

R A N D C O N F E R E N C E P R O C E E D I N G S

Russia's Demographic "Crisis"

*Edited by Julie DaVanzo
with the assistance of Gwendolyn Farnsworth*

RAND Center for Russian and Eurasian Studies

***Center for Demography and Human Ecology, Institute of
Economic Forecasting, Russian Academy of Sciences***

***RAND Center for the Study of the Family in
Economic Development***

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Preface

This volume is an outgrowth of a June 5–6, 1995 conference at which a group of Russian demographers presented the results of their pioneering research on Russia's demographic "crisis" to American colleagues from RAND, the University of California at Los Angeles, the University of Southern California, and the International Programs Center of the U.S. Bureau of the Census. This conference was jointly sponsored by RAND's Center for Russian and Eurasian Studies and the Center for Demography and Human Ecology of the Russian Academy of Science's Institute of Economic Forecasting as part of a multi-year program of collaborative research, training, and institution-building on which they embarked in October, 1994.

On behalf of both of these centers, we would like to thank the Carnegie Corporation of New York for its support of this program. We would also like to give special thanks to Dr. Julie DaVanzo, Director of RAND's Center for the Study of the Family in Economic Development, who organized the conference at which the reports in this volume were first presented and, with the help of Gwendolyn Farnsworth, edited these reports for publication. Finally, we would like to thank Victor Agadjanian and Jane Siegel for their invaluable assistance in making this publication possible.

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Contents

Preface	iii
Figures	vii
Tables	xi
Introduction	
<i>by Julie DaVanzo</i>	xiii
1. FAMILY, FERTILITY, AND DEMOGRAPHIC DYNAMICS IN RUSSIA: ANALYSIS AND FORECAST	
<i>by Anatoly G. Vishnevsky</i>	1
Introduction	1
Modernization of the Family	2
Size and Composition of the Family and the Household	4
Marital Status and Living Arrangements	7
Fertility and Family Planning	13
Fertility Decline and Slower Population Growth	16
Looking Into the Future	18
Conclusion	23
Discussants' Comments	35
2. FERTILITY DECLINE AND RECENT CHANGES IN RUSSIA: ON THE THRESHOLD OF THE SECOND DEMOGRAPHIC TRANSITION	
<i>by Sergei V. Zakharov and Elena I. Ivanova</i>	36
Introduction	36
Russia's Natural Increase Becomes Negative: Crises, Public Opinion, and Historical Analogies	37
Brief History of Russia's Fertility Transition Through the Lens of the European Experience	39
Post-War Fertility in Russia vs. the Developed World: Is Russia European?	42
Completed Fertility in Post-War Generations	44
Explaining Russia's Fertility Decline in the 1980s and Early 1990s	47
Trends in Russian Fertility in 1979-1993: A Cohort Analysis	50
The Impact of Pronatalist Policies of the 1980s on Current Fertility Rates	52
The Second Demographic Transition and Prospects for Russian Fertility	54
The Concept of the Second Demographic Transition as an Assumption in Fertility Projections for Russia	56
Conclusions	59
Sources of Data Presented in Graphs	62
Discussants' Comments	83

3.	FAMILY PLANNING AND INDUCED ABORTION IN POST-SOVIET RUSSIA OF THE EARLY 1990S: UNMET NEEDS IN INFORMATION SUPPLY	
	<i>by Andrej A. Popov</i>	84
	Introduction	84
	Family Planning Statistics in Post-Soviet Russia	89
	Conclusion	107
	References	109
	Discussants' Comments	112
4.	THE RUSSIAN EPIDEMIOLOGICAL CRISIS AS MIRRORED BY MORTALITY TRENDS	
	<i>by Vladimir M. Shkolnikov and France Meslé</i>	113
	Introduction	113
	General Trends in Life Expectancy at Birth in Russia	115
	Russian Mortality: 1938–39 and Postwar Improvements	117
	Mortality Trends Since 1965: The New Epidemiological Crisis	121
	Russian Mortality Trends in the International Context	127
	Some Speculations on Factors Contributing to the Russian Epidemiological Crisis of the 1990s	144
	References	148
	Sources of Statistical Data	150
	Discussants' Comments	162
5.	THE CRISIS OF RUSSIAN HEALTH CARE AND ATTEMPTS AT REFORM	
	<i>by Boris A. Rozenfeld</i>	163
	Introduction	163
	Current Policy Issues	165
	The Health Care Financing Crisis	166
	Conclusions	172
	Discussants' Comments	174
6.	THE DETERMINANTS AND IMPLICATIONS OF AN AGING POPULATION IN RUSSIA	
	<i>by Sergei A. Vassin</i>	175
	Introduction	175
	Data	175
	Population Growth	176
	Population Composition	178
	Population Aging in Russia	180
	Aging in Russia: International Comparisons	183
	Russia's Aging Population: Discussion	184
	Conclusions	186
	References	188
	Discussants' Comments	201
	Appendix	
	A. Conference Agenda	202
	B. Conference Participants	204

Figures

1.1.	Age-Specific Fertility Rates and Total Fertility Rate in Russia, 1959–1994	25
1.2a.	Total Fertility Rate in Russia and Selected Western Countries, 1950–1993, Russia and Countries of Earlier Demographic Transition	26
1.2b.	Total Fertility Rate in Russia and Selected Western Countries, 1950–1993, Russia and Countries of More Recent Demographic Transition	26
1.3.	Fertility Decline and Evolution of Mean Age of Mother	27
1.4.	Population Increase By Components in Russia, 1950–1993	28
1.5.	Net Reproduction Rate in Russia, 1959–1994	29
1.6.	Number of Births and Number of Women of Selected Age Groups, Russia, 1994–2015, Forecast of the Center for Demography and Human Ecology, Medium Variant	30
1.7.	Number of Births in Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1992–2015, Medium Variant	31
1.8.	Number of Births, Number of Deaths, and Natural Increase in Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, Medium Variant	32
1.9.	Net Immigration to Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, High and Medium Variants	33
1.10.	Various Estimates of the Population of Russia, 1994–2015, Forecast of the Center for Demography and Human Ecology, Scenarios With Medium and High Migration	34
1.11.	Various Estimates of the Population of Russia, 1959–2015, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, Scenarios With Medium and High Migration	34
2.1.	Trends in Total Fertility Rate in Russia and Other Countries of Western and Eastern Europe, 1880–1990	64
2.2.	Trends in Total Fertility Rate in Terms of Comparable Time Schedule in Russia and Other Countries of Western and Eastern Europe During the Demographic Transition	64
2.3.	Completed Fertility of Birth Cohorts, 1890–1960, in the USSR and Russia	65
2.4.	Postwar Trends in Total Period Fertility Rate in Russia Against the Background of Different Groups of Countries, 1945–1993	66
2.5.	Trends in Completed Fertility in Russia Against the Background of the Different Groups of European Countries, Birth Cohorts of 1940–1960	67

2.6.	Trends in Mean Age of Mother and Total Fertility Rate in Russia, 1959–1993	68
2.7.	Trends in Age-Specific Fertility Rates and Total Fertility Rate in Russia, 1958–1993	69
2.8.	Percentage of Non-Marital Births Among Live Births, 1959–1993	70
2.9.	Distribution of Women by Number of Children Born by Age 50 in Different Birth Cohorts in Russia (estimates for birth cohorts of 1945 and 1955)	71
2.10.1.	Trends in Total Fertility Rate and Order-Specific Total Fertility Rate in Russia, 1979–1993, 1st–4th Birth Orders	72
2.10.2.	Trends in Total Fertility Rate and Order-Specific Total Fertility Rate in Russia, 1979–1993, 5th–10th Birth Orders	72
2.11.	Trends in Period Parity Progression Ratios in Russia, 1979–1993, 2nd–6th Birth Orders	72
2.12.	Trends in Mean Age of Mother at Childbearing For All and 1st–5th Birth Orders in Russia, 1979–1993	73
2.13.	Trends in Standard Deviation of Mean Age of Mother at Childbearing For All and 1st–5th Birth Orders in Russia, 1979–1993	73
2.14.	Trends in Conventional Total Fertility Rate and Parity-Specific Total Fertility Rate for 1st–3rd Birth Orders in Russia, 1979–1993	74
2.15.	Cumulative Fertility at Each Age For Different Birth Cohorts in Russia, 1979–1993	75
2.16.	Cumulated Frequency of First Births at Each Age for Different Birth Cohorts in Russia, 1979–1993	76
2.17.	Cumulated Frequency of Second Births at Each Age for Different Birth Cohorts in Russia, 1979–1993	77
2.18.	Cumulated Frequency of Third Births at Each Age for Different Birth Cohorts in Russia, 1979–1993	78
2.19.	Cumulated Frequency of Fourth Births at Each Age for Different Birth Cohorts in Russia, 1979–1993	79
2.20.	Cumulated Frequency of Fifth Births at Each Age for Different Birth Cohorts in Russia, 1979–1993	80
2.21.	Trends in Abortion Indicators in Russia, 1959–1992	81
2.22.	Trends in Total Fertility Rate (TFR) and Total Abortion Rate (TAR) in Russia, 1970–1993	81
2.23.	Actual and Projected Age-Specific Fertility Rates in Russia, 1992–2015	82
4.1.	Ratio of Age-Specific Death Rates of the Russian Population (1938–1939) to Corresponding Death Rates of the U.S. Population (1939–1941)	152
4.2.	Proportion of Four Principal Classes of Causes of Death for Males, by Age in the Russian Urban Population (1938) and in the United States (1940)	152
4.3.	Variation in Number of Deaths by Month in the 1930s and the 1950s: Russia and the USSR	153
4.4.	Ratios of Russian Age-Specific Death Rates in 1938–1939 to Corresponding Values from Coale-Demeny Model Life Tables	154

4.5.	Infant Mortality Rate in Russia: 1940–1993	154
4.6.	Probabilities of Survival: From Birth to Age 15, from 15–45, from 45–65, and from 65–80: Russia, 1965–1993	155
4.7.	Ratios of Male Age-Specific Death Rates to Corresponding Death Rates from Coale-Demeny Model Life Tables (Families West and South)	155
4.8.	Trends in Russian Male Mortality in Active Ages: All Causes Combined and Principal Causes of Death	156
4.9.	Time Trends in Standardized Death Rates for All Ages: Russia, European Community Countries, Countries of Central and Eastern Europe, and United States	157
4.10.	Contributions of Different Ages and Causes of Death to the Total Difference in Life Expectancy Between the United States and Russia in 1989, and Between Hungary and Russia in 1991	158
4.11.	Proportions of Decrease and Increase in Russian Male ASDRs Associated With the Anti-Alcohol Campaign, 1985–1987	159
4.12.	Age-Specific Death Rates in 1991, 1992, and 1993, Divided by Corresponding Death Rates in 1987, by Gender	160
4.13.	Male Death Rates for Different Ages: 1970–1993	160
4.14.	Real Per Capita Income, Daily Protein Intake, Number of Physicians and Hospital Beds per 10,000, and Real Alcohol Consumption, Each Compared to the Basic Level of 1970: Russia, 1970–1994	161
6.1.	Annual Population Growth Rates, Russia, 1959–2015	189
6.2.	Components of Population Growth, Russia, 1959–2015	189
6.3.	Population Pyramid: Total Russian Population, 1989	190
6.4.	Population Pyramid: Total Russian Population, 2015	190
6.5.	Sex Ratio For Persons Age 60 and Over, Russia, 1959–2015	191
6.6.	Percentages of Five Broad Age Groups, Russia, 1959–2015	192
6.7.	Age Structure Ratios, Russia, 1959–2015	193
6.8.	Median Age, Russia, 1959–2015	194
6.9.	Index of Aging in Russia, 1959–2015	194
6.10.	Percent Elderly in Developed Countries, 1990–2015	195
6.11.	Percent Oldest Old in Developed Countries	196
6.12.	Index of Aging in Developed Countries, 1990–2015	197
6.13.	Percent Working-Age Population (Ages 15–64) Who Are Aged	198
6.14.	Index of Aging of Working-Age Population	199
6.15.	Labor Force Participation Rates for Russia, 1989	200

Tables

1.1. Selected Characteristics of Families in Russia, 1939–1989	2
1.2. Male and Female Labor Participation Rate by Age Group, 1959–1989	3
1.3. Percentage of Men and Women With Secondary and Higher Education, by Birth Cohort	3
1.4. Percentage of Persons Living in a Family, 1959–1989	4
1.5. Family Distribution by Size, 1939–1989	5
1.6. Households, Frequency Distribution by Size, 1994	6
1.7. Different Types of Families, 1926–1989	6
1.8. Number Currently Married by Age and Sex, 1959–1989, Per 1,000 Persons of Every Sex and Age Group	8
1.9. Cohabitation By Age and Sex, Per 1,000, 1994	9
1.10. Marriages and Divorces, 1950–1994	10
1.11. Percentage of Remarried to All Getting Married, 1980–1993	11
1.12. Divorces, by Number of Common Children Under 18, 1988–1993	11
1.13. Total Fertility Rate, 1961–1994	14
1.14. Registered Abortions in Russia, 1970–1993	16
1.15. Components of Population Size Change in Russia, 1951–1994	17
1.16. Total Fertility Rate, Various Forecasts to 2015	19
1.17. Evolution of Life Expectancy, Various Forecasts to the Year 2015	20
1.18. Annual Net Immigration, Various Forecasts to the Year 2015	21
1.19. Population of Russia, Various Forecasts to the Year 2015	23
2.1. Cumulative Average Number of Children Per Women By Age in 1980, 1987, 1990, and 1993 (cohort estimations)	53
3.1. Grounds for Legal Abortion in the USSR and Selected Countries	87
3.2. Conditions for Legal Abortions in the USSR and Russian Federation, 1920–1993	88
3.3. Officially Registered Induced Abortion on Demand in the Russian Federation, by Types of Abortion, 1970–1992*	92
3.4. Officially Registered Abortions in the USSR, 1957–1990*	96
3.5. Officially Registered Induced Abortion Rates in Russia (1992) and Several European Countries (Circa Late 1980s–Early 1990s)	97
3.6. Officially Registered Induced Abortion Rates Per 1,000 Women Aged 15–49 in the Russian Federation, by Economic Region, 1970–1992	98
3.7. Officially Registered Early Abortion Rates Per 1,000 Women Aged 15–49 in the Russian Federation, by Economic Region, 1990–1992	99
3.8. Officially Registered Users of Intrauterine Devices and Hormonal Oral Contraception, Per 1,000 Women Aged 15–49, by Provinces of the Russian Federation, 1992	101

3.9.	Officially Registered Voluntary Contraceptive Sterilizations, by Province in the Russian Federation, 1991–1992	104
3.10.	Abortion Rates in the Soviet Republics, 1990	105
3.11.	Main Characteristics of Abortions in the Russian Federation, 1991	106
3.12.	Abortions in the Russian Federation, by Gestational Age, 1991	106
3.13.	Abortions in the Russian Federation, by Age of Women, 1991	106
4.1.	Temporal Changes in Life Expectancy at Birth in Russia, United States, and Japan, by Gender	116
4.2.	Monthly Index of Mortality in Russia and the USSR in the 1930s and the 1950s	120
4.3.	Components of Life Expectancy Increase in 1938–1939 to 1956, by Age	121
4.4.	Components of Life Expectancy Change in 1965–1980, by Age and Cause of Death	123
4.5.	Standardized Death Rates, by Selected Causes of Death in Russia and in the United States: Males, Ages 15–64	125
4.6.	Differences in Life Expectancy Between Females and Males, by Cause of Death	130
4.7.	Changes in Life Expectancy of Russian Population by Cause of Death: 1980–1987 and 1987–1992, by Gender	132
4.8.	Recent Increase in Total Deaths for Both Sexes: Observed Values Versus Expected Values, Based on Census Population of 1989	135
4.9.	Components of Life Expectancy Decrease in 1992–1993, by Age and Cause of Death	137
4.10.	Standardized Death Rates for Selected Causes of Death: 1980, 1991, 1992, 1993 (per 100,000)	139
4.11.	Standardized Death Rates for “Avoidable” Causes of Death: 1965, 1980, 1985, 1990–1993 (per 100,000)	142

Introduction¹

*by Julie DaVanzo*²

During the last several years, the Russian public and Russian policymakers have been becoming increasingly concerned about demographic trends in their country. Russia is currently experiencing unusually high mortality rates from preventable causes (e.g., alcoholism), extremely high induced abortion rates, and fertility rates that are among the lowest in the world. Consequently, the population growth rate in Russia has become negative, life expectancy appears to be decreasing, and the population has been aging rapidly. The evidence now available on these changes has led a number of observers to call the present situation a “demographic crisis.” The public and the government are concerned about the detrimental effects that demographic trends may have on economic reform and development—for example, how a shrinking working-age population will support a growing number of elderly and the demands that the latter will make on the social safety net. Policymakers and demographers in Russia are eager to learn more about the causes and likely social and economic consequences of these demographic changes so that they can define appropriate domestic policy options as the reform process proceeds.

Under the Soviet system, Russian researchers were discouraged from studying behavioral and social causes of demographic phenomena. Therefore, until recently, much of Russian demographic research has focused on description and measurement issues, often with applications to historical information on the earlier parts of this century.³ While recent Russian demographic research goes a

¹The preparation of this chapter was supported by grant P01 HD-28372 to RAND from the National Institute for Child Health and Human Development.

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³In July 1992, in a paper entitled, “A Conceptual Plan for Support of Demographic Research and Training in the Former Soviet Union,” Dr. Anatoly Vishnevsky, Director of the Russian Center of Demography and Human Ecology, wrote:

“During the postwar decades, scholarly and policy-relevant research in demography developed rapidly in the Western countries. . . . (D)emography assumed an important place among the other social sciences and substantially contributed to governmental policy planning and the formulation of public opinion. In developing countries also, the importance of accurate information about the population and analysis of this information assumed a growing role in policy planning in new nations. . . . In the Soviet Union, demography moved in the opposite direction. This was due to a lack of interest by Soviet authorities in practical information for policy planning.”

long way towards documenting the existence of worrisome demographic phenomena, to date that work has been largely descriptive. The current situation demands a refocusing on the more recent years and efforts to understand the *reasons* underlying the observed demographic phenomena and the types of policy options that might be most effective in dealing with them.

The six papers in this volume reflect the current state of knowledge in two broad categories: (1) fertility and family planning; and (2) issues in the area of health and mortality—health status, health care, and population aging. Together these phenomena affect the size, composition, health needs, and growth rate of the Russian population. The commentaries that follow each of these papers summarize the main points of discussants at the conference who undertook to compare the data, research design, and substantive findings of the papers with those of analogous studies in other settings (typically the United States) and sought to identify ways in which the Russian work could be extended to understand the behaviors underlying demographic trends and patterns and to address issues that are of interest and concern to Russian policymakers.

The first paper of the conference, by Dr. Anatoly Vishnevsky, Director of the Center for Demography and Human Ecology, gives an historical overview of Russia's demographic trends, concentrating on the modernization of the family, fertility decline, and immigration. He notes that the changes that the Russian family has undergone in recent decades have undermined traditional family patterns and produced alternative forms, such as single-parent families and unregistered cohabitation. Considering the decrease of Russian fertility, Dr. Vishnevsky notes that the current low fertility levels are normal for a developed country, albeit the most recent precipitous fertility decline was probably triggered by the economic hardships. Finally, the growing net immigration flow into Russia from other former Soviet republics is a direct continuation of the trend that emerged in the late 1970s, although the size of this flow increased dramatically after the collapse of the Soviet Union. While noting that Russia presently lacks an adequate infrastructure to receive and accommodate immigrants, Dr. Vishnevsky stresses that large immigration could offset the negative natural growth of the Russian population. He notes that, in general, the erosion of the traditional family, low fertility, and increased immigration should not be seen as signs of a demographic crisis. However, in Russian ideological debates, these phenomena are often exploited for political purposes. Many

Vishnevsky goes on to note that in the 1980s the situation began to improve as a new generation of Russian demographers were exposed to skills and a research outlook similar to that of Western demographers and as previously inaccessible statistical information became available.

Russian politicians depict them as direct consequences of reform and even of a conspiracy against the Russian nation.

The next paper, by Drs. Sergei Zakharov and Elena Ivanova, considers fertility trends in Russia. Not unlike western nations, Russia has undergone a demographic transition from high fertility and mortality to relatively low fertility and mortality. The path of fertility (and mortality) change in Russia, however, has been different from developed countries in the last two decades. In contrast to other countries, age at marriage in Russia has been constantly decreasing and most reproductive activity is now concentrated in the relatively early ages. Pronatalist policy measures enacted by the Soviet government in the 1980s led to an increase in fertility rates in the mid-1980s, owing largely to a rise in the number of second births. However, this fertility increase was short-lived. As the financial advantages of the government measures were swept away by inflation and the economic hardships of the early 1990s, fertility, which in any case is rarely affected by such measures on a long-term basis, dropped to one of the lowest levels in the world. Drs. Zakharov and Ivanova concede that the present state of fertility in Russia is not necessarily anomalous and may be the normal outcome of a longtime trend that has brought Russia to the beginning of what is often called “second demographic transition”—a fertility decline to below-replacement levels associated with greater individualism and less interest in childbearing. Nevertheless the role of the current economic crisis should not be ignored. Although a two-child family remains the ideal for most Russians, due to economic difficulties many families now postpone the second birth.

The third paper in this volume, on family planning in Russia, is by the late Dr. Andrej Popov, who tragically died several months before the conference; the paper was presented at the workshop by Dr. Zakharov. The paper notes that the incidence of abortion in Russia is by far the highest in the world. The unavailability of efficient contraceptives and the official legitimization of abortion have led to the formation of an “abortion culture,” in which abortion has become the main, if not the only, method of birth control—readily available free of charge in virtually all clinics and often performed in improper hygienic conditions and even without anesthesia. The concentration of women’s reproductive activity in early ages is also linked to abortion, according to Popov: Women try to achieve their desired number of children in young age and then abort all subsequent unwanted pregnancies without fear of secondary sterility and other reproductive complications that are often caused by frequent abortions. Only in recent years, as the availability of effective contraceptives has increased and the negative effects of abortion have been openly discussed in the media, have abortion rates begun a slow decline.

The next paper, by Drs. Vladimir M. Shkolnikov and France Meslé, is on the epidemiological situation and mortality in Russia. The dramatic worsening of the epidemiological situation and the sharp drop of life expectancy are the most unequivocal signs of the Russian demographic crisis. The first negative trends in the dynamics of mortality in Russia and the Soviet Union appeared in the mid-1960s when, after decades of a steady increase, life expectancy stalled. The second half of the 1980s witnessed an apparent improvement in life expectancy that Drs. Shkolnikov and Meslé, and some other Russian scholars, attribute to the effects of the anti-alcohol policy. However, the improvement was as short-lived as the campaign that triggered it, and by 1993 mortality was rising again. Today, as before, Russia holds two somber records: the lowest life expectancy among males for a developed country in peacetime (59 years) and the largest gap between male and female life expectancy in the world (13 years). The data presented by Drs. Shkolnikov and Meslé show that the recent mortality increase has been especially dramatic among working-age men. When the mortality rate is disaggregated by the cause of death, it becomes obvious that deaths from accidents, violence, poisoning, and other non-natural causes are primarily responsible for the latest rise in mortality. Although death rates from chronic and degenerative diseases have also risen, reflecting the poor state of the country's health care, these changes are generally comparable to those elsewhere in Eastern Europe.

The next paper, by Dr. Boris Rozenfeld, discusses the state of the health care system in Russia—a topic that has also been at the center of both Russian public attention and political debate. Although the existing health care problems were not created by the current socio-economic crisis, they have been greatly aggravated by the breakdown of the old system. In the Soviet era, virtually all health care was provided free by the state-run health sector, which emphasized the quantity of medical personnel and facilities over the quality of services and pursued goals set on the basis of political ambitions rather than on objective medical needs and economic capabilities. As the command economy crumbled, the public health sector plunged into a deep financial crisis. The budget resources currently allocated to health care are hardly sufficient to pay the salaries of the sector workers, and there is virtually no money left for drugs or equipment maintenance and replacement. As a result of the dire crisis of the health care system, the health status of the Russian population is worsening, and many diseases that were long thought to be eliminated or controlled are now spreading again. Faced with this situation, the Russian government has attempted to reform the health care sector through decentralization, marketing of services in state-owned facilities, and the promotion of the private medical sector. One of the central goals of the reform is the establishment of obligatory

health insurance financed through taxation and operated by both the state and private sectors. However, the reform has not yet produced any noticeable results. Russian citizens are used to receiving free care and are unwilling, and very often unable, to pay for the services. Besides, reform efforts often encounter strong political and administrative resistance. Dr. Rozenfeld contends that, under the current Russian conditions, the state has to maintain a prominent role in the regulation and provision of health care. At the same time, reform policy should seek a politically feasible and economically sound mix of public and private health sectors.

The final paper of the conference, by Dr. Sergei Vassin, focuses on two interrelated issues—population growth and aging in Russia. Today Russia is experiencing rapid population aging that will accelerate in the next two decades. The patterns and trends of population growth and aging in Russia have been strongly affected by such catastrophic events as the two world wars, the civil war, and famines. These catastrophes have distorted the population age-sex structure. For example, due to huge losses during the World War II, Russia has the lowest male-to-female ratio in the world, especially among the elderly. The irregularities of the age-sex pyramid will have an impact on the rate of population growth and aging for several decades. Dr. Vassin stresses that the age-sex structure of the population affects such vital spheres of society as kindergarten and school enrollment, employment, and retirement. He suggests that the state should try to smooth the population age structure by offering pronatalist incentives when smaller birth cohorts enter the childbearing phase. He notes, however, that the current economic crisis significantly limits the government's ability to influence population growth and also exacerbates the problems of the elderly. The retired population is growing, while the financial resources the state allocates for its needs are dwindling. With the declining real value of pensions and the rising costs of health care, the Russian elderly are among the most economically vulnerable social groups.

The papers in this volume raise provocative questions about the interrelations between economic reforms and demographic trends in Russia. On the one hand, some of these trends appear to reflect a reaction to, or catch-up from, policies that were instituted in the 1980s and have since been abandoned. For example, the current decline in fertility appears to be partially due to the fact that, in the 1980s, pronatalist policies caused couples to have a second child sooner than they would have otherwise; they are now returning to a slower pace of child-bearing. Similarly, some portion of the current increase in adult male mortality appears to be a result of the postponement of the deaths that did not occur during the anti-alcohol campaign of the 1980s. On the other hand, these policy changes do not

seem to account for all of the recent demographic changes. Further research is needed to disentangle the effects of earlier policies, current reforms, and other factors in explaining Russia's unique demographic patterns.

1. Family, Fertility, and Demographic Dynamics in Russia: Analysis and Forecast

by Anatoly G. Vishnevsky⁴

Introduction

In the early 1990s, Russia arrived at a turning point in her demographic evolution. The rate of natural population increase (births less deaths) became clearly negative and the size of the population actually began to decrease. Public opinion expressed shock, but for the professional demographers it was not unexpected.

Recent demographic trends in post-Soviet Russia have profound roots in Russian history of the 20th century; in particular they are closely linked to the evolution of the Russian family in the post-war period. This paper discusses the long-run trends of this evolution and the changes in family and demographic behavior. All these changes, and their causes and consequences, are interpreted in this paper in the context of the modernization of Russian society in the 20th century. Family modernization is an important aspect of general modernization. The rapid destruction of the peasant family in the late 1920s, as well as mass rural-urban migration, resulted in a break with the traditional family and its demographic behavior and in an accelerated demographic transition. The evolution of the family in Russia was almost the same as in Europe or North America, but with a delay and with certain significant, special features. These include the maintenance of traditionally early and almost universal marriages, relatively early fertility, the predominance of abortion as a main method of family planning, etc. In spite of rapid modernization, family relations and family behavior of a large part of the population maintained archaic features and, as a consequence, the level of fertility in Russia was higher and the population was younger than in the West.

Nevertheless, the postwar decades became a period of increased convergence in the evolution of the family and demographic behavior across Russia and the West (particularly the United States). This is confirmed by the various indicators

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of family size and composition, family cycle, nuptiality, divorces, fertility, living arrangements, etc. True recent demographic developments in Russia do not indicate a demographic catastrophe, but testify that, in her demographic evolution, Russia follows all developed countries, though she does not always find adequate responses to the challenges she meets on the way.

Modernization of the Family

The fundamental functions of the family—its way of life, rhythm of formation, family roles, relationships, and morality—entered a period of renewal which is still not completed. In the early 20th century in Russia, relatively large rural families with dependent children were prevalent. Since the mid-century, owing to the shift of the majority of the work force to the non-farming sector and to the migration of most of the population into the cities, the majority of families have lived in urban areas (Table 1.1).

At the same time, production activity shifted beyond the family circle and ultimately into wage labor for the majority of people. Family and production obligations were separated in time and space, as their combination become much more complex. In the USSR, these global trends were brought to extremes, notably in regard to the salarization of female labor. By 1970, the percentage of women working outside the home was not much different from that of men (Table 1.2).

Table 1.1
Selected Characteristics of Families in Russia, 1939–1989

	1939	1959	1970	1979	1989
Percentage of families living in urban areas	35.4	53.0	63.6	69.6	73.7
Average size of family	4.1	3.6	3.5	3.3	3.2
– Urban	3.6	3.5	3.4	3.2	3.2
– Rural	4.3	3.8	3.8	3.4	3.3
Proportion of families with 5 members or more	35.5	24.9	20.6	13.4	12.6
– Urban	23.6	20.4	15.7	11.1	11.2
– Rural	42.0	29.9	29.3	18.8	16.4

Sources: Naselenie Rossii 1993. (Population of Russia 1993). *Annual Demographic Report of the Center for Demography and Human Ecology*, A. Vishnevsky and S. Zakharov, eds, Moscow, Eurasia, 1993. p. 16; *Narodonaselenie. Enciklopedicheskij slovar'* (Population: An Encyclopedic Dictionary). Moscow, Bol'shaja Rossijskaja Encyklopedia, 1994, p. 404.

Table 1.2
Male and Female Labor Participation Rate by Age Group, 1959–1989
(in percentages)

	1959		1970		1979		1989	
	Male	Female	Male	Female	Male	Female	Male	Female
Total population of working ages	89	70	87	82	87	84	87	80
Ages 20–29	92	76	90	85	91	89	91	89
Ages 30–39	96	72	98	91	98	95	98	95
Ages 40–49	94	66	96	89	97	90	97	93
Ages 50–54	88	53	89	74	90	82	90	81

SOURCE: Source: Evolucia sem'i i semejnaia politika v SSSR (Family evolution and family policy in the USSR). Ed. by A. Vishnevsky. Moscow, Nauka, 1992, p. 45.

Another change of crucial importance was a rapid increase in educational attainment by both men and women. In the 1920s, most of the population was illiterate. In the generations of people born in the late 1930s and later, a rapid growth of educational level is observed: the share of men and women with secondary or higher education (10 years or more) increased, with the percentage of women with secondary education being even higher than that of men for the cohorts born between 1935 and 1964, and the proportion of women with higher education greater than that for men for all cohorts born after 1950 (Table 1.3).

Table 1.3
Percentage of Men and Women With Secondary and Higher Education, by Birth Cohort

Birth Cohort	Secondary Education (general and specialized)		Some or Completed Higher Education	
	Men	Women	Men	Women
1925–1929	20.6	20.3	10.6	6.8
1930–1934	21.1	20.4	11.1	9.0
1935–1939	32.4	36.3	17.4	13.0
1940–1944	39.6	45.7	19.2	16.2
1945–1949	53.0	58.7	23.0	23.0
1950–1954	60.4	66.5	19.9	20.4
1955–1959	67.9	70.4	18.6	21.2
1960–1964	72.0	72.1	19.1	22.6
1965–1969	73.0	71.1	18.9	23.9

SOURCE: Osnovnye itogi microperepisi naselenia 1994 (The main results of the microcensus 1994). Moscow, Goscomstat, 1994, p. 71.

Size and Composition of the Family and the Household

The modernization of the family and its functions has not been accompanied by a significant change in the proportion of “singles”⁵ and, consequently, of persons living in families (Table 1.4). A different situation appears when we consider the size and composition of families themselves. In 1920, the majority of the population lived in rural areas. The average rural family comprised 5.6 persons.⁶ Beginning in the late 1920s, the size and composition of families began undergoing a rapid change.

Table 1.4
Percentage of Persons Living in a Family, 1959–1989

	1959	1970	1979	1989
Total Population	88.8	88.9	87.4	88.4
Urban Population	86.6	87.4	86.5	88.0
Rural Population	91.2	91.5	89.3	89.4

SOURCE: *Naselenie Rossii 1994. (Population of Russia 1994)*. The second annual demographic report of the Center for Demography and Human Ecology. Ed. by A. Vishnevsky. Moscow, Eurasia, 1994. p. 52.

Throughout the post-war period, especially in the 1970s and 1980s, the share of the smallest (i.e., two-member) families increased (especially in rural communities, where this phenomenon was connected with the mass migration of young people to the cities), whereas the proportion of families with five and more members steadily decreased. Over the same period, the proportion of medium-size families (consisting of three or four persons) has exceeded 50 percent and remained relatively constant (Table 1.5).

