

ESA/P/WP. 177*
Revised version for the Web
May 2003

POPULATION DIVISION
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
UNITED NATIONS SECRETARIAT

PARTNERSHIP AND REPRODUCTIVE BEHAVIOUR IN LOW-FERTILITY COUNTRIES

*Unedited version prepared by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.

NOTE

The designations employed and the presentation of the material in the present report do not imply the expression of any opinion on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Where the designation “country or area” appears in the headings of tables, it covers countries, territories, cities or areas.

The designations “developed country” and “developing country” are intended for statistical convenience and do not necessarily express a judgement about the stage reached by a particular country or area in the development process.

The present report has been reproduced without official editing.

PREFACE

The Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat is responsible for providing the international community with up-to-date and scientifically objective information on population and development. The Population Division provides guidance to the United Nations General Assembly, Economic and Social Council and the Commission on Population and Development on population and development issues and undertakes regular studies on population levels and trends, population estimates and projections, population policies and population and development interrelationships.

The preparation of this report represents the Population Division's continued interest in fostering the understanding of new and emerging population issues in partnership and reproductive behaviour. In the more developed regions, marital (or, in a broader sense, partnership) behaviour diversified during the recent decades and became one of the major determinants of fertility levels and trends. The Population Division's analysis of first marriage patterns¹ focused on one of several components of partnership behaviour. The other important issue is reproductive behaviour among populations with below-replacement fertility. The Population Division prepared a study on the patterns of low fertility² and organized an Expert Group Meeting on Below-Replacement Fertility, at the United Nations Headquarters in New York from 4 to 6 November 1997³. At that Meeting international comparisons of fertility indicators, their common determinants and likely evolution in the future was discussed. This volume focuses on the interaction of marital and reproductive behaviours resulting in below-replacement fertility.

While all low-fertility societies share fundamental societal features, many of their socio-economic and cultural features vary and thus shape the differences of demographic characteristics. The need for a greater focus on these differences is accentuated by the search for effective policy interventions and refined projection hypotheses.

Notes

¹United Nations (1990). *Patterns of First Marriage: Timing and Prevalence*. ST/ESA/SER.R/111.

²United Nations (1992). *Patterns of Fertility in Low-fertility Settings*. ST/ESA/SER.A/131.

³United Nations (2000). *Below Replacement Fertility. Population Bulletin of the United Nations*. Special Issue Nos. 40/41. Sales No.E.99.XIII.13

CONTENTS

Page

Preface	
Explanatory notes	
Key findings	
Executive Summary.....	
INTRODUCTION	
<i>Chapter</i>	
I. LOW-FERTILITY SETTINGS.....	
A. Social environment.....	
B. Methodological considerations.....	
II. PARTNERSHIP PATTERNS.....	
A. Conjugal unions.....	
B. Leaving the nest.....	
C. Cohabitation	
D. Union dissolution	
E. Nuptiality levels and trends.....	
F. Time spent in union.....	
G. Regional partnership patterns.....	
III. REPRODUCTIVE PATTERNS.....	
A. Partnership framework of childbearing.....	
B. Fertility preferences.....	
C. Timing of childbearing.....	
D. Fertility levels and trends	
E. Regional reproductive patterns.....	
IV. INTERRELATIONSHIPS OF PARTNERSHIP AND CHILDBEARING PATTERNS.....	
REFERENCES	

TEXT TABLES

No.

Page

1. Low-fertility countries: number and population, 2002.....	
2. Selected low-fertility countries by level of TFR in 2000	
3. Mean age of women at first marriage: selected developed countries, 1960-2000	
4. Living arrangements and marital status of people aged 15-39: Italy, late 1990s	
5. Prevalence of consensual unions in age group 20-24: selected countries, 1990s	
6. Partnership formation and dissolution by female generation: selected countries, 1945-1970	
7. Percentage of females born in 1960-1965 who, by age 25, had entered their first partnerships.....	
8. Total divorce rate European countries, 1960-2000	
9. Proportion of marriages ending in divorce by marriage cohort, 1965 and 1982.....	
10. Percentage of women aged 40-44 who married at least once: low fertility regions, 1990s	

11. Total first marriage rate: European countries, females, 1960-2000
12. Selected partnership characteristics for women in Italy and Norway, 1999
13. Low-fertility regions by selected characteristics of partnership
14. Percentage of women in age groups 25-29 and 30-34 who have two children and want more, 1990s
15. Mean age at first birth: selected low-fertility countries 1960-2000
16. Difference between the average age at first birth and the average age at first marriage, females, 1960-2000
17. Mean age at birth by birth order: selected countries, most recent estimate.....
18. Percentage of the sum of age-specific fertility rates for age groups 30-49 in total fertility rate: Japan, United States and averages for European regions, 1960-2000.....
19. Completed fertility of female birth cohorts born in 1930, 1935, 1940, 1945, 1950, 1955, 1960 and 1961-1967
20. Age-specific fertility rates and completed fertility of 5-year birth cohorts: selected European countries, women born in 1945-1970.....
21. Parity progression ratios in cohorts with identical completed fertility: selected countries
22. Total fertility rate: selected low-fertility countries, 1960-2000
23. Decline of total fertility rate during two periods: selected countries
24. First-order total fertility rates adjusted for tempo effect: selected countries, 1960-2000
25. Low-fertility regions and countries by selected characteristics of reproductive behaviour

TEXT FIGURES

No.

1. Mean age of women at first marriage: selected regions and countries, 1960-2000.....
2. Living arrangements of young adults: United States, 1970-2000
3. Distribution of 25 year old women by status of first partnership, by birth cohort
4. Percentage of cohabiting women by age group: Norway, 1975-1999.....
5. Total first marriage rate, European regions, 1960-2000 (3-year moving average)
6. Percentage of never married women in age group 20-24, 1960-2000.....
7. Percentage of never married women in age group 25-29, 1960-2000.....
8. Percentage of women born in 1960-1965 who had, by age 25, entered a first partnership
9. Percentage of extra-marital births, 1960-2000
10. Percentage of extra-marital births, 1960 and 2000
11. Mean age of women at first birth: selected countries, 1960-2000.....
12. Percentage of the sum of age-specific fertility rates for age groups 30-49 in total fertility rate: selected countries, 1960-2000
13. Age-specific fertility rates: highest and lowest in the European Union, 1996-1997 and Russian Federation, 1998.....
14. Completed fertility of female birth cohorts born in 1930-1960.....
15. Percentage never married and childless women by generation in France and Germany, 1900-1960
16. Proportion of women with three children or more by generation, 1903-1960
17. Proportion of childless women by generation, 1900-1960.....
18. Total fertility rates by birth order, adjusted for tempo effect: selected countries, 1966-1999

ANNEX TABLES AND FIGURES, BY COUNTRY

No.

Finland

Tables

- 1. Age-specific fertility rates: 1949-1999.....
- 2. Nuptiality.....
- 3. Fertility.....
- 4. Proportion of ever-married women, by age and birth cohort.....
- 5. Selected fertility indicators, by birth cohort.....

Figures

- 1. Annual number of births and crude birth rate, 1950-2000.....
- 2. Age-specific fertility rates.....
- 3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation).....
- 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate.....

Japan

Tables

- 1. Age-specific fertility rates, 1960-1998.....
- 2. Nuptiality.....
- 3. Fertility.....
- 4. Proportion of ever-married women, by age and birth cohort.....
- 5. Selected fertility indicators, by birth cohort.....

Figures

- 1. Annual number of births and crude birth rate, 1950-2000.....
- 2. Age-specific fertility rates.....
- 3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation).....
- 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate.....

Netherlands

Tables

- 1. Age-specific fertility rates and total fertility rates, 1960-1999.....
- 2. Nuptiality.....
- 3. Fertility.....
- 4. Proportion of ever-married women, by age and birth cohort.....
- 5. Selected fertility indicators, by birth cohort.....

Figures

- 1. Annual number of births and crude birth rate, 1950-2000.....
- 2. Age-specific fertility rates.....
- 3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation).....
- 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate.....

5. Observed and adjusted total fertility rate, 1961-1998
6. Selected rates, 1950-1997.....
7. Percentage of fertility rates of women aged 30 and older in total fertility
8. Mean age at first marriage and first birth, 1950-1997.....

Russian Federation

Tables

1. Age specific fertility rates, 1960-1999
2. Nuptiality.....
3. Fertility.....
4. Proportion of ever-married women by age and birth cohort
5. Selected fertility indicators, by birth cohort.....

Figures

1. Annual number of births and crude birth rate, 1950-2000
2. Age-specific fertility rates
3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation)
4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate.....
5. Observed and adjusted total fertility rate, 1961-1998
6. Selected rates, 1950-1997, events per woman.....
7. Percentage of fertility rates of women aged 30 and older in total fertility
8. Mean age at first marriage and first birth, 1950-1997.....

Spain

Tables

1. Age specific fertility rates, 1960-1999
2. Nuptiality.....
3. Fertility.....
4. Proportion of ever-married women, by age and birth cohort
5. Selected fertility indicators, by birth cohort.....

Figures

1. Annual number of births and crude birth rate, 1950-2000
2. Age-specific fertility rates
3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation)
4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate.....
5. Observed and adjusted total fertility rate, 1961-1998
6. Selected indicators, 1961-1999.....
7. Percentage of fertility rates of women aged 30 and older in total fertility
8. Mean age at first marriage and first birth, 1961-1998.....

United States

Tables

1. Age specific fertility rates, 1960-1999
2. Nuptiality.....
3. Fertility.....
4. Proportion of ever-married women, by age and birth cohort

5. Selected fertility indicators, by birth cohort

Figures

1. Annual number of births and crude birth rate, 1950-2000

2. Age-specific fertility rates

3. Total fertility rates: cohort (CTFR, by year of birth) and period (PTFR, by year of observation)

4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1
and most recent estimate.....

5. Observed and adjusted total fertility rate, 1961-1998

6. Total first parity fertility rate, 1950-1997.....

7. Percentage of fertility rates of women aged 30 and older in total fertility

8. Mean age at first first birth, 1950-1997.....

Explanatory notes

Symbols of United Nations documents are composed of capital letters combined with figures.

The following symbols have been used in the tables throughout the report:

Two dots (..) indicate that data are not available.

A hyphen (-) indicates that the item is not applicable.

A minus sign (-) before a figure indicates a decrease.

A full stop (.) is used to indicate decimals.

A slash (/) indicates a crop year or financial year, for example, 1994/95.

Use of a hyphen (-) between years, for example, 1994-1995, signifies the full period involved including the beginning and end years.

Details and percentages in tables do not necessarily add to totals because of rounding.

The term “billion” signifies a thousand million.

The following abbreviations are used in the present report:

TFR	total fertility rate
U.S.S.R.	former Union of Soviet Socialist Republics
European U.S.S.R.	refers to the following group of countries before and after the dissolution of U.S.S.R.: Belarus, Estonia, Latvia, Lithuania, Republic of Moldova, Russian Federation and Ukraine.

KEY FINDINGS

- Cohort and period fertility rates are below replacement level in all developed countries and a limited but increasing number of developing countries. The number of countries where the total fertility rate is below 2.1 children per woman increased more than ten-fold during the last four decades. Yet, below-replacement populations are characterized by considerable variation of fertility levels and systematic differences in reproductive behaviour.
- The gap in the total fertility rates between almost two children per woman in France and the United States and slightly more than one child per woman in several European and Eastern Asian countries makes the difference between the eventual stabilization of population and sustained population decline.
- Decreasing high-order births within marital unions have been the principal axis of the demographic transition until the last quarter of the twentieth century. Profound changes in partnership patterns, trends in childlessness and one-child unions in most countries drove recent changes of fertility levels.
- Since the end of the baby boom in the mid-1960s, the age at first formal marriage increased, on average, by more than 4 years in the Western countries of Europe and the United States, whereas in Eastern Europe it remained low until the early 1990s. The rise of the average age at first marriage stems from increasing postponement of entry into marital life and childbearing; so long as women start their reproductive life when they are fecund, most of them would have ample possibility to bear as many children as they want. However, in certain Western countries, the average age at first marriage attained 30 years, which is the upper limit of the most fecund ages. On the other hand, high proportions of never married women past age 30 or 35, which are typical for most Western countries, are indicative of definite celibacy during reproductive lifespan. For a long time in Eastern Europe marriage was a more popular living arrangement but this is changing. In all low-fertility regions rapidly growing celibacy among younger women will most probably raise further the proportion of women who would never marry during their reproductive lifespan. Period measures also show that formal marriage is receding everywhere: the total first marriage rate dropped from the average of 0.9-1.0 per woman in 1970 to 0.4-0.7 by the end of the century. The incidence of divorce varies considerably and in the last 30-40 years in most countries it was either stable or increased.
- In Northern and Western Europe and in the United States cohabitation is popular and births within relatively stable informal unions partly compensate for the depressing impact of recent nuptiality trends on fertility levels. The age at entry into a conjugal union (of any status) and the proportion of women in prime reproductive age who live in such unions did not change much during the last decades. On the contrary, low levels of cohabitation in Southern Europe and Eastern Asia are insufficient to cushion the impact of increases of the age at marriage and lifetime celibacy on fertility.
- Associated with changes in nuptiality patterns are the trends in reproductive behaviour. After the baby boom the age at first birth in the Western countries increased by 2 to 4 years and reached 27 to 29 years with the notable exception of United States (25 years). The age profile of childbearing remains distinctly different in Eastern Europe where the age at first birth in 1990 varied from 23 to 24 years, although it recently started to increase and gained, on average 1.3 years by 2000. Extra-marital fertility increased everywhere but the proportion of out-of-wedlock births varies from 1 per cent in Japan to 66 per cent in Iceland.
- The structure of female cohorts by the number of children varies considerably, even though completed fertility may be similar. For example, women born circa 1960 in France, Japan, and the United States had on average 1.9 to 2.1 children. Yet, women who had three or more children constitute 31 per cent of the American cohort and 33 per cent of the French cohort, while in Japan such women represent only 13 per cent of the 1960 cohort. On the other hand, 3 per cent of Japanese and 8 per cent of French remained childless, while this proportion attained 20 per cent in the United States.

EXECUTIVE SUMMARY

The number of countries with period total fertility rates at or below replacement increased from 5 in 1960 to 64 in 2000. Patterns of partnership and reproductive behaviours vary substantially among these 64 countries even though total fertility rates vary within a relatively small range.

The demographic transition from high to replacement fertility was essentially associated with the implementation of reproductive choices within marital unions. The post-transitional developments are driven mostly by the transformations of partnership behaviour. During the last decades of the twentieth century, the family as a social institution changed, obligation and commitment with regard to formal marriage eroded, and new forms of partnership proliferated in many countries. The range of options for individuals expanded. These options consist of permanent or much more prolonged state of celibacy, and of engaging in partnerships that do not assume formal contractual status and may or may not involve childbearing. The diversification of partnership options relaxes obligations to previously strict social norms when choosing the path of union formation. Marriage and parenthood are drifting apart and the sequences of events in personal biographies are no longer standardized. However, in the recent past these transformations were confined mostly to Northern and Western Europe and Northern America, while formal marriage remained the nearly exclusive form of conjugal union in most countries of Eastern and Southern Europe and Eastern Asia.

The age at and the prevalence of marriage are the other dimensions of partnership. The respective levels and trends vary across regions. Since the Second World War the age at marriage, which for a long time had been relatively high in the West with the notable exception of the United States, further increased by 2 to 3 years notwithstanding the transitory fall during the baby boom. In some countries the age at first marriage for females approached 30 years – close to the end of the prime reproductive lifespan. In Eastern European countries the age at first marriage started to increase in the 1990s, but still does not exceed 25 years.

High proportions of never married women past age 30 or 35, which are typical for most Western countries, are indicative of the substantial loss of opportunities for childbearing within formal marital unions. Rapidly growing celibacy among younger women will most probably raise further the proportion of women who would never marry during their reproductive lifespan. Although in Eastern Europe formal marriage remains highly popular among women in prime reproductive age, its prevalence began to decline. The parallel and abrupt fall of the total marriage rate, which occurred in the 1990s in most developed countries and attained 0.6 to 0.7 first marriages per woman, suggests that formal marriage is receding everywhere.

In Northern and Western Europe and the United States, the spread of cohabitation compensates for the delay of formal marriage and the decrease of nuptiality during the reproductive lifespan: the proportion of women, who, by age 25, entered either a formal or informal union, remains stable at 70 to 80 per cent. In Southern Europe cohabitation does not compensate for delayed formal marriage: as a result, only 65 to 75 per cent of women enter a first relationship by age 25. Eastern Asia is similar to Southern Europe.

By historical standards and in comparison with most developing countries, fertility levels in all developed countries are low but diverse. The total fertility rate ranges from 1.2 children per woman in Eastern Europe, Eastern Asia and Southern Europe to 2.0 in the United States. Period rates understate the true fertility levels because of the massive postponement of births. The international variation of fertility levels is less apparent from the cohort perspective because cohort indicators are not affected by postponement effects and probably because they reflect a rather distant past when the results of reproductive behaviour were more homogeneous than they may be for the younger cohorts. Yet, the average completed family size of women born in the mid-1960s will probably vary from 1.6 children in Austria, Italy, Germany, Russian Federation to 1.9 to 2.1 children per woman in a number of countries from Eastern Europe and Northern Europe, France and the United States. Low period fertility rates are

coupled with and partly determined by high and increasing age at first birth in most Western countries (27-29 years).

Developed countries differ by parity structure of recent fertility declines. Prevalence of childlessness, popularity of two-child families and propensity to achieve high fertility preferences (three children or more) acted together but often in different and evolving combinations in shaping levels and trends of cohort and period fertility during the last three decades of the twentieth century. In some countries increase of childlessness and/or spreading of one-child family models played the major role in fertility trends below replacement. In other countries shrinking of third and higher-order births was a decisive factor in fertility decline. The decrease of third and subsequent births determined four-fifths of the fertility decline from replacement to current levels in the Republic of Korea and Singapore. High-order births contributed less than 15 per cent to a similar fertility decline in Japan and the Russian Federation where falling propensity to have two rather than one child played the major role. In terms of regions, the proportion of childless women by age 40 is highest in the United States (20 per cent) and lowest in Eastern Asia (5 per cent); the countries in transition have levels of the order of 10 per cent, while in the Western countries of Europe childlessness varies from 2 per cent in Iceland to 30 per cent in Germany and is rapidly rising in Southern Europe. The incidence of childlessness is not likely to decrease anywhere; in several countries low first-order fertility rates (even adjusted for tempo distortions) imply significant increases of the proportion of childless women.

Several components of each partnership pattern are independent. Similarly, reproductive patterns often consist of independent elements. However, within regions partnership and reproduction patterns are interrelated. For example, the age at marriage is positively related to the age at first birth, although the former does not completely define the latter because extra-marital fertility is widespread and on the rise. Prevalence of childlessness is positively related to the proportion of women never married, but this relationship is attenuated where childbearing within cohabitation is prevalent. The number of first-order births is typically higher when cohabitation is widespread. In the United States relatively low age at first marriage, high proportion of never married women and high prevalence of cohabitation lead to low age at first birth, numerous extra-marital births and high prevalence of childlessness. In Eastern Europe low age at marriage and relatively low proportion of never married lead to low prevalence of childlessness. In Eastern Asia and Southern Europe, late marriage, high propensity to marry and low prevalence of cohabitation result in high prevalence of childlessness and low extra-marital fertility.

Fertility levels and trends result from varying combinations of numerous demographic parameters, which do not necessarily evolve in parallel. As a result, fertility trends are likely to be non-linear and vary between countries. However, the combinations of key parameters of partnership and reproductive behaviour form a series of regional patterns, which makes future fertility trends more predictable. From that perspective, all characteristics of the Southern European/Eastern Asian pattern (also applicable to Austria and Germany) are conducive to particularly low fertility, while in the United States and France most components of partnership and reproductive behaviour sustain overall fertility at high and stable levels. In Eastern Europe several components of partnership and reproductive patterns should support fertility; however, its levels are particularly low. This is probably due to distinct past and current socio-economic factors and cultural climate of this region. These factors and respective behavioural responses call for appropriate analytical instruments.

In general, the rich diversity of national environments cannot be fully fit into the suggested classifications, which represent a rather rough attempt at combining particular behavioural characteristics into "patterns". Partnership and reproductive behaviours are evolving; as a result, national populations may shift from one pattern to another. Scattered evidence points to an eventual global convergence of at least some characteristics of demographic behaviour. However, it is not clear whether such post-transitional demographic behaviour is likely to become, within a reasonable timeframe, truly homogenous

or, alternatively, deeply rooted national and regional environments will preserve some distinct components of partnership and reproduction.

INTRODUCTION

The concept of demographic transition stipulates a shift from a homeostatic near-equilibrium of high mortality and high fertility resulting in zero or slow and fluctuating population growth to a new homeostatic equilibrium of low mortality and replacement-level fertility leading to a stationary population. In reality, however, fertility did not stabilize at replacement level in most countries but declined to levels far below replacement. While in some countries, this development has already led to negative population growth in others these trends suggest negative population growth and an even older population structure in the future.

Period fertility rates in all of Europe, all of Eastern Asia (except Mongolia), Canada and developed Oceania are currently at or below replacement level of 2.1 children per woman. Below-replacement fertility is also evident in four (Armenia, Azerbaijan, Kazakhstan, Georgia) out of seven Asian successor States of the former U.S.S.R, Cyprus, Thailand, six Caribbean countries (Barbados, Cuba, Guadeloupe, Martinique, Puerto Rico, Trinidad and Tobago) and two (Mauritius and Tunisia) African countries. With the demographic transition completed in China, the share of the world's population in 2002 of countries where the total fertility rate is below 2.11 children per woman reached 39 per cent. The number of countries with estimated fertility levels at or below 2.11 children per woman increased from 5 in 1960 to 64 (table 1). Moreover, recent trends of fertility in other developing countries suggest that many more countries are likely to achieve below-replacement fertility in the near future (United Nations, forthcoming). United States is the only developed country where the total fertility was recently hovering close to replacement level fertility.

Countries with below-replacement fertility are not demographically homogenous in several pertinent respects. At similar levels of fertility, childbearing behaviour often differs by the average age of the mother, weight of non-marital births and the distribution of births by parity. Besides that, the variations of the average number of births per woman (especially in the period perspective) determine, to a large degree, the trajectories of population size. The difference between slightly more than two children per woman in the United States and just above one in several Eastern European and Southern European countries suggests stabilization at stationary level in the former and deep population decline in the latter.

TABLE 1. LOW-FERTILITY COUNTRIES^a: NUMBER AND POPULATION, 2002

<i>Variable</i>	<i>Total</i>	<i>TFR in 2000-2005 less than</i>		
		<i>2.11</i>	<i>1.85</i>	<i>1.50</i>
Population				
Millions	6,223	2,425	2,211	758
per cent	100	39	36	12
Countries				
Number	185	64	47	30
per cent	100	35	25	16

Source: United Nations (forthcoming).

NOTE: ^a countries with population of not less than 150,000 in 2000

Even smaller differences in period fertility rates (of 0.3 children per woman for example) have significant demographic and, by implication, economic, social and political significance other than in the perspective of cohort replacement. For instance, in the Russian Federation every 0.3-point change in the total fertility rate would result (with the same assumptions on mortality and international migration) in a 9-10 million (7-8 per cent) difference in the population size in 2025.

Another key consequence of fertility decline is population ageing, which is one of the most important contemporary social processes and may be confidently predicted for decades to come. The speed of ageing is highly sensitive to even small variations in fertility levels. Population ageing represents a major challenge to the sustainability of current pension and health care systems and, by implication, public debt, government finances and intergenerational compacts. The shifts in age-specific demand for goods and services (e.g. housing, recreation, clothing, advertisement, health care) depend, in the long run, on fertility levels and differentials. Population ageing diminishes the supply of labour and, therefore, increases the demand for foreign workers and entails reconsidering hiring, career development and retirement criteria. The greying of electorates may reorient public resources away from young families and therefore create self-reinforcing mechanisms of low fertility. On the other hand, the ageing-induced changes represent new and potentially beneficial economic, societal and political opportunities.

TABLE 2. SELECTED^a LOW-FERTILITY COUNTRIES BY CATEGORY OF TFR IN 2000

<i>1.85-2.10</i>		<i>1.60-1.85</i>		<i>1.35-1.60</i>		<i>Less than 1.35</i>	
<i>Country</i>	<i>Level</i>	<i>Country</i>	<i>Level</i>	<i>Country</i>	<i>Level</i>	<i>Country</i>	<i>Level</i>
France	1.89	Australia (1998)	1.76	Canada (1997)	1.55	Armenia	1.11
Iceland	2.08	Azerbaijan (1999)	1.71	Croatia	1.36	Austria	1.32
Ireland	1.89	Belgium	1.66	Estonia	1.39	Belarus	1.29
Mauritius (1999)	2.05	Cuba (1998)	1.60	Germany	1.36	Bosnia and Herzegovina (1998)	1.21
New Zealand	2.01	Cyprus	1.83	Portugal	1.52	Bulgaria	1.26
Norway	1.85	Denmark	1.77	Republic of Korea (1999)	1.48	China, Hong Kong S.A.R. (1999)	0.84
Puerto Rico (1999)	1.87	Finland	1.73	Singapore (1999)	1.55	Czech Republic	1.14
TFRY of Macedonia	1.88	Kazakhstan (1999)	1.75	Sweden	1.54	Georgia	1.35
Tunisia (1998)	1.93	Luxembourg	1.79	Switzerland	1.50	Greece	1.29
United States	2.13	Netherlands	1.72			Hungary	1.32
		Serbia and Montenegro	1.63			Italy	1.23
		Trinidad and Tobago (1997)	1.72			Japan (1999)	1.32
		United Kingdom	1.65			Lithuania	1.27
						Latvia	1.24
						Poland	1.34
						Republic of Moldova	1.30
						Romania	1.31
						Russian Federation	1.21
						Slovakia	1.29
						Slovenia	1.26
						Spain	1.24
						Ukraine (1999)	1.10

Sources: Council of Europe, United Nations Statistics Division

NOTE: ^a countries with reliable vital statistics

When below-replacement countries are grouped into intervals of 0.25 children per woman, four categories result starting from *close to replacement* TFR of 1.85 to 2.10 children per woman to the last group of *lowest low* TFR of less than 1.35 children per woman (table 2). The length of the interval (0.25 children per woman) corresponds to the difference between fertility levels projected by the United Nations for the period 2045 to 2050 according to the low, medium and high variants (United Nations, forthcoming). Only in seven countries (three developing and four developed, including the United States) current fertility implies a near-replacement of generations. In 16 countries (including France and the United Kingdom) fertility levels vary from 1.60 to 1.85 children per woman; another 11 countries (including Germany and Poland) are characterized by TFR from 1.35 to 1.60 children per woman. But the “lowest low” category with 20 countries is the largest; it includes a number of relatively small countries (in terms of population size) but also Japan, Italy, Russian Federation and Ukraine.

The central thesis of this report is that, along with common trends in nuptiality and reproductive behaviour in low-fertility societies, several characteristics of partnerships and childbearing systematically differ between regions and countries and form distinct patterns. In fact, wide variations of demographic behaviour (i.e. partnership and reproductive behaviour) within the developed world have surprised many specialists in the field to the extent that the paradigm of the (first) demographic transition was held viable for emerging new settings. Therefore, the attempt to systematize these differences in the international context may be useful for the analysis of the mechanisms of family life and reproduction and for the design of family policies.

Aggregate demographic variables permit an examination of most of the pertinent characteristics, which stem from cultural, societal, institutional and economic factors. In this report, distinct types of demographic behaviour that underlie differences in fertility levels in low-fertility countries will be studied. Unlike the developing countries where high levels of infant, child and young adult mortality impact on childbearing (Lloyd and Ivanov, 1988), the developed countries are characterized, with few exceptions, by virtually assured survival until the end of the reproductive period. Since it is unlikely that the understanding of fertility differentials in low-fertility settings would be significantly enhanced by the analysis of mortality levels and trends, the latter are omitted from this report.

Chapter I provides a brief overview of the theoretical insights into the social and cultural correlates of low fertility and selected pertinent methodological issues. The first section presents the concept of the second demographic transition, which offers a coherent framework for explaining partnership and reproductive behaviour in modern industrial societies. The second section describes a variety of indicators developed for the analysis of subtle but important demographic changes in low-fertility regimes.

Chapters II and III describe the evolution of partnership and reproductive patterns respectively as reflected in demographic variables. With the advent of universal access to effective modern contraception and safe abortions, the role of these proximate determinants of fertility has become quite limited (in comparison with high-fertility settings) in explaining the subtle but important differentials in average levels. Conversely, the impact on aggregate fertility levels of partnership and childbearing behaviour, which in modern developed societies is increasingly diversified, is rising. The relationship may run in another direction as voluntary childlessness sometimes makes the marriage redundant; with respect to childbearing, however, such impacts are outside of the scope of this report.

In both chapters II and III, the analysis of demographic processes starts with overviews of the forms of partnership and reproductive behaviours and concludes with attempts to categorize the country-specific features into regional patterns. The analysis combines, whenever appropriate, cohort and period variables in order to link historical trends with current developments.

The concluding chapter IV speculates, on the basis of the preceding analysis, on the possible relationships between partnership and reproductive patterns in the low-fertility countries.

I. LOW-FERTILITY SETTINGS

A. SOCIAL ENVIRONMENT

Explanatory frameworks for understanding the mechanisms and underlying factors of low fertility link socio-economic, institutional and cultural features of modern societies to partnership and reproductive behaviour. The concept of the “second demographic transition” (Lesthaeghe and van de Kaa, 1986; van de Kaa, 1987; 1999) emerged, at least in part, in response to continuing fertility decline beyond the end of the (first) demographic transition to levels below replacement. This concept encompasses components of different social, economic, cultural and sociological theories that explain the workings of industrialized societies. The concept of the second demographic transition provides a framework for the examination of demographic trends in low-fertility countries and is generally consistent with quantitative data. With respect to the concept of the (first) demographic transition, the emphasis within this framework shifts from reproductive choice to partnership choice.

The second demographic transition is a framework for analysing changes in partnership and reproductive behaviour that occurred in the last decades of the twentieth century. The concept emerged partly as a response to explaining fertility trends to levels far below replacement. However, its essence is not the prediction of ultimate levels of the demographic parameters at the end of the transition. The underlying logic of the second demographic transition is consistent with an array of explanatory theories of low fertility, which themselves are not mutually exclusive but rather look at the same phenomena from different and complementary perspectives. Several (but not all) components of the concept of second demographic transition may be expressed in operational terms because it uses standard demographic parameters and is anchored to changes in their dynamics.

The last decades of the twentieth century witnessed a tremendous increase in the educational levels of women, their economic independence, decision-making abilities and political power. These processes collectively constitute women’s empowerment, which is the single most powerful factor driving the profound changes in family formation, living arrangements and childbearing that occurred in industrialized countries since the 1970s (McDonald, 1994; 2000a; 2000b). The strategic role of women’s empowerment in bringing about the second demographic transition is consistent with the concept of increased female autonomy in economic matters (Becker, 1991). Rising female education and the resulting improved employment opportunities for women make them less dependent on traditional single-earner households and lead to increased opportunity costs of childbearing. Thus, when the birth of the first child is delayed, women are able to increase their potential income from gainful employment through education and the accumulation of on-the-job skills and experience, which, in turn, increases the opportunity cost of having child (McDonald, 2001). Also, as the functional differentiation between males and females diminishes, the preference for sons is progressively vanishing. As a result, the notion of replacement level fertility has a different connotation at the micro-level: a couple perceives replacing itself through the birth of a single child (Chesnais, 2001). For this reason, replacement fertility remains more of a theoretical threshold that is very important for measuring population trends at the macro-level but has little or no meaning for individual couples building their families. The widely held view is that below-replacement fertility is likely to remain the norm (Demeny, 1997; Bongaarts, 2001).

The emphasis on increasing gender equity also fits into the theory of social deprivation (Easterlin, 1976; Easterlin, MacDonald and Macunovich, 1990), which states that rising consumption aspirations can be better satisfied in dual-income childless families or by living alone. Women are becoming more likely to stay single or to enter into informal partnerships with men than to marry and if they do, to postpone marriage. As a result, motherhood is typically postponed. Moreover, couples in dual-earner households are more likely to have fewer children, but this relationship may be attenuated by generous social support of employed mothers (Cooke, 2001).

Social transfers to families with children can have a non-trivial impact on fertility levels. Wherever substantial childcare and family allowances that are directly sponsored by the Government are accessible (as in France, the Nordic countries in the 1980s, Ireland in the 1990s), relatively high fertility is maintained (Kravdal, 1992; Hoem and Hoem, 2000; Coleman, 1998; McCarthy and Murphy-Lawless, 2000). Alternatively, as for instance in Southern Europe and Eastern Asia, when women are provided with opportunities near equivalent to those of men in education and market employment, but these opportunities are severely curtailed by having children, then on average, women will restrict the number of children that they have. In such cases fertility is depressed to very low levels for the long-term (Chesnais, 1996, Esping-Andersen, 1996).

Changes in demographic behaviour are not confined to women. The universal features of the modern liberal market society are such that young people of both sexes study long to succeed in life, that young people get married and have children after rather than before they gain security and stability regarding education, employment and affective relationships. These aspects are part of a package of irreversible conquests in an advanced society, which involve the postponement of the stages of adult life and an increasingly significant concentration of all reproductive events in the few years between 30 to 40 years or just beyond (Palomba, 2001).

In having a child, people are making a decision about their future life course. While the cost of children can be figured in money terms, there are no monetary benefits; instead, the utility of children is psychological in nature (Coleman, 1998). In the increasingly risk-conscious context of market societies (Beck, 1999), couples balance quantifiable direct and opportunity costs of children with barely quantifiable and uncertain psychological benefits. This may let them err on the side of safety in order to avert risk. Individuals tend to enjoy life – including travel -- and invest in economic security (education, professional career, savings, geographical mobility) rather than in making irreversible commitments to childbearing, which are also immediately associated with insecurity: lower income for a period, difficulty of return to the job, higher consumption expenditure, and economic responsibility for dependents (Chesnais, 1996; 2000b).

The second demographic transition corresponds to a further, much more public manifestation of individual autonomy (Lesthaeghe, 1995) and constitutes a massive shift from standard biographies consisting of traditional family building events occurring in a fixed sequence, to "choice biographies" (Gierveld, 2001) consisting of many more options with respect to partnership and childbearing and a more varied array of sequences in which people choose to realize these options. This happens because biographies are being removed from the traditional precepts and certainties and from external control, becoming more open and dependent upon individual decision-making. The individual range of options for living arrangements, for example, becomes wider because they are accepted by society (Hoffman-Nowotny, 1997).

The typical succession of events in a person's life used to be that entry into adulthood is associated with entry into marriage followed by childbearing, and, in case of widowhood or divorce, remarriage or singlehood. During the second demographic transition this sequence of events becomes increasingly supplemented by diversified strategies composed of different combinations in varying sequences and of diverse durations of such stages as living alone, cohabitation with or without intent to marry, marriage, separation or divorce. Thus, living together no longer necessarily entails a married state and being married does not automatically result in living together (Dorbritz and Hohn, 2000). During a single life course, these stages are often repeated more than once. Childbearing may or may not "superimpose" on these partnership paths: the link between marriage and childbearing is loosening.

The transition to choice biographies is associated with fundamental societal change, which includes the emancipation of women and increasing gender equality, the weakening of mechanisms that have shaped normative behaviour including but not limited to secularism, the pursuit of such “post-modernist” goals as self-fulfilment (as opposed to individual or family survival and social obligations), consumerism and hedonism (Lifbroer, 2001). Trends toward greater individual autonomy in ethical, religious, and political domains are manifest in the rise of secularism and emancipation movements operating first in the domain of social stratification and later in the area of gender relations. Recently, scepticism towards institutions, including the family has emerged almost universally and generalized in some societies (Lesthaeghe and Moors, 1996; Lesthaeghe and Willems, 1999).

Post-materialist values have been shown to be associated with increasing incidence of cohabitation, concomitant decrease of the incidence of formal marriage, rising age at first marriage and rising incidence of divorce, postponement of childbearing to later stages in life and increasing proportion of extra marital births, and rising incidence of childlessness. Yet, fertility levels differ considerably in low-fertility societies. Social institutions shape these differences. Among the low-fertility countries, fertility is higher in the liberal settings characterized by high prevalence of cohabitation and extra-marital fertility (Northern Europe, France and the English-speaking countries) than in cultural settings where marriage and reproductive behaviour remain linked as in Eastern Asia, Southern Europe and to some extent Eastern Europe. The positive association of cohabitation and extra-marital fertility with the overall fertility level is neither spurious nor universal. Liberal social and cultural environment is characterized by the wide acceptance of different ways of life, including parenthood outside of formal marriage. Voluntary childlessness became as acceptable for married people as for those single or cohabiting. The difference between the “traditional” and the liberal settings results more from the meaning and purpose of non-marital partnership and childbearing than directly from their quantitative prevalence. This is probably why high incidence of out-of-wedlock births in several Eastern European countries (whose nature is different from the West) did not prevent fertility from falling to very low levels.

As in the first demographic transition, the second transition is predicated on the germination of three very broadly defined conditions (Lesthaeghe and Neels, 2001): readiness (new behaviours become advantageous), willingness (new behaviours become morally and socially acceptable) and ability (means to implement new goals become technically feasible and accessible). These conditions emerge under the combined influences of structural changes in societies (such as women’s emancipation and growth of the middle class), cultural shifts (such as enhancement of the value of education and leisure) and technological developments (such as the contraceptive revolution, epidemiological transition and new information technologies). The three conditions must be met jointly: otherwise, the last condition to emerge stipulates the onset of the transition. New behaviour takes root if it is compatible with the realities of the economic market place and the social climate. In other words, the interaction of values with constraints and opportunities is the driving force of the transition.

Cultural characteristics that shape the three conditions of the second demographic transition, such as women’s status, family formation patterns, attitude towards cohabitation and out-of-wedlock childbearing, while evolving, are marked by durable historical imprints. Behavioural models and changes therein are sometimes more connected with socio-economic conditions of a distant past than with the current economic opportunities and constraints (Lesthaeghe and Neels, 2001). Path dependency of the second demographic transition is contingent on initial conditions. In other words, long-standing differences in social and economic institutions play an important role in shaping the sequence, interactions, intensity and duration of change in life course patterns (Billari, 2001).

However, once started, the second demographic transition, as did the first, diffuses from innovative groups into the rest of the society and across national borders. The second demographic transition is a truly international, pan-European (van de Kaa, 2001) and even trans-cultural phenomenon:

the low-fertility countries differ more by the calendar and tempo of change in fertility than by its direction (Leridon, 1999). No precedent exists for a low-fertility country to return to sustained fertility levels well above two children per woman. The trend toward acceptance of new values and behaviours is universal to the extent that economic conditions become globalized and media beam the same signals across national borders.

Groups of countries are going through the same demographic process albeit at different time and pace (Roussel and Festy, 1978; Roussel, 1994). In Europe, the second demographic transition spread from northwest to southeast (van de Kaa, 2001). It appears that in Europe there are stable cultural entities that remain invariant with respect to the first and the second demographic transitions: regions such as Northern Europe and parts of Western Europe are innovators from where both transitions spread to the rest of the continent and last reached the its easternmost countries (Lesthaeghe and Neels, 2001). Although ultimately the major marital and fertility characteristics of different countries are likely to converge, the paths, timing and sequences of events vary (Van de Kaa, 2001a).

The concept of the second demographic transition was initially developed with respect to countries with established market economies. However, it is applicable to Eastern European countries, which underwent or are undergoing similar changes in values, women's status, family formation patterns and attitudes towards extra-marital childbearing. However, forced economic modernization and abrupt secularization of social life (Vishnevsky, 1998), combined with a rigid system of incentives and taboos shaped particular characteristics of demographic behaviour in the past and delayed the onset of the second demographic transition in Eastern Europe. More recently, the "velvet revolutions" spurred similar demographic results to those in the western parts of Europe, in part because it brought market reforms but also because it involved a rejection of authorities and advanced aspirations for freedom.

The concept of the second demographic transition does not necessarily assume the convergence of low-fertility regimes. Convergence may not even be a pertinent issue because the second demographic transition implies the diversification of individual behaviour occurring with different timing, sequence and pace. It assumes the possibility of increasing heterogeneity of individual demographic behaviour within or across national populations. Therefore, the macro-level homogeneity of collective demographic outcomes is not a necessary result of the second demographic transition.

B. METHODOLOGICAL CONSIDERATIONS

1. Fertility

Recent methodological developments are driven by concerns over replacement of generation or the "quantum of fertility". If 100 women of reproductive age (usually defined as 45-49 years) bear, on average, at least 205-210 children, then the generation of parents will be fully quantitatively "replaced" and the population, given prevailing survival rates, will become, in the long run, stationary or quasi-stable. An average number of births below 205 to 210 per 100 women does not ascertain replacement and leads to declining population size and population ageing.

The annual number of births represents the size of a cohort born in that year. However, the annual numbers of births tells little about fertility behaviour because they cannot be meaningfully compared across populations of different sizes. The crude birth rate controls for population size and therefore provides a rough picture of the reproductive behaviour of the entire population. But the crude birth rate is inappropriate for fertility analysis because births occur to women of reproductive age and their share in population varies. This deficiency is resolved in the general fertility rate, which relates the total number of births to all women of reproductive age. However, for biological and social reasons the intensity of

childbearing depends on the age of women. Because the age structures of female populations in reproductive age differ there is a need for age-specific rates that standardize for age structure.

Period age-specific fertility rates which are derived from widely available civil registration data relate the annual number of births to women of a particular age group (usually one-year or five-year age groups) within the reproductive age range (usually 15-49) to the mid-year population size of the respective age group of women. The total fertility rate, computed by the summation of age-specific fertility rates, is the best of easily available period indicators of the intensity of childbearing in a population. It represents the number of children that would be born to a woman if she, during her reproductive life, were subject to age-specific fertility rates observed for that year. Thus, the total fertility rate reflects the result of reproductive behaviour of a hypothetical cohort. By their nature, period indicators capture the current levels and recent trends of fertility. Demographic projections rely on period rates.

The results of reproductive behaviour captured by cohort indicators are important for demographic analyses precisely because they measure the levels and trends of fertility of real rather than hypothetical cohorts. Cohort indicators adequately assess the distribution of women born in the same period (cohort) according to the number of children ever born to them. Cohort indicators show the achieved family size of a typical person or groups of persons. Therefore, they reflect the size and composition of families and summarize individual histories. The completed family size indicates whether generations are reproducing themselves. In particular, a major advantage of cohort indicators is that they are able to directly capture childlessness. Childlessness is a familiar feature of the demographic landscape in low fertility countries and its incidence defines, to a certain degree, the extent to which generations replace themselves. However, the association of the average completed fertility with the incidence of childlessness is not necessarily strong. The important variables are the proportions of women with one child and the proportion with three and more children in a given cohort. The trends of cohort fertility are generally smooth and the changes from one cohort of women to the next are not large, while period rates often change fast and may fluctuate.

Period and cohort indicators are different concepts of fertility. They are both expressed by the same units, but the period rate is not a true measure of fertility in the sense that it is not an average of completed fertility of women who are currently of fecund age. The period total fertility rate and cohort fertility are equivalent only if the timing of fertility remains constant over time. The total fertility rate assumes that real cohorts behave (or will behave) according to childbearing schedules of hypothetical cohorts. This assumption, under conditions where the timing of fertility is subject to change, produces non-trivial differences between observed and “true” levels of fertility. These differences lead to an exaggeration of the short-term trends of total fertility rate (tempo effect), thus masking changes in “real” fertility (quantum effect). This means that the observed period rates may yield a biased picture of fertility: they are often – and sometimes considerably - affected by calendar fluctuations of births (timing) with little effect on cohort fertility.

In many countries, the “lowest low” fertility indicators result not only from the aspiration of couples to limit the number of children they wish to have, but also from massive postponement of childbearing, above all of first births, to more advanced ages. When the average age at (first) birth is increasing, observed period measures underestimate the “true” current fertility level and, therefore, eventual completed family sizes of the currently living cohorts. This observation raises the following questions: (a) to what extent is the fertility level underestimated by conventional period indicators; (b) what are the weights of quantum and tempo effects in the trends of conventional summary period indicators such as the total fertility rate; (c) what are the probable completed family sizes of currently living cohorts if the age and parity distribution of fertility were to stabilize at some level (i.e. because ageing of motherhood is limited by at least physiological parameters); (d) to what extent will future

demographic trajectories differ among countries with similar total fertility rates but different childbearing timing and parity distributions?

It is particularly important to infer the quantum of fertility from observed period indicators, which would then allow the combination of the central property of cohort measures -- the real, unbiased characteristics of childbearing -- with the inherent advantage of period variables, which are derived from current data. The central question is how to deduce cohort fertility from period indicators. More concretely, is there a way to correct the distortions of period fertility indicators or is there a need to develop new, alternative fertility indicators and, accordingly, to expand the theory and methodology of fertility assessments.

The search for more precise indicators of fertility levels has a long history. Ryder (1951) and Henry (1953, 1961) were the first to suggest using life table techniques to estimate parity-progression ratios in order to improve the estimation of the rates of family building. The essence of the method is to estimate the probability of birth of parity n to women of parity $n-1$, that is, to assess the intensity of childbearing not of all women, but only of those women who are actually exposed to the risk of childbearing. The intensity of childbearing assessed by parity progression methods would be free of tempo distortions if they were computed for cohorts. Henry (1953, 1961) suggested that parity progression fertility tables be calculated from the duration of stay at current parity. This approach was further refined by Ní Brolcháin (1987, 1992), Feeney and Yu (1987) and, Kohler and Ortega (2001a, 2001b, 2001c). The Kohler-Ortega model also makes an explicit attempt to complete cohorts' fertility under the scenarios of (a) stable period occurrence-exposure rate, (b) ceased postponement and (c) continuing postponement.

Concurrently, Whelpton (1954) suggested an age-based approach to the parity-progression ratios calculated from period data, which represents a particular case of multi-state life table (Ledent, 1980). The age-based approach is better suited (than parity-interval-based fertility tables for real cohorts) to the data from civil registration systems from which researchers can draw on annual distributions of births by age (or year of birth). However, in this case parity progression ratios may be as distorted by the timing effects as age-specific fertility rates. This method of constructing age-parity fertility table was later developed (Chiang and van den Berg, 1982), in particular to reconcile it with the parity-duration progression method by incorporating duration since previous birth estimated from sample surveys (Rallu and Toulemon, 1993, 1994). It was also suggested that the correction for duration since previous birth could be ignored because it varies little, while the necessary data are hard to obtain (Barkalov and Dorbitz, 1996).

The drawback of all parity progression methods is the difficulty of obtaining necessary data, that is the initial distribution of women by age and number of children ever born; annual distributions of births by age of mother and parity and female survival rates for all such methods, and, in addition, duration since previous birth in the case of duration-based methods. Few countries collect and publish these data by single years of age. Continuous temporal series are even less accessible and very rarely are parity progression rates constructed on the same methodological basis. As a result, national estimates are seldom directly comparable.

A relatively simple correction of period fertility data for the effect of changing schedule of births was suggested by Bongaarts and Feeney (1998). The essence of the method is to correct the order-age-specific fertility rates using the average annual rate of change of order-specific age at birth, which ultimately yields a tempo-adjusted total fertility rate. This allows the estimation of the fertility level if the process of slowing down or accelerating of family formation ceases immediately. In other words, this method provides a rough solution to the problem of adjusting total fertility rates for distortion attributable to changes in the tempo of childbearing. The adjusted total fertility rate may be interpreted as a total

fertility rate that would have been observed in the year t if the age pattern of fertility for each birth order had been the same as in year $t-1$, under the assumption that the shape of the order-specific age pattern of period fertility (that is age and order-specific proportions in total fertility), is equal in both years. The method was employed to demonstrate that the changes in the dispersion of the cohorts-specific calendars of births produced by such factors as sudden change of socio-economic climate or the implementation of population policies produce non-trivial effects on period fertility rates (Kohler and Philipov, 2001).

The tempo-adjusted fertility rate, however, has some drawbacks. Some criticisms centred on the assumption of linearity of changes of order-specific mean age at birth (Kim and Schoen, 2000) and on the stability of the shape of the age distribution that does not necessarily withstand empirical testing (Van Imhoff and Keilman, 2000). Another shortcoming is that the adjustment with the average annual rate of change of order-specific age at birth makes the period total fertility rate even more hypothetical and therefore, a more fictitious overall fertility measure (Smallwood and others, 2000). In response, Ortega suggested the use of the tempo adjusted effect to complete censored cohort fertility (Ortega, 2001) but this was objected to on the grounds that completed cohort fertility in principle could not be accurately derived from period indicators (Van Imhoff, 2001).

In spite of these criticisms the Bongaarts-Feeney method of adjusting observed rates for tempo distortions remains a valuable analytical instrument because it provides a simple summary -- though rough and not always robust -- measure of the extent to which past timing changes in childbearing can explain temporal changes in observed period rates (Lesthaeghe and Willems, 1999). Another advantage is the minimum requirement for necessary data to compute the measure thus making it suitable for international comparisons.

2. Nuptiality

In comparison with the studies of fertility, methodological issues of nuptiality analysis are relatively less developed. However, what is pertinent is that several indicators of fertility have their close counterparts in marriage indicators. Most properties, deficiencies and suggested corrections of fertility indicators and analytical methods are also valid with respect to nuptiality.

The percentages of women ever married, divorced (and separated) or widowed are cohort indicators that are readily available from several sources and are adequate for comparisons of marital behaviour across cohorts. As in the case of cohort fertility indicators, cohort nuptiality indicators have such advantages as adequately capturing the real (as opposed to hypothetical) results of partnership behaviour and reflecting the composition of birth cohorts by marital status. In addition, the cohort indicators evolve more smoothly than period indicators, whose fluctuations sometimes hamper the examination of behavioural changes.

On the other hand, by their very nature, simple cohort indicators such as the proportions of persons of different marital status derived from census data are often better suited for evaluating the past behaviour of relatively older cohorts than assessing recent trends. Cohort data on age at marriage – a very important indicator when the age pattern of marriage is in flux – are lacking in most publications of census results. The proxy indicator, which may be computed from census data on marital status – the singulate mean age at marriage (SMAM) – approximates the age at first marriage of consecutive cohorts. The SMAM is defined as the average number of years lived in the single state by those who marry prior to a certain age (usually 50 years). The SMAM is subject to serious distortions when these cohorts differ in their marital behaviours. Mean age at first marriage is a superior indicator and is available for most developed countries.

The drawback of cohort indicators can be corrected with data on young cohorts gathered in special sample surveys. The internationally comparable Fertility and Family Surveys provide a particularly rich body of information for analysing partnership behaviour. These data help to fill in several lacunae typical for census and civil registration data. In particular, these surveys provide detailed cohort data on the sequence of events in partnership behaviour.

The measurement of the prevalence of cohabitation is very often hampered by the lack of relevant data: only few censuses include the pertinent questions, and not many countries collect these data from population registers and publish them. Here again, sample surveys and in particular the Fertility and Family Surveys provide otherwise lacking data on different forms of cohabitation, its duration and interrelationship with formal marriage.

Period data are routinely available on the prevalence of first and all marriages and divorces, but not on separations. The age at first marriage and the total first marriage rate are computed from civil registration data; these indicators allow for monitoring long-term and current trends and are directly comparable with their fertility counterparts (age at birth and TFR). As in fertility analysis, the use of occurrence-exposure period rates (e.g. the probability of marrying for the first time, divorcing or remarrying), which would be the best indicators of “true” current nuptiality, is seldom possible because of the absence of necessary data. Instead, different frequency-type period rates, computed with data from civil registration, are routinely used. Age-standardized period indicators of first marriages are adequate for the assessment of nuptiality levels and trends, but they are – as in the case of period fertility indicators – prone to distortions when the timing of these events changes such as postponement of (first) marriages. Therefore, it is preferable to adjust the total first marriage rate for the timing of events but such adjustments are not usually performed.

With those considerations in mind, the quantitative overview in this report relies on selected period and cohort characteristics of nuptiality and fertility, which seem to be most pertinent for examining partnership and reproductive behaviour in low-fertility settings.

3. Classification of countries

The attempt to classify populations according to the most salient features of demographic behaviour is central to this report. There are several reasons that justify the emphasis on data aggregated at the national level. Macro data are more than just the aggregations of micro data because they reflect the preponderant behavioural models, which shape, to a large extent, individual decision-making. Moreover, internationally comparable and sufficiently long series of micro-data are scarce. Although internationally comparable surveys generate a wealth of pertinent micro-level data, they only partially compensate for this drawback because such surveys are carried out in selected countries and therefore are unlikely to represent the diversity of demographic behaviours.

