Politik und Zeitgeschichte* B17:11-22.

Stropnik, N. 2003. "Impact of transition on family policy." Pp. 559-596 in *Population of Central and Eastern Europe. Challenges and Opportunities - European Populatin Conference Warsaw*, edited by I.E. Kotowska and J. Józwiak. Warsaw: Statistical Publishing Establishment.

—. 2004. "Childbearing and parenting in low fertility countries: Enabeling choices." *European Population Forum 2004: Population Challenges and Policy Responses*:1-8.

Tchikmatcheva, L.I. 1998. "Present Problems of social insurance reform in the Russian Federation." *Paper presented at the 2nd International Research Conference on Social Security, Jerusalem 1998*.

Teachman, J.D., K.A. Polonko, and G.K. Leigh. 1987. "Marital Timing: Race and Sex Comparisons." *Social Forces* 66(1):239-268.

Teplova, T. 2004. "Social Reforms in Russia: Labour Market Implications." *Conference: Welfare state restructering: processes and social outcomes"* RC19:1-30.

—. 2007. "Welfare State Transformation, Childcare, and Women's Work in Russia." *Social Politics: International Studies in Gender, State & Society* 14(3):284-322.

Théry, I. 1994. *Le Démariage*. Paris: Editions Odile Jacob.

Thomson, E., C. Bachrach, K. Kaye, and S. Ventura. 1998. "Male Fertility in Relation to Union Formation and Dissolution." Pp. 1-28 in *Nurturing Fatherhood: Improving Data and Research on Male Fertility, Family Formation and Fatherhood*, edited by Federal Interagency Forum on Child and Family Statistics: Federal Interagency Forum on Child and Family Statistics.

Thornton, A., W.G. Axinn, and J.D. Teachman. 1995. "The Influence of School Enrollment and Accumulation on Cohabitation and Marriage in Early Adulthood." *American Sociological Review* 60(5):762-774.

Tikhomirov, V. 2000. "The Second Collapse of the Soviet Economy: Myths and Realities of the Russian Reform." *Europe-Asia Studies* 52(2):207-236.

Tishkov, V.A. 1991. "The Soviet Empire Before and After Perestroika." *Theory and Society* 20:603-629.

Titma, M., N. Brandon Tuma, and K. Roosma. 2003. "Education as a Factor in Intergenerational Mobility in Soviet Society." *European Sociological Review* 19(3):281-297.

Titma, M.and E. Saar. 1995. "Regional Differences in Soviet Secondary Education." *European Sociological Review* 11(1):37-58.

Tölke, A. 2005. "Die Bedeutung von Herkunftsfamilie, Berufsbiographie und Partnerschaften für den Übergang zur Ehe und Vaterschaft." Pp. 98-126 in *Männer - Das 'vernachlässigte' Geschlecht in der Familienforschung*, edited by A. Tölke and K. Hank. Wiesbaden: VS Verlag für Sozialwissenschaften.

Tölke, A.and M. Diewald. 2003. "Insecurities in employment careers and their impact on the transition to fatherhood in Western Germany." *Demographic Research* 9(3):41-68.

Tolts, M., O. Antonova, and E. Andreev. 2006. "Extra-Marital Conception in Contemporary Russia's Fertility." *EPC Liverpool*.

Toulemon, L. 1997. "Cohabitation is here to stay." *Population* 9:11-46.

—. 2001. "Men's fertility and family size as compared to women's." *XXIVth IUSSP General Population Conference* Session S-13.

Toulemon, L.and É. Lapierre-Adamcyk. 2000. "Demographic Patterns of Motherhood and Fatherhood in France." Pp. 293-325 in *Fertility and the Male Life-Cycle in the Era of Fertility Decline*, edited by C. Bledsoe, S. Lerner, and J.I. Guyer. New York: Oxford University Press.

Unicef. 1999. *Women in Transition - Regional Monitoring Report No. 6*. Florence: UNICEF.

United Nations. 2004. "Human Settlement Country Profile - Russian Federation."

van de Kaa, D. 1987. "Europe's second demographic transition." *Population Bullentin* 42.

—. 2001. "Postmodern Fertility Preferences: From Changing Value Orientation to New Behavior." *Population and Development Review* 27:290-331.

Vaskovics, L.and M. Rupp. 1992. "Nichteheliche und eheliche Lebensgemeinschaften - ein Vergleich." *Gegenwartskunde* 41:323-335.

Vishnevskii, A.G. 2001. "Family, Fertility, and Demographic Dynamics in Russia: Analysis and Forecast." Pp. 1-20 in *Russia's Demographic "Crisis"*, edited by J. DaVanzo and G. Farnsworth. Santo Monica, CA: RAND Corporation.