⁵The Soviet censuses did not permit one to distinguish one-person households. They provided three choices: “living together with family”; “living separately with family but linked with it by a common budget”; and “singles”; that is those who do not have a family or do not maintain economic relations with it. Those who opted for the second or third choice were sometimes lumped together as “singles” in reports of census results. See, for example, A. G. Volkov, *Sem’ja - objekt demografii* (Family as a Subject Matter of Demography), Moscow, 1986, p. 27, 49.

⁶Vassilieva, E. K., *Sem’ja i jeje funkcii* (Family and Its Functions), Moscow, 1975, pp. 34-35.

Table 1.5
Family Distribution by Size, 1939–1989
(in percentages)

Number of Family Members	1939	1959	1970	1979	1989
Total Population:					
– 2	20.6	26.7	26.5	31.6	34.2
– 3	22.6	26.6	27.9	31.5	28.0
– 4	21.3	21.8	24.9	23.4	25.2
– 5 or more	35.5	24.9	20.7	13.5	12.6
Urban Population:					
– 2	26.9	27.2	26.0	30.5	33.1
– 3	27.7	29.3	31.5	33.9	29.6
– 4	21.8	23.1	26.8	24.6	26.1
– 5 or more	23.6	20.4	15.7	11.0	11.2
Rural Population:					
– 2	17.8	26.1	27.3	34.2	37.2
– 3	19.8	23.6	21.8	26.3	23.5
– 4	21.0	20.4	21.6	20.7	22.8
– 5 or more	42.0	29.9	29.3	18.8	16.5

SOURCE: *Narodonaselenie. Enciklopedicheskij slovar'*, Moscow, 1992, p. 429, 328.

The 1994 partial census of the population (“micro-census”) for the first time took into account households, rather than families.⁷ Distinct from families, households can include persons who are not relatives (for example, farm staff or a nanny) if those persons make contributions (totally or partially) into the household budget. Also, a household can consist of only one person. The results of the micro-census showed that 60 percent of all households consisted of a married couple with or without children. Households that included two married couples or more represented only 4 percent of all households. Tables 1.5 and 1.6 show the differences in the distribution of urban and rural households or families by size: the rural population is distinguished by a higher share of both the smallest and the biggest households or families.

⁷The main results of the 1994 micro-census of the population. Moscow, Goskomstat, 1994, p. 71. The census was conducted on February 14–23, 1994, in all regions of the Russian Federation, except Chechnya, and covered 5 percent of the population (7.3 million people).

Table 1.6
Households, Frequency Distribution by Size, 1994
(in percentages)

	Household Size, Number of Persons					Avg. Size
	1	2	3	4	5 or more	
All households	19.2	26.2	22.6	20.5	11.5	2.84
Urban households	18.1	26.1	24.3	21.0	10.5	2.84
Rural households	22.0	26.8	18.1	19.0	14.1	2.85

SOURCE: Osnovnye itogi microperepisi naselenia 1994, p. 10.

Currently three types of families are most prevalent in the Russian Federation: (A) married couples with children (nuclear families); (B) single parents with children (single-parent nuclear families); (C) married couples with children, or childless, living with one of the wife's or husband's parents or other relatives (extended, or complex, families with a married couple nucleus). In the 1970s and 1980s, over 90 percent of families in the country belonged to one of these three categories. The growth of the percentage of all these categories together has been accompanied by growth of the share of nuclear families (type A) and by reduction of the share of complex families (type C) (see Table 1.7).

Table 1.7
Different Types of Families, 1926–1989
(in percentages)

	1926		1979	1989
	Moscow	Cities of Russia	Russian Federation	Russian Federation
Family types A,B, and C	82.8	84.7	91.8	91.5
In percent to total of 3 groups:				
– Type A	67.8	68.5	72.3	79.9
– Type B	10.7	11.1	13.8	15.7
– Type C	21.5	20.4	13.9	13.7
Other*	17.2	15.3	8.2	8.5

SOURCES: Vassilieva E.K. *Sem'ja i jejo funkcii* (Family and Its Functions). Moscow, Statistika, 1975, p. 44; *Narodonaselenie. Enciklopedicheskij slovar'*, p. 429.

*Other families: two or more married couples with or without children, with or without parents; sisters and brothers without spouses and without children, etc.

Marital Status and Living Arrangements

As a consequence of the freedom of procreative choice and matrimonial mobility, the range of living arrangement possibilities has grown and produced marked changes in the whole process of family formation and dissolution, including marriage and cohabitation, divorce and remarriage, childbearing, and separation of children from the parental family, etc.

First marriages have not changed much. In contrast to most Western countries, early and almost universal marriages have always been typical for Russia. Now as before, almost all men and women in each generation get married eventually. According to the 1979 Census, only 1.9 percent of men and 4 percent of women aged 45-49 were never married. According to the 1989 Census, the respective figures were 3.7 and 3.5 percent—even lower than at the beginning of the century.

Contrary to what has been observed in recent years in the majority of developed countries, in Russia the proportion of people getting married at young ages has been growing. In the cohort born in 1925-1929, 12.9 percent of women married before age 20, and 24.2 percent of men married before age 23. The proportions for the cohort born in 1955-1959 were 31.9 percent and 48.9 percent, respectively. The average age at marriage (if we disregard the perturbations provoked by the wars and other social cataclysms, whose effects have basically disappeared by now) has remained practically unchanged since the late 19th century: 24.2 years for men and 21.4 for women in 1897; 24.4 and 21.8 respectively in 1989.

In the period between 1959 and 1979, the proportion of men and women aged 20-24 years who were married increased significantly (see Table 1.8). However, the proportion of both men and women who were currently married was decreasing over the entire 1959-94 period in almost every other age group. The differences between proportions of married men and women, which become more distinct with age, are due to a higher probability of remarriage for men, as well as to an important difference between life expectancies of men and women, resulting in a large number of widows.

Table 1.8
Number Currently Married by Age and Sex, 1959–1989, Per 1,000 Persons of
Every Sex and Age Group

Age	Males					Females				
	1959	1970	1979	1989	1994	1959	1970	1979	1989	1994
16+	692	716	708	718	723	505	563	569	598	585
16–17	4	4	\	\	5	24	20	\	\	38
			25 ¹	29 ¹				112 ¹	130 ¹	
18–19	38	40	/	/	63	143	159	/	/	237
20–24	269	297	395	381	383	479	536	595	618	565
25–29	802	771	775	742	712	752	819	793	798	751
30–34	921	878	850	821	805	768	848	817	822	799
35–39	953	924	874	840	837	711	838	810	804	797
40–44	963	942	894	845	\	606	783	795	772	\
					853 ²					757 ²
45–49	965	949	915	847	/	525	708	758	737	/
50–54	958	952	924	863	\	452	588	683	708	\
					862 ³					662 ³
55–59	946	949	927	880	/	392	478	571	636	/
60–64	\	\	919	878	\	\	\	427	532	\
	908 ⁴	925 ⁴			859 ⁴	332 ⁴	342 ⁴			496 ⁴
65–69	/	/	901	863	/	/	/	315	399	/
70+	718	771	782	748	694	158	176	153	162	184

¹16–19; ²40–49; ³50–59; ⁴60–69

SOURCES: *Naselenie Rossii 1994*, p. 51; *Osnovnye itogi microperepisi naselenia 1994*, p.38.

In recent years in Russia, cohabitation has become more and more frequent (though the levels are lower than in the West⁸), and more tolerated by public opinion. In a 1989 poll,⁹ 22.5 percent of interviewed respondents said that they felt that cohabitation without official registration is unacceptable, but the proportion of such answers was strongly related to age: 47.3 percent for the respondents over age 60 disapproved of cohabitation, while only 13.8 percent under age 20 disapproved. The same poll showed that persons with a higher education were more tolerant of unregistered unions.¹⁰ An increased tolerance

⁸For example, see review in Julie DaVanzo and M. Oman Rahman, *American Families: Trends and Policy Issues*, Santa Monica, Calif.: RAND, P-7859, 1993.

⁹"The family in a mirror of public opinion." A representative poll, conducted in 1989 by the National (former All-Union) Public Opinion Center (VTSIOM) in 51 cities of the ex-USSR, covering 3,014 persons over age 16.

¹⁰M. Matskovksi and V. Bodrova, *Cenost' sem'ji v soznanii razlichnykh slojov naseleniya*. (Value of the Family as Perceived by Various Strata of the Population). In: *Sem'ja v predstavlenijakh sovremennogo cheloveka* (Family in Perception of a Modern Man). Institute of Sociology of the Academy of Sciences of the USSR, Moscow, 1990, p. 163.

for non-traditional family forms was accompanied, nonetheless, by an acknowledgment that the family represents one of the most important values: 89.5 percent of all respondents preferred to marry and to live in a family. Public opinion is much more tolerant of unregistered unions than of conscious childlessness.¹¹

The 1994 micro-census has made it possible for the first time to estimate (although these rates may be underreported in the survey) the proportion of persons living in cohabitation (Table 1.9). In the aggregate, this proportion is higher for men than for women; however, below age 25, women are more likely to cohabit than men. The difference between men and women at these younger ages is especially marked for the rural population.

Table 1.9
Cohabitation By Age and Sex, Per 1,000, 1994

Age	Males			Females		
	Total	Urban	Rural	Total	Urban	Rural
16 and older	47	41	64	39	34	54
16-19	5	5	5	19	16	30
20-24	30	29	32	38	36	45
25-29	44	42	49	44	42	50
30-34	50	47	60	47	42	60
35-39	53	47	69	48	42	70
40-49	56	47	84	49	41	82
50-59	62	51	91	46	38	71
60-69	52	43	72	34	27	50
70 and over	41	32	64	15	12	21

SOURCE: Osnovnye itogimicroperepisi naselenia 1994, p. 38.

Family dissolution as a consequence of widowhood and divorce has changed dramatically over the past years. As in earlier years, the death of a spouse was the main cause of family dissolution for elderly people. But for younger people, the role of this factor is much less significant than before. By contrast, the probability of divorce has grown dramatically. At the beginning of the century, the divorce rate and even the absolute number of divorces were negligible. Later, they began to grow rapidly. Since the late 1970s, the divorce rate has been relatively stable, but at the relatively high level of about 4 divorces per 1,000 population (see Table 1.10). (These trends are very similar to those in the U.S.

¹¹Ibid., pp. 157, 165.

and other Western countries.¹²⁾ Since 1990 there has been a slight increase in the divorce rate in Russia.

Table 1.10
Marriages and Divorces, 1950-1994

Year	Marriages (in thousands)	Divorces (in thousands)	Marriage Rate (per 1,000 population)	Divorce Rate (per 1,000 population)
1950	1223.0	49.4	12.0	0.5
1960	1499.6	184.4	12.5	1.5
1970	1319.2	396.6	10.1	3.0
1980	1464.6	580.7	10.6	4.2
1985	1389.4	574.0	9.7	4.0
1986	1417.5	579.4	9.8	4.0
1987	1442.6	580.1	9.9	4.0
1988	1397.4	573.9	9.5	3.9
1989	1384.3	582.5	9.4	3.9
1990	1319.9	559.9	8.9	3.8
1991	1277.2	597.9	8.6	4.0
1992	1053.7	639.2	7.1	4.3
1993	1106.7	663.3	7.5	4.5
1994	1080.6	680.5	7.4	4.6

Sources: Naselenie SSSR 1987 (Population of the USSR 1987). Statistical yearbook. Moscow, Finansy i Statistika, 1988, p. 190; Demograficheskij ezhegodnik Rossijskoj Federacii 1993 (The Demographic Yearbook of the Russian Federation 1993). Moscow, Goskomstat of Russia, 1994, p. 97.

Divorces, like widowhood in the past, are partly compensated by remarriage, and the compensatory role of remarriage is growing. The proportion of divorced among those getting married has risen from 16.1 percent in 1980 to 23.2 percent in 1993 for men, and from 14.3 percent to 21.3 percent for women (Table 1.11). Children are becoming less and less an obstacle either for divorce or for remarriage (Table 1.12). This also means that a greater number of children are experiencing the divorce of their parents.

¹²DaVanzo and Rahman, op. cit.

Table 1.11
Percentage of Remarried to All Getting Married, 1980–1993

Year	Males		Females	
	Remarried	Remarried After Divorce	Remarried	Remarried After Divorce
1980	18.9	16.1	17.9	14.3
1985	23.8	20.7	24.6	20.1
1986	26.2	23.0	27.0	22.2
1987	27.8	24.6	27.8	22.9
1988	27.7	24.5	27.7	22.9
1989	26.6	23.5	26.3	21.7
1990	25.3	22.3	24.6	20.4
1991	25.7	22.7	25.2	20.9
1992	26.8	23.7	25.6	21.4
1993	26.0	23.2	25.3	21.3

Table 1.12
Divorces, by Number of Common Children Under 18, 1988–1993
(in thousands)

Year	Total Number of Divorces	Divorces of Spouses			Total Number of Common Children	Average Number of Common Children Per Divorce	
		Without Children	With One Child	With 2 or More Children		Total Divorces With Children	Divorces With Two or More Children
1988	573.8	223.5	251.1	99.3	465.1	1.3	2.2
1989	582.5	223.6	253.1	105.8	479.1	1.3	2.2
1990	559.9	214.3	239.6	106.1	466.1	1.3	2.1
1991	597.9	215.1	261.2	121.3	522.2	1.4	2.1
1992	639.2	223.6	282.9	132.8	569.1	1.4	2.2
1993	663.3	229.7	294.8	138.8	593.8	1.4	2.2
1994	680.5	230.9	307.9	141.7	613.4	1.4	2.2

NOTE: Sources: Sem'ia v Rossijskoj Federacii (Family in the Russian Federation). Goskomstat Rossii, Moscow, 1994, p 88.

The Russian population is increasingly abandoning a tradition of maintaining large, extended families—a family form that was quite common in the past. As economic and other incentives to preserve extended families disappear, the

process of splitting-up the family has intensified due, in particular, to the separation of young families from their parents. The majority of young married couples desire to live apart from their parents. Those living with their parents generally want to live separately, and those already separated do not want to join them again.¹³ In actual practice, the process of separation is somewhat retarded by difficulties in obtaining separate housing.

According to evidence compiled by Volkov regarding the early 1980s, 35.1 percent of men and 35.6 percent of women who lived with their parents prior to marriage moved away from their parents immediately after marriage (the corresponding figures for 1989 were 37.1 percent and 38.3 percent respectively).¹⁴ Furthermore, Volkov estimates that, based on the results of the 1989 census, 59 percent of young families separated from their parents during the first 10 years of marriage. Since another 16 percent of such families broke up over this period, only 25 percent of young families are still intact and living with the husband's or wife's parents after 10 years of marriage.¹⁵ These data apply to the entire ex-USSR. In Russia, as in the other European republics of the ex-USSR, the process of separation was more pronounced, especially among the urban population. The frequency of separation from the parental family in the nuptial cohort is particularly high during the first year of marriage, decreases later on and flattens out at a level of 4-5 percent per year during the second decade of married life.¹⁶

According to the results of a sample survey of young families carried out in 1992,¹⁷ 51 percent of the young couples who were surveyed lived independently from their parents; the rest were living together with the husband's or wife's parents or other relatives. It should be noted that 61 percent of young families living with their relatives had an independent or a partly independent budget, and 31 percent had a common budget.

¹³Volkov, *Sem'ja - objekt demografii*, p. 219.

¹⁴Volkov, *Sem'ja - objekt demografii*, p. 202; Volkov A.G. Nuklearizacija sem'ji v Sovetskom Soyuze i otdelenie molodykh sem'ej ot roditel'ej (Nuclearization of the family in the USSR and separation of the young families from their parents). In: *Vosproizvodstvo naselenija i razvitije sem'ji*. (Population Reproduction and Family Evolution), Moscow, 1992, p. 27.

¹⁵Volkov, *Sem'ja - objekt demografii*, p. 203, 216.

¹⁶Volkov, *Nuklearizacija sem'ji v Sovetskom Soyuze*, p. 29.

¹⁷The survey, "Perspectives of Developments of the Young Family," was carried out by the State Committee of the Russian Federation for Statistics (Goskomstat) in December 1992. It covered 14,000 persons in young families (first marriages contracted under age 25 which lasted from 1 to 5 years) in Moscow, Saint Petersburg, and in 21 regions and autonomous republics of the Russian Federation.

Fertility and Family Planning

Throughout most of the world, the process of modernization of the family has been accompanied by fundamental changes in people's procreative behavior. Beginning in the late 1920s, fertility rapidly declined due to the broadening scope of procreative choice,¹⁸ on the one hand, and to the difficult, sometimes even catastrophic, social and political conditions of the 1930s and 1940s, on the other. This same process did not occur in the USSR. The general fertility level was relatively high in the 1950s compared with that in many European countries due to Russia's young population. Soviet official sources cited this high fertility rate as an example of the advantages inherent to a socialist society.

Nevertheless, the decline in fertility, being a natural consequence of the demographic transition, persisted. The dynamics of the total fertility rate (TFR)¹⁹ gives an idea of the size of this reduction. In 1959-1960, the total fertility rate in Russia was 2.6 (the level of France at that time; in the United States it was 3.7). In the next decade it quickly fell, and then stabilized. From the mid-1960s, the TFR stayed close to 2.0. Its fluctuations in the 1980s were more dramatic. In 1979-1980, the TFR was at its lowest point of the postwar years (1.89). In 1986-1987, it jumped 2.20, the highest level since 1961. In 1990, it fell again to 1.89, and then plummeted to 1.73 in 1991, 1.55 in 1992, and 1.39 in 1993 (see Table 1.13 and Figure 1.1). Similar patterns are seen in both urban and rural areas, though urban fertility rates are always considerably lower than rural rates.

Public opinion in Russia has tended to attribute such an unprecedented decline in fertility to the direct influence of the social and economic crisis of the last few years. However, even if such an influence does exist, it is likely that other factors have contributed to, and are perhaps much more significant determinants of, the phenomenon of fertility decline. The universal trends of demographic transition associated with the modernization of the family and society have played a leading role, and served to draw the Russian and Western models of procreative behavior in the family closer to one another. During several decades in the middle of the 20th century, Russia followed the path already traversed by the developed countries. Russia did it at an accelerated pace, and in the 1970s attained the same fertility level as many of the Western countries. In terms of fertility trends and indices, Russia in this period resembled the Western countries of an earlier demographic transition, but twenty years later Russia more closely

¹⁸Religious and moral proscriptions against the use of abortion and contraception were rapidly disappearing, especially in cities.

¹⁹Total fertility rate is defined as the average number of children a woman would have over her lifetime, given current levels of age-specific fertility rates.

resembled the countries of the more recent transition (Figures 1.2a and 1.2b). This seems to be quite natural because the transition in Russia was also rather late.

Table 1.13
Total Fertility Rate, 1961–1994

Year	Total	Urban	Rural
1961–1962	2.419	1.926	3.180
1965–1966	2.123	1.719	3.001
1970–1971	2.017	1.767	2.657
1975–1976	1.973	1.723	2.838
1980–1981	1.875	1.667	2.636
1985–1986	2.106	1.863	3.051
1987	2.219	1.974	3.187
1988	2.130	1.896	3.057
1989	2.016	1.829	2.697
1990	1.895	1.700	2.606
1991	1.732	1.540	2.384
1992	1.552	1.362	2.176
1993	1.385	1.215	1.935
1994	1.386	1.243	1.842

NOTE: Naselenie Rossii 1994, p. 62; Demograficheskij ezhegodnik Rossijskoj Federacii 1993, p. 74; unpublished data of Goskomstat.

In the 1990s fertility has declined in all age groups of women, even the youngest (under 20), in which fertility had been steadily rising between 1963 and 1990. In all age groups except the youngest, the fertility rate is lower now than at any time in the entire postwar period (Figure 1.1).

The fertility decline of recent years (after 1987) is due in part to factors that were not connected with the long-run transition, but which are not necessarily connected to the short-term crisis, either. Among other factors, the fertility decline is due to the timing effects which revealed themselves in the 1980s. In this period, cross-sectional fertility indices increased due to the policy measures of the early 1980s (discussed in the paper by Zakharov and Ivanova in this volume), but it did not lead to a corresponding increase in the cohort indices. The age at which women gave birth to “planned” children decreased, but this did not lead to an increase in the average number of births per woman in different cohorts. Consequently, the increase in the total fertility rate was bound to be followed by a decline. In all likelihood, this was indeed the case in the late

1980s and early 1990s. Moreover, the timing effects were accompanied by other factors that existed before but became more visible under the influence of reforms carried out in Russia. The paternalistic-state mechanisms regulating people's economic, social, and demographic behavior have weakened and given way to market mechanisms. This means that great numbers of families have had to adapt their current plans to the new conditions, while extending their material and ideological capabilities for such adaptation. In terms of demographic behavior, Russia is drawing closer to the countries with market economies.

At the same time, the Russian model of procreative behavior still differs from the Western one in important features. For example, in contrast to recent developments in most Western countries, the decrease in TFR in Russia was accompanied by a simultaneous *decrease* in the age at marriage and at birth. The average age at first marriage decreased, and the average age at birth, after an increase in the late 1980s, resumed its decline (Figure 1.3). The proportion of children born by women under 18 has increased from 1.8 percent in 1980 to 2.0 percent in 1988 and to 4.2 percent in 1992. Recently, evidence for abandonment of this model of procreative behavior has appeared, leading some experts to suggest that Russia is involved in a "second demographic transition."²⁰

Another important feature of fertility in Russia concerns birth control methods. In Russia, contrary to most countries that have already passed through the demographic transition, induced abortion remains one of the main methods of family planning. There is usually a limited selection of contraceptives in Russia. They are in short supply and have recently become very expensive. Although, according to official data the absolute number of abortions and the average number per woman tended to decline during the last decade (Table 1.14), a cautionary note is appropriate as data concerning registered abortions have become increasingly incomplete for a variety of reasons. Even so, according to official figures, the proportion of conceptions ending in abortion have been increasing as has the number of abortions per 100 live births since 1985 (Table 1.14). In 1993, in Russia more than 3.2 million abortions (88 per 1,000 women ages 15-49, or 235 per 100 live births) were officially registered. The respective indices in other countries are as follows: Ukraine, 57 and 164; Estonia, 64 and 117; Hungary, 38 and 72; Sweden, 20 and 30; France, 13 and 21; and the Netherlands, 5 and 20.²¹

²⁰See paper by Zakharov and Ivanova in this volume.

²¹For further discussion of abortion in Russia, see Popov's paper in this volume.

Table 1.14
Registered Abortions in Russia, 1970–1993

Year	1970	1980	1985	1990	1991	1992	1993
Number of abortions, in thousands:							
– Total	4,670	4,506	4,415	3,920	3,526	3,266	3,244
– Without “mini-abortions”*	n.a.	n.a.	n.a.	2,968	2,678	2,409	2,447
Abortions per 1,000 women aged 15-49:							
– Total	133.3	122.9	120.4	108.9	98.0	90.3	88.4
– Without “mini-abortions”	n.a.	n.a.	n.a.	82.5	74.0	66.6	66.7
Abortions per 100 live births							
– Total	245.3	204.6	185.9	197.1	196.4	205.7	235.2
– Without “mini-abortions”	n.a.	n.a.	n.a.	149.2	149.2	151.7	177.4

NOTE: Naselenie Rossii 1994, p. 73; unpublished data of Goskomstat.

*Mini-abortions are abortions by aspiration.

Moreover, there are no signs of serious changes in the attitude of the population to abortions. According to the results of a poll carried out by the National Center for the Study of Public Opinion in April 1994, the answers to the question “What would you do in case of unplanned pregnancy?” had the following distribution: “Would keep the baby”—13 percent; “Would have an abortion”—40 percent; “Don’t know”—47 percent. The readiness to have an abortion was the same for both urban and rural dwellers. The question appeared to be too embarrassing to 51 percent of the respondents claiming adherence to the Orthodox religion and to 71 percent of religious Muslims; they answered, “I hardly know what to answer.”²²

Fertility Decline and Slower Population Growth

The demographic transition in Russia was not accompanied by a demographic explosion, as was the case in most countries where demographic modernization took place comparatively late. Until the early 1960s the total fertility rate in Russia exceeded 2.5, and the rate of natural increase was relatively high (1.7–1.8 percent per year until 1991). This natural increase was the main factor determining the growth of the population over the entire post-war period (Table 1.15 and Figure 1.4). But the decline of fertility long ago predetermined the cessation of this growth.

²²Ekonomichekies i socialnye peremeny: monitoring obshchestvennogo mnenija (Economic and Social Changes: the Public Opinion Monitoring), Moscow, 1994, 4, p. 39.

Table 1.15
Components of Population Size Change in Russia, 1951–1994

Year	Population at the End of Period in 1,000s	Annual Rate of Increase Per 1,000	Total Increase in 1,000s	Natural Increase in 1,000s	Net Immigration in 1,000s
1951–1955	112,266	17.5	9,321	9,160	161
1956–1960	120,766	14.7	8,500	9,515	-1,015
1961–1965	127,189	10.4	6,423	7,067	-644
1966–1970	130,704	5.5	3,515	4,180	-665
1971–1975	134,690	6.0	3,986	4,180	-195
1976–1980	139,165	6.6	4,338	3,730	607
1981–1985	144,080	7.0	4,807	3,939	869
1986–1990	148,543	6.1	4,707	3,649	1,058
1991	148,704	1.1	161	104	57
1992	148,673	-0.2	-31	-207	176
1993	148,366	-2.1	-308	-738	430
1994	148,306	-0.4	-60	-870	810

NOTE: Naselenie SSSR 1973 (Population of the USSR 1973). Statistical yearbook. Moscow, Statistika, 1975, p. 70; Demograficheskij ezhegodnik Rossijskoj Federacii 1993, p. 10; unpublished data of Goskomstat.

From the beginning of the 1930s demographic modernization accelerated in Russia, and 30 years later the country entered a period of hidden depopulation. None of the post-war generations of women in Russia have provided replacement-level fertility. Throughout the period beginning in the middle of the 1960s to the present (excepting 1986–1988), the net reproduction rate in the Russian Federation has been less than 1.²³ In the early 1990s, its decline became sharper. In 1990 it reached the all-time low of 0.821 (the previous minimum value of 0.874 was attained in 1979–1980) and continued to fall to 0.733 in 1992 and to 0.651 in 1993 (Figure 1.5). The net reproduction rate has always been higher in rural than in urban areas, but even in the former its value is now less than 1.0 (Figure 1.5).

The fact that the rate of natural increase was positive during almost this entire period (mid-1960s to the early 1990s) was due only to the potential of demographic growth accumulated in the age structure of the population. This potential has been gradually exhausted, and finally the hidden depopulation

²³The net reproduction rate is the TFR multiplied by a survival probability (from the mother's birth through her childbearing years) and the proportion of female to all births. A net reproduction rate of 1.0 means that the population is exactly reproducing itself.

became apparent and the rate of natural increase has become negative.²⁴ This was no surprise at all. Forecasts made in the early 1980s predicted the appearance of a negative natural increase beyond any doubt, though it was supposed to not appear until the beginning of the next century. But even then it was clear that the only way to prevent an overall decrease in the population of Russia was through immigration. In those forecasts it was assumed that the migrating population would come from other republics of the USSR.

The effective influence of immigration on the total population increase in Russia was quite small for a long time. From 1955 to 1975, the population increase due to external migration was negative, but this decrease was more than offset by natural population increase (Table 1.15). Beginning in the middle of the 1970s, the increase due to net immigration became positive but, as a rule, never exceeded 25 percent of the total increase and usually was considerably smaller. Since 1990, the absolute annual population increase due to immigration was smaller than in the late 1980s but, owing to the drop in natural increase, its *proportion* to the total increase has grown. When, in 1992, the natural increase changed into natural decrease, net immigration was unable to make up for it (Table 1.15 and Figure 1.4). The total rate of population growth, as well as the rate of natural increase, became negative and the population size in Russia began to decrease.

Looking Into the Future

What changes await Russia in the next 10–20 years? The answer can be found in the demographic forecasts made in recent years by several Moscow research centers and organizations abroad. The following results are taken from those forecasts.²⁵ Although general demographic dynamics are determined by changes in fertility, mortality, and net immigration, the changes in the first two

²⁴Population age structure and population growth are the topic of the paper by Vassin in this volume.

²⁵The forecasts were made by the Demographic Department of the Institute of Statistics and Economic Research of the Goskomstat (DD ISER), the Center of Economic Conjuncture attached to the Government of the Russian Federation (CEC), and the Center for Demography and Human Ecology of the Institute for Economic Forecasting of the Russian Academy of Sciences (CDHE). Except for the CDHE forecast, the results are quoted from the following sources: Andreev E.M., Darsky L.E., Khar'kova T.L., *Naselenie SSSR: 1922-1991* (Population of the USSR: 1922-1991); *Demograficheskie perspektivy Rossii* (Demographic Perspectives of Russia), Moscow, Goscomstat, 1993; *Prognoz chislennosti naselenia do 2005 goda* (Population Forecast up to 2005), Moscow, Center of Economic Conjuncture attached to the Government of the Russian Federation, 1994; *Prognoz chislennosti naselenia do 2005 goda* (Population Forecast up to 2005), Moscow, Center of Economic Conjuncture, 1995; *World Population Profile: 1994*, Washington, U.S. Department of Commerce, Bureau of the Census, 1994.

components appear to have had only a slight influence on the growth of the population and the evolution of its age structure.

Fertility. Even though the estimates given in the considered forecasts are very different, none of them predicts an increase in the total fertility rate from the 1993 level (1.39) that will be large enough for the TFR to reach the replacement level over the next 20 years (Table 1.16). Nevertheless, the number of births should have significantly increased already beginning in 1995, since in this period the number of women in the age group with the highest fertility (20-34 years) will grow rapidly. Later, a decrease in the number of births will occur again as a consequence of cyclic dynamics of the size of female generations due to an “echo” from World War II (Figures 1.6 and 1.7).²⁶

Table 1.16
Total Fertility Rate, Various Forecasts to 2015

Source	Forecast Type	Year 2000	Year 2005	Year 2015
DD ISER, 1993:	High Variant	-	-	1.88
	Medium Variant	-	-	1.67
	Low Variant	1.47	-	-
CEC, 1994:	Medium Variant	1.11	1.20	-
	Low Variant	0.94	0.89	-
CEC, 1995:	Medium Variant	1.25	1.34	-
	Low Variant	1.07	1.02	-
CDHE, 1994:	High Variant	1.62	1.68	1.74
	Medium Variant	1.58	1.60	1.59
	Low Variant	1.54	1.52	1.43
U.S. Census Bureau, 1994:		1.80	1.80	1.70
United Nations, 1994:	High Variant	1.65	1.85	1.95
	Medium Variant	1.53	1.60	1.67
	Low Variant	1.50	1.50	1.50

NOTE: For abbreviations and sources, see footnote 25.

Mortality. If the fertility forecasts generally predict the prevalence of trends which converge with those in the West, the mortality forecasts tend to forecast the maintenance of current differences. All existing forecasts are very pessimistic. Even in the most favorable scenarios, assuming a considerable improvement in current Russian indices (in 1993 the life expectancy was 58.9

²⁶For more on the age structure in Russia and how it has changed over time, see the paper by Vassin in this volume.

years for males and 71.9 years for females), it is not generally assumed that the present level for Western countries (life expectancy of 72-75 years for males and 78-81 years for females) will be attained in Russia even in 10-20 years (Table 1.17).²⁷

Table 1.17
Evolution of Life Expectancy, Various Forecasts to the Year 2015

Year	2000		2005		2015	
Source of Forecasts	Males	Females	Males	Females	Males	Females
DD ISER, 1993	-	-	-	-	70.2	78.3
Andreev et al, 1993	63.0	73.2	-	-	64.9	74.3
CEC, 1994	58.7	70.1	59.6	70.7	-	-
CEC, 1995	58.8	70.2	59.6	70.9	-	-
CDHE, 1994	62.3	73.6	64.1	74.5	67.6	76.2
UN, 1994	61.5	73.6	63.5	74.6	67.0	76.4

NOTE: For abbreviations and sources, see footnote 25.

External Migration. The fertility and mortality forecasts presented above do not leave much hope for a positive natural population increase in Russia for the foreseeable future (Figure 1.8). Consequently, positive growth of the population in Russia is possible only with a steady and high positive balance of external migration. But we should keep in mind that uncertainty is especially significant in the migration forecasts, so that scenarios of the future considerably differ among them (Table 1.18).

²⁷For more on life expectancy in Russia, see the paper by Sholnikov and Meslé in this volume.

Table 1.18
Annual Net Immigration, Various Forecasts to the Year 2015
(thousands of persons)

Year	Forecast Type	2000	2005	2015
RF Goskomstat, 1993:	High Variant	278	154	-11
	Medium Variant	213	142	34
	Low Variant	-1.8	12.2	16.4
CEC, 1994	–	173	74	–
CEC, 1995	–	29.5	117	–
CDHE, 1994:	High Variant	507	515	473
	Medium Variant	373	313	142
	Low Variant	0	0	0

NOTE: For abbreviations and sources, see footnote 25.