Of course, national populations are seldom homogeneous with respect to demographic behaviour, particularly so in large and diverse countries. On the other hand, the demographic behaviour of sub-national populations may be similar across national borders. Therefore, classifications of demographic behaviour at the meso-level, that is by sub-national population groups would probably better capture reality than a classification based on countries as units of analysis. However, this is precluded by the difficulty of developing universally applicable parameters for the identification of such groups and by the scarcity of appropriate internationally comparable data. As a compromise, it is assumed that the more available country-level indicators approximate the diversity of demographic behaviours.

The main criteria for selection of a below-replacement country for analysis are the availability, high quality and comparability of data from civil registration, censuses and surveys. This excludes, *inter alia*, below-replacement countries of Africa and the Caribbean and Asian countries and territories other than Japan, the Republic of Korea, China, Hong Kong S.A.R and Singapore. The geographical scope of this report includes all countries from the more developed regions, Hong Kong, the Republic of Korea and Singapore. However, not all indicators are available for all countries. For the purposes of this report, the United Nations regional classification of countries was adjusted to better take into account the cultural and demographic realities. Thus, Eastern Europe is “enlarged” to include countries with formerly centrally planned economies from Northern Europe (Estonia, Latvia and Lithuania) and Southern Europe (Albania, Bosnia and Herzegovina, TFYR of Macedonia, Serbia and Montenegro and Slovenia). Consequently, those countries are not included in the computation of regional averages of the European regions where they belong. Countries with established market economies from Northern, Southern and Western Europe are sometimes referred to as the Western countries of Europe. The analysis focuses on the four European regions, Northern America (Canada and the United States), Eastern Asia (Japan, Hong Kong, Republic of Korea and Singapore, which is in fact located in the South-eastern Asia) and developed Oceania (Australia and New Zealand).

Classifying national populations according to characteristics of demographic behaviour is rough but appealing because the countries that belong to respective groups have or had in the past similar cultural, social and economic conditions. This does not mean the absence of variation of national demographic parameters within groups of countries. Within some geographical regions, many national indicators are quite similar, while others are diverse. The degree of intra-regional heterogeneity is likely to vary as the function of the size of the group: for this reason, variation should be high in the group of countries with economies in transition (18 countries) and low in Northern America. In fact, several features of the common economic and political regime in Eastern Europe until the last decade of the twentieth century have created a relatively homogenous demographic landscape; the radical transformations of the 1990s led to the diversification of partnership and reproductive behaviours. The size of the group, though, is not the only and often not the major factor of intra-regional heterogeneity. Cultural characteristics and different paths of social history are the underlying causes of demographic variability. For instance, Western Europe (7 countries) is particularly diverse with respect to some demographic indicators. Similarly, several demographic characteristics of the United States substantially differ from those of Canada, which resembles more Western Europe. Intervals would be more appropriate than average values when there is large intra-regional variation of a particular demographic indicator within particular region. However, such intervals would often hamper the classification of the national populations. Therefore, if a country differs from the group on just one parameter of partnership or reproductive pattern, it is still considered as part of that group, but if a country substantially differs from the group on a number of parameters, it is classified as an “outsider”.

The quantitative analysis is limited to indicators that can be computed from widely available data, particularly from civil registration. Although the aim is to include as many countries as possible, the analysis is limited to developed countries (plus the Republic of Korea, Singapore and Hong Kong) because the necessary data are lacking on most below-replacement developing countries. The data are collected by United Nations Statistics Division, the Council of Europe and Eurostat directly from Governments or compiled for this report from official national statistical publications. Occasionally, data from sample surveys are used and those are referenced to their respective sources.

II. PARTNERSHIP PATTERNS

A. CONJUGAL UNIONS

Few decades ago, only formal marriage was acknowledged and accepted by society. Households were primarily nuclear composed of a husband-breadwinner, a wife-housekeeper and young children, or multi-generational where the nucleus was supplemented with co-residing grown-up children and grandchildren or other close kin. These socially approved family and parenthood forms largely prevailed in most agricultural societies before the Industrial Revolution of the nineteenth century and survived well into the mid-twentieth century.

Approximately up to the late 1960s marriage was the most common type of living arrangement in Europe, Northern America, Japan and developed Oceania. Even so other features of marriage, such as age at first marriage, prevalence of celibacy and household forms, differed markedly between the Western countries and Eastern Europe. In the Western countries, couples entered marriage at a relatively late age, while the Eastern European populations were characterized by early marriage. In several Northern European countries and in Northern America, non-trivial proportions of people never married whereas marriage was virtually universal in Eastern Europe, Eastern Asia and developed Oceania. Typically, large majorities of people in Western countries lived in nuclear households but in Eastern Europe complex households that included three generations of direct relatives and/or other relatives were popular.

This partition of Europe into two groups distinguished by differences in marital patterns coincides with the stylised historic fault line running from Saint Petersburg in the north-east to Trieste in the south-east of Europe (Hajnal, 1965). This partition played an influential role in the timing of the first demographic transition and continues to be relevant for the second.

Common demographic features, particularly living arrangements, marriage and childbearing, of these groups of countries have been shaped by centuries-old societal arrangements. In the Western countries, these included land ownership and inheritance rules that favoured the oldest sons at the expense of younger kin, the practice of parity-specific celibacy, protracted household service of unmarried youth (Laslett, 1988) and scarcity of affordable urban housing for the working classes. Even when these arrangements died out, the partnership patterns persisted as long as they did not conflict seriously with new conditions. In the predominately agrarian Eastern European societies, communal land ownership, allotment of land in accordance with household size and village-type housing in the cities facilitated early and universal marriage (Mironov, 2000; Vishnevsky, 1998).

The social changes of the late twentieth century have profoundly altered the family as a social institution in the West. Perhaps the most important change was the de-institutionalization of the family through erosion of obligations and commitments with regard to formal marriage. This erosion resulted, to a large extent, from urbanization, which greatly reduced the number of family businesses, separated parents from adult children, promoted anonymity and weakened the bonds of inter-generational influence. The range of options for individuals expanded. These options, which became socially acceptable and widespread, consist of permanent or much more prolonged state of celibacy (“living alone”), and of engaging in partnerships that do not assume formal contractual status and that have a strong individualistic character and are generally less stable than marriage (e.g. Hoffman-Nowotny, 1997). This diversification of arrangements relaxes obligations to previously strict social norms when choosing a path of action for family formation. Being married does not necessarily mean living together, and living together does not necessarily entail a married state. Marriage and parenthood are drifting apart and the sequences of events of personal biographies are no longer standardized (Dorbitz and Höhn, 2000). Marriage may be preceded or followed by periods of cohabitation. Divorce typically limits childbearing, but not when divorce is followed by remarriage.

Increased differentiation of individuals according to their tastes, habits and lifestyles obstructs mating and creation of formal unions (Chesnais, 2000a) because it becomes more difficult to find a suitable partner and marriage is considered to be the one of several but the most demanding form of partnership. As a result, alternative forms of partnership develop. While this hypothesis is difficult to test empirically, it is consistent with widely acknowledged fundamental traits of modern Western civilization (individualism, materialism, secularisation, high valuation of pleasure, social atomisation). In the present day, partnership patterns in the Western countries have in common late age at first marriage (lower in the United States) but differ with respect to the incidence of cohabitation and divorce which is high in Northern and Western Europe and the United States but low in Southern Europe and Eastern Asia.

In Southern Europe and Eastern Asia, despite the pervasive secularization of social life, marriage still largely retains the character of a sacred institution, sealed by the contract between families (rather than individuals). Marriage is increasingly postponed but remains the dominant form of union. In Italy, a person generally does not leave his or her parental home to experience life alone or with a cohabitant, but to get married. The same is true among the young of Japan where arranged marriages only recently started to decline (Matsuo, 2001).

The conservation of traditional forms of partnerships underlie, until recently, the high prevalence of standard biographies in most of Eastern Europe. Although early and universal marriage and standard family formation patterns predated the communist regimes, they were strengthened during most of the period that followed the Second World War by rigid organization of social life, which promoted the obligatory adherence social norms, and by material constraints and widespread shortages of goods and services, which greatly strengthened the interdependence between generations. The radical change in social and economic environment associated with the end of the communist regimes saw the beginnings of profound transformations of partnership patterns in this part of the world.

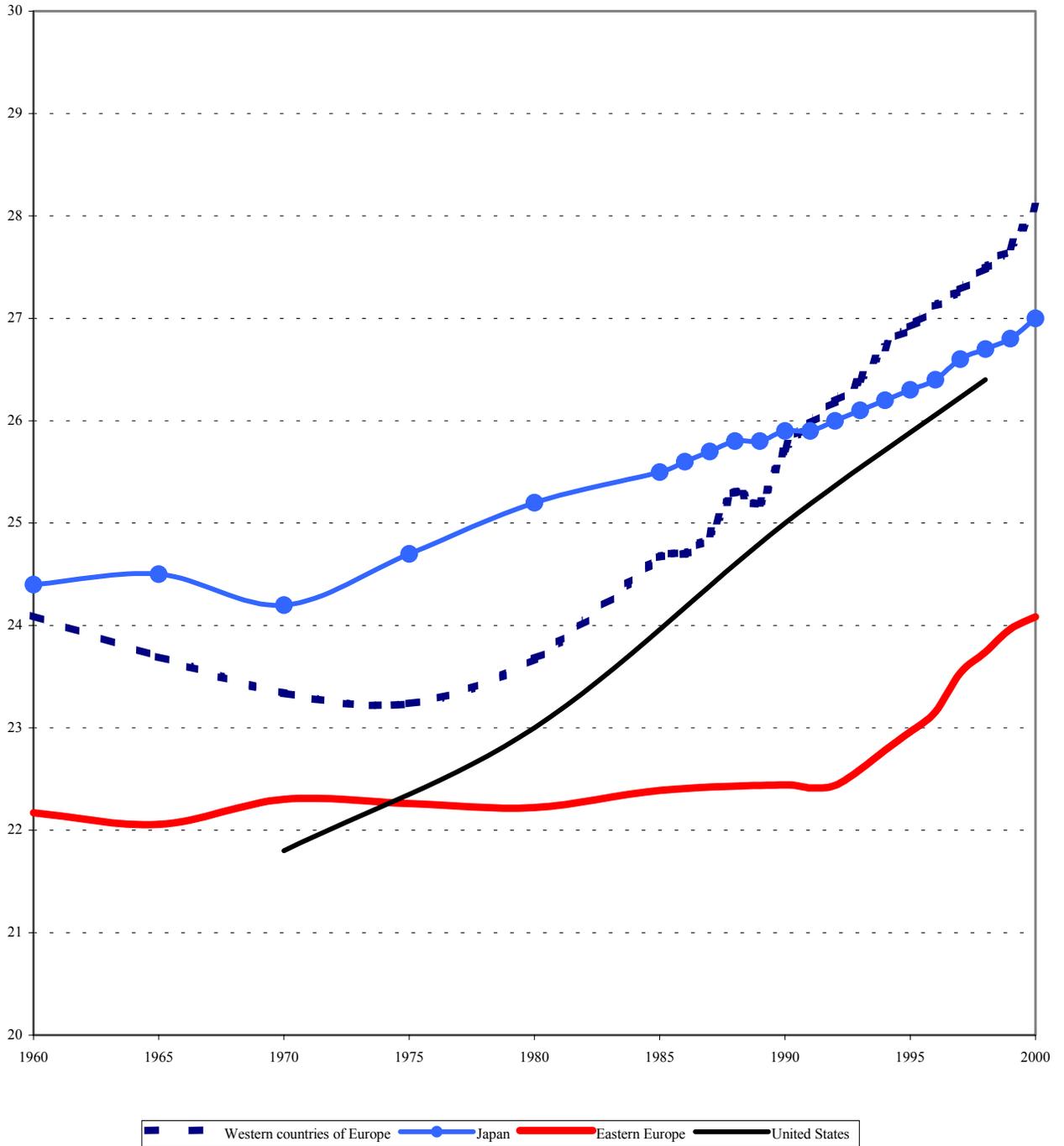
B. LEAVING THE NEST

In Western countries of Europe men and women traditionally married rather late, in their mid-twenties, and many not at all, whereas in both Eastern Europe and Eastern Asia, early and universal marriage was the norm. The singular mean age at marriage (SMAM) during the first quarter of the twentieth century was around 20 to 21 years in Japan, Republic of Korea (Atoh, Kandiah and Ivanov, 2001) and the Russian Federation, compared to about 25 years in the Northern, Southern and Western European countries (United Nations, 1990).

From the 1940s through the 1960s, the average age at first marriage declined in Northern, Western and Southern Europe, by a full year; it declined further by a year from 1960 to 1975. Trends similar to those in Western Europe occurred in the United States and Australia, where the proportion of women aged 20 to 24 who had married increased from 31 per cent in 1933 to 64 in 1971 (McDonald, 1994). Most Eastern European countries (with the exception of the Russian Federation) did not experience a noticeable post-war rejuvenation of marriage patterns.

The decline in age at marriage reversed in the United States and the Western countries of Europe around 1975. Since then, the trend towards increasing age at first marriage became universal for the cohorts born after the war. Postponement of marriage has become an intrinsic, structural factor, “in a certain sense implicit in the membership of a modern society” (Palomba, 2001). In the Western countries of Europe during the last quarter of the twentieth century, the average age at first marriage increased by 4.4 years (figure 1). The increase in the mean age at first marriage (for females) ranged from 3.3 years in Greece and Spain to 6.7 years in Denmark. In the United States, the age at first marriage increased from

FIGURE 1. MEAN AGE OF WOMEN AT FIRST MARRIAGE: SELECTED REGIONS AND COUNTRIES, 1960-2000



Source: computed from Table 3

21.8 years in 1970 to 26.4 years in 1998 (table 3). The mean age at first marriage for males, usually 2 to 3 years higher than that for females, evolved in parallel.

The same trends were unfolding in Eastern Asia with noticeable differences from the Western countries of Europe and the United States. The trend of increasing age at marriage started earlier in the twentieth century, was more gradual and was not interrupted by a rejuvenation associated with the post-war baby boom. Only in the period 1965 to 1970 was there, in Japan, a slight deviation from this trend. Eastern Asia experienced an increase in average age at marriage to levels recorded by the West during the post-war decade and again in the late 1990s. Thus in Japan, the age at first marriage increased from 24.4 years in 1960 to 27.0 years in 2000 (figure 1 and table 3). Similar trends unfolded in other Eastern Asian countries, although with some shifts in timing.

In Eastern Europe, age at marriage has been traditionally low. The average age at first marriage in the region was low and flat or decreasing through most of the second half of the twentieth century, until the 1990s (figure 1). The decrease in age at marriage in the Western countries of Europe during the baby boom narrowed the gap between two parts of the continent, albeit momentarily, to approximately 0.5 years around 1975. In the meantime, age at marriage has been decreasing in the former U.S.S.R and stable in most other Eastern European countries. For instance in the Russian Federation, the age at first marriage decreased from 24.7 years in 1960 to 21.8 in 1991 to 1993 (table 3). As a result, the age at first marriage in Eastern Europe sharply diverged from the other developed regions and by 1990 the difference was 3.3 years (figure 1).

This trend sharply reversed in the 1990s, which coincided with transformations of the socio-economic and political climate in Eastern Europe. The average age at marriage in Eastern Europe increased by 1.6 years in just a short period; the amount of increase is associated with each country's timing and depth of these socio-economic and political transformations. For example, the age at first marriage in Slovenia, the country, which is most advanced in terms of market reforms, rose by 2.7 years in the period 1990 to 2000, and in the Czech Republic by 2.9 years over the same period. In Belarus, the country undergoing rather slow transformation, the age at first marriage increased from 1990 to 2000 by only 0.6 years (table 3).

The social mechanisms and cultural norms that stipulate a particular age at marriage (and childbearing) are likely to include self-reinforcing mechanisms whereby prevailing social norms discourage dissent. This view is consistent with the stability of the early age at marriage during the periods of rigid social order typical for Eastern Europe for most of the second part of the twentieth century. Profound transformations of social order during the 1990s made innovative behaviour acceptable, which precipitated the rise of the age at marriage. Another explanation links postponement of marriage and increase of singlehood with the hardships of the transition period and therefore assumes that these trends will reverse as soon as economic conditions improve. However, the experience of other countries does not support this assumption.

The period of the life cycle that follows adolescence is "demographically dense" because it involves many inter-related life-altering transitions. Between ages 18 and 30, young adults usually finish their formal schooling, leave home, develop careers and begin families. These transitions may be sequential, as most often they used to be, but in recent decades the transitions acquired new stages that may overlap with traditional stages: getting tertiary education, searching for the first job, living alone and living together (cohabiting). Moreover, these stages are not necessarily sequential, and are often superimposed and gradual, including partial co-residence with parents, interruption in educational enrolment, and living "apart-together" (visiting relationship with a partner). Young adults may experience

TABLE 3. MEAN AGE OF WOMEN AT FIRST MARRIAGE: SELECTED DEVELOPED COUNTRIES, 1960-2000

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Asia																	
Eastern Asia																	
Japan	24.4	24.5	24.2	24.7	25.2	25.5	25.9	25.9	26.0	26.1	26.2	26.3	26.4	26.6	26.7	26.8	27.0
Europe																	
Eastern Europe																	
Albania	21.0	21.3	21.6	21.7	22.2	22.4	23.2	22.9	..	..	..	23.0	..	..	23.6	23.5	..
Belarus	..	..	..	..	22.9	22.4	22.0	21.9	21.8	21.7	21.7	21.6	21.9	22.1	22.1	22.5	22.6
Bosnia and Herzegovina	..	..	..	..	22.0	22.4	23.3	..	..	..	..	..	..	..	..	..	..
Bulgaria	21.3	21.4	21.4	21.4	21.3	21.4	21.4	21.4	21.6	22.0	22.3	22.6	22.8	23.1	23.2	23.5	24.1
Croatia	22.4	22.0	21.4	21.7	22.1	22.5	23.1	23.2	23.6	23.7	23.9	24.1	24.6	24.8	25.2	25.3	25.3
Czech Republic	22.0	21.7	21.6	21.6	21.5	21.6	21.6	21.6	21.6	22.0	22.3	22.7	23.0	23.4	23.7	24.1	24.9
Estonia	..	..	23.5	23.2	22.6	22.8	22.5	22.4	22.5	23.0	23.5	23.5	23.8	24.0	24.3	24.5	24.8
Hungary	22.0	21.8	21.5	21.1	21.2	21.5	21.9	21.9	22.1	22.4	22.7	22.9	23.2	23.6	23.9	24.2	24.6
Latvia	..	..	..	23.3	22.8	22.7	22.3	22.2	22.3	22.4	22.6	22.9	23.2	23.6	23.9	24.2	24.5
Lithuania	..	..	24.1	23.7	23.0	23.3	22.3	22.1	22.0	22.2	22.2	22.3	22.4	22.7	22.8	23.1	23.5
Poland	..	..	22.8	22.8	22.7	22.7	22.6	22.7	22.8	22.8	23.0	23.1	..	23.4	23.6	..	..
Republic of Moldova	..	..	..	..	..	22.8	22.3	22.0	21.7	21.5	21.7	21.9	21.9	..	..	..	21.0
Romania	22.1	21.8	21.8	22.1	21.5	21.9	22.0	22.0	22.0	22.1	22.4	22.7	22.8	22.9	23.1	23.2	23.4
Russian Federation	24.7	24.0	23.2	22.7	22.4	22.2	21.9	21.8	21.8	21.8	21.9	22.0	22.1	..	..	..	..
Serbia and Montenegro	22.0	22.2	22.0	22.1	22.5	22.8	23.4	23.6	23.8	24.0	23.8	24.0	24.2	..	24.4	24.5	24.6
Slovakia	22.1	22.1	22.0	22.0	21.9	22.0	21.9	..	..	..	..	..	..	..	23.1	23.2	24.0
Slovenia	..	..	23.1	22.5	22.5	22.8	23.7	24.0	24.2	24.6	24.8	25.1	25.4	25.7	26.0	26.3	26.7
TFYR Macedonia	22.1	22.2	22.1	22.0	22.5	22.6	22.6	22.7	22.7	22.8	23.0	23.0	23.0	23.1	23.3	23.3	23.6
Northern Europe																	
Denmark	22.8	22.5	22.8	23.5	24.6	26.2	27.6	27.8	28.0	28.5	28.9	29.0	29.2	29.3	29.5	29.7	29.5
Finland	23.8	23.4	23.3	23.4	24.3	25.1	26.0	26.1	26.3	26.6	26.7	27.0	27.2	27.3	27.5	27.8	28.0
Iceland	..	..	23.2	23.1	23.7	25.6	26.7	26.8	27.3	27.7	28.5	28.5	28.8	29.1	29.7	29.8	29.9
Ireland	26.9	25.6	24.8	25.0	24.6	25.4	26.6	26.9	27.1	27.4	27.8	27.9	28.2	..	..	..	..
Norway	23.7	23.2	22.8	22.9	23.5	24.9	26.2	26.6	26.6	26.9	27.1	27.3	27.7	27.9	28.2	28.6	..
Sweden	23.9	23.5	23.9	24.8	26.0	27.2	27.5	27.6	28.0	28.1	28.5	28.7	28.9	29.2	29.4	29.8	30.2
United Kingdom	23.3	22.6	22.4	22.5	23.0	23.9	25.1	25.4	25.7	25.9	26.1	26.4	26.7	26.9	27.0	27.3	..
Southern Europe																	
Greece	25.1	24.6	24.0	23.4	23.3	23.5	24.8	24.8	25.1	25.3	25.5	25.6	25.9	26.2	26.5	26.6	..
Italy	24.8	24.2	23.9	23.7	23.8	24.5	25.5	25.7	25.9	26.0	26.3	26.6	26.7	27.0	..	..	..
Portugal	24.6	24.4	24.0	23.1	23.4	23.4	23.9	24.1	24.2	24.4	24.6	24.7	24.8	25.0	25.0	25.1	25.2
Spain	..	25.3	24.8	23.9	23.4	24.2	25.3	25.6	25.9	26.2	26.5	26.8	27.1	27.3	27.5	27.7	..
Western Europe																	
Austria	24.0	23.3	22.9	22.7	23.2	24.1	24.9	25.2	25.3	25.6	25.8	26.1	26.3	26.5	26.7	27.0	27.2
Belgium	22.8	22.6	22.4	22.0	22.2	23.1	24.2	24.4	24.7	24.9	25.2	25.4	25.6	25.7	25.8	26.1	..
France	23.0	22.7	22.6	22.5	23.0	24.2	25.6	25.8	26.1	26.4	26.7	26.9	27.4	27.6	27.7	27.8	..
Germany	23.5	22.9	22.5	22.3	22.9	24.1	25.2	25.6	25.8	26.1	26.3	26.4	26.6	26.7	26.9	27.2	..
Luxembourg	..	..	22.8	22.7	23.0	24.1	25.3	25.9	25.9	25.7	26.3	26.6	26.5	27.2	27.2	27.4	27.1
Netherlands	24.2	23.6	22.9	22.6	23.2	24.4	25.9	26.2	26.5	26.7	27.0	27.1	27.2	27.4	27.6	27.7	27.8
Switzerland	24.9	24.6	24.2	24.3	25.0	26.0	26.8	26.9	26.9	27.0	27.2	27.3	27.3	27.5	27.7	27.7	27.9
Northern America																	
United States of America	..	..	21.8	..	23.0	..	25.0	..	..	..	..	..	..	..	26.4	..	..

Sources: Council of Europe, United Nations Population Division

any number of independent living arrangements before they marry, as they change jobs, pursue education and move into and out of intimate relationships.

Many social, demographic and economic factors influence young adults' decisions about where and with whom to live (Casper and Bianchi, 2001). The social factors include the definition of maturity, probability of getting a college education away from their parental place of residence and cultural acceptability of living alone when young and unmarried. The old economic incentive to keep young adults at the parental household, because of their role in family production, has eroded everywhere in the developed world except for pockets of smallholder agriculture. The other previously powerful incentive for co-residence with adult children was economic support the grown-up children traditionally provided their aged parents. This incentive virtually disappeared with the advent of pension schemes. On the other hand, prolonged schooling delays the onset of economically independent life, which may extend the need for parental support.

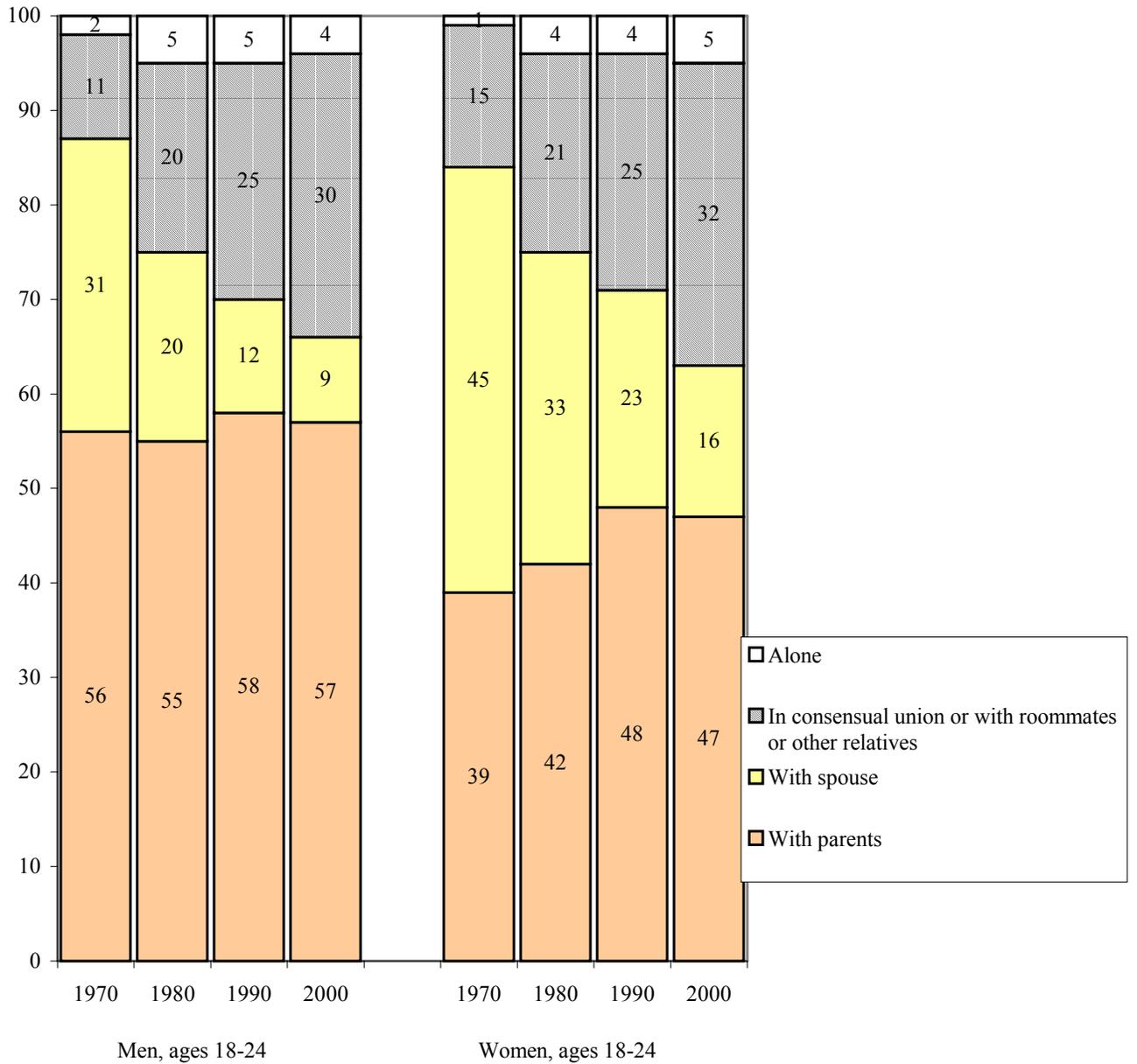
The reversal of inter-generational economic flows determines the new role of demographic factors, which operate through the age at marriage and childbearing of the previous generation: the younger the parents are when their children reach maturity, the more able they may be to support their children through residential cohabitation. On the other hand, co-residence with parents often is hardly compatible with marrying or entering another form of lasting intimate relationship.

Among the economic factors, the cost of living and employment conditions are powerful factors for determining the timing of when the young leave the parental home. Even though young adults today may prefer to live independently, they may not be able to afford to do so. High and rising housing costs is a deterrent for young people to leave the parental home. Unemployment or low wages for entry-level jobs in the conditions of soaring housing costs may put independent living out of reach for many young adults. Living at home may be a way for families to curb college expenses. These factors are often closely interrelated: family and work transitions are influenced greatly by fluctuations in the economy and by related changing ideas about gender and age-specific roles.

The Northern American pattern of transition to adulthood is commonly associated with early home leaving and residential independence, which often takes the form of either single living, living with age mates, or cohabitation. Getting a college education often involves getting out of the parental household. Because the rate of enrolment in tertiary education is high, a fairly large proportion of young people are in this situation. The proportion living alone, although increasing, is relatively small at 4 to 5 per cent. As age at marriage increases, the proportion living with a spouse greatly decreases. Thirty-one per cent of men aged 18 to 24 lived with their spouses in 1970, while only 9 per cent lived with a spouse in 2000. A similar drop occurred for women – from 45 per cent in 1970 to 16 per cent in 2000. Conversely, the prevalence of living with a partner other than a spouse, unrelated roommate or other relatives increased among 18 to 24 year old males from 11 per cent in 1970 to 30 per cent in 2000, and among females – from 15 per cent to 32 per cent, respectively. However, the prevalence of early residential independence should not be overestimated as more than half of young males and almost half of young females live with their parents and these proportions have been stable over time (figure 2).

In Northern and Western Europe, living arrangements among young adults are similar to that in the United States in that a fairly large proportion lives away from their parents. These arrangements evolved over time and, as the trends indicate, not always in the same direction. For instance, in France, the median age at acquiring residential independence declined, for females, from 21.2 years in the cohorts born between 1941 and 1945 to 20.1 years in the cohorts born between 1956 and 1960. However, the opposite trend is unfolding among males: the percentage of men who stay at the parental household at least until age 30 rose from 6 per cent in the 1941 cohort to 10 per cent in the 1955 cohort (Toulemon, 1994).

FIGURE 2. LIVING ARRANGEMENTS OF YOUNG ADULTS: UNITED STATES, 1970-2000



Sources: U.S. Census Bureau, Current Population Surveys, March Supplements of 1970, 1980, 1990 and 2000

Southern Europe is characterized by a unique pattern of transition to adulthood. Residence of youth in the parental household is prolonged, first union formation is synchronized with leaving the parental home, partnership is equivalent to marriage and premarital cohabitation is not widespread. These traditional features of Southern European societies proved to be resilient to the influence of the lifestyles typical for other Western countries of Europe (Billari and others, 2000; Gesano, 2001). In Southern Europe being a student or even a young professional is compatible with living with parents who take care of all household chores and do not impose their standards of behaviour on their children (Golini, 2000). Young people leave their parental home to study or to perform army service, but many of them return. This way of life is sometimes prompted by the shortage of affordable housing or difficulties in the labour market but its roots lie deeper. In essence it is embedded in historically strong bonds of the Southern European family that underlie long lasting flows of inter-generational transfers from the older to the younger generations. The new environment did not weaken these bonds but rather adapted them for the new conditions.

In Italy, for instance, the completion of higher education is often indispensable for seeking employment. Having a steady job and possessing a home are necessary prerequisites for independence from the family of origin, starting marital life and childbearing (Livi Bacci, 1997). Not only are these events sequential, they are often lagged. For instance even having stable employment does not necessarily imply residential independence from parents. In 1995, 54 per cent of employed Italians aged 25 to 29 years lived with their parents – compared with 18 per cent in France and 26 per cent in Germany (Palomba, 2000; 2001). Such pathways to adulthood, consisting of sequenced and lagged events become rigid, creating the “unbreakable chain” where every event is predicated on another; and each link of the chain, each stage in life tends to be increasingly postponed (Palomba, 2000; 2001). The increasing lags between reaching the statutory age at marriage, completing education and getting a steady job accumulate and translate into particularly late age at marriage. Continuing high unemployment among youth (including among college graduates), unrestricted enrolment in fee-free universities for prolonged number of years and a tight housing market create the psychological climate conducive to high prevalence of cohabitation with parents even after necessary conditions for economic independence are achieved. Getting married entails leaving the parental home. Consequently, most young Italian males stay with their parents up to age 30, up to a third – until age 35, and a sizeable proportion (13 per cent), beyond age 35 (table 4). The social and psychological importance of marriage and childbearing remains high. Among the youth in Italy (as well as in Greece, and, to a lesser extent, Spain and Portugal) in contrast to their age mates elsewhere in Europe, very few are moving into new forms of partnership. Another result of living in the parental household where all of a young man’s daily needs are taken care of by his mother is the development of a belief that gender roles in the family should be strongly separated.

TABLE 4. LIVING ARRANGEMENTS AND MARITAL STATUS OF PEOPLE AGED 15-39; ITALY, LATE 1990S

<i>Age group</i>	<i>Men</i>		<i>Women</i>	
	<i>Percentage living in parent's home, 1998</i>	<i>Ever married, 2000</i>	<i>Percentage living in parent's home, 1998</i>	<i>Ever married, 2000</i>
15-19	99.0	0.1	98.4	0.9
20-24	91.6	2.9	83.5	12.8
25-29	69.2	21.2	45.7	43.6
30-34	30.8	54.6	16.5	71.9
35-39	13.1	74.9	6.6	83.7

Source: Gesano, 2001

In Eastern Asia, the traditional patrilineal family system, under which the male head controls all family assets, has shown considerable resilience in the face of broader social change. Under this system, the male head of the family controls all family properties and is generally the sole provider of economic support. A woman, when marrying, had to leave her parental home and move to her husband's house. More recently, the principal change has been a shortening of the length of time the young couple spends with the husband's parents, rather than a movement away from ever living with parents (Chi, 1992). The change in the prevalence of co-residence was dramatic. In Japan, the proportion of newly-wed couples living with their parents (mostly husband's parents) dropped from 60 per cent in 1960 to about 30 per cent in the 1970s and then stabilized; the percentage of the elderly (persons aged 65 and over) co-residing with their sons or daughters decreased from 87 per cent in 1960 to 52 per cent in 1997 (Atoh, 1997). In the Republic of Korea, the decline was from 29 per cent in 1960 to 16 per cent in 1985 (Kong and Choe, 1989). Currently in Eastern Asia, grown-up children tend, on average, to stay in or very close to their parental home longer than their age peers in Northern America, Northern Europe and Western Europe, but not as long as in Southern Europe.

In Eastern Asia, close links of nuclear family households to parents living elsewhere remain and these linkages involve frequent contact to help parents, including financial help. Thus, the extended family is still functioning, but not anymore as a single household. A special feature in Japan is the practice for young couples to build an extension to the parental house by adding another floor with a separate entrance thus saving on the high price of land. This practice further preserves intergenerational bonds and should be taken into account when estimating the number of young adults "effectively" living together with their parents.

In Eastern Europe, several factors pushed the age at leaving the parental home in different directions. In Belarus, the Russian Federation and Ukraine, and to a lesser extent elsewhere in the region, the prevailing patrilineal system, associated with protracted work on family plots was quickly and virtually completely destroyed by the collectivisation of agriculture. However, co-residence of two or three generations in a single household and close links of nuclear family households to parents living elsewhere remained in the cities and the countryside. Policies reserving preferential access to housing for married couples contributed to the maintenance of the young marriage pattern. This, combined with acute housing shortages in urban areas, forced young couples to share apartments with their parents and, therefore, allowed the young to rely on their parents for help in childrearing and the sharing of household expenses. Full employment diminished the opportunity costs of interrupting careers and the wide availability of low-cost crèches and kindergartens decreased the direct costs of childbearing. In addition, pro-family policies of the early 1980s in several Eastern European countries and particularly in the former Soviet Union resulted in a slight decline in the age at marriage with a concomitant mini baby boom. Since the early 1990s these conditions are eroding leading to rising age at marriage and increasing percentage of unmarried women in prime reproductive ages.

C. COHABITATION

One of the most significant changes in the fourth quarter of the twentieth century was the increase in the proportion of men and women living together without formal marriage. As a mass phenomenon in Western and Northern European countries, these unions first appeared in the second half of the nineteenth century in the industrial working classes of the United Kingdom and since then have remained popular in that milieu (Haskey and Kiernan, 1987), particularly among the low-paid unskilled blue-collar workers. In Southern and Eastern Europe, this type of conjugal arrangement was either very rare or non-existent. Russia from 1918 to the early 1930s experienced an exceptional period when cohabitation was popular

among urban youth as a form of “revolutionary denial” of bourgeois marriage; in the 1930s, this attitude was substituted by the strong adherence to the stable, and duly registered “proletarian family”.

In the last third of the twentieth century, cohabitation became popular among professionals and students in Northern and Western Europe, Northern America and developed Oceania. In the United States in the 1970s, single Hispanic women were most likely to cohabit, but by 1998, single non-Hispanic white women became the most likely to cohabit (Bianchi and Casper, 2000). In general, three periods of development of cohabitation may be discerned: “traditional” free unions; increasing cohabitation of young people: increasing duration of cohabitation (de Guibert-Lantoine and others, 1994; Toulemon, 1996).

TABLE 5. PREVALENCE OF CONSENSUAL UNIONS IN AGE GROUP 20-24: SELECTED COUNTRIES, 1990s

Country	Year of census or survey	In consensual unions as per cent of age group		Percent of consensual unions in all types of conjugal unions	
		Men	Women	Men	Women
Denmark	1991	21.1	33.8	82.2	75.2
Finland	1989-92	30.8	23.2	51.7	32.4
France	1994	15.8	23.9	79.0	61.9
Hungary	1990	2.6	3.7	11.5	7.6
Portugal	1991	1.8	2.9	10.0	8.0
Republic of Moldova	1997	..	3.2	..	4.8
Russian Federation	1994	3.0	3.8	7.8	6.7
Ukraine	1999	..	6.0	..	10.2

Source: Fertility and Family Surveys. Country Reports; Goskomstat Russia (1996). Micro census 1994. General Results.

Prevalence of cohabitation in Europe (tables 5-7 and figure 3) varies widely, generally increasing from east to west and from south to north. Prevalence is markedly higher in Northern and Western Europe than in Eastern and Southern Europe. For the youngest cohorts for whom information is available, the percentage of females who, by age 25, had entered consensual unions, ranges from 10 per cent or less in Italy, Poland and Spain to 50 per cent or more in Austria, Norway, Sweden and Switzerland (tables 6 and 7). The popularity of cohabitation largely depends on the foundations of the family, which are deeply rooted in history. Thus, the development of cohabitation in the Scandinavian countries is facilitated by the historically predominant form of marriage as the contract between two individuals. Concurrently, cohabitation is discouraged where the marriage is perceived as the contract between families, as it is the case in Southern Europe.

Cohabitation is a particularly popular living arrangement of young men and women in the Scandinavian countries. In Sweden, cohabitation among people in their early 20s almost supplanted marriage since at least the Second World War (table 6 and figure 3). In Norway, cohabitation rates soared in the late 1970s to early 1980s, reaching 34 per cent in the age group 20 to 24, 24 per cent in the age group 25 to 29 and 12 per cent in the age group 30 to 34. In the ensuing 17 years, the rate for the 20 to 24 year olds was stable, but the prevalence of cohabitation among women in their late 20s and early 30s substantially increased reaching 42 and 28 per cent, respectively (figure 4). In Estonia and Latvia, that are culturally close to Scandinavia, the percentage of cohabiting reproductive-age women is close to that in Northern and Western Europe rather than to other Eastern European countries.

TABLE 6. PARTNERSHIP FORMATION AND DISSOLUTION BY FEMALE GENERATION: SELECTED COUNTRIES, 1945-1970

Partnership	Birth cohort	Eastern Europe					Northern Europe			Southern Europe			Western Europe				Canada		
		Estonia ^a	Hungary	Latvia	Lithuania	Poland	Slovenia	Norway	Sweden	Italy	Portugal	Spain	Austria	Belgium ^b	France	Netherlands		Switzerland	
Percentage of females who, by age 25, had entered first partnerships																			
Marriages not preceded by cohabitation	1945-50	39	...	59	74	73		64	16	68	62	64	57	...	64	...		51	74
	1950-55	29	78	55	67	70	65	52	8	68	66	66	43	80	60		65	35	58
	1955-60	24	72	56	69	68	62	35	5	57	62	66	30	73	47		53	23	49
	1960-65	19	66	54	69	70	44	21	6	50	55	53	22	59	33		31	15	32
	1965-70	15	...	...	65	...	41	...	...	36	46	43	13	...	16		21	16	...
Consensual unions	1945-50	29	...	16	6	3	...	9	68	1	10	2	22	...	15	...		18	7
	1950-55	47	7	24	9	3	17	26	74	3	10	3	38	6	21		18	33	20
	1955-60	49	15	25	13	4	23	44	76	3	8	5	45	10	35		28	45	32
	1960-65	61	18	29	11	4	36	58	74	5	11	7	55	17	46		45	51	42
	1965-70	64	...	40	16	...	43	...	...	5	13	10	58	...	60		50	51	...
Percentage of consensual unions that converted to marriages during first 5 years																			
	1945-50	78	...	79	81	...	...	...	59	...	40	67	...	65	...			77	36
	1950-55	81	74	81	84	56	73	63	42	51	...	50	60	53	64		61	65	40
	1955-60	76	72	82	75	69	62	56	30	48	...	45	50	57	70		54	67	43
	1960-65	80	73	78	86		60	48	28	68	...	48	53	48	...		56	60	40
	1965-70	67	...	67	79	...	58	...	12	48	...	...	40	...	...		42	49	29
Percentage of first partnerships that dissolved during the first 5 years																			
Marriages not preceded by cohabitation	1945-50	14	...	15	5	4		9	10	1	...	1	8	...	5	...		5	5
	1950-55	17	9	17	8	3	6	7	12	2	...	2	5	5	7		3	9	8
	1955-60	11	10	15	7	4	4	13	8	2	...	4	10	4	7		5	8	7
	1960-65	12	9	19	11	4	4	13	6	2	...	3	6	5			6	5	9
	1965-70	10	8	22	12	...	4	...	...	3	...	4	16	...	...		6	5	2

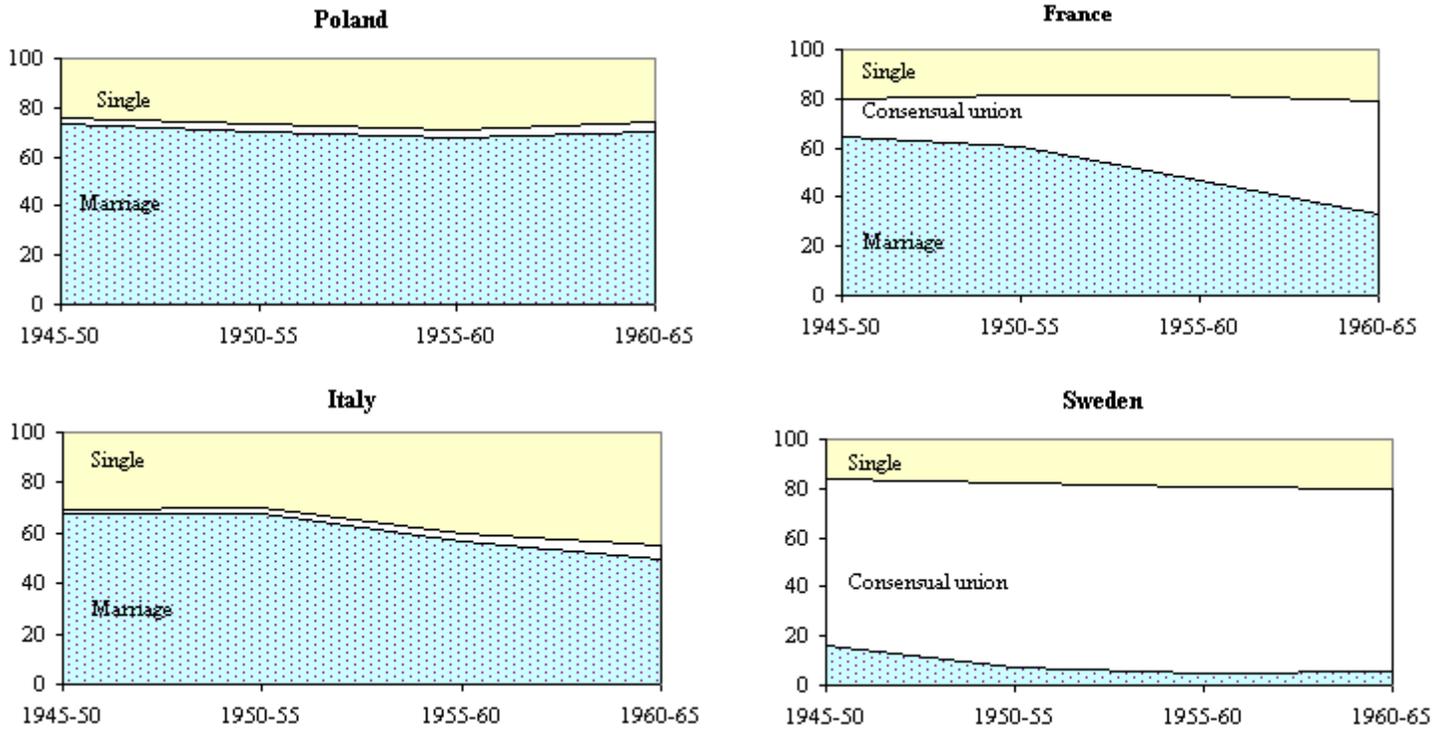
Partnership	Birth cohort	Eastern Europe						Northern Europe			Southern Europe			Western Europe				Canada
		Estonia ^a	Hungary	Latvia	Lithuania	Poland	Slovenia	Norway	Sweden	Italy	Portugal	Spain	Austria	Belgium ^b	France	Netherlands	Switzerland	
Consensual unions	1945-50	16	...	13	11	...	...	27	13	...	...	...	4	...	9	...	13	22
	1950-55	17	17	13	6	7	12	17	21	7	...	14	8	8	13	33	22	24
	1955-60	26	19	10	11	3	9	23	30	18	...	17	10	5	12	21	19	20
	1960-65	24	16	13	...	9	11	31	33	4	...	14	15	11	...	19	25	28
	1965-70	22	...	20	12	...	10	...	32	...	...	26	13	...	...	16	23	28
Consensual unions converted into marriage	1945-50	15	...	17	17	9	...	...	8	...	...	0	5	...	6	...	10	5
	1950-55	12	22	15	12	11	7	5	9	12	...	4	3	10	7	9	11	12
	1955-60	17	15	17	20	...	6	6	13	3	...	6	8	8	9	9	11	20
	1960-65	16	9	16	28	...	3	10	9	...	...	8	6	...	...	6	8	11
	1965-70	12	...	27	17	...	3	...	...	7	...	10	10	...	...	6	4	3

Source: United Nations Economic Commission for Europe and UNFPA (different years). Fertility and Family Surveys in Countries of the ECE Region. Standard Country Reports

NOTES: a both sexes combined

b Flanders only

FIGURE 3. DISTRIBUTION OF 25-YEAR OLD WOMEN BY STATUS OF FIRST PARTNERSHIP, BY BIRTH COHORT

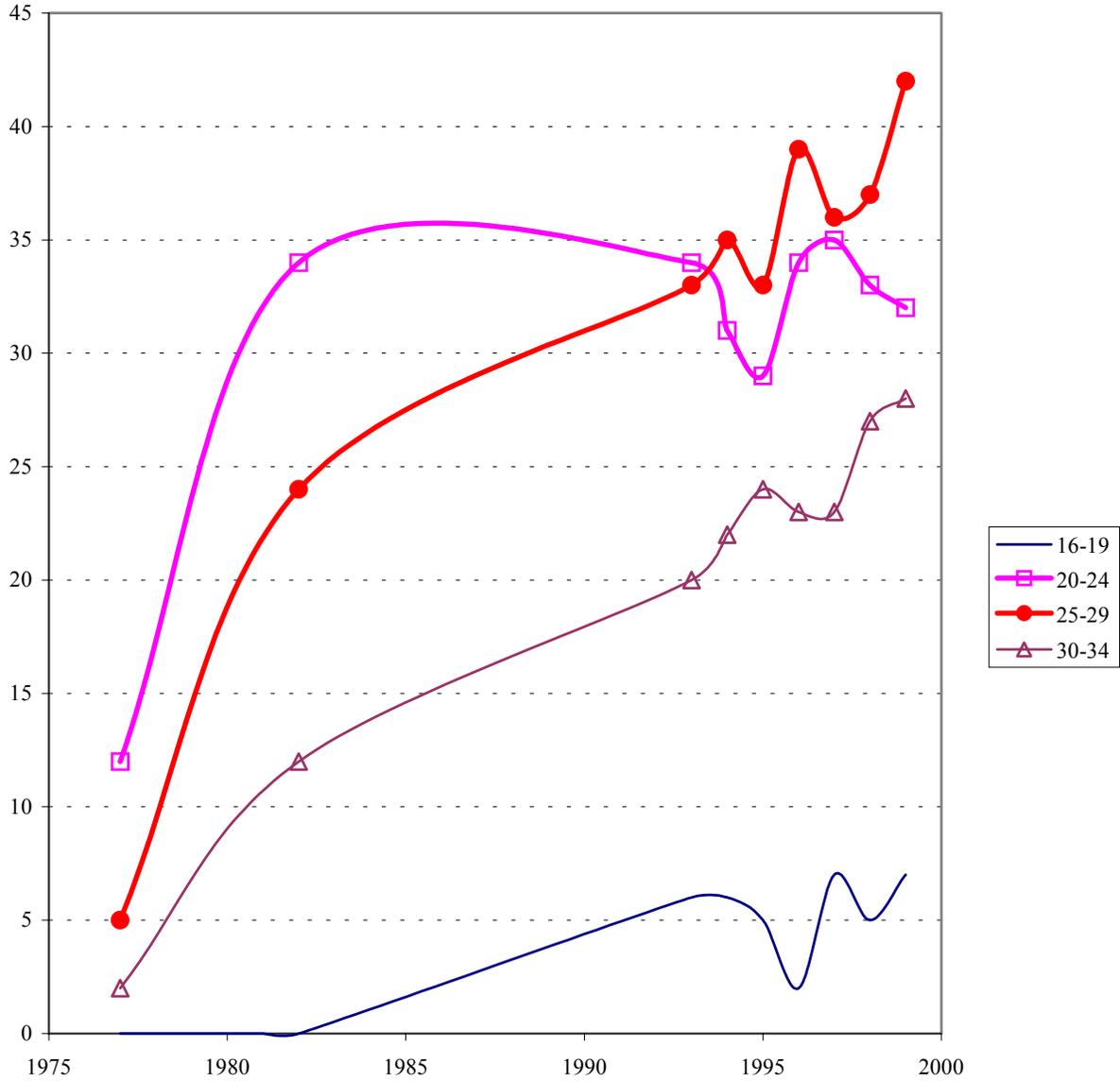


Source: United Nations Economic Commission for Europe and UNFPA (different years). Fertility and Family Surveys in Countries of the ECE Region. Standard Country Reports

In France, consensual unions had been relatively popular in the cohorts born soon after the war but proliferated since the 1970s. The frequency of first consensual unions that began, by age 25, increased from 15 to 20 per cent in the 1945 to 1955 cohorts to 35 per cent in the cohorts born in 1955 to 1960 and then soared to 60 per cent in the cohorts born in the late 1960s (table 6 and figure 3). Among the conjugal unions (marriage and cohabiting couples) formed before age 30, the proportion of marriages not preceded by cohabitation declined from 80 per cent for the “union cohorts” of 1968-1970 to 36 per cent for the union cohorts of 1980-1982. The proportion of cohabiting unions leading to marriage within three years increased from 11 per cent to 29 per cent and the proportion leading to a birth, from 6 per cent to 10 per cent, to separation, from 3 per cent to 11 per cent. The proportion of cohabiting unions that remained after three years rose from zero to 14 per cent (Leridon and Villeneuve-Gokalp, 1994).

In the United States, cohabitation was a rare phenomenon not so long ago. Unmarried-couple households made up less than one per cent of American households in 1960 and 1970. This share rose to 2.2 per cent by 1980, to 3.6 per cent in 1990, and to nearly 5 per cent by 1998. In combination with an increasing proportion of one-person households (young and aged), the growth of cohabitation leads to declining share of family households. In 1960, the latter accounted for 85 per cent of all households but by 2000, declined to 69 per cent. The growth of cohabitation accounts for 38 per cent of the decline in marriage over the period, assuming that all the cohabitants would have eventually married (Bianchi and Casper, 2000). Currently, the prevalence of cohabitation is moderately high. Yet, cohabitation is a more widespread phenomenon than suggested by the proportion currently living in such a union; one-half of the

FIGURE 4. PERCENTAGE OF COHABITING WOMEN BY AGE GROUP: NORWAY, 1975-1999



Source: United Nations Economic Commission for Europe and UNFPA (1996). Fertility and Family Surveys in Countries of the ECE Region. Norway. Standard Country Report.