Vishnevsky, A. 1999. "Demographic Changes in Russia - Past and Future." *Yearbook of Population Research in Finland* 35:39-57.

Vishnevsky, A.G. 1996. "Family, Fertility, and Demographic Dynamics in Russia: Analysis and Forecast." Pp. 1-20 in *Russia's Demographic "Crisis"*, edited by J. DaVanzo and G. Farnsworth. Santo Monica, CA: RAND Corporation.

von der Lippe, H. 2004. *Transition to Fatherhood in East Germany in the 1990s. Psycholigical Determinants of Childbearing and the Meaning of Entering into Parenthood for Young Adults from Rostock: An Event-History and Qualitative Composite Investigation within the Rostock Longitudinal Survey*. Magdeburg: Universität Magdeburg.

Watkins, S.C. 1993. "If all we knew about women was what we read in Demography, what would we know?" *Demography* 30(3):551-577.

Wesson, R.G. 1971. "The Military in Soviet Society." *Russian Review* 30(2):139-145.

Willekens, F. 1999. "The Life Course: Models and Analyses." Pp. 23-51 in *Population Issues - An Interdisciplinary Focus*, edited by L. van Wissen and P. Dykstra. New York: Kluwer Academic / Plenum Publishers.

Yamaguchi, K. 1991. *Event History Analysis*. London: SAGE Publications.

Zakharov, S.V. 1997. "Fertility Trends in Russia and the European new Independent States: Crisis or Turning Point." *United Nations. Population Division. Expert Group Meeting on Below-Replacement Fertility*:271-290.

—. 1999. "Unlike their Parents, the Russian Youth are less eager to form Families at young Ages: Basic Outcomes from the analyses of Period and Cohort Parity-specific fertility tables, 1979-1997." *Paper presented at the Second Workshop on Lowest Low Fertility, Max Planck Institute for Demographic Research Rostock*.

—. 2003. "The first and the second demographic transition in Russia - The newest tendencies against historic experience." *Conference "Childlessness and fertility development in Europe", Münster*.

Zavodny, M. 1999. "Do Men's Characteristics Affect Whether a Nonmarital Pregnancy Results in Marriage?" *Journal of Marriage and the Family* 61(3):764-773.

Zelenev, S. 2002. "Social Protection Imperatives in Post-Socialist Russia." *Paper at the 9th International Congress of BIEN, Geneva September 2002*.

Ich erkläre hiermit, dass ich die vorliegende Arbeit ohne unzulässige Hilfe Dritter und ohne die Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Die aus fremden Quellen oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht.
Die Arbeit wurde bisher weder im Inland noch im Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt und ist auch noch nicht veröffentlicht.

Rostock, Mai 2009

David Alich

Geburtsdatum:	15.06.1977
Geburtsort:	Rostock
Nationalität:	Deutsch
Familienstand:	ledig

Schulbildung:

06/1996	Abitur am CJD Chistopherus Gymnasium Rostock • Abschlussnote: 2,0

Studium:

10/1997 - 09/1998	Diplomstudiengang Soziologie an der Universität Leipzig
10/1998 - 09/1999	Magisterstudiengang Soziologie an der Universität Rostock
10/1999 - 09/2004	Diplomstudiengang Demographie an der Universität Rostock • Abschlussnote: 1,9
10/2003 - 09/2004	International Max Planck Research School for Demography - Rostock

Promotion:

seit 10/2004	Beginn der Promotion am Max Planck Institut für demographische Forschung in Rostock
06/2005	Gastaufenthalt: Lund University – Schweden, International Max Planck Research School for Demography
08/2005 - 11/2005	Gastaufenthalt: Stockholm University – Schweden, International Max Planck Research School for Demography

Arbeitserfahrung:

04/1999 - 06/2003	Studentische Hilfskraft an der Universität Rostock – Wirtschafts- und Sozialwissenschaftliche Fakultät
02/2003 - 06/2003	Dozent der Seminare „Einführung in SPSS und Statistik für Sozialwissenschaftler“ an der Universität Rostock
07/2003 -10/2003	Studentische Hilfskraft an der Universität Rostock – Statistik E-Learning-Projekt „Methodenbaukasten“
01/2004 -06/2004	Studentische Hilfskraft am Max-Planck-Institut für demographische Forschung in Rostock
10/2006 - 03/2007	Tutor an der International Max-Planck Research School for Demography Seminar: „Theories of fertility, family dynamics and
10/2004-04/2008	Doktorand am Max Planck Institut für demographische Forschung im Rahmen der Promotion