Hypotheses concerning future immigration depend highly on estimates of current trends. Today, positive net immigration (the difference between immigration and emigration) is growing. In 1994, 1.1 million persons arrived in Russia (compared with 0.7-0.9 million annually during the previous 25 years) and 0.2 million left Russia (compared with 0.5–0.7 million previously). So the net migration figure was about 0.8 million (mainly in exchange with Ukraine, Uzbekistan, and especially Kazakhstan)²⁸—an unusually high number for Russia. This can be considered as a manifestation of the present social and political crisis. If so, overcoming the crisis is likely to lead to a drop in net migration to the level of the 1980s. But bearing in mind new demographic and political realities, one can take a different view of future development of external migration.

According to estimates of the Center for Demography and Human Ecology (CDHE) of the Institute of Economic Forecasting, assuming the most realistically optimistic scenarios for fertility and mortality along with moderate net immigration,²⁹ by 2010 the Russian population will reach the level of the early 1990s, after a twenty-year period of decline. For the population size to exceed the 1990 level by the middle of the first decade of the 21st century and continue to grow, one needs to assume high net immigration, constantly maintained at a level of about half a million persons per year (Figure 1.9), in combination with the optimistic scenarios of fertility and mortality. Thus, for the stage of

²⁸Naselenie Rossii 1994. (Population of Russia 1995.) The third annual demographic report of the Center for Demography and Human Ecology, ed. by A. Vishnevsky, Moscow, 1996, pp. 79–80.

²⁹ It should be noted that the CDHE moderate net migration assumption considerably exceeds Goskomstat's "High" variant, referred to in Table 1.18.

development that Russia has entered, the current high level of immigration cannot be considered a crisis, but as normal and even desirable from the point of view of overall demographic dynamics.

Population Size. In conclusion, we provide a summary of forecasts of the population size in Russia up to the year 2015, made by different research groups (Table 1.19). The reader should note that the forecasts vary from a low of 137,500,000 persons to a high of 159,300,000. (The population in Russia at the beginning of 1995 was 148,306,000.) Some forecasts of the evolution of population size in Russia, carried out by the Center for Demography and Human Ecology, are presented in Figures 1.10 and 1.11.

Table 1.19
Population of Russia, Various Forecasts to the Year 2015
(in millions)

Source	Forecast Type	2000	2005	2015
RF Goskomstat, 1993:	High Variant	150.0 ^a	152.4 ^b	153.7 ^c
	Medium Variant	150.0 ^a	150.2 ^b	148.9 ^c
	Low Variant	150.4 ^a	149.3 ^b	143.8 ^c
CEC, 1994	Medium Variant	142.7	138.7	–
	Low Variant	139.3	131.5	–
CEC, 1995	Medium Variant	145.7	142.8	–
	Low Variant	143.0	136.0	–
CDHE, 1994				
A) Zero immigration scenario	High Variant	143.4	142.8	142.4
	Medium Variant	143.2	142.1	139.9
	Low Variant	143.0	141.3	137.5
B) Medium immigration scenario	High Variant	145.8	147.0	148.6
	Medium Variant	145.6	146.2	146.0
	Low Variant	145.4	145.5	143.4
C) High immigration scenario	High Variant	146.4	148.3	152.8
	Medium Variant	146.2	147.5	150.1
	Low Variant	146.0	146.8	147.5
U.S. Census Bureau, 1994		151.5	155.9 ^d	159.3 ^e
United Nations, 1994	High Variant	146.3	146.1	146.6
	Medium Variant	145.5	144.2	142.0
	Low Variant	145.2	143.8	140.1

NOTE: ^a2002; ^b2007; ^c2017; ^d2010; ^e2020. For abbreviations and sources, see footnote 25.

Conclusion

From the beginning of the 1990s, population growth or even preservation of constant population size in Russia is possible only on the condition that annual net immigration is steady and sizable (at least 500,000 per year). This situation is absolutely new for Russia. In the course of many centuries, Russia has typically sent population beyond the limits of historical Russian territory. Centrifugal migration flows were the *condition sine qua non* of the colonization of new regions of the Russian and Soviet empire.

Though the current situation is a result of a long-run and, by and large, normal evolution, under actual political circumstances public opinion has interpreted it as something disastrous. Warnings of “the family crisis,” a “demographic catastrophe,” a “demographic tragedy,” the “extinction of the Russian people,” and so on, are often heard. The negative opinions concerning the changes in demographic and family spheres are being exploited by anti-reformists who consider these changes to be nothing but unfavorable consequences of unneeded or unsuccessful reforms. If some crisis features are present in the demographic development of Russia, they are likely to be due precisely to a delay in implementing reforms, for example, reform of the health care system. This delay hampers adaptation of social institutions to the new realities of demographic and family behavior. But these realities themselves are the natural consequence of a contradictory, catch-up, Russian and Soviet style of modernization.

This modernization has constantly created and still is creating an inner resistance, but in the end it steadily advances. As this takes place, existing problems are solved, but new ones arise. While the new demographic realities make their way in Russia, the country faces the same challenges as most industrial nations (danger of depopulation, population aging, fragility of families, etc.). Since it is not possible to avoid them, we need to find adequate answers to these challenges.

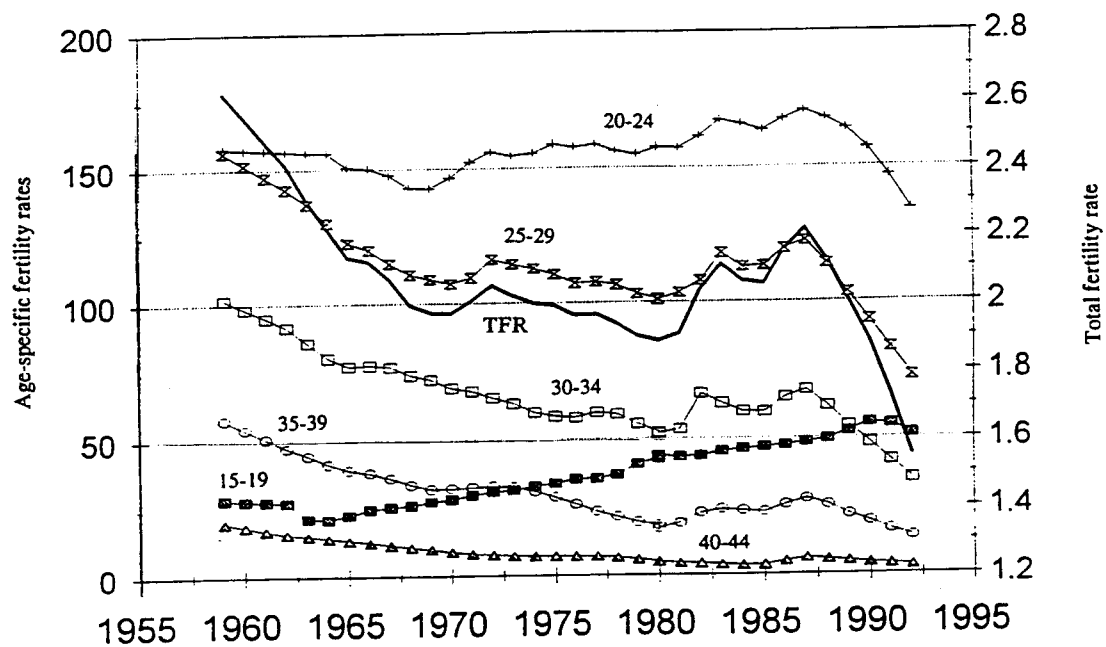
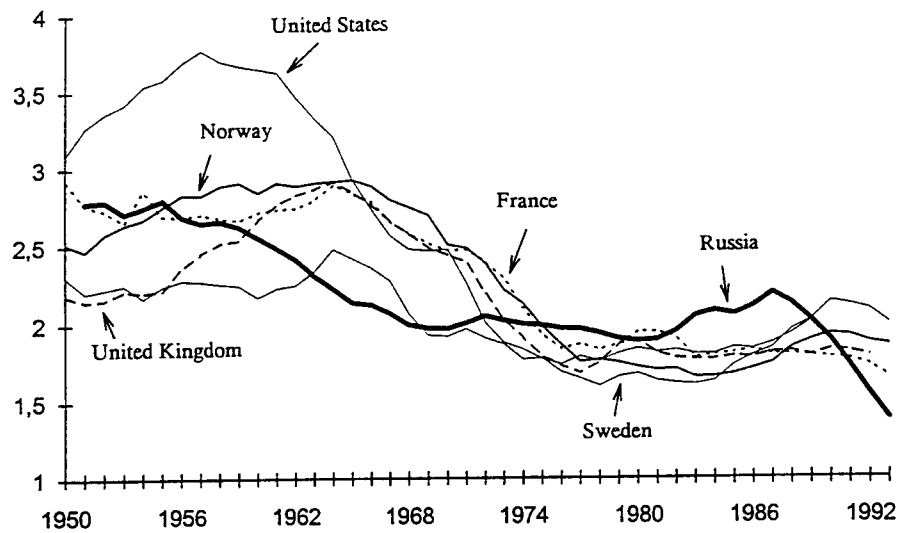
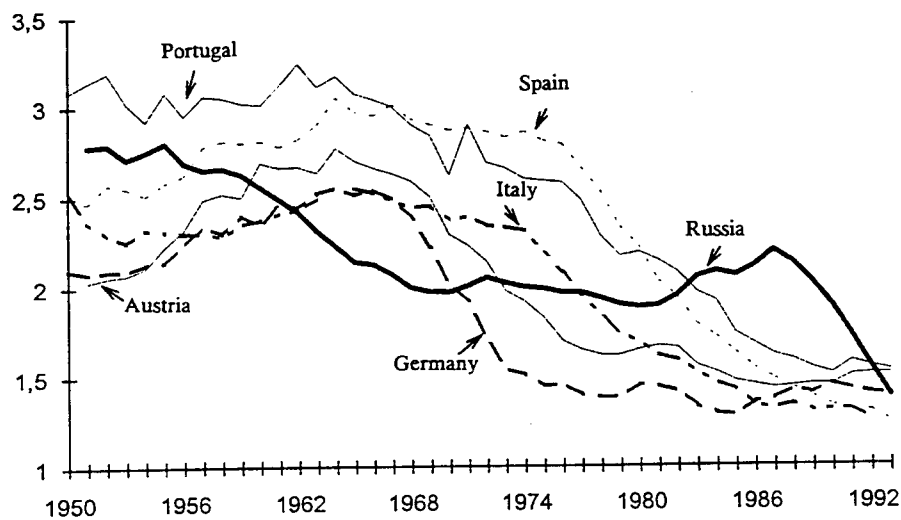


Figure 1.1—Age-Specific Fertility Rates and Total Fertility Rate in Russia, 1959–1994



a) Russia and countries of earlier demographic transition

Figure 1.2a—Total Fertility Rate in Russia and Selected Western Countries, 1950–1993, Russia and Countries of Earlier Demographic Transition



b) Russia and countries of more recent demographic transition

Figure 1.2b—Total Fertility Rate in Russia and Selected Western Countries, 1950–1993, Russia and Countries of More Recent Demographic Transition

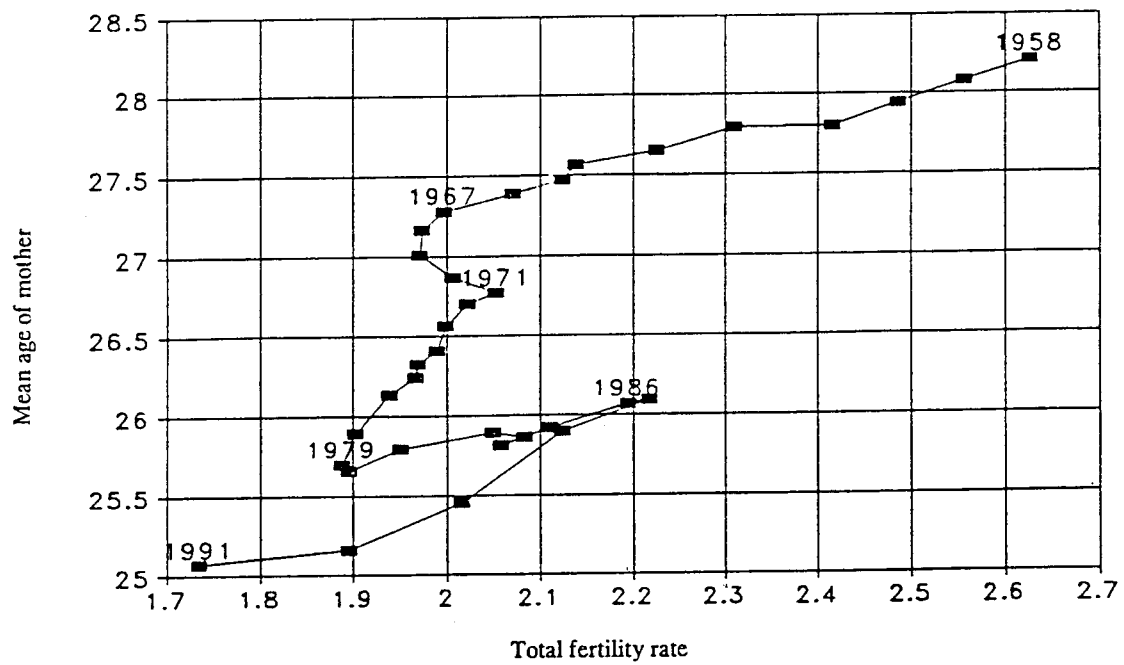


Figure 1.3—Fertility Decline and Evolution of Mean Age of Mother

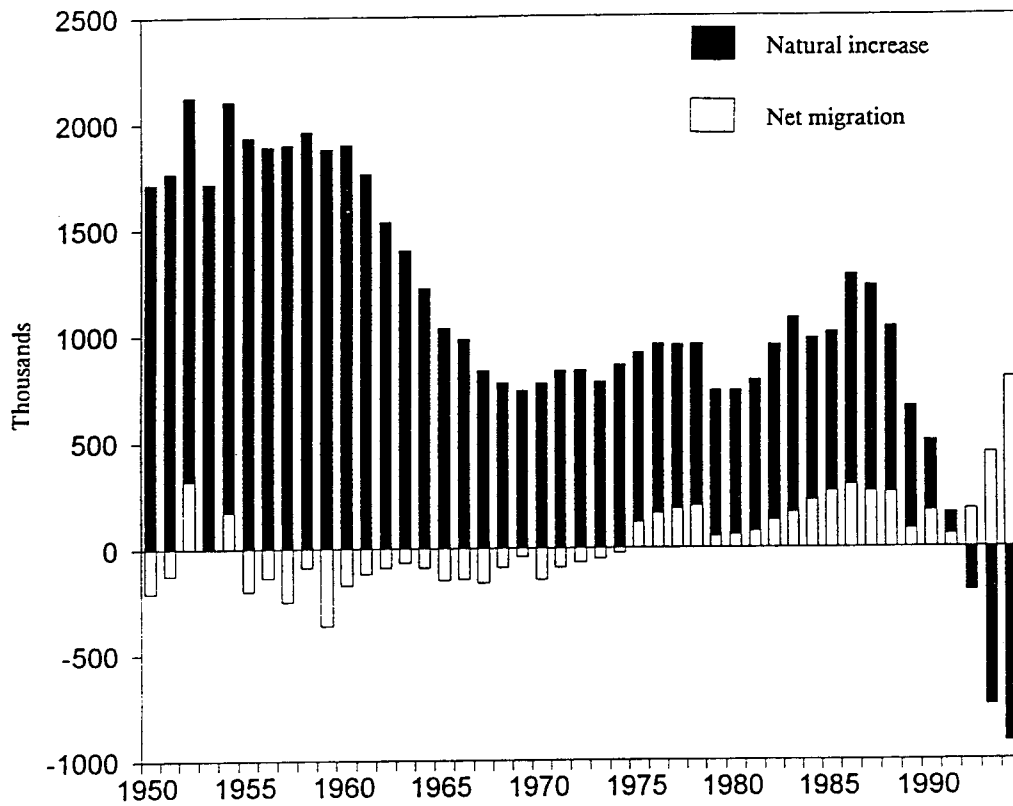


Figure 1.4—Population Increase By Components in Russia, 1950–1993

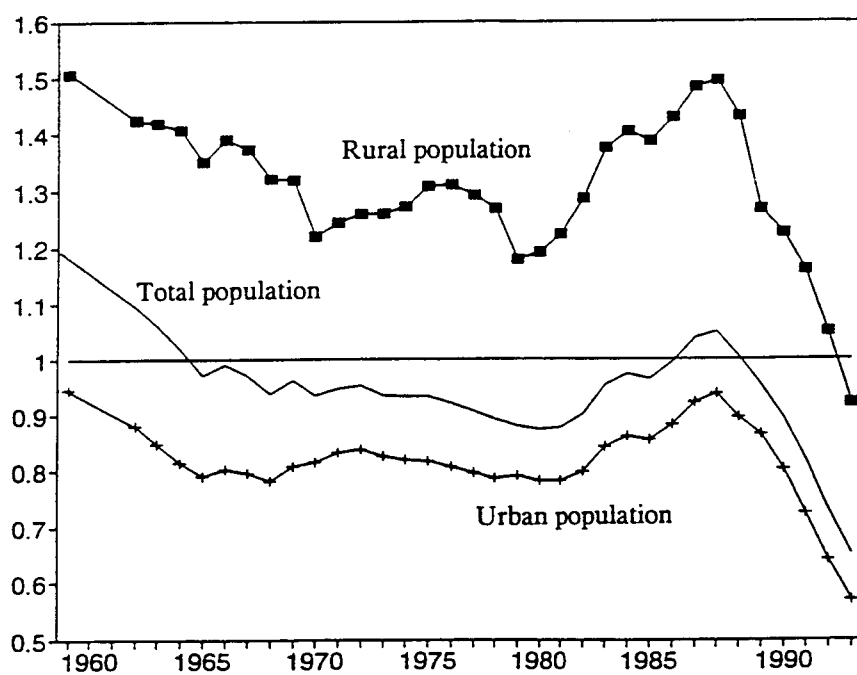


Figure 1.5—Net Reproduction Rate in Russia, 1959–1994

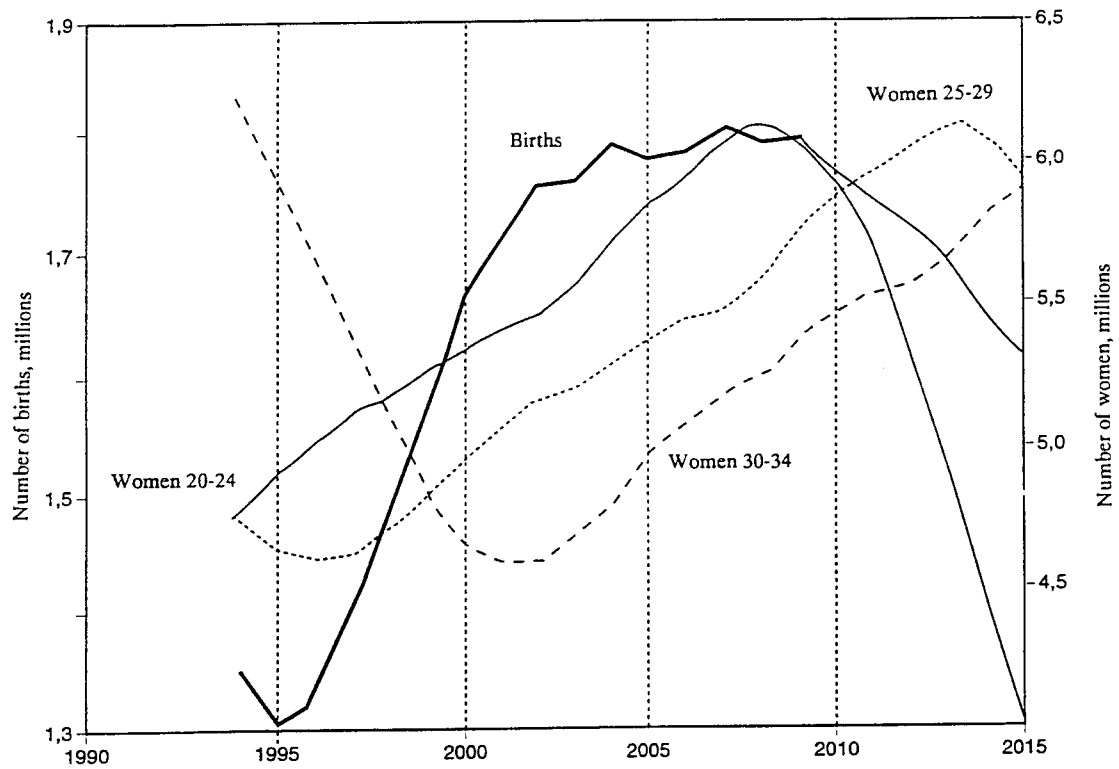


Figure 1.6—Number of Births and Number of Women of Selected Age Groups, Russia, 1994–2015, Forecast of the Center for Demography and Human Ecology, Medium Variant

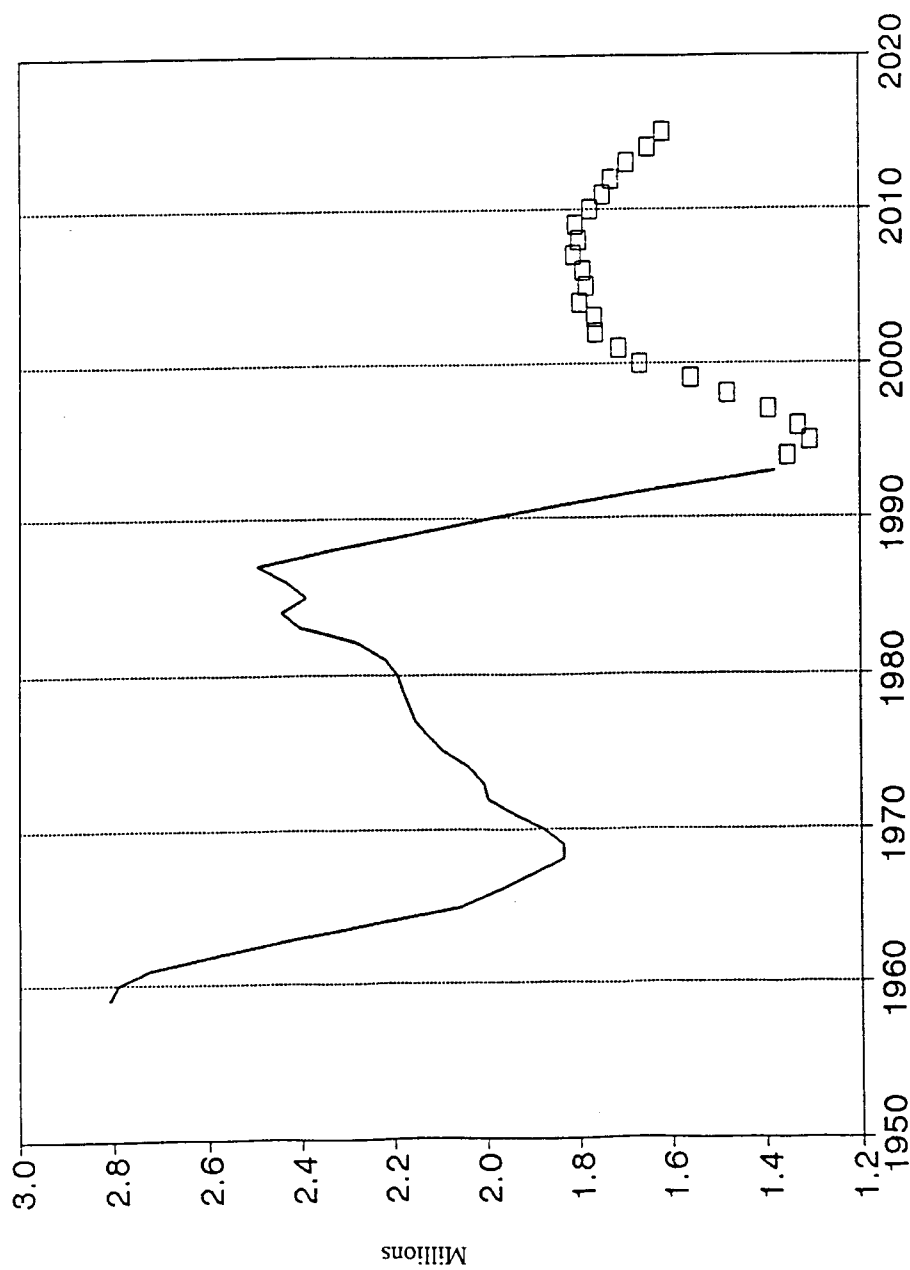


Figure 1.7—Number of Births in Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1992–2015, Medium Variant

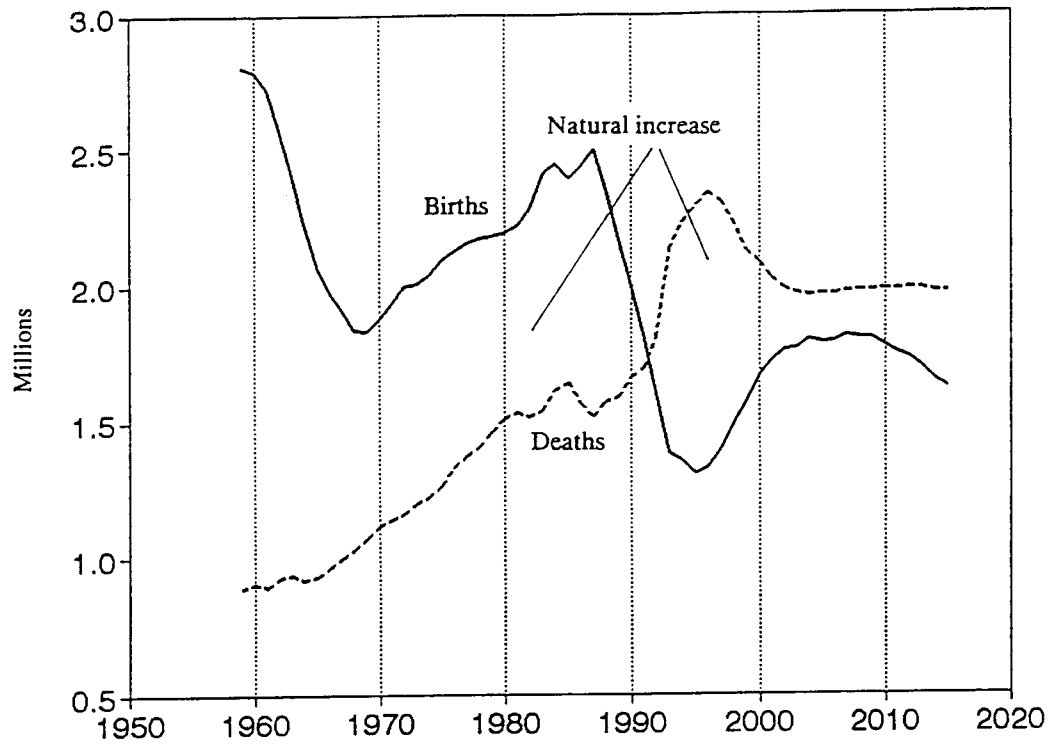


Figure 1.8—Number of Births, Number of Deaths, and Natural Increase in Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, Medium Variant

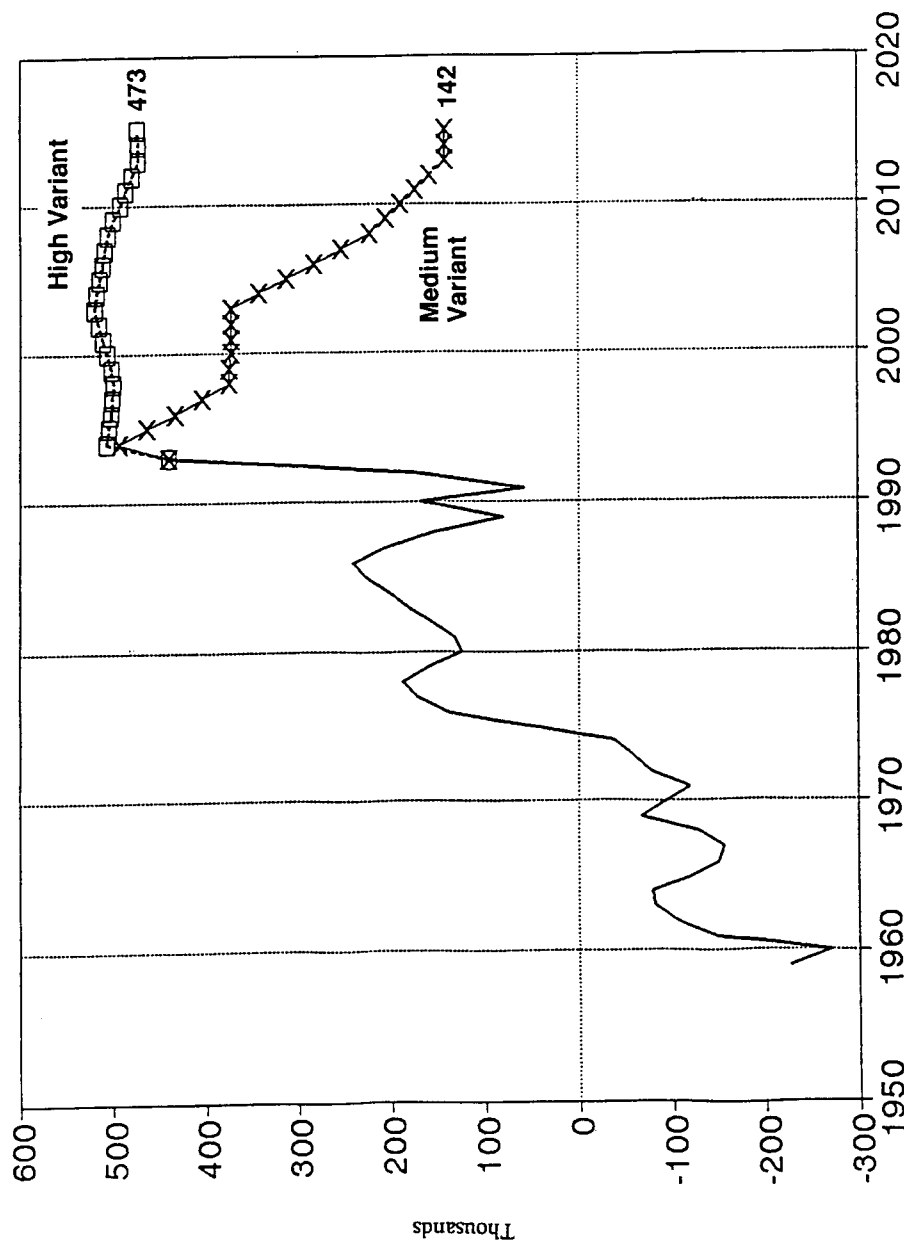


Figure 1.9.—Net Immigration to Russia, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, High and Medium Variants

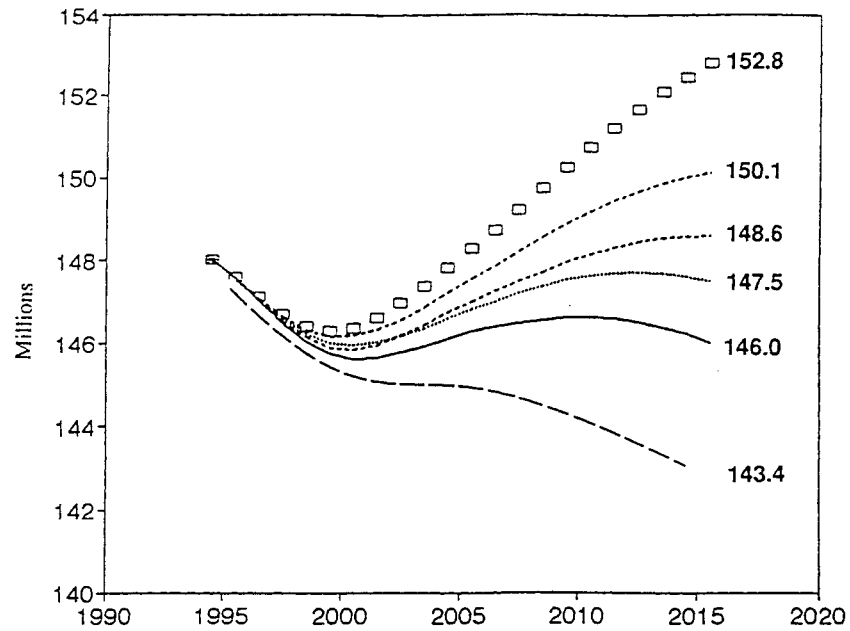


Figure 1.10—Various Estimates of the Population of Russia, 1994–2015, Forecast of the Center for Demography and Human Ecology, Scenarios With Medium and High Migration

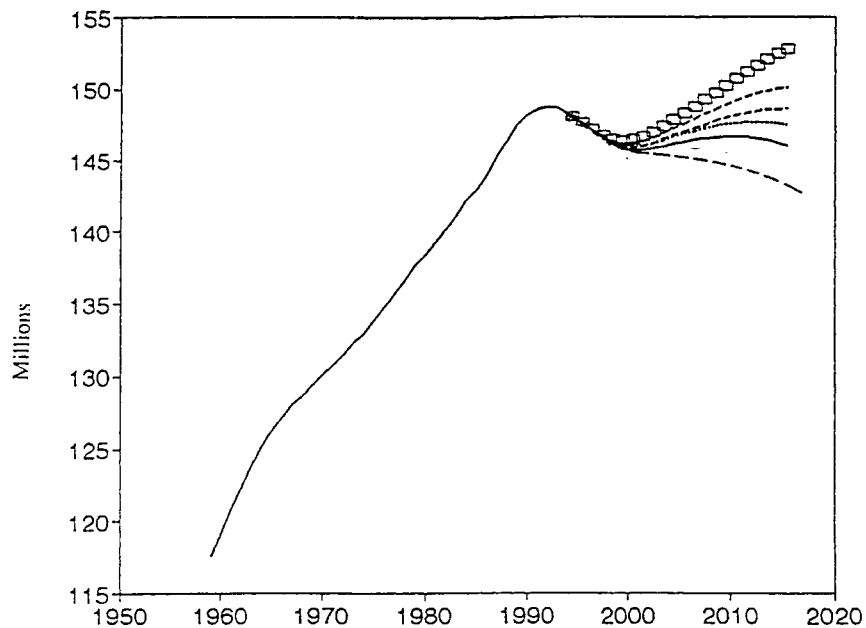


Figure 1.11—Various Estimates of the Population of Russia, 1959–2015, Real Evolution in 1959–1993 and Forecast of the Center for Demography and Human Ecology for 1994–2015, Scenarios With Medium and High Migration

Discussants' Comments

Discussants: Julie DaVanzo, RAND; and Ward Kingkade, U.S. Census Bureau

The discussants of Dr. Vishnevsky's paper pointed out that, even if the described processes are not defined as crises, they pose important questions. Russian demographic history has been strongly affected by a series of political cataclysms, and the current political situation may have a profound and long-lasting effect on demographic trends. The current socio-economic situation in Russia is unique and the interaction between demographic, economic, and political factors should be thoroughly studied. This research will require new, high quality demographic data. The accuracy of the existing data should also be carefully assessed.