TABLE 7. PERCENTAGE OF FEMALES BORN IN 1960-1965 WHO, BY AGE 25, HAD ENTERED THEIR FIRST PARTNERSHIP

<i>Country</i>	<i>Marriage not preceded by cohabitation</i>	<i>Consensual union</i>
Austria	21.7	54.6
Belgium	58.8	16.9
Canada	31.9	42.3
France	32.9	46.0
Hungary	65.7	18.1
Italy	49.8	5.0
Latvia	54.0	28.6
Lithuania	68.8	10.5
Netherlands	31.3	45.2
Norway	21.0	57.6
Poland	69.9	4.1
Portugal	55.1	10.8
Slovenia	43.5	36.0
Spain	53.2	7.3
Sweden	5.7	74.1
Switzerland	15.2	50.9

Source: United Nations Economic Commission for Europe and UNFPA (different years). Fertility and Family Surveys in Countries of the ECE Region. Standard Country Reports

couples that married in the mid-1990s had lived together before marriage, up from 8 per cent in the late 1960s (Bumpass and Lu, 2000).

In Southern Europe, pre-marital cohabitation is infrequent. In the four Southern European countries, the percentage of persons who, by age 25, had entered a first partnership that was not marriage, ranged from 5 per cent in Italy to 11 per cent in Portugal in the early 1990s. Moreover, the inter-generational increase was trivial (tables 6-7 and figure 3).

In Japan, cohabitation among young people is uncommon. A 1997 survey reported less than 2 per cent of women aged 18 to 34 to be currently cohabiting (Atoh, Kandiah and Ivanov, 2001); partnerships typically start with marriage (Atoh, 1993). It was also reported that there is no evidence yet of a major trend towards cohabitation before marriage, or of rising proportions of births outside of marriage among the overseas Chinese in Asia, (Leete, 1994).

In most of Eastern Europe cohabitation was rare (tables 5 and 6), at least in the urban areas, presumably because the access to housing for young adults has been limited to formally married couples; rigorous moral values have also chastised extramarital relationships. However, these attitudes are rapidly changing. In the Russian Federation of the mid-1990s, in spite of low prevalence of cohabitation (6 per cent of the population and 3 per cent of first partnerships), only 6 per cent of respondents aged 16 to 50 disapprove of cohabitation (Vishnevsky and others, 1999; Zakharov and others, 2000). There are indications that in the former U.S.S.R and its Slavic successor States, consensual unions have been and remain somewhat more prevalent in the rural areas, where housing shortages were not that acute. However, cohabitation there has higher prevalence among older couples often following widowhood, divorce or separation than among younger couples as a form of first partnership.

Cohabitation is a complex phenomenon that varies over time and its preponderant types are associated with social strata and cultural affiliation. Cohabitation may be a prelude to marriage, a trial marriage, a stable childless union or a “free union” – the closest substitute for marriage whereby the partners live together, have children and behave as if they were married but without official certification of their bond. In the United States, in the period 1987 to 1988, 45 per cent of cohabitants characterized their living arrangement as a precursor to marriage, 15 per cent as a trial marriage, 10 per cent as a substitute for marriage and 30 per cent as co-residential dating (Bianchi and Casper, 2000). That the major effect of cohabitation has been to delay, not replace, marriage is consistent with the fact that marriage rates at ages 29-39 rose between 1988 and 1995, keeping the proportion of persons who ever marry close to the 1988 level (Schoen and Standish, 2001). At the same time, cohabiting unions are increasingly likely to include children. In the United States in 1978, 29 per cent of unmarried-couple households included children under age 18 (but mostly from previous marriages); by 1998, 43 per cent included children, thus indicating a trend towards a substitution of cohabitation for marriage.

In France, the dynamics of cohabitation are somewhat different. The proportion of transient and stable childless unions increased from 29 per cent among unions started during 1968 to 1970 to 45 per cent among the unions started during 1980 to 1982 (Leridon and Villeneuve-Gokalp, 1994). This happened because the growth of cohabitation of young people (and therefore mostly childless) -- was particularly steep in France. The increase of the proportion of childless cohabiting couples was produced by this growth and not at the expense of “free unions” with a child whose number did not decrease while the proportion decreased from 24 per cent to 8 per cent over the same period. The third stage of development of cohabitation (that is its increasing duration) is gaining momentum later than in several other Western countries (Toulemon, 1996).

The percentage of non-formal unions that convert into marriage relatively soon (during the first 5 years of the relationship) varies in inverse relationship with the prevalence of those unions: it is highest (above 60 per cent) in Eastern European countries and Italy and lowest (12 per cent) in Sweden. In the United States about three-quarters of cohabiting men and women expect to marry their current partner (Manning and Smock, 2000). The propensity to convert cohabitation into marriage is decreasing almost everywhere (table 6). This may imply that cohabitation for many people concerned increasingly leads to a de facto substitution of consensual relationship(s) for formal marriage rather than a prelude to wedlock. The “paperless unions” are becoming lasting relationships, an alternative to the institution of marriage (Desplanques and de Saboulin, 1986; Leridon and Villeuneuve-Gokalp, 1994).

D. UNION DISSOLUTION

Patterns of union dissolution are characterized by rising divorce rates and high separation rates. At least one in three first marriages ends in divorce in most European countries (Bosveld, 1996), Australia (McDonald, 1994) and the United States (Bramlett and Mosher, 2001). Divorce is still uncommon in Southern Europe and Eastern Asia, although its incidence is rising rapidly.

In the early 1960s, the total divorce rate varied in Northern Europe from 0.09 divorces per woman in Norway to 0.19 in Denmark; in Western Europe the total divorce rate was not higher and ranged from 0.07 in the Netherlands to 0.14 in Austria (table 8). Since then the incidence of divorce increased 3 to 5-fold in both regions. In 2000, the total divorce rate ranged from 0.26 in Portugal and Switzerland to 0.55 in Sweden. In this respect, Eastern Europe is diverse. In many countries of the region, in particularly in the European U.S.S.R. the trends and levels of divorces have been and remain close to those in Northern and Western Europe. For instance, the total divorce rate in the Russian Federation increased from 0.17 in 1960 to 0.51 in 1998. Some fluctuations in the trend occurred in the 1990s. In the early 1990s, the number

TABLE 8. TOTAL DIVORCE RATE: EUROPEAN COUNTRIES, 1960-2000

<i>Country</i>	<i>1960</i>	<i>1965</i>	<i>1970</i>	<i>1975</i>	<i>1980</i>	<i>1985</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
Eastern Europe																	
Albania	0.08	0.09	0.12	0.12	0.11	0.11	...	...	...	...	...	...	...	...	...	...	...
Belarus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.55	0.53
Bosnia and Herzegovina	...	...	...	...	...	0.08	0.05	...	...	...	...	...	...	...	...	...	...
Bulgaria	0.10	0.13	0.14	0.15	0.18	0.21	0.17	0.17	0.15	0.13	0.13	0.18	0.18	0.18	0.20	0.19	0.21
Croatia	...	...	...	...	0.15	0.15	0.17	0.15	0.12	0.14	0.15	0.14	0.12	0.13	0.14	0.13	0.15
Czech Republic	0.16	0.20	0.26	0.30	0.31	0.36	0.38	0.35	0.34	0.36	0.37	0.38	0.42	0.42	0.43	0.32	0.43
Estonia	...	...	...	...	0.50	0.49	0.46	...	0.54	0.48	0.47	0.66	0.53	0.51	0.46	0.49	0.47
Hungary	0.18	0.23	0.25	0.28	0.29	0.33	0.31	0.31	0.28	0.29	0.32	0.34	0.32	0.36	0.39	0.39	0.38
Latvia	...	0.30	0.51	0.52	0.54	0.48	0.44	0.45	0.60	0.44	0.36	0.35	0.28	0.30	0.32	0.32	0.34
Lithuania	...	...	0.42	...	...	...	...	...	0.36	...	...	0.32	0.36	0.37	0.40	0.40	0.39
Poland	...	0.10	0.14	0.15	0.14	0.17	0.15	0.12	0.11	0.10	0.12	0.14	0.15	0.16	0.17	0.16	0.17
Republic of Moldova	...	...	...	...	...	...	...	...	...	...	...	0.37	0.35	0.27	0.27	0.25	0.28
Romania	0.20	0.20	0.05	0.21	0.20	0.19	0.19	...	...	0.18	0.23	0.20	0.21	0.21	0.24	0.21	0.19
Russian Federation	0.17	0.19	0.34	0.38	0.42	0.41	0.40	0.43	0.46	0.49	0.51	0.50	0.43	...	0.51	...	...
Serbia and Montenegro	0.17	0.15	0.13	0.14	0.15	0.16	0.15	0.12	0.10	0.11	0.10	0.12	0.12	0.12	...	...	...
Slovakia	...	...	...	...	...	0.22	0.24	...	...	0.22	0.23	0.24	0.25	0.24	0.25	0.27	0.27
Slovenia	...	...	0.13	0.15	0.16	0.18	0.15	0.16	0.15	0.16	0.16	0.14	0.18	0.18	0.20	0.20	0.21
TFYR of Macedonia	...	...	...	...	...	0.05	0.05	...	...	0.04	...	...	...	...	...	...	...
Ukraine	...	...	0.29	0.34	0.36	0.36	...	...	...	...	...	0.40	...	...	...	...	...
Northern Europe																	
Denmark	0.19	0.18	0.25	0.36	0.40	0.46	0.44	0.40	0.41	0.41	0.44	0.41	0.40	0.40	0.41	0.42	0.45
Finland	0.11	0.13	0.17	0.26	0.28	0.28	0.42	0.42	0.43	0.43	0.47	0.48	0.48	0.48	0.50	0.51	0.51
Iceland	...	...	0.18	0.26	0.28	0.36	0.34	0.38	0.38	0.38	0.35	0.34	0.38	0.37	0.35	0.35	0.39
Ireland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Norway	0.09	0.10	0.13	0.21	0.25	0.33	0.43	0.44	0.44	0.47	0.47	0.45	0.44	0.44	0.41	0.40	...
Sweden	0.16	0.18	0.23	0.50	0.42	0.45	0.44	0.45	0.48	0.48	0.50	0.52	0.50	0.51	0.51	0.53	0.55
United Kingdom	...	...	0.16	0.28	0.35	0.39	0.37	0.39	0.40	0.41	0.40	0.40	0.44	0.42	0.43	...	...
Southern Europe																	
Greece	...	...	0.05	0.05	0.10	0.11	0.09	0.10	0.09	0.12	0.12	0.17	0.15	0.15	0.13	0.16	...
Italy	...	...	0.05	0.03	0.03	0.04	0.08	0.08	0.07	0.07	0.08	0.08	0.10	0.10	...	...	...
Portugal	0.01	0.01	0.01	0.02	0.07	0.11	0.12	0.14	0.16	0.16	0.18	0.16	0.18	0.19	0.21	0.24	0.26
Spain	...	...	...	...	...	0.08	0.10	0.12	0.12	0.13	0.14	0.15	0.15	0.15	...	...	...
Western Europe																	
Austria	0.14	0.14	0.18	0.20	0.26	0.31	0.33	0.34	0.34	0.34	0.35	0.38	0.38	0.39	0.39	0.41	0.43
Belgium	...	...	0.10	0.16	0.21	0.27	0.31	0.32	0.34	0.33	0.34	0.55	0.45	0.43	0.43	0.44	...
France	0.09	0.11	0.12	0.17	0.22	0.30	0.32	0.33	0.33	0.35	0.37	0.38	0.38	0.38	0.38	...	...
Germany	0.12	0.13	0.17	0.25	0.25	0.34	0.29	0.26	0.26	0.30	0.32	0.33	0.35	0.38	0.39	0.39	...
Luxembourg	...	...	0.10	0.10	0.26	0.31	0.36	0.36	0.34	0.35	0.32	0.33	0.37	0.45	0.46	0.48	0.47
Netherlands	0.07	0.07	0.11	0.19	0.25	0.35	0.30	0.30	0.32	0.32	0.38	0.36	0.37	0.37	0.36	0.37	0.38
Switzerland	0.12	0.13	0.15	0.21	0.27	0.29	0.33	0.34	0.36	0.36	0.38	0.38	0.39	0.41	0.43	0.50	0.26

Source: Council of Europe

of divorces increased and then dropped. This trend is likely to have been caused by the stresses and deprivations associated with the events of the early 1990s that precipitated divorces that would have occurred later. For instance, in the Russian Federation, the number of divorces increased by 13 per cent from 1991 to 1994 and subsequently decreased by 22 per cent in 1999. The total decrease during the latter period corresponds to 93 per cent of the increase during the former period (Zakharov and others, 2000). In other Eastern European countries, including Bulgaria, Poland and the countries of the former Yugoslavia, divorce is much less popular. Greece, Italy and Spain have the lowest divorce rates in Europe and the total divorce rate increased slowly. In Portugal, however, the total divorce rate increased sharply from 0.01 in 1960-1970 to 0.26 in 2000.

In the Western countries of Europe, the proportion of marriages dissolved by divorce in the 1965 marriage cohort ranged from less than 8 per cent in Southern Europe to 28 to 37 per cent in Northern Europe. In the 1982 marriage cohort, this proportion ranged from 9 to 16 per cent in Southern European countries to 38 to 46 per cent in Northern European countries (table 9). In Australia, the proportion of first marriages estimated to end in divorce rose from about 10 per cent in the 1950s to around 40 per cent in the early 1990s (McDonald, 1994). In the United States, the proportion of all marriages ending in divorce has been increasing slowly over the last three decades, from 36 per cent (for males) and 37 per cent (for females) in 1970 to 44 per cent (for males) and 43 per cent (for females) in 1995 (Schoen and Standish, 2001); 43 per cent of first marriages end in separation or divorce within 15 years (Bramlett and Mosher, 2001).

TABLE 9. PROPORTION OF MARIAGES ENDING IN DIVORCE BY MARRIAGE COHORT, 1965 AND 1982

<i>Country</i>	<i>1965</i>	<i>1982</i>
Italy	4	9
Greece	6	13
Spain	7	13
Portugal	6	16
Netherlands	20	32
France	22	35
Austria	23	35
Belgium	21	36
Germany	23	36
Luxembourg	19	38
Iceland	27	38
Switzerland	24	38
Norway	28	41
United Kingdom	29	42
Finland	28	43
Denmark	35	44
Sweden	37	46

Source : Eurostat

The stability of marriage does not seem to be much affected by whether or not the couple has cohabited before marriage. In most countries, the percentage of first marriages that were not preceded by cohabitation ending in divorce during the first 5 years varies little (from 3 to 10 per cent) over time. Austria (16 per cent for the cohort born in 1965-1970), Estonia and Latvia (22 per cent for the same cohort) represent exceptions to this generalization. The frequency of divorces in the marriages preceded

by cohabitation also varies from 3 to 10 per cent, with the exception of the three Baltic Republics (12-27 per cent) (table 6).

Cohabitation is a less stable form of partnership than marriage. The percentage of first partnerships that were consensual unions that dissolved within 5 years varies more widely across countries than dissolution of marriages: from 4 per cent in Italy to 33 per cent in Sweden. The stability of consensual unions appears to be inversely related to their frequency, that is, where cohabitation is rare, they are more stable and vice versa. In many countries the forms of family reconstitution are shifting away from remarriage in favour of post-marital cohabitation (Lesthaeghe, 1998). In Eastern Europe where cohabitation is relatively rare, this form of partnership has become increasingly popular as a type of post-divorce living arrangement. In the Russian Federation, consensual unions, a popular form of new partnership that follow the breakdown of first marriages, represents 31 per cent of second unions and 42 per cent of third unions (Zakharov and others, 2000).

Among the factors affecting the incidence of divorce is its legal status, especially in the recent period as it impacts on the perception of the acceptability of family breakdown. Since the 1920s, Eastern European countries (as well as the Nordic countries) have had the most liberal marriage dissolution legislations resulting in widespread divorce. Female education is another prominent factor affecting the incidence of divorce. Female education is positively related to the likelihood of divorce, but the strength of the relationship decreases in Europe from the south to the north (Blossfeld and others, 1995). In Sweden the strength of the relationship decreased over time (Hoem, 1997). In Australia and the United States, there is even a weak negative association between female education and the likelihood of divorce, implying that women and men with higher education are less likely to have their marriage end in divorce (Bracher and others, 1993; Lillard and others, 1995).

E. NUPTIALITY LEVELS AND TRENDS

At the beginning of the twentieth century, marriage patterns differed markedly between regions. While in Eastern Europe marriage was nearly universal, in several Northern and Western European countries, it was typical for relatively high proportions of women to remain permanently unmarried (Hajnal, 1965). For example, in Scotland in the late nineteenth century up to 20 per cent and in England and Wales some 12 per cent of women aged 45 to 49 never married (Anderson and Morse, 1993). Marital rates changed in most Western countries when they experienced the first demographic transition. In most countries previously characterized by high prevalence of celibacy (except Finland and Sweden), the concluding stages of the first transition coincided with a marked increase in the propensity to marry. For instance, in Scotland the proportion of never married women aged 45 to 49 declined to 12 to 13 per cent by the 1960s. In the 1990s, the regional average proportion of women near the end of reproductive age who had married at least once was higher than 80 per cent everywhere and higher than 90 per cent in Australia/New Zealand, Eastern Asia, Eastern Europe, Northern America and Southern Europe (table 10).

Period data on marriage rates shed new light on nuptiality trends. The marriage boom of the 1950s and early 1960s temporarily lifted the regional average total first marriage rate to or even above one first marriage per woman in Southern and Western Europe (figure 5 and table 11). The reason for this increase (and the explanation why total first marriage rates exceeded unity) was that even while age at marriage decreased, more people were getting married. The total first marriage rate started to decline after 1965-1970 in Northern and Western Europe, after 1975 in Southern Europe and after 1990 in Eastern European countries. The decrease in total first marriage rate was abrupt in the Western countries of Europe. In Northern and Western Europe in a matter of 20 to 25 years the total first marriage rate fell from 0.9 to 1.0 to just 0.6 first marriages per woman. In Southern Europe the decline started ten years later, also lasted about 20 years and was particularly steep. In Eastern Europe, the total first marriage rate

declined slightly from one first marriage per woman in 1960 to 0.9 in 1990 and then fell abruptly by 40 per cent by 2000 to a level slightly lower than in the other European regions. As a result, by the end of the twentieth century, the average rates of European regions converged around 0.6 first marriages per woman. Within the European regions, except for Eastern Europe, the inter-country variation is low. In Eastern Europe the abrupt decline of marriage rate occurred during less than a last decade, which resulted in a wider variation: in 2000 the first marriage rate ranged there from 0.4 in Estonia and Latvia to 0.8 in TFYR of Macedonia (table 11).

TABLE 10. PERCENTAGE OF WOMEN AGED 40-44 WHO MARRIED AT LEAST ONCE: LOW FERTILITY REGIONS, 1990S
(LATEST AVAILABLE ESTIMATE)

Region	Number of countries	Percentage married at least once		
		Average	Minimum	Maximum
Northern Europe	7	83.3	67.2	93.6
Western Europe	7	88.2	84.2	92.3
Southern Europe	4	91.0	89.1	94.1
Eastern Asia	4	91.4	88.5	93.2
Northern America and developed Oceania	4	92.0	90.1	93.9
Eastern Europe	9	94.5	91.1	96.6

Source: United Nations Population Division

While these trends may be indicative of the decreasing popularity of formal marriage, they also resulted from substantial postponement of entry into marriage. What is especially pertinent for the relationship to fertility trends is that entry into marriage was being postponed to within the prime reproductive age range. The percentage of never married women aged 20 to 24 increased, from circa 1975 to 2000, by almost 20 percentage points in Japan, 35 percentage points in the United States and almost 40 percentage points in the Western countries of Europe (figure 6). The proportion of single women in the age group 25 to 29 also reached new heights ranging from about 40 per cent in the United States to 60 per cent in the Western countries of Europe (figure 7). These figures imply that, by the end of the twentieth century, on average more than half of women in the countries with established market economies did not marry before age 30 as compared to one quarter in 1975. In certain societies where cohabitation is confined to a small group of people, particularly in Southern Europe and Eastern Asia, the “postponement syndrome” (Livi Bacci, 1997) became really extreme, pushing age at marriage beyond prime reproductive ages.

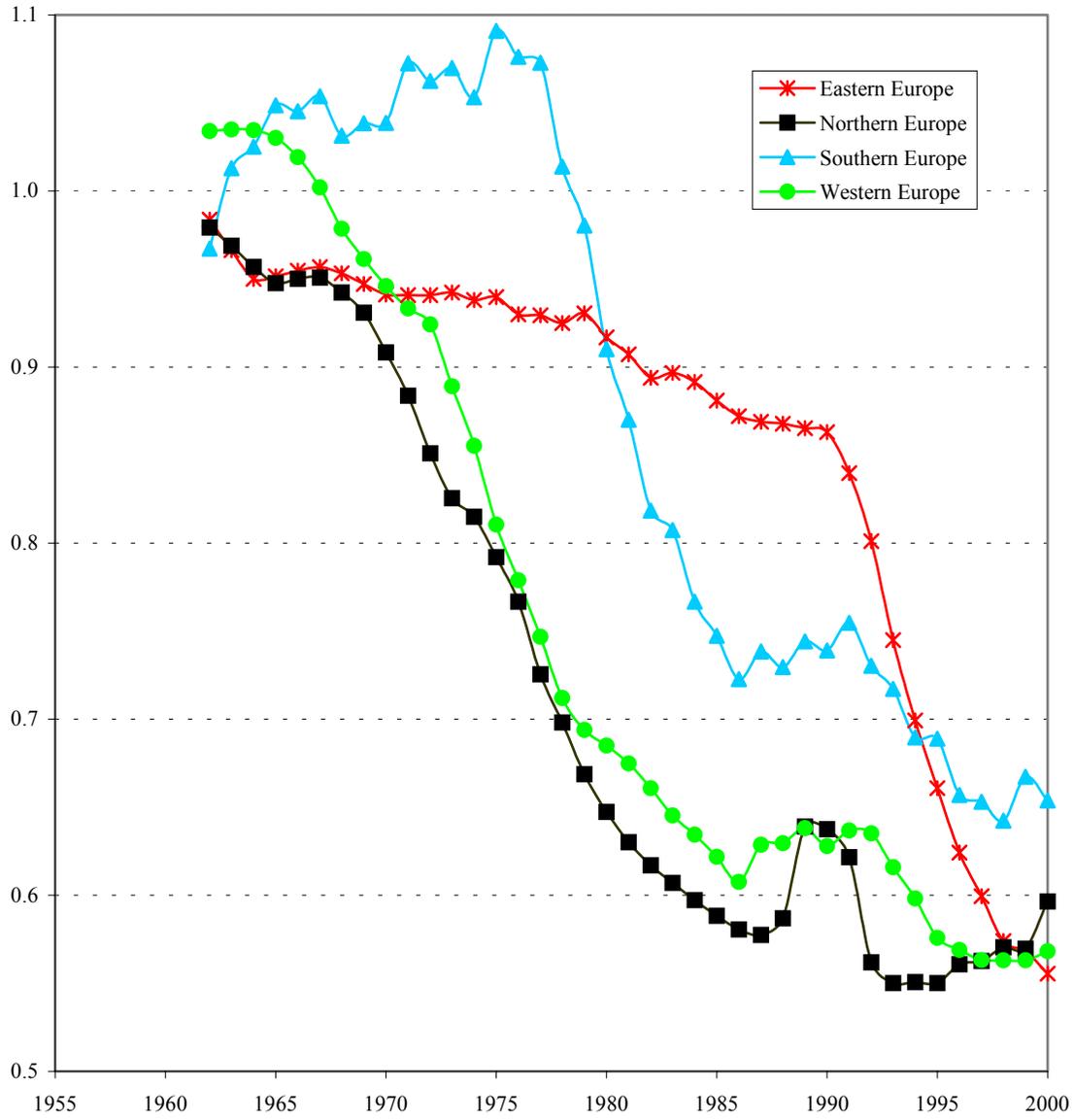
In Eastern Europe, the trends are different as are the current proportions of never married women in their 20s. The proportion of women aged 25 to 29 who were never married started to increase from a low of about 10 per cent in 1960 (compared with 20-35 per cent in the Western countries of Europe at that time). From 1960 to 1990, there was an increase of 18 percentage points in the proportion of never married women in the age group 20 to 24 in Eastern Europe (except the former U.S.S.R), but only 8 percentage points in the group 25 to 29, which reflected postponement of first marriage within prime reproductive age rather than beyond it. Since 1990, the proportions of never married women in both age groups sharply increased. The average proportion of never married in the age group 20 to 24 is converging with the levels typical for the West. In spite of the rapid increase, the average proportion of never married in the age group 25 to 29 is more than 30 percentage points lower than in the Western countries of Europe (figures 6 and 7). Marrying before age 30 remains the largely preferred living arrangement. However,

TABLE 11. TOTAL FIRST MARRIAGE RATE: EUROPEAN COUNTRIES, FEMALES, 1960-2000
(per woman)

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Eastern Europe																	
Belarus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.74	0.65
Bosnia and Herzegovina	...	...	...	...	0.69	0.71	0.67	...	...	...	...	...	0.72	0.79	0.75	...	...
Bulgaria	1.05	0.93	0.97	1.00	0.97	0.96	0.90	0.74	0.69	0.61	0.57	0.55	0.53	0.51	0.53	0.53	0.52
Croatia	0.90	0.97	0.87	0.82	0.79	0.77	0.70	0.54	0.56	0.58	0.61	0.63	0.71	0.70	0.71	0.69	0.64
Czech Republic	1.04	0.90	0.91	0.99	0.90	0.91	1.02	0.75	0.73	0.64	0.55	0.50	0.49	0.50	0.49	0.48	0.50
Estonia	...	...	1.04	0.94	0.94	0.88	0.79	0.69	0.58	0.50	0.46	0.45	0.35	0.36	0.35	0.37	0.39
Hungary	1.00	0.98	0.97	1.00	0.89	0.86	0.77	0.71	0.65	0.60	0.57	0.56	0.51	0.47	0.46	0.46	0.49
Latvia	...	...	0.87	1.01	0.97	0.93	0.92	0.87	0.73	0.57	0.48	0.47	0.41	0.40	0.40	0.40	0.40
Lithuania	...	...	1.14	1.01	0.94	0.98	1.06	0.98	0.89	0.71	0.71	0.68	0.62	0.58	0.57	0.55	0.51
Poland	...	...	0.91	0.93	0.90	0.89	0.91	0.82	0.76	0.71	0.69	0.65	0.62	0.64	0.61	0.66	0.63
Republic of Moldova	...	...	...	...	1.11	1.06	1.19	1.16	1.15	1.15	0.95	0.89	0.62	...	...	...	...
Romania	1.14	0.97	0.84	0.97	1.02	0.89	0.92	0.89	0.86	0.79	0.74	0.73	0.71	0.69	0.67	0.66	0.64
Russian Federation	1.18	1.09	1.06	1.03	0.96	0.97	1.00	0.96	0.78	0.82	0.77	0.75	0.60	...	...	...	...
Serbia and Montenegro	0.89	0.96	0.92	0.81	0.82	0.80	0.78	0.75	0.78	0.76	0.68	0.68	0.63	...	...	0.59	0.68
Slovakia	1.01	0.88	0.87	0.94	0.87	0.90	0.96	0.75	0.77	0.68	0.61	0.57	0.56	0.56	0.55	0.54	0.52
Slovenia	...	...	0.96	0.99	0.79	0.64	0.51	0.50	0.55	0.55	0.51	0.51	0.47	0.47	0.47	0.48	0.45
TFYR Macedonia	0.89	1.00	0.97	0.92	0.91	0.91	0.86	0.86	0.90	0.93	0.98	0.98	0.86	0.84	0.83	0.84	0.83
Ukraine	1.04	1.01	1.04	0.88	0.77	0.67	0.62	0.58	0.59	0.57	0.55	0.53	...	...	...	...	...
Northern Europe																	
Denmark	1.01	0.99	0.82	0.67	0.53	0.57	0.60	0.59	0.61	0.60	0.67	0.65	0.68	0.64	0.65	0.67	0.73
Finland	0.96	0.93	0.94	0.70	0.67	0.58	0.58	0.58	0.56	0.59	0.60	0.57	0.59	0.57	0.57	0.58	0.62
Iceland	...	...	...	0.79	0.55	0.52	0.45	0.49	0.50	0.49	0.52	0.51	0.55	0.59	0.62	0.62	0.70
Ireland	0.93	1.00	1.08	0.93	0.84	0.69	0.70	0.68	0.65	0.65	0.64	0.59	0.60	0.57	0.59	...	...
Norway	1.04	0.87	0.96	0.80	0.65	0.57	0.58	0.51	0.50	0.47	0.48	0.54	0.58	0.60	0.60	0.52	...
Sweden	0.95	0.95	0.62	0.63	0.53	0.53	0.55	0.49	0.50	0.45	0.45	0.44	0.44	0.42	0.41	0.46	0.53
United Kingdom	1.04	1.00	1.04	0.88	0.76	0.66	0.63	0.59	0.59	0.57	0.55	0.54	0.53	0.53	0.52	0.53	...
Southern Europe																	
Greece	0.79	1.19	1.06	1.16	0.87	0.83	0.73	0.80	0.58	0.74	0.67	0.75	0.53	0.70	0.64	0.71	0.52
Italy	0.98	1.03	1.01	0.95	0.78	0.67	0.69	0.67	0.68	0.66	0.63	0.63	0.60	0.60	0.60	0.62	...
Portugal	0.94	1.04	1.21	1.38	0.90	0.79	0.88	0.88	0.84	0.81	0.78	0.77	0.73	0.76	0.77	0.80	0.73
Spain	...	0.99	1.01	1.05	0.76	0.64	0.69	0.67	0.67	0.61	0.60	0.60	0.58	0.58	0.61	0.61	0.61
Western Europe																	
Austria	1.03	1.00	0.91	0.75	0.68	0.60	0.58	0.55	0.57	0.56	0.55	0.56	0.56	0.55	0.53	0.53	0.54
Belgium	...	...	...	...	0.77	0.66	0.72	0.68	0.68	0.60	0.58	0.57	0.56	...	...	0.50	0.52
France	1.03	0.99	0.92	0.86	0.71	0.54	0.56	0.55	0.53	0.50	0.49	0.49	0.54	0.55	0.55	0.58	0.62
Germany	1.06	1.11	0.98	0.81	0.69	0.63	0.64	0.56	0.57	0.56	0.57	0.56	0.57	0.57	0.57	0.59	0.58
Luxembourg	...	...	0.88	0.80	0.66	0.56	0.64	0.69	0.68	0.65	0.64	0.56	0.58	0.53	0.52	0.53	0.55
Netherlands	1.05	1.13	1.06	0.83	0.68	0.57	0.66	0.64	0.63	0.60	0.56	0.53	0.55	0.56	0.58	0.60	0.59
Switzerland	0.96	0.90	0.87	0.65	0.66	0.67	0.74	0.74	0.71	0.67	0.66	0.64	0.64	0.62	0.62	0.66	0.64

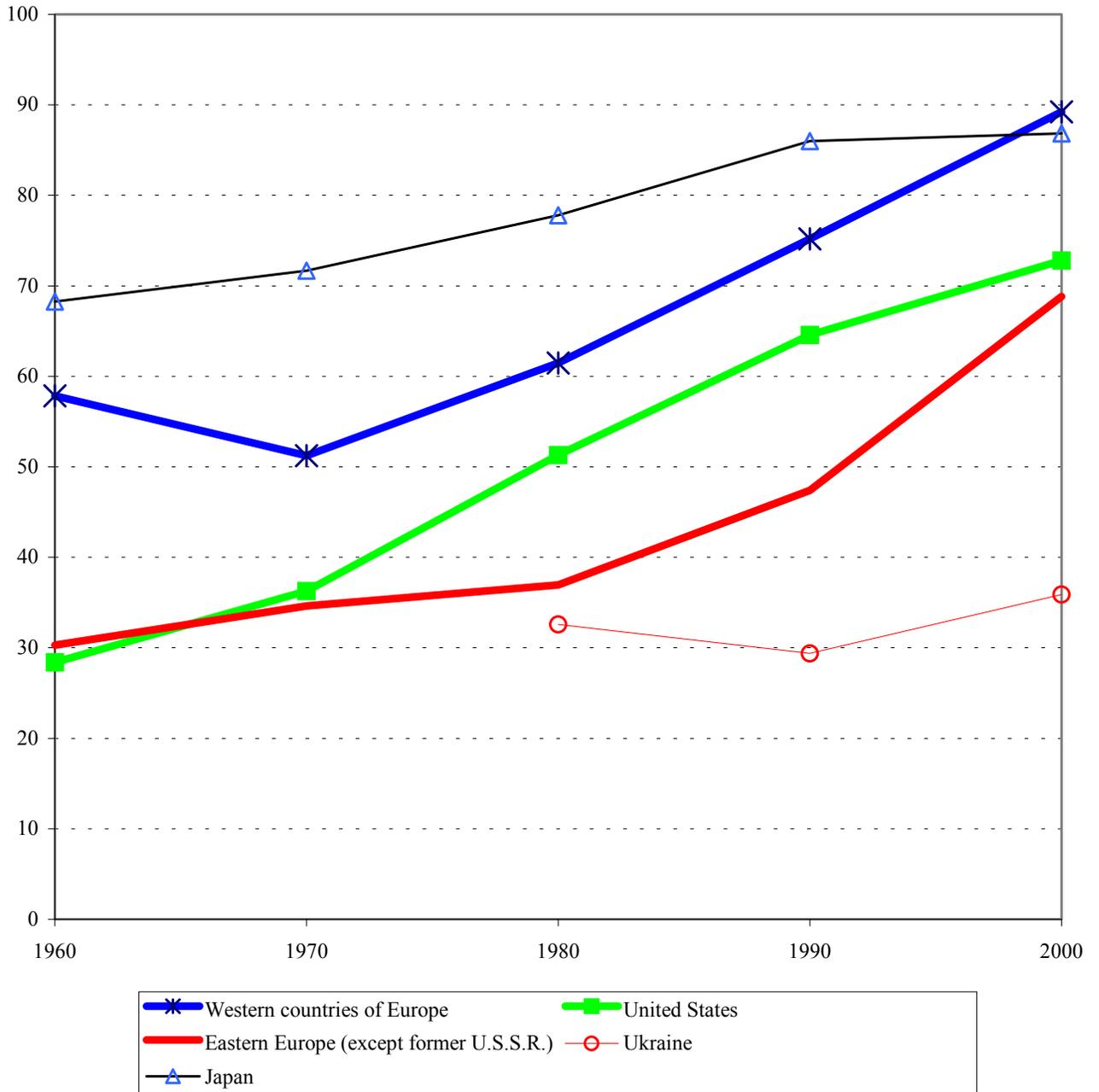
Source: Council of Europe

FIGURE 5. TOTAL FIRST MARRIAGE RATE: EUROPEAN REGIONS, 1960-2000 (3-YEAR MOVING AVERAGE)



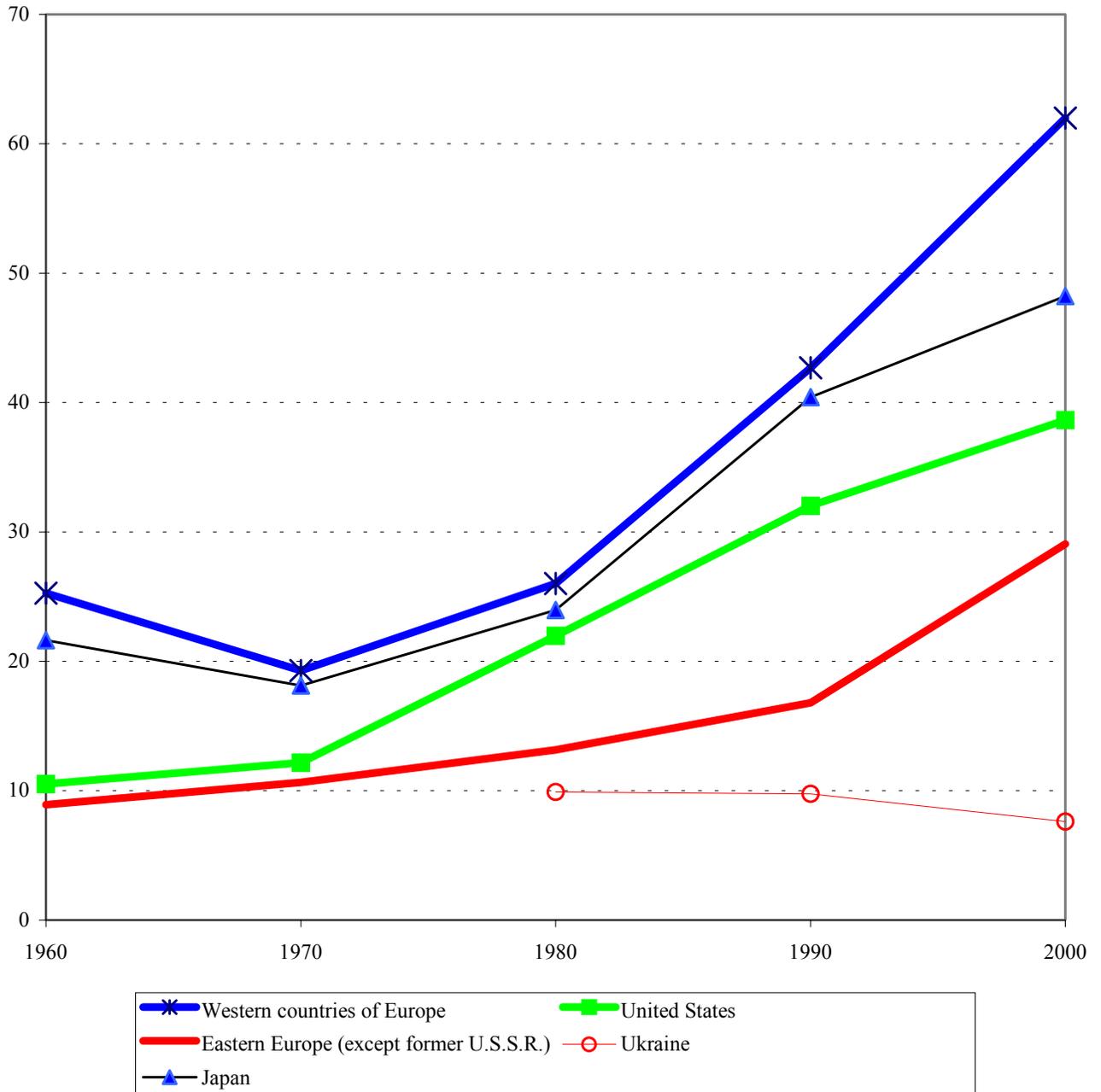
Source: Council of Europe

FIGURE 6. PERCENTAGE OF NEVER MARRIED WOMEN IN AGE GROUP 20-24, 1960-2000



Source: United Nations Statistics Division, United States Bureau of the Census

FIGURE 7. PERCENTAGE OF NEVER MARRIED WOMEN IN AGE GROUP 25-29, 1960-2000



Source: United Nations Statistics Division, U.S. Bureau of the Census

the sub-region is rapidly losing its homogeneity as Slovenia and the Czech Republic already approached marriage patterns typical for the Western countries of Europe.

The countries of the former U.S.S.R are different in that nuptiality levels have been high and stable until very recently, and the inter-country variation was modest. For instance, in Ukraine during the last two decades only slightly more than one-third of women aged 20 to 24 were single and only 10 per cent in the age group 25 to 29 (figures 6 and 7). Data for the Russian Federation reveal that marriage had remained early and universal during most of the twentieth century, except for effects of major wars. Between 1989 and 1993, 49 per cent of women in the rural areas and 36 per cent of women in the urban areas were married by age 20 and 87 per cent and 78 per cent were married by age 25 in the rural and urban areas respectively (Darsky and Ilina, 2000). In the 1990s, the age at marriage started to increase slowly with the concomitant decrease of the proportion of young married women. The percentage of never married women in the age group 20 to 24 increased from 12 per cent in 1989 to 14 per cent in 1994 and in the age group 25 to 29, from 7 per cent to 8 per cent over the same period. It is probably too early to say whether this trend is indicative of a delayed second demographic transition entailing an eventual convergence to the Western nuptiality pattern (as implied by the sharply decreasing total marriage rate). Alternatively, whether the cultural peculiarity of partnership patterns in the Slavic parts of the former U.S.S.R (reflected in low age at marriage) withstood the impacts of industrialization and urbanization and the future trend in marriage patterns is likely to respond in their own way to societal changes (Ivanov, 2001). In the Baltic countries the proportions of never married women in their 20s were, in 1989, only slightly higher than in the Slavic countries but given particularly low recent total first marriage rates, they are probably becoming closer to other European regions.

The view that enhanced economic independence diminishes women's incentive to marry is the most likely explanation of these transitions. Also, early marriage is often incompatible with getting post-secondary education. The single most important factor in marriage postponement in the last decades of the twentieth century probably was increasing educational attainment, especially of college and universities degrees. This is a two-way and self-reinforcing relationship: marrying early may impede the continuation of education and the wish to complete education is likely to lead to postponement of marriage.

Women's emancipation and empowerment limit the marriage market for them and depress nuptiality levels. In many countries, younger women who have higher educational levels than men are disinclined to enter into marital unions with socially less advantageous partners. In the United States, women's increased independence decreases their likelihood of marrying (Lloyd and South, 1996). Increased women's earnings raise women's likelihood of entering a cohabiting union rather than marriage; on the other hand relatively higher men's earnings increase their likelihood of marriage. For example, in Sweden, increased male earnings increase union formation for men whereas increased female earnings decrease union formation, particularly marriage (Goldscheider, 2000). In Hong Kong, the rise in the proportion of higher educated women may well account for the increasing proportions remaining permanently unmarried because higher educated women experience difficulties in finding suitable marriage partners, as they are traditionally reluctant to marry into the lower educational strata. The high proportions of unmarried women persist despite the particularly high sex ratio in the marriageable age groups (1.20 males per female at ages 15-24, 1.17 at ages 25-34 and 1.27 at ages 35-44) caused by selective male in-migration. Educated women apparently tend to be reluctant to sacrifice their careers and life styles for the uncertainties of marriage (Leete, 1994).

However, high educational levels of women do not necessarily diminish their propensity to enter into partnership unions. For instance, it was demonstrated that in Sweden, instead of being less likely than other women to cohabit, women with a greater degree of economic self-sufficiency are more likely to do

so (Bracher and Santow, 1998). The maturing of gender equality may result in the weakening of the negative education-nuptiality relationship for women.

F. TIME SPENT IN UNION

Rising age at marriage and the fragility of marital unions result in a shortening of time spent in marital union, particularly in the prime childbearing ages. This trend if not compensated by cohabitation leads to a shortening of the opportunity for childbearing among most women. In many Western countries, more than half of women currently spend their 20s unmarried. Particularly in countries where cohabitation is not compatible with childbearing and where single motherhood is not widespread, the childbearing span is significantly shortened.

In Northern and Western Europe, Northern America and developed Oceania, the rise of cohabitation counterbalances the delay of marriage among young adults and the general increase in divorce. Because of increased propensity to cohabit in lieu of or in preparation for marriage, the age at first union formation (either marriage or cohabitation, whichever occurs first) has not changed much since the 1960s (Glezer, 1993). The increasing appeal of consensual unions, which are sometimes as stable as formal marriages, compensates to a large extent for decreasing popularity of formal marriages. As a result, the proportion of women who had entered a first partnership (whether formal marriage or cohabitation) by age 25 is little different in the generation born in 1960-1965 than in the cohorts born twenty years earlier and varies, in spite of low proportions of formally married, within a narrow interval from 74 per cent in Canada to 80 per cent in Sweden (figure 8). Therefore, in terms of time spent in a conjugal union, cohabitation substantially compensates for the shorted period of childbearing resulting from later age at first marriage. On the other hand, the substitution of cohabitation for marriage has a depressing effect on fertility to the extent that those in cohabiting unions have a lower propensity to have children.

In Eastern Europe and the Baltic States, early entry into formal marital unions and high propensity to get married shape high prevalence of partnerships among young people despite the rather low prevalence of cohabitation. The proportion of women who had entered a first partnership (whether formal marriage or cohabitation) by age 25 ranges from 74 per cent in Poland to 83 per cent in Hungary. In some Eastern European countries, social acceptability of extramarital motherhood and increasing prevalence of stable consensual unions further extend the childbearing span.

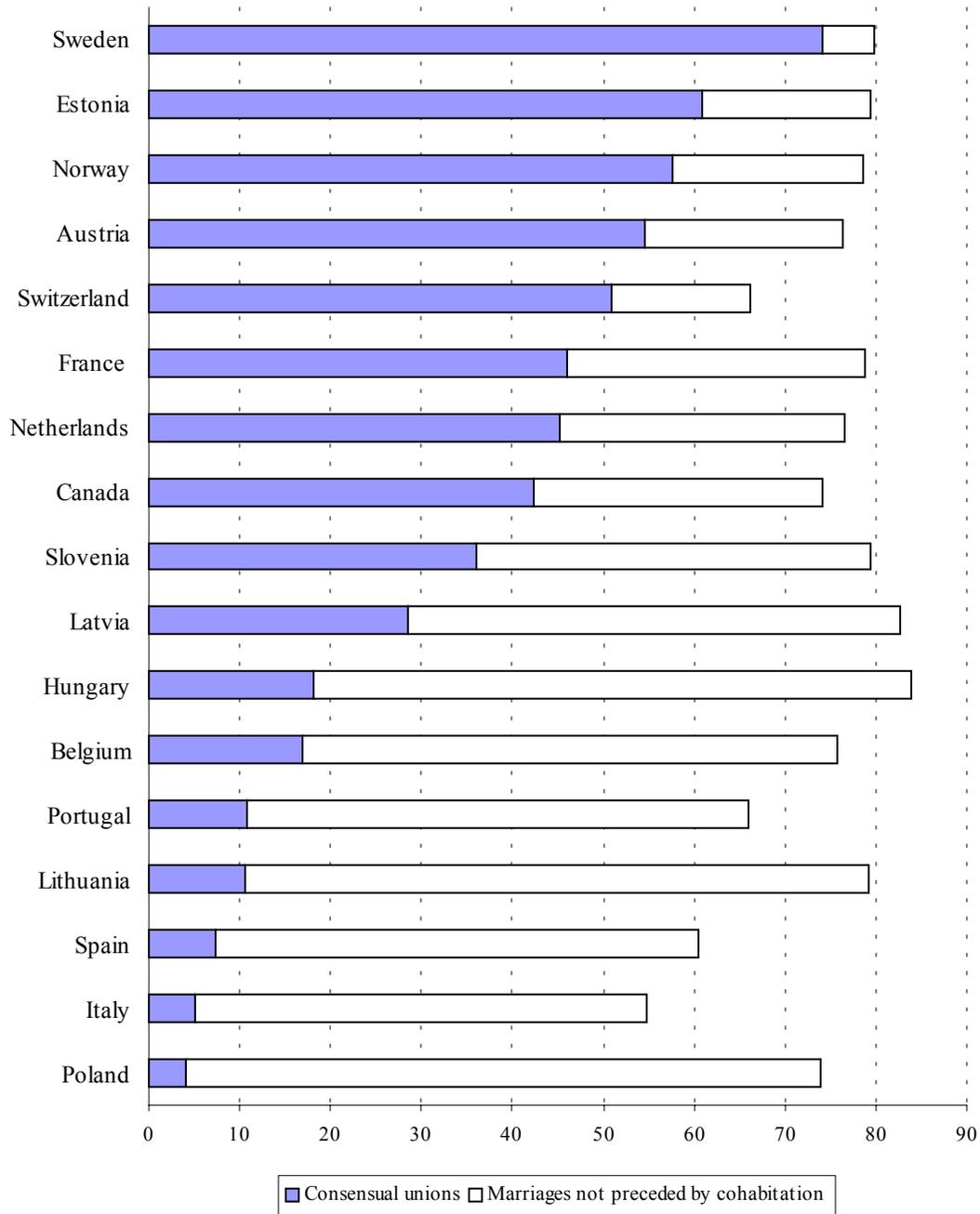
TABLE 12. SELECTED PARTNERSHIP CHARACTERISTICS FOR WOMEN IN ITALY AND NORWAY, 1999

Country	Singular mean age at marriage	Percentage of 25-29 year old in:		Years spent not in union between ages 20 and 29
		Marital union	Consensual union	
Italy.....	28.4	45	2	8.4
Norway	30.9	30	42	5.1

Source: United Nations Population Division

By contrast, in Southern Europe, increasing age at marriage is not compensated by the formation of consensual unions, thus, the overall effect is a contraction of the childbearing span. The proportion of women who, by age 25, have entered a first partnership is only 50 per cent in Italy, 61 per cent in Spain and 66 per cent in Portugal (figure 8). As a result, the effective opportunity for childbearing is limited to

FIGURE 8. PERCENTAGE OF WOMEN BORN IN 1960-1965 WHO HAD, BY AGE 25, ENTERED A FIRST PARTNERSHIP



Source: Fertility and family Surveys. Standard Country Reports.

a short duration. For instance, in Italy larger proportions of women are married in all reproductive age groups than in Norway (e.g. by 15 percentage points in the age group 25-29) and the singulate mean age at marriage is 2.5 years lower, but a higher incidence of consensual unions in Norway increases the length of “exposure to the risk of childbearing” in that country by 3.3 years with respect to Italy (table 12).

In Japan, partnership levels and trends are similar to those in Southern Europe. In Japan, high age at marriage and a very low prevalence of cohabitation and extra-marital births result in low exposure to the risk of childbearing in the age group 20 to 29. Increased age at marriage and proportion of women who never marry account for nearly all the decrease in the average fertility level (Kaneko, 2000). Economic development and societal changes combined with regional cultural similarities drive the partnership patterns in the Republic of Korea, Hong Kong and Singapore closer to the Japanese pattern characterized by considerable contraction of the effective childbearing span (Atoh, Kandiah and Ivanov, 2001).

G. REGIONAL PARTNERSHIP PATTERNS

The low-fertility regions are classified in table 13 according to four characteristics of nuptiality: age at first (registered) marriage, prevalence of marriage in the prime reproductive ages, prevalence of union dissolution and prevalence of cohabitation. They reflect the major quantifiable components of partnership patterns that are most pertinent to reproductive behaviour and determine the average exposure to the risk of childbearing. The data on family reconstitution (remarriage), which also have non-trivial impacts on childbearing, are so scarce that little is known about the prevalence of this phenomenon. The suggested classification is approximate because precise numerical thresholds are elusive and several countries do not completely fit into any one classification. Still, it seems to be useful for understanding the different processes that shape various partnership patterns in the modern world (Ivanov, 2002a; 2002b).

The combinations of the four indicators form 16 possible combinations of partnership patterns discussed in the sections above. With respect to the fertility level, the most favourable would be the combination of low age at marriage, high prevalence of marriage and low prevalence of divorce; in this case, the prevalence of cohabitation would not matter much, but most likely it would be low. The most unfavourable for childbearing would be the combination in which women marry late, quite a few not at all, those who marry, often divorce and cohabitation is rare. None of the regions is in either of these extreme situations. Instead, the nuptiality patterns in the six regions fall into only three intermediate cells of the table.

All Western countries (except the United States) are characterized by late marriage and a high proportion of women do not marry. The opposite is true for Eastern Europe and the United States. Divorces happen often everywhere except in Eastern Asia and Southern Europe. In Northern and Western Europe, low prevalence of marriage is partially “compensated” by high popularity of cohabitation. In these regions, the age at entry into consensual unions is low, this type of partnership is fully accepted by the society, many cohabiting couples have children and cohabitation differs from formal marriage by little more than the absence of a certificate.

The most depressing impacts of partnership patterns on fertility are characteristic for Eastern Asia and Southern Europe where the age at marriage is very high and the prevalence of both marriage and cohabitation is low, which implies that many women remain single and unexposed to the risk of childbearing. Low incidence of divorces there is insufficient to counterweight these factors. The best combination of parameters is typical for Eastern Europe and the United States where relatively low age at

TABLE 13. LOW-FERTILITY REGIONS BY SELECTED CHARACTERISTICS¹ OF PARTNERSHIP

Age at first marriage	Prevalence of			Region/country
	marriage	divorce	cohabitation	
Low	Low	Low	Low High	
		High	Low High	
	High	Low	Low High	Eastern Europe ⁶
		High	Low High	Eastern Europe ⁷
High	Low	Low	Low High	Eastern Asia, Southern Europe
		High	Low High	Northern Europe, Western Europe, Northern America, Australia/New Zealand
	High	Low	Low High	
		High	Low High	

Notes

¹ lower or higher than the average value of the respective indicator for all countries

² average for circa 2000: **25.9** years (37 countries)

³ average percentage of ever-married women aged 25-29 circa 1990: **70.1** (38 countries)

⁴ average total divorce rate circa 2000: **0.35** divorces per woman (37 countries)

⁵ average percentage of females born in 1960-1965 who, by age 25, had entered consensual unions: **32** (16 countries)

⁶ except Czech Republic, Hungary, Lithuania, Republic of Moldova and Russian Federation

⁷ Czech Republic, Hungary, Lithuania, Republic of Moldova and Russian Federation

first marriage combines with a high (but decreasing) prevalence of marriage; in most social strata cohabitation does not really supplement registered marriages – until recently they remained marginal.

The Northern/Western European partnership pattern, which itself is evolving, is likely to represent the model around which the other regions would eventually converge. This process, however, is likely to take considerable time. To the extent that national and regional cultural environments and socio-economic conditions in the industrialized countries would remain dissimilar, the distinctiveness of partnership patterns will remain.

III. REPRODUCTIVE PATTERNS

A. PARTNERSHIP FRAMEWORK OF CHILDBEARING

Marriage remains the primary framework of childbearing in most low-fertility countries. However, the situation is changing rapidly. In the first half of the twentieth century, births outside formal marriage were rare in Europe, United States and Eastern Asia. Around 1960, the percentage of extra-marital births ranged from 1 to 2 per cent of all births in Greece, Japan, Ireland, Italy and the Netherlands to 12 to 14 per cent in Austria, Estonia, Latvia, Lithuania, the Russian Federation, Serbia and Montenegro. Iceland, with 25 per cent of births born out of wedlock, was exceptional at that time.

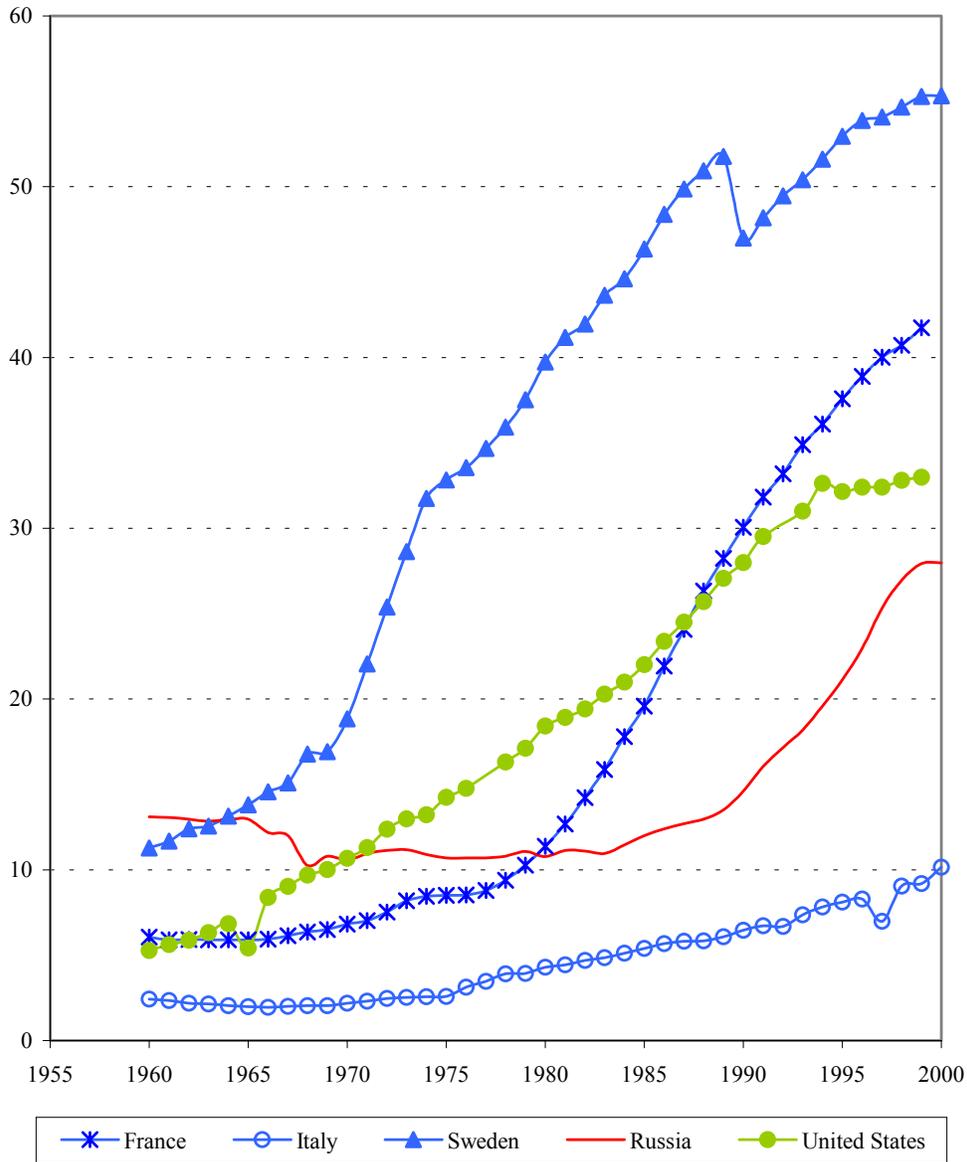
Extra-marital fertility started to increase rapidly since 1960 to 1975 in Northern and Western Europe and the United States and 10 to 15 years later in Eastern Europe. This happened, first, because the alternative living arrangements – cohabitating or living alone – were no longer perceived as being incompatible with childbearing. Second, in several (but not all, with Poland being a notable exception) Eastern European countries, and in particular in the former U.S.S.R, as well as in the United States and the United Kingdom, the surge of the extra-marital fertility was partly related to early conceptions, that were not all followed by marriages or abortions. Finally, in some regions of the former U.S.S.R, acute shortages of potential grooms due to sex-selective out-migration of males, led some women to resort to raising children on their own. Currently the low fertility countries can be classified into three groups: the Scandinavian and most Western European countries where many births are out-of-wedlock but within consensual unions; several Eastern European countries, the United States and the United Kingdom, where the share of out-of-wedlock births is also high, but many of these children are born to lone mothers; and Southern Europe, Poland and Eastern Asia where there is a low prevalence of out-of-wedlock births.

The increase in extra-marital births in conjunction with falling fertility rates resulted in a growth in the proportion of all births that were born out-of-wedlock in all countries. This trend occurred everywhere, but to a different degree. From 1960 to 2000 the proportion of extra-marital births increased five-fold in Sweden and seven-fold in France and the United States (figure 9). Currently the proportion of extra-marital births averages 28 per cent for all low-fertility countries taken together, but the range is large. In Estonia, Iceland, Norway and Sweden 50 per cent of births or more are extra-marital, whereas in Greece and Japan that proportion is below 5 per cent (figure 10).

Rising proportions of births that are extra-marital could result from increasing proportions of single women in reproductive ages and/or from increased fertility of unmarried women and/or falling marital fertility. In countries with the increased popularity of cohabitation and, more generally, widened public acceptance of the freedom of choice, the first two factors played a role and were usually accompanied by the third. Childbearing in those countries became less confined to marriage and more compatible with alternative forms of unions and varied living arrangements, which opened the door to extra-marital births. In many countries, including France, the Netherlands, Sweden and the United States, fertility of unmarried women increased substantially at the same time that marital fertility declined.

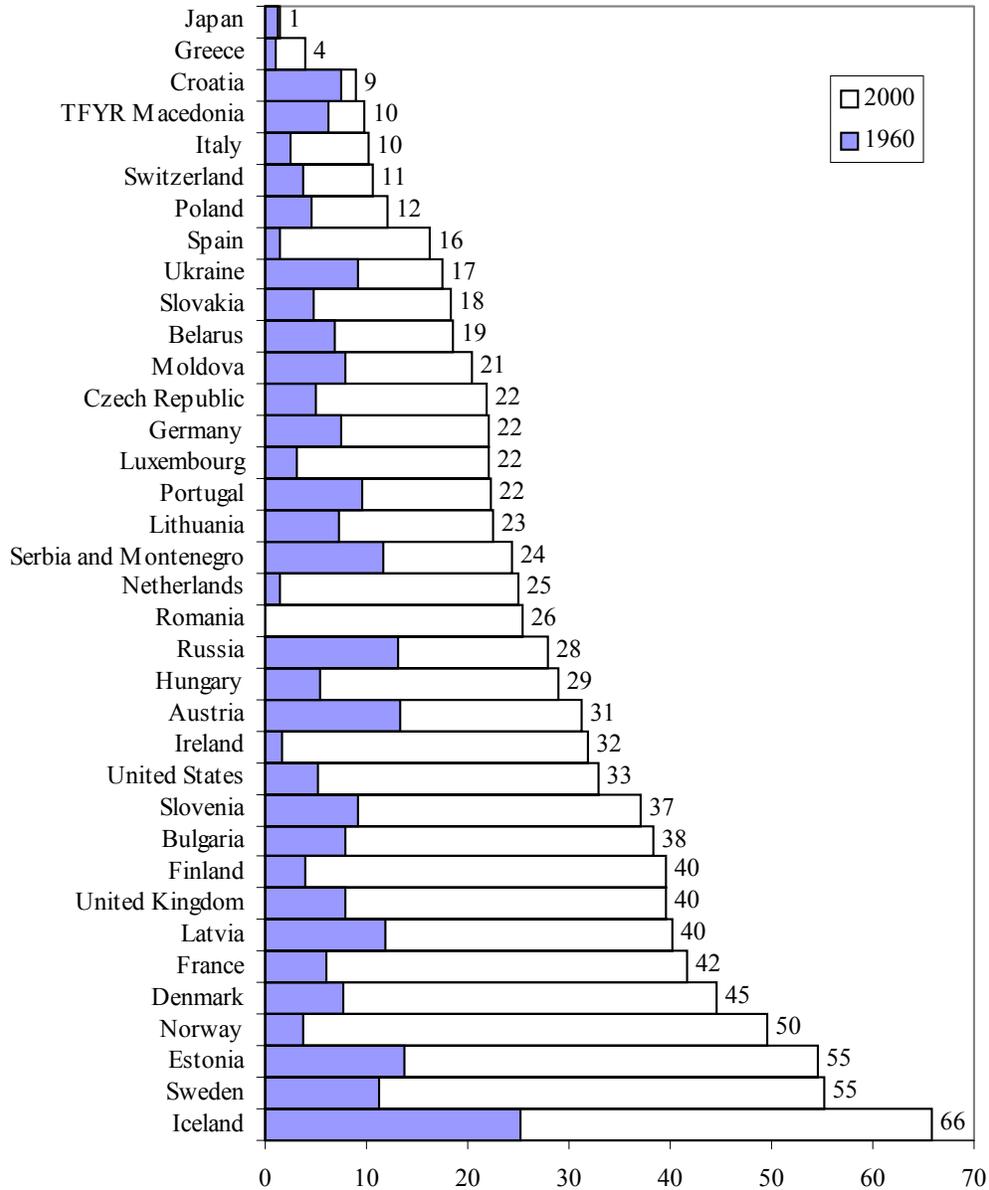
In France and several Northern European countries, in particular, Sweden, extra-marital fertility is as high as marital fertility. This is due to the profound change in the meaning of extra-marital births. Previously, children born out of wedlock were legally considered as illegitimate and their fathers did not feel obliged to care for them. Lately, the social climate changed and the large majority of children born out-of-wedlock is recognized by their fathers. These changes reinforce each other, which is mediated by new legislation, which recognizes equal rights of children irrespective of the status of the births. Thus in France in 1994, 37 percent of children conceived out-of-wedlock were recognized by their fathers before delivery and 55 per cent after birth (Munoz-Perez and Prioux, 1999).

FIGURE 9. PERCENTAGE OF EXTRA-MARITAL BIRTHS: SELECTED COUNTRIES, 1960-2000



Source: Council of Europe; United States. Vital and Health Statistics, Series 21, No. 53 (1960-1992); United States. National Vital Statistics Report, Vol. 48, No.14 (1998-1999)

Figure 10. Percentage of extra-marital births, 1960^a and 2000^b



Source: Council of Europe; United States. Vital and Health Statistics, Series 21, No. 53 (1960-1992); United States. National Vital Statistics Report, Vol. 48, No.14 (1998-1999).

NOTES: ^a except Greece (1965), Republic of Moldova (1975), Spain (1970), TFYR Macedonia (1970), Ukraine (1965) and the United Kingdom (1965); no data for Romania is available until 1990; ^b except France (1999), Germany (1999), Japan (1998), Spain (1998), United States (1999) and Serbia and Montenegro (1997).

Conversely, in many countries with low prevalence of cohabitation, such as Japan, Italy and Poland, extra-marital fertility typically remains low. In the European part of the former U.S.S.R the percentage of extra-marital births is high despite the low popularity of cohabitation and high prevalence of formal marriage.

In countries with high prevalence of cohabitation, the differences in levels of extra-marital fertility may also stem from different prevalence of intentional childlessness of cohabiting couples. In some countries, the cultural climate and social conditions are appropriate for out-of-wedlock childbearing. In others, cohabiting couples that wish to have children may be constrained by the apprehension of the risk of finding themselves more secluded and isolated than married couples with children, who have better chances of acquiring social capital.

Different degrees of social integration of cohabiting couples with children, in particular their access to social services, underlie the differentials in marital versus extra-marital fertility. The deeper the integration, the smaller the differential, which, in turn, supports the overall fertility level (Bozon, 2001). Cross-country comparisons do not reveal an association between the percentages of extra-marital births and the overall level of fertility.

B. FERTILITY PREFERENCES

Some insights about the completed family size of women may be inferred from data on childbearing intentions. Among the pertinent issues are: what is the average preferred family size, what are the distributional characteristics of fertility preferences, how do they evolve during the life course, and what causes the systematic positive difference between the preferred family size and the achieved family size.

Fertility preferences show little variation around two children across industrialized societies and between generations. The average expected number of children ranges between 2.0 and 2.5 but in most countries the range is closer to 2.1 to 2.2 children. Forty to 60 per cent of 20 to 24-year-old women in the countries in Europe for which such information is available prefer or expect to have two children (van de Kaa, 2001a). Fertility expectations do not systematically vary with most often explored socio-economic correlates (Van Peer, 2000). Nevertheless, in some Northern and Western European countries better-educated women expect noticeably more future births than women with less education, but better-educated women often postpone childbearing more than less-educated (van de Kaa, 2001a), which may result, for the former, in fewer children than expected. Completed family size would, therefore, depend to some extent of fertility expectations and postponement.

Perhaps more informative is the distribution of desired family size, especially with respect to the potential for enlarging families beyond two children. In Sweden, 64 per cent of 25 to 29-year old women with two children want more; in other Northern European countries and in Western Europe (except Switzerland), this percentage is within the range 33 to 41 per cent. It is lower – from 25 to 28 per cent in Southern Europe and still lower – from 12 to 21 per cent in Eastern Europe (table 14). Such differences would produce considerable variation in the final distributions of women by the number of children ever born if women fully realize their expectations, even under the (unrealistic) assumption that the percentages of childless and one-child women are equal in all populations.

However, the ultimate number of children a woman would have is not necessarily closely associated with fertility preferences. The unreliability of birth expectations of young women for predicting their reproductive behaviour in later years has been documented on the basis of empirical

TABLE 14. PERCENTAGE OF WOMEN IN AGE GROUPS 25-29 AND 30-34 WHO HAVE TWO CHILDREN AND WANT MORE, 1990s

<i>Country</i>	<i>25 - 29</i>	<i>30 - 34</i>
Estonia.....	..	57.7
Hungary.....	12.1	7.5
Poland	16.8	6.5
Latvia	20.7	11.3
Lithuania	21.0	17.4
Austria.....	24.7	13.0
Portugal.....	24.8	7.9
Switzerland.....	26.0	27.6
Italy	26.5	11.0
Spain	27.6	19.7
Slovenia.....	28.0	23.4
Belgium.....	33.4	15.0
Canada.....	35.8	18.8
Netherlands	37.0	22.0
France.....	38.6	22.3
Norway ^a	41.2	16.9
Sweden ^a	64.0	39.0

Source: Fertility and Family Surveys Country Reports.

NOTE: ^a Exact ages 28 and 33

evidence collected in the 1960s and early 1970s, when fertility was falling rapidly (Westoff and Ryder, 1977). Yet, no analyses of the relationship between fertility preferences and reproductive behaviour were published on the basis of data for the late 1980s and beyond, when women have presumably caught up on delayed childbearing in a number of countries (Van Hoorn and Keilman, 1997).

In general, it appears that the expectations for the near future (e.g. 5 years) are much less reliable than those for the long run (Van Hoorn and Keilman, 1997). A study linking the Norwegian Fertility Survey of 1977 with data from the Central Population Register demonstrated that only 55 per cent of women who had stated in 1977 that they expected to have a or another child within 5 years actually did so in 1978 to 1982 (Noack and Østby, 1985). On the other hand, the trend towards postponing childbearing makes the concentration of attention on fertility preferences of young women at the start of reproductive period increasingly insufficient. Almost invariably women younger than 30 who have one child or no children do not consider their childbearing years to have passed. Among 25 to 29-year-old women having one child, not more than 7 per cent (in Sweden) to 30 per cent (in Austria) see their families as completed (van de Kaa, 2001). From this viewpoint, it would be appropriate to focus on women aged 25 to 29. An additional motive for this is that the Fertility and Family Surveys have shown that expectations about numbers of children become more realistic with age (van de Kaa, 2001a).

Another reason why the explanatory value of fertility preferences should not be overestimated is that these expectations partly reflect prevailing norms at the time of the interview rather than indicative of future behaviour (Van Hoorn and Keilman, 1997). It was also demonstrated that an increase in uncertainty in responses (and non-response) is an indication that there has been a change in the public

opinion about the desired family size; a reduction in uncertainty indicates that the situation has become more stable (O'Connell, 1991; Morgan, 1981; 1982).

Birth expectations also tend to change over the life course of a cohort, as women grow older and gain childbearing experience (Calhoun and de Beer, 1991). Young women are inherently too optimistic: for most of them, it would be difficult to confront the possibility of infecundity or a break-up of the current partnership later in life. However, the accumulation of childbearing experience does not necessarily depress the desired number of children. In the 1982 Dutch Fertility Survey 65 per cent of older women who already had children had wanted the same number of children as they had wanted before their first pregnancy, but 30 per cent wanted more than they had indicated earlier (Van de Giessen, 1992). As demonstrated by the Current Population Survey in the United States, many women who eventually remain childless reach that state through a series of decisions to postpone childbearing, rather than deciding at a young age not to have children (Morgan and Chen, 1992). Also, people tend to justify past actions. Therefore, ex-post rationalization should lead to a close correspondence between expected and actual number of children for couples beyond fertile ages.

Yet, contrary to this assumption, Fertility and Family Surveys found a systematic gap between fertility preferences among women nearing completion of their childbearing life and their achieved family size. This gap varies from 0.1 children per woman to 0.3 children in the age group 35 to 39 years (for the 13 FFS countries the average is 0.2 children per woman) and from 0 to 0.2 children per woman in the age group 40 to 44 (for the 10 countries the average is 0.1 children per woman) (Prioux, 1993). However small such gaps seem to be, they still reflect non-trivial variation of reproductive behaviour when fertility is low.

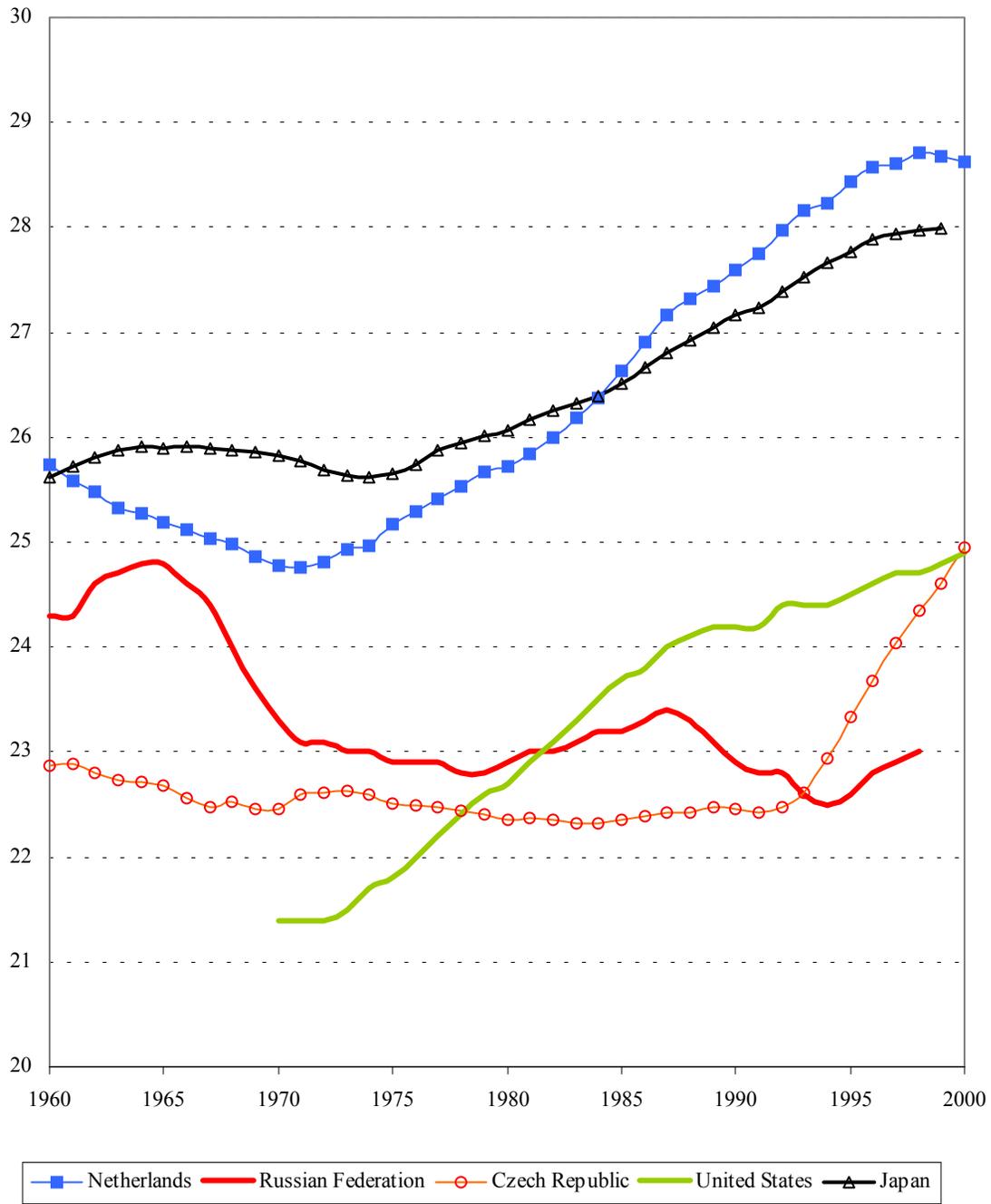
High prevalence of unrealised expectations among women in older age groups may reflect a general upward bias in the answers about birth expectations. This, in turn, may be instrumental in explaining why the average desired family size is consistently and significantly higher than achieved or reasonably extrapolated family size. Desired family size is also systematically higher than period total fertility rate (Bongaarts, 2001). This explanation is consistent with the hypothesis linking the positive difference of desired and achieved family sizes with gender relations. Since fertility preferences of women usually exceed those of men in the same age groups, while the men have relatively more decision-making power, the trend towards gender equity may lead to narrowing of the gap between the expected (by women) and actual number of children (McDonald, 2000a; van de Kaa, 2001a).

C. TIMING OF CHILDBEARING

It was noted that while the first demographic transition in the domain of reproductive behaviour was essentially about the reduction of the number of births within marital unions (quantum effect), the changes in the timing of childbearing (tempo effect) constitute an important facet of the second demographic transition.

During the second half of the twentieth century, the timing of fertility evolved in waves, whereby the initial reduction in the average age at first birth (rejuvenation) was followed by its postponement. In some countries, postponement was followed by compensatory recuperation. Traditionally, the European (that is, all of Europe except its Eastern region) pattern of fertility was associated with relatively late onset of childbearing. The baby boom was associated with rejuvenating age schedule of fertility. Since 1970 however, the age at first birth has been rising in most Western countries. On the other hand, the age at first birth has been relatively low and stable in Eastern Europe, and in some Eastern European countries even decreasing (figure 11). In most Western countries, the average age at first birth rose by 2.5 to 4.0 years to reach 28 to 29 years, which is past the mid-point of the primary childbearing ages. In the United

FIGURE 11. MEAN AGE OF WOMEN AT FIRST BIRTH: SELECTED COUNTRIES, 1960-2000



Sources: Council of Europe, Goskomstat Russia, U.S. Bureau of the Census

TABLE 15. MEAN AGE AT FIRST BIRTH: SELECTED LOW-FERTILITY COUNTRIES, FEMALES, 1960-2000 (YEARS)

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Asia																	
Eastern Asia																	
Hong Kong	...	...	25.2	25.6	26.1	26.6	27.6	27.6	27.5	27.4	27.6	27.9	28.0	28.2	28.3	...	...
Japan	25.6	25.9	25.8	25.7	26.1	26.5	27.2	27.2	27.4	27.5	27.7	27.8	27.9	27.9	28.0	27.9	29.0
Republic of Korea ^b	...	...	...	...	24.9	25.1	25.8		26.2	26.4	26.6	26.6	...	...	...	...	...
Singapore	...	...	25.0	25.4	26.1	26.7	27.4	27.4	27.6	27.7	27.9	27.9	...	...	28.1	...	...
Europe																	
Eastern Europe																	
Belarus	...	...	...	...	...	...	22.6	22.5	22.5	22.4	22.4	22.4	22.5	22.5	22.6	23.2	23.4
Bosnia and Herzegovina	23.2	23.2	23.0	23.0	23.3	23.6	23.6	...	...	...	...	...	...	...	...	...	...
Bulgaria	22.1	22.2	22.1	22.1	21.9	21.9	22.2	22.0	21.9	22.0	22.2	22.4	22.6	22.8	22.9	23.0	23.5
Croatia	23.4	23.4	23.1	23.1	23.4	23.6	24.1	24.4	24.5	24.7	24.8	25.0	25.0	25.2	25.4	25.4	...
Czech Republic	22.9	22.7	22.5	22.5	22.4	22.3	22.5	22.4	22.5	22.6	22.9	23.3	23.7	24.0	24.4	24.6	24.9
Estonia	...	...	24.1	23.6	23.2	23.2	22.9	22.7	22.7	22.7	22.8	23.0	23.2	23.4	23.6	23.8	24.0
Hungary	22.9	22.9	22.8	22.5	22.4	22.8	23.1	23.2	23.3	23.4	23.6	23.8	24.1	24.3	24.5	24.8	25.1
Latvia	...	...	...	...	22.9	23.0	23.0	22.9	22.8	22.9	23.3	23.3	23.5	23.8	24.0	24.2	24.4
Lithuania	...	...	...	...	23.8	24.1	23.2	23.1	23.1	23.2	23.0	23.1	23.2	23.3	23.6	23.7	23.8
Poland	25.0	23.5	22.8	23.0	23.4	23.5	23.3	23.3	23.4	23.5	23.6	23.8	23.9	24.1	24.2	24.4	24.5
Romania ^e	22.8	22.9	22.6	22.5	22.4	22.6	22.6	22.6	22.6	22.5	22.6	23.0	23.1	23.3	23.4	23.5	23.6
Russian Federation	24.3	24.8	23.3	22.9	22.9	23.2	22.9	22.8	22.8	22.6	22.5	22.6	22.8	22.9	23.0	...	...
Serbia and Montenegro	22.7	22.9	22.7	22.8	23.3	23.6	23.9	24.0	24.2	24.3	24.4	24.5	24.7	24.8	24.9	25.0	...
Slovakia	22.7	22.7	22.6	22.8	22.7	22.6	22.6	22.5	22.6	22.7	22.8	23.0	23.2	23.4	23.6	23.8	24.2
Slovenia	24.8	24.2	23.7	23.0	22.8	23.1	23.7	23.9	24.1	24.5	24.6	24.9	25.2	25.5	25.8	26.1	26.5
TFYR Macedonia	23.2	23.4	23.0	22.9	23.2	23.3	23.4	...	...	...	...	23.7	...	...	24.1	24.1	24.3
Northern Europe																	
Denmark	23.1	22.7	23.8	23.9	24.6	25.7	26.4	26.8	26.9	27.1	27.2	27.4	27.5				
Finland	24.7	24.6	24.4	24.9	25.6	25.9	26.5	26.6	26.7	26.8	27.0	27.2	27.2	27.4	27.4	27.4	27.4
Iceland			21.3	21.8	21.9	23.1	24.0	24.4	24.6	24.8	24.9	25.0	25.0	25.0	25.2	25.1	25.5
Ireland				25.5	25.5	26.1	26.6	26.6	26.7	27.0	27.1	27.3	27.3	27.5	27.6	27.6	27.8
Norway ^c					25.1	25.6	25.8	25.9	26.0	26.3	26.4	26.5	26.7	26.8	26.8	26.9	
Sweden	25.5	25.2	25.9	24.4	25.3	26.1	26.3	26.5	26.7	27.0	27.1	27.2	27.4	27.5	27.8	27.9	27.9
United Kingdom ^a							27.3	27.5	27.7	27.9	28.2	28.3	28.7	28.6	28.8	28.9	29.1
Southern Europe																	
Greece	...	...	25.0	24.5	24.1	24.5	25.5	25.7	25.9	26.2	26.4	26.6	26.8	27.0	27.2	27.3	...
Italy	25.8	25.4	25.1	24.7	25.0	25.9	26.9	27.0	27.3	27.4	27.7	28.0	28.3	28.7	...	...	...
Portugal	...	...	...	...	24.0	24.2	24.9	25.1	25.3	25.4	25.6	25.8	25.9	26.0	26.2	26.4	26.4
Spain	...	...	...	25.1	25.0	25.8	26.8	27.1	27.5	27.8	28.1	28.4	28.5	28.7	28.9	29.0	...
Western Europe																	
Austria	...	...	...	...	...	24.3	25.0	25.0	25.0	25.1	25.4	25.6	25.9	26.0	26.1	26.3	26.3
Belgium ^a	24.8	24.5	24.3	24.4	24.7	25.5	26.4	26.5	26.7	26.9	...	...	...	...	...	...	...
France ^a	24.8	24.4	24.4	24.5	25.0	25.9	27.0	27.2	27.4	27.6	27.9	28.1	28.4		28.5	28.7	...
Germany ^a	25.0	24.4	24.0	24.5	25.0	26.1	26.6	26.8	26.9	27.1	27.3	27.5	27.6	27.7	27.9	28.0	...

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Luxembourg ^a	...	...	...	...	...	...	...	...	...	...	27.8	27.4	27.7	27.8	27.9	28.3	28.4
Netherlands	25.7	25.2	24.8	25.2	25.7	26.6	27.6	27.8	28.0	28.2	28.2	28.4	28.6	28.6	28.7	28.7	28.6
Switzerland ^a	26.1	25.6	25.3	25.7	26.3	27.0	27.6	27.6	27.8	27.9	28.0	28.1	28.2	28.4	28.5	28.5	28.7
Northern America																	
United States	22.4	22.4	...	22.8	23.5	24.0	...	...	...	...	...	24.6	...	...	25.0	...	...

Sources: Council of Europe; various official statistical publications

NOTE: ^a births within current marriage; ^b Republic of Korea 1990: 1989 data; ^c Norway 1985: 1986 data; ^d Greece 1970: 1971 data; ^e Romania 1960: 1961 data

States, even though the age at first birth has increased, women still start childbearing earlier than in the other Western countries – at age 25, on average. The age profile of fertility has been and still is much younger in Eastern Europe (except Slovenia). From 1960 to 1990, the average age at first birth stayed within the range of 21 to 24 years and was characterized by little variation across countries or over time. In the 1990s, the age at first birth started to rise in Eastern Europe (table 15).

Delayed marriage raises the mean age at childbearing. However, the age at first birth in most countries increased more than the age at first marriage. The positive difference between the mean age of first birth and the mean average age at first marriage of the order of 1.5 to 2.0 years was typical for most low-fertility countries in the 1960s and 1970s. Since then this difference has narrowed in all of them, and in the Nordic countries, Austria, Bulgaria, Estonia, Iceland, Latvia, Slovenia and the United States the mean age at first birth became lower than the mean age at first marriage (table 16). This trend reflects the growth of extra-marital births rather than the compression of the interval between marriage and birth because it appears that “shot gun ” marriages, as for example in the case of Norway, where they accounted for up to half of all conceptions or first births, have declined since the 1960s (Jensen, 2001).

In the low fertility countries, the difference between mean age at birth of the second child and mean age at birth of the first child typically ranges from 2 to 3 years (table 17). The mean age at first birth increased substantially in most countries (table 16), while the differences between mean ages at higher-parity births often remained stable. The differences between mean ages at births of children of successive parities do not equal the inter-births intervals because, for example, not all first-parity women have another child (Toulemon and Mazuy, 2001). However, both indicators typically evolve in the same direction. Since the fecund lifespan is limited, childbearing, especially in the countries with established market economies, becomes concentrated in a narrow age interval ranging from the late twenties and early thirties to the mid- or late thirties. In Eastern Europe, the effective reproductive life span is about 5 years longer.

The shifts of the age profile of period fertility may result from changes due to timing (tempo effects) and/or from the changing parity structure. Sometimes, these trends impact on the period indicators in opposite directions and may cancel each other. For instance, postponement of births (change in timing) leads to “ageing” of the fertility pattern but decrease of high-parity births (change in parity structure) means their concentration at relatively young ages.

At the end of the first transition (that is before the mid-1970s in the countries with established market economies and 1990s in Eastern Europe), typically there was little postponement of first births. Fertility decline was achieved more by decreases of high-order births (which occur relatively late in life) than by a reduction of first- and second-order births, resulting in a rejuvenation of the age pattern of period fertility. This trend is reflected in a shift of the age pattern of fertility towards younger ages, summarized by the declining average age at birth and in the falling proportion of the sum of age-specific

TABLE 16. DIFFERENCE BETWEEN MEAN AGE AT FIRST BIRTH AND MEAN AGE AT FIRST MARRIAGE, FEMALES, 1960-2000 (YEARS)

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Asia																	
Eastern Asia																	
Japan	1.2	1.4	1.6	1.0	0.9	1.0	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.3	1.3	1.1	2.0
Europe																	
Eastern Europe																	
Bosnia and Herzegovina	...	...	...	...	1.3	1.2	0.3	...	...	...	...	...	...	...	...	...	...
Bulgaria	0.8	0.8	0.7	0.7	0.6	0.5	0.8	0.6	0.3	0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.6	-0.6
Croatia	1.0	1.4	1.7	1.4	1.3	1.1	1.0	1.2	0.9	1.0	0.9	0.9	0.4	0.4	0.2	0.1	...
Czech Republic	0.9	1.0	0.9	0.9	0.9	0.7	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.7	0.5	0.4
Estonia	...	...	0.6	0.4	0.6	0.4	0.4	0.3	0.3	-0.3	-0.7	-0.5	-0.6	-0.6	-0.6	-0.7	-0.8
Hungary	0.9	1.1	1.3	1.4	1.2	1.3	1.2	1.2	1.2	1.1	0.9	0.9	0.9	0.7	0.6	0.6	0.5
Latvia	...	...	...	...	0.1	0.3	0.7	0.7	0.5	0.5	0.7	0.5	0.3	0.2	0.1	-0.1	-0.1
Lithuania	...	...	...	...	0.8	0.8	0.9	1.0	1.1	0.9	0.9	0.9	0.7	0.7	0.8	0.6	0.3
Poland	...	...	0.0	0.2	0.7	0.8	0.7	0.6	0.6	0.7	0.6	0.7	...	0.7	0.6	...	...
Romania	0.6	1.1	0.8	0.4	0.9	0.7	0.6	0.6	0.6	0.4	0.3	0.2	0.4	0.4	0.3	0.3	0.2
Russian Federation	-0.4	0.8	0.1	0.2	0.5	1.0	1.0	1.0	1.0	0.8	0.6	0.6	0.7	...	...	...	...
Serbia and Montenegro	0.7	0.7	0.7	0.7	0.8	0.8	0.5	0.4	0.4	0.3	0.6	0.5	0.5	...	0.5	0.5	...
Slovakia	0.6	0.6	0.6	0.8	0.8	0.6	0.7	...	...	...	...	...	...	...	0.5	0.6	0.2
Slovenia	...	...	0.6	0.5	0.3	0.3	0.0	0.0	-0.1	-0.1	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2
TFYR Macedonia	1.1	1.1	0.9	0.9	0.7	0.7	0.8	...	...	...	...	0.7	...	...	0.8	0.8	0.7
Northern Europe																	
Denmark	0.3	0.2	1.0	0.4	0.0	-0.5	-1.2	-1.0	-1.1	-1.4	-1.7	-1.7	-1.7	...	...	...	...
Finland	0.9	1.2	1.1	1.5	1.3	0.8	0.5	0.5	0.3	0.2	0.2	0.2	0.0	0.1	-0.1	-0.4	-0.6
Iceland	...	...	-1.9	-1.3	-1.8	-2.5	-2.7	-2.4	-2.7	-2.9	-3.6	-3.5	-3.8	-4.0	-4.5	-4.7	-4.4
Ireland	...	...	...	0.5	0.9	0.7	0.0	-0.3	-0.3	-0.4	-0.7	-0.6	-0.9	...	...	...	...
Norway	...	...	...	...	...	0.2	-0.6	-0.9	-0.7	-0.8	-0.8	-1.0	-1.2	-1.2	-1.3	-1.8	...
Sweden	1.6	1.7	2.0	-0.4	-0.7	-1.1	-1.1	-1.1	-1.2	-1.1	-1.3	-1.5	-1.6	-1.7	-1.6	-1.9	-2.3
United Kingdom	...	...	...	...	...	...	2.1	2.1	2.1	2.0	2.0	1.9	2.1	1.8	1.8	1.6	...
Southern Europe																	
Greece	...	...	1.0	1.1	0.8	1.0	0.7	0.9	0.8	1.0	0.9	1.0	0.9	0.8	0.7	0.7	...
Italy	1.0	1.2	1.2	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.6	1.7	...	...	...
Portugal	...	...	...	...	0.6	0.8	1.0	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.3	1.2
Spain	...	...	...	1.2	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.6	1.4	1.4	1.4	1.3	...
Western Europe																	
Austria	...	...	...	...	...	0.2	0.0	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.6	-0.6	-0.7	-0.9
Belgium	2.0	1.9	1.9	2.4	2.5	2.4	2.1	2.1	2.0	2.0	...	...	...	...	...	...	...
France	1.8	1.7	1.8	2.0	2.0	1.7	1.5	1.4	1.3	1.2	1.1	1.1	1.0	...	0.8	0.9	...
Germany	1.5	1.5	1.5	2.2	2.1	2.0	1.4	1.1	1.1	1.0	1.0	1.0	1.0	1.0	0.9	0.8	...
Luxembourg	...	...	...	...	...	...	...	...	...	...	1.5	0.8	1.2	0.7	0.7	0.9	1.3
Netherlands	1.5	1.6	1.9	2.6	2.5	2.2	1.7	1.5	1.5	1.5	1.2	1.3	1.4	1.2	1.1	1.0	0.8
Switzerland	1.2	1.0	1.1	1.4	1.3	1.0	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8
Northern America																	
United States of America	...	...	...	...	0.5	...	...	...	...	...	...	...	...	...	-1.4	...	...

Source: tables 3 and 15

fertility rates above 30 years to the total fertility rate. For instance, this proportion fell in Southern Europe from 41 per cent in 1960 to 28 per cent in 1975, in Western Europe from 37 per cent to 28 per cent and in Northern Europe from 32 per cent to 28 per cent. In Eastern Europe, this percentage decreased from 31 to 23 per cent (table 18).

The second transition involves rising age at first birth and a reduction of first- and second-order births that is larger than the reduction of high-order births. These trends result in a shift of the age pattern of fertility towards older ages. In the Western countries of Europe and Japan, the proportion of the sum of the above 30 age-specific fertility rates to the total fertility rate increased sharply. In 2000, in most Western countries of Europe this proportion was higher than 40 per cent, and attained and approached 50 per cent. In spite of the similarity of trends, the structure of period fertility by age currently varies across Western countries, as there remain marked regional differences in the age pattern of childbearing. In Spain fertility above age 30 contributes more than 50 per cent of the total fertility, because of the high age at first birth. By contrast, in the United States this proportion is only one-third because of the relatively low age at first birth (figure 12).

TABLE 17. MEAN AGE AT BIRTH BY BIRTH ORDER: SELECTED COUNTRIES, MOST RECENT ESTIMATE

Country	Year	Birth order			
		1	2	3	4
Finland.....	1998	27.4	29.8	31.9	33.1
France ^a	1997	27.8	30.0	31.7	33.3
Hong Kong.....	1998	28.3	31.1	33.1	34.4
Netherlands.....	1996	29.0	30.8	32.3	34.3
Poland.....	1997	24.1	27.4	30.3	32.2
Russian Federation.....	1998	23.1	27.5	30.5	32.1
Singapore.....	1998	28.1	30.6	32.6	33.9
Spain.....	1998	28.9	31.8	33.7	34.8
United States of America.....	1998	25.0	27.7	29.2	30.3

Source: United Nations Statistics Division and United Nations Population Division

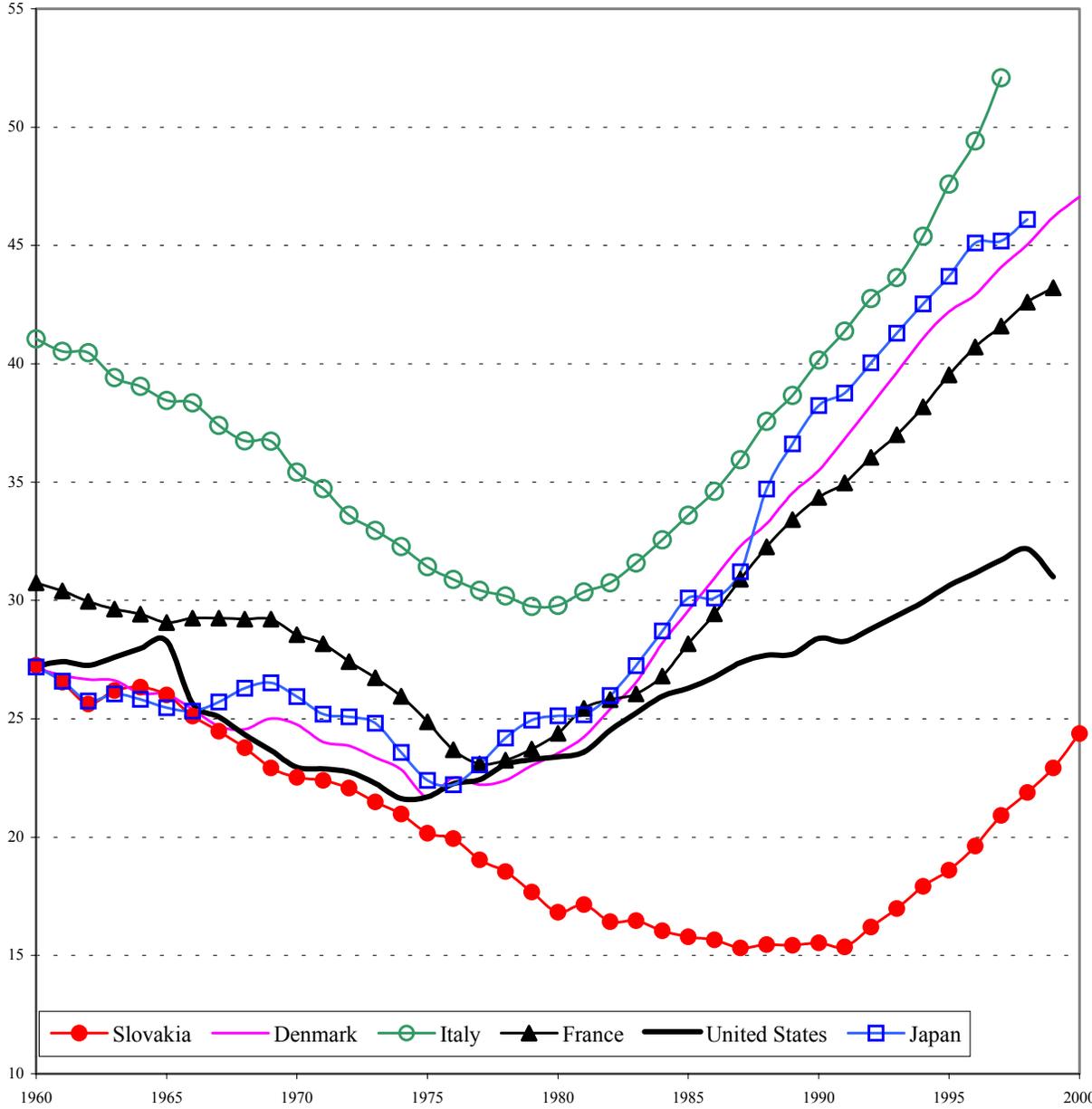
NOTE: ^a births in current marriage

TABLE 18. PERCENTAGE OF THE SUM OF AGE-SPECIFIC FERTILITY RATES FOR AGE GROUPS 30-49 IN TOTAL FERTILITY RATE: JAPAN, UNITED STATES AND AVERAGES FOR EUROPEAN REGIONS, 1960-2000

Country	1960	1965	1970	1975	1980	1985	1990	1995 circa 2000
Japan	27	25	26	22	25	30	38	44
United States	27	28	23	22	23	26	28	31
Eastern Europe	31	28	26	23	20	19	19	20
Northern Europe	36	34	31	28	30	34	37	43
Southern Europe	42	40	37	33	29	30	34	42
Western Europe	34	32	29	25	26	29	35	40

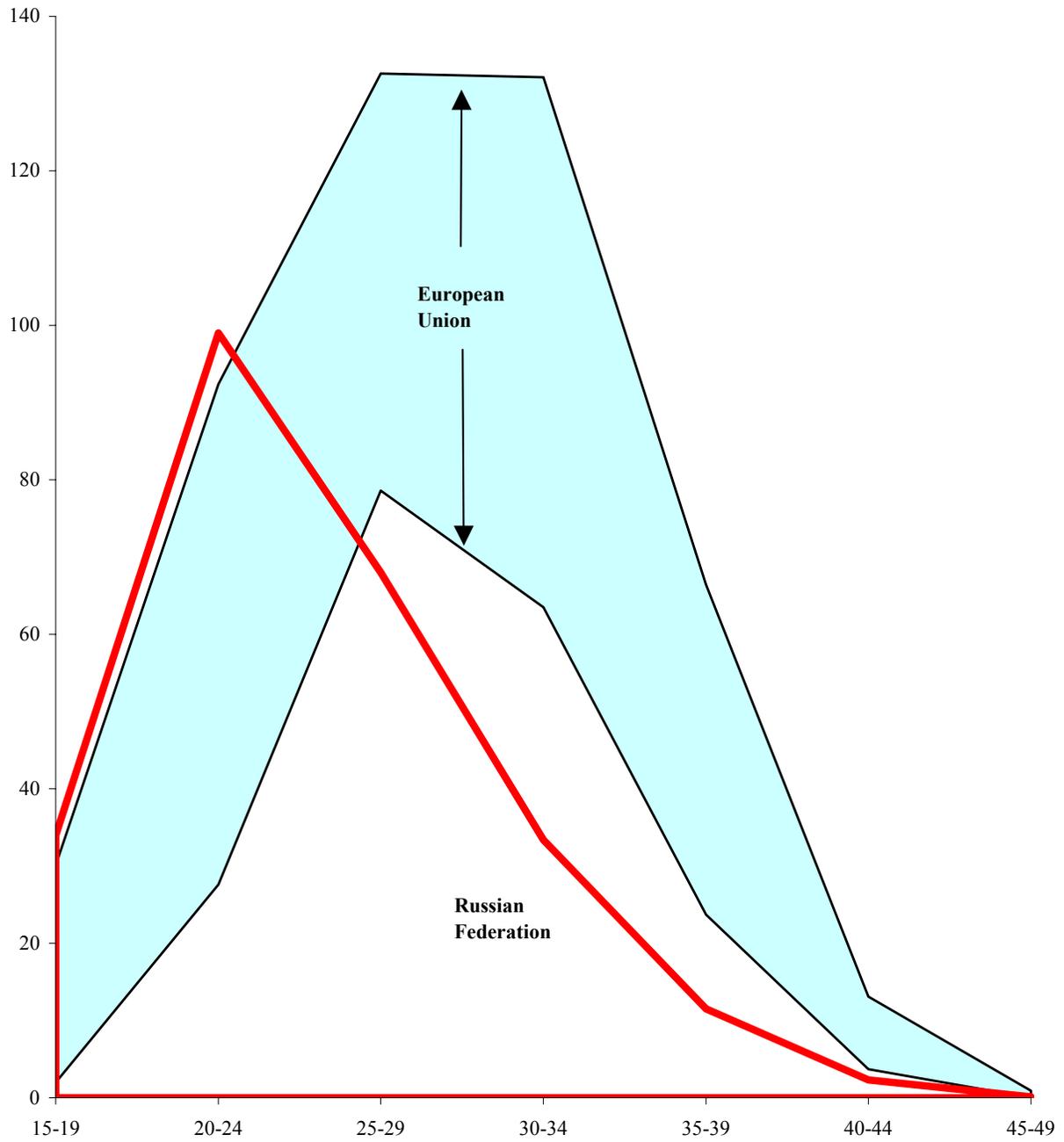
Source: Council of Europe, United Nations Population Division

FIGURE 12. PERCENTAGE OF THE SUM OF AGE-SPECIFIC FERTILITY RATES FOR AGE GROUPS 30-49 IN TOTAL FERTILITY RATE: SELECTED COUNTRIES^a, 1960-2000



Source: European Council, United Nations Population Division
 NOTE: ^a selected are the European countries whose indicators for circa 2000 are closest to the averages in their respective regions (Table 18)

FIGURE 13. AGE-SPECIFIC FERTILITY RATES: HIGHEST AND LOWEST IN THE EUROPEAN UNION, 1996-1997 AND RUSSIAN FEDERATION, 1998



Source: Council of Europe

In Eastern Europe, during the last decades of the twentieth century fertility decline was still fuelled by more or less equal reduction of births of all parities and the age at first birth was either stable or decreasing. As a result, the age pattern of fertility was rejuvenating continuously. The average proportion of total fertility to mothers aged 30 and older decreased from 31 per cent in 1960 to 23 per cent in 1975 and 20 per cent in 1990. Only since the 1990s was there an increase in this proportion (table 18). The female cohorts that started childbearing in the 1990s postponed their first births considerably. The extent of postponement is reflected by the gap between the adjusted and observed first-order total fertility rates. By the late 1990s this gap attained 0.3 births per woman in Bulgaria and Czech Republic (Philipov and Kohler, 1998), but was much smaller (0.1 births per woman) in the Russian Federation.

Before the onset of the second demographic transition the age pattern of fertility in the established market economies (and particularly in the Western countries of Europe) was older than in Eastern Europe. Since then, the differences increased because the age pattern of fertility aged in the former group and rejuvenated in the latter. For instance, in the late 1990s fertility rates in the age groups 15 to 19 and 20 to 24 in the Russian Federation were higher than those in the United Kingdom and Iceland respectively. The United Kingdom and Iceland had the highest rates of the European Union. By contrast, fertility rates of women older than 24 were lower than the minima recorded for the European Union (Spain for the age group 25-29, Austria for the age group 30-34 and Belgium for the age groups 35-44) (figure 13).