The discussants also noted the similarities of many Russian demographic patterns and trends to those in the United States (e.g., high rates of female labor force participation, long-term increases in divorce, increases in cohabitation, and relatively high rates of immigration). They also commented that demographic research in Russia could probably benefit from U.S. research on such issues as teenage pregnancy, the effect of women's labor force participation and divorce on the well-being of children, and the effects of immigration on the economy and society.

2. Fertility Decline and Recent Changes in Russia: On the Threshold of the Second Demographic Transition

by Sergei V. Zakharov and Elena I. Ivanova³⁰

Introduction

This paper surveys fertility trends in Russia since the beginning of the 1900s, focusing on the 1980s and 1990s, with comparisons to selected countries. The rapid fertility decline in Russia over the past decade has been the subject of much scientific, policy, and political interest. This paper examines fluctuations in post-war fertility, completed fertility of post-war generations, and the timing of fertility. Distinguishing features of the fertility decline in Russia appeared over the recent transitional period and in the post-war trends, as well. An extremely large contribution by younger mothers to the total number of births and short intervals between successive births have been characteristic of Russian fertility patterns in the last two decades.

The paper introduces period and cohort analyses of Russian fertility trends in 1979-1993. Though the tempo of cohort fertility reflects shifts in the timing of births, the results of cohort analysis show that the female post-war cohorts have stabilized towards the two-child family. The findings of the present research help to identify the historical point that Russia's fertility transition has reached. The fertility trends analyzed in the present paper also help to identify the position of the Russian population relative to the second demographic transition of other European countries.

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Russia's Natural Increase Becomes Negative: Crises, Public Opinion, and Historical Analogies

It was in late 1991 that, for the first time in the postwar history of the Russian population, the number of deaths exceeded that of births. In 1992 the negative natural change amounted to 219,800, or 1.5 per 1,000. An even greater decrease was recorded in 1993, with a 750,300 natural decrease in population, or 5.1 per 1,000. This natural decrease was larger than the positive change due to net immigration and resulted in a total population decrease by 30,900 in 1992 and by 307,600 in 1993.

Russia has entered the stage of negative population change. The era of postwar population growth, determined predominantly by natural increase, has come to an end. The first postwar decade saw a high natural increase, whereas during the second one its rapid decline was observed. The subsequent two decades brought a period of stability. But by the late 1980s, this gave way to a steep fall in births and, thus, in natural increase.

The mass media has increasingly overflowed with alarming articles on population issues. Based on non-professional interpretation of available vital statistics, they are calling "to save Russia from depopulation." Such assertions ring of nationalism in today's political context. The whole spectrum of conservative forces ("red," "brown," "green," etc.) would not miss an opportunity to manipulate population data to contribute to the atmosphere of anti-democratic, anti-reform, and anti-West sentiments.

As a result, the general public has been completely misled about population issues. Rank-and-file citizens are inclined to draw a direct link between the current economic slump and a demographic crisis. Indeed, the rate of increase in the cost of living exceeds that of income, and under such economic conditions it is not surprising that some view giving birth to a child an irrational or irresponsible act.

The present-day developments in Russia have much in common with those observed in France and Germany many years ago, namely in the 1930s. The Great Depression was accompanied by a demographic depression, and public opinion was largely molded by an impressive comparison of numbers of "coffins" ("crosses") to numbers of baby cradles.³¹ The approaches then pursued in population data interpretation played a role in supporting the patriotic

³¹Huss M. M., "Pronatalism in the Inter-war Period in France," *Journal of Contemporary History*, Vol.25, 1990, pp.39-68.

sentiments of those years, which developed an increasingly nationalistic and national-socialist tone. Ordinary people are always inclined to associate setbacks in population dynamics with those in the economy, and with some reason. In all places and at all times, famine, war, and revolution have tended to bring about a postponement of marriages, a fall in births, and a rise in deaths.

In the twentieth century, Russia has suffered a series of social cataclysms. The demographic crises which have followed have had disastrous implications. They occurred in 1915-1921, 1928-1934, and 1941-1947. According to our lowest estimate, these three crises lasting 6 years each and 7 years apart have accounted for a loss of 38 million people, including losses due to the deficit in births, excess of deaths, and emigration. Thus, Russia was destined to accumulate an enormous experience living in crisis and to reproduce the resulting population decline effect in generations born a half century later.

Yet the history of a population, as much as a historical process itself, tends to be formed not only by a history of catastrophes (event history), but also by a history of evolution (history of long-run and short-run trends). One or another demographic situation appears to evolve from long-term population dynamics, as well as to be shaped by more immediate changes in the social environment. It is not surprising, then, that a dual approach to interpreting demographic change exists. An instructive example can be easily offered by Russia, where both the general public and scholars display an ambiguous approach to assessing the general impact of current trends in births and population dynamics.

What rank-and-file people are much more likely to miss when interpreting the historical developments is an evolutionary component of social dynamics, for they tend to consider them in terms of critical events of their own lives or those of their family. The way they would see things concerning their present and past everyday life is mostly affected by the current settings they live in, or by the foggy idealistic notions they happen to share of the past times. Such a manner of seeing things can be described as an aberration of two types, one resulting from short-sightedness and the other from far-sightedness, or believing that "yesterday was better because today is worse." Meanwhile, a researcher, versus an ordinary citizen, has at his disposal systematically processed information and is expected to resist such temptations.

The experience of investigating Russia's population history makes it clear that, however deep social crises have tended to be, they could never deprive the population dynamics of its major evolution-related component. Consistent with universal laws of social and demographic modernization, crucial patterns of mortality and fertility change have forced their way through the chaos of

irregular fluctuations of rates and unequal demographic contributions of different generations. Moreover, none of the crises observed in Russia has succeeded in exerting a decisive influence on the course of the demographic transition, which would have meant a turnaround in an overall transitional trend. Whatever the case, the crises could not but affect the pace of the demographic modernization by making it either slower or faster, and eventually make Russia's particular pattern of demographic change far more pronounced.

Whether the current demographic crisis is an exception, only the future can tell. Its first stages, which Russia is in, cannot show much and cannot be of great help, if any, in forecasting future trends. In such rapidly changing settings, projections are not easy to do. Nevertheless, there is a need, and some evidence is available in this regard, to identify the historical point within the transition that Russian fertility had reached when the recent socioeconomic and political turmoil broke out. This is all the more important, for Russia is experiencing not only a phase of crisis; it can be also seen as a positive stage of in-depth reconsideration of the history of the country, of coming to know the core patterns of its culture, and seeking answers to vital questions of human existence.

Brief History of Russia's Fertility Transition Through the Lens of the European Experience

The major findings of research into Russia's specific pattern of demographic change in comparison to those of other European countries have been already reported elsewhere.³² We will review here the most important findings relating to fertility.

The pre-transitional (until the end of the nineteenth century) level of Russian fertility was very high. It was higher than that found in the rest of eastern Europe, even though they had a similar nuptiality pattern, which differed from that of western European countries with their late marriage.³³ The Russian nuptiality model was characterized by marriage at an early age and by the overall prevalence of marriage. The mean age at first marriage was around 20 for women, and the proportion of marriages at 20 and younger ages accounted for

³²Zakharov S., "La transition démographique en Russie et l'évolution des disparités démographiques régionales," in, *Modèles de la démographie historique*. Eds.: A. Blum, N. Bonneuil, and D. Blanchet, Paris, 1992, pp. 353-370; Zakharov, S. V., "Changes in Spatial Variation of Demographic Indicators in Russia," *Demographic Trends and Patterns in the Soviet Union Before 1991*. Eds.: W. Lutz, S. Scherbov and A. Volkov, 1994, pp. 113-130.

³³Hajnal J., "European Marriage Patterns in Perspective," *Population in History*, Ed. by D.V. Glass and D.E.S. Eversley, London, 1965; Vishnevsky A., et S. Zakharov, "Similitudes et divergences des transitions de fécondité dans les Europes de l'Est et de l'Ouest depuis 1880." Paper presented at *Chaire Quetelet 1992: Transitions démographiques et Sociétés*, Louvain-la-Neuve, September 15-17, 1992.

more than 50 percent of the total. By age 30, more than 90 percent of women had married at least once, with only 5 percent never married. In addition, though Orthodox Russia didn't have divorce, high mortality made remarriages quite common among widowed persons, accounting for 8–11 percent of the total number of marriages among women and for 14–17 percent among men.³⁴

Lack of widespread fertility control in combination with the overall high nuptiality level were responsible for the average Russian woman giving birth to 7 or more children during her reproductive life. Total fertility rates in Russian European regions (except the Northern Caucasus) varied between 5.9 and 8.7.³⁵

The fertility decline in Russia started at the very beginning of the twentieth century and involved cohorts born after 1870. Geographically, the transition began in the central and northwestern European regions and later spread to the East and the South of the country. By that time, all European countries except Bulgaria, Romania, Portugal, and Albania had already started their fertility decline. In countries like France, the decline had already been under way for a century.

Figure 2.1 illustrates Russia's TFR trend against the background of the European countries³⁶ and clearly shows that, in the initial stage of the transition, Russia tended to exceed the limits of the statistical range of the European transition. It is also apparent that Russia's convergence towards the rest of Europe was very rapid and took no more than 50 years (by the beginning of the 1950s).

The European fertility transition can be considered in terms of a uniform, comparable time scale based on the period of time from the onset of irreversible changes in fertility in each country (Figure 2.2). This enables us to abstract from the differences in the fertility level across countries caused by differences in the initial date of an individual transition. Russia's trend is clearly an exception.

The sweeping fall in fertility in Russia can be attributed to a sharp break from the socio-cultural system of traditional agrarian society. In Western Europe, as well

³⁴Tolts, M., "Nuptiality in Russia in the Nineteenth and the Beginning of the Twentieth Century," in *Nuptiality, Fertility, Mortality in Russia and the USSR*. Ed.: A. G. Vishnevsky, Moscow, 1977, pp.138-153. (In Russian.)

³⁵Zakharov, S. V., "Changes in Spatial Variation of Demographic Indicators in Russia," in *Demographic Trends and Patterns in the Soviet Union before 1991*. Ed. by W. Lutz, S. Scherbov and A. Volkov, 1994, p. 126.

³⁶In Figures 2.1 and Figure 2.2. Western European countries are represented by Austria, Belgium, England and Wales, Finland, Federal Republic of Germany, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland; Eastern European countries include Albania, Bulgaria, Czechia (Czechoslovakia), Hungary, Poland, Romania, Serbia (Yugoslavia).

as in some other parts of the developed world, a similar modernization was far more moderate and much less rapid.

The faster an illiterate Russian peasant grew into an urban educated resident, the more rapidly did his demographic profile change. It was as early as the nineteenth century, and even earlier according to A. Vishnevsky,³⁷ that the need and inevitability of modernization of the Russian society, then lagging behind the civilized European countries, was evident. Is it surprising, then, that long accumulated latent energy for change burst out so intensively? The attempts “to construct communism” in Russia can be regarded as one of the extreme and most aggressive forms of state-driven modernization of a traditional society. In this vein, the social cataclysms of Russian history can be seen as inherent to the chosen path to modernization. As regards population history, catastrophes repeatedly broke the regular pattern of population change. In the area of fertility they did so by bringing about shifts in the timing of family formation.

Prior to the First World War the fertility decline evolved very slowly. That war, and the subsequent Civil war, with their famine and ravages, brought the first acceleration in the change process. A second increase in the tempo of change taking place in the 1920–1930s resulted in an internationally unprecedented drop in fertility (see Figure 2.1). Its causes are well known. The major ones are rooted in the period of intensive industrialization with accompanying massive exodus to cities, a crisis in the country's agriculture, and famine. Then the Second World War came and yet another famine broke out in 1946–47. Though in the 1950s there was a short respite, there was no return to the prewar fertility level.

It can be suggested that the mechanism of fertility decline operating at the family level was that the family repeatedly delayed child-bearing and had less than the intended number of children because of persistent stress conditions. To unfavorable factors affecting fertility can be added the poor social conditions suffered by many generations. The probability of becoming an orphan or being reared in a one-parent family (by a widow, for example) was virtually constantly high for cohorts born between 1885 and the early 1920s.³⁸

The inevitable result of this “stress”-originating fertility control was the rapid spread of induced abortion. A whole abortion-related culture and abortion-providing industry, both legal and illegal, emerged in Russia. Alternating revisions of the legislation concerning induced abortion (1920—legalization,

³⁷Vishnevsky, A.G., “Land and Money,” *The Person (Human Being)*, No. 3, 1993, pp. 5-20. (In Russian.)

³⁸Blum, A., M. Ely, and S. Zakharov (1992). *Démographie soviétique—1920-1950, une redécouverte. Annales de Démographie Historique*, Paris, pp. 7-22.

1936—prohibition, 1955—legalization) testified to conflicting pressures regarding this issue. Although the government fought against abortion for many years, abortion had been widely accepted among the population. (For more on abortion, see paper by Popov in this volume.)

We still lack reliable time series on transitional completed cohort fertility in Russia.³⁹ The data we have are estimates and relate to the population of the USSR as a whole. They must be treated with caution as they have been reconstructed on the basis of data obtained through special surveys of women conducted during 1960-1985 and, therefore, represent the fertility intent of survivors at the moment of the survey.⁴⁰ The completed fertility of cohorts born in 1940-1944 and later was estimated as the actual number of children born plus the expected number of additional children reported in the surveys. We estimated completed fertility of the birth cohorts of 1912-1960 on the basis of pertinent data from the 1979 and 1989 censuses and of the national vital statistics for recent years (Figure 2.3).

Post-War Fertility in Russia vs. the Developed World: Is Russia European?

Ups and Downs in Post-War Fertility

There is considerable difficulty in identifying Russia as a low-fertility country of the Western European type. The fact that Russia shares many fertility patterns with the rest of Europe cannot be of much help in this regard. What does matter are the distinguishing features of the Russian fertility decline. They made their appearance over the transition period and in a postwar trend as well, though recent visible changes in fertility are not significant compared to past developments.

In its general features, the postwar period of Russian fertility history fortunately escaped the dramatic developments of previous decades. However, the postwar compensating increase in births was not so substantial as to create a “baby-boom,” as was the case in most Western countries during the 1950s and 1960s.

Throughout the 1960s fertility declined rapidly, partly due to another, and possibly last, wave of massive relocation to urban areas. Then it began to slow

³⁹ Avdeev, A., and A. Monnier, “À la découverte de la fécondité Russe contemporaine,” *Population*, No. 4-5, 1994, pp. 870-871.

⁴⁰ Andreev, E.M., Darsky, L.E., and Kharkova, T.L., *Population of the USSR: 1922-1991*, Moscow, 1993, p. 81. (In Russian.)

down and eventually a stable situation was reached. In the 1980s Russia saw a notable surge in the total fertility rate (TFR). That was rather a result of governmental interventions through implementation of a series of social policy measures borrowed from the experience of the other Eastern European countries, which had embarked on pronatalist policies ten years earlier (to be discussed below). But by the late 1980s in Russia, similar to the rest of Eastern Europe, a sharp drop in fertility rates replaced their rise. From 1988 up to now a practically linear fall in TFR has been occurring.

Russia's postwar TFR trend is shown in Figures 2.4.1–2.4.6 against the background of the other industrialized countries, geographically classified in accordance with criteria adopted by the Council of Europe. The general conclusion that may be drawn from this comparison is that the closer the countries are geographically, the more they appear to have common change patterns. In this vein, non-European countries of Anglo-Saxon culture such as the United States, Canada, Australia, and New Zealand have fertility trends most dissimilar to Russia (Figure 2.4.5). Next are the countries of western and northern Europe. Comparing further, more similarity is found in Russia's and southern European nations' TFR trends. As the analysis is extended to the countries of eastern Europe, the similarities increase. Finally, all the European republics of the former USSR display a striking simultaneity in TFR change. Viewing these trends together can make the distinguishing pattern specific to Russia visible (Figure 2.4.6). It can be readily documented that in the postwar period in the republics of the former USSR, fertility has been characterized by a gradual trend toward a uniform low level, with Russia tending to occupy the middle level. Moldova is the only exception, where a fertility decline started later and where, naturally, higher TFR levels occur.

Another observation that can be derived from the comparison concerns the rank of Russia's fertility level among the European countries at different periods. In the 1960s, the Eastern European countries including Russia substantially diverged from the countries located beyond the "Iron Curtain." Whereas in Eastern Europe TFRs continued to fall, in the West a slight, short-lived rise was observed. Both trends were reversed in the 1970s. While in the 1960s Russia competed with Hungary and Japan for a record among countries with the lowest fertility, in the 1970s Russia's fertility level was higher than in western and northern countries, which were by then experiencing a downward trend. However, Russia's TFR was lower than those in most Eastern European countries with their upward trend caused by governmental interventions in the population area. A soaring rise in the TFR in the 1980s further raised the rank of Russia, so that it found itself, by European standards, in a pool of countries with the highest

levels of TFR. The subsequent (since 1988) fall in TFR in Russia has brought Russia closer to both groupings of countries.

Thus, the picture of short-run changes in fertility dynamics in the postwar European countries looks rather complicated. The convergence of different groups of European countries was possible only in cross-overs of “group” fluctuating trends representing phases specific to these different groupings of countries. The rank of Russia among the European countries during the 1960s and the 1970s was determined by opposite trends within the other countries rather than by changes in Russian fertility. In the 1980s, the former USSR government’s pronatalist policy strongly affected the fertility patterns there. It led to the emergence of a new fluctuating fertility trend in Europe associated with the ex-Soviet republics.

Completed Fertility in Post-War Generations

The Russian fertility trend compared to those of other countries is presented in cohort terms in Figs. 2.5.1-2.5.4. Since cohort fertility is far less sensitive to casual fluctuations, the distinguishing pattern specific to Russia is much more pronounced in comparison with the rest of the countries. As was the case with TFR, it is hard to find any radical differences between Russia and its nearest neighbors within the former USSR. Meanwhile, the differences between Russia and countries of western, northern, and southern Europe become noticeable to the naked eye. In contrast to a downward trend in completed fertility of postwar generations in many European countries, Russian fertility for the same cohorts is rather steady and even tends to increase. By the number of births produced, cohorts born in the late 1950s have approached the magic value of 2 (more precisely 1.9–1.95), which represents the dominant two-child-family model of nowadays. This is neither a very high nor a very low level for Europe. It is rather an average for the whole of Europe: higher than in most countries of western and northern Europe (excepting France and Norway), but lower than in Eastern Europe (with the exception of the ex-GDR).

The Timing of Fertility: Evidence from Russia

The specifics of Russia’s fertility trend are not restricted to patterns of change in summary indices of fertility. Far more crucial differences can be found in age patterns of childbearing. Age-specific patterns of fertility have been shown in comparative studies to vary from one country to another, and the level of fertility

is not necessarily associated with the concentration of births within a given age range.⁴¹

At present, the eastern European countries including Russia generally display the early-peak type of age pattern in which the maximum fertility occurs in age group 20–24. The countries of western, northern, and even southern Europe (except Yugoslavia) have their fertility peak in the 25–29 age group.

The notable divergence of countries as regards the above-mentioned patterns has increased since the mid-1960s. That period revealed a strong “aging” tendency in Western fertility due to fertility reductions at younger ages, including the 20–24 age group. In the mid-1970s this was supported by an increase in fertility rates for age groups 30–34 and 35–39. Nothing similar was observed in the eastern European countries.

Evidence available from Russia shows that in the 1960s–1980s fertility at younger ages increasingly prevailed. The mean age of childbearing mothers became younger and younger, falling from 28.1 in 1960 to 25.7 in 1980 (Figure 2.6). By 1991, fertility at ages 15–19 exceeded that in the 40–44, 35–39, and 30–34 age groups and approached the rate at ages 25–29 (Figure 2.7).

This strong tendency towards fertility at younger ages is associated with the similar process found in nuptiality patterns. By 1980, compared to 1960, the mean age of women at marriage in Russia fell by 3.5 years, from 26.2 to 22.7. This differentiates Russia considerably from the Western countries, where the 1970s were a turning point in the evolution of marriage age patterns as the age at first marriage began to increase rapidly.⁴²

The increasing occurrence of marriage at ever younger ages in Russia was accompanied by a drop in the proportion of non-marital births—from 13.9 percent in 1959 to 10.8 percent in 1980 (Figure 2.8). By contrast, most Western countries experienced an intensive growth in non-marital fertility in that period. This raises the question of the role that forced marriages may play in fertility dynamics in general, and in Russia in particular. Forced marriages are assumed to largely concern younger ages and be induced by unplanned premarital conception. It is believed that social norms have long been designed to prevent early sexual relations; and non-marital and especially premarital child-bearing have always been stigmatized. Apparently, during the 1970s a crucial change in social norms in this area occurred, and soon showed demographic effects.

⁴¹*Patterns of Fertility in Low-fertility Settings*, U.N. ST/ESA/SER.A/131, 1992, pp. 23–41.

⁴²For example, see Julie DaVanzo and M. Oman Rahman, *American Families: Trends and Policy Issues*, Santa Monica, Calif.: RAND, P-7859, 1993, Figure 1.

J. Bourgeois-Pichat was one of the first to draw serious attention to this issue.⁴³ He made it sufficiently clear that the changes associated with a new phase in Western fertility decline, considered to start in the mid-1970s, most notably the upward trend in mean age at marriage, shift in fertility concentration towards women at older ages, and increase in non-marital births, may be due to a considerable decline in forced marriages in relation to total marriages, along with a decline in unplanned conceptions in general. This indicates a new step towards regulation of life cycle events within a family and by individuals, benefiting from newly available values and economic opportunities. The wide availability of modern, effective contraceptive methods were tools that permitted greater choice in marital and sexual behavior patterns and in timing of childbearing.

In contrast, by the end of the 1980s, a "second demographic transition" (a term introduced by Van de Kaa to summarize the above described trends⁴⁴) was still in its infancy in Eastern Europe, if it was present at all. Russia was no exception. Estimates of the probability of premarital conception resulting in legitimate birth were obtained by processing information from birth certificates and provide some evidence on the pattern of forced marriages in Russia. Premarital conception was assumed to have occurred if the interval between marriage and date of child's birth was less than 8 months. According to many authors conducting studies in different regions, the proportion of premarital conceptions accounted for 30-40 percent of total marital births of the first order, and 50-60 percent and over at adolescent (under 20) ages. One of the major implications of the wide prevalence of forced marriages is a high divorce rate. In this respect, Russia finds itself among the leading countries, with only the United States and the Baltic states ahead.

Yet another feature of Russian fertility patterns that calls for closer attention is the interval between successive births, or the timing of births. As studies have revealed, a slow decline in the TFR during the 1970s was accompanied not only by a shift to younger ages in nuptiality and fertility and a decrease in the probability of higher-order births, but also by a reduction in the intervals between births. In low-fertility settings, shifts in timing of first, second, and third births may considerably affect the overall level of TFR. The interval reductions mean that children of the same order are born by women of different cohorts: some of them according to a normally expected "schedule," while others are born

⁴³Bourgeois-Pichat, J., "The Unprecedented Shortage of Births in Europe," in *Below-Replacement Fertility in Industrial Societies: Causes, Consequences, Policies*. Ed. by K. Davis et al, *Population and Development Review* (Supplement to Vol.12, 1986), 1987, pp. 3-25.

⁴⁴Van de Kaa, D.J., "Europe's Second Demographic Transition," *Population Bulletin*, Washington, Vol. 42 (1), 1987.

somewhat earlier, or ahead of “schedule.” The outcome is an abnormally high number of the births and a high TFR.

The early age patterns of marriage characteristic of Russia and the shortening of birth intervals contributed to the emergence of births of second and higher orders occurring at ever younger ages. Another factor responsible for shifts in birth timing during the 1970s is Russia’s family planning model. Abortion was prevalent, as was little awareness by the population about effective contraceptive devices and a lack of availability of contraceptives. There was virtually no domestic contraception industry, and imports from other countries were negligible. According to the estimate made by A. Avdeev and I. Troitskaya, for the 1970s the life-time abortion rate was 4.0-4.5 per woman in Russia.^{45, 46} However, such a fertility control strategy is really birth limitation rather than family planning as, in fact, attempts are made only to regulate the number of children born and not the spacing of their conceptions. Whether deliberately or not, Russian women apparently achieve the desired number of children in young ages as fast as possible by reducing the birth intervals, with the unplanned pregnancies resulting in induced abortions.

In sum, the combination of low fertility, an extremely large contribution by younger mothers to the total number of births, and short intervals between successive births were characteristic of Russian fertility patterns in the late 1970s. In such a fertility setting, period rates and, in particular, the TFR can never be stable. Even a little change in external conditions might lead to an unpredictable response from young families, causing fluctuations in the total fertility level. The bulk of evidence in this respect is provided by the developments of the 1980s.

Explaining Russia’s Fertility Decline in the 1980s and Early 1990s

An assessment of fertility trends manifested in the mid-1980s provides clues to understanding fertility trends in Russia during the last few years. In the early 1980s, the government attempted to affect demographic trends by a series of social policy measures. The activity in this field consisted of enacting in 1981 the staged implementation of a family-with-children support program. The measures were introduced in all Russian regions by 1983, with repeated

⁴⁵Avdeev, A. A., and Troitskaya, I. A., “Intermediate Determinants of Fertility in the USSR,” in *Demography and Sociology: Family and Family Policy*. Ed. by A.G. Vishnevsky, Moscow, 1991, p. 145. (In Russian.)

⁴⁶Avdeev A., Blum A. et I. Troitskaja, “Histoire de la statistique de l’avortement en Russie et en URSS jusqu’en 1991,” *Population*, No. 4-5, 1994, p. 931.

modifications over the next few years. Of the measures, which primarily affected fertility dynamics, two are especially noteworthy: (1) the introduction of partially paid maternity leave (from one year initially, its period was then extended to 1.5 years and finally to 3 years); (2) the introduction of a juridical definition of a large family as a family with three children, made eligible for all kinds of benefits in public services and housing. The population responded to the implemented measures almost immediately: fertility rose in almost all reproductive ages across all regions of Russia.

The sharp fluctuations in period fertility rates that we have been witnessing in Russia during the last decade cannot but intrigue the scholar, especially given the fact that the absolute majority of Russian families has finally and irreversibly decided to opt for a small nuclear family with two children. Figure 2.9 illustrates how cohorts, one after another, were shifting to the universal two-child family model: all cohorts of Russian women born after the war were reluctant to either remain childless or have more than three children. Numerous sociological surveys conducted in Russia confirm the stability in reproductive intentions of modern families. Under these conditions, fluctuations in period fertility indices may, in fact, reflect the results of adjustments that parents are tending to introduce in their timing of births, rather than a radical revision of their plans concerning the number of children they would like to have. Hence, the growth and subsequent fall of TFR during the 1980-1990s appears to be, in a sense, a peculiar artifact that results from the underlying distribution of women by the number of children already born and intervals between births. To address this issue, we have to introduce into our analysis of distribution of births by order, as well as distribution of women by parity as calculated from the 1979 and the 1989 censuses (in which the relevant question was included for the first time).

Trends in Russian Fertility in 1979-1993: A Period Analysis

Figures 2.10.1 and 2.10.2 show changes in the TFR and total fertility rates for each birth order. First births have gradually increased since 1982, reaching their maximum in 1988, while third births started to increase somewhat earlier—in 1981, with a peak in 1987. The shape of the TFR curve is clearly influenced by the irregular trend in the second-birth total fertility rate. Note also, that there was a slight increase in the frequency of births of the fourth, fifth, and sixth orders during 1986-1987. The picture becomes all the more clear as we estimate period parity-progression ratios, appearing to confirm the impression given by our previous analysis that the probabilities of second and third births (a_1 and a_2) grew in the mid-1980s, reaching their highest level in 1987 (Figure 2.11).

All these facts—first-birth total fertility rate exceeding unity and a second-birth probability at an all-time high of 0.85—lead us to raise the question of the likelihood of considerable shifts in the timing of births in different cohorts during the period under study. Likewise, we can observe the dynamics of mean age at childbearing for each birth order, as well as the dynamics of the standard deviation of mothers' age from the mean age at childbearing for each birth order (Figures 2.12 and 2.13). The mean age of women at childbearing for first, second, and third orders rose slightly in 1986-1987, while mothers' age distribution has changed (i.e., standard deviation increased) considerably since 1981 for first and second births, and since 1983-1984 for third and fourth births. All of these confirm the hypothesis that children of the first four orders were simultaneously born to younger and older women, that is, to women belonging to different cohorts and having correspondingly different reproductive and marriage histories.

Shifts in birth timing (intervals between births) during a short period of time tend to cause irregular changes in the distribution of women by parity. Due to distributional distortion effects, conventional period measures—the total fertility rate and total age-specific fertility rates—cannot adequately reflect the true final number of children born. One can somewhat improve the situation by including in the denominator of age-specific fertility rates only the women at risk of moving to a specified birth order instead of the total female population at that age. We may, therefore, construct period parity-specific fertility tables using the probability a female with at least n children will have $n+1$ children during a calendar year.

The major methodological problem arising here is that, to calculate parity-specific fertility rates, one has to estimate the distribution of women by the number of children already born for each calendar year under study. We attempted to tackle this problem by applying the survival ratio method to the distribution of mothers by age and by the number of children ever born derived from the 1979 and the 1989 censuses. We also used annual distributions of births by mother's age and order of birth, as well as the Goskomstat estimates of the magnitude of changes in each cohort's size due to intercensal mortality. To reduce the magnitude of error, we based our analysis on the average of two annual distributions of mothers obtained by the "forward" method—from 1979 to 1989, and the "reverse" method—from 1989 to 1979. The accuracy of our estimation seems satisfactory.⁴⁷

⁴⁷Comparing the estimated number of women giving birth to 0 to 10 children obtained by the forward method for 1989 with the corresponding data from the 1989 census, we find that the error for

Total age-specific fertility rates for each birth order, calculated for 1979-1993 in the usual way, and the parity-specific fertility rates, estimated on the basis of the distribution of women by the number of children already born from the 1979 and 1989 censuses, are shown in Figure 2.14. This confirms our assumption made earlier that total first-birth fertility rates, as well as second-birth rates obtained in the conventional way, appear to have been inflated for the mid-1980s and, conversely, deflated for the beginning of the 1990s. The difference in intensity of second births recorded between 1983 and 1987 looks less substantial. Generally speaking, however, our calculations intended to help interpret the period indices have introduced nothing new in our substantive conclusions. The intensity of fertility of the first three orders has, indeed, grown significantly during the 1980s, while its drop in the early 1990s was not less significant.

To progress further in our analysis, we should calculate parity-interval-specific fertility rates⁴⁸ and/or undertake a cohort analysis. At the moment, we choose the latter.

Trends in Russian Fertility in 1979-1993: A Cohort Analysis

The age distributions of women by parity obtained by the above mentioned method enable us to reconstitute fertility patterns in cohorts of women born between 1937 and 1977 and giving birth to children during 1979-1993.