D. FERTILITY LEVELS AND TRENDS

1. Cohort perspective

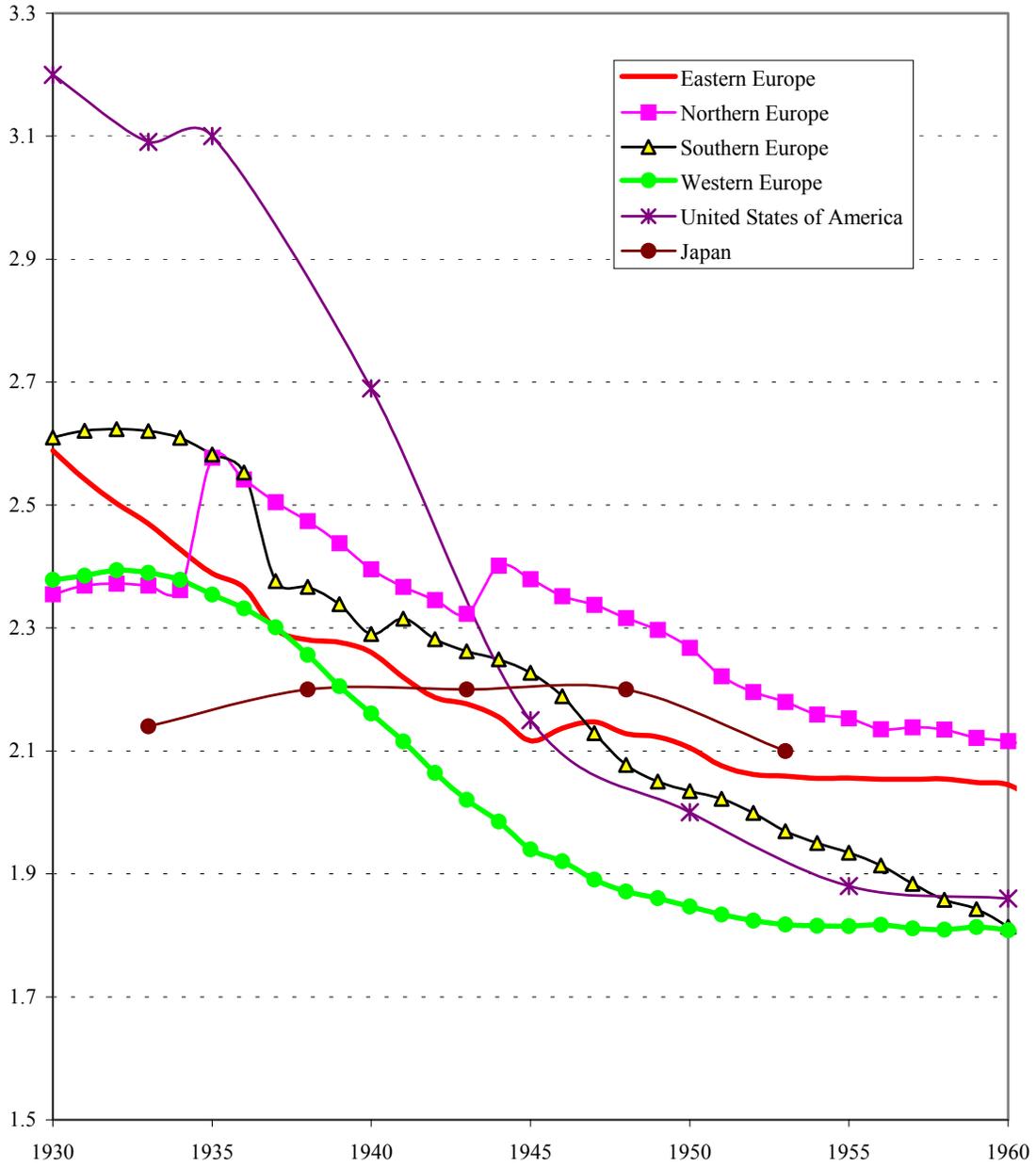
Cohort fertility of women born at the beginning of the twentieth century decreased to 2.5 children per woman in the United States and 3.0 in most Western countries of Europe. In most of these countries, completed fertility of cohorts born in the first decades of the twentieth century decreased further. However, in some Western countries, for example in the United States and France, completed fertility of women born from around 1925 to 1935 was higher than that of the preceding and following cohorts, reflecting in part the post-war baby boom. In the United States fertility had been one of the lowest in the world for the cohorts born at the beginning of the twentieth century (2.5 children per woman) but increased for the cohorts born 30 years later by 0.7 children per woman reaching 3.2 children per woman. The 1930 cohort born in the United States had, on average, one child more than the same cohort born in most other developed countries (figure 14). In France, cohort fertility increased from an average of 2.3 children per woman born at the beginning of the twentieth century to 2.6 children per woman born in the early 1930s.

The decline of fertility continued in most developed countries for all cohorts born after the early 1930s (table 19 and figure 14). Completed fertility was falling particularly fast in the United States where in a matter of only 15 years it decreased by one child per woman. On the other hand, completed fertility was decreasing relatively slowly in Eastern European countries. As a result, the positive gap in completed fertility between the Western countries of Europe and Eastern Europe closed for the cohorts born during the Second World War and then became negative for the cohorts born during the period 1945 to 1960. However, these details should not derail attention from the striking similarities in fertility decline across developed world. Notwithstanding the differences in socio-economic conditions and political climates of the low-fertility countries, their fertility regimes, as reflected in completed cohort fertility, were evolving in the same direction. Completed fertility of women born in 1960 ranges from 1.8 children per woman in Southern and Western Europe to 2.1 children per woman in Northern Europe (figure 14 and table 19). It was noted by Vishnevsky (1998), Zakharov (2000) and Zakharov and Ivanova (1996) that from a long-term perspective, fertility trends in Eastern Europe neither were nor currently are that much different from those in the Western countries. A similar observation would hold for Eastern Asia (table 19).

Probably the most important result of these trends was that in most developed countries cohort fertility declined to below replacement level for the cohorts born during the 1940s (in Russia since 1930) and never recuperated. Regional averages of completed fertility of women born in the mid-1960s is likely to span from 1.7 children per woman in Southern Europe to 2.0 children per woman in Northern Europe (figure 14 and table 19). Yet, the regions are not homogeneous with respect to completed fertility of the youngest cohorts that have completed childbearing. For instance, in the cohorts born around 1965, the average completed family size would probably vary from 1.6 to 2.1 children per woman in Eastern Europe, from 1.9 to 2.3 children per woman in Northern Europe, from 1.6 to 1.8 children per woman in Southern Europe and from 1.6 to 2.0 children per woman in Western Europe (table 19).

Postponement of childbearing implies that women catch up on delayed births when they grow older, if they were so inclined. If all deferred births subsequently take place, completed fertility would remain stable. Among the 1950s and the 1960s cohorts in all Northern European countries (with the exception of Ireland), France and Switzerland fertility deficits by young women were “compensated” with increased fertility when they reached their late twenties and thirties (table 20, see also Frejka and Calot, 2001a). For instance, a thousand Swiss women born in 1945 to 1949 had, on average, 875 children before they reached the age 25; in the following 15 years of their lives, 1100 children were added. The cohort born in 1960 to 1964 followed a different childbearing path: before reaching the age 25, this cohort had 575 children per thousand women (34 per cent less than the former cohort), but from age 25 to age 40

FIGURE 14. COMPLETED FERTILITY OF FEMALE BIRTH COHORTS BORN IN 1930-1960



Sources: Council of Europe, United Nations Statistics Division

TABLE 19. COMPLETED FERTILITY OF FEMALE BIRTH COHORTS BORN IN 1930, 1935, 1940, 1945, 1950, 1955, 1960 AND 1961-1967

Country	Observed data							Estimates based on censored data						
	1930	1935	1940	1945	1950	1955	1960	1961	1962	1963	1964	1965	1966	1967
Asia														
Eastern Asia														
Hong Kong	...	4.01	3.42	...	...	...	...	...	...	...	...	...	...	...
Japan	...	2.14	2.20	2.20	2.20	2.10	...	...	...	...	...	...	...	...
Republic of Korea	...	4.69	4.05	3.41	2.79	...	...	...	...	...	...	...	...	...
Singapore	...	4.90	3.95	3.17	2.51	...	...	...	...	...	...	...	...	...
Europe														
Eastern Europe														
Albania	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belarus	...	...	1.95	1.95	1.99	1.86	1.91	1.81	1.70	1.65	1.62	1.62	1.62	1.63
Bosnia and Herzegovina	3.59	3.04	2.75	2.34	2.17	1.95	...	...	...	...	...	...	...	...
Bulgaria	2.12	2.01	2.13	2.07	2.07	2.03	1.95	1.91	1.88	1.87	1.86	1.83	1.79	1.77
Croatia	2.15	1.98	1.95	1.80	1.84	1.94	1.97	1.97	1.94	1.91	1.88	1.86	1.82	1.77
Czech Rep.	2.14	2.12	2.07	2.03	2.10	2.07	2.03	2.01	1.99	1.96	1.93	1.92	1.89	1.86
Estonia	...	...	...	1.85	1.97	2.00	2.00	1.98	1.94	1.90	1.85	1.81	1.76	1.73
Hungary	2.07	1.99	1.92	1.90	1.95	1.94	2.02	2.03	2.02	2.00	1.98	1.97	1.95	1.92
Poland	...	...	...	2.27	2.19	2.17	2.18	2.14	2.10	2.07	2.03	2.00	1.98	1.95
Romania	...	2.38	2.42	2.43	2.48	2.27	2.16	2.10	2.06	2.01	1.97	1.91	1.82	1.71
Russian federation	...	...	1.94	1.82	1.88	1.88	1.83	1.80	1.75	1.71	1.68	1.65	1.62	1.59
Slovakia	2.86	2.72	2.54	2.38	2.31	2.22	2.18	2.17	2.14	2.11	2.07	2.04	2.01	1.99
Serbia and Montenegro	2.51	2.33	2.38	2.33	2.28	2.26	2.28	2.24	2.20	2.18	2.16	2.14	2.10	2.07
Slovenia	2.10	2.06	2.01	1.83	1.90	1.96	1.87	1.85	1.84	1.81	1.78	1.76	1.74	1.71
TFYR of Macedonia	3.75	3.26	3.06	2.64	2.35	2.29	2.29	2.26	2.22	2.21	2.21	2.20	2.18	2.17
Ukraine	...	...	...	...	...	2.01	1.97	1.94	1.92	1.90	1.89	1.87	1.86	...
Northern Europe														
Denmark	2.36	2.38	2.24	2.06	1.91	1.84	1.90	1.91	1.91	1.92	1.92	1.91	...	...
Finland	2.46	2.29	2.04	1.88	1.86	1.90	1.95	1.95	1.94	1.92	1.91	1.90	...	...
Iceland	...	...	...	2.87	2.71	2.57	2.46	2.45	2.46	2.41	2.38	2.32	...	...
Ireland	...	3.50	3.20	3.28	3.04	2.67	2.41	2.35	2.30	2.26	2.21	...	...	...
Norway	2.48	2.57	2.45	2.21	2.09	2.05	2.09	2.10	2.09	2.08	2.07	2.07	2.05	...
Sweden	2.12	2.14	2.05	1.98	2.00	2.03	2.04	2.03	2.01	2.00	1.98	1.96	1.93	...
United Kingdom	...	...	...	...	...	2.01	1.93	1.94	1.92	1.90	1.89	1.87	1.86	...
Southern Europe														
Greece	...	...	2.06	1.99	2.04	2.00	1.93	1.89	1.83	1.79	1.76	1.73	1.70	...
Italy	2.28	2.28	2.14	2.07	1.88	1.80	1.67	1.63	1.60	1.59	...	...	...	...
Portugal	2.94	2.88	2.66	2.42	2.08	2.04	1.90	1.88	1.87	1.85	1.84	1.83	1.81	...
Spain	...	...	...	2.44	2.14	1.90	1.76	1.71	1.65	1.65	1.63	...	...	...
Western Europe														
Austria	2.32	2.45	2.12	1.96	1.87	1.76	1.69	1.66	1.66	1.65	1.63	1.61	1.58	1.54
Belgium	2.29	2.27	2.16	1.93	1.83	1.83	1.84	1.83	1.80	...	...	...	...	...
France	2.63	2.57	2.41	2.22	2.11	2.13	2.10	2.09	2.07	2.04	2.02	1.99	...	...
Germany	2.18	2.16	1.97	1.80	1.72	1.67	1.65	1.63	1.60	1.57	1.55	1.51	...	...
Luxembourg	...	...	...	1.82	1.72	1.69	1.76	1.77	1.79	1.81	1.81	1.82	...	...
Netherlands	2.67	2.49	2.22	2.00	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	...	...

Country	Observed data							Estimates based on censored data						
	1930	1935	1940	1945	1950	1955	1960	1961	1962	1963	1964	1965	1966	1967
Switzerland	2.18	2.18	2.08	1.86	1.79	1.75	1.77	1.76	1.74	1.71	1.67	1.65	...	...
Northern America														
Canada (Quebec)	...	...	...	...	...	...	1.62	...	...	...	...	...	...	...
United States	3.20	3.10	2.69	2.15	2.00	1.88	1.86	1.85	...	...	...	...	...	...
Australia/New Zealand														
Australia	...	...	...	2.30	...	...	2.17	...	...	...	...	...	...	...

Source: Council of Europe, United Nations Statistics Division

an additional 1435 children (per thousand women) was added (30 per cent more than in the former cohort). As a result, the completed fertility (by age 40) of the two cohorts is identical at 2.0 children per woman (table 20).

The dynamics of age-specific rates in the cohorts born in the early 1950s in Croatia, the Czech Republic, Hungary, Poland and Slovakia and in the Russian Federation in the late 1950s-early 1960s may also be interpreted as compensation/recuperation effects. However, these effects were much weaker and did not manifest beyond age 30 (table 20). Young motherhood in most of Eastern Europe together with its recent ageing suggests that postponement/recuperation has potential in the region. On the contrary, in Southern Europe, Austria and Germany the combination of high age at first birth with the absence of noticeable recuperation effects in the cohorts that have already completed childbearing is indicative that recuperation either failed (because of reduced fecundability) or was not intended. In general, the decreases of birth rates at younger ages do not necessarily imply later recuperation. The delicate balance between stopping and postponement of childbearing determines the large variation of observed recuperation. Thus, although recuperation of deferred births occurred in Belgium and the Netherlands it did not prevent cohort fertility from declining (table 20).

The parity structure of fertility is an important characteristic of reproductive patterns. In the low-fertility populations, parity dynamics becomes complicated. Births of different parities may acquire a leading role in the fertility decline. Different distributions of women by number of children may lead to similar completed cohort fertility; similar levels of period fertility sometimes result from their different structures by birth order. Reducing the real parity distributions to three categories (none, one or two, and three or more) is consistent with the prevailing perceptions of the types of families and may clarify the demographics of reproductive behaviour in the low-fertility populations. For instance, such an approach underscores the role of childlessness in below-replacement fertility regimes.

The proportion of women aged 45 to 49 who never had a live birth measures childlessness. Childlessness may result from voluntary choice, adverse social conditions or infertility. Infertility is “primary” when a woman has never been able to bear live children, or “secondary” when a woman becomes infertile with age or as a result of a disease. Infertility may be caused by innate conditions or acquired through behaviours such as early sexual activity, multiple partners with attendant exposure to sexually transmitted infections, complications caused by unsafe abortions or, quite often, postponement of childbearing beyond a certain age. A 3 to 6 per cent level of childlessness resulting from primary infertility due to genetic, anatomical endocrinological or immunological factors is to be expected in all populations (AbouZahr, Ahman and Guidotti, 1998). The prevalence of childlessness exceeding this threshold could be either an unintentional result of risk-prone sexual behaviour, excessive postponement of birth (secondary infertility) or through a conscious decision by the couple not to have children.

TABLE 20. AGE-SPECIFIC FERTILITY RATES AND COMPLETED FERTILITY^A OF 5-YEAR BIRTH COHORTS: SELECTED EUROPEAN COUNTRIES, WOMEN BORN IN 1945-1970

Country	Cohorts	Age-specific fertility rates					Completed fertility
		15-19	20-24	25-29	30-34	35-39	
Eastern Europe							
Bulgaria	1945-49	74	173	112	42	10	2.06
	1950-54	67	189	115	32	10	2.07
	1955-59	72	198	93	33	9	2.03
	1960-64 ^b	75	193	91	29	8	1.98
	1965-69 ^c	81	177	78	22	8	1.83
Croatia	1945-49	45	167	97	51	17	1.89
	1950-54	43	134	106^d	51	17	1.75
	1955-59	47	146	107	48	16	1.82
	1960-64 ^b	52	159	109	47	22	1.94
	1965-69 ^c	45	149	105	61	22	1.91
Czech Republic	1946-50	43	175	112	55	13	1.99
	1951-55	47	176	130	40	11	2.02
	1956-60	48	210	103	37	11	2.05
	1961-65 ^b	62	190	101	37	11	2.00
	1966-70 ^c	51	182	101	35	10	1.90
Hungary	1946-50	52	153	104	54	13	1.88
	1951-55	46	158	122	41	15	1.90
	1956-60	50	178	101	44	17	1.95
	1961-65 ^b	75	156	107	50	17	2.02
	1966-70 ^c	62	148	117	49	17	1.97
Poland	1945-49	45	184	126	71	29	2.28
	1950-54	32	165	137	69	30	2.16
	1955-59	30	170	136	70	25	2.15
	1960-64 ^b	31	180	141	59	23	2.17
	1965-69 ^c	33	183	121	54	23	2.07
Romania	1945-49	59	141	152	71	25	2.24
	1950-54	52	201	139	58	21	2.36
	1955-59	66	198	127	55	19	2.32
	1960-64 ^b	69	200	121	46	11	2.24
	1965-69 ^c	72	191	98	29	11	2.01
Russian Federation	1945-49	27	148	116	60	22	1.87
	1950-54	26	156	108	55	25	1.84
	1955-59	31	159	106	63	17	1.87
	1960-64 ^b	36	159	118	42	11	1.82
	1965-69 ^c	44	166	83	30	11	1.67

Country	Cohorts	Age-specific fertility rates					Completed fertility
		15-19	20-24	25-29	30-34	35-39	
Slovakia	1945-49	51	212	137	69	19	2.44
	1950-54	40	195	153	56	18	2.31
	1955-59	39	209	131	51	15	2.23
	1960-64 ^b	46	205	124	46	14	2.17
	1965-69 ^c	48	203	117	40	14	2.11
Slovenia	1945-49	26	172	112	58	20	1.94
	1950-54	36	152	115	51	17	1.86
	1955-59	42	166	113	41	13	1.88
	1960-64 ^b	60	177	98	39	15	1.94
	1965-69 ^c	56	144	95	48	15	1.79
Ukraine	1945-49	35	145	113	59	18	1.85
	1950-54	25	165	111	51	20	1.86
	1955-59	35	162	101	52	16	1.83
	1960-64 ^b	40	166	108	44	10	1.84
	1965-69 ^c	49	170	91	28	10	1.74
Northern Europe							
Denmark	1945-49	42	176	131	62	16	2.13
	1950-54	47	130	137	55	18	1.94
	1955-59	32	137	118	64	27	1.89
	1960-64 ^b	27	102	118	87	39	1.86
	1965-69 ^c	17	77	135	109	39	1.88
Finland	1945-49	28	144	109	60	27	1.84
	1950-54	34	119	114	68	33	1.84
	1955-59	32	106	115	77	37	1.83
	1960-64 ^b	28	92	122	94	42	1.88
	1965-69 ^c	19	76	133	105	42	1.88
Iceland	1945-49	0	215	142	94	46	2.48
	1950-54	87	166	145	98	36	2.66
	1955-59	74	164	142	81	50	2.55
	1960-64 ^b	64	143	117	112	50	2.43
	1965-69 ^c	58	112	145	111	50	2.38
Ireland	1945-49	15	125	229	162	97	3.14
	1950-54	14	146	216	166	75	3.08
	1955-59	16	139	202	138	63	2.79
	1960-64 ^b	23	125	159	126	60	2.47
	1965-69 ^c	23	87	138	124	60	2.16
Sweden	1946-50	36	139	133	62	25	1.98
	1951-55	50	126	119	72	32	1.99
	1956-60	35	107	121	90	43	1.97
	1961-65 ^b	25	90	136	112	39	2.01
	1966-70 ^c	15	83	154	93	40	1.93

Country	Cohorts	Age-specific fertility rates					Completed fertility
		15-19	20-24	25-29	30-34	35-39	
United Kingdom	1945-49	34	179	155	59	23	2.25
	1950-54	45	157	124	71	25	2.10
	1955-59	49	116	135	77	31	2.04
	1960-64 ^b	37	114	128	87	36	2.00
	1965-69 ^c	31	96	123	87	36	1.86
Southern Europe Greece	1945-49	17	127	159	80	27	2.04
	1950-54	26	142	156	66	19	2.04
	1955-59	36	135	134	54	20	1.90
	1960-64 ^b	40	158	103	55	24	1.89
	1965-69 ^c	53	118	97	63	24	1.78
Italy	1945-49	20	135	154	84	27	2.10
	1950-54	26	131	140	67	25	1.94
	1955-59	27	129	114	66	29	1.83
	1960-64 ^b	33	101	104	74	32	1.72
	1965-69 ^c	21	75	99	76	32	1.51
Portugal	1945-49	27	141	158	95	36	2.28
	1950-54	26	136	144	76	28	2.05
	1955-59	30	142	129	62	24	1.93
	1960-64 ^b	37	140	106	62	25	1.85
	1965-69 ^c	41	106	108	70	25	1.75
Spain	1945-49	10	114	198	119	42	2.42
	1950-54	12	130	187	85	31	2.22
	1955-59	16	144	137	74	28	1.99
	1960-64 ^b	25	106	113	77	30	1.76
	1965-69 ^c	23	67	99	82	30	1.51
Western Europe Austria	1945-49	48	162	115	52	19	1.98
	1950-54	57	155	99	51	18	1.90
	1955-59	58	129	102	52	21	1.81
	1960-64 ^b	47	118	98	58	23	1.72
	1965-69 ^c	35	100	102	62	23	1.61
Belgium	1945-49	20	159	149	59	19	2.03
	1950-54	22	142	124	60	18	1.83
	1955-59	23	113	134	62	21	1.77
	1960-64 ^b	21	105	129	73	24	1.76
	1965-69 ^c	15	80	139	81	24	1.69
France	1945-49	15	178	157	68	26	2.22
	1950-54	28	158	127	74	28	2.07
	1955-59	27	128	144	79	36	2.07
	1960-64 ^b	25	122	142	91	36	2.08

Country	Cohorts	Age-specific fertility rates					Completed fertility
		15-19	20-24	25-29	30-34	35-39	
	1965-69 ^c	18	97	138	91	36	1.90
Netherlands	1945-49	12	125	188	67	20	2.06
	1950-54	17	125	142	74	23	1.90
	1955-59	17	86	143	89	36	1.86
	1960-64 ^b	9	70	129	114	45	1.84
	1965-69 ^c	7	53	120	118	45	1.71
Switzerland ^c	1945-49	36	139	133	62	25	1.98
	1950-54	50	126	119	72	32	1.99
	1955-59	35	107	121	90	43	1.97
	1960-64 ^b	25	90	136	112	39	2.01
	1965-69 ^c	15	83	154	93	40	1.93

Source: United Nations Population Division

NOTES: ^a by exact age 39. Cohort fertility, when reconstructed from period data, may be distorted by mortality in the reproductive ages and international migration.

^b age-specific fertility rate for the age group 35-39 is estimated.

^c age-specific fertility rates for age groups 30-34 and 35-39 are estimated.

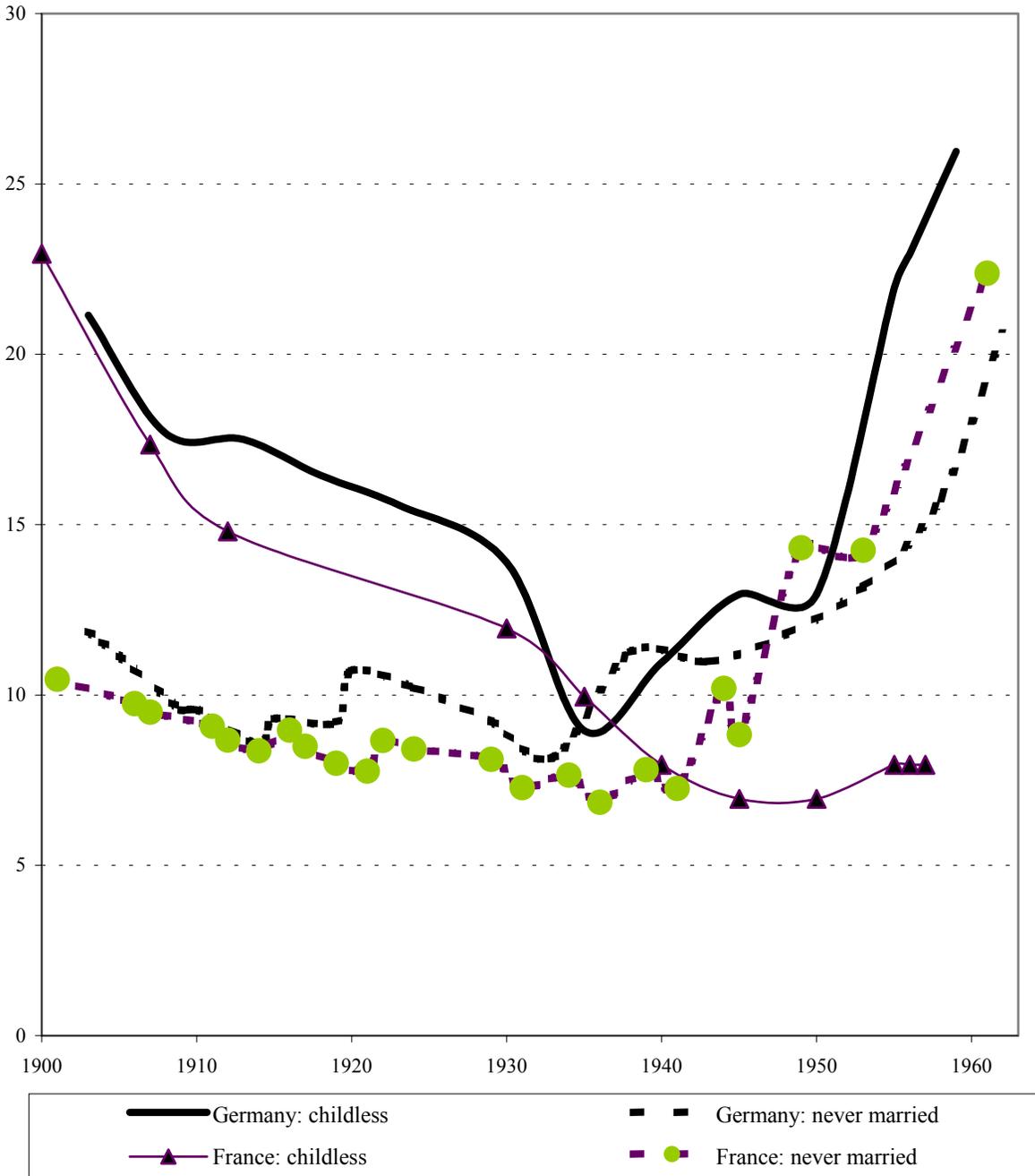
^d Data in **bold italics** reflect possible recuperation of decreased fertility at younger ages. It is assumed that recuperation occurs in the age group older than age group A (and necessarily older than 25 years) of the cohort X+1 if the ASFR of the age group A is lower, and the ASFR of the age group X+1 higher, than the ASFR of the respective age groups in the cohort X by more than 5 points.

In developed countries, the prevalence of infertility is higher than would have been expected in view of the quality of prevention and treatment of sexually transmitted infections and the relatively low incidence of unsafe abortions. In the United States, infertility affects more than 6 million women and their partners, and the proportion of women aged 15 to 44 reporting some form of fecundity impairment rose from 8 per cent in 1988 to 10 per cent in 1995 (Chandra and Stephen, 1998). A comparable prevalence of female infertility was reported for Finland for the early 1990s (Notkola, 1996).

Levels and trends of primary infertility and lifetime childlessness are only weakly correlated. Yet biological and behavioural causes of childlessness are interrelated. For instance, high incidence of childlessness in the last decades of the nineteenth century and the beginning of the twentieth century was largely due to widespread syphilis. Also, secondary infertility often results from postponement of childbearing into the less fecund ages of childbearing. Because the likelihood of getting pregnant decreases with age, young women who postpone births and subsequently try to make up for these postponed births over the next decade or two, will be confronted with increasing likelihood of failure to conceive. In the absence of infertility therapy, 4 per cent of women who try for a pregnancy when they are 20 do not succeed; this proportion rises to 8 per cent for women who start at age 25, 12 per cent at age 30 and 20 per cent at age 35 (Toulemon, 1996).

In the past, childlessness was closely associated with singlehood because never married women were childless and most married women had children. This association still holds for some countries (for example, Germany) and does not in others (for example, France) (figure 15). In Germany, among women

FIGURE 15. PROPORTIONS OF NEVER MARRIED AND CHILDLESS WOMEN BY GENERATION IN FRANCE AND GERMANY, 1900-1960 (PER CENT)



Sources: United Nations Statistics Division, Toulemon (2001), (Dorbritz and Höhn, 2000)

born in the first third of the twentieth century, marriage was becoming increasingly popular and married women rarely remained childless. Among women born from the late 1930s to the early 1950s the proportions of unmarried and childless were increasing in parallel. For the following cohorts both indicators kept increasing, but the trends started to diverge perhaps because the combined effect on fertility of the growing proportion of unmarried women and rapidly increasing childlessness of married women was increasingly larger than the effect on fertility of the rising popularity of extra-marital childbearing, which still remains much lower than in most other Western and Northern European countries (figure 10).

In France, the cohorts born before the late 1930s were characterized by decreasing (but converging) trends in nuptiality and childlessness. But in the following cohorts the trends sharply diverged: the percentage of never married women increased while the proportion childless stabilized. Presumably this occurred because the incidence of childlessness among married women did not increase while the popularity of cohabitation and the acceptability of out-of-wedlock births (the proportion of which is among highest in the world –figure 10) compensated for the decreasing proportion of formally married women (figure 15).

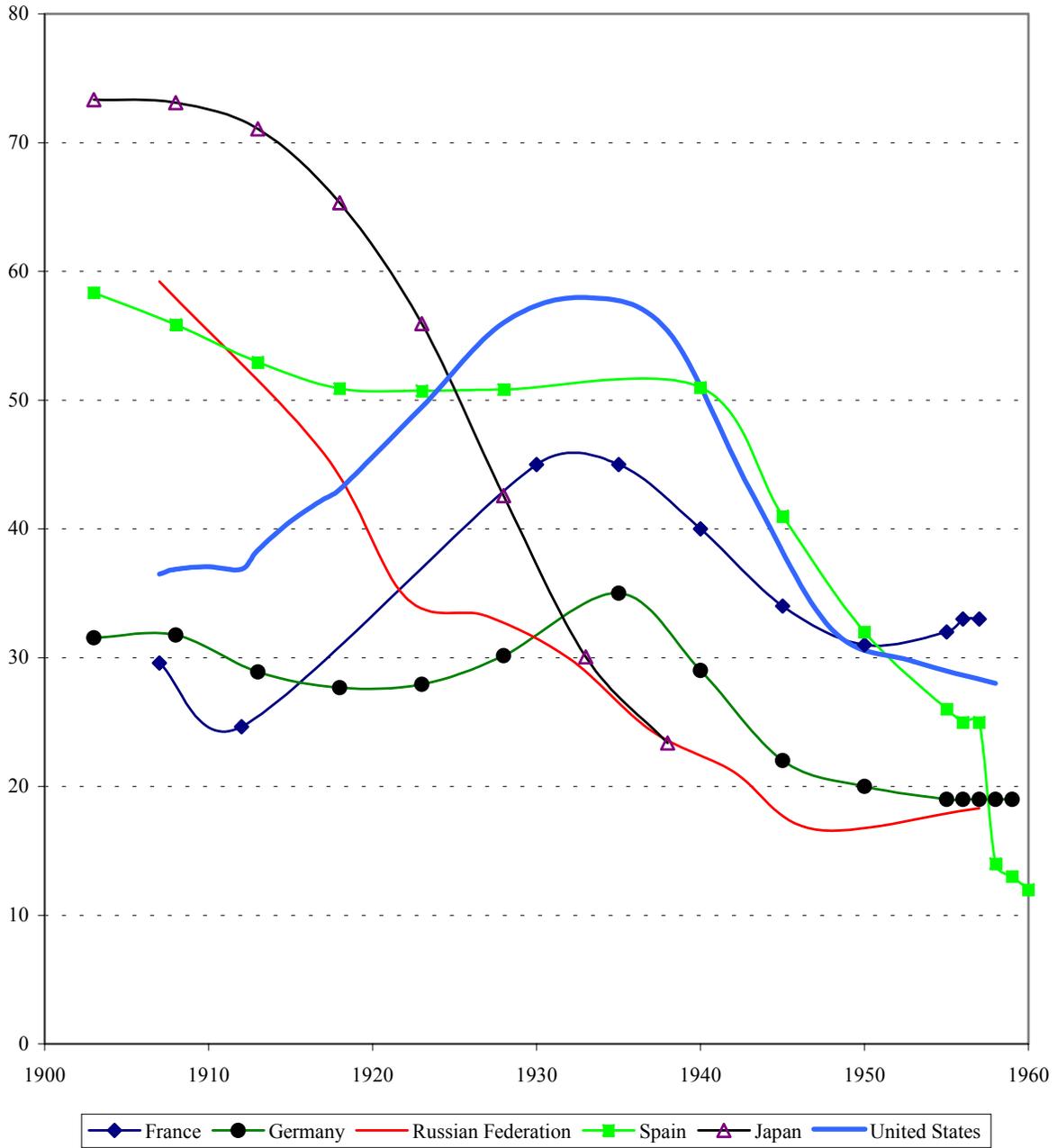
Several basic social features of modernity impede childbearing and are often positively related to the prevalence of childlessness. The most prominent among them is the gainful employment of women. Female employment hampers childbearing when a double-income is necessary to maintain an acceptable level of well-being especially if public childcare services are non-existent or unaffordable. In countries where there is generous public support for families (and single women) with children or where incomes are sufficiently high to afford private childcare facilities the conflict between the two social roles of women is lessened.

In modern societies, the need for self-fulfilment and the aspiration for career development motivate women to enter the job market. On the other hand, irrespective of factors leading women to seek employment, the gender distribution of household chores plays an important role. An imbalanced distribution of the burden of childrearing and household maintenance between spouses (or cohabitants) may discourage a woman from childbearing while reinforcing her aversion to staying home.

The strength of these causal links of employment and childlessness depends, to a large degree, on women's educational attainment as both the capability to get an acceptable job and the willingness to do so are formed mostly by formal education. In particular, higher education often increases the prevalence of childlessness. The influence is strong in Italy where childlessness increases from 6 per cent among women who had attained the first level of education to 17 per cent among women with the third level, and moderate in France (7 per cent versus 13 per cent). In Norway, childlessness is also positively correlated with the level of education, ranging from 7 to 8 per cent for women with primary education to 17 to 21 per cent for women with a university degree. However, the relationship weakens from older to younger cohorts (Lappegård, 2000).

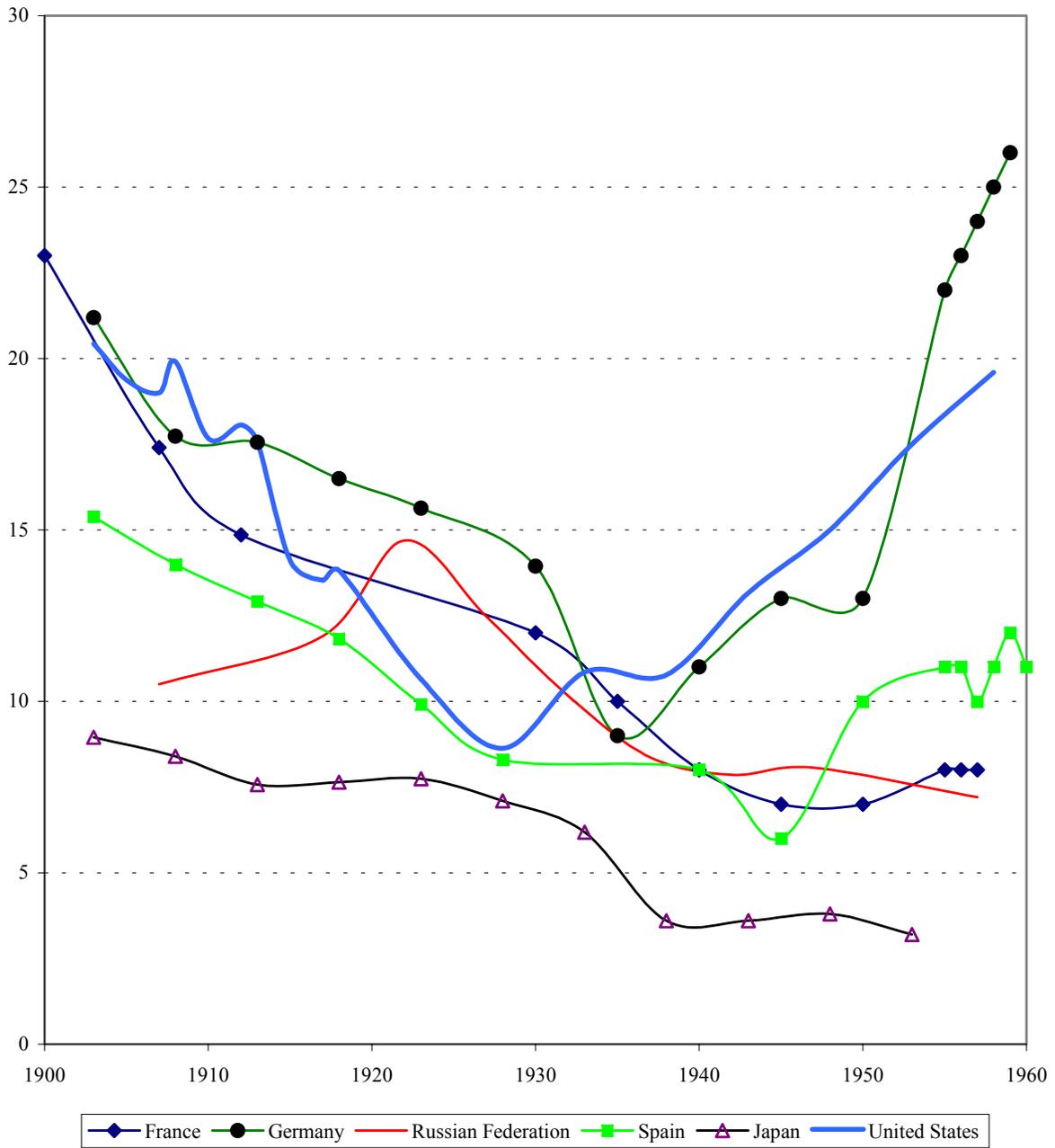
At the beginning of the twentieth century, the proportions of childless and high-parity women varied considerably among the presently low-fertility populations. That variation was partly determined by the timing of the first demographic transition. In the countries that pioneered the transition completed fertility of the cohorts born at the beginning of the twentieth century was already close to replacement (e.g. 2.1 children per woman in Germany, 2.3 children per woman in France and 2.3 to 2.5 children per woman in the United States) and only about one-third of women had three live births or more (figure 16), while more than 20 per cent remained childless (figure 17). Where the transition started later, higher completed fertility was associated with higher prevalence of high-parity women and low childlessness. For instance, women who had three children or more represented 60 per cent of the cohorts born at the

FIGURE 16. PROPORTION OF WOMEN WITH THREE CHILDREN OR MORE BY GENERATION, 1903-1960
(PER CENT)



Sources: Eurostat, United Nations Statistics Division

FIGURE 17. PROPORTION OF CHILDLESS WOMEN BY GENERATION, 1900-1960
(PER CENT)



Sources: Eurostat, United Nations Statistics Division, Toulemon (2001), (Dorbritz and Höhn, 2000)

beginning of the twentieth century in Russia and almost 75 per cent in Japan (figure 16), while the proportion childless was around 10 per cent in both countries (figure 17).

The parity structure of the cohorts born in the first third of the twentieth century evolved in the opposite directions in the two groups of countries. In Japan and the Russian Federation the fertility decline accelerated and brought completed fertility of the cohorts born in the early 1930s to replacement level. In Japan that decline was achieved almost exclusively by the decrease of high-parity births (the proportion of women with more than two births fell by 40 percentage points) – in spite of slightly decreasing childlessness. In the Russian Federation the proportion of high-parity women also went down steeply (by 30 percentage points). While the overall long-term trend in childlessness in Russia was similar to that in Japan, there was a transient increase of the proportion childless among the cohorts born in the 1920s, which was caused by immense losses of young men during the Second World War.

In France and the United States fertility decline was reversed, partly as a result of the baby boom, for the cohorts born during the first three decades of the twentieth century. The temporary increase of completed fertility was achieved through increasing prevalence of high-parity women (figure 16) and decreasing childlessness (figure 17). In Germany the decrease of childlessness was even more pronounced (proportion childless declined by 12 percentage points), but the proportion of high-parity women changed marginally. Among the cohorts born after 1950, the decreasing share of large families did not play a discernible role in the decrease of the average family size (Dorbritz and Höhn, 2000).

In France, Germany and the United States, the proportion of high-parity women resumed its decrease in the cohorts born in the early 1930s and later (figure 15). For those cohorts, childlessness increased steeply in Germany and the United States, while it stabilized in France. In the Russian Federation, the proportion of high-parity women, but not childlessness, was also decreasing rapidly (figures 16 and 17). In Spain, the Republic of Korea and Singapore decreasing number of large families also played the decisive role in fertility decline above as well as below the replacement level (Chesnais, 1997).

TABLE 21. PARITY PROGRESSION RATIOS IN COHORTS WITH IDENTICAL^a COMPLETED FERTILITY: SELECTED COUNTRIES

Country	Cohort	Parity progression ratios			
		0-1	1-2	2-3	3-4
United Kingdom	1960	0.79	0.85	0.48	0.34
Netherlands	1955	0.82	0.80	0.38	0.32
United States	1960	0.85	0.79	0.48	..
Spain	1955	0.89	0.75	0.34	0.30
Russian Federation	1955	0.93	0.71	0.27	0.28
Italy	1950	0.89	0.74	0.36	0.00

Sources: Eurostat, Goskomstat Russia, United States Bureau of the Census

NOTE: ^a 1.9 children per woman

The parity structures of cohorts born in the 1950s (the youngest cohorts for which uncensored data is available) vary largely. Even identical cohort fertility levels often resulted from quite different parity progression ratios (table 21). Many women remained childless in the United Kingdom (21 per cent)

and the United States (15 per cent), but childlessness was compensated by higher propensity of women who already had one child to bear a second, and of those with two children to have more. On the contrary, in Italy, Spain and the Russian Federation only 7 to 11 per cent of women remained childless, but much fewer women who had one child had a second, and of those with two children a much smaller number proceeded to higher parities.

Decreasing inclination of women at parity two to have more children and increasing childlessness lead to growing proportions of women with one or two children. Between the cohorts born in the early 1930s and the cohorts born in the early 1960s the proportion of women with one or two children rose by 50 percentage points in Japan, 30 percentage points in Spain, 35 percentage points in the Russian Federation, 20 percentage points in the United States and 15 percentage points in the Netherlands. The percentage of women with small families (1 to 2 children) varies across countries with below-replacement fertility. In the cohorts born in the early 1960s, the combined share of one- and two-children families varies from around 50 per cent in Northern and Western Europe and the United States to more than 70 per cent in Southern Europe, the Russian Federation and Eastern Asia.

2. Period perspective

Period data corroborate and update the picture of cohort fertility trends and differentials. Since the 1960s, period rates fell steeply in most low-fertility countries. In 1960, only five countries had a total fertility rate below 2.1 children per woman: Estonia, Czech Republic, Hungary, Japan and Latvia (table 22). By contrast, 64 countries had period total fertility rate below 2.1 in 2002, and 30 among them had total fertility below 1.5 children per woman (table 1).

Looked at from the perspective of the massive fertility decline during the nineteenth to twentieth centuries, the international convergence of period fertility indicators seems apparent. However, within the low-fertility world, period fertility levels are varied. Currently, only in Iceland and the United States are total fertility rates at or above 2.1 children per woman (table 22).

The total fertility rate in the United States at 2.1 children per woman is supported by a particular combination of interdependent factors. Socially disadvantaged groups are characterized by high prevalence of unintended (and uninterrupted) pregnancies and thus sustain the national TFR. Profound fertility differentials between Hispanics and non-Hispanics (3.1 children per woman vs. 2.0 children per woman) also result from cultural and socio-economic factors. To the extent that Hispanic fertility will remain higher than non-Hispanic fertility, its positive impact on national rates will be amplified by the increasing share of Hispanics, which grew from 9 per cent of national population in 1990 to 18 per cent in 2000 (United States, 2001). However, differentials in fertility levels by ethnicity are only part of the explanation of the relatively high level of fertility in the United States compared with other developed countries. Even when only non-Hispanic fertility is considered, the level is higher than the national averages of all but two developed countries.

Total fertility rates in Western Europe range from 1.3 children per woman in Austria to 1.9 children per woman in France; in Northern Europe, period fertility varies from 1.5 in Sweden to 2.1 in Iceland. In 15 out of 17 Eastern European countries, three out of four Southern European countries and three out of four Eastern Asian countries total fertility rates are below 1.5 children per woman. In Hong Kong the total fertility rate it is at the record low of 0.8 children per woman (table 22). The former German Democratic Republic has had a total fertility rate of 0.9 children per woman for several years.

Changes in the timing of childbearing affect period fertility indicators. When births are postponed, observed period fertility indicators fall. In the event that the deferred births subsequently

TABLE 22. TOTAL FERTILITY RATE: SELECTED^a LOW-FERTILITY COUNTRIES, 1960-2000

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Asia																	
Eastern Asia																	
Hong Kong	...	4.93	3.31	2.75	2.06	1.47	1.19	1.22	1.26	1.23	1.22	1.16	1.06	0.99	0.87	0.84	...
Japan	2.02	2.15	2.10	1.93	1.74	1.74	1.52	1.51	1.47	1.43	1.47	1.42	1.42	1.39	1.36	1.32	...
Republic of Korea	5.98	...	4.27	3.26	2.84	1.66	1.53	...	1.73	1.71	1.72	1.69	...	...	1.53	1.48	...
Singapore	...	4.62	3.10	2.11	1.74	1.62	1.87	1.77	1.76	1.78	1.75	1.71	1.76	1.71	1.57	1.55	1.67
Europe																	
Eastern Europe																	
Belarus	2.76	2.25	2.33	2.20	2.00	2.07	1.91	1.80	1.75	1.61	1.57	1.39	1.32	1.23	1.27	1.29	1.31
Bulgaria	2.32	2.07	2.18	2.24	2.05	1.96	1.73	1.57	1.53	1.46	1.37	1.23	1.24	1.09	1.11	1.23	1.26
Croatia	2.20	2.19	1.80	1.90	1.92	1.82	1.67	1.53	1.48	1.52	1.47	1.48	...	...	1.45	1.38	1.36
Czech Republic	2.09	2.18	1.93	2.43	2.05	1.95	1.87	1.84	1.70	1.66	1.44	1.28	1.19	1.18	1.16	1.13	1.14
Estonia	1.96	1.93	2.16	2.04	2.02	2.12	2.05	1.79	1.69	1.45	1.37	1.32	1.30	1.24	1.21	1.24	1.39
Hungary	2.02	1.81	1.97	2.38	1.92	1.83	1.84	1.86	1.77	1.69	1.64	1.57	1.46	1.38	1.33	1.29	1.32
Latvia	1.94	1.74	2.01	1.96	1.90	2.09	2.02	1.86	1.73	1.51	1.39	1.25	1.16	1.11	1.10	1.18	1.24
Lithuania	2.60	2.40	2.40	2.20	2.00	2.10	2.00	1.97	1.89	1.69	1.52	1.49	1.42	1.39	1.36	1.35	1.27
Poland	2.98	2.52	2.20	2.27	2.28	2.33	2.04	2.05	1.93	1.85	1.80	1.62	1.58	1.51	1.44	1.37	1.34
Republic of Moldova	...	2.68	...	2.55	2.39	2.75	2.39	2.26	2.21	2.10	1.95	1.74	1.60	1.67	1.67	1.39	1.30
Romania	2.33	1.91	2.89	2.62	2.45	2.26	1.83	1.56	1.51	1.44	1.41	1.34	1.30	1.32	1.32	1.30	1.31
Russian Federation	2.56	2.13	2.01	1.97	1.90	2.11	1.89	1.73	1.55	1.39	1.40	1.34	1.28	1.23	1.25	1.17	1.21
Serbia and Montenegro	2.59	2.53	2.28	2.31	2.26	2.21	2.08	2.08	1.92	1.91	1.85	1.90	1.80	1.77	1.69	1.62	1.63
Slovakia	3.07	2.78	2.40	2.55	2.32	2.25	2.09	2.05	1.98	1.92	1.66	1.52	1.47	1.43	1.38	1.33	1.29
Slovenia	2.18	2.43	2.10	2.16	2.11	1.72	1.46	1.42	1.34	1.34	1.32	1.29	1.28	1.25	1.23	1.21	1.26
TFYR Macedonia	4.11	3.66	2.95	2.70	2.45	2.31	2.06	2.30	2.18	1.87	2.23	2.13	2.06	1.93	1.90	1.76	1.88
Ukraine	2.23	1.99	2.09	2.02	1.95	2.02	1.89	1.81	1.72	1.55	1.50	1.40	1.38	1.31	1.19	1.10	...
Northern Europe																	
Denmark	2.54	2.61	1.95	1.92	1.55	1.45	1.67	1.68	1.76	1.75	1.81	1.80	1.75	1.75	1.72	1.73	1.77
Finland	2.71	2.47	1.83	1.69	1.63	1.64	1.78	1.80	1.85	1.81	1.85	1.81	1.76	1.75	1.70	1.74	1.73
Iceland	3.88	3.58	2.92	2.52	2.33	1.93	2.19	2.21	2.22	2.14	2.08	2.08	2.04	2.04	2.04	1.99	2.08
Ireland	3.76	4.03	3.87	3.40	3.23	2.50	2.12	2.08	1.99	1.91	1.85	1.84	1.88	1.92	1.93	1.88	1.89
Norway	2.91	2.95	2.50	1.98	1.72	1.68	1.93	1.92	1.88	1.86	1.87	1.87	1.89	1.86	1.81	1.84	1.85
Sweden	2.13	2.41	1.94	1.78	1.68	1.73	2.14	2.12	2.09	2.00	1.89	1.73	1.60	1.52	1.50	1.50	1.54
United Kingdom	2.71	2.87	2.45	1.81	1.89	1.80	1.83	1.82	1.79	1.76	1.74	1.71	1.72	1.72	1.71	1.68	1.65
Southern Europe																	
Greece	2.23	2.32	2.43	2.28	2.23	1.68	1.43	1.38	1.39	1.34	1.36	1.32	1.30	1.31	1.29	1.28	1.29
Italy	2.41	2.67	2.43	2.21	1.68	1.45	1.33	1.31	1.31	1.27	1.22	1.20	1.19	1.18	1.20	1.23	1.23
Portugal	3.01	3.08	2.76	2.52	2.19	1.73	1.57	1.57	1.54	1.52	1.44	1.40	1.44	1.46	1.46	1.49	1.52
Spain	2.86	2.94	2.88	2.79	2.20	1.64	1.36	1.33	1.32	1.27	1.21	1.18	1.15	1.15	1.16	1.20	1.24
Western Europe																	
Austria	2.70	2.70	2.29	1.83	1.65	1.47	1.45	1.49	1.49	1.48	1.44	1.40	1.42	1.37	1.34	1.32	1.34
Belgium	2.54	2.71	2.25	1.74	1.69	1.51	1.62	1.66	1.65	1.60	1.55	1.55	1.59	1.60	1.59	1.61	1.66
France	2.73	2.84	2.47	1.93	1.95	1.82	1.78	1.77	1.73	1.66	1.66	1.71	1.72	1.71	1.76	1.79	1.89
Germany	2.37	2.51	2.02	1.45	1.45	1.28	1.45	1.33	1.30	1.28	1.24	1.25	1.32	1.37	1.36	1.36	1.36
Luxembourg	2.28	2.38	1.97		1.50	1.38	1.62	1.60	1.67	1.69	1.72	1.69	1.76	1.71	1.68	1.73	1.79
Netherlands	3.12	3.04	2.57	1.66	1.60	1.51	1.62	1.61	1.59	1.57	1.57	1.53	1.53	1.56	1.63	1.65	1.72
Switzerland	2.44	2.60	2.10	1.61	1.55	1.52	1.59	1.58	1.58	1.51	1.49	1.48	1.50	1.48	1.47	1.48	1.50

Country	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Northern America																	
United States	3.40	2.74	2.48	1.77	1.84	1.84	2.08	2.07	2.07	2.05	2.04	2.02	2.04	2.04	2.06	2.08	2.13
Canada	3.81	3.11	2.26	1.83	1.71	1.65	1.82	1.70	...	1.66	1.66	1.64	1.62	1.55	...	...	...
Oceania																	
Australia	3.45	2.98	2.86	2.22	1.92	1.92	1.91	1.91	1.90	1.87	1.85	1.82	1.86	...	1.76	...	...
New Zealand	4.11	3.53	3.15	2.33	2.05	1.93	2.16	2.17	2.13	...	2.05	...	2.02	...	1.91	2.00	2.01

Source: Council of Europe, United Nations Population Division

NOTE: countries with reliable vital statistics

occur, observed period fertility rates rise. Adjustment of period fertility indicators for tempo effects using the Bongaarts-Feeney method (described in chapter I) allows the rough estimation of the level of fertility in the absence of postponement as well as the potential for eventual recuperation. Therefore, a positive difference between the adjusted and the observed period total fertility rate implies a likely increase due to future recuperation, whereas a negative difference implies a decrease in the total fertility rate. The adjusted and observed period fertility rates shown in the annexes for selected countries demonstrate that the baby boom was partly driven by the rejuvenation of childbearing leading to a temporary increase in period total fertility rate.

In the case of the United States, the adjusted total fertility rate gives even more prominence than the observed rate to the baby boom and reveals that fertility was close to two children per woman since the early 1970s as opposed to rather wide fluctuations suggested by the observed rate (annex for the United States, figure 5). Likewise, the adjusted total fertility rate for the Netherlands indicates that fertility had not been nearly as low as the observed total fertility rate for recent two decades would suggest (annex for the Netherlands, figure 5). In Spain in the early 1990s, the adjusted rate was higher than the observed rate by as much as 0.4 to 0.5 children per woman (annex for Spain, figure 5). More recent rise of the age at childbearing in the Russian Federation depressed observed total fertility rate below the adjusted rate by the same amount (annex for the Russian Federation, figure 5). Similar processes either happened or are happening, with varying intensity, virtually everywhere in the low-fertility countries. However, recuperation of deferred births observed in real cohorts in selected countries during particular periods as well as the past trends in the difference between the observed and adjusted period rates will not necessarily replicate in all countries where the age at childbearing is rising because falling period rates may also result from a genuine decline in fertility. Delayed births may never be recovered, especially in terms of annual number of births (Levy, 1990).

When postponement-recuperation does happen, and even if women completely make up for postponed births, it does not imply that fertility will necessarily return to replacement level. In many below-replacement countries, such a return is unlikely in the foreseeable future for a number of reasons. One of them is that below-replacement fertility has lasted for over two decades, implying that the postponement effect has largely run its course (Frejka and Ross, 2001). This observation is corroborated by the trends and levels of completed cohort fertility.

The period perspective sheds additional light on the role of changing parity structure in fertility decline. Table 23 shows, for selected countries, the share of the decline of the total fertility rate contributed by the decrease of first, second and third- and higher-order births during two periods. The first period starts from the earliest date with available data on order-specific fertility rates and ends when the total fertility rates reaches replacement level. The latest available estimate closes the second period. The

TABLE 23. DECLINE OF TOTAL FERTILITY RATE DURING TWO PERIODS: SELECTED COUNTRIES

Country	A. Total fertility rate (children per woman)					
	Beginning of observation		Replacement level		Late 1990s	
	Year	Value	Year	Value	Year	Value
Finland	1949	3.32	1968	2.06	1998	1.70
Hong Kong	1969	3.41	1979	2.13	1998	0.87
Netherlands	1961	2.60	1971	2.13	1996	1.51
Poland	1964	2.57	1989	2.08	1997	1.51
Spain	1975	2.75	1982	1.94	1998	1.17

Country	B. Structure of fertility decline ^a by birth order (per cent)					
	Decline to replacement level (per cent)			Decline below replacement level (per cent)		
	First order	Second order	Third order and higher	First order	Second order	Third order and higher
Finland	13	23	63	52	4	44
Hong Kong	0	3	97	24	29	47
Netherlands	25	12	64	17	42	41
Poland	12	8	80	33	39	28
Spain	23	26	51	26	24	50

Source: United Nations Population Division

Note: ^a percentage contribution of order-specific total fertility decline to overall decline of total fertility rate.

data shows that the parity structure of fertility decline varies largely across countries and between periods. The decreases in births of order three or higher accounted from one half of the fertility decline to replacement level in Spain to almost all the decline in Hong Kong. The decreases of first-order births contributed from zero per cent of TFR decline in Hong Kong to 25 per cent in the Netherlands.

In the second period, the parity structure of fertility decline changed in all countries except Spain and became more “balanced”: the contribution of high-parity births decreased everywhere while the role of first and second-order births increased. This shift was particularly pronounced in Poland. However, there is considerable variation of parity ‘inputs’ in the fertility decline. For instance, the inputs of first-order births versus second-order births differ enormously. In Hong Kong, Poland and Spain first- and second-order births contributed equally to fertility decline; in the Netherlands, decreasing second births contributed to 42 per cent of TFR decline while the first births, only 17 per cent; in Finland these indicators are 4 per cent and 52 per cent respectively.

Increasing levels of childlessness may be inferred from the dynamics of first-order period total fertility rates (figure 18 and table 24 show adjusted rates and figures in country annexes show observed rates). While in most countries (Netherlands is a notable exception), the first order period fertility rates 30 to 40 years ago used to fluctuate around one child per woman, now they are in the range of 0.5 (Hong Kong) to 0.8 (United States) children per woman. Such low rates may partly result from large-scale postponement of first births, but they should then be transitory and increase as deferred births are recuperated. In reality, the periods when first-order total fertility rates remain much below unity longer than warranted by postponement-recuperation effect.

Figure 18. Total fertility rates by birth order, adjusted for tempo effect: selected countries, 1996-1999



Sources: United Nations Population Division, communication of S.Zakharov

TABLE 24. FIRST-ORDER TOTAL FERTILITY RATES ADJUSTED FOR TEMPO EFFECT: SELECTED COUNTRIES, 1960-2000

<i>Year</i>	<i>Bulgaria</i>	<i>Czech Republic</i>	<i>Hungary</i>	<i>Italy</i>	<i>Netherlands</i>	<i>Poland</i>	<i>Russian Federation</i>	<i>Spain</i>	<i>Sweden</i>	<i>United States</i>
1960	...	...	...	...	0.81	...	...	...	...	...
1961	...	...	...	...	0.80	...	...	...	...	0.86
1962	...	...	...	...	0.82	...	...	...	...	0.91
1963	...	...	...	...	0.82	...	...	...	...	0.88
1964	...	...	...	...	0.89	...	...	...	...	0.98
1965	...	0.85	...	0.97	0.82	0.81	...	...	...	0.79
1966	...	0.80	...	0.93	0.87	0.81	...	...	...	0.81
1967	...	0.86	...	0.88	0.85	...	...	...	...	0.80
1968	...	0.86	...	0.91	...	...	...	...	...	1.03
1969	...	0.86	...	0.89	...	0.81	...	...	...	0.80
1970	...	0.97	...	0.86	0.80	0.90	...	...	...	...
1971	...	1.00	...	0.89	0.77	0.59	...	...	...	...
1972	...	0.95	...	0.88	...	...	...	...	...	...
1973	...	0.94	...	0.93	...	...	...	...	...	...
1974	...	0.95	...	0.93	0.68	0.82	...	...	0.84	0.83
1975	...	0.96	...	0.89	0.72	...	...	...	0.81	0.77
1976	...	0.98	...	0.98	0.68	...	...	0.75	0.77	...
1977	...	0.97	...	0.94	0.70	...	...	0.86	0.73	...
1978	...	0.97	...	0.87	0.67	...	...	0.90	0.68	0.85
1979	...	0.94	...	0.89	0.70	...	...	0.86	0.70	0.83
1980	...	0.92	...	0.86	0.68	...	0.93	...	0.72	0.83
1981	...	0.89	...	0.81	0.69	...	0.97	...	0.69	0.83
1982	...	0.87	...	0.84	0.68	...	0.93	...	0.68	0.87
1983	...	0.88	...	0.85	0.73	...	0.92	0.84	0.67	0.86
1984	...	0.93	...	0.85	0.74	...	0.93	...	0.68	0.87
1985	...	0.96	...	0.82	0.84	0.91	0.96	...	0.71	0.83
1986	...	0.95	...	0.78	0.85	0.87	1.02	...	0.75	0.85
1987	...	0.92	...	0.80	0.87	0.82	0.97	...	0.78	0.88
1988	0.96	0.93	0.90	0.81	0.81	...	0.99	...	0.83	0.83
1989	0.98	0.90	0.82	0.74	...	...	0.90	...	0.86	0.82
1990	0.83	0.87	0.85	0.72	...	0.81	0.87	...	0.90	...
1991	0.82	0.93	0.95	0.80	0.81	0.82	0.91	...	0.88	...
1992	0.88	0.90	0.92	0.81	0.85	0.86	0.90	...	0.85	...
1993	0.89	0.96	0.86	0.78	0.81	0.78	0.78	0.93	0.82	...
1994	0.90	1.00	0.88	0.85	0.72	0.81	0.75	0.91	0.75	...
1995	0.89	0.90	0.89	0.86	0.78	0.73	1.06	0.84	0.70	...
1996	0.94	0.81	...	0.99	0.79	0.74	0.96	0.60	0.66	0.99
1997	...	0.79	...	0.74	...	0.76	0.78	0.76	0.64	...
1998	...	0.73	...	...	...	...	0.85	0.73	0.63	0.84
1999	...	0.75	...	...	...	...	...	...	0.64	...
2000	...	...	...	...	...	...	...	...	0.69	...

Sources: United Nations Population Division; Kohler and Ortega (2002); Sobotka (2003); communication of S.Zakharov

Long-lasting first-order total fertility rates imply that a considerable proportion of women will end up childless. Even when adjusted for tempo distortions, first-order total fertility rates are considerably below 0.9 children per woman in many countries (table 24). The adjusted rates are higher in Eastern Europe and the United States than in the Western countries of Europe. The low adjusted first-order fertility rates imply that, even if recuperation is operational, maintaining (let alone decreasing) the prevalence of childlessness in the current childbearing cohorts at the levels of older cohorts is hard to achieve in most countries. A late start at childbearing complicates recuperation of deferred births and may make it altogether unlikely.

Figure 18 shows recent order-specific adjusted fertility rates for five countries from different regions (figures 4 in country annexes show the unadjusted rates). The rates suggest that replacement-level fertility in the United States is sustained by relatively large first- and second-order fertility rates and particularly large fertility rates of orders three and higher, which more than compensates for moderately high level of childlessness. In Finland, there are proportionally as many third and higher-order births as in the United States, but there are fewer first- and second- order births; as a result, the total fertility rate is 0.2 children per woman below replacement. In the Netherlands first-order fertility rate is as high as in the United States but the second- and, especially high-order births are lower, which results in the total fertility rate at 0.3 children below replacement level. In the Russian Federation the level of childlessness is low (as implied by first-order fertility rate) but few women have more than one child and the fertility rates of orders above two are particularly low: the combination of these features yielded a total fertility rate in 1996 of 1.5 children per woman. In Spain birth rates of all orders are low, which is conducive to very low overall rate, which, at 1.2 children per woman is one-third of a child below replacement. Order-specific fertility rates in Japan are as low as in Spain (annex for Japan, figure 4). In those two countries, the abrupt fall of first-order fertility rates imply a fast growing incidence of childlessness, which represents a break with the past when childlessness was relatively rare in Spain and marginal in Japan.

E. REGIONAL REPRODUCTIVE PATTERNS

As shown above, differences in reproductive behaviour may be classified by combinations of three parameters: age at first birth, incidence of childlessness and popularity of large families (with three children or more). However, low-fertility populations differ from each other also by the balance between one-child and two-children families. The share of one-child families among small (1 to 2 children) families varies widely from less than 25 per cent in Australia, Netherlands, Norway, the United Kingdom and the United States to more than 40 per cent in Austria, Belgium, Spain and the Russian Federation. The choice between one and two children becomes an important parameter of the reproductive behaviour. This choice has a large impact on the degree of (under) replacement of generations in several Eastern European countries where the proportions of both childless and high-parity women are low. Therefore, this choice as captured by the propensity to have more than one child is also selected as a classification criterion (table 25).

National populations within most low-fertility regions are characterized by similar levels of all four parameters; on the other hand, regions systematically differ by one or more parameters. This allows for a stylized regional classification of reproductive patterns. In this typology, however, Western Europe and Eastern Europe are not homogeneous entities. For instance, such diverse populations as the French (rare childlessness and numerous large families) and German (very high incidence of childlessness and one-child families) are both in Western Europe. In Eastern Europe, large families are relatively numerous in Poland but very few in the former U.S.S.R.

Timing of childbearing, which in low-fertility populations is determined essentially by the age at first birth, represents a particularly important component of reproductive patterns. The recent increase of

TABLE 25. LOW-FERTILITY REGIONS AND COUNTRIES BY SELECTED CHARACTERISTICS¹ OF REPRODUCTIVE BEHAVIOUR

<i>Age at first birth</i> ²	<i>Prevalence of childlessness</i> ³	<i>Propensity to have more than one child</i> ⁴	<i>Propensity to have three or more children</i> ⁵	<i>Region/country</i>
Low	Low	Low	Low High	Former European U.S.S.R.
		High	Low High	Eastern Europe ⁶
	High	Low	Low High	
		High	Low High	United States
High	Low	Low	Low High	
		High	Low High	France
	High	Low	Low High	Eastern Asia, Southern Europe, Austria, Canada, Germany
		High	Low High	Netherlands Northern Europe

Notes

- 1 lower or higher than the average value of the respective indicator for all countries
- 2 average for 1996-1999: **26.1** years (40 countries)
- 3 average percentage of childless women born circa 1960: **13.3** (24 countries)
- 4 average progression ratio from first to second child in the cohorts born circa 1960: **0.75** (10 countries)
- 5 average progression ratio from second to third child in the cohorts born circa 1960: **0.40** (10 countries)
- 6 except former European U.S.S.R.

the age at first birth in Eastern Europe is consistent with the concept that ageing of childbearing is the universal feature of the second demographic transition. This trend is associated with the so-called tempo effect, which impacts on the number of births (and therefore the population age structure), and may lead to underestimation of fertility levels. At its advanced stage, ageing of childbearing may jeopardize the realization of fertility preferences. Late childbearing is widespread in all established market economies. In the case of countries of Eastern Europe, the childbearing pattern began to age only since the 1990s. The speed of this process appears to be associated with the depth and smoothness of socio-economic reforms; as a result, the region started to lose its homogeneity (Sobotka, forthcoming), at least temporarily. For the time being, however, only in Slovenia is the age at first birth higher than the average for all low-fertility countries.

The parity-distributional characteristics of reproductive patterns may be illustrated with different scenarios compatible with replacement-level fertility. Clearly, in order to ascertain cohort replacement, the higher the proportion of childless women, the higher the proportion of high-parity women should be. An average completed fertility of two children per woman may result from three contrasting distributions of women by the number of children: (1) replacement can be achieved by a relatively flat distribution of women by the number of children, where, for example, 20 per cent of women have one child, 30 per cent have two, 35 per cent have three or more and 15 per cent stay childless; (2) in another scenario, all women have two children, which coincides with the average ideal family size typical for most low-

fertility countries; and (3) the population may be polarized into two equal groups: those for whom childlessness is the preferred state and those who have as many as four children. The first scenario is close to the actual distribution in the United States and France. Real populations do not have the extreme distributions of the last two scenarios. Germany provides an example of what happens when widespread childlessness is not compensated by high fertility of a sufficiently large number of women. Current prevalence of childlessness in Germany implies that 75 per cent of women should have, on average, three children, which is unrealistic.

None of the regions or countries falls within the category where all parameters support fertility: low incidence of childlessness, high incidence of large families and, to a lesser degree, early start of childbearing. Replacement-level fertility is achieved in France and the United States where relatively high incidence of childlessness is outweighed by high popularity of families with several children (that is two and three children) and (in the United States) young age pattern of childbearing. Both countries maintain relatively high average fertility levels.

In Northern Europe the parity distribution is similar to that of France and the United States, but the age at first birth is so high that it has an important depressing effect on fertility. In Eastern Europe the early start of childbearing in combination with a low incidence of childlessness is insufficient to outweigh very low prevalence of families with two or more children: as a result, the average fertility level fell to levels way below replacement. In Eastern Asia and Southern Europe, the combination of fertility-depressing factors is particularly powerful. In countries of those regions, age at first birth is high, many women remain childless, the proportion of women with two children is low and higher-order births are rare.

IV. INTERRELATIONSHIPS OF PARTNERSHIP AND CHILDBEARING PATTERNS

Fertility is below replacement level in nearly all developed countries and a growing group of developing countries whether measured in cohort or period rates and in the latter case, whether in observed or adjusted indicators. For several reasons childbearing in modern societies yields a number of children insufficient for the replacement of generations but consistent with the individual goals, resources and constraints. Yet, the gaps between the actual fertility levels and the level required for the replacement of generations vary widely among low fertility countries. The end result of reproductive behaviour at the macro-level– the average number of children per woman – is linked to distinct reproductive patterns. The most pertinent and easily quantifiable parameters of reproductive patterns are the age at first birth, childlessness and parity progressions from the first and second parities. These parameters are often independent and their combinations form distinct country-specific types of reproductive behaviour. Similarities exist between reproductive patterns of countries that share significant cultural, social and economic characteristics. These groups of countries typically correspond to conventional geographical regions.

As in the case of childbearing, partnership can be characterized by different parameters, the most pertinent for fertility being the age at formal marriage, the prevalence of formal marriage and the popularity of alternative forms of unions. Different combinations of these parameters form distinct types of partnership behaviour.

The trends in partnership and reproductive patterns can be presented in a stylised sequence of the second demographic transition in line with the narrative suggested by van de Kaa (1997, 2001). First, during the concluding stage of the first transition, total fertility rates continue to decline as a consequence of reductions of higher-order births: as the latter occur at relatively older ages, the age pattern of fertility tends to rejuvenate. Then, childbearing within marriage becomes increasingly postponed, fertility among young women declines and lower-order births rates decline; these trends accentuate decline in period total fertility rates. Marriages are postponed; age at first marriage rises; separation and divorce increase. At this point, cohabitation becomes more popular; cohabiting couples postpone marriage until pregnancy occurs; premarital births and mean age at first birth increase. Cohabitation gains further support and is increasingly seen as an alternative to marriage; as a result, extramarital fertility increases. Eventually, total fertility rates slightly increase where women who had postponed births begin childbearing. Lower-order birth rates increase at later ages of childbearing. However, not all postponed births can be made up in the years of childbearing remaining. Voluntary childlessness becomes increasingly popular.

While the partnership (table 13) and reproductive patterns (table 25) consist of components that are often independent, the patterns themselves are interrelated. The age at marriage is positively related to the age at first birth, although the former does not completely define the latter because extra-marital fertility is widespread and on the rise. As the likelihood to have a (additional) child decreases with age, the postponement of stable partnership and childbearing could have a limiting effect on family size. Prevalence of childlessness is positively related to the proportion of women who never marry, but this relationship is attenuated where childbearing within cohabitation is prevalent. The number of first-parity births is typically higher when cohabitation is widespread. In the United States low age at first marriage, high proportion of never married and high prevalence of cohabitation result in low age at first birth, numerous extra-marital births and high prevalence of childlessness. In Eastern Asia and Southern Europe, late age at marriage, high propensity to marry and low prevalence of cohabitation result in high prevalence of childlessness and low extra-marital fertility. In Eastern Europe low age at marriage and high prevalence of formal marriage lead to low prevalence of childlessness; on the other hand, high prevalence of extra-marital births is produced by factors other than cohabitation, which is still not popular in the region.

From that perspective, all characteristics of the Southern European/Eastern Asian pattern (also applicable to Austria and Germany) are conducive to particularly low fertility, while in the United States and France most components of partnership and reproductive behaviour sustain the overall fertility at high and stable levels. Yet, the suggested scheme does not fully explain fertility levels. For instance, most components of partnership and reproductive patterns in Eastern Europe should support fertility; yet its levels are among the lowest in the world. The analysis of this and similar phenomena calls for other analytical instruments, but the results of such studies most often complement then defy the logic formulated in this report.

Although the two-child family is, on average, the preferred family size in all developed countries, the realized family size depends to a large extent on whether childbearing is confined to formal marital unions or whether other partnerships, such as cohabitation, are accepted forms for family formation. Some partnerships are less, and others more, favourable to childbearing. Where childbearing is confined to marriage, the large majority of married women tend to have the number of children that is the societal average preferred family size. This is in large part because such societies do not favour plurality of lifestyles. In other societies, the diversity of lifestyles expressed, *inter alia*, in several coexisting forms of partnerships, also expands the choice of childbearing behaviour. Many women who are not in formal unions bear children and a relatively large proportion of women have high-parity births.

The suggested regional patterns of demographic behaviour are not equally internally homogeneous. This is due to the rough, highly stylised nature of the regional classification, which better fits some regions than others. However, partnership and reproductive behaviours are evolving and as a result, national populations may shift from one pattern to another. Thus, recent trends in some of the indicators discussed above suggest that the past homogeneity of demographic behaviours in Eastern Europe is weakening (Sobotka, 2003b). On the other hand, the Northern European pattern is converging. All this is consistent with the observation that the second demographic transition diffuses with uneven speed. Scattered evidence points to an eventual global convergence of at least some characteristics of demographic behaviour. However, it is not clear whether such post-transitional demographic behaviour is likely to become, within a reasonable timeframe, truly homogenous or, alternatively, deeply rooted national and regional environments will preserve some distinct components of partnership and reproduction.

The typology of partnership and reproductive behaviours may be useful for the analysis of concrete goals of population and family-support policies, their mechanisms, degree of internal cohesiveness and coordination with other social policies, cost and effectiveness. However, a few policy implications geared at increasing/maintaining fertility levels may be suggested at this stage. Obviously, the more partnership and reproductive parameters that influence fertility levels there are, the better are the prospects for policy interventions. However, some parameters are more responsive to policy interventions than others. For example, the age at marriage and the age at first birth are most resistant to downward change. On the other hand generous programmes aimed at supporting families with children or policies promoting gender equality have a potential to increase the popularity of marriage and/or stable informal unions, increase or maintain the popularity of childbearing and increase the number of high-parity births. Policies aimed at promoting second births are likely to be particularly effective when marriage is popular, age at birth is low and remaining childless is unattractive. Probably, the measures aimed at promoting births should be parity-specific, although some previous research points to the contrary (Gauthier and Hatzius, 1997).

REFERENCES

- AbouZahr, Carla, E. Ahman and C. Guidotti (1998). Puerperal sepsis and other puerperal infections. In *The Global Burden of Diseases and Injury Series: Health Dimensions of Sex and Reproduction*, C. J. L. Murray and A. D. Lopez, eds. Cambridge, Massachusetts: Harvard University Press on behalf of the World Health Organization and the World Bank, pp. 191-218.
- Anderson, M. and D. J. Morse (1993). High fertility, high emigration, low nuptiality: adjustment process in Scotland's demographic experience, 1861-1914. Part I. *Population Studies*, vol. 47, No. 1, pp. 3-26
- Atoh, M. (1993). *Attitude toward marriage among the youth: Causes for the recent rise in the proportion single among the twenties in Japan*. Reprint Series, No. 15. Tokyo: Institute of Population Problems, Ministry of Health and Welfare.
- Atoh, M. (1997). Demographic changes and family changes. In Atoh, Makoto et al, eds. *Population Change and the Family*, Tokyo: Taimeido, pp.1-24.
- Atoh, M. (2001). Why are cohabitation and extra marital births so few in Japan? Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Atoh, M., V. Kandiah and S.Ivanov (2001). The second demographic transition in Asia. Paper presented at the IUSSP Conference on Perspectives on Low Fertility: Trends, Theories and Policies. Tokyo, 21-23 March 2001.
- Barkalov, Nicholas B., and Jürgen Dorbritz (1996). Measuring period parity-progression ratios with competing techniques. An application to East Germany. *Zeitschrift für Bevölkerungswissenschaft*. München: Harald Boldt Verlag im R. Oldenbourg Verlag, 21 (4), s. 458-505.
- Beck, U. (1999). *World Risk Society*. Malden: Polity Press.
- Becker, G.S. (1991). *A Treatise on the Family (enlarged edition)*. Cambridge: Harvard University Press.
- Bianchi, S.M. and L.M. Casper (2000). American families. *Population Bulletin*, Vol. 55 (4), pp.1-44.
- Billari, F. (2001). Convergence towards diversity? Cohort dynamics in the transition to adulthood in contemporary Western Europe. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Billari, F. C., M. Castiglioni M., T. Castro Martin, F. Michielin, and F. Ongaro (2000). Household and union formation in a Mediterranean Fashion: Italy and Spain. Paper presented at the FFS Flagship Conference, Brussels, 29-31 May 2000.
- Birg, H. (2000). Interview. In *The empty nursery*. *The Economist*, 23 December.
- Blossfeld, H. P., A. de Rose, Jan M. Hoem and G. Rohwer (1995). Education, modernization, and the risk of marriage disruption in Sweden, West Germany, and Italy. In: *Gender and family change in industrialized countries*, ed. by K. O. Mason and An-M. Jensen. Oxford: Clarendon.
- Bongaarts, J. and G. Feeney (1998). On the quantum and tempo of Fertility. *Population and Development Review*, vol. 24, No. 2, pp. 271-291.

- Bongaarts, J. (2001). Fertility and reproductive preferences in post-transitional societies. In R.A.Bulatao and J.B.Casterline, *Global Fertility Transition. Population and Development Review*, A Supplement to vol. 27, pp.260-281.
- Bongaarts, John and Griffith Feeney (1998). On the Quantum and Tempo of Fertility. *Population and Development Review*, 24(2), pp.271-291.
- Bosveld W. (1996) *The ageing of fertility in Europe: a comparative demographic-analytic study*. Amsterdam: Thesis Publishers
- Bracher, M. and others (1993). Marriage dissolution in Australia: Models and explanations. *Population Studies*, Vol. 47, pp. 403-425.
- Bracher, M. and G. Santow (1998). Economic independence and union formation in Sweden. *Population Studies*, Vol. 52, No. 3 pp. 275-94 pp.
- Bramlett, M.D. and W.D.Mosher (2001). *First Marriage Dissolution, Divorce, and Remarriage: United States*. Washington: Centers of Disease Control.
- Bozon, M. (2001). Sexual change and socio-economic trends from the 1960s. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Bumpass, L. and Hsien-Hen Lu (2000). Trends in cohabitation and implications for children's family contexts in the United States. *Population Studies*, vol. 54, No. 1, pp. 29-41.
- Calhoun, C. and J. de Beer (1991). Birth expectations and population forecasts: The case of the Netherlands. In W.Lutz, ed. *Future Demographic Trends in Europe and North America: What Can We Assume Today?* London: Academic Press, pp. 197-226.
- Casper, L.M and S.M. Bianchi (2001). *Trends in The American Family*. Thousand Zoaks, CA: Sage Publications
- Chandra, A. and E.H. Stephen (1998). Impaired fecundity in the United States: 1982-1995. *Family Planning Perspectives*, Vol. 30, No. 1, pp. 34-42.
- Chesnais, J.-C. (1996). Fertility, family and social policy in contemporary Western Europe. *Population and Development Review*, 22(4), pp. 729-739.
- Chesnais, J.-C. (1997) La transition démographique: trente ans de bouleversements (1965-1995). In: *La population du monde: enjeux et problèmes*, J.-C. Chasteland and J.-C. Chesnais, eds. Paris : Presses Universitaires de France, 1997, pp. 403-20.
- Chesnais, J.-C. (2000a). The future of French fertility : back to the past, or a new implosion? In *Population Bulletin of the United Nations. Below Replacement Fertility*. Special Issue Nos. 40/41 1999, pp. 212-217.
- Chesnais, J.-C. (2000b). Determinants of below-replacement fertility. In *Population Bulletin of the United Nations. Below Replacement Fertility*. Special Issue Nos. 40/41 1999, pp. 126-136.
- Chesnais (2001). Comment: A March Toward Population Recession. In R.A.Bulatao and J.B.Casterline, *Global Fertility Transition. Population and Development Review*, A Supplement to vol. 27, pp. 255-259.

- Chi, P.S.K. (1992). Economic development, women's status, and changing family structures in Taiwan. In C.Goldscheider, ed. *Fertility Transitions, Family Structure and Population Policy*. Westview Press, pp. 157-174.
- Chiang, Chin Long and Bea van den Berg (1982). A fertility table for the analysis of human reproduction. *Mathematical Biosciences*, 62(2), pp.237-251.
- Coleman, D. (1998). Reproduction and survival in an unknown world: what drives today's industrial populations and to what future? NIDI Hofstee Lecture Series, No.5, Netherlands Interdisciplinary Demographic Institute, The Hague.
- Cooke, L. (2001). Impact of careers on family fertility levels: comparison of nine countries using the Luxembourg Income Study. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Darsky, L.E and I.P.Ilina (2000). *Брачность в России. Анализ таблиц брачности* [Nuptiality in Russia. The analysis of nuptiality tables]. Moscow: Informatika.
- De Guibert-Lantoine, C., H.Laridon, L.Toulemon and C.Villeneuve-Gokalp (1994). La cohabitation adulte. *Population et Sociétés*, No. 293, 4 pp.
- Demeny, P.(1997). Replacement-level fertility: the implausible endpoint of the demographic transition. In: The continuing demographic transition, edited by G. W. Jones et al. pp. Oxford: Clarendon Press, pp. 94-110.
- Desplanques, G. and M. de Saboulin M. (1986). Mariage et premier enfant: un lien qui se defait. *Economie et Statistique*. No.187, pp. 31-45.
- Dorbritz, J. and C.Höhn. (2000). The future of the family and future fertility trends in Germany. *Population Bulletin of the United Nations*, Special Issue Nos. 40/41, pp.218-234. Sales No.E.99.XIII.3, pp. 218-234
- Easterlin, R.A.(1976). The conflict between aspirations and resources. *Population and Development Review*, vol. 2, No. 3-4, pp. 413-435.
- Easterlin, R.A., C. MacDonald and D.J.Macunivich (1990). How have American baby boomers fared? Earnings and economic well-being of young adults, 1964-1987. *Journal of Population Economics*. Vol. 3, No. 4, pp. 277-290.
- Esping-Andersen, G. (1996). *Welfare States in Transition: National Adaptations in Global Economies*. London: Sage Publications.
- Feeney, G. and J. Yu (1987). Period parity-progression measures of fertility in China. . *Population Studies*, 41 (1), pp.77-103.
- Frejka, T. and G. Calot (2001). Cohort reproductive patterns in low-fertility countries. *Population and Development Review*, vol. 27(10), pp. 103-132.
- Frejka, T. and G. Calot (2001a). Cohort childbearing age patterns in low-fertility countries in the twentieth century: Is the postponement of birth an inherent element? Paper presented at the IUSSP Conference on Perspectives on Low Fertility: Trends, Theories and Policies. Tokyo, 21-23 March 2001.
- Frejka, T. and J. Ross (2001). Paths to subreplacement fertility: The empirical evidence. In R.A.Bulatao and J.B.Casterline, *Global Fertility Transition. Population and Development Review*, A Supplement to vol. 27, pp.213-254.

- Gauthier A. and J. Hatzius . (1997) Family benefits and fertility: an econometric analysis. *Population Studies* vol. 51(3):295-306.
- Gesano, G. (2001). Modernity and tradition in family life. *Demotrends*, No.2, p. 3.
- Gierveld, J. (2001). The second demographic transition and its consequences for attitudes and demographic behaviour of older generations. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Glezer, H. (1993). Pathways to family formation, *Family Matters* (Melbourne: Official magazine of the Australian Institute of Family Studies), vol. 34.
- Goldscheider, F.K. (2000). Realizing the potential of FFS1 with contextual data. Paper presented at the Flagship Conference on the Family and Fertility Surveys, Brussels, 29-31 May.
- Golini, A. (2000). Levels and trends of fertility in Italy: are they desirable or sustainable? *Population Bulletin of the United Nations*, Special Issue Nos. 40/41, pp.218-234. Sales No.E.99.XIII.3, pp. 247-265.
- Hajnal, J. (1965). European marriage patterns in perspective. In D.V.Glass and D.E.C. Eversley, eds. *Population in history: essays in historical demography*. Chicago: Aldine Publishing, pp.101-143.
- Haskey, K. and K.Kiernan (1987). Cohabitation in Great Britain: characteristics and estimated numbers of cohabiting partners. *Population Trends*, No. 58.
- Henry, Louis (1953). Fécondité des mariages – nouvelle méthode de mesure. Paris: Institut national d'études démographiques.
- Henry, Louis (1961). Un nouveau tableau statistique les naissances suivant le rang et l'année de naissance de l'enfant précédent. *Population*, 16(3), pp.513-515.
- Hoffman-Nowotny, H.-J. (1987). The future of the family. In *Plenaries. European Population Conference 1987: Issues and Prospects*. Helsinki: Central Statistical Office of Finland.
- Hoffman-Nowotny, H.J. (with the collaboration of Beat Fux) (1997). *Fertility and new types of household and family formation in Europe. A theoretical analysis*. Strasbourg: Council of Europe.
- Hoem, J. (1997). Educational gradients in divorce risks in Sweden in recent decades. *Population Studies*, Vol. 51, pp. 19-27.
- Jensen, An-M. (2001). Changing fertility and family life: Are the roles of men and women being redefined. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Ivanov, S. (2001). Reproductive behaviour in Eastern Europe: Similarities with and deviations from the western patterns. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Ivanov, S. (2002a). Новое лицо брака в развитых странах [New faces of marriage in the developed countries]. *Demoscope Weekly*, No. 67-68. <http://demoscope/weekly/2002/067>
- Ivanov, S. (2002b). Брачность в развитых странах [Nuptiality in the developed countries]. *Russian Demographic Journal*, No. 1(6), pp. 73-80.

- Kaneko, R. (2000). Below-replacement fertility in Japan: trends, determinants and prospects. *Population Bulletin of the United Nations*, Special Issue Nos. 40/41, pp.218-234. Sales No.E.99.XIII.3, pp.266-291.
- Khachikian, M. A. (1997). Reproductive health in Armenia: the service and research needs. In Assessment of research and service needs in reproductive health in Eastern Europe – concerns and commitments, E.Johannisson and others, eds. Proceedings of a workshop organized by the ICRR and the WHO Collaborating Centre on Research in Human Reproduction, Szeged, Hungary, 25-27 October 1993. New York: Parthenon Publishing Group.
- Kim, Y.J. and Robert Schoen (2000). On the quantum and tempo of fertility: Limits to the Bongaarts-Feeney adjustment. *Population and Development Review*, 26(3), pp.554-559.
- Kohler, Hans-Peter and Dimitr Philipov (2001). Variance Effects in the Bongaarts-Feeney Formula. *Demography*, 38(1), pp. 1-16.
- Kohler, Hans-Peter and José Antonio Ortega (2001a). Adjusting period fertility measures for tempo distortions using occurrence-exposure rates. Max Planck Institute for Demographic Research, Rostock, Germany, Working Paper #2001-001 (available at <http://demogr.mpg.de>).
- Kohler, Hans-Peter and José Antonio Ortega (2001b). Period parity progression measures with continued fertility postponement: A new look at the implications of delayed childbearing for cohort fertility. Max Planck Institute for Demographic Research, Rostock, Germany, Working Paper #2001-001 (available at <http://demogr.mpg.de>).
- Kohler, Hans-Peter and José Antonio Ortega (2001c). Parity Progression Ratios with Continued Fertility Postponement: Assessing the Implications of Delayed Childbearing for Fertility in Sweden, the Netherlands and Spain. Paper presented at IUSSP Conference, Tokyo, Japan, 21-23 March 2001. 53p.
- Kong Sae Kwon and Minja Kim Choe (1989). Labor force participation of married women in contemporary Korea. *Journal of Population and Health Studies*, vol. 9, No. 2, pp. 116-138.
- Kravdal, O. (1992). The emergence of a positive relation between education and third birth rates in Norway with supportive evidence from the United States. *Population Studies*, vol. 46, No. 3, pp. 459-475.
- Lappegård, T. (2000). New fertility trends in Norway. *Demographic Research*, vol. 2-4: www.demographic-research.org/Volumes/Vol2/3.
- Laslett, P. (1988). La parenté en chiffres. *Annales: Economies, Sociétés, Civilisations*, Vol. 43, No. 1, pp. 5-24.
- Ledent J. (1980). Multistate life tables: movement versus transition perspectives. *Environment and Planning*, 12 (5).
- Leete, R. (1994). The continuing flight from marriage and parenthood among the overseas Chinese in East and South-East Asia. In *Low Fertility in East and Southeast Asia: Issues and Policies*. Seoul: Korea Institute for Health and Social Affairs, pp. 3-27.
- Leridon, H. and C.Villeneuve-Gokalp (1994). *Constance et inconstances de la famille. Biographies familiales des couples et des enfants*. INED Travaux et Documents Cahier, No. 134. Paris: Presses Universitaires de France.

- Leridon, H. (1999). Les nouveaux modes de la planification de la famille en Europe. In D.J. van de Kaa, H. Leridon, G. Gesano and M'Okolski, eds. *European Populations: Unity in Diversity*. [European Studies in Population. Vol. 6: European Population Conference. Vol.1.]. Dordrecht: Kluwer Academic Publishers, pp. 51-70.
- Lesthaeghe, R. and D.J. van de Kaa (1986). "Twee demografische transitie's", in R. Lesthaeghe and D.J. van de Kaa (eds.), *Bevolking, groei en krimp*. Deventer: Van Loghum Slaterus, pp. 19-68.
- Lesthaeghe, R. (1995). The second demographic transition in Western countries: an interpretation. In: *Gender and family change in industrialized countries*, ed. by K. O. Mason and An-M. Jensen. Oxford: Clarendon Press, pp. 17-62
- Lesthaeghe, R. (1998). On theory development: applications to the study of family formation. *Population and Development Review*, vol. 24, No. 1, pp. 1-14.
- Lesthaeghe, R. and G. Moors (1996). Living arrangements, socio-economic position, and values among young adults: A pattern description for France, West Germany, Belgium and the Netherlands, 1990, in D. Coleman, ed. *Europe's Population in the 1990s*, pp. 163-221.
- Lesthaeghe, R. and P. Willems (1999). Is low fertility a temporary phenomenon in the European Union? *Population and Development Review*, vol. 25, No.2, pp. 211-228.
- Lesthaeghe, R. and K. Neels (2001). From the first to the second demographic transition: long term spatial continuities in Belgium, France and Switzerland. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Levy, M. Le calendrier de la fécondité. *Population et Societes* No. 249, 4 p.
- Lifbroer, A. (2001). The link between values and demographic behaviour. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2000.
- Lillard, L., M.Brien and L.Waite (1995). Premarital cohabitation and subsequent marital dissolution: Is it self-selection? *Demography*, vol. 32, pp. 437-457.
- Livi Bacci, M. (1997). Abbondanza e scarsità: la popolazione d'Italia e d'Europa al passaggio del millennio. Paper presented at Mulino Conference, Bologna, 19 September 1997.
- Lloyd, K. and S.J.South (1996). Contextual influences on young men's transition to first marriage. *Social Forces*, vol. 74, pp. 1097-1119.
- Manning, W.D. and P.J. Smock (2000). First comes cohabitation and then comes marriage? Paper presented at the Annual Meeting of the Population Association of America, Los Angeles, 23-25 March 2000.
- Matsuo, H. (2001). The first child: Transition to motherhood in Japan and The Netherlands. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Mironov, B.N. (2000). *Социальная история России* [Social History of Russia]. St-Petersburg: Dmitri Bulanin, vol. 1.
- Morgan, S.Ph. (1981). Intention and uncertainty at later stages of childbearing: the United States 1965 to 1970. *Demography*, vol. 18, No. 3, pp. 267-285.
- Morgan, S.Ph. (1982). Parity-specific fertility intentions and uncertainty: the United States 1970 to 1976. *Demography*, vol. 19, No.3, pp. 315-334.

- Morgan, S.Ph. and R. Chen (1992). Predicting childlessness for recent cohorts of American women. *International Journal of Forecasting*, Vol. 8, pp. 477-493.
- Munoz-Perez, F. and F. Prioux (1999). Naître hors mariage. *Population et sociétés*. No. 342, 4 p.
- McCarthy, J. and Jo Murphy-Lawless (2000). Recent fertility change in Ireland and the future of Irish fertility. *Population Bulletin of the United Nations*, Special Issue Nos. 40/41, pp.218-234. Sales No.E.99.XIII.3, pp. 235-246.
- McDonald, P. (1994). Marriage, family formation, living arrangements and household composition in low fertility countries. In *Low Fertility in East and Southeast Asia: Issues and Policies*. Seoul: Korea Institute for Health and Social Affairs, pp. 61-89.
- McDonald, P. (2000a). Gender equity in theories of fertility. *Population and Development Review*, 26(3), pp 1-12.
- McDonald, P. (2000b). Gender equity, social institutions and the future of fertility. *Journal of Population Research*, 17(1), pp.1-16
- McDonald, P. (2001). Theory pertaining to low fertility. Paper presented at the IUSSP Conference on Perspectives on Low Fertility: Trends, Theories and Policies. Tokyo, 21-23 March 2001.
- Noack, T. and L. Østby (1985). Fertility expectations: A short cut or dead-end in predicting fertility. In *Proceedings of the Seventh Nordic Demographic symposium, Paimio, Finland, June 1984*. Scandinavian Population Studies 7. Helsinki: The Scandinavian Demographic Society, pp. 48-59.
- Ní Brolcháin, Máire (1987). Period parity-progression ratios and birth intervals in England and Wales, 1941-1971: a synthetic life table analysis. *Population Studies*, 41 (1), pp.102-125.
- Ní Brolcháin, Máire (1992). Period paramount? A critique of the cohort approach to fertility, *Population and Development Review*, vol. 18, No. 4, pp. 599-629.
- Notkola, Il (1996). Occurrence of infertility in Finland with comparisons to other Western countries. Paper presented at the annual meeting of the Population Association of America.
- O'Connell, M. (1991). Late Expectations: Childbearing Patterns of American Women for the 1990s. *Current Population reports, Special Studies P-23-176*. Washington, D.C.: U.S. Bureau of the Census.
- Ortega, J.A. (2001). Measuring low fertility: Rethinking demographic methods and data. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Palomba, R. (2000). La permanenza dei giovani in famiglia. *Assistenza sociale*, No. 3-4, pp. 137-152.
- Palomba, R. (2001). Postponement of family formation in Italy within the Southern European context. Paper presented at the IUSSP Conference on Perspectives on Low Fertility: Trends, Theories and Policies. Tokyo, 21-23 March 2001.
- Philipov, D. and H.-P. Kohler (1998). Timing and Quantum Effects on Fertility in Bulgaria, the Czech Republic and Russia. Paper presented at the Conference on Lowest-Low Fertility, Rostock, Germany, 10-11 December 1998.

- 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 (1): 37-60.
- Prioux, F. (1993). L'infécondité en Europe, in A. Blum and J-L. Rallu (eds.), *European Population. II Demographic Dynamics*. Montrouge : John Libbey, pp. 231-255.
- Rallu, J.-L. and L. Toulemon (1993). Les mesures de la fécondité transversale. I. Construction des différents indices. II. Application à la France de 1946 à 1989. *Population*, 48 (1), pp. 7-26; 48(2), pp. 369-404.
- Rallu, J.L. and L. Toulemon (1994). Period fertility measures. The construction of different indices and their application to France, 1946-1989. *Population. An English Selection*. 6, pp. 59-94. (See also: Period Fertility Measures. Reflective commentaries by G. Calot, J-P. Sardon, G. Desplanques, N.Kelman, M. Ni Brolcháin, P. Festy and the authors' reply in *Population. An English Selection*. 6, pp.95-130).
- Ryder, N. B. (1951). The cohort approach: essays in the measurement of temporal variations in demographic behavior. A Ph.D. dissertation. (Firstly Published in 1980: N.Y.: Amo Press).
- Roussel, L. (1994). Fertility and the Family. *Proceedings European Population Conference, Geneva 1993*, Vol. I. Strasbourg: Council of Europe, pp. 35-110.
- Roussel, L. and P.Festy (1978). *L'évolution récente des attitudes et comportements a l'égard de la famille dans les Etats membres du Conseil de l'Europe*. Paris: Ined.
- Sadauskas, V. (1997). Research and service needs in reproductive health in Lithuania. In *Assessment of research and service needs in reproductive health in Eastern Europe – concerns and commitments*, E. Johannisson and others, eds. Proceedings of a workshop organized by the ICRR and the WHO Collaborating Centre on Research in Human Reproduction, Szeged, Hungary, 25-27 October 1993. New York: Parthenon Publishing Group.
- Schoen, R. and N. Standish (2001). The retrenchment of marriage: Results from Marital Status Life Tables for the United States, 1995. *Population and Development Review*, vol. 27(3), pp. 553-564.
- Smallwood, S., M.Murphy and A.Gjonca (2000). Alternative approaches to the analysis of fertility trends in lowest low fertility countries and their application to British and Swiss data. Paper presented at the British Society for Population studies and Nederlandse Vereniging voor Demografie Conference on Population Studies in Britain and the Netherlands, Utrecht, 31 August – 1 September 2000.
- Sobotka, T. (2003) Tempo-Quantum and Period-Cohort Interplay in Fertility Changes in Europe. Evidence from the Czech Republic, Italy, the Netherlands and Sweden. *Demographic Research*, Vol. 8, Article 6 (available at <http://demogr.mpg.de>)
- Sobotka T. (forthcoming). Re-emerging diversity. Rapid fertility changes in Central and Eastern Europe after the collapse of the communist Regimes. *Population*.
- Toulemon, L. (1994). La place des enfants dans l'histoire des couples. *Population*, vol. 49 (6), pp. 321-345.
- Toulemon, L. (1996). La cohabitation hors mariage s'installe dans la durée. *Population*, Vol. 8 (1), pp. 1-27.
- Toulemon, L. (1996). Very few couples remain voluntarily childless. *Population: An English Selection*, vol. 8, pp. 257-268.

- Toulemon, L. and M. Mazuy (2001). Les naissances sont retardées mais la fécondité est stable, *Population*, vol. 56 (4), pp. 611-644.
- United Nations (1990). *Patterns of First Marriage: Timing and Prevalence*. ST/ESA/SER.R/111.
- United Nations (1992). *Patterns of Fertility in Low-fertility Settings*. ST/ESA/SER.A/131.
- United Nations (2003). *World Population Prospects: The 2002 Revision*. ST/ESA/SER.A/222
- United Nations Economic Commission for Europe and United Nations Population Fund (various years). *Fertility and Family Surveys in Countries of ECE Region. Standard Country Reports* (referred in the text, tables and figures and Fertility and Family Survey).
- United States of America (2001). *Statistical Abstract of the United States 2001*. Washington: Government Printing Office.
- United States of America (2001). *National Vital Statistics Report*, vol. 50 (5). Washington: Government Printing Office.
- Van de Giessen, H. (1992). Using birth expectation information in national population forecasts. In Keilman, N. and H.Cruijsen, eds. *National Population Forecasting in Industrialized Countries*. Amsterdam: Swets & Zeitlinger Publishers, pp. 223-241.
- Van de Kaa, D.J. (1987). Europe's second demographic transition, *Population Bulletin* 42, No.1
- Van de Kaa, D.J. (1997). «Anchored narrative»: The story and findings of half a century of research into the determinants of fertility. *Population Studies*, vol. 50, pp. 389-432.
- Van de Kaa, D.J. (1999). Europe and its Population: The Long View. In D. Van de Kaa, H. Leridon, G.Gesano and M.Okolski, eds. *European Populations: Unity in Diversity*. [European Studies in Population. Vol. 6: European Population Conference. Vol.1.]. Dordrecht: Kluwer Academic Publishers, p.1-49.
- Van de Kaa, D.J (2001). The second demographic transition: concept, dimensions and new evidence. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Van de Kaa, D.J (2001a). Postmodern fertility preferences: from changing value orientation to new behavior. In R.A.Bulatao and J.B.Casterline, *Global Fertility Transition. Population and Development Review*, A Supplement to vol. 27, pp.290-331.
- Van Imhoff, E. and N.Keilman (2000). On the quantum and tempo of fertility: Comment, *Population and Development Review*, vol. 26, No. 3, pp. 549-553.
- Van Imhoff, E. (2001). On the quantum of fertility: Demographic indices for understanding changes in family formation processes. Paper presented at the EuroConference on The Second Demographic Transition in Europe, Bad Harrenalb, 23-28 June 2001.
- Van Hoorn, W. and N. Keilman (1997). Birth expectations and their use in fertility forecasting. Eurostat Working Papers, Population and Social Conditions, E4/1997-4.
- Van Peer (2000). Desired and realized fertility in selected FFS countries. Paper presented at the FFS Flagship Conference, Brussels, 29-31 May.

- Vishnevsky, A. (1998). *Серп и рубль: консервативная модернизация в СССР* [Sickle and Rouble: Conservative Modernization in the U.S.S.R]. Moscow: OGI.
- Vishnevsky, A., E.Ivanova, V. Sakevich and S.Zakharov (1999). Брачность и рождаемость [Nuptiality and fertility] in *Naselenie Rossii 1998*. Moscow: Universitet Publishing House, pp. 27-60.
- Westoff, C. and N.Ryder (1977). The predictive validity of reproductive intentions. *Demography*, vol. 14, No. 4, pp. 431-453.
- Whelpton, P.K. (1954). *Cohort Fertility. Native White Women in the United States*. Princeton, New Jersey: Princeton University Press.
- Zakharov, S. (2000). Fertility trends in Russia and the European newly independent States: crisis or turning point? In *Population Bulletin of the United Nations. Below Replacement Fertility*. Special Issue Nos. 40/41, pp. 292-317.
- Zakharov S. and E.Ivanova (1996). Fertility Decline and recent Changes in Russia: on the Threshold of the Second Demographic Transition, in J. DaVanzo, ed. *Russia's Demographic Crisis*. RAND Conference Proceedings. Santa Monica: RAND, pp. 36-82.
- Zakharov, S., E.Ivanova and B.Sakevich (2000). Брачность и рождаемость [Nuptiality and fertility] in *Naselenie Rossii 1999*. Moscow: Universitet Publishing House, pp. 47-81.

ANNEX

Finland

TABLE 1. AGE-SPECIFIC FERTILITY RATES: 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	28	163	159	104	61	25	2	2.71
1961	28	160	160	103	61	25	2	2.70
1962	28	163	158	101	56	24	2	2.66
1963	30	161	159	101	56	23	2	2.66
1964	32	156	154	96	54	22	2	2.58
1965	34	144	149	92	52	19	2	2.47
1966	36	145	143	91	48	17	2	2.40
1967	36	141	139	83	46	16	2	2.32
1968	36	135	126	77	39	14	2	2.14
1969	34	123	114	69	35	12	1	1.93
1970	32	119	109	65	31	9	1	1.83
1971	30	111	108	58	25	7	1	1.70
1972	29	104	104	53	22	6	1	1.59
1973	26	97	99	51	22	6	1	1.50
1974	27	104	108	57	23	6	1	1.62
1975	28	106	114	60	25	6	0	1.69
1976	26	104	116	66	25	6	1	1.72
1977	24	99	115	68	26	6	0	1.69
1978	21	96	114	67	27	6	0	1.65
1979	19	94	113	68	28	6	0	1.64
1980	19	92	115	68	27	6	0	1.63
1981	17	89	118	70	30	6	0	1.65
1982	17	91	124	74	31	7	0	1.72
1983	16	87	127	78	33	7	0	1.74
1984	15	82	123	78	33	7	0	1.70
1985	14	76	122	77	33	7	0	1.64
1986	13	71	120	78	31	7	0	1.60
1987	12	68	119	80	31	8	0	1.59
1988	12	70	128	87	34	8	1	1.70
1989	12	70	130	89	34	7	0	1.71
1990	12	72	133	94	37	8	0	1.79
1991	12	72	133	97	37	7	0	1.80
1992	12	74	138	100	39	8	1	1.85
1993	11	72	134	101	38	8	0	1.82
1994	10	71	135	105	41	8	0	1.85
1995	10	66	130	105	42	8	0	1.81
1996	10	64	125	102	43	8	0	1.76
1997	9	62	123	101	44	9	1	1.74
1998	9	60	117	100	44	9	1	1.70
1999	7	61	117	102	46	9	0	1.72
2000	10	60	116	103	46	9	0	1.73

Finland

PERIOD INDICATORS

TABLE 2. NUPTIALITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Annual number of marriages	1000	32.8	36.2	40.7	31.5	29.4	25.8	25.0	23.6	23.1	24.7	24.9	23.7	24.5	23.4	24.0	24.3	26.2	
Annual number of divorces	1000	3.6	4.6	6.0	9.4	9.5	9.1	13.1	12.8	12.8	12.3	13.8	14.0	13.8	13.5	13.8	14.0	13.9	
Crude marriage rate	per 1000	7.4	7.9	8.8	6.7	6.1	5.3	5.0	4.7	4.6	4.9	4.9	4.6	4.8	4.6	4.7	4.7	5.1	
Crude divorce rate	per 1000	0.8	1.0	1.3	2.0	2.0	1.8	2.6	2.6	2.5	2.4	2.7	2.7	2.7	2.6	2.7	2.7	2.7	
Total first marriage rate	per woman	0.96	0.93	0.94	0.70	0.67	0.58	0.58	0.58	0.56	0.59	0.60	0.57	0.59	0.57	0.57	0.58	0.62	
Total divorce rate	per woman	0.11	0.13	0.17	0.26	0.28	0.28	0.42	0.42	0.43	0.43	0.47	0.48	0.48	0.48	0.50	0.51	0.51	
Mean age at first marriage	Years	23.7	22.9	23	23.5	24.5	25.4	26.5	26.6	26.9	27.2	27.3	27	27.2	27.3	27.6	27.8	28.0	
<i>Synthetic cohort indicators</i>																			
SMAM	Years	22.5..		22.5	23.3	24.6	26.1	25.1..	30.0	30.2
Time not married from 20 to 40	Years	4.7..		4.4	4.9	5.8	6.9	7.6..	9.4	9.6

TABLE 3. FERTILITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of births	1000	82.1	77.9	64.6	65.7	63.1	62.8	65.5	65.7	66.9	64.8	65.2	63.1	60.7	59.3	57.1	57.6	56.7
Crude birth rate	per 1000	18.5	17.1	14.0	13.9	13.2	12.8	13.1	13.1	13.3	12.8	12.8	12.3	11.8	11.5	11.1	11.2	11.0
Proportion of first births	per cent	35.5	36.2	50.7	52.3	47.0	39.4	40.0	40.5	39.6	39.5	38.2	38.7	39.2	39.8	39.8	40.2	40.2
Proportion of extra-marital births	per cent	4.0	4.6	5.8	10.1	13.1	16.4	25.2	27.2	28.8	30.3	31.3	33.1	35.4	36.5	37.2	38.6	39.2
TFR	per woman	2.7	2.5	1.8	1.7	1.6	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7
Proportion of TFR in age group 30+	per cent	35.5	33.7	28.8	26.8	31.2	35.6	39.1	39.4	39.8	40.4	41.4	42.9	43.6	44.1	45.3	46.1	46.1
Mean age at first birth	Years	24.7	24.6	24.4	24.9	25.6	25.9	26.5	26.6	26.7	26.8	27.4	27.6	27.2	27.7	27.8	27.4	27.4
Mean age at birth	Years	28.3	28.0	27.1	27.0	27.7	28.4	28.9	28.9	28.9	29.0	29.1	29.3	29.4	29.5	29.5	29.6	29.6

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT

TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

<i>Age</i>	1918	1923	1928	1933	1938	1943	1948	1953	1958	1963	1968	1973	1978
20-24	46	..	49	40	31	23	38	..	10
25-29	76	..	78	76	68	60	48	..	38	..
30-34	84	..	86	86	84	79	62	..	60	..	..
35-39	..	86	..	88	89	89	87	72	..	73	..	..	..
40-44	86	..	88	89	90	90	79	..	..	..	..	..	..