The cumulative average number of children born in female cohorts by different ages is presented in Figure 2.15. Two stages of evolving cohort fertility can be easily distinguished. The declining fertility trend continued with cohorts of women born in the 1920s, 1930s, and in the first half of the 1940s. Whereas women born in 1909-1913 gave birth to 3 children during their reproductive life, those born in the early 1920s had about 2.3 children, and the 1945 cohort had 1.8 children. For women born around 1945, the peak of reproductive activity occurred in the second half of the 1960s.

Starting with cohorts born at the end of the 1940s, all following cohorts had, on average, more children than their immediate predecessors. Figure 2.15 clearly shows a gradual upward trend in the average number of children born to cohorts of all specified ages. It is only in 1992 and 1993 that the growth of cohort fertility

fifty birth-cohorts of women varies between 0.1 percent and 3 percent. The "reverse" method estimates for 1979 differ from the 1979 census data in a similar fashion.

⁴⁸Rallu J. L., L. Toulemon, "Les mesures de la fécondité transversale," *Population*, 1993, No. 1, pp. 7-26; No. 2, pp. 369-404.

has ceased. After 23-32 years, women have begun to delay births. In spite of this, by 1994 none of the cohorts, even the most recent ones, has returned to the level of much lower fertility observed fifteen years ago.

The cumulative frequency for birth orders 1-5 in cohorts of women born between 1937 and 1975 observed during the period 1979-1993 are shown in Figures 2.16-2.20. The cumulative frequency of births of the $n+1$ order relates to mothers with at least n children.

A few important points become evident when examining Figure 2.16, illustrating the first birth pattern. The first concerns the stability of the level of permanent childlessness in all cohorts having completed or nearing the completion of their procreation period: 7-8 percent of all women remain permanently childless. The second point is associated with a clearly discernible tendency toward younger first-order fertility. Apparently, the tendency toward younger motherhood has emerged in Russia since at least the mid-1950s. Both period and cohort fertility measures appear to confirm this. It should be noted that in the mid-1980s, due to incentive effects of pronatalist measures, a considerable acceleration of family formation occurred. While by 1979, 18 percent in the 1959 female cohort had their first child by age 20, the corresponding proportion in the 1972 cohort was already 26 percent. The same pattern of younger motherhood is also recorded for other ages, from 15 to 25 years.

Figure 2.17, illustrating the second birth pattern, is of interest also. First, it clearly shows the increasing probability of second births in all the cohorts born after 1945, up to 1962. It is even so for the most recent cohorts, born during the first half of the 1970s: they gave birth to their second child by a specified age more frequently than those born 10 years earlier. Secondly, the magnitude of the increase in the proportion of women who had their second child at a younger age is really phenomenal. By age 25, 18 percent of women of first parity in the 1955 cohort had a second birth while in the 1965 cohort the corresponding figure was 24 percent. The probability of a third birth increased during the 1980s as well, particularly in the second half of the 1980s for mothers 30 years and over. For younger mothers, the growth of third birth fertility was not that appreciable, and, for women at ages below 24, the probability of a third birth was tending to decrease (Figure 2.18).

Figures 2.19 and 2.20 show a steady downward trend in fertility of fourth and fifth birth orders. The population policy of the 1980s did not bring about an increase in the probability of having a large family—it only served to accelerate the timing of the first through third child. Instead, cohorts, one after another, gave birth to children of higher orders less and less frequently, confirming the

observation that a two-child family had become the universal and most desired family model for the Russian population.

The Impact of Pronatalist Policies of the 1980s on Current Fertility Rates

It is now clear that the intense governmental intervention in the area of population during the 1980s favored a trend, which had emerged somewhat earlier, to a stabilization of the final number of children in families at the two-child level. During the 1983-1989 period, the TFR exceeded 2.0 children. It is the change pattern of the second-birth probability that has been shaping the dynamics of the total fertility rate during the last two decades. Due to the implementation of the pronatalist measures, the second-birth probability for women at both younger and older ages increased considerably. Though women over 25 also had an increased probability of a third birth, their contribution to the final size of TFR was not substantial enough to determine the overall trend. The contribution of fourth- and higher-order fertility is statistically insignificant, being in line with its more stable, historical declining trend.

The results of our cohort analysis seem to leave no doubt that the post-war cohorts of Russian women have displayed a stabilizing and even upturning trend in fertility in conformity with the two-child-family size, reaching a high of 1.8-1.9 children per woman.

The incentive effect of the pronatalist measures introduced during the 1980s in Russia was twofold. First, the average number of births in cohorts having completed their reproductive activity grew. This means that a fraction of second and third births would probably not have occurred unless the pronatalist measures had been taken. On the other hand, women had their first three births at younger and younger ages, and reduced the intervals between births more frequently than before, thus continuing a tendency which had emerged earlier. A considerable portion of families achieved their reproductive goals earlier, giving birth to the desired number of children during a short period of five to six years, and did so at a younger age as compared with the preceding cohorts.

During 1992-1994, there has been a slowdown in the tempo of cohort fertility due to the postponement of births of the second and third order (while first birth is not delayed). The fact that five years earlier many of the cohorts had produced their first and second births ahead of the "normal" schedule appears to have made a considerable contribution to the fall of TFR during the early 1990s. Despite a recent significant drop in age-specific fertility in the absence of the

mentioned policy measures, none of the cohorts, even the most recent, has returned to the relatively “slower” tempo of family formation characteristic of the end of 1970s (Table 2.1). A slight decrease in cohort fertility during the early 1990s can be observed for women who by 1994 reached the ages of 23–34.

Table 2.1
Cumulative Average Number of Children Per Women By Age in 1980, 1987, 1990, and 1993 (cohort estimations)

Age	1980	1987	1990	1993
18	0.035	0.048	0.056	0.063
20	0.194	0.238	0.267	0.267
25	0.958	1.026	1.051	1.020
30	1.451	1.527	1.580	1.533
35	1.715	1.758	1.798	1.822
40	1.946	1.792	1.840	1.883
45	1.978	1.934	1.846	1.819

No doubt, today’s hard times for Russian society play a role in the postponement of births observed recently. At the same time, one should take into account the possibility that today the population may be coming back to the former more natural and moderate tempo of procreation. The shift to longer intervals between births seems to be an inevitable “negative” compensation for the pronatalist population policy pursued during the 1980s.

For now, statistical evaluation of the contributions of each of the mentioned factors to the postponement of births is not possible. It is clear that both the end of pronatalist policies and the economic downturn of the 1990s have affected current fertility dynamics. During the last three years (1992–1994), their overall contribution to the drop in fertility, in terms of completed mean number of children per woman, can be estimated to not exceed 0.05 children for women around age 30 and 0.03 children for women around age 25. No sign of the impact of recent developments on the younger cohorts has been detected. One should keep in mind that births postponed today due to changes in family plans might be made up a few years later, representing still another short-term shift in birth timing in a number of cohorts, similar to that observed in the 1980s. In this case, the completed number of births would behave as if no postponement had occurred.

The cohort analysis presented above clearly demonstrates that there is not sufficient evidence to associate a so-called “crisis” in Russian fertility with the

current political and socioeconomic situation, as is frequently done in the media with non-professional speculations about population issues.

The Second Demographic Transition and Prospects for Russian Fertility

The Second Demographic Transition: Basic Features

As shown in the first section of this paper, a complex process of change in fertility behavior patterns has been occurring in the West since the late 1960s. To achieve the relatively small number of children desired, people were modifying their behavioral patterns in ways that have been termed “the second demographic transition.” *The second demographic transition* in fertility and nuptiality is characterized by the following features:

- absolute and relative increase in numbers of consensual unions, long-lasting premarital unions, “trial marriages,” and separations accompanying a rapid decline in the proportion of forced marriages resulting from prenuptial conception;
- a rapid increase in the proportions of illegitimate births with an accompanying increase in mean age at childbearing outside marriage;
- an increase in mean age at legal marriage, mean age at first birth, and mean age at maternity; and
- a change in the position and shape of the distribution of birth by age—a shift of modal age at birth from the 20-24 age group to the 25-29 age group, the declining contribution of the youngest ages 15-19 and a growing contribution of the older ages (over 30 years) to the total fertility rate, resulting in a less concentrated distribution of births by women’s ages.

The mentioned signs of the second demographic transition are mainly associated with fundamental changes in the individual life cycle in general, and with changes in individual goals with regard to the timing of marriage and family formation, in particular. Modern sexual norms imply a free choice of partner and type of conjugal life, mutual responsibility for the potential outcome of intimate relations, effective birth spacing, and a functional attitude to contracting or dissolving of marriage. In short, the increased opportunities for an individual to mold his life on his own are tending to be realized through a different model of nuptial and reproductive behavior.

As a result, a new pattern of fertility timing has begun to emerge. This new fertility model has, no doubt, become possible owing to the development of effective contraceptive means and techniques, offering unprecedented opportunities for couples to pursue their own strategy with respect to the desired number of births and their spacing.

The first indication of a changing fertility model in Russia was that the upward trend in fertility for the 15–19 age group has reversed since 1991. The increase in adolescent fertility observed until that moment may be attributed to earlier initiation of premarital sexual relations associated with “the sexual revolution.”

The Second Demographic Transition as a Process of Change in Age-Specific Fertility Patterns

Let us follow the process underlying the changes in age-specific patterns of fertility in advanced countries, taking as a starting point the onset of its decline in age group 15–19. The countries selected for a comparative analysis⁴⁹ differ in the initial date of steady fertility decline at ages 15–19 from 1966 in Sweden to 1979 in Greece. In the United States the decline has been occurring since 1971–1972. It can be noted that the decline in adolescent fertility is quite independent of overall levels of fertility. TFR varied from 1.72 in Germany to 3.19 in New Zealand. As mentioned above, the desired final number of children and desired timing of births appear to be relatively independent and, to a certain extent, adaptable characteristics of fertility.

At the beginning of the mentioned changes, not all the countries under study had a fertility rate at ages 20–24 higher than at ages 25–29. For instance, for Australia, Italy, and Sweden, the ratio of the former to the latter was 0.94–0.95, and was even lower in the Netherlands—0.77. However, by the onset of the change process, this index tended to rise in all the countries without exception, even in those where the corresponding ratio was below unity. The highest values of the ratio were recorded for Hungary (1.59), Austria (1.37), the United States (1.25), and for Greece (1.21). It reached 1.01 in England, 1.08 in Luxembourg, 1.10 in Finland, and 1.14 in France and Germany.

The decline in adolescent fertility is followed after a certain interval by reductions in the ratio of fertility rate at ages 20–24 to that at ages 25–29. On

⁴⁹These include 16 countries: Australia, Austria, Finland, France, Germany (Western Germany), Greece, Hungary, Italy, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Sweden, England and Wales, and the United States. In all of them the change in the age pattern of fertility is unequivocally evident.

average, the length of the time lag ranged across the countries from one to five years. However, certain countries, for instance, the United States, had no delay at all. The countries with higher ratio values needed, naturally, more time to level off the rates of fertility at these age groups. Thus, in Hungary the leveling off process has not yet been completed, while it lasted 18 years in Austria, 10 in the United States, 9 in Greece, 6-7 in Germany and France, and 2 years in England and Luxembourg.

The next stage in the process of transformation of the age pattern of fertility is characterized by increasing absolute and relative contributions to overall fertility by the 30–34 age group, and then the 35–39 age group. Recently, in the most advanced populations, a slight rise in fertility rates has been recorded even for ages 40–44. The change in age fertility pattern, therefore, represents, from a statistical standpoint, a process of successive redistribution of births from younger age groups to older ones. During such a redistribution, a drop in the size of TFR tends to occur due to both the incomplete realization of postponed births (the postponement of birth across a few cohorts underlies the changes in age-specific fertility) and to diminishing numbers of unplanned and unwanted births, particularly at young ages.

In other studies (of the evolution of regional demographic differences in Russia, of cross-country comparisons of demographic transition patterns,⁵⁰ and of modeling the mortality transition⁵¹) we have attempted to model the entire process of age-curve modification. The basic variables used in these studies are the tempo of change in fertility for each age group and in the ratio of fertility intensities for different age groups, using the initiation of the decline in adolescent fertility as a starting point. Since the given process is to be presented in an imaginary comparable time scale, the impact of the overall fertility levels can be eliminated to a certain extent. To evaluate the range of variation in indicators of change in age-fertility patterns, we have constructed indices for a set of the countries under study using the same time scale.

The Concept of the Second Demographic Transition as an Assumption in Fertility Projections for Russia

As was already mentioned with regard to major features of population evolution, Russia has tended to follow in the footsteps of the most advanced populations.

⁵⁰ See reference 2.

⁵¹ Vassin, Sergei, "Epidemiological Transition of Mortality Curves in Terms of the Brass Logit System," *European Journal of Population*, No. 10, 1994, pp. 43-68.

Throughout the twentieth century Russia was either lagging behind or rapidly catching up with the vanguard group of countries. Because of this, an illusion of a unique pattern of Russian demographic change arose. Indeed, Russia had in the past, and still has, a number of important, distinct features of population dynamics, including in fertility. However, in practice most of them are nothing more than extreme (peripheral) points and variants of a generalized statistical space of variations (or value area acceptable within certain limits) of other countries. This approach to identifying the location of the Russian population in a European or even in a global demographic space enables us not only to interpret the current changes in population trends, but also to make assumptions about future prospects of fertility change in Russia.

By the early 1990s, no signs were observable of the onset of a second demographic transition in Russia. Even the capital city regions had barely begun to join in the process, which had emerged in the advanced countries over the past two decades. However, Russia could be considered to be exhibiting a 'pre-transitional' pattern of age fertility of an extreme variant that stands out very clearly against not only the western European countries but even certain countries of eastern Europe. Peculiarly Russian features of this 'pre-transitional' pattern are a more pronounced dissymmetry and a higher age concentration of births resulting from earlier nuptiality and a greater concentration of births at young ages.

Until recently, Russian women had their children at younger and younger ages, with a greater concentration of births in the youngest age groups. In 1990, the fertility rate in the 15–19 age group in Russia was 55.6 per 1,000, the highest ever reached during the post-war period in any of the western European countries (excepting Austria, where it was 63 per 1,000 in 1966–1968). (A similar level was observed in 1971 in Australia, until 1974 in New Zealand, until 1976 in the United States, while Canada did not show the described pattern at all.)

In Russia, over several decades, with the exception of only a short period in the mid-1980s, the contribution of ages 25–49 to total fertility was falling. The contribution by mothers aged 15–24 accounted for 56 percent of TFR in 1990, the all-time high for western European countries and non-European developed countries in the post-war period. Only in such eastern European countries as Bulgaria, the former GDR, and Hungary did the process of fertility shifting to younger ages go somewhat further than it did in Russia.

Nonetheless, the fertility trends of recent years provide us with some evidence suggesting that *Russia seems to be starting to embark on a second demographic transition.*

- (1) Since the mid-1980s in Russia, there has been occurring a rapid increase in the proportion of births outside marriage, which may be considered an indirect indication of a progressive increase in consensual unions other than traditional legal marriage (Figure 2.8).
- (2) Since the mid-1980s the prevalence of abortion (per 1,000 women aged 15-49) has been decreasing substantially (Figure 2.21). Though the registration of induced abortions has visibly deteriorated of late, the recent reductions in abortion numbers may, in fact, mean the beginning of change in family planning patterns. Evidence both on abortion and contraceptive use suggests that an increasing number of Russian women are currently moving from abortion to efficient methods of contraception. A steep fall in TFR observed in Russia since 1988 has not, at least, been accompanied by an upturn in the life-time abortion rate, which we might expect to have occurred (Figure 2.22). Besides, induced abortions in Russia have been continuously declining since the mid-1970s, and the dynamics of the abortion rate were not strongly affected by period-specific fluctuations in fertility during the 1980s.⁵²
- (3) Since 1991, the 15-19 age group has been exhibiting decreasing fertility. This is an important sign of the onset of the transition to a new fertility age pattern. In our view, a reduction of fertility in this age group can hardly be of a period-specific character, as that should occur in the other age groups. As already mentioned, the preceding growth of adolescent fertility resulted largely from changes in the sexual behavior of youth—from poor knowledge about contraceptive methods and a predominantly non-economic attitude to marriage and family at the time. From the beginning of the 1960s, adolescent fertility exhibited a strikingly steady upward trend. It did not respond to any external interventions or have breaks in its monotonic trend, as was the case in the other age groups during certain periods. So, we may assume that behind the appearance of fertility decline in that age group must be factors beyond changes in the political and economic climate.
- (4) The postponement of second and third births occurring in Russia since the early 1990s appears to signify not only the return to the pattern of the end of the 1970s, or a reaction to difficult economic conditions, but also a change in

⁵²For detailed information on trends in abortion in the former USSR and Russia, see A. Avdeev, A. Blum, I. Troitskaja, "L'avortement et la Contaception en Russie et Dans l'ex-URSS: Histoire et Présent," *Dossiers et Recherches*, INED, No. 41, Octobre 1993; A. Avdeev, A. Blum, I. Troitskaja, "Histoire de la Statistique de L'Avortement en Russie et en URSS Jusqu'en 1991," *Population*, No. 4-5, 1993, pp. 903-934; A. Popov, "Family Planning and Induced Abortion in the Post Soviet Russia of the Early 1990s: Unmet Needs in Information Supply," 1994, in this volume.

- the family life cycle by leading social groups adopting “Western” norms in reproductive and nuptial behavior.

In the period before the collapse of the Berlin Wall, signs of the second demographic transition could be readily found in a number of Eastern European countries (e.g., Hungary, former GDR, and Yugoslavia), though their initial pattern of birth timing was not very different from that of Russia. In addition, it is important to note that the transition to a new model of fertility in Russia may be stimulated (or is already stimulated?) by the existing economic reality. In any case, in the near future we can expect increasing responsibility in contracting a marriage, in recognition of its growing economic significance. This will inevitably result in an increase in the mean age at first marriage and, correspondingly, in the mean age at first birth. Consequently, the new fertility model may appear even sooner than it might be expected in conditions of gradual, evolutionary changes.

Figure 2.23 presents a medium-scenario fertility projections up to 2015 based on the described hypothesis of modifications in age-specific fertility patterns. The figure shows that the fertility rate at ages 20–24 is higher than at ages 25–29 and the tempo of change of their ratio appears to be very slow. The redistribution of births between these age groups in the latter’s favor is believed to have taken place over a rather long time. The contribution of age groups 30–34 and 35–39 to fertility tends to increase, but the rate of increase grows at different speeds through the course of transition. The decline of the age-specific fertility rate for the youngest age group (15–19) is slower than that in the advanced countries.

The second demographic transition involves a complex adaptation process modifying the whole system of reproductive behavior that may bring about, particularly in its first stages, not only change in the age pattern of fertility, but also reductions in its overall level. It appears likely that this very process is responsible for the similarity in the transition patterns found currently in Russia and the central and southern European countries, as well as for their common features distinguishing them from the countries of northern and western Europe, where the transition started earlier and was to a lesser extent conditioned by obstacles of an ideological or religious character.

Conclusions

The negative population change and rapid fertility decline that Russia experienced at the beginning of 1990s brought contradictory responses in public opinion and in professional publications. The real stage that Russia’s fertility

transition has reached at present can be found only by conducting a demographic analysis of the process over a relatively long historical period.

The analysis of fertility since the beginning of the 20th century through recent decades in comparison with other advanced countries shows that Russia has followed a unique path in fertility trends during the entire period under study. Russia's peculiarities were caused by differences in its initial date of transition and in its process of social modernization. Russia's social and political transformations have had great consequences for its population history. Its demographic processes were influenced by social catastrophes which repeatedly broke the long-term patterns of population change.

Ultimately, however, social crises could not overcome the major evolutionary component of Russia's population dynamics. Fundamental patterns of fertility change have forced their way through the chaos of irregular fluctuations in birth rates and unequal demographic contributions of different generations.

The postwar period vividly demonstrated opposite trends in the total fertility rate (TFR) and completed fertility within most other countries in comparison with Russia. Fluctuations in these trends in Russia were determined by peculiarities in the timing of fertility: a shift to younger ages in nuptiality and fertility, a reduction of intervals between births, and a family planning model based on abortion.

The government's population policies during the 1980s accelerated a transition to the two-child family model in Russia. On the other hand, it brought a further reduction in the intervals between births. This tendency was broken in the 1990s and, during the last decade, by sharp fluctuations in period fertility rates. The widespread public opinion is that the economic slump has caused a slowdown of fertility. It is easy to associate the changes in economics with the current postponement of births. However, the results of cohort analysis have revealed the superficiality of this explanation. The postponement of higher-order births in the 1990s reflects the shift to longer intervals between births and can be considered as a compensatory effect for the pronatalist policy of 1980s. None of the cohorts has returned to the slower tempo of family formation of the 1970s. Hence, the growth and subsequent fall of the TFR during the 1980-1990s appears to be a peculiar artifact that resulted from the distribution of women by the number of children already born or intervals between births. Thus, there is not sufficient evidence to associate the decrease in Russian fertility with the current political and economic crisis. Future social and demographic developments and continuing research should serve to clarify the correlation between fertility and social changes in Russia.

A complex process of change in fertility patterns over the past three decades has occurred in most Western countries. Those shifts are mainly associated with changes in the individual life cycle, and, in particular, in the timing of marriage and family formation. All these trends are interpreted as "the Second Demographic Transition." Until recently, Russia has demonstrated opposite trends in comparison with the West. Russia has tended to follow in the footsteps of the most advanced populations, but at present the Second Demographic Transition in Russia is still in its infancy. Most of the specific features of Russia's fertility dynamics appear to be extreme points of a generalized statistical range for the more advanced nations. If the Second Demographic Transition progresses further in Russia as in other developed countries, it will be apparent in tendencies toward nuptiality and fertility at older ages and changes in the scheduling of these demographic processes.

Sources of Data Presented in Graphs

1. Andreev, E.M., Darsky, L.E., and Kharkova, T.L., *Population of the USSR: 1922-1991*, Moscow, 1993, p. 81 (in Russian).
2. Avdeev A., Monnier, A., "A la découverte de la fécondité russe contemporaine," *Population*, No. 4-5, 1993, pp. 870-871.
3. Avdeev A., Blum, A., Troitskaja, "Histoire de la statistique de l'avortement en Russie et en URSS jusqu'en 1991," *Population*, No. 4-5, 1993, pp. 931.
4. Carlson E., "Inverted Easterlin Fertility Cycles and Kornai's 'Soft' Budget Constraint," *Population and Development Review*, Vol.18(4), 1992, p. 670.
5. *Central Statistical Office of Russia*. Unpublished official data and calculations collected by authors.
6. Chenais, J.C., "La Transition Démographique," Paris: INED, 1986, pp. 520-521.
7. Lutz W., *Finnish Fertility Since 1722*, Publication of the Population Research Institute, Series D, No. 18. Helsinki, 1987, pp. 121-122.
8. Monnier A. (1991). The Demographic Situation of Europe and the Developed Countries Overseas: An Annual Report, 1991. *Population. An English Selection*. Vol. 3., p. 229; Monnier, A., de Guibert-Lantoine C. (1993). The Demographic Situation of Europe and the Developed Countries Overseas: An annual report. *Population. An English Selection*. Vol.5., pp. 264-265.
9. *Patterns of Fertility in Low-fertility Settings*, U.N. N.Y. ST/ESA/SER.A/131, 1992, pp. 83-115.
10. Preston S.H., "The Decline of Fertility in Non-European Industrialized Countries," in *Below-Replacement Fertility in Industrial Societies*. Ed. by K.Davis, M.S.Bernstam, R.Ricardo-Campbell. *Population and Development Review*. Vol.12 (Supplement), 1987, p. 27.
11. Ralu, J.L. A. Blum, eds., *European Population*, Vol. 1, "Country Analysis," Paris: John Libbey and Co., Ltd., 1991.
12. *Recent Demographic Developments in Europe and North America, 1992*, Strasbourg: Council of Europe, 1993.
13. Sardon, J.P., "Generation Replacement in Europe Since 1900," *Population, An English Selection*. Vol. 3., 1991, pp. 19-20.
14. Vishnevsky, A.G., Anichkin, A.B., and T.A.Vishnevskaya (1990), "Low Fertility Settings in the USSR: 1959-1989." Tables and Graphs, Center for Demography and Human Ecology (working paper), Moscow. (In Russian.)

15. Zakharov, S.V. (1994), "Demography. Population of the Russian Federation," in *New Russia: An Information and Statistical Almanac*, 'SP All Russia' Publishing House, p. 124. (in Russian).

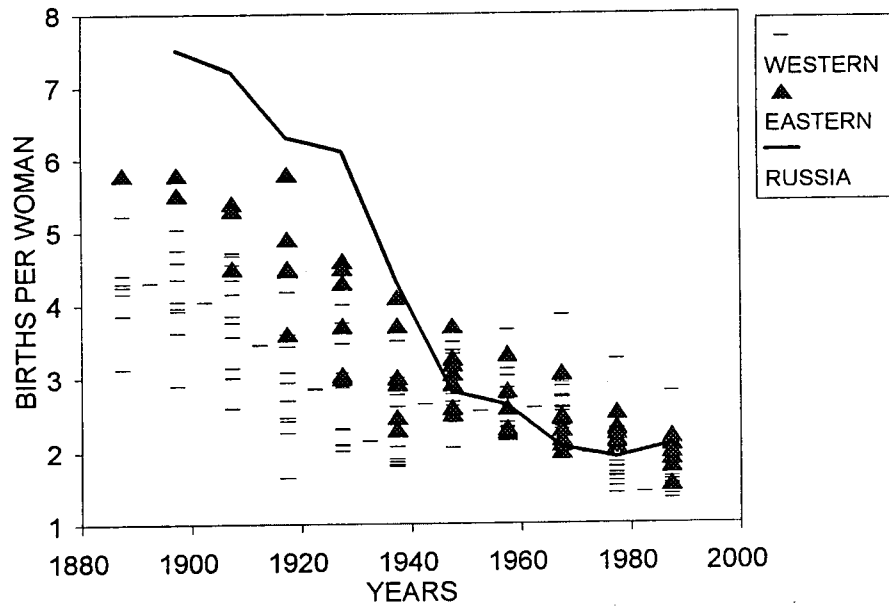


Figure 2.1—Trends in Total Fertility Rate in Russia and Other Countries of Western and Eastern Europe, 1880-1990

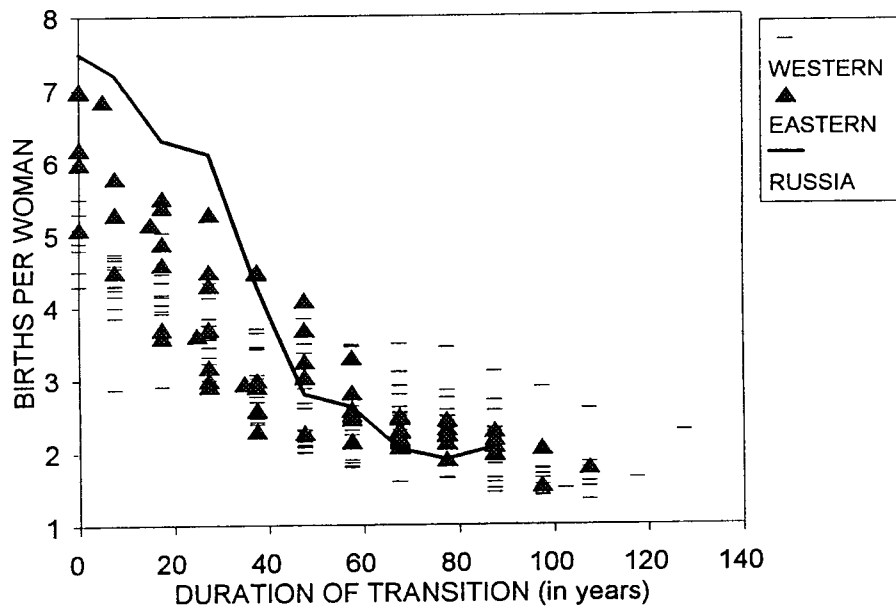


Figure 2.2—Trends in Total Fertility Rate in Terms of Comparable Time Schedule in Russia and Other Countries of Western and Eastern Europe During the Demographic Transition

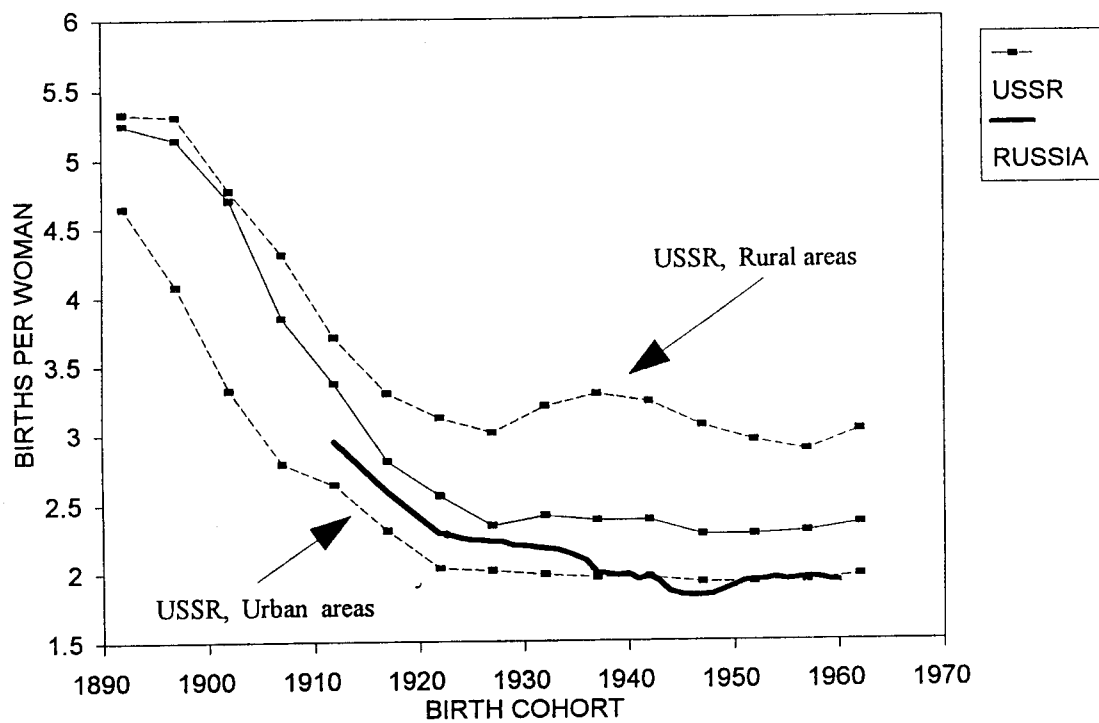
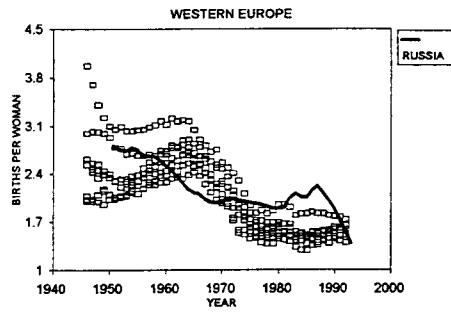
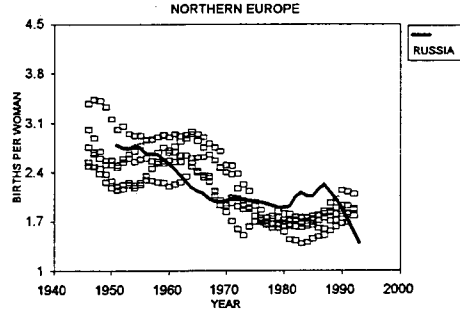


Figure 2.3—Completed Fertility of Birth Cohorts, 1890–1960, in the USSR and Russia

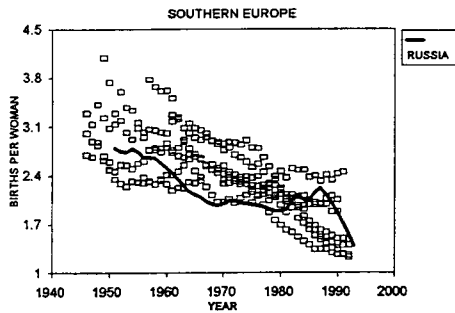
SOURCES: Data for the USSR, Andreev E.M., Darskii, L.E., Kharkova, T.L., 1993, p. 81. Data for Russia, (1) Andeev, A., Monnier, A., 1994, pp. 870–871; (2) Estimates based on the 1979 and 1989 Census Data and Vital Statistics for 1989–1993.