<i>Indicator</i>	1930	1935	1940	1945	1950	1955	1960	1961	1962	1963
Children ever born	2.46	2.29	2.04	1.88	1.85	1.90	1.95	1.94	1.93	1.92
Proportion childless	14	14	16	18	18	18	19	21
Proportion with 1 child	18	21	20	16	15	16	15	13
Proportion with 2 children	38	40	40	37	36	36	35	36
Proportion with 3+ children	30	25	24	29	31	30	31	30

Figure 1. Annual number of births and crude birth rate, 1950-2000

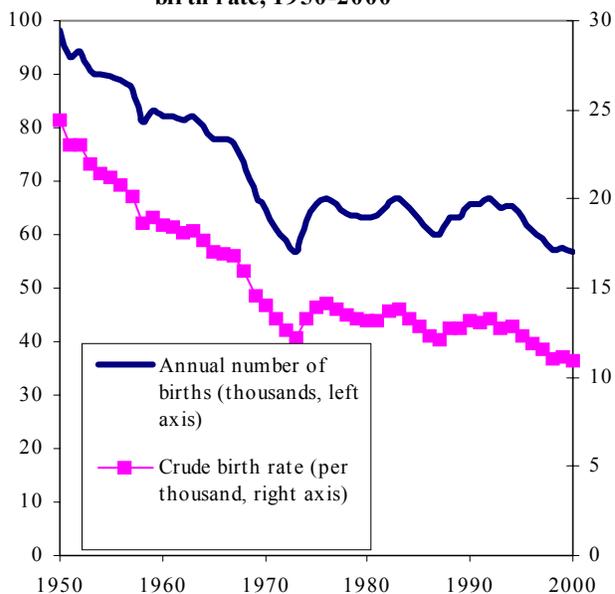


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

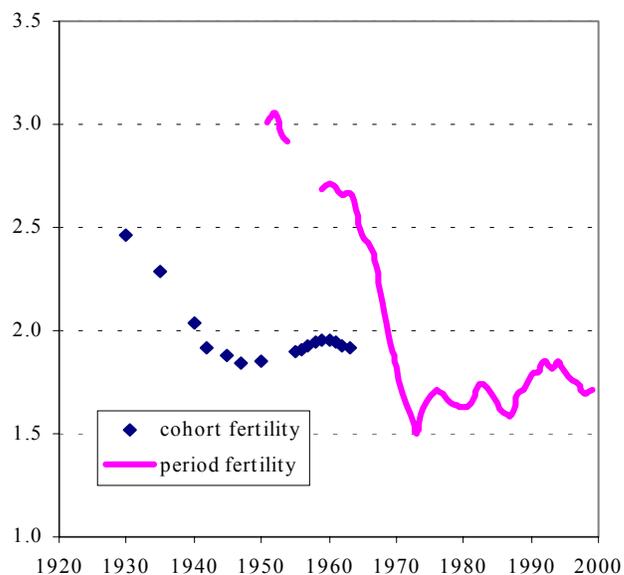


Figure 2. Age-specific fertility rates

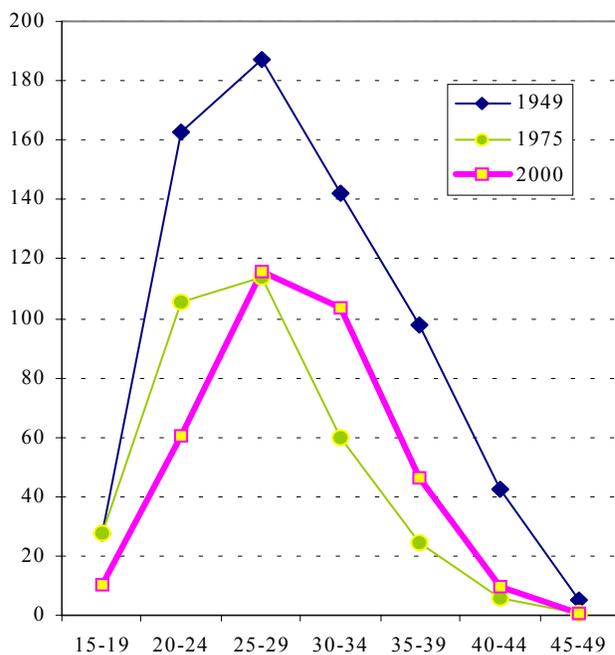


Figure 4. Order-specific total fertility rates: earliest available estimate, at overall TFR close to replacement and most recent estimate

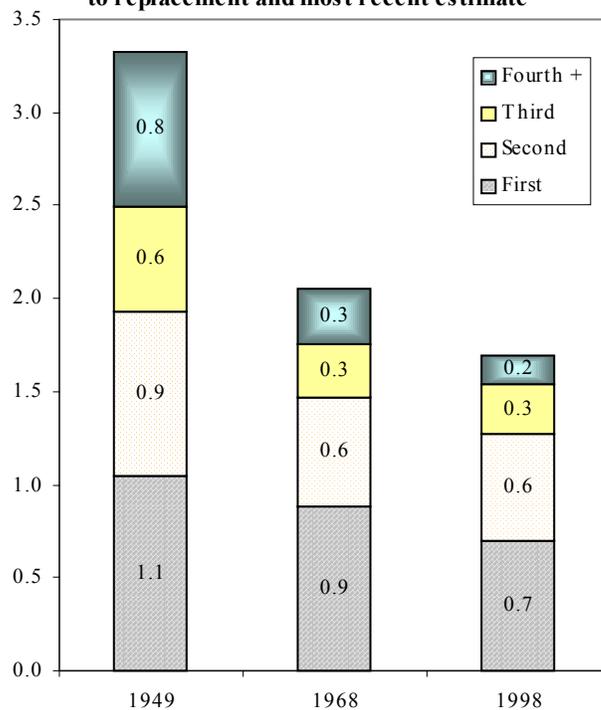


Figure 5. Observed and adjusted total fertility rate, 1950-2000

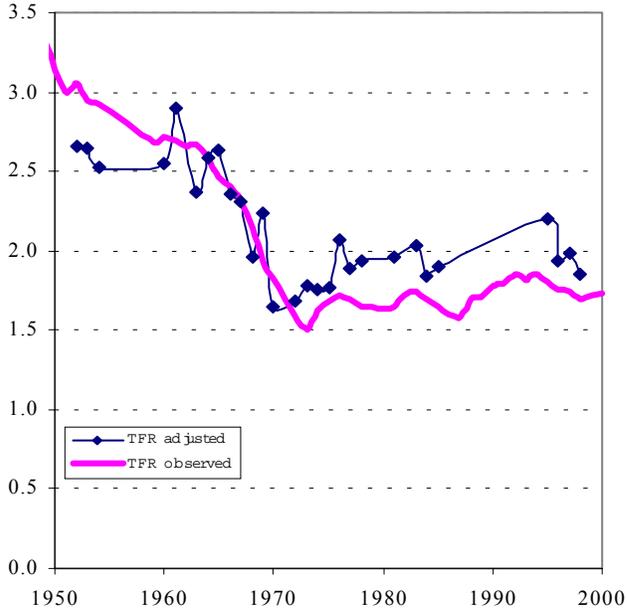


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility, 1950-2000

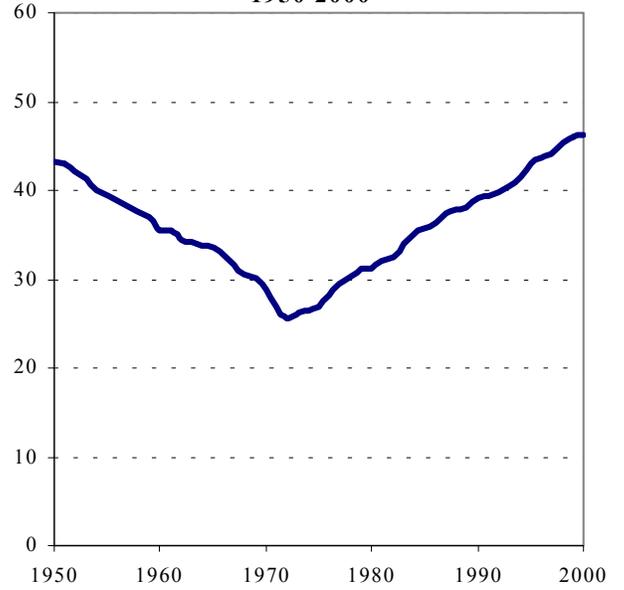


Figure 6. Selected indicators, 1950-2000

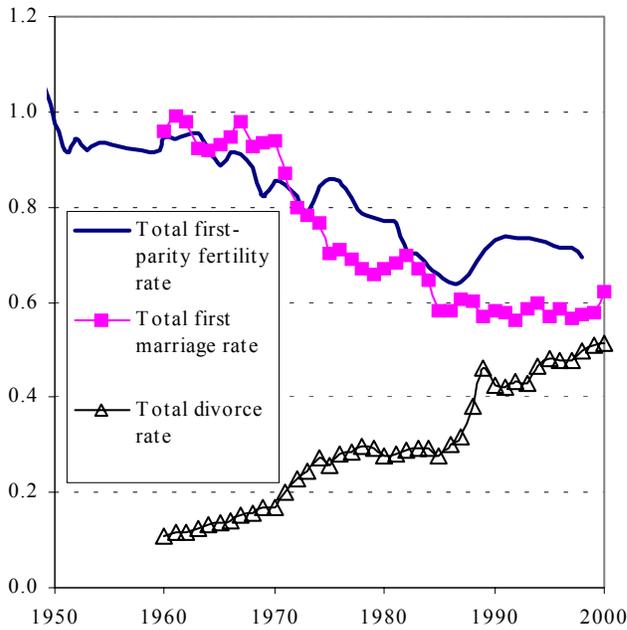
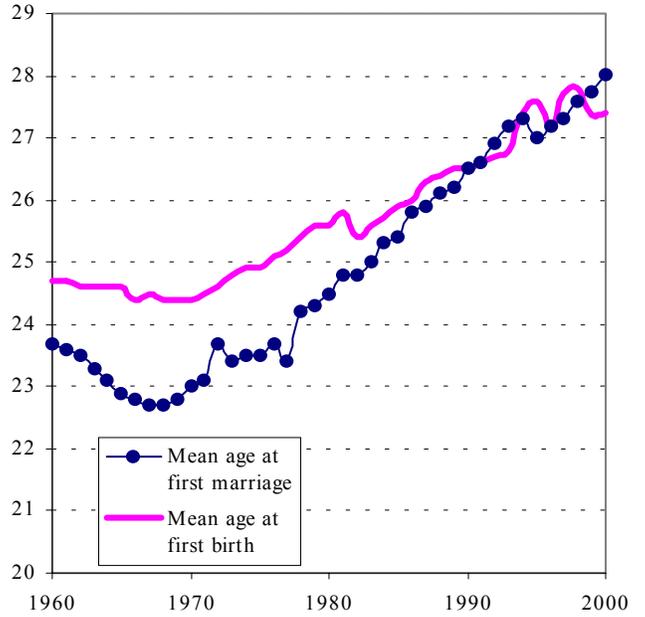


Figure 8. Mean age at first marriage and mean age at first birth, 1960-2000



Japan

TABLE 1. AGE-SPECIFIC FERTILITY RATES, 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	4	107	182	80	24	5	0	2.02
1961	4	100	182	78	21	5	0	1.95
1962	4	100	187	78	19	4	0	1.96
1963	4	98	191	81	19	3	0	1.98
1964	3	102	195	83	19	3	0	2.03
1965	3	113	204	87	19	3	0	2.15
1966	4	91	144	62	16	3	0	1.60
1967	4	109	217	91	20	3	0	2.22
1968	4	99	206	87	20	3	0	2.10
1969	4	92	206	86	20	3	0	2.06
1970	5	97	209	86	20	3	0	2.10
1971	5	107	213	87	20	3	0	2.17
1972	5	114	203	86	19	3	0	2.15
1973	5	117	206	87	19	3	0	2.17
1974	5	115	200	79	17	2	0	2.09
1975	4	106	189	69	15	2	0	1.93
1976	4	99	183	66	14	2	0	1.84
1977	3	92	182	67	14	2	0	1.80
1978	4	86	184	72	14	2	0	1.80
1979	4	80	183	74	13	2	0	1.78
1980	4	77	180	73	13	2	0	1.74
1981	4	73	179	71	13	2	0	1.71
1982	4	71	183	74	14	2	0	1.74
1983	4	70	184	79	16	2	0	1.77
1984	5	67	183	83	18	2	0	1.78
1985	4	62	178	86	18	2	0	1.74
1986	4	60	170	87	17	2	0	1.69
1987	4	55	166	90	18	2	0	1.67
1988	4	51	159	93	19	2	0	1.64
1989	4	47	146	92	20	2	0	1.56
1990	4	45	140	93	21	2	0	1.52
1991	4	44	137	93	21	2	0	1.51
1992	4	43	129	93	23	2	0	1.47
1993	4	41	122	92	23	2	0	1.43
1994	4	42	123	97	26	3	0	1.47
1995	4	40	116	95	26	3	0	1.42
1996	4	40	112	97	28	3	0	1.42
1997	4	40	108	94	28	3	0	1.39
1998	5	39	103	93	29	3	0	1.36
1999	5	38	98	90	30	3	0	1.32
2000	5	39	98	91	31	4	0	1.35

Japan

PERIOD INDICATORS
TABLE 2. NUPTIALITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of marriages	1000	872.2	962.6	1037.8	941.6	774.7	735.9	722.1	742.3	754.4	792.7	782.7	791.9	795.1	775.7	784.6	762.0	798.1
Annual number of divorces	1000	69.9	78.0	97.0	119.1	141.7	166.6	157.6	169.0	179.2	188.3	195.1	199.0	207.0	222.6	243.2	250.5	264.2
Crude marriage rate	per 1000	9.4	9.8	10.0	8.4	6.6	6.1	5.8	6.0	6.1	6.3	6.3	6.3	6.3	6.2	6.2	6.0	6.3
Crude divorce rate	per 1000	0.7	0.8	0.9	1.1	1.2	1.4	1.3	1.4	1.4	1.5	1.6	1.6	1.6	1.8	1.9	2.0	2.1
Total first marriage rate	per woman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total divorce rate	per woman	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mean age at first marriage	Years	24.4	24.5	24.2	24.7	25.2	25.5	25.9..	..	..	..	..	26.3..	..	26.6	26.7	26.8	27.0
<i>Synthetic cohort indicators</i>		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SMAM	Years	25.0	24.8	24.7	24.5	25.1	25.8	26.9..	..	..	..	..	27.7..	..	..	..	..	..
Time not married from 20 to 40	Years	5.0	4.8	4.9	4.9	5.5	6.1	7.0..	..	..	..	..	7.7..	..	..	..	..	..

TABLE 3. FERTILITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of births	1000	1627.9	1844.5	1955.3	1901.4	1576.9	1431.6	1221.6	1223.2	1209.0	1188.3	1238.3	1187.1	1206.6	1191.7	1203.1	1177.7	1190.6
Crude birth rate	per 1000	17.5	18.8	18.9	17.0	13.5	11.8	9.9	9.9	9.7	9.5	9.9	9.5	9.6	9.5	9.5	9.3	9.4
Proportion of first births	per cent	..	..	43.7	48.7	43.4	43.9	43.8	43.5	45.7	46.8	47.6	47.8	47.6	48.0	48.5..	..	..
Proportion of extra-marital births	per cent	1.2	0.9	0.9	0.8	0.8	1.0..	..	1.1..	..	1.1	1.2	1.2	1.3	1.4	1.4..	..	..
TFR	per woman	2.0	2.2	2.1	1.9	1.7	1.7	1.5	1.5	1.5	1.4	1.5	1.4	1.4	1.4	1.4	1.3	1.3
Proportion of TFR in age group 30+	per cent	27.1	25.4	25.9	22.4	25.1	30.1	38.2	38.8	40.0	41.3	42.5	43.7	45.1	45.2	46.1	46.6	47.1
Mean age at first birth	years	25.6	25.9	25.8	25.7	26.1	26.5	27.2	27.2	27.4	27.5	27.7	27.8	27.9	27.9	28.0	27.9	28.0
Mean age at birth	years	27.9	27.7	27.8	27.4	27.8	28.3	29.0	29.0	29.1	29.2	29.3	29.4	29.5	29.5	29.6..	..	..

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT

TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

<i>Age</i>	1918	1923	1928	1933	1938	1943	1948	1953	1958	1963	1968	1973	1978	<i>Indicator</i>	1918	1923	1928	1933	1938	1943	1948	1953
20-24	45	34	32	32	28	31	22	18	14	13..	..	Children ever born	3.27	2.78	2.40	2.14	2.20	2.20	2.20	2.10
25-29	..	85	79	78	81	82	79	76	69	60	52..	..	..	Proportion childless	8	8	7	6..	..	..	..
30-34	94	92	91	91	93	92	91	90	86	80..	..	..	..	Proportion with 1 child	10	11	13	14..	..	..	..
35-39	96	95	93	94	95	95	93	93	89..	..	..	..	..	Proportion with 2 children	15	24	36	48..	..	..	..
40-44	97	95	95	95	96	95	94	93..	..	..	..	..	..	Proportion with 3+ children	66	58	44	32..	..	..	..

Figure 1. Annual number of births and crude birth rate, 1960-2000

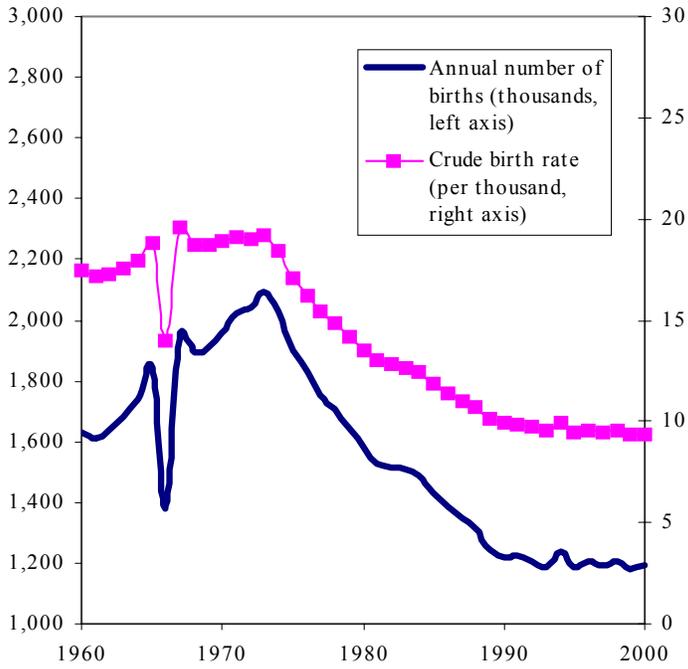


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

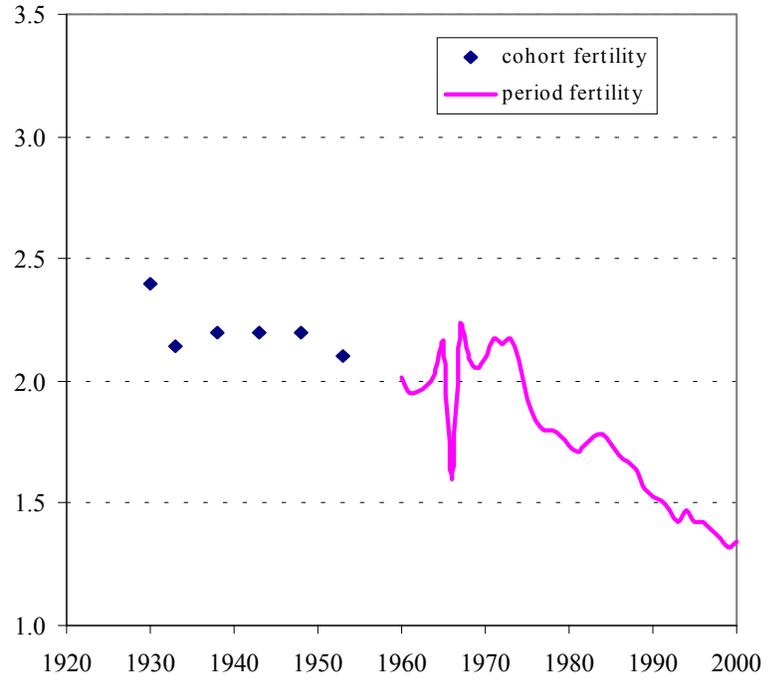


Figure 2. Age-specific fertility rates

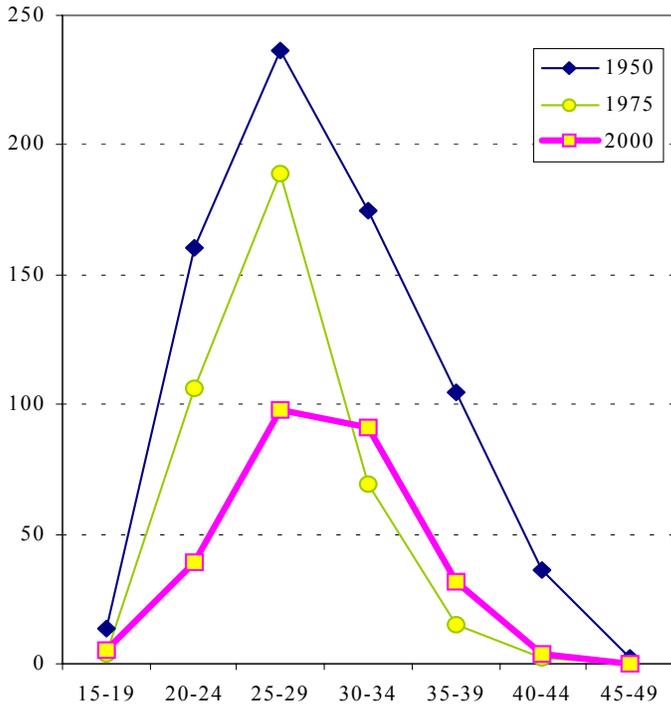


Figure 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to 2.1 and most recent estimate

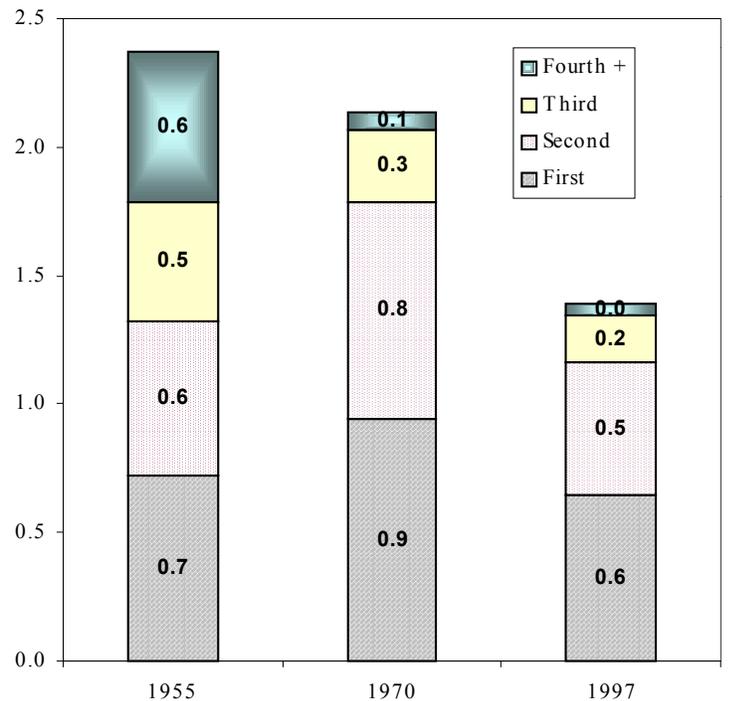


Figure 5. Observed total fertility rate: 1955-2000

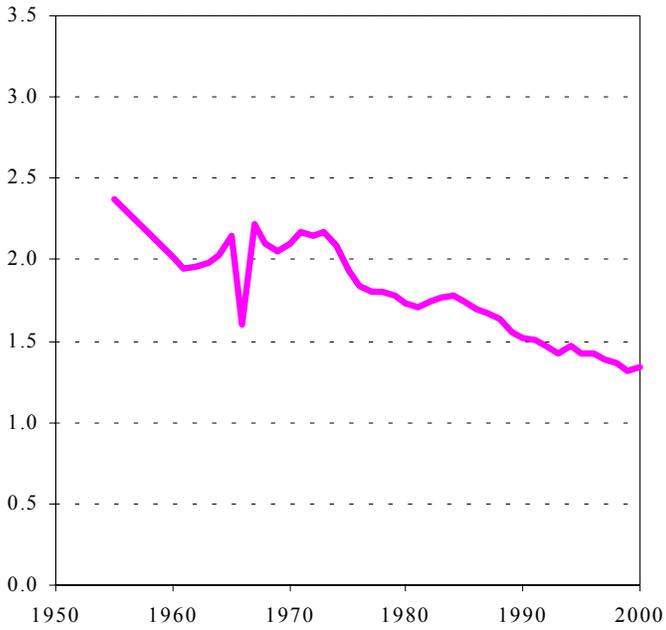


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility, 1960-2000

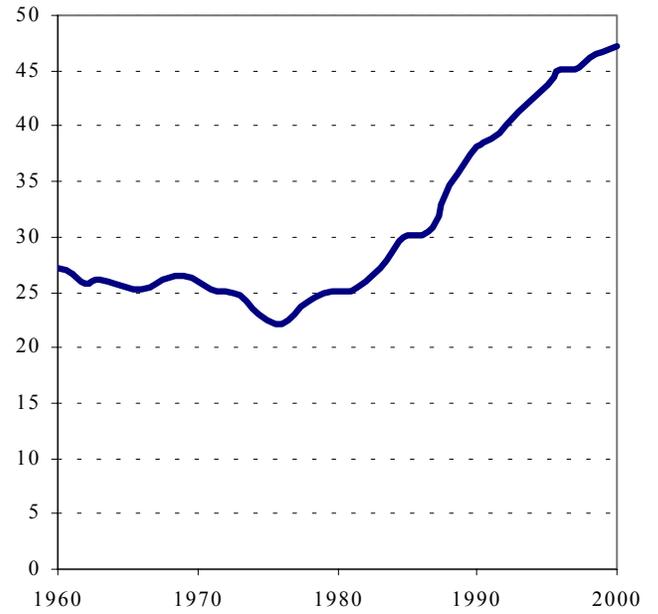


Figure 6. Total first-parity fertility rate, 1955-2000

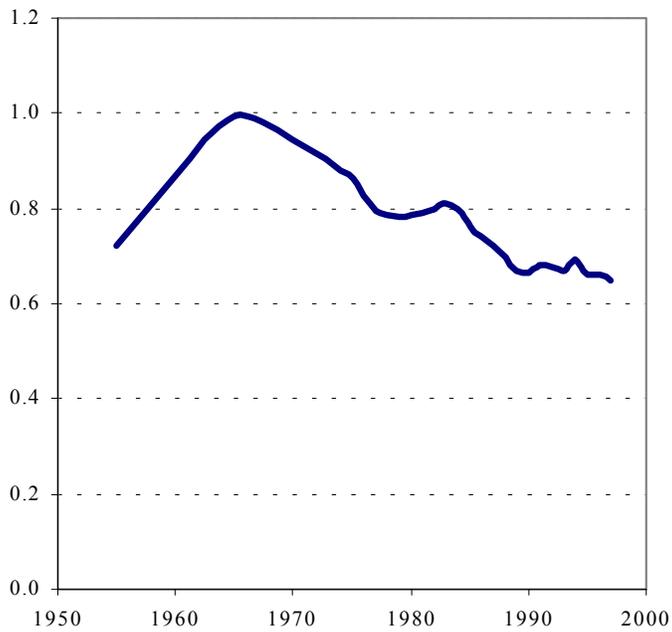
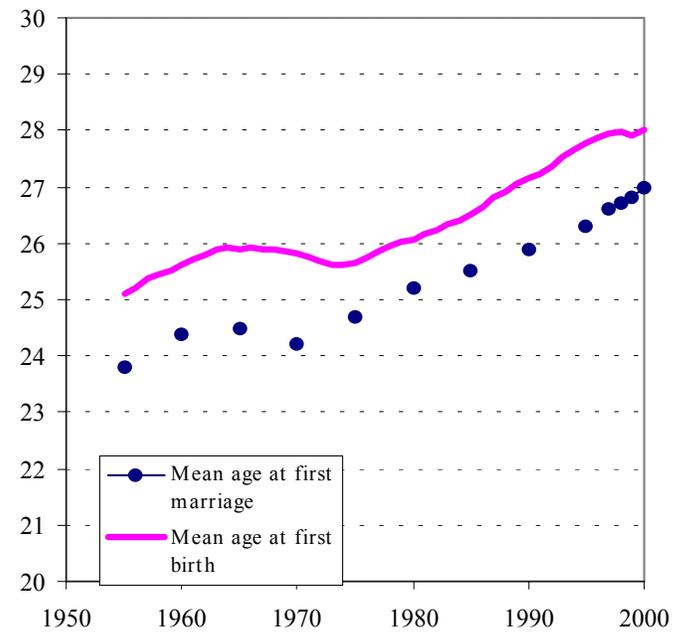


Figure 8. Mean age at first marriage and first birth, 1955-2000



Netherlands

TABLE 1. AGE-SPECIFIC FERTILITY RATES, 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	17	122	208	153	89	32	3	3.12
1961	19	129	215	158	89	32	3	3.22
1962	20	133	213	153	84	30	3	3.18
1963	21	138	214	152	82	28	3	3.19
1964	21	142	213	149	79	26	2	3.17
1965	21	143	207	139	73	24	2	3.04
1966	21	143	200	129	65	21	2	2.90
1967	22	145	194	120	60	19	2	2.81
1968	21	144	191	114	55	17	1	2.72
1969	23	146	195	115	54	16	1	2.75
1970	23	137	183	107	49	14	1	2.57
1971	22	130	170	95	41	12	1	2.36
1972	20	124	160	83	34	9	1	2.15
1973	17	112	146	69	27	7	1	1.90
1974	15	106	141	63	22	6	0	1.77
1975	13	98	138	59	20	5	0	1.66
1976	11	95	139	59	18	4	0	1.63
1977	10	88	137	59	17	4	0	1.58
1978	10	86	140	61	16	3	0	1.58
1979	9	82	139	62	17	3	0	1.56
1980	9	81	143	67	17	3	0	1.60
1981	9	75	139	68	17	4	0	1.56
1982	8	70	133	68	17	3	0	1.50
1983	8	66	129	70	17	3	0	1.47
1984	7	65	131	74	18	3	0	1.49
1985	7	61	131	80	19	3	0	1.51
1986	7	58	134	86	22	3	0	1.55
1987	6	54	132	92	24	3	0	1.56
1988	7	51	128	95	25	3	0	1.55
1989	7	49	125	98	28	4	0	1.55
1990	8	48	127	106	31	4	1	1.62
1991	8	46	123	108	33	4	0	1.61
1992	7	43	117	110	35	5	0	1.59
1993	7	41	113	112	36	5	0	1.57
1994	7	40	111	113	38	5	0	1.57
1995	6	38	107	112	38	5	0	1.53
1996	6	36	104	114	40	5	0	1.53
1997	6	38	104	118	41	5	0	1.56
1998	6	38	107	124	44	6	0	1.63
1999	7	39	107	125	46	6	0	1.65
2000	7	41	110	130	49	7	0	1.72

Netherlands

PERIOD INDICATORS
TABLE 1. NUPTIALITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Annual number of marriages	1000	89.1	108.5	123.6	100.1	90.2	82.7	95.6	94.9	93.6	88.3	83.0	81.5	85.1	85.1	87.0	89.4	88.1	
Annual number of divorces	1000	5.7	6.2	10.3	20.1	25.7	34.0	28.4	28.3	30.5	30.5	36.2	34.2	34.9	33.7	32.5	33.6	34.7	
Crude marriage rate	per 1000	7.8	8.8	9.5	7.3	6.4	5.7	6.4	6.3	6.2	5.8	5.4	5.3	5.5	5.4	5.5	5.7	5.5	
Crude divorce rate	per 1000	0.5	0.5	0.8	1.5	1.8	2.3	1.9	1.9	2.0	2.0	2.4	2.2	2.2	2.2	2.1	2.1	2.2	
Total first marriage rate	per woman	1.05	1.13	1.06	0.83	0.68	0.57	0.66	0.64	0.63	0.60	0.56	0.53	0.55	0.56	0.58	0.60	0.59	
Total divorce rate	per woman	0.07	0.07	0.11	0.19	0.25	0.35	0.30	0.30	0.32	0.32	0.38	0.36	0.37	0.37	0.36	0.37	0.38	
Mean age at first marriage	Years	24.2	23.6	22.9	22.6	23.2	24.4	25.9	26.2	26.5	26.7	27.0	27.1	27.2	27.4	27.6	27.7	27.8	
<i>Synthetic cohort indicators</i>																			
SMAM	Years	22.9..	24.6..	..	26.8..	29.3	29.5
Time not married from 20 to 40	Years	4.6..	5.8..	..	6.9..	8.8	9.0

TABLE 2. FERTILITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of births	1000	239.1	245.2	238.9	177.9	181.3	178.1	198.0	198.7	196.7	195.7	195.6	190.5	189.5	192.4	199.4	200.4	206.6
Crude birth rate	per 1000	20.8	19.9	18.3	13.0	12.8	12.3	13.2	13.2	13.0	12.8	12.7	12.3	12.2	12.3	12.7	12.7	13.0
Proportion of first births	per cent	27.1	28.5	33.5	39.6	37.1	35.5	34.4	34.7	35.4	35.9	35.7	36.5	36.1	35.4	35.0	35.6	35.8
Proportion of extra-marital births	per cent	1.4	1.8	2.1	2.1	4.1	8.3	11.4	12.0	12.4	13.1	14.3	15.5	17.0	19.2	20.8	22.7	24.9
TFR	per woman	3.12	3.04	2.57	1.66	1.60	1.51	1.62	1.61	1.59	1.57	1.57	1.53	1.53	1.56	1.63	1.65	1.72
Proportion of TFR in age group 30+	per cent	44.3	39.0	33.4	25.2	27.4	34.1	43.6	45.1	47.3	48.9	49.8	51.0	52.1	52.7	53.5	53.7	53.9
Mean age at first birth	Years	25.7	25.2	24.8	25.2	25.7	26.6	27.6	27.8	28.0	28.2	28.2	28.4	28.6	28.6	28.7	28.7	28.6
Mean age at birth	Years	29.8	29.0	28.2	27.4	27.7	28.4	29.3	29.5	29.7	29.8	29.9	30.0	30.1	30.2	30.2	30.3	30.3

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT

<i>Age</i>	1918	1923	1928	1933	1938	1943	1948	1953	1958	1963	1968	1973	1978
20-24	41	46	55	..	..	27	21	..	12
25-29	80	84	86	..	..	67	60	..	41	..
30-34	88	91	92	..	..	85	81	..	68	..	..
35-39	..	90	91	93	..	..	92	89	..	80	..	..	..
40-44	90	91	93	..	94	93	..	87	..	..	..	..	..

TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

<i>Indicator</i>	1930	1935	1940	1945	1950	1955	1960	1961	1962	1963
Children ever born	2.65	2.50	2.21	1.99	1.90	1.87	1.85	1.81	1.80	1.76
Proportion childless	..	12	12	12	15	17	18	19	19	19
Proportion with 1 child	..	10	10	13	15	15	16	16	16	17
Proportion with 2 children	..	32	42	49	47	43	41	42	41	41
Proportion with 3+ children	..	46	36	26	23	25	25	23	24	23

Figure 1. Annual number of births and crude birth rate, 1950-2000

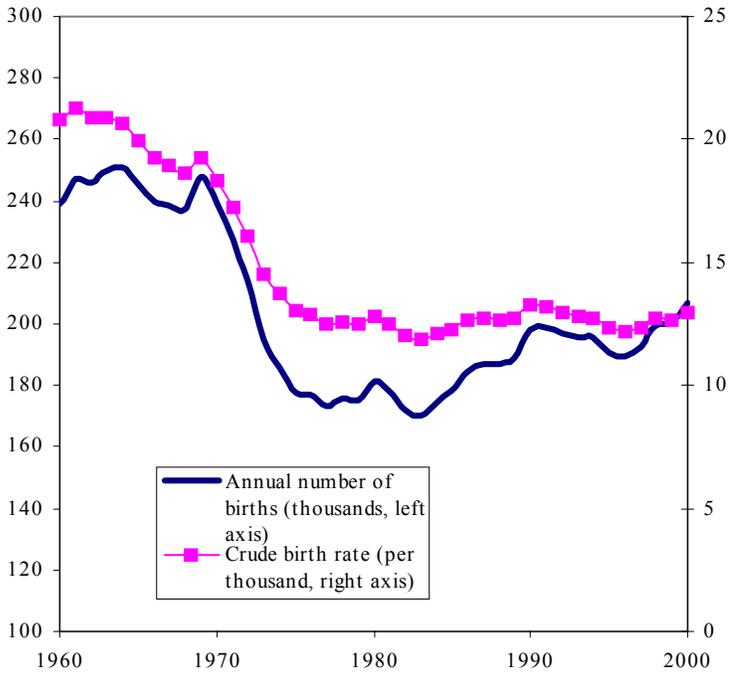


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

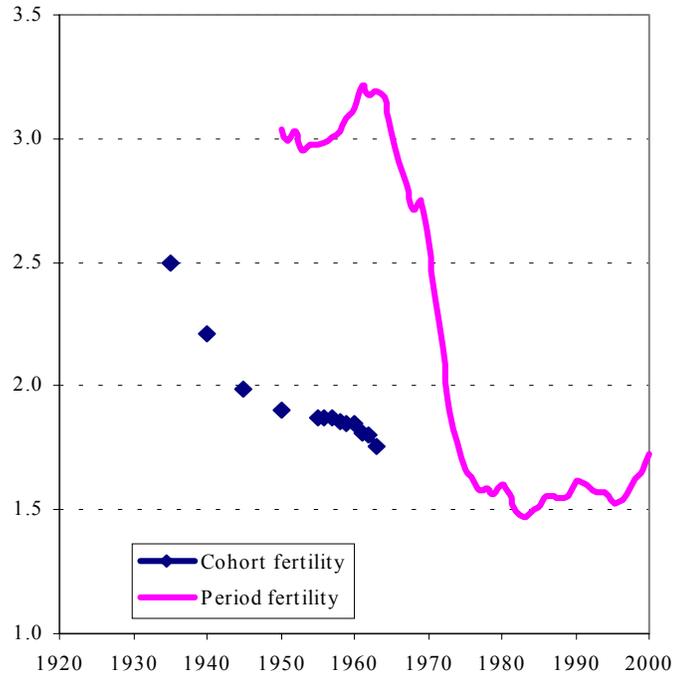


Figure 2. Age-specific fertility rates

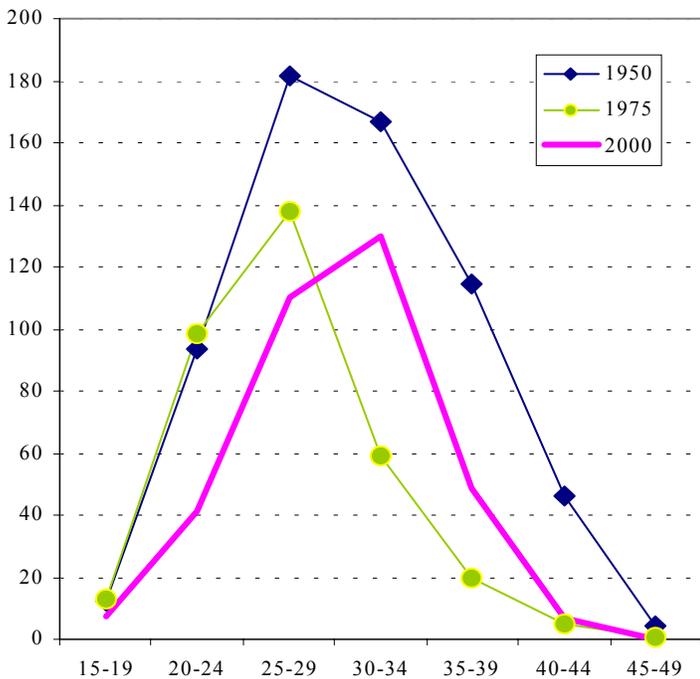


Figure 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to replacement and most recent estimate

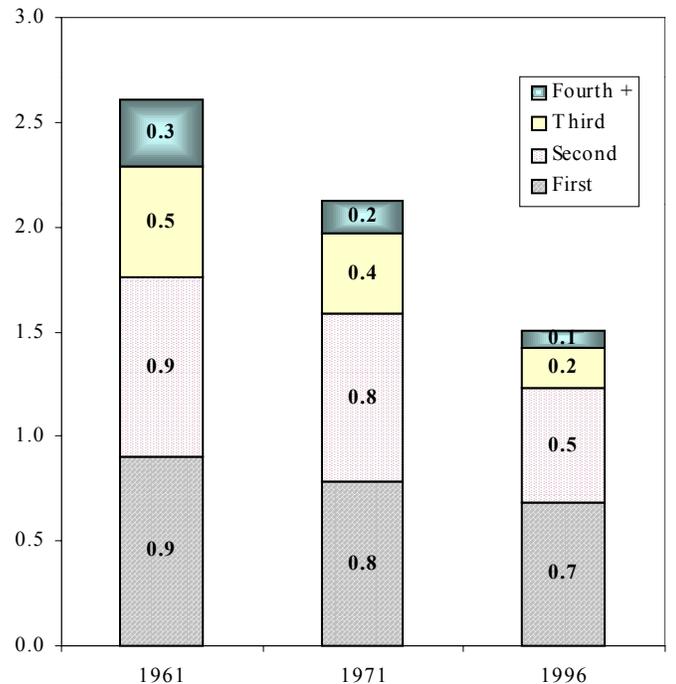


Figure 5. Observed and adjusted total fertility rate, 1950-2000 (for women aged 20-49)

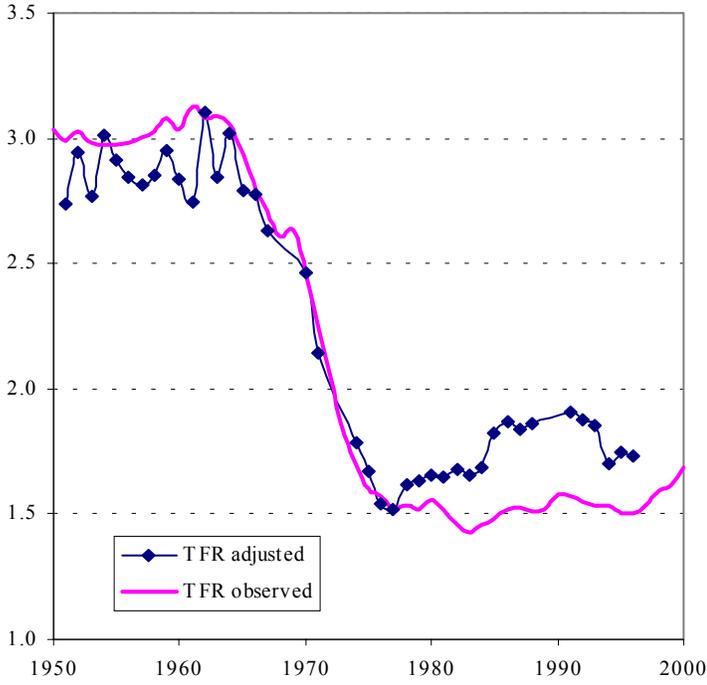


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility, 1950-2000

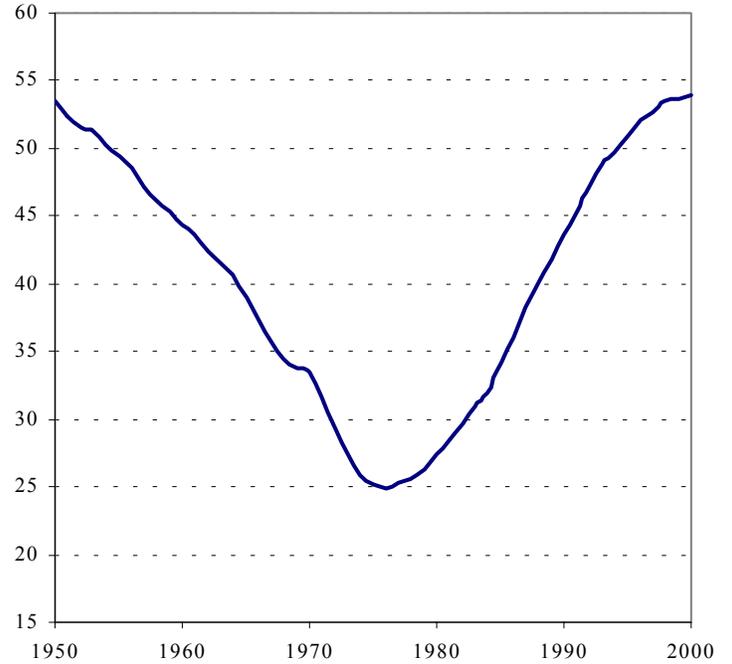


Figure 6. Selected indicators, 1950-2000

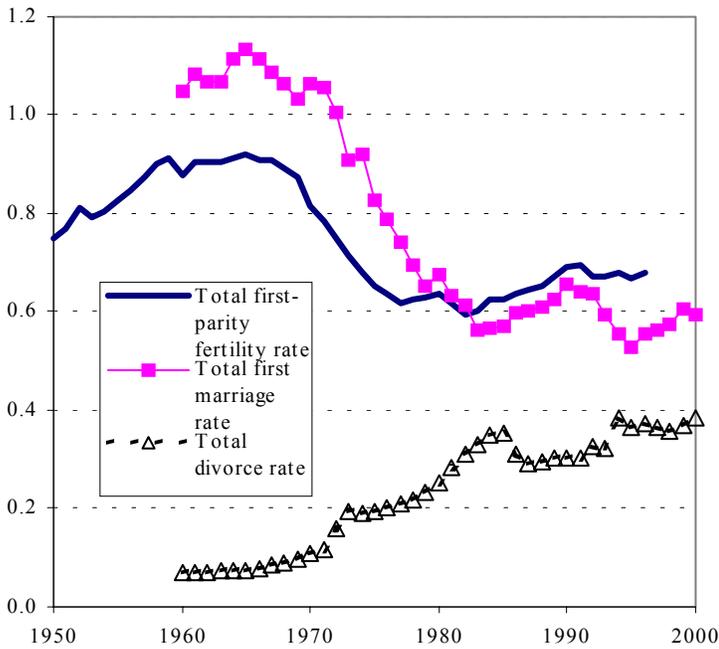
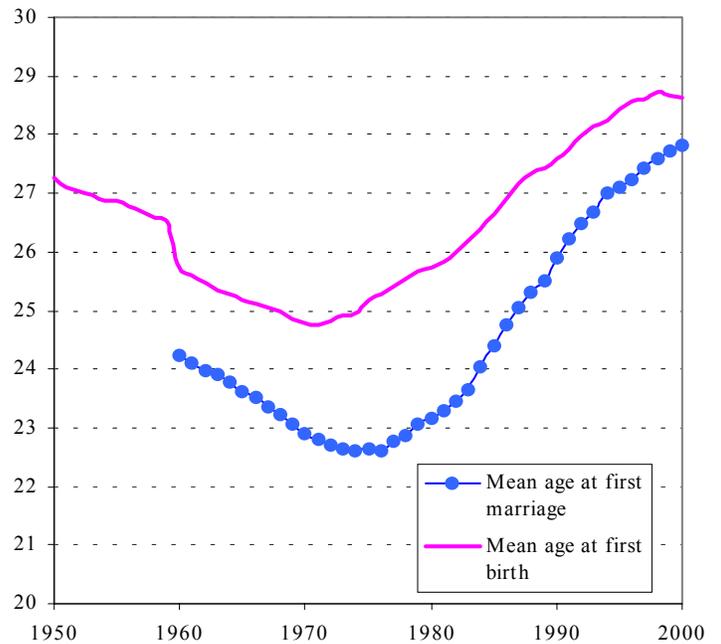


Figure 8. Mean age at first marriage and mean age at first birth, 1950-2000



Russian Federation

TABLE 1. AGE-SPECIFIC FERTILITY RATES: 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	..	..	..	..	..	..	..	..
1961	27	157	143	92	47	16	2	2.42
1962	21	156	137	86	45	15	2	2.31
1963	21	156	130	81	41	14	2	2.23
1964	23	151	123	77	39	13	2	2.14
1965	25	150	120	78	38	13	1	2.12
1966	26	148	115	77	36	12	1	2.07
1967	26	143	111	74	34	11	1	2.00
1968	27	143	109	72	32	10	1	1.97
1969	28	147	107	69	32	9	1	1.97
1970	30	153	110	68	33	8	1	2.01
1971	31	156	116	66	33	8	1	2.05
1972	32	155	114	63	33	8	1	2.02
1973	33	156	113	60	31	7	1	2.00
1974	34	159	111	59	29	7	1	1.99
1975	35	159	108	58	27	7	1	1.97
1976	36	159	108	60	24	7	1	1.97
1977	37	156	107	59	22	7	0	1.94
1978	41	155	103	56	20	6	0	1.90
1979	43	157	101	53	18	5	0	1.89
1980	44	158	102	52	19	5	0	1.90
1981	44	159	106	55	22	4	0	1.95
1982	45	164	113	60	24	4	0	2.05
1983	46	166	115	61	24	4	0	2.08
1984	47	164	113	60	23	4	0	2.06
1985	47	166	118	63	25	4	0	2.11
1986	47	166	118	63	25	4	0	2.11
1987	49	171	123	68	28	6	0	2.22
1988	50	168	114	62	26	6	0	2.12
1989	53	164	103	55	22	5	0	2.01
1990	56	157	93	48	19	4	0	1.89
1991	55	147	83	42	17	4	0	1.73
1992	51	134	73	35	14	3	0	1.55
1993	48	120	65	30	11	3	0	1.39
1994	50	120	67	30	11	2	0	1.40
1995	46	114	67	30	11	2	0	1.35
1996	40	106	67	30	11	2	0	1.28
1997	36	99	66	32	11	2	0	1.23
1998	34	99	68	33	12	2	0	1.24
1999	30	93	65	33	11	2	0	1.17
2000	28	95	69	36	12	2	0	1.21

Russian Federation

PERIOD INDICATORS TABLE 1. NUPTIALITY

Indicator	Unit	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Annual number of marriages	1000	1,499.6	1,097.6	1,319.2	1,495.8	1,464.6	1,389.4	1,319.9	1,277.2	1,053.7	1,106.7	1,080.6	1,075.2	866.7	928.4	848.7	911.2	897.3	
Annual number of divorces	1000	184.4	231.4	396.6	483.8	580.7	574.0	559.9	597.9	639.2	663.3	680.5	665.9	562.4	555.2	501.7	532.5	627.7	
Crude marriage rate	per 1000	12.5	8.7	10.1	11.1	10.6	9.7	8.9	8.6	7.1	7.5	7.3	7.3	5.9	6.3	5.8	6.2	6.2	
Crude divorce rate	per 1000	1.5	1.8	3.0	3.6	4.2	4.0	3.8	4.0	4.3	4.5	4.6	4.5	3.8	3.8	3.4	3.6	4.3	
Total first marriage rate	per woman	1.18	1.09	1.06	1.03	0.96	0.97	1.00	0.96	0.78	0.82	0.77	0.75	0.60	..	..	..	..
Total divorce rate	per woman	0.17	0.24	0.42	0.48	0.54	0.51	0.51	0.54	0.58	0.61	0.63	..	..	..	..	..	..
Mean age at first marriage	years	24.7	24.0	23.2	22.7	22.4	22.2	21.9	21.8	21.7	21.7	21.8	22.0	22.2	22.3	22.3	22.4	22.6	
<i>Synthetic cohort indicators</i>																			
SMAM	years	..	..	..	..	21.4 ^a	21.8	21.8 ^b	..	..	..	..	..	..	..	..	..	..
Time not married from 20 to 40	years	..	..	..	..	2.7 ^a	2.8	2.6 ^b	..	..	..	..	..	..	..	..	..	..

Note: ^a 1979; ^b 1989

TABLE 2. FERTILITY

Indicator	Unit	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of births	1000	2,782.4	1,990.5	1,903.7	2,106.1	2,202.8	2,375.1	1,988.9	1,794.6	1,587.6	1,379.0	1,408.2	1,363.8	1,304.6	1,259.9	1,283.3	1,214.7	1,266.8
Crude birth rate	per 1000	23.9	16.0	14.8	15.9	16.1	16.8	13.5	12.1	10.7	9.3	9.5	9.2	8.8	8.5	8.7	8.3	..
First births	1000	1,150.1	808.1	970.3	1,137.5	1,191.5	1,070.7	984.5	942.2	884.7	808.5	840.0	814.5	775.3	737.7	754.1	..	..
Extra-marital births	1000	364.8	258.2	201.2	225.1	237.6	285.0	290.6	287.9	272.3	250.7	275.8	288.3	299.9	319.2	345.9	339.3	..
Proportion of first births	per cent	41.3	40.6	51.0	54.0	54.1	45.1	49.5	52.5	55.7	58.6	59.6	59.7	59.4	58.5	58.8	..	..
Proportion of extra-marital births	per cent	13.1	13.0	10.6	10.7	10.8	12.0	14.6	16.0	17.1	18.2	19.6	21.1	23.0	25.3	27.0	27.9	28.0
Total fertility rate	per woman	..	2.12	2.01	1.97	1.90	2.11	1.89	1.73	1.55	1.39	1.40	1.35	1.28	1.23	1.24	1.17	1.21
Proportion of TFR in age group 30+	per cent	..	30.3	27.2	23.4	19.9	21.8	19.0	17.8	16.8	15.7	15.2	15.8	17.0	18.1	19.0	19.7	20.8
Mean age at first birth	years	24.3	24.8	23.3	22.9	22.9	23.2	22.9	22.8	22.8	22.6	22.5	22.6	22.8	22.9	23.0	..	..
Mean age at birth	years	27.7	28.2	26.9	25.7	25.7	25.9	25.2	25.5	25.3	25.0	24.9	24.8	25.1	25.2	25.3	25.6	..

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

Age	1912	1917	1922	1927	1932	1937	1943	1948	1952	1957	1962	1967
20-24	..	36.1	..	..	..	26.9	..	29.7	..	39.5	..	38.1
25-29	75.7	..	..	..	80.2	..	77.1	..	77.5	..	74.2	..
30-34	92.1	..	87.8	..	85.0	..	82.1	..	..
35-39	92.6	..	87.4	..	..	..	..	..
40-44	..	96.3	..	..	..	89.4	..	84.5	85.0	..	..	..

Indicator	1905	1915	1925	1930	1935	1940	1945	1950	1955	1960	1965
Children ever born	3.50	2.70	2.20	2.18	2.12	1.98	1.84	1.88	1.89	1.84	1.65
Proportion childless	11	12	13	..	9	..	9	..	7	..	..
Proportion with 1 child	13	19	23	..	24	..	30	..	26	..	..
Proportion with 2 children	16	23	30	..	39	..	43	..	48	..	..
Proportion with 3+ children	59	46	34	..	27	..	18	..	18	..	..

Figure 1. Annual number of births and crude birth rate, 1960-2000

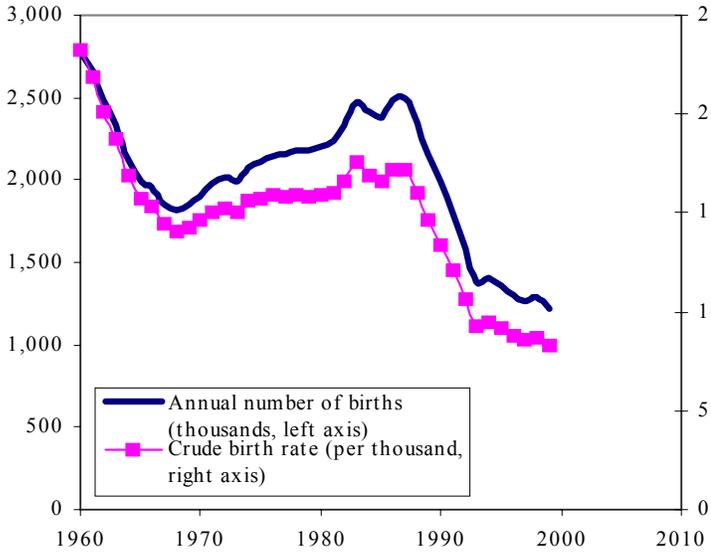


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

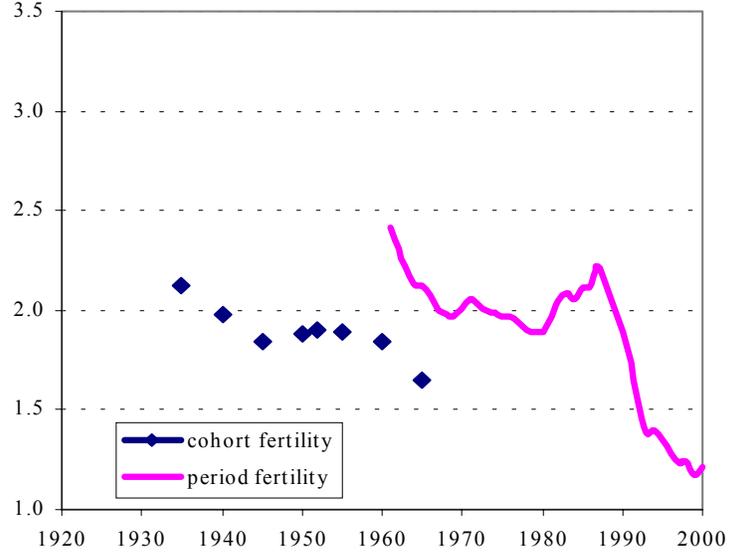


Figure 2. Age-specific fertility rates

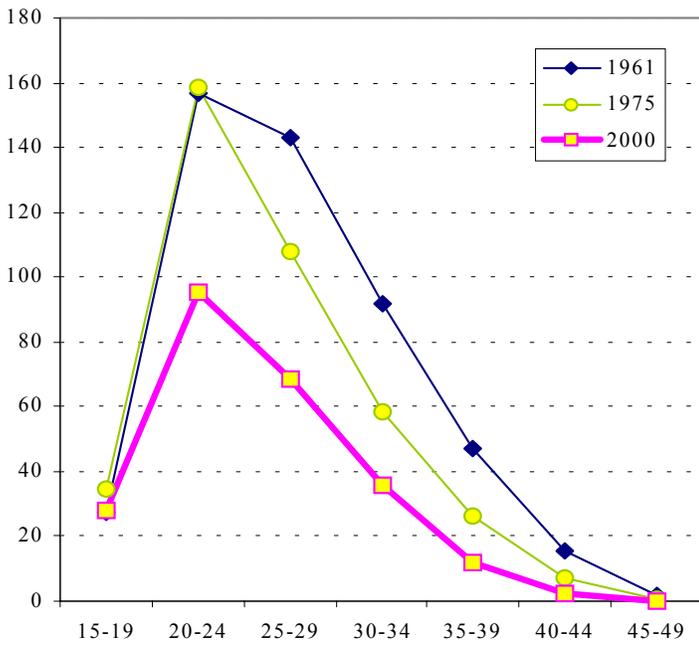


Figure 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to replacement and most recent estimate

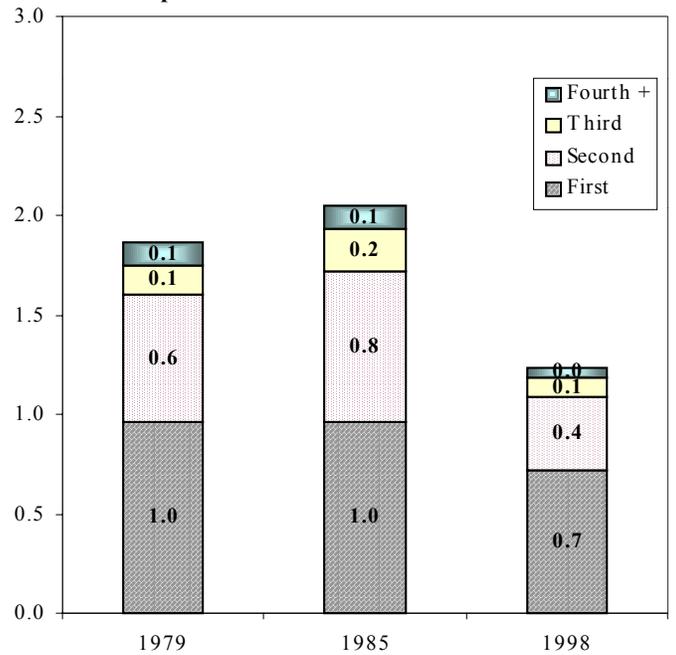


Figure 5. Observed and adjusted total fertility rate, 1980-2000

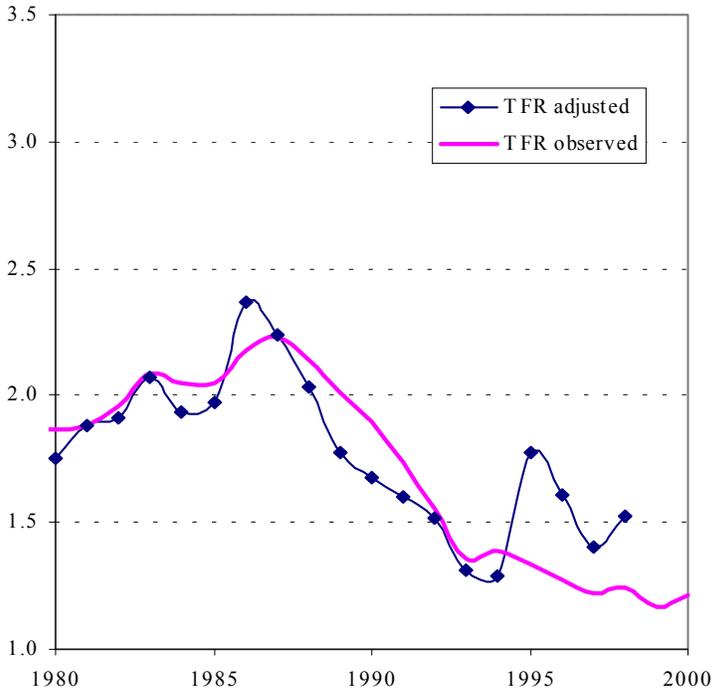


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility, 1961-2000

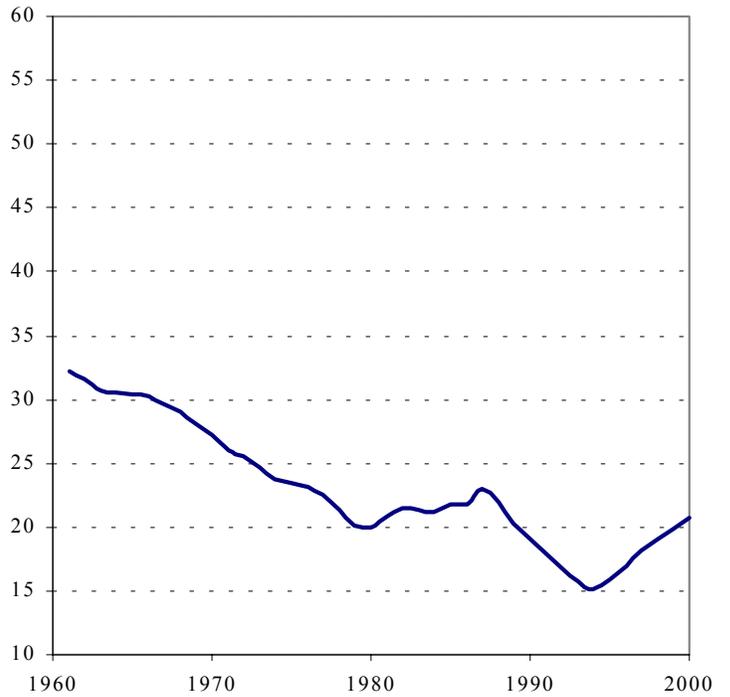


Figure 6. Selected indicators, 1960-1998

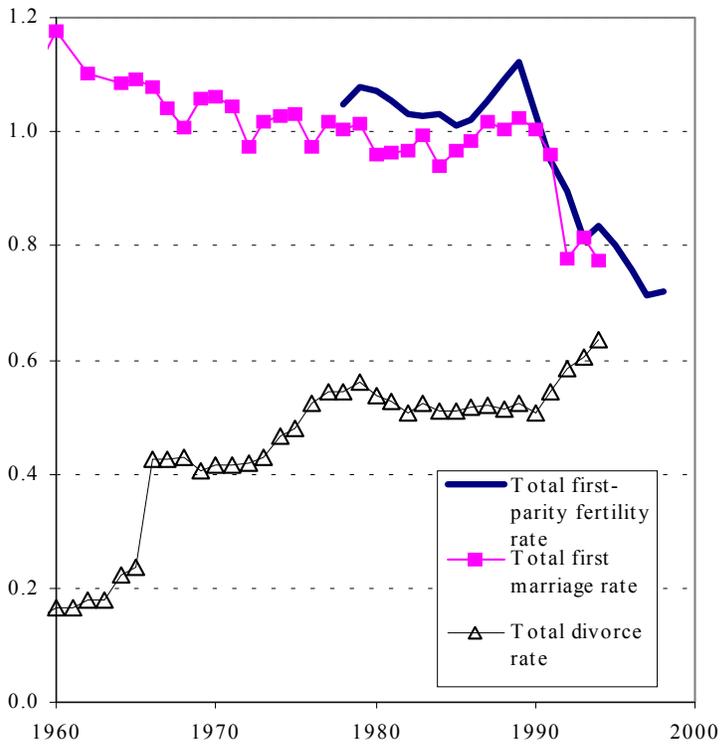
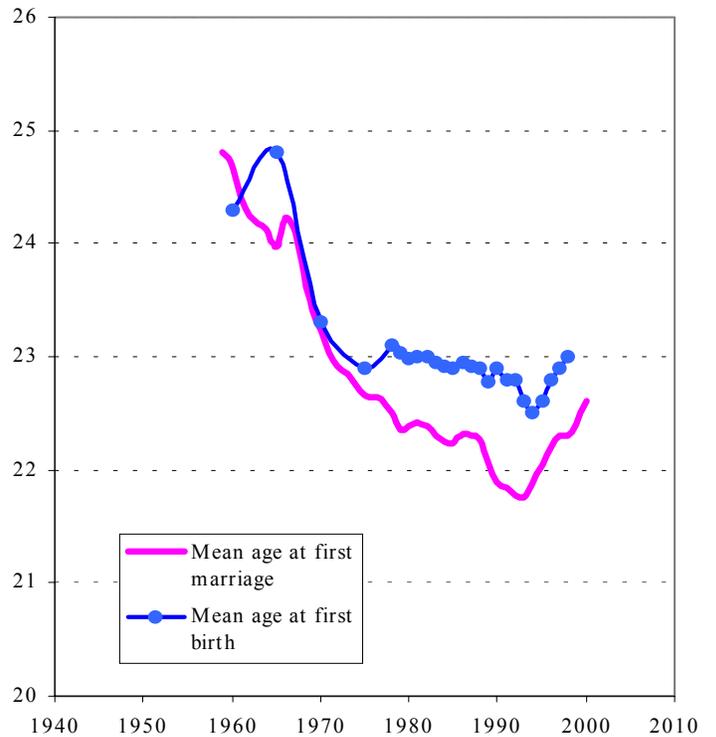


Figure 8. Mean age at first marriage and first birth, 1960-2000



Spain

TABLE 1. AGE-SPECIFIC FERTILITY RATES, 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	..	..	..	..	..	..	..	..
1961	10	103	188	142	81	29	3	2.78
1962	13	103	194	142	81	29	3	2.82
1963	10	103	201	151	82	30	3	2.90
1964	11	115	203	156	87	32	3	3.04
1965	11	112	199	150	86	31	4	2.97
1966	12	114	196	149	85	29	3	2.94
1967	12	112	188	155	89	32	6	2.97
1968	13	124	185	143	82	28	3	2.90
1969	13	126	193	134	80	27	3	2.88
1970	14	123	199	130	77	27	3	2.86
1971	16	130	198	130	74	26	2	2.88
1972	16	137	194	126	73	25	3	2.86
1973	17	138	198	122	69	23	2	2.85
1974	21	139	199	128	65	24	2	2.89
1975	22	136	189	123	64	23	2	2.80
1976	25	144	187	119	61	21	2	2.80
1977	26	139	178	113	56	20	2	2.67
1978	27	132	169	108	54	18	2	2.55
1979	27	124	157	99	50	15	2	2.37
1980	26	116	146	92	46	15	1	2.21
1981	23	106	137	85	42	13	1	2.03
1982	22	97	132	84	40	12	1	1.94
1983	20	87	124	78	38	11	1	1.80
1984	19	81	121	77	36	11	1	1.73
1985	19	74	117	75	34	10	1	1.64
1986	17	67	113	74	31	9	1	1.56
1987	16	63	110	73	30	8	1	1.50
1988	15	59	107	73	29	7	1	1.45
1989	13	55	104	74	28	7	1	1.40
1990	12	50	102	76	28	6	1	1.37
1991	11	46	99	77	28	6	0	1.33
1992	10	42	98	80	29	6	0	1.32
1993	9	37	93	81	29	5	0	1.27
1994	8	32	85	81	30	5	0	1.21
1995	8	28	80	84	31	5	0	1.18
1996	8	28	79	82	30	5	0	1.16
1997	8	25	73	90	35	6	0	1.19
1998	6	24	69	90	37	6	0	1.16
1999	8	25	67	92	40	6	0	1.20
2000	..	..	..	..	..	..	..	1.24

Spain

PERIOD INDICATORS
TABLE 1. NUPTIALITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Annual number of marriages	1000	235.9	227.5	247.5	271.3	220.7	199.7	220.0	218.1	217.5	201.5	196.1	200.7	194.1	196.5	207.0	208.1	209.9	
Annual number of divorces	1000	..	..	..	..	..	18.3	23.2	27.2	26.8	28.9	31.5	33.1	32.6	36.1	36.9	..	..
Crude marriage rate	per 1000	7.7	7.1	7.3	7.6	5.9	5.2	5.7	5.6	5.6	5.2	5.0	5.1	4.9	5.0	..	..	..
Crude divorce rate	per 1000	..	..	..	..	..	0.5	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	..	..	..
Total first marriage rate	per woman	..	0.99	1.01	1.05	0.76	0.64	0.69	0.67	0.67	0.61	0.60	0.60	0.58	0.58	0.61	0.61	0.61	
Total divorce rate	per woman	..	..	..	..	..	0.08	0.10	0.12	0.12	0.13	0.14	0.15	0.15	0.15	..	..	..
Mean age at first marriage	years	..	25.1	24.5	23.9	23.4	24.2	25.3	25.6	25.9	26.2	26.5	26.8	27.1	27.3	27.5	27.7	..	
<i>Synthetic cohort indicators</i>																			
SMAM	years	25.0	..	23.7	..	..	..	..	26.0	..	..	..	..	..	..	..	..	..
Time not married from 20 to 40	years	6.4	..	5.4	..	..	..	..	6.7	..	..	..	..	..	..	..	..	..

TABLE 2. FERTILITY

<i>Indicator</i>	<i>Unit</i>	1960	1965	1970	1975	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Annual number of births	1000	654.5	667.7	656.1	669.4	571.0	456.3	401.4	396.0	396.7	385.8	370.1	363.5	362.6	369.0	365.2	380.1	395.8
Crude birth rate	per 1000	21.5	20.9	19.4	18.8	15.3	11.9	10.3	10.2	10.2	9.9	9.5	9.3	9.2	9.4	9.3	9.6	9.9
Proportion of first births	per cent	..	..	..	..	42.8	46.4	50.3	51.3	51.9	52.1	51.8	51.2	49.7	50.9	51.5	52.1	..
Proportion of extra-marital births	per cent	2.3	1.6	1.3	2.0	3.9	8.0	9.6	10.0	10.5	10.8	10.8	11.1	11.7	13.1	14.5	16.3	..
TFR	per woman	..	2.97	2.86	2.80	2.21	1.64	1.37	1.33	1.32	1.27	1.21	1.18	1.16	1.19	1.16	1.20	1.24
Proportion of TFR in age group 30+	per cent	..	45.7	41.4	38.0	34.8	36.2	40.1	41.6	43.4	45.4	48.2	50.8	50.9	55.2	57.4	58.2	57.4
Mean age at first birth	years	..	..	..	25.1	25.0	25.8	26.8	27.1	27.5	27.8	28.1	28.4	28.5	28.7	28.9	29.0	..
Mean age at birth	years	..	30.0	29.6	28.7	28.2	28.4	28.9	29.0	29.3	29.5	29.7	30.0	30.2	30.4	30.6	30.7	30.6

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

<i>Age</i>	1933	1938	1943	1948	1953	1959	1964	<i>Indicator</i>	1933	1940	1945	1950	1955	1960	1963
20-24	..	6.6	..	9.5	..	18.6	..	Children ever born	2.69	2.59	2.43	2.19	1.90	1.74	1.59
25-29	46.3	..	54.0	..	63.5	..	42.4	Proportion childless	8	8	6	10	11	11	16
30-34	..	80.9	..	82.7	..	74.4	..	Proportion with 1 child	13	8	10	16	22	26	28
35-39	86.7	..	87.6	..	84.9	..	..	Proportion with 2 children	28	24	36	42	44	46	43
40-44	..	89.6	..	88.4	..	..	..	Proportion with 3+ children	51	61	48	32	23	16	13

Figure 1. Annual number of births and crude birth rate, 1950-2000

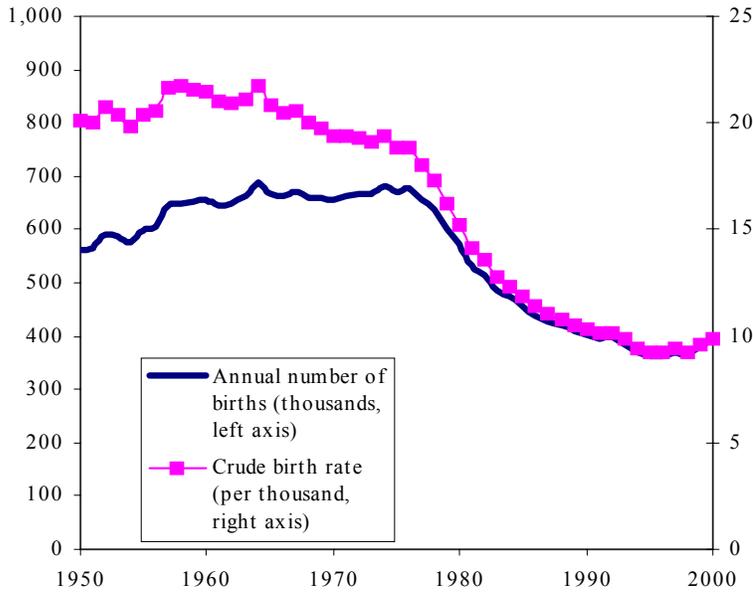


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

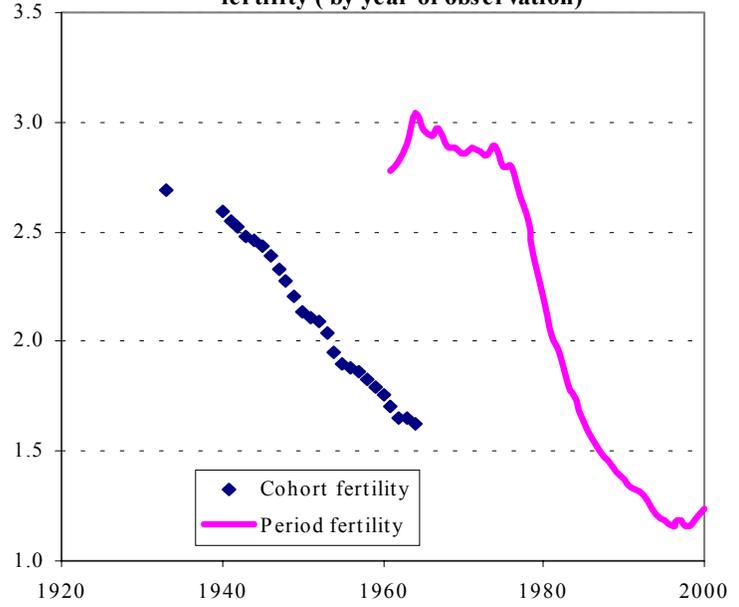


Figure 2. Age-specific fertility rates

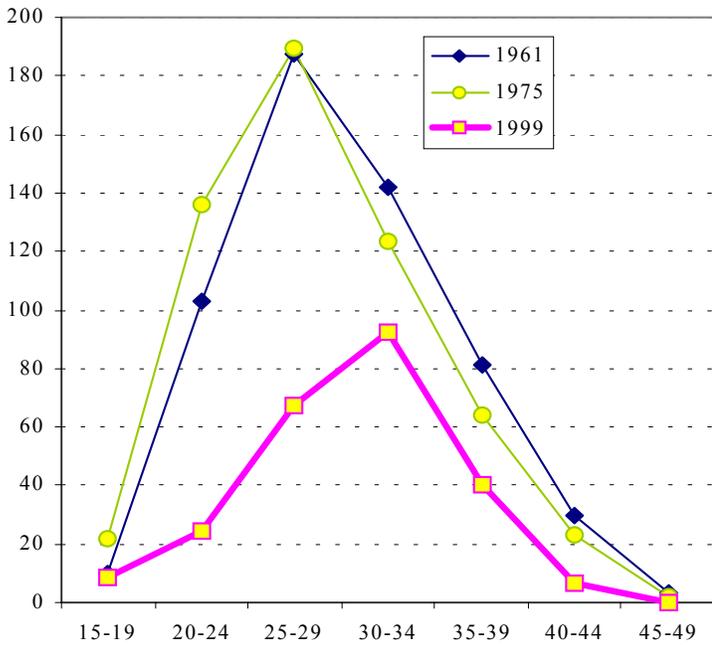


Figure 4. Order-specific period total fertility rates: earliest available estimate, at TFR close to replacement and most recent estimate

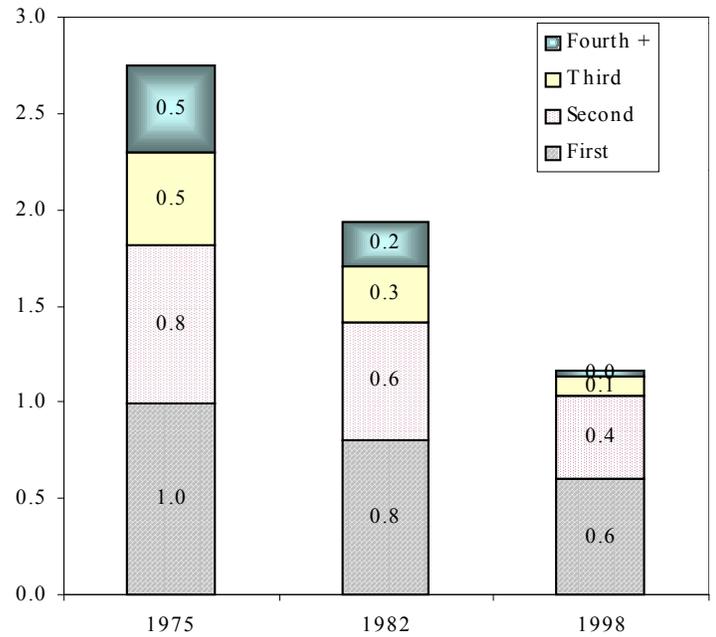


Figure 5. Observed and adjusted total fertility rate, 1961-2000

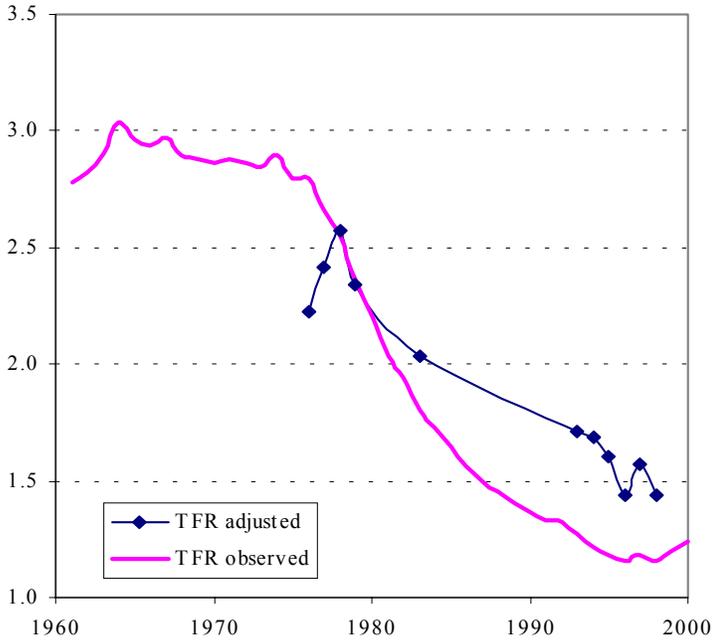


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility, 1961-1999

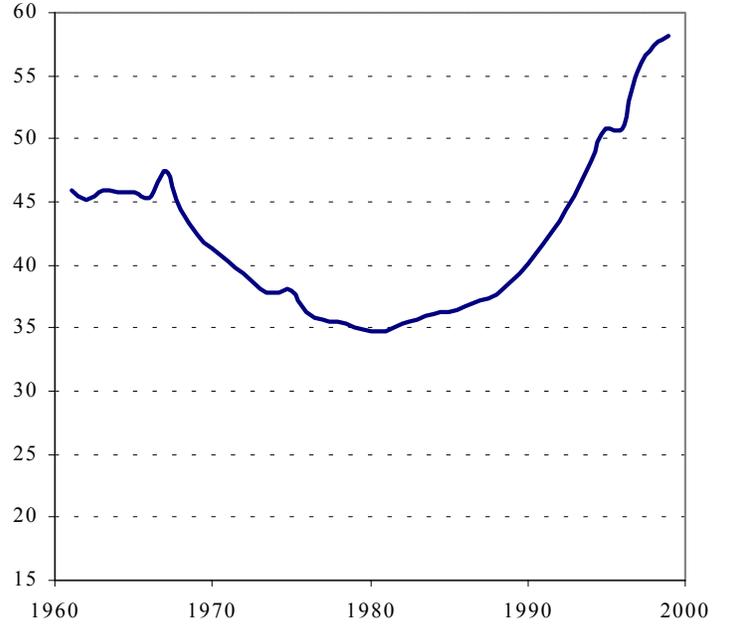


Figure 6. Selected indicators, 1961-1999

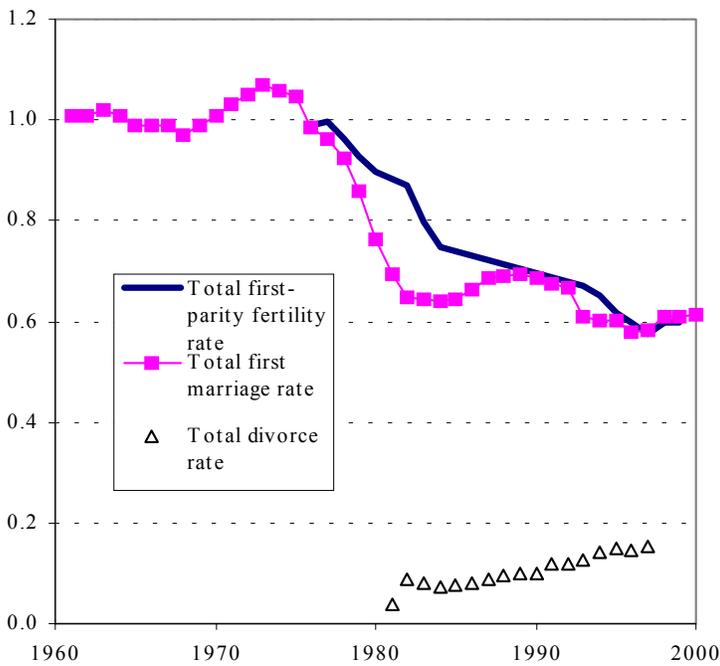
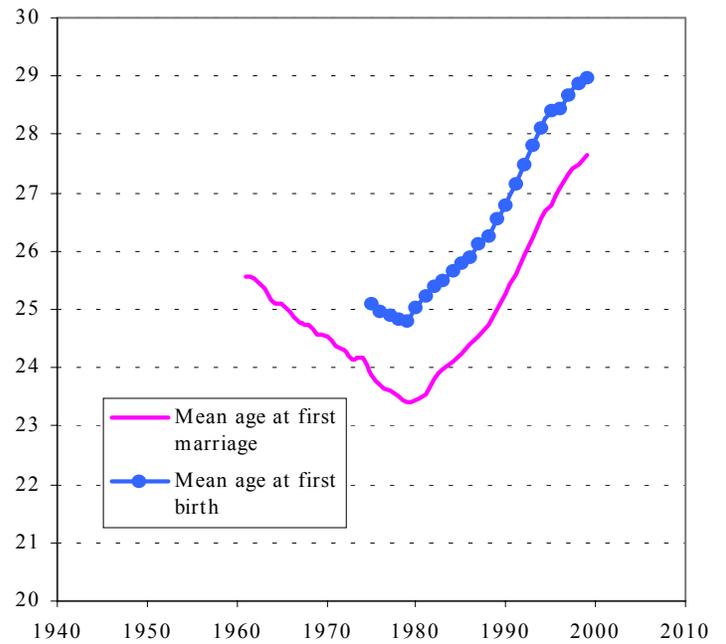


Figure 8. Mean age at first marriage and first birth, 1961-1998



United States

TABLE 1. AGE-SPECIFIC FERTILITY RATES, 1960-2000

<i>Year</i>	<i>15-19</i>	<i>20-24</i>	<i>25-29</i>	<i>30-34</i>	<i>35-39</i>	<i>40-44</i>	<i>45-49</i>	<i>TFR</i>
1960	40	258	197	113	56	16	1	3.40
1961	39	254	198	113	56	16	1	3.38
1962	38	244	192	109	53	15	1	3.25
1963	36	231	186	106	51	14	1	3.13
1964	35	220	179	104	50	14	1	3.01
1965	34	197	162	95	46	13	1	2.74
1966	72	186	149	86	42	12	1	2.73
1967	69	174	143	79	39	11	1	2.57
1968	67	168	140	75	36	10	1	2.48
1969	67	166	143	74	33	9	1	2.47
1970	68	168	145	73	32	8	1	2.47
1971	65	150	134	67	29	7	0	2.26
1972	62	130	118	60	25	6	0	2.00
1973	59	120	112	56	22	5	0	1.87
1974	58	118	112	54	20	5	0	1.83
1975	56	113	108	52	20	5	0	1.77
1976	53	110	106	54	19	4	0	1.73
1977	53	113	111	56	19	4	0	1.78
1978	52	110	109	58	19	4	0	1.75
1979	52	113	111	60	20	4	0	1.80
1980	53	115	113	62	20	4	0	1.83
1981	53	112	112	61	20	4	0	1.81
1982	53	111	111	64	21	4	0	1.82
1983	52	108	109	65	22	4	0	1.80
1984	51	107	108	67	23	4	0	1.80
1985	51	109	111	69	24	4	0	1.84
1986	51	108	109	69	24	4	0	1.83
1987	51	109	111	71	26	4	0	1.86
1988	54	112	113	74	28	5	0	1.93
1989	58	115	117	76	30	5	0	2.01
1990	61	117	120	81	32	6	0	2.08
1991	64	116	118	80	32	6	0	2.07
1992	62	115	117	80	33	6	0	2.07
1993	61	113	116	81	33	6	0	2.05
1994	60	111	114	82	34	6	0	2.04
1995	58	110	112	83	34	7	0	2.02
1996	56	110	113	84	35	7	0	2.03
1997	53	110	114	85	36	7	0	2.03
1998	52	111	116	87	37	7	0	2.06
1999	50	111	118	90	38	7	1	2.07
2000	49	112	121	94	40	8	0	2.13

United States

PERIOD INDICATORS
TABLE 1. NUPTIALITY

Indicator	Unit	1960	1965	1970	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000
Annual number of marriages	1000	1,523.4	1,800.2	2,158.8	2,152.7	2,390.3	2,412.6	2,448.0	2,336.0	2,344.0	2,384.0	2,244.0	..	..
Annual number of divorces	1000	393.0	479.0	708.0	1,036.0	1,189.0	1,190.0	1,175.0	1,169.0	1,150.0	1,163.0	1,135.0	..	..
Crude marriage rate	per 1000	8.2	9.0	10.3	9.8	10.3	9.9	9.6	8.7	8.6	8.6	8.0	..	..
Crude divorce rate	per 1000	2.1	2.4	3.4	4.7	5.1	4.9	4.6	4.3	4.2	4.2	4.1	..	..
Total first marriage rate	per woman	..	..	..	..	..	..	..	..	..	..	..	..	..
Total divorce rate	per woman	..	..	..	..	..	..	..	..	..	..	..	..	..
Mean age at first marriage: females	years	..	..	21.8	23.1	24.1	..	..	26.6	..	..	..	..	..
<i>Synthetic cohort indicators</i>														
SMAM	years	20.3	..	21.5	..	23.0	..	25.0	..	..	..	26.4	..	..
Time not married from 20 to 40	years	2.3	..	2.8	..	4.2	..	5.7	6.1	..	..	6.5	..	..

TABLE 2. FERTILITY

Indicator	Unit	1960	1965	1970	1975	1980	1985	1990	1995	1996	1997	1998	1999	2000
Annual number of births	1000	4,257.9	3,760.4	3,731.4	3,144.2	3,612.3	3,760.6	4,158.2	3,899.6	3,891.5	3,880.9	3,941.6	3,959.4	4,058.8
Crude birth rate	per 1000	22.9	18.8	17.8	14.3	15.6	15.4	16.3	14.4	14.3	14.1	14.1	14.0	14.2
First births	1000	..	..	1,430.7	1,319.1	1,545.6	1,554.8	1,638.5	..	1,589.5	1,573.8	1,576.7	1,604.6	..
Extra-marital births	1000	224.3	203.6	398.7	447.9	665.7	828.2	1106.1	1254.0	1260.8	1257.4	1292.8	1306.6	..
Proportion of first births	per cent	..	..	38.3	42.0	42.8	41.3	39.4	..	40.8	40.6	40.0	40.5	..
Proportion of extra-marital births	per cent	5.3	5.4	10.7	14.2	18.4	22.0	26.6	32.2	32.4	32.4	32.8	33.0	..
Total fertility rate	per woman	3.40	2.74	2.47	1.77	1.83	1.84	2.08	2.02	2.03	2.03	2.06	2.07	2.1
Proportion of TFR in age group 30+	per cent	27.2	28.3	23.0	21.7	23.4	26.3	28.4	30.6	31.2	31.7	32.2	32.8	33.5
Mean age at first birth	years	22.4	22.4	..	22.8	23.5	24.0	..	24.6	24.7	..	25.0	..	24.9
Mean age at birth	years	27.0	27.2	26.1	25.8	26.0	26.4	26.6	26.8	26.9	27.0	27.1	27.3	27.4

COHORT INDICATORS

TABLE 4. PROPORTION OF EVER MARRIED WOMEN, BY AGE AND BIRTH COHORT

TABLE 5. SELECTED FERTILITY INDICATORS, BY BIRTH COHORT

Age	1933	1938	1943	1948	1953	1958	1963	1968	1973	Indicator	1933	1937	1942	1947	1952	1957	1961
20-24	..	71.6	..	63.7	..	48.7	..	35.4	33.2	Children ever born	3.09	2.99	2.45	2.05	1.96	1.87	1.85
25-29	89.5	..	87.8	..	78.0	..	68.0	64.7	..	Proportion childless	10.2	10.1	11.4	16.0	17.5	19.6	19.8
30-34	..	92.6	..	89.2	..	81.8	81.0	..	..	Proportion with 1 child	9.6	9.6	12.6	16.9	17.6	16.8	16.8
35-39	94.1	..	93.8	..	90.0	87.4	..	..	..	Proportion with 2 children	21.7	24.6	32.9	35.0	35.2	35.5	34.7
40-44	..	..	..	..	91.3	..	..	..	..	Proportion with 3+ children	58.5	55.7	43.1	32.1	29.7	28.0	28.7

Figure 1. Annual number of births and crude birth rate, 1950-2000

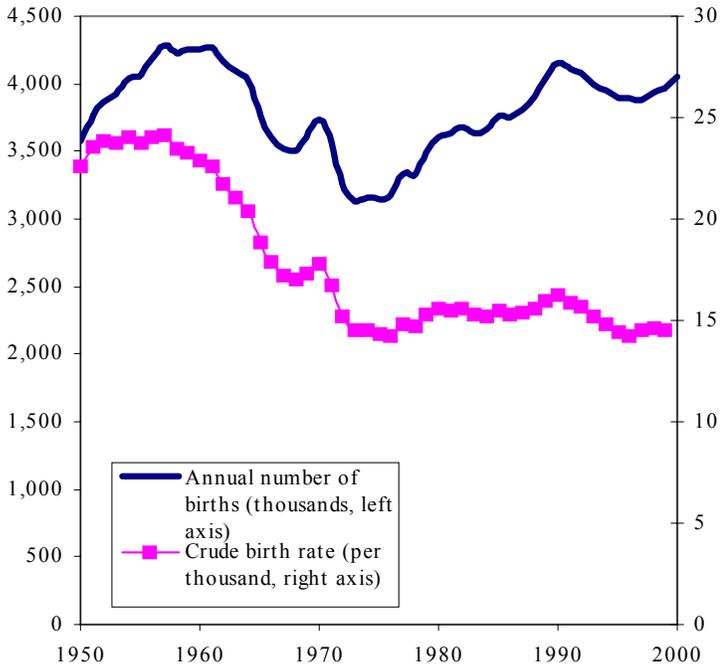


Figure 3. Cohort fertility (by year of birth) and period fertility (by year of observation)

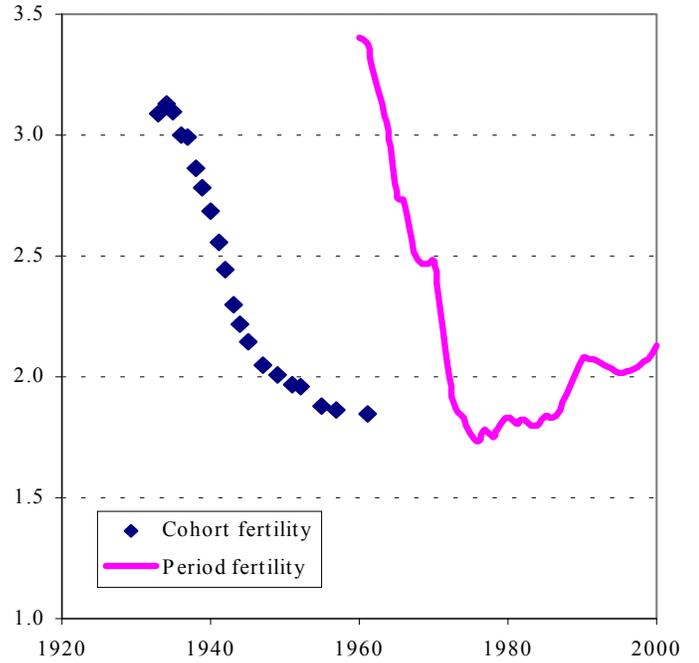


Figure 2. Age-specific fertility rates

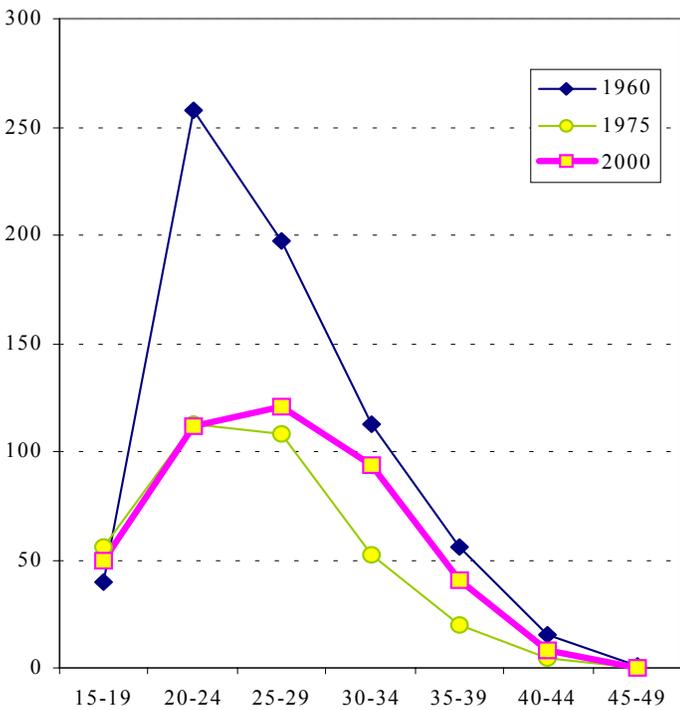


Figure 4. Order-specific period total fertility rates: earliest and most recent estimate

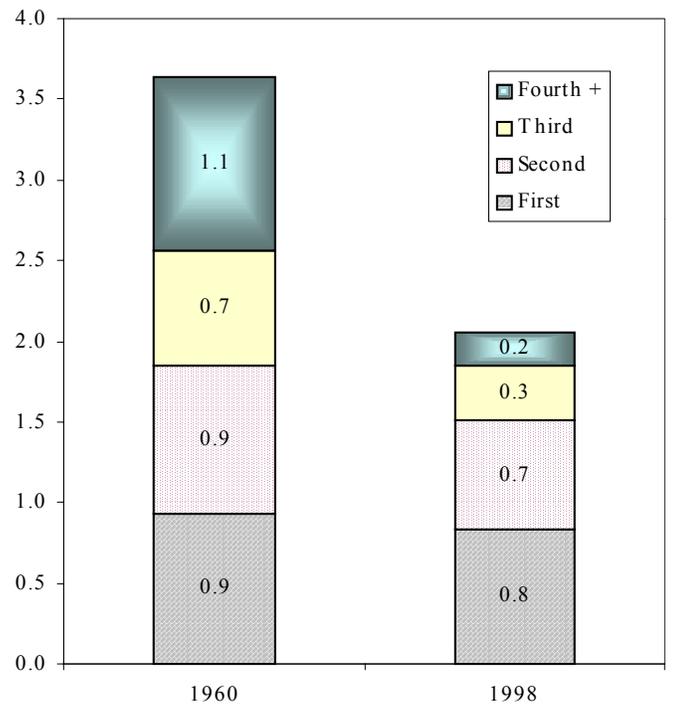


Figure 5. Observed and adjusted total fertility rate, 1960-2000

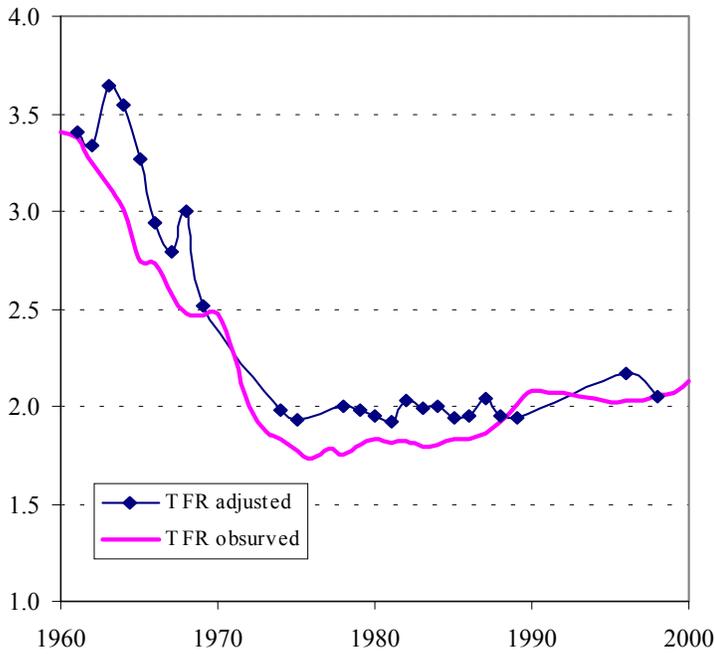


Figure 7. Percentage of fertility rates of women aged 30 and older in total fertility

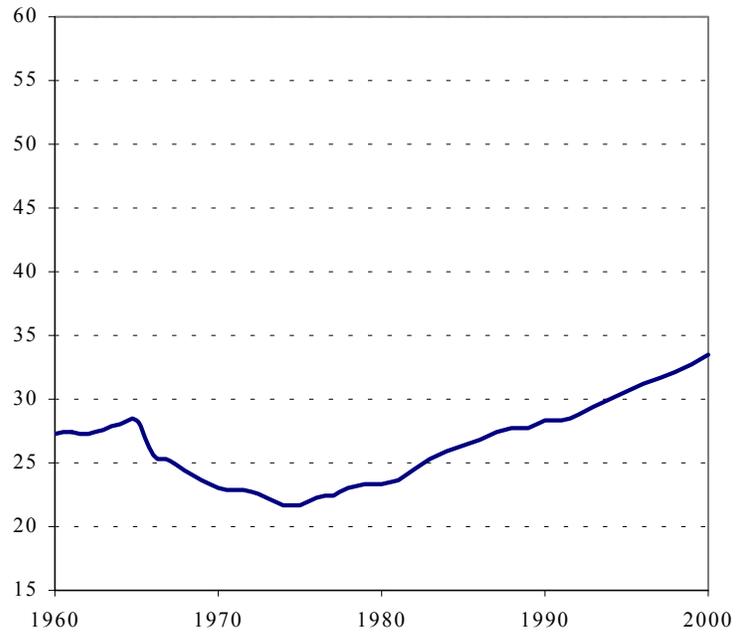


Figure 6. Total first-parity fertility rate, 1960-1998

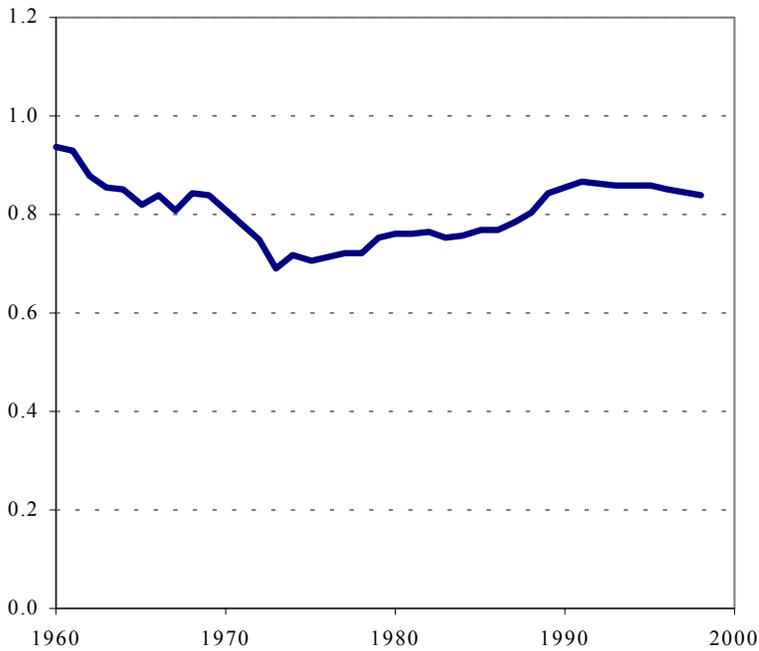


Figure 8. Mean age at first marriage and first birth, 1960-2000