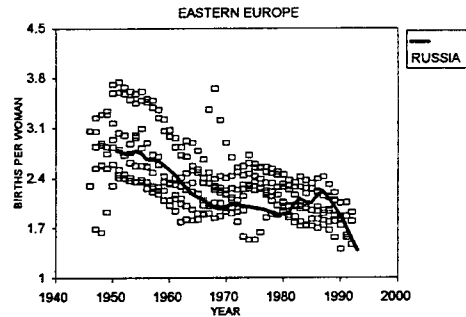
Austria, Belgium, France, FRG,
Luxemburg, The Netherlands, Switzerland



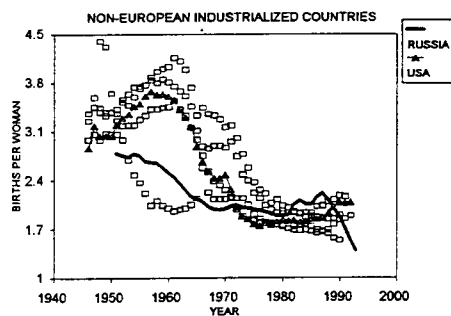
Denmark, England & Wales, Finland,
Norway, Sweden



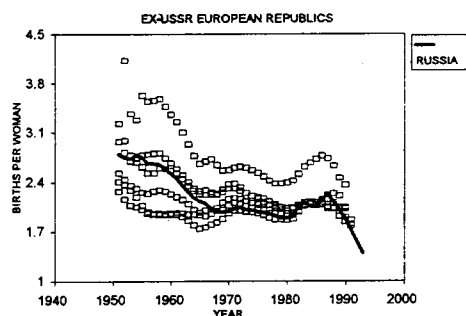
Cyprus, Greece, Italy, Malta,
Portugal, Spain, Yugoslavia



Bulgaria, Czech Republic, GDR, Hungary
Poland, Romania, Slovakia

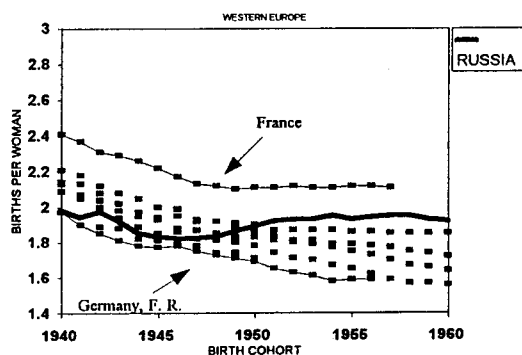


Australia, Canada, Japan,
New Zealand, U.S.A.

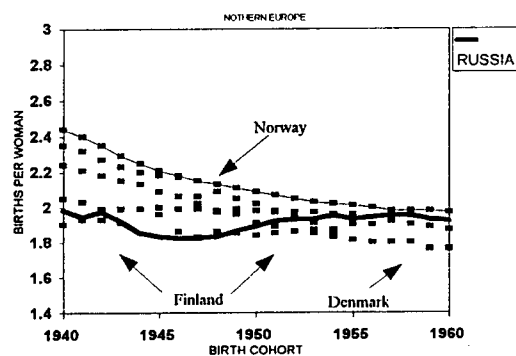


Estonia, Belarus, Latvia, Lithuania,
Moldova, Ukraine

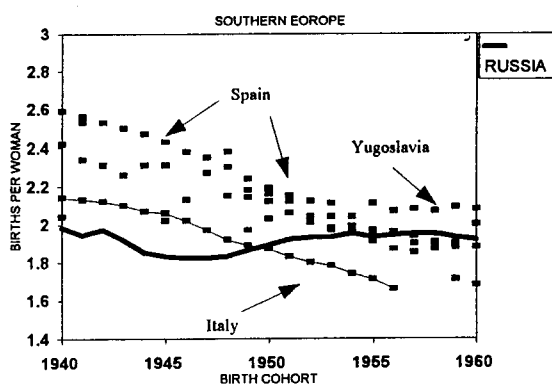
Figure 2.4—Postwar Trends in Total Period Fertility Rate in Russia Against the Background of Different Groups of Countries, 1945–1993



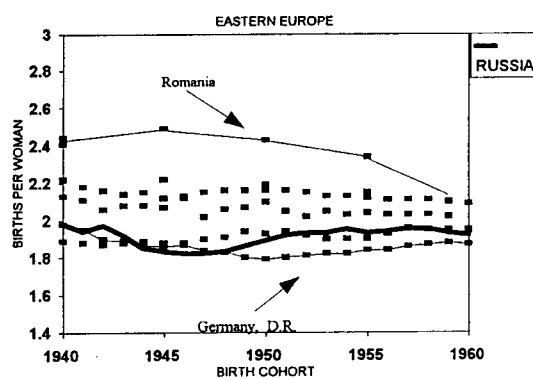
Austria, Belgium, France, F.R.G.,
Luxemburg, The Netherlands.



England and Wales, Denmark, Finland,
Norway, Sweden.



Greece, Italy, Portugal, Spain,
Yugoslavia.



Bulgaria, Czechoslovakia, G.D.R.,
Hungary, Poland, Romania.

Figure 2.5—Trends in Completed Fertility in Russia Against the Background of the Different Groups of European Countries, Birth Cohorts of 1940–1960

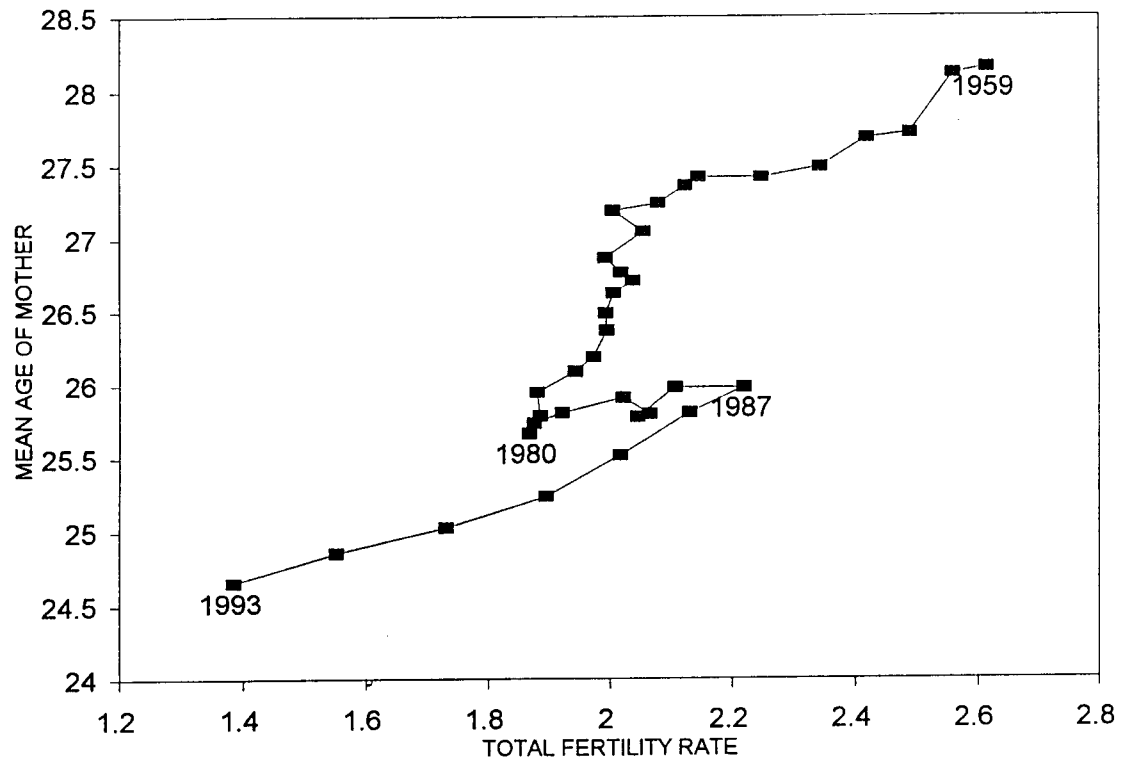


Figure 2.6—Trends in Mean Age of Mother and Total Fertility Rate in Russia, 1959–1993

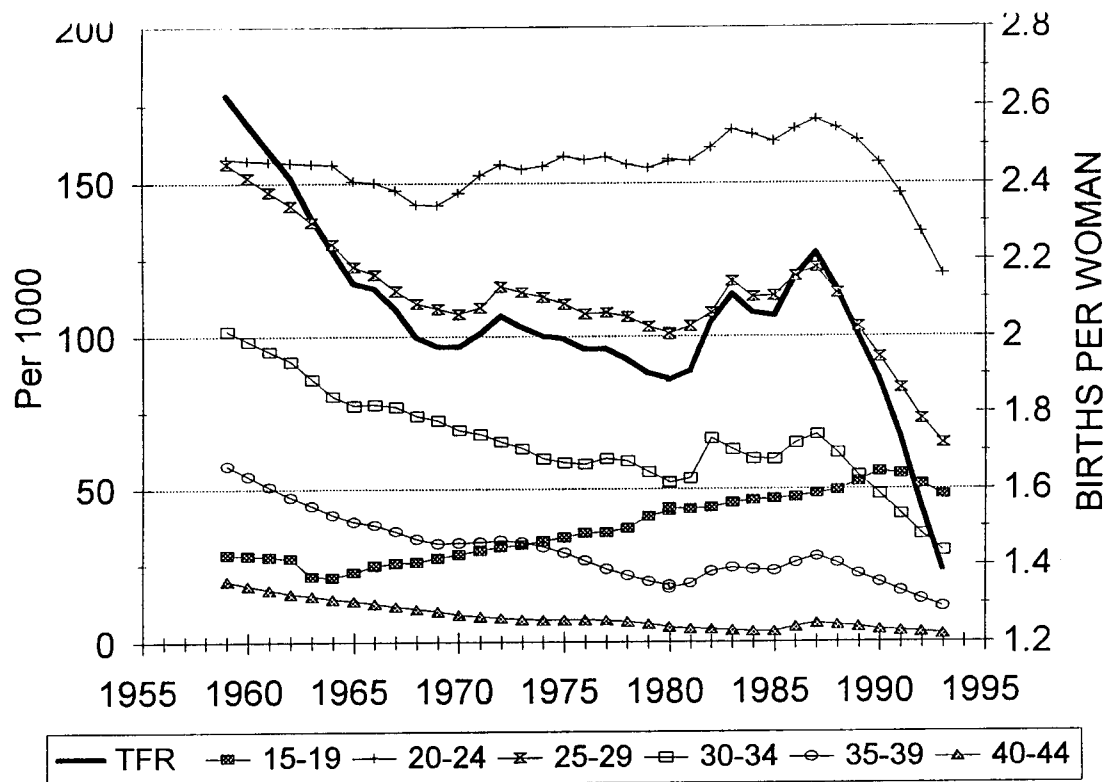


Figure 2.7—Trends in Age-Specific Fertility Rates and Total Fertility Rate in Russia, 1958–1993

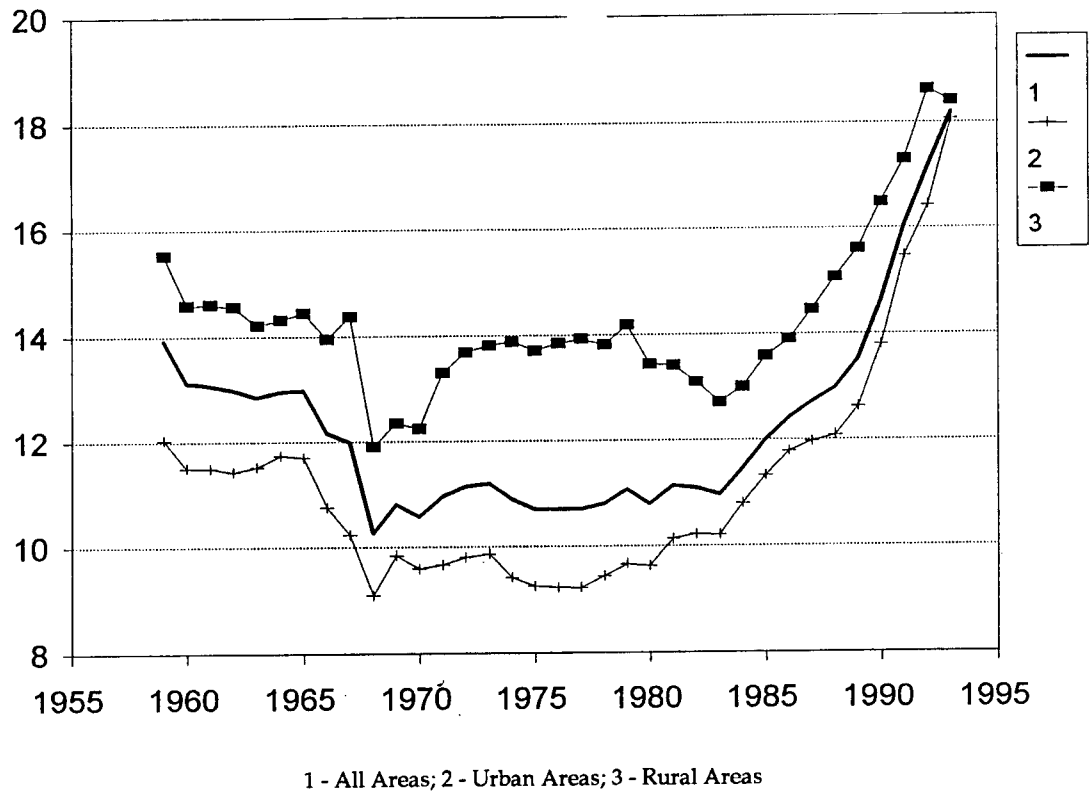


Figure 2.8—Percentage of Non-Marital Births Among Live Births, 1959–1993

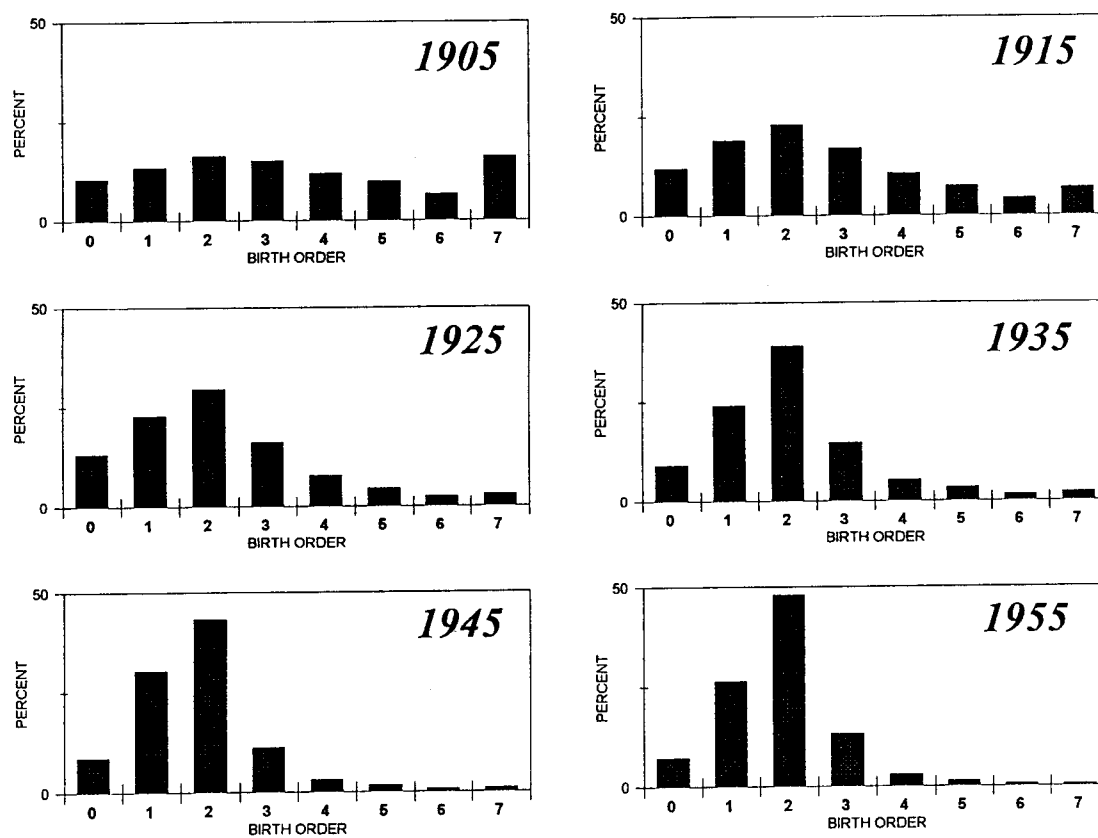


Figure 2.9—Distribution of Women by Number of Children Born by Age 50 in Different Birth Cohorts in Russia (estimates for birth cohorts of 1945 and 1955)

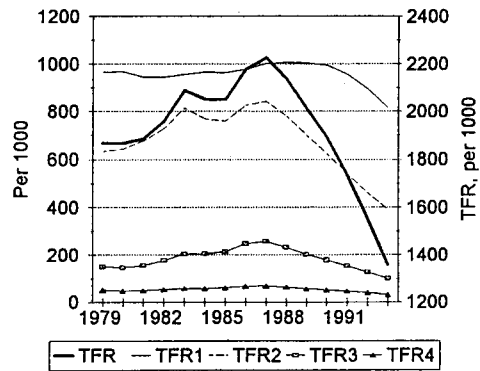


Figure 2.10.1—Trends in Total Fertility Rate and Order-Specific Total Fertility Rate in Russia, 1979–1993, 1st–4th Birth Orders

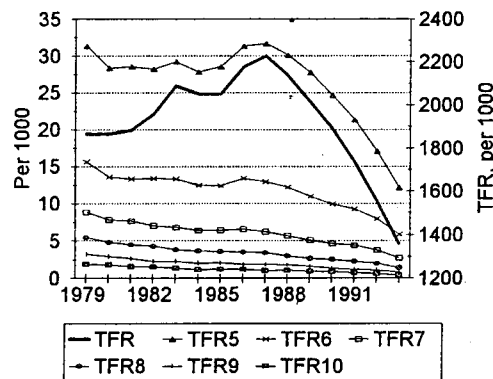


Figure 2.10.2—Trends in Total Fertility Rate and Order-Specific Total Fertility Rate in Russia, 1979–1993, 5th–10th Birth Orders

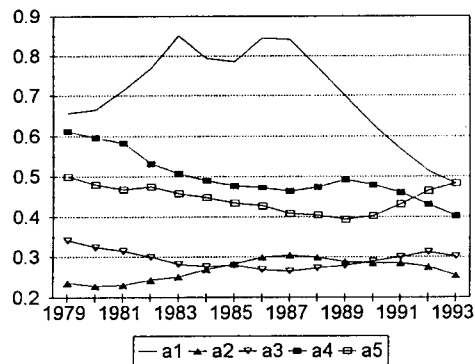


Figure 2.11—Trends in Period Parity Progression Ratios in Russia, 1979–1993, 2nd–6th Birth Orders

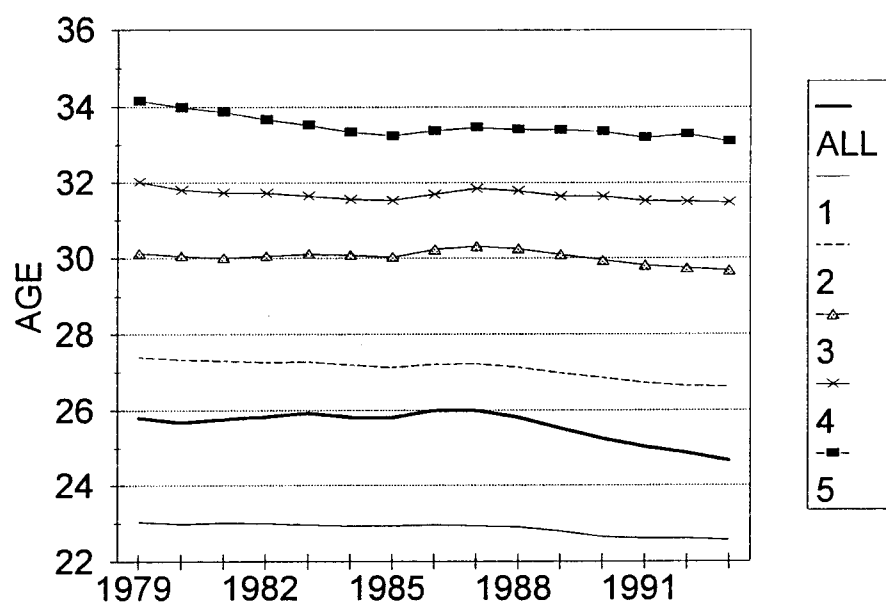


Figure 2.12—Trends in Mean Age of Mother at Childbearing For All and 1st-5th Birth Orders in Russia, 1979-1993

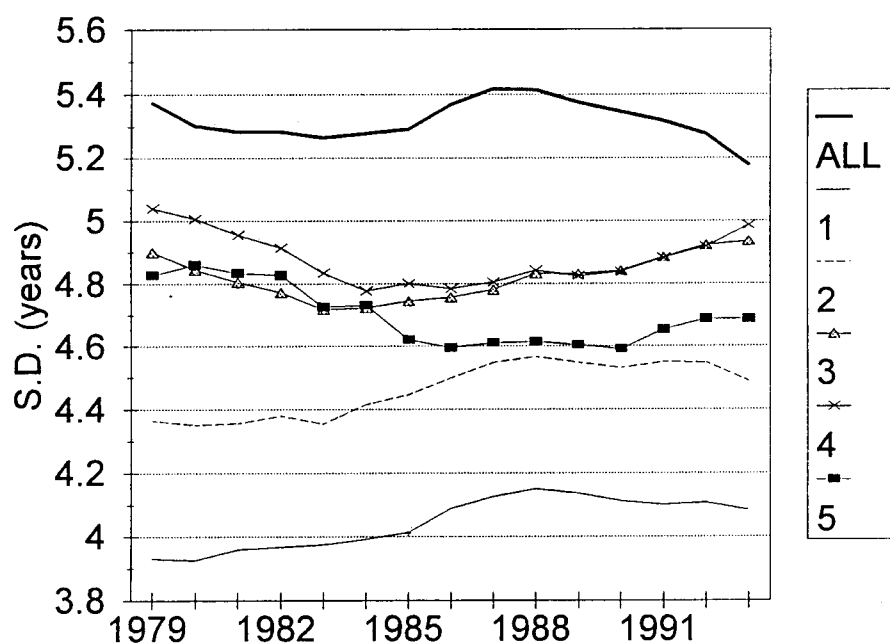


Figure 2.13—Trends in Standard Deviation of Mean Age of Mother at Childbearing For All and 1st-5th Birth Orders in Russia, 1979-1993

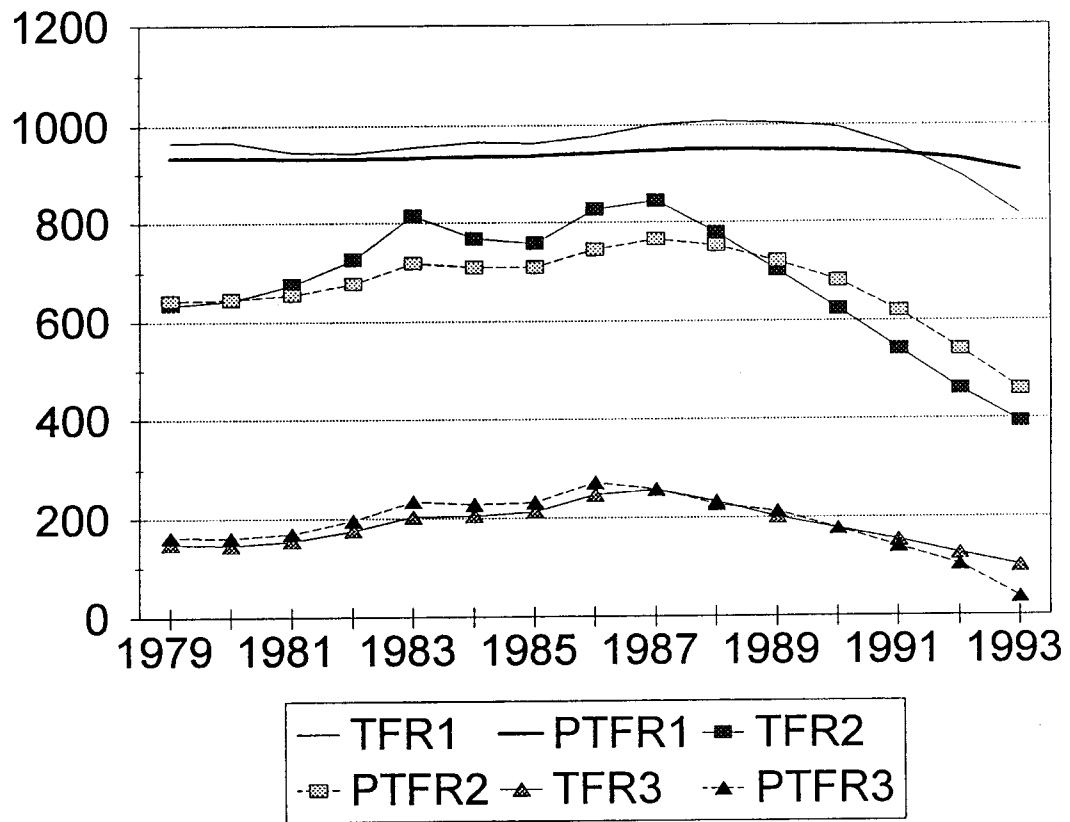


Figure 2.14—Trends in Conventional Total Fertility Rate and Parity-Specific Total Fertility Rate for 1st-3rd Birth Orders in Russia, 1979-1993

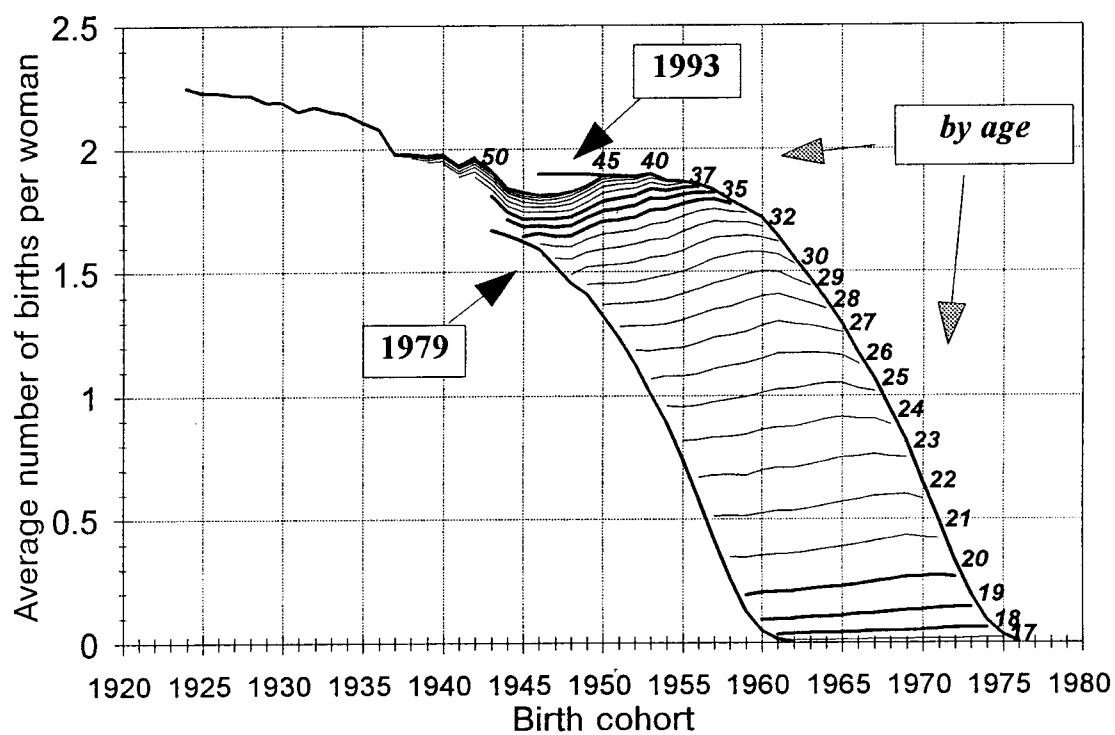


Figure 2.15—Cumulative Fertility at Each Age For Different Birth Cohorts in Russia, 1979–1993

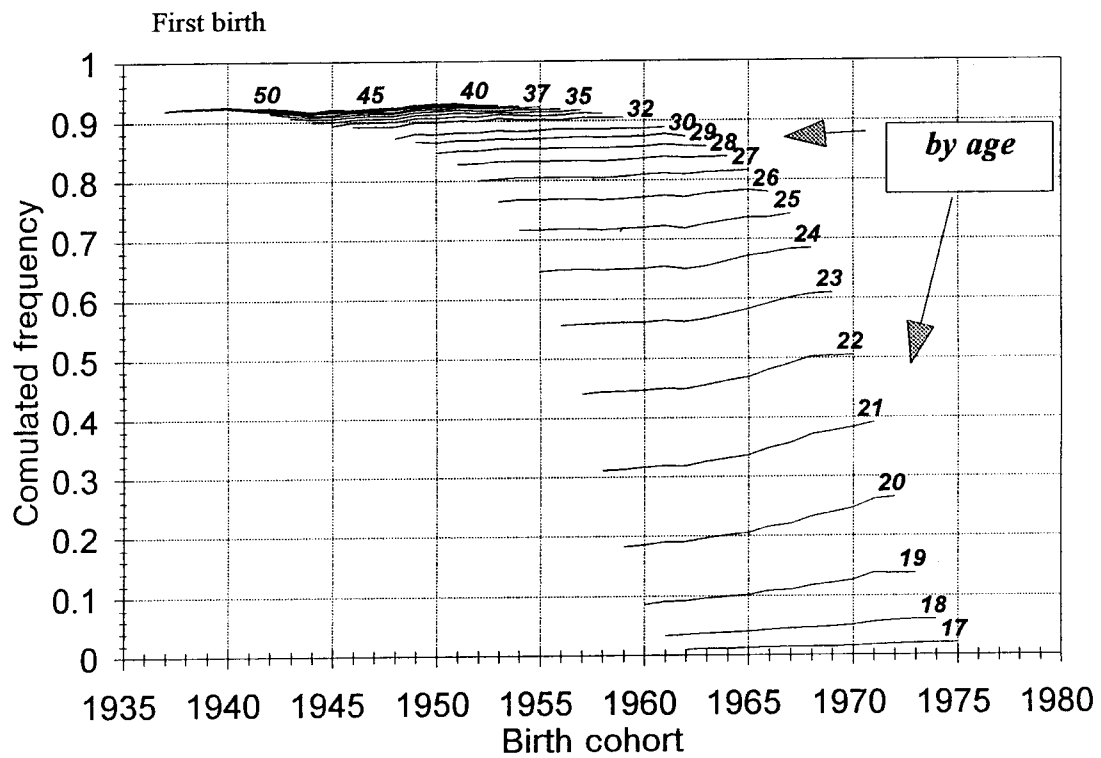


Figure 2.16—Cumulated Frequency of First Births at Each Age for Different Birth Cohorts in Russia, 1979–1993

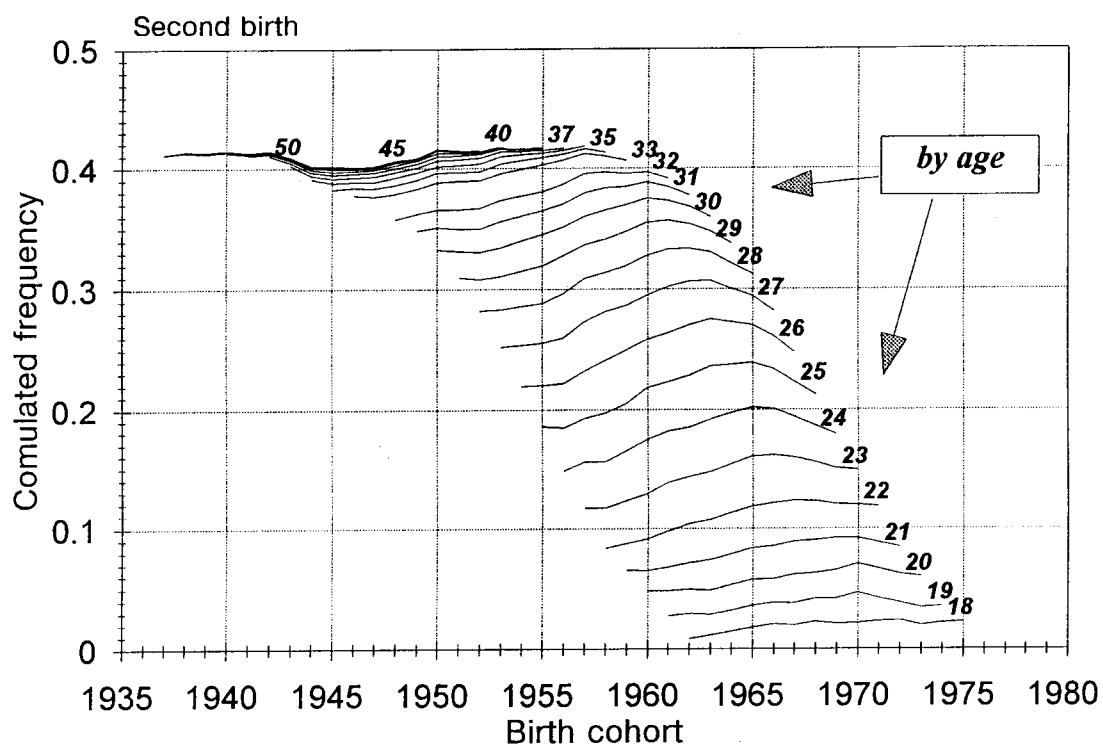


Figure 2.17—Cumulated Frequency of Second Births at Each Age for Different Birth Cohorts in Russia, 1979–1993

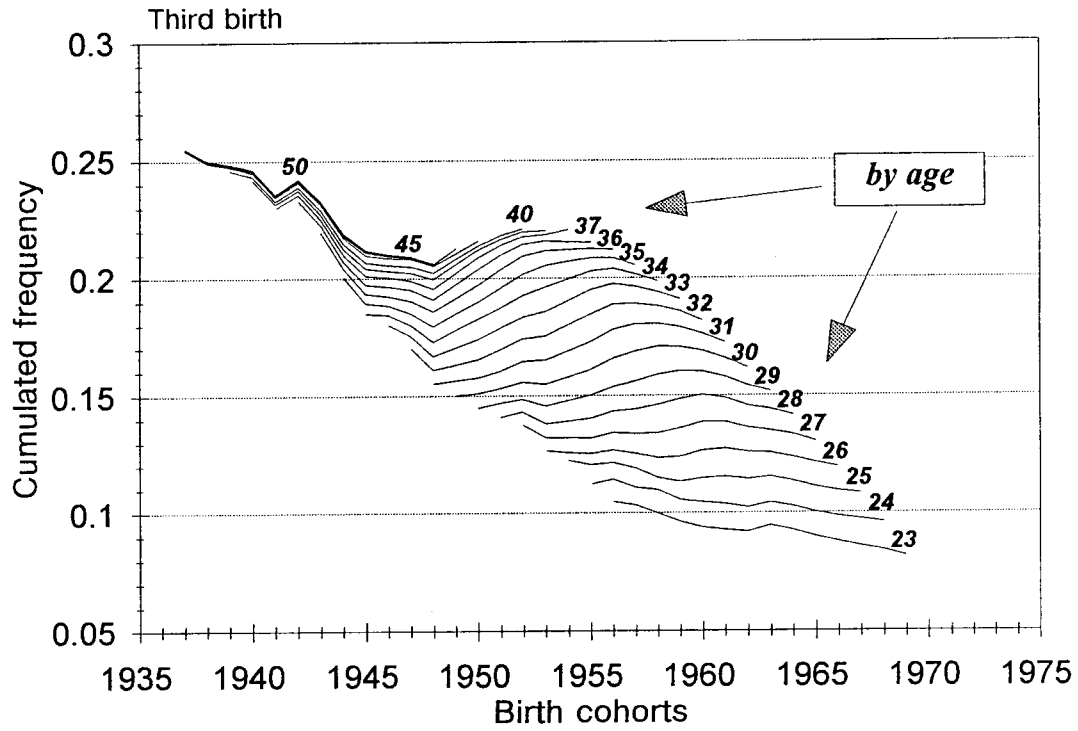


Figure 2.18—Cumulated Frequency of Third Births at Each Age for Different Birth Cohorts in Russia, 1979–1993

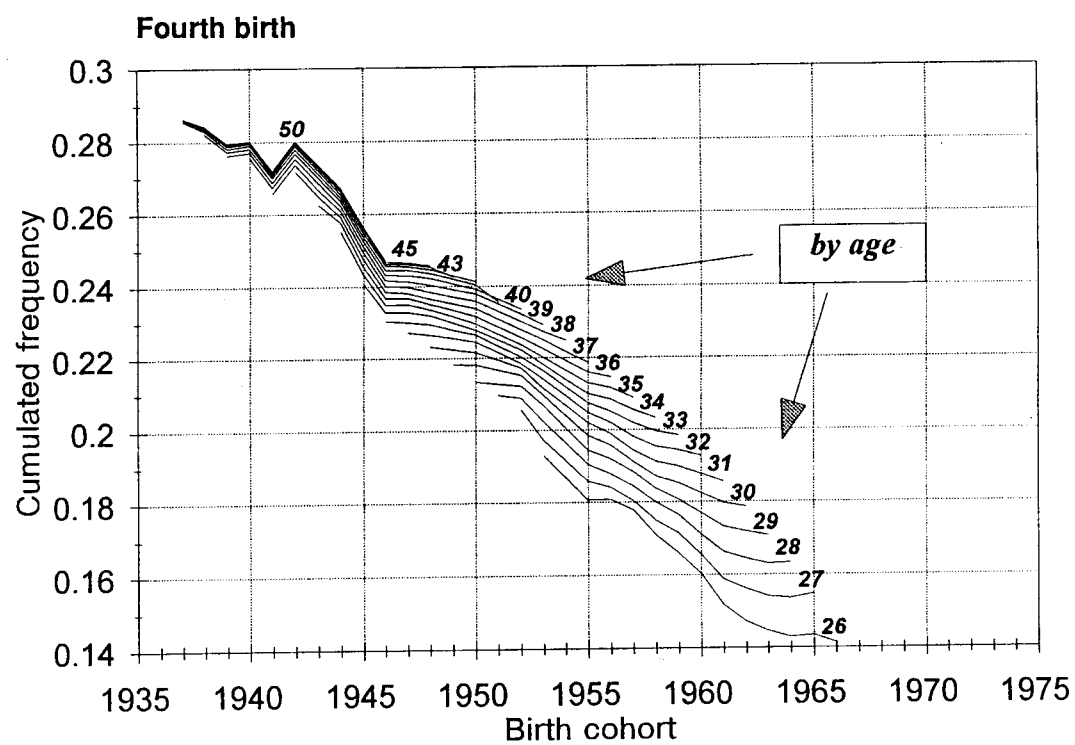


Figure 2.19—Cumulated Frequency of Fourth Births at Each Age for Different Birth Cohorts in Russia, 1979–1993

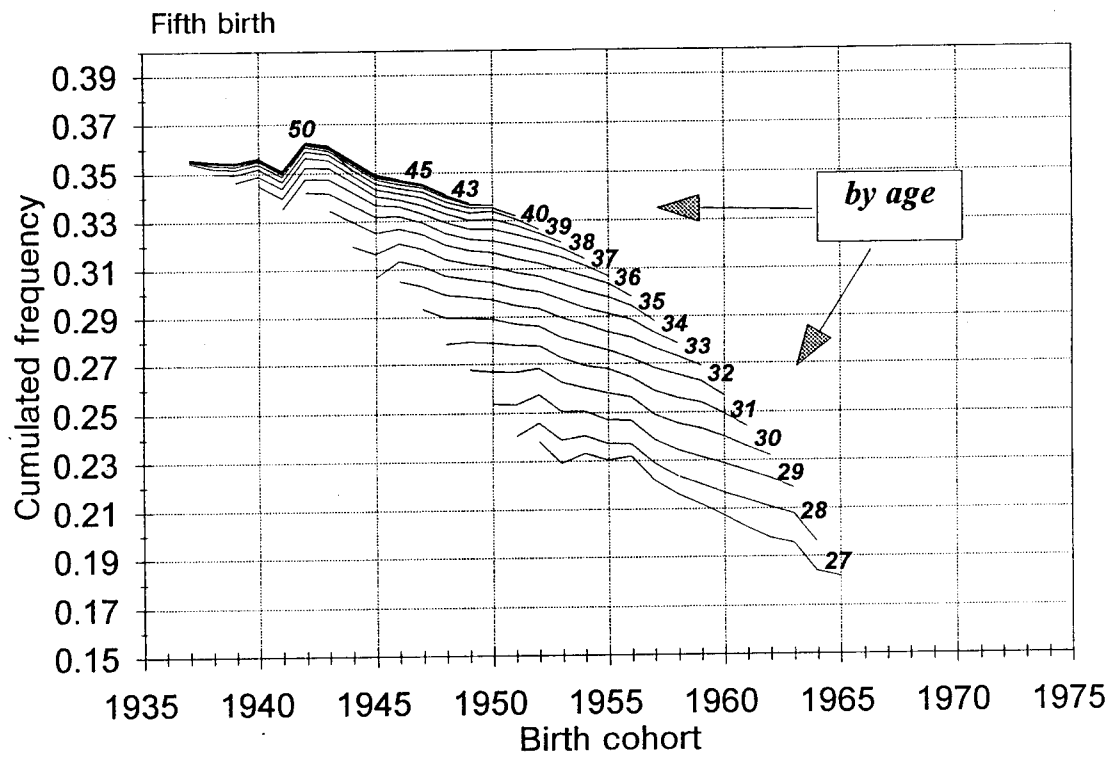
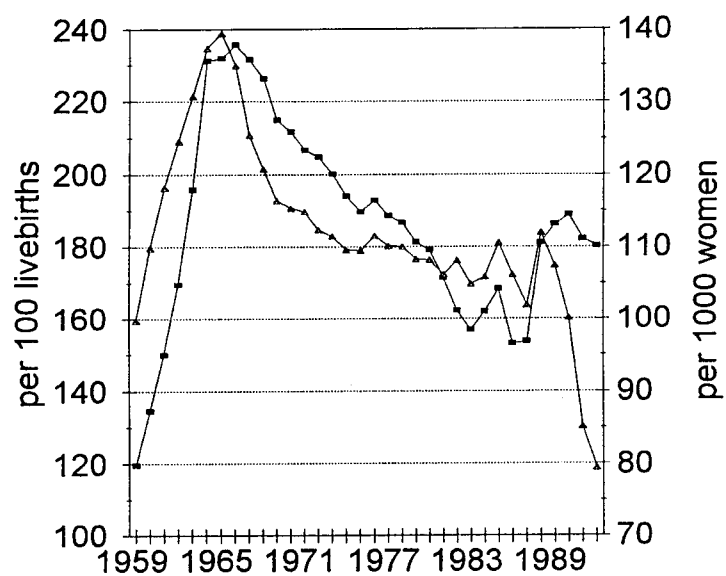


Figure 2.20—Cumulated Frequency of Fifth Births at Each Age for Different Birth Cohorts in Russia, 1979–1993



1 - Number Per 100 Live Births; 2 - Number Per 1,000 Women Ages 15–49

Figure 2.21—Trends in Abortion Indicators in Russia, 1959–1992

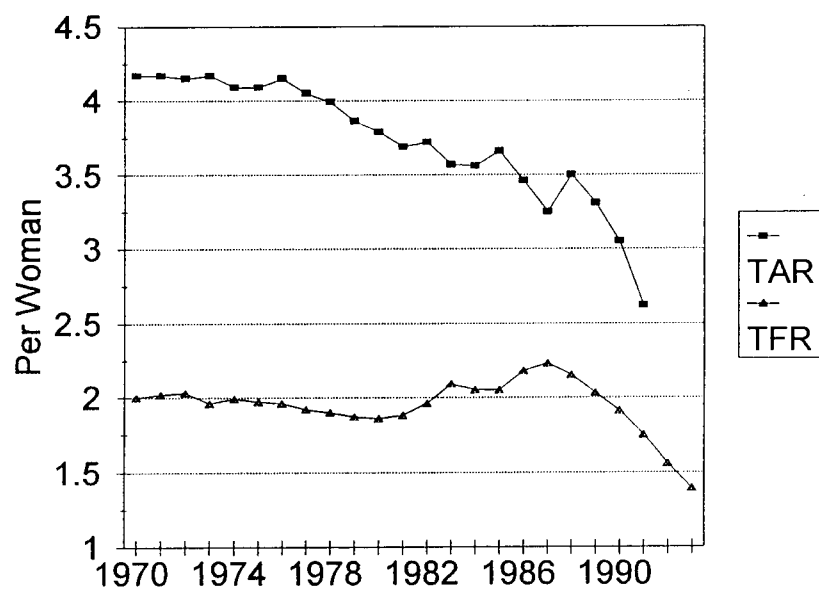


Figure 2.22—Trends in Total Fertility Rate (TFR) and Total Abortion Rate (TAR) in Russia, 1970–1993

Actual & Projected ASFR, Russia
Medium Variant, 1992 - 2015

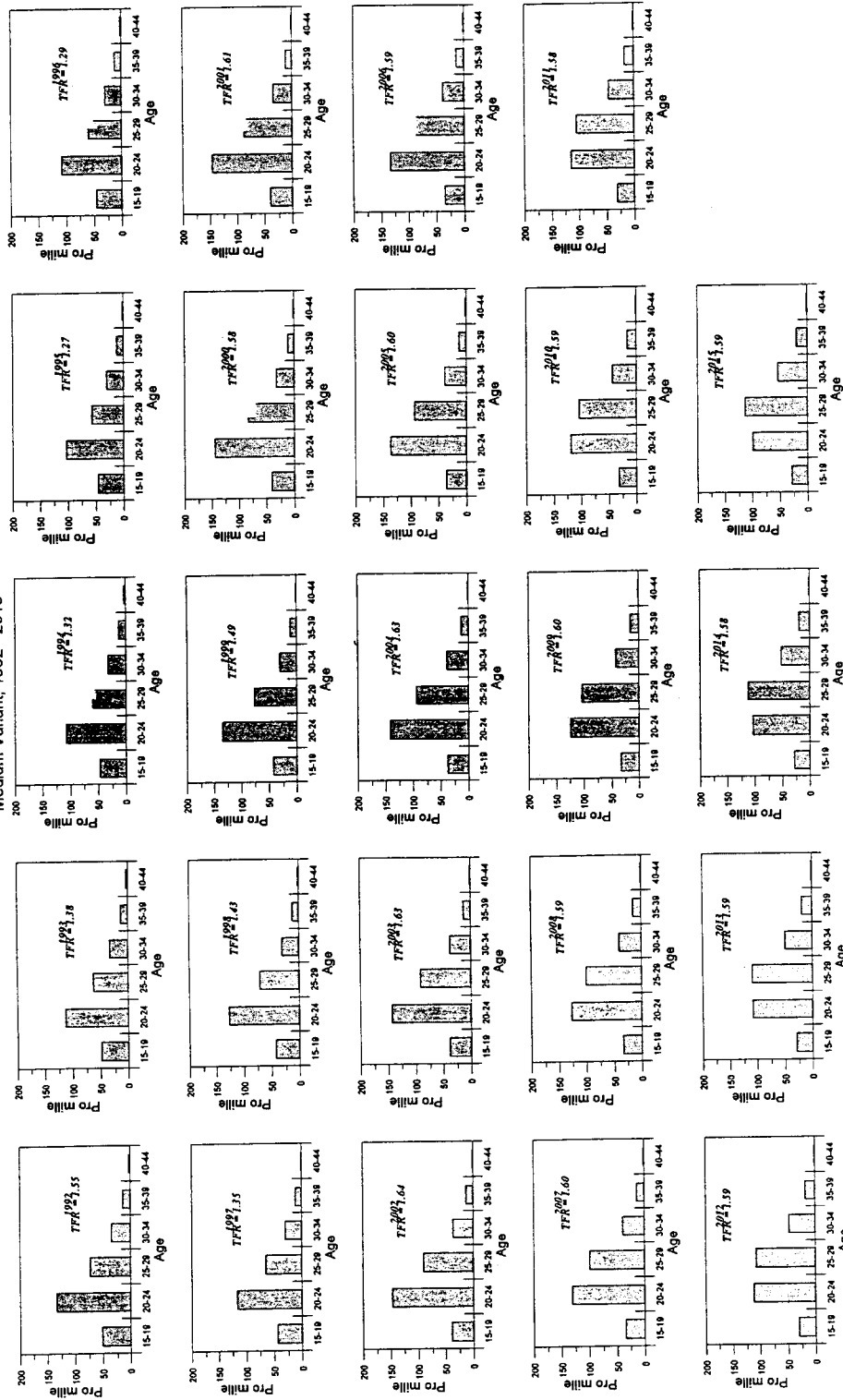


Figure 2.23—Actual and Projected Age-Specific Fertility Rates in Russia, 1992–2015

Discussants' Comments

Discussants: Catherine Jackson, RAND; and Jack Molyneaux, RAND

The discussants of Dr. Zakharov's paper suggested that the analysis of fertility trends should take into account both government policy and structural socio-economic changes. Pro-natalist measures (e.g., in the Soviet Union in the first half of the 1980s) as well as anti-natalist policies (in most developing nations) can yield enduring results only if enacted in a receptive socio-economic environment. Thus in Russia, current and future fertility policies should be based on the country's socio-economic circumstances. Demographic policy decisions need to be incorporated into the whole system of social and economic development policies. The complexity of this matter calls for a new methodology of analysis. Sophisticated analytical tools must be employed to assess the net impact of government's policies on reproductive behavior in general, and specifically, on proximate determinants of fertility such as marriage, contraception, and abortion.

3. Family Planning and Induced Abortion in Post-Soviet Russia of the Early 1990s: Unmet Needs in Information Supply

*by Andrej A. Popov*⁵³

Introduction

Induced abortion remains possibly the most common and effective means of family planning in Russia. Russian society and the public health system have adapted to the provision of induced abortion as the primary method of family planning. Therefore, Russia can be defined as having a stable abortion culture. Induced abortion is still the primary and often the only method of reducing fertility in many regions. At the same time, there is a high degree of regional differentiation in family planning behavior related to ethnic, social, and demographic variations across Russia.

Since 1991, new "post-Soviet" features have emerged in family planning in Russia. This has been due to the following societal trends and organizational innovations introduced by the Ministry of Health of Russia:

- Societal reflection on the high rate of induced abortion and its predominance as a method of family planning has increased considerably. This is most clearly illustrated by the official adoption of a conceptual review of family planning by the Ministry of Health. Different issues such as the high rate of induced abortion, family planning services, and even personal reproductive rights are being actively discussed now.⁵⁴

⁵³ Andrej A. Popov was a director of the Transnational Family Research Institute in Moscow and a research associate of the Center for Demography and Human Ecology, Institute for Economic Forecasting, Russia Academy of Sciences. He died tragically on April 23, 1995, immediately prior to the conference for which this paper was prepared. This paper was completed with the financial support of the Russian Foundation for Basic Research and by the John D. and Catherine T. MacArthur Foundation. The paper owes a great deal to Dr. Henry P. David (Transnational Family Research Institute, USA), Michele Rivkin-Fish (Princeton University, USA), Anna Lukina, Nadezda G. Baclaenco, Dr. Sergei V. Zakharov, Anna Vorobyova, Nadezda Azhgikhina, and Alexandra Sokolova.

⁵⁴ Ministry of Health of the Russian Federation, 1992, Directive of the Minister of Health, August 30, 1992, No. 6-15/7-15: "On the Abortion Situation and Organizing Family Planning Services," Moscow: MZRF, 7 pp.

- An entirely new phenomenon is the use of the induced abortion issue for a wide variety of political purposes.
- There has been a demonopolization of the position of the Ministry of Health as the only agency endowed with powers to formulate social policy in the field of family planning. Traditionally, the Ministry of Health has been involved in the fight against abortion, mostly through the ineffective publication of new orders and leaflets. Many newly established organizations are now involved in this area. Among them are the Russian Orthodox Church, the Russian Association of Family Planning, various women's political organizations, and nationalist political movements. There is also active participation by various religious groups and religion-related public movements, such as the Roman Catholic Church and, associated with it, the "Pro-Life Movement" and "Right-to-Life International."

The Russian Orthodox Church became very active in the field of anti-abortion propaganda by publishing miscellaneous pamphlets, leaflets, and articles in early 1990s. Even the Orthodox Church in America has been involved in such anti-abortion activities.

- Beginning in 1988, the state monopoly in medical family planning services was progressively destroyed, and legal commercialization of induced abortion and contraceptive services ensued. This decentralization and legal commercialization has occurred mostly in the larger cities and economically advanced regions of Russia. In most cases this process was merely the legalization of pre-existing illegal and quasi-legal commercial enterprises, which functioned in the "gray" field of gynecological and abortion services before 1991. Now a real abortion industry exists in Russia and this branch of the market for family planning services is totally oriented to the provision of induced abortion.

This abortion industry has developed new, advanced techniques for performing induced abortion, including magnetic cervical cups, manual massage, and different reflectorial techniques. One of the most advanced technologies is the magnetic cervical cup ("Magnetic Cup" or "Magnitoforny' Kolpachok"), which induces abortion by weak, localized magnetic fields within the first trimester of pregnancy in out-patient conditions. This method was approved and licensed by the Ministry of Health, and there is currently a flood of advertisements in Moscow newspapers for this new Russian abortion technology.

- Abortion and family planning statistics by the Ministry of Health of Russia were revised in 1991 and further defined in a Health Ministry directive

issued March 1992.⁵⁵ The new State Statistical Registration Form titled “The Abortion Report” (No. 13) was also introduced in 1991. In this way, a new system of statistical registration of induced abortion and contraceptive usage was introduced to replace the old one, which had remained practically unchanged since 1956. This change brought very serious consequences. The new statistical system is an incomplete reflection of actual trends and is not comparable with the previous one.

- The number of officially registered induced abortions reveals an apparently decreasing trend. However, it is not possible to accurately estimate the real size of this decline because the official statistics do not capture the dynamics of commercial medical services and are reported as improperly calculated aggregate indices. Additional difficulties were created by changing the official system of conducting and registering induced abortions.
- In comparison with European and Western countries, Russia allows the broadest legal provision of induced abortions. Only the Netherlands, the United States, and, perhaps, Sweden, which allow abortion on request up to about 26 weeks, can be compared with the USSR and contemporary Russia (Table 3.1). Additionally, on December 28, 1993, the Ministry of Health of the Russian Federation significantly extended the approved list of medical indications for artificial interruption of pregnancy.⁵⁶ The historically most significant changes in legislation concerning induced abortion in the USSR and Russian Federation in 1920–1990s are briefly presented in Table 3.2.

⁵⁵Directive of Minister of Health of the Russian Federation, No. 171-y, “On the Collection and Presentation of Monthly Medical Records,” Moscow: MZRF, 1 p., March 03, 1992.

⁵⁶Order of Minister of Health of Russian Federation, No. 302, “On the Confirmation of the List of Medical Indications for Artificial Interruption of Pregnancy,” Moscow: MZRF, December 28, 1993, 16 pp.

Table 3.1
Grounds for Legal Abortion in the USSR and Selected Countries
(approx. 1986–1987)

Country	Medical			Social		
	Narrow (life)	Broad (health)	Eugenic (fetal)	Juridical (rape, incest)	Social & Medical	On Demand
Austria	x	x	x	x	x	x
Bulgaria	x	x	x	x	x	—
Czechoslovakia	x	x	x	x	x	—
Finland	x	x	x	x	x	—
France	x	x	x	x	x	x
Germany (FRG)	x	x	x	x	x	—
Germany (GDR)	x	x	x	x	x	x
Hungary	x	x	x	x	x	—
Italy	x	x	x	x	x	x
Netherlands	x	x	x	x	x	x
Norway	x	x	x	x	x	x
Poland	x	x	x	x	x	—
Romania	x	x	x	x	x	—
Spain	x	x	x	x	—	—
Sweden	x	x	x	x	x	x
United Kingdom	x	x	x	x	x	—
Yugoslavia	x	x	x	x	x	x
Ireland, Northern	x	x	—	—	—	—
Ireland, Rep. of	x	—	—	—	—	—
United States	x	x	x	x	x	x
USSR, 1987	x	x	x	x	x	x
Russia, 1993	x	x	x	x	x	x

SOURCE: See references 3–11.

Table 3.2
Conditions for Legal Abortions in the USSR and Russian Federation, 1920–1993

Year, Document, Reference No.	Medical			Social			Final Gest Age	Place of Ser- vice	Cost
	Narrow (life)	Broad (health)	Eugenic (fetal)	Juridical (rape, incest)	Social & Medical	On Demand			
1920,L[14]	x	x	x	x	x	x	–	C	Free
1924,I[12;13]	x	x	x	x	x	–	–	C	Free
1924,L,a[12;13]	x	x	x	x	x	x	–	PC	Fees
1924,I,a[12;13]	x	x	x	x	x	–	–	C	Fees
1926,I,a[12;13]	x	x	x	x	x	–	12 wk	C	Fees
1936,L,[15]	x	x	x	x	–	–	–	C	Free
1955,L,[16]	x	x	x	x	–	–	12–28 wk	C	Free
1955,L,[12]	x	x	x	x	x	x	12 wk	C	Fees
1962,I,a[12;19]	x	x	x	x	x	x	12 wk	C	Fr+Co m*
1976,I,a[17]	x	x	x	x	x	x	12 wk	C	Fr+Co m**
1982,I,a[11]	x	x	x	x	x	x	12 wk	C*	Fr+Co m**
1982,I,a[11]	x	x	x	x	-	-	12–28 wk	C*	Fr+Co m**
1987,I,a[8]	x	x	x	x	x	x	20 days	Amb	Fr+Co m**
1988,L [18]	x	x	x	x	x	x	20 days	CC	Fees
1993,I,a[3]	x	x	x	x	x	x	12–28 wk	C*	Fr+Co m**

KEY:

L State laws of the USSR

I Instructions of the Ministry of Health of the USSR

Ia Amendment to a previous Law or Instruction

C Only in special clinics or hospitals

C* Changing of local abortion clinic or hospital is permitted

PC Abortions made available in private clinics

CC Abortions made available in commercial clinics

Amb Abortions made available in hospitals on an outpatient basis

12 wk Abortion is available up to 12 weeks gestation only

12-28 wk Abortion is available up to 28 weeks gestation only

20 days Abortion is available up to 20 days gestation only

Fees Abortions made available only for a fee

Free Abortions made available only free of charge

Fr+Com* Abortions free of charge and monetary compensation is available for employed women only

Fr+Com** Abortions free of charge for all women, monetary compensation available for all women in case of complications

Sources: See references 3, 7–19.

Family Planning Statistics in Post-Soviet Russia

The statistical registration of induced abortion in the USSR was virtually unchanged between 1956 to 1991. During this period, abortion was differentiated into the following categories: spontaneous abortion, induced therapeutic abortion, induced abortion on demand, out-of-clinic (clandestine) abortion and, since 1988, early abortion (by vacuum aspiration). The officially published family planning statistics consisted of the absolute number of induced abortions on demand, the abortion rate per 1,000 women aged 15-49, the induced abortion rate per 100 births (born alive or dead), the number of abortions to primigravidae (first-time pregnant) women, the number of abortions to women under 14 and under 17, and the number of mortality cases resulting from induced abortion.

The object of analysis here is officially registered induced abortion performed on demand and on all non-medical grounds. The indices were calculated separately for legal induced abortions and clandestine induced abortions. There are no data prior to 1991 for by age, except for age groups under 14 and under 17.

In the 1980s to 1990s, the statistical registration of abortions was revised twice: first slightly, in 1988, and then fundamentally, in 1991 and 1992. In 1988, the registration of early abortions and of intrauterine and oral contraception use was introduced. In 1991 and 1992, the Ministry of Health of Russia disseminated new statistical registration forms.⁵⁷ In the new forms, abortions were differentiated into the following categories: legal induced abortion on demand, spontaneous abortion, therapeutic induced abortion, clandestine induced abortion, and abortion without clear grounds. The last were not considered to be induced abortion because of the vagueness of the cause. Early abortions are still registered separately from induced abortions because they are not officially considered abortions at all, but only a method of menstrual cycle regulation.

To summarize, family planning information available since 1991 is limited to the following:

- induced abortion rate per 1,000 women at ages 15-49;
- abortion rate per 100 children born alive and dead;
- number of induced abortions within the first 22-28 weeks of pregnancy;

⁵⁷Directive of the Minister of Health of the Russian Federation. No. 171-y, "On the Collection and Presentation of Monthly Medical Records," Moscow: MZ RF, March 3, 1992, 1 p.

- number of induced abortions for women at ages under 15, 15–19, 20–34, 35 and over;
- number of vacuum-aspirated abortions within the first two weeks of pregnancy;
- number of women who died as a result of a legal induced abortion;
- number of women who died as a result of clandestine and illegal induced abortion;
- number of registered users of intrauterine devices;
- number of registered users of hormonal contraceptives; and
- rate of women using contraceptives per 100 fertile-age women.

Clandestine Abortion

At present, the authorities consider only registered induced abortion performed in a clinic by a professional doctor to be a legal one. Theoretically, all possible kinds of clandestine abortions would include:

1. Those performed by a woman herself (self-induced abortion);
2. Those performed by a professional doctor in a clinic, but not registered (an unregistered induced abortion); and
3. Those performed unprofessionally, out-of-clinic, and not registered (a criminally induced abortion).

Before 1991, all of these types of clandestine abortions were included by the Ministry of Health in one category—"out-of-clinic" abortion. The official statistics defined out-of-clinic abortions to be those officially registered but performed outside of an official clinic. Therefore, this is not a valid statistic of clandestine abortion, but merely an indicator of complications and side-effects following clandestine abortions which ultimately required professional medical treatment and hospitalization.

Only serious complications resulted in the official registration of clandestine abortions. Probably only half of the clandestine abortions have been officially registered. Nevertheless, the rate of officially registered clandestine abortions was very high. This statistic may also indicate in part the decline in registration of all induced abortions. Until 1991, the authorities considered all abortions which were performed out-of-clinic and which caused the death or serious bodily injury of a woman as criminal ones.

In the USSR in 1989, only 15 doctors were sentenced for performing criminal abortion, though in that year 1,500,000 clandestine abortions were officially registered. The number of registered *criminal* abortions was low because confirmation of its criminal nature was needed in each case. The main criterion for classifying this kind of abortion as criminal was direct evidence of interference (i.e., uterus perforation or sepsis). However, confirmation by the woman herself regarding the criminal nature of the clandestine abortion was also required, and a criminal investigation would subsequently be initiated.

The main problem of the statistics system introduced in 1991 is its total incomparability with the previous one. Under the new classification most clandestine abortions are now registered as abortions for unknown reasons. Only a small portion of registered clandestine abortions are now registered as criminally induced abortions. As a result, the number of registered criminal abortions remains low, because the criminal nature of interference still must be proved and confirmed by the woman herself, which is very rare. When clandestine abortion is not detected or proved, the abortion is registered as one with an unestablished cause, or “spontaneous,” and is excluded from the total number of induced abortions. As a result, the 1991 decline in the number of induced abortions was a statistical artifact—the result of transferring clandestine induced abortions into the category “spontaneous abortion.”

Understanding the importance of these changes in the induced abortion registration system enables us to comprehend the dramatic decrease in the number of abortions in Russia from 3.9 million in 1990 to 3.5 million in 1992, and to 2.9 million in 1993. That is a more than 25 percent decline in only two years.

Early Safe Induced Abortion (Mini-Abortion)

In the early 1980s, large-scale provision of early, safe abortion began in the USSR outside the government health system, though it was not legal or officially recognized until 1988. Despite the common name “mini-abortion,” this type of induced abortion has been officially considered “regulation of a menstrual cycle by vacuum-aspiration,” and not as an induced abortion. In 1992, 26 percent of all registered induced abortions were “mini-abortions” (Table 3.3). Moreover, professionals generally recognize that registration of early abortions is incomplete.

Table 3.3
Officially Registered Induced Abortion on Demand in the Russian Federation,
by Types of Abortion, 1970–1992*

	1970	1980	1985	1990	1991	1992
Total abortions (thousands)	4,670	4,506	4,415	3,920	3,442	3,531**
Early (mini) abortions (thousands)	n.a.	n.a.	n.a.	952	829	914
Abortions per 1,000 women aged 15–49	134.9	127.8	115.7	108.8	100.3	98.1
Abortions per 1,000 women aged 15–49 (early)	n.a.	n.a.	n.a.	26.5	23.6	25.4
Abortions per 100 births	200.5	192.9	184.2	195.3	199.4	224.62

SOURCE: Ministry of Health of the Russian Federation (MZRF), 1993

NOTES: * Departmental statistics not included.

** Some departmental statistics included.

n.a. = No data available.

Since 1988, early abortions have been substituted for full induced abortion within the first 12 weeks of pregnancy. It is widely believed that relatively poor registration of early abortions could result in an increase in the number of unregistered induced abortions in Russia.

Commercial Induced Abortion

In 1988 the Ministry of Health of Russia introduced a revolutionary innovation which had long-term consequences for family planning and abortion statistics—legalization of commercial induced abortions.⁵⁸ Since 1988, induced abortion can be legally performed in private clinics or in the commercial sections of state hospitals and, since 1991, by doctors with a private practice at their residences. This legal commercialization is more typical in big cities and the more economically advanced regions of Russia.

⁵⁸Order of the Minister of Health of the Russian Federation. No. 250, "On Organizing of Commercial Clinics (departments, rooms) and Free-of-Charge Clinics (departments, rooms) With State Financing for Patients Who Require Permanent Care and Commercial Gynecologic Clinics for Provision of Operations for Artificial Interruption of Pregnancy (abortion)," Moscow: MZ RF, March 29, 1988, 10 pp.

As noted above, in most cases this process only legalized preexisting illegal and quasi-legal commercial abortion services already in existence before 1991. However, a system of statistical registration of such abortions was not created in 1991, perhaps due to a desire to maintain a degree of secrecy surrounding abortions.

The lack of a system for registering commercially induced abortions resulted in a considerable gap in induced-abortion statistics in Russia. The abundance of commercial advertisements for induced abortions in private clinics and the miscellaneous ads placed by privately practicing doctors provide some indication of the scope of the gap in the registration of induced abortions.

Similarly, there is no procedure to register hormonal and intrauterine contraceptives users in the commercial health care sector. It is also likely that other cases of medical assistance in commercial clinics are also not registered, including services for venereal diseases, infertility, sexual disorders, and even contraceptive sterilization.

Family Health and Inducted Abortion Statistics of Independent Departmental Government Health Services

It is still commonly assumed that the number of induced abortions registered by the Ministry of Health of Russia represent the total for the nation. This is not correct. The Ministry of Health medical statistics are not the same as national medical statistics, but are only a part of it. The health ministry is only the largest of several health care systems in contemporary Russia, with additional health care services provided by independent departmental health care services.

Each government department with its own health care service also has its own medical statistics system, independent of the Ministry of Health. The largest known institutions which had their own systems of independent public health in 1992 were the Ministry of Defense, the Ministry of Railroad Transportation, the Ministry of Domestic Affairs, the Committee of State Security (former KGB), the Ministry of the Defense Industry, the Ministry of River Transportation, the Academy of Sciences, and the Aeroflot Air Company. In 1992, practically every other large ministry had its own independent health system. In fact, the complete list of such independent health systems is still classified as top secret and is, therefore, not publicly known.

Most of such departmental health services are quite significant and include their own network of hospitals, ambulatory clinics, sanitariums, pharmacies, and staff of physicians. For an illustration of the size of such departmental systems, the

role of the Ministry of Railroad Transportation provides an example. The total number of induced abortions provided in this departmental health system alone represents up to 5 percent of the total number of induced abortions in the USSR in 1989.

Induced abortions performed by these institutions are not included in the total number of national abortion statistics, the Ministry of Railroad Transportation being the only exception. We don't know how the reorganization of these institutions after 1991 affected their public health systems. Therefore, complete national family planning and induced abortion statistics are still not available in Russia.

Induced Abortion Age Distribution

The development and publication of data concerning the age distribution of abortion constituted another of the innovations in induced abortion statistics introduced by the Ministry of Health in 1991. The only official data by age collected before 1992 concerned abortions by women under the ages of 14 and 17. The data concerning women under 14 was collected but was available only theoretically because it was never published.

In 1991, the Ministry of Health began collecting and publishing data on induced abortion for women at ages under 15, 15–19, 20–34, and above 34 (as seen ahead in Table 3.13). Unfortunately, these groups are not comparable with those in data from previous years. This circumstance lowered the scientific and practical value of published data on the age distribution of abortions.

Monthly Registration of Induced Abortions

Introduction of monthly registration of the number of induced abortions performed has been another recent statistical innovation.⁵⁹ The statistical quality of this information is poor, however. For example, we still do not know whether early abortion (vacuum-aspiration) is included in the monthly data on induced abortion. We can only hope that such vagaries are clarified in the future.

⁵⁹Directive of the Minister of Health of the Russian Federation, No. 171-y, "On the Collection and Presentation of Monthly Medical Records," Moscow: MZ RF, March 3, 1992, 1 p.

Contraceptive Use

Since 1988, the Ministry of Health has maintained a statistical registry of women who were officially implanted with intrauterine devices (IUDs) and women officially known to be using hormonal oral contraceptives ("the pill"). In both cases, the statistics include only patients who are using official prescriptions and were officially under the extended supervision of a physician. More recently, the Ministry of Health began to report the number of registered patients using intrauterine and hormonal contraceptives relative to the number of fertile-age female residents by region of residence.

The comprehensiveness and validity of these data are very problematic, however. First, they may be incomplete because women using these contraceptives without official medical supervision are not registered. Second, women who were treated in an independent departmental health facility, by a private doctor, or in any commercial facility were never registered in the Ministry of Health statistics. Advertisements, again, are perhaps the only indicator of the private market for contraceptives. As a result, comparing the entire fertile age female population in a region to the number receiving contraceptive services from the Ministry of Health facilities is deceptive. Simply stated, this is a problem of using the wrong denominator. Thus, the validity of the official Ministry of Health data, as far as contraceptives usage is concerned, is questionable. The official data describe the registration of patients in the Ministry of Health system only, and should not be considered true and complete data on intrauterine and hormonal contraceptive usage by local female populations.

Induced Abortion in Post-Soviet Russia of the Early 1990s

Since 1966, there has been a continuously decreasing trend in the number of officially registered abortions on-demand per woman in Russia (Table 3.4). It is still impossible to estimate the real scope of this decreasing trend, due to the successive changes in the registration of abortion procedures as discussed above.

Data imperfections aside, even the official abortion rate (which underestimates abortion in the Russian Federation) demonstrates the possibility that Russia has the highest abortion rate in the world. In 1992, 3.5 million induced abortions were officially registered in the Russian Federation. The abortion rate per 1,000 women aged 15-49 years was 98.1 and the rate per 100 births was 224.6; i.e., for every live birth in the country, there were over 2.2 officially registered abortions.

This figure is two to three times higher than those for most Western and Eastern Europe countries (Table 3.5).

Table 3.4
Officially Registered Abortions in the USSR, 1957–1990*

Year	Number of Abortions, Thousands	Abortions Per 1,000 Women Aged 15–49		Abortions Per 100 Deliveries	
Source	1; 2	1	2	1	2
1957	5,109	84.7	66.3	98.9	76.8
1958	5,927	98.6	80.6	113.1	92.2
1959	6,014	101.1	85.8	114.2	96.2
1960	6,623	112.0	96.1	124.0	107.1
1961	7,109	119.6	103.6	136.9	118.4
1962	7,361	123.1	110.2	148.4	132.1
1963	7,617	126.7	114.7	161.1	144.8
1964	7,251	120.1	120.2	n.a.	161.3
1965	7,260	119.6	122.5	170.6	169.3
1966	7,904	129.4	118.2	186.3	168.5
1967	7,878	127.7	109.7	192.5	161.9
1968	7,611	122.3	105.2	186.2	158.3
1969	7,256	120.9	101.8	171.5	152.3
1970	6,970	110.7	101.4	165.0	149.0
1971	7,262	112.5	101.1	166.1	147.9
1972	7,160	109.4	98.3	162.6	144.5
1973	7,160	108.2	97.5	162.2	145.5
1974	7,114	106.6	95.9	156.5	139.7
1975	7,135	105.7	95.7	154.7	137.7
1976	7,293	107.4	97.2	155.0	140.1
1977	7,238	106.1	96.2	154.0	138.7
1978	7,160	104.7	95.0	150.0	136.1
1979	7,009	102.4	93.2	146.0	131.6
1980	7,003	102.3	93.2	143.0	130.5
1981	6,834	99.6	91.1	137.0	124.6
1982	6,912	100.3	92.1	135.0	120.3
1983	6,765	97.7	90.1	124.0	115.1
1984	6,780	97.2	90.0	125.0	115.7
1985	7,034	100.3	92.8	127.0	118.6
1986	7,116	101.2	89.5	126.0	110.6
1987	6,818	97.0	85.7	121.0	109.3
1988ab	7,228	103.2	92.4	112.0	124.1
1989a	6,974	99.8	90.0	136.0	126.9
1990	6,194	89.8	84.8	132.0	123.5

SOURCES: 1 = data from references [12, 20, 22–25, 31]; 2 = data from reference [26].

NOTES: a = Including some departmental health services; b = Including early abortions by vacuum aspiration within the first 20 days of pregnancy.

* = Departmental statistics are not included.

Table 3.5
Officially Registered Induced Abortion Rates in Russia (1992) and Several
European Countries (Circa Late 1980s–Early 1990s)

Country	Induced abortion rate per 1,000 women 15-49	Induced abortion rate per 100 births
Russia	98.1	225
Rumania	90.9	157
Belarus	62.6	153
Ukraine	56.7	164
Latvia	60.2	126
Bulgaria	64.7	138
Estonia	63.9	117
Czechoslovakia	46.7	87
Hungary	38.2	72
Sweden	19.8	30
Italy	15.3	29
Great Britain	14.2	23
France	13.3	21
Finland	11.7	20
Austria	16.6	17
Germany (FRG)	7.0	11
The Netherlands	5.3	10

SOURCES: See references 4, 5, 20, 27.

Considerable regional variations in the rates of officially registered abortions are notable throughout the Russian Federation (Table 3.6). Russia has such an impressive degree of regional variation in demographic characteristics that it may be considered a demographic micro-model of the larger world. Russia's regions include all variety of socio-economic, cultural, and other possible determinants of fertility and family planning behavior. The difference between the number of registered induced abortions in urban and rural populations may measure up to 2-4 times, even within an economic region, republic, or province.

The difference between the abortion rates for the Chechen Republic of the Northern Caucasus and the Krasnodar region of central Russia measures up to 4

times. This is a clear example of differences between Muslim-based traditional culture and Christian-based culture as reflected in abortion patterns.⁶⁰

Table 3.6
Officially Registered Induced Abortion Rates Per 1,000 Women Aged 15–49 in
the Russian Federation, by Economic Region, 1970–1992

Region	1970	1975	1980	1985	1990	1992
North	n.a.	n.a.	n.a.	115.9	n.a.	81.8
Northwest	n.a.	n.a.	n.a.	104.5	n.a.	79.8
St. Petersburg city	125.2	120.5	102.0	101.1	101.7	77.0
Central	n.a.	n.a.	n.a.	98.6	n.a.	79.9
Moscow city	109.3	112.6	102.6	97.7	91.6	78.7
Volga-Vyatsk	n.a.	n.a.	n.a.	120.4	n.a.	99.1
Central "Chernozem."	n.a.	n.a.	n.a.	101.6	n.a.	123.1
Volga	n.a.	n.a.	n.a.	112.0	n.a.	99.4
North Caucasus	n.a.	n.a.	n.a.	107.8	n.a.	74.7
Urals	n.a.	n.a.	n.a.	132.6	n.a.	103.7
West Siberian	n.a.	n.a.	n.a.	140.8	n.a.	95.7
East Siberian	n.a.	n.a.	n.a.	122.5	n.a.	105.7
Far East	n.a.	n.a.	n.a.	125.7	n.a.	94.5
Baltic	n.a.	n.a.	n.a.	118.4	119.4	104.4
Russian Republic within USSR	134.9	127.8	118.0	115.7	n.a.	n.a.
Russian Federation	n.a.	n.a.	n.a.	n.a.	108.8	98.1
USSR	114.2	105.7	102.3	100.3	n.a.	n.a.

SOURCES: For RSFSR, 1970-1990, official data of the Ministry of Health of the RSFSR (departmental statistics not included);

For USSR, 1970-1985, official data of the Ministry of Health of the USSR (departmental statistics from MPS included).

For Russian Federation, 1992, official data of the Ministry of Health of Russia (departmental statistics from MPS included)

NOTE: n.a.: data not available

Early Abortion in Post-Soviet Russia of the Early 1990s

The statistics on early abortion appear to be the least influenced by regional registration variations. This statistic is also an important indicator for evaluating the Ministry of Health's declared policy of transitioning to "safe abortion," which in Russia means early abortion. Nevertheless, it is difficult to estimate the real

⁶⁰*Editor's Note:* The statistics in the tables included in the present article are not disaggregated enough to support this argument. Due to the author's death prior to preparation of the present volume for publication, further elaboration is not possible here.

trend in early abortion dynamics because of the successive changes in abortion legislation and registration of induced abortion. However, the total number of early abortions in Russia in 1990–1992 was relatively stable—952,000 cases in 1990 and 914,000 in 1992.

Table 3.7
Officially Registered Early Abortion Rates Per 1,000 Women Aged 15–49 in the Russian Federation, by Economic Region, 1990–1992

Region	1990	1992
North	n.a.	31.8
Northwest	n.a.	18.7
St. Petersburg city	17.9	18.3
Central	n.a.	19.0
Moscow city	17.7	21.5
Volga-Vyatsk	n.a.	22.4
Central, "Chernozem."	n.a.	24.3
Volga	n.a.	25.0
North Caucasus	n.a.	14.5
Urals	n.a.	n.a.
West Siberian	n.a.	27.1
East Siberian	n.a.	27.1
Far East	n.a.	22.8
Baltic	n.a.	40.4
Russian Federation	26.5	25.4

SOURCE: Official data of the Ministry of Health of Russia

NOTE: Departmental statistics from the Ministry of Railroad Transportation are included.

In some territories, such as the Orel province and the Rostov region, the number of registered early abortions decreased between 1990 and 1992. Abortion dynamics in Russia appear to correspond to regional economic development. For example, the rate of early abortion in 1992 in Moscow city was 21.5 while the less developed Republic of Maryi El recorded 58.4 early abortions per 1,000 women aged 15 to 49. It is likely that this is a result of the interaction between regional differences in the diffusion of early induced-abortion technology, abortion migration,⁶¹ and the peculiarities of statistical registration.

⁶¹*Editor's Note:* By "abortion migration," the author may mean migration from regional periphery to center, across regions, or from public to private facilities in order to obtain the highest quality services.

Induced abortions in Russia are registered at the place of service. Because of better availability and service quality, abortion registration is statistically concentrated in the largest cities. However, it is well known that the level of commercialization of health care in Moscow is the highest in Russia, and that most early abortions are performed at commercial facilities. Women who are residents of the Moscow region in most cases have early abortions in commercial facilities in the city of Moscow. Therefore, we should expect the largest gap in registration of early abortion in Moscow, as no statistics are collected on commercially performed abortions. This may help to explain the wide variation between rates of early abortion in the city of Moscow, in the Moscow region, and in the Maryi El republic (the ratio is 1:5:14, respectively).

Contraception in Post-Soviet Russia of Early 1992

In 1988, the Ministry of Health introduced annual statistical reporting of women using intrauterine and hormonal contraceptives. In both cases, only patients using government health care facilities were included. Later, the Ministry of Health began to report the number of officially registered users of intrauterine and hormonal contraception relative to the number of fertile-age women residing in a given region. These data are officially presented as describing the regional prevalence of intrauterine and hormonal contraceptive usage (Table 3.8).

When analyzing these data, it should be taken into account that the official registration system for hormonal and intrauterine contraceptives users is imperfect and may underestimate true usage rates. Only peculiarities of the registration process could explain the low rate of female contraceptive users in Moscow city and the Moscow region, which has always been one of the most advanced regions in Russia.

Table 3.8
Officially Registered Users of Intrauterine Devices and Hormonal Oral Contraception, Per 1,000 Women Aged 15–49, by Provinces of the Russian Federation, 1992

Region	Intrauterine Devices	Pills
Northern	269.4	31.8
Northwest	100.0	31.4
St. Petersburg city	66.7	13.0
Central	116.2	26.2
Moscow city	77.0	18.4
Volga-Vyatsk	225.4	22.4
Central, "Chernozem"	147.7	23.1
Volga	232.0	46.2
North Caucasus	142.5	24.6
Urals	n.a.	n.a.
West Siberian	278.3	42.1
East Siberian	170.4	19.1
Far East	217.8	27.6
Baltic	167.2	25.3
Russia	181.9	30.6

SOURCE: Official data of the Ministry of Health of Russia.

NOTE: Departmental statistics from the Ministry of Railroad Transportation are included.

Voluntary Surgical Sterilization in Post-Soviet Russia of the Early 1990s

Voluntary surgical contraceptive sterilization was legalized in the USSR in the early 1990s. Earlier such sterilization was strictly prohibited in the USSR pursuant to Stalin's prohibition of abortion.⁶² During that time, numerous policies were introduced to curtail individual reproductive freedom and increase fertility. During the 60 years between the end of the 1930s and the early 1990s, this method of sterilization was not officially recognized and, as a result, was considered to be clandestine. Contraceptive sterilization could be obtained by payment ("under the table") or through an "acquaintance" only.

⁶²Prohibition of contraceptive sterilization was officially established by the Order of Narkomzdrav of the USSR, "On the Prohibition of the Operation of Cutting or Ablation of Healthy Fallopian Tubes of the Uterus," No. 303, August 7, 1939. Narkomzdrav is the abbreviation for the Narodnyi' Commissariat Zdravookhraneniya, or the Peoples' Commissariat of Public Health Services.

The prohibition of voluntary surgical contraceptive sterilization extended until 1990, when the Order of the Ministry of Health of the USSR No. 484, "On permission for surgical sterilization of women," was published.⁶³ However, judging by personal communications with practicing physicians in the larger cities of the former USSR, this method was very rarely used for contraception in the early 1990s.

Until 1990, a woman theoretically had the opportunity of obtaining medical sterilization at the local hospital closest to her place of residence, but only after a complex series of medical investigations. It was only in 1990, on the basis of Order No. 484, that women were allowed to have sterilization performed at a facility outside her region of permanent residence. Order No. 484 included official permission for surgical contraceptive sterilization on demand for some limited cases only. Those special cases include women having:

- three or more children;
- over 30 years of age, and with at least two children;
- had repeated cesarean sections, and with children;
- sustained injury of the uterus after myomectomy;⁶⁴
- particular cancers and any blood diseases;
- any mental disorders.

The full list of such indicators consists of 18 groups of different pathological disorders and diseases. It should be noted that the possibility of male voluntary surgical contraceptive sterilization was not mentioned at all in that order. Moreover, Order No. 484 included very detailed instructions for performing the sterilization operation.

One constraint in providing medical sterilization was that the required laparoscopic equipment and instruments were imported and available only in large hospitals and medical-scientific research institutes. Smaller hospitals did not have access to this technology. The collection of statistical data on contraceptive sterilization in the USSR began only in 1991 and was first published in the 1991 statistics on family planning in Russia.

⁶³Ministry of Health of the USSR, Order No. 484, "On permission for surgical sterilization of women," December 14, 1990, Moscow: MZSSSR, 23 pp.

⁶⁴Myomectomy is the surgical removal of a myoma (a tumor composed of muscle tissue), specifically of a uterine myoma.

A new government order, No. 303, concerning voluntary surgical contraceptive sterilization was published in 1993, replacing Order No. 484.⁶⁵ The primary goals of this order were officially declared as the “protection of public health; realization of rights [of access] to specialized medical treatment; reducing the number of abortions and post-abortion mortality.” The main action of this order was that “. . . Medical sterilization, as a special procedure with the goal of limiting personal reproductive potential or as a method of contraception, may be provided...with the agreement of the citizen . . . without limitation by age and number of children.” Additionally, Order No. 303 included:

- instructions concerning the rules permitting the provision of medical sterilization;
- a list of medical indications for providing medical sterilization;
- instructions concerning medical technology for sterilization of women;
- instructions concerning medical technology for sterilization of men.

Some very important innovations in family planning and in contraceptive sterilization were introduced by Order No. 303. Most significantly, for the first time, medical sterilization was considered a method of family planning and sterilization of males was permitted. In addition, the list of medical indicators for sterilization was broadened, consisting of more than 50 diseases and pathological disorders. Finally, this order also made it possible to obtain contraceptive sterilization outside of one's region of residence.

In sum, voluntary surgical contraceptive sterilization in the USSR and Russia has progressed through four periods of legalization: before 1939 it was legal; from 1939 to 1990 it was *de jure* prohibited and *de facto* barely provided; from 1990 to 1993 there was *de jure* legalization of female contraceptive sterilization on medical (and some social) grounds; and in 1993 there was *de jure* legalization of the provision of male and female contraceptive sterilization on medical and social grounds and on request.

Commercial Sterilization

In 1993 in Moscow and St. Petersburg, some private commercial clinics began providing voluntary surgical contraceptive sterilization for a fee.

⁶⁵Order of the Minister of Health of the Russian Federation. No. 303, “On Providing Medical Sterilization of Citizens,” Moscow: MZ RF, December 28, 1993, 28 pp.

Advertisements concerning provision of such contraceptive sterilization are regularly published in newspapers in the larger cities.

Legalization of sterilization and the subsequent publication of official information in 1989 raised certain important problems. Even in 1994, contraceptive sterilization of women did not constitute a statistically significant phenomenon, averaging in 1991 barely 0.3 percent of the total number of fertile age women in all of Russia (Table 3.9). Nevertheless, it is more important to pay attention to the annual *growth* in the number of contraceptive sterilizations performed in Russia, which rose from 7,255 in 1991 to 9,660 in 1992 (Table 3.9).

Table 3.9
Officially Registered Voluntary Contraceptive Sterilizations, by Province in the Russian Federation, 1991–1992

Region	Number of Sterilizations		As Percentage of Women of Fertile Age	
	1991	1992	1991	1992
Northern	468	840	0.32	0.57
Northwest	149	205	0.07	0.10
St. Petersburg city	60	57	0.05	0.04
Central	1,272	1,834	0.16	0.24
Moscow city	483	488	0.21	0.21
Volga-Vyatsk	724	458	0.34	0.21
Central "Chernozem."	103	441	0.5	0.22
Volga	720	1,164	0.17	0.28
North Caucasus	932	716	0.22	0.17
Urals	1,393	1,874	0.27	0.37
West Siberian	701	1,040	0.19	0.28
East Siberian	402	643	0.18	0.29
Far East	289	417	0.15	0.22
Baltic	102	28	0.47	0.13
Russia	7,255	9,660	0.20	0.26

SOURCE: Official data of the Ministry of Health of Russia.

NOTE: Departmental statistics from the Ministry of Railroad Transportation are not included.

It is important to note that the real increase in the number of voluntary contraceptive sterilizations may be higher, because of the concentration of such operations in commercial health facilities in the larger cities of Russia. Also, rural residents are likely to be undercounted because they tend to travel to big cities to take advantage of the greater availability and higher quality medical care. Such "provincial" cases are not registered in provincial medical statistics, nor in the medical statistics of big cities. Moreover, the statistics do not differentiate the

proportion of sterilizations which were provided voluntarily *as a method of contraception*. Because of this approach to statistical reporting, we lose the most interesting and essential information about such operations performed as a method of family planning.

Other Characteristics of the Distribution of Induced Abortion in Post-Soviet Russia of the Early 1990s

Data in Tables 3.10–3.13 show some additional characteristics of abortion in Russia and the former Soviet Union. Among the former Soviet republics, abortion rates per 1,000 women range from a low of 14.2 in Azerbaijan to a high of 108.8 in Russia. The statistics suggest that nearly two-thirds of all abortions are legal, induced abortions, and another 24 percent are early induced abortions (Table 3.11). Just over two-thirds of all reported abortions in the Russian Federation in 1991 occurred in the first 12 weeks of pregnancy (Table 3.12). Ten percent of all abortions are to women under age 20, and nearly 20 percent are to women aged 35 or older (Table 3.13).

Table 3.10
Abortion Rates in the Soviet Republics, 1990

Soviet Republics	Total Abortions	Per 1,000 women age 15-49
USSR	6,193,561	89.8
RSFSR (Russia)	3,920,287	108.8
Ukraine	1,019,038	82.7
Byelorussia	254,726	103.5
Uzbekistan	214,137	44.7
Kazakhstan	354,430	85.0
Georgia	61,127	45.9
Azerbaijan	25,536	14.2
Lithuania	n.a.	n.a.
Kirgizstan	78,105	76.1
Tajikistan	52,658	44.3
Armenia	25,282	29.6
Moldavia	81,931	74.6
Latvia	45,360	70.4
Turkmenistan	35,698	40.4
Estonia	25,246	66.3

SOURCE: Official data of the Ministry of Health of USSR and Russia.

NOTES: Departmental statistics are not included.

na = No data available.

Table 3.11
Main Characteristics of Abortions in the Russian Federation, 1991

Type of Abortion	Total Number of Abortions	Percentage of All Abortions
All abortions	3,442,395	100.00
Spontaneous abortions	229,230	6.70
Induced abortions for medical reasons	57,787	1.70
Legal induced abortions	2,203,536	64.00
Criminal induced abortions	13,493	0.39
Abortions of unknown causes	114,348	3.32
Early induced abortions	827,001	24.02

SOURCE: Official statistical data issued from Central Data Processing Center of the Ministry of Health of Russian Federation, 1993.

NOTE: Departmental statistics are not included.

Table 3.12
Abortions in the Russian Federation, by Gestational Age, 1991

Gestation Age	Total	Percentage of All Abortions
Up to 12 weeks	2,338,311	67.9
22–27 weeks	61,965	1.8

SOURCE: Official statistical data issued from Central Data Processing Center of the Ministry of Health of Russian Federation, 1993.

NOTE: Departmental statistics are not included.

Table 3.13
Abortions in the Russian Federation, by Age of Women, 1991

Age of Women	Total	Percentage of All Abortions
Under 15	6,015	0.2
15–19	38,848	9.8
20–34	2,458,948	71.4
35 and over	638,584	18.5

SOURCE: Official statistical data issued from Central Data Processing Center of the Ministry of Health of Russian Federation, 1993.

NOTE: Departmental statistics are not included.

Conclusion

This investigation was undertaken in order to present and discuss the principal officially issued statistics concerning family planning in Russia. The core of this work was focused on evaluating issues of macro-level statistics on family planning, and particularly induced abortion, in Russia.

The social and demographic aspects of induced abortion in family planning in contemporary post-Soviet Russia reflect the unique experience in the social and demographic development of the country.

The right for family planning, or “free and responsible parenthood,” as defined by the United Nations/World Health Organization (UN/WHO), is an internationally acknowledged and inherent right of each person.⁶⁶ Family planning is referred to in a number of UN documents which were ratified by the USSR and recognized and supported by the Russian Federation at the 1994 Cairo International Conference on Population and Development. However, in Russia the right to family planning, despite being *de jure* legalized in domestic law and confirmed by international commitments, remains restricted due to the lack of information, lack of specialized and qualified medical care personnel and assistance in family planning, and of modern contraceptives. In practice, only the right to induced abortion on request has been realized *de facto* in Russia.

Since the 1970s, Russia’s decline in fertility was primarily accomplished by a very high abortion rate. Moreover, induced abortion in Russia has been used not only for birth limitation, but also for birth spacing. The substitution of abortion with effective methods of contraception has yet to take place on a large scale, and induced abortion is still the primary method of family planning in Russia. In addition, because abortion services remain inadequate, clandestine abortions are performed at a very high rate.

The issue of induced abortion in Russia may be viewed not only as a national problem, but also as an extreme case relevant to world-wide population policy discourse. Russia can be used as a model of what happens when information, services, and contraception are unavailable or inadequate. A system of family planning services has yet to be created in Russia. It is one of the few economically developed countries where abortion still prevails over the use of contraceptives in family planning. The difference between Russia and all

⁶⁶Moreover, the right of each person to conduct family planning serves as the legal and organizational basis for guaranteeing many other fundamental human rights—women’s rights in general, the woman’s right to choose, children’s rights, the right of a person to health, etc., UN/WHO.

Western countries lies not only in this temporal lag, but also in the continuing and widespread underestimation of this as a social problem for Russia.

Nevertheless, we expect a deterioration in the situation⁶⁷ as a result of the problem of AIDS and great changes in sexual behavior (especially among the young), changing demographics, and increasing democratization in Russian society.

⁶⁷*Editor's Note:* The author may have meant that an improvement, in the form of a reduction in the abortion rate and increase in contraceptive use, is expected.

References

1. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1992 (Ministry of Health of the Russian Federation, 1992). Directive of the Minister of Health of the Russian Federation, Moscow, August 30, 1992, No. 06-15/7-15: On the Abortion Situation and Organizing of Family Planning Services. Moscow: MZ RF. 7 pp.
2. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1992 (Ministry of Health of the Russian Federation, 1992). Directive of the Minister of Health of the Russian Federation, Moscow, March 3, 1992, No. 171-y: On the Collection and Presentation of Monthly Medical Records. Moscow: MZ RF. 1 p.
3. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1993 (Ministry of Health of the Russian Federation, 1993). Order of the Minister of Health of the Russian Federation, Moscow, December 28, 1993, No. 302: On Confirmation of the List of Medical Indications for Artificial Interruption of Pregnancy. Moscow: MZ RF. 16 pp.
4. Henshaw, S.K., "Induced Abortion: A World Review, 1990," *International Family Planning Perspectives*, Vol. 12, No. 2, 1990, pp. 59–65.
5. Henshaw, Stanley K., Morrow, E., *Induced Abortion: A World Review 1990 Supplement*, New York: The Alan Guttmacher Institute, 1990, 120 pp.
6. Tietze, Christopher, Henshaw, Stanley K., *Induced Abortion: A World Review 1986*, 6th Edition, New York: The Alan Guttmacher Institute, 1986, 144 pp.
7. Popov, A., "Sky-high Abortion Rates Reflect Dire Lack of Choice," *Entre Nous (The European Family Planning Magazine)*, No 16, September 1990, pp. 5–7.
8. USSR. Ministerstvo Zdravookhraneniya SSSR, 1987 (Ministry of Health of the USSR, 1987). Order of the Minister of Health of the USSR, Moscow, June 05, 1987, No. 757, On Confirmation of the Instruction on Artificial Interruption of Early Pregnancy by Vacuum Aspiration. Moscow: MZ SSSR. 6 pp.
9. USSR. Ministerstvo Zdravookhraneniya SSSR, 1987 (Ministry of Health of the USSR, 1976). Order of Minister of Health of the USSR. Moscow, December 31, 1987. No 1342: On the Confirmation for the Developing of Operation for Artificial Interruption of Pregnancy for Non-medical Reasons. Moscow: MZ SSSR, 3 pp.
10. SSSR. Ministerstvo Zdravookhraneniya SSSR, 1982 (Ministry of Health of the USSR, 1982). Order of the Minister of Health of the USSR. Moscow, April 22, 1982, No 430: On Confirmation of the Instruction on the Organization of a Women's Clinic. Moscow: MZ SSSR, 99 pp.

11. USSR. Ministerstvo Zdravookhraneniya SSSR, 1982 (Ministry of Health of the USSR, 1982). Order of the Minister of Health of the USSR, Moscow, March 16, 1982, No 234: On Confirmation of the Instruction on Providing Surgical Artificial Interruption of Pregnancy. Moscow: MZ SSSR, 18 pp.
12. Sadvokasova, E.A., *Social and Hygienic Aspects of Birth Control*, Moscow: Meditsina, 1969, 192 pp.
13. Vasilevskii L.A., Vasilevskii L.M., 1924. *Abortion as a social phenomena. Social and hygienic essay*. Moscow-Leningrad: Izdatel'stvo Frenkelia. 128 pp.
14. RSFSR. Narkomzdrav, Narkomiust, 1920 (RSFSR. People's Commissariat of Health. People's Commissariat of Justice, 1920). Order of the People's Commissariat of Health and the People's Commissariat of Justice of the Russian Federation. Moscow, November 16, 1920: On the Artificial Interruption of Pregnancy, in *Orders of the CPSU and the Soviet Government on public health protection*. Moscow: Medgiz, 1958. p. 63.
15. USSR. TSIK i SNK Soyuza SSSR, 1936 (Central Executive Committee and Council of the People's Commissars of the Soviet Union, 1936). Decree of the TSIK and SNK of the USSR. Moscow, June 27, 1936: On the prohibition of abortion, the increase of financial help to mothers, the establishment of State help for large families, the broadening of the network of maternity hospitals and daycare centers, the amplification of judicial penalty for deviation from prescribed child support and about certain changes in legislation of divorce. In: *Orders of the CPSU and the Soviet Government on public health protection*. Moscow: Medgiz. 1958. p. 264. GCNMB:[Ksp 667/s-p].
16. USSR. Prezidium Verkhovnogo Sovieta SSSR, 1955 (Presidium of the Supreme Council of the USSR, 1955). Decree of the Presidium of the Supreme Council of the USSR. Moscow, November 23, 1955: On the Elimination of Abortion Prohibition, in *Orders of the CPSU and the Soviet Government on Public Health Protection*. Moscow: Medgiz, 1958, p. 333.
17. USSR. Ministerstvo Zdravookhraneniya SSSR, 1976 (Ministry of Health of the USSR, 1976). Order of the Minister of Health of the USSR. Moscow, July 8, 1976. No. 08-23/11: On the Permission for the Operation of Artificial Interruption of Pregnancy. Moscow: MZ USSR, 10 pp.
18. USSR. Soviet Ministrov SSSR, 1988 (Council of Ministers of the USSR). Directive of the Council of Ministers of the USSR. Moscow: December 29, 1988: Instruction for Realization of the Decree of the Soviet of Ministers of the USSR. Moscow: Mir., 12 pp.
19. USSR. Ministerstvo Zdravookhraneniya SSSR, 1962 (Ministry of Health of the USSR). Order of the Minister of Health of the USSR. Moscow, August 2, 1962. No. 377: On the Measures of Adjusting the Fight Against Abortion. Moscow: MZ SSSR. 5 p.
20. Goskomstat, USSR, "Demographic Yearbook of the USSR 1990," in *Finance and Statistics*, Moscow: 1990, p.640.

21. Ministry of Health of the USSR, 1990. Public Health in the USSR in 1989, in *Statistical Materials*, Moscow: MZ SSSR, 110 pp.
22. Goskomstat, USSR, 1988. Population of the USSR in 1987: Statistical Yearbook, in: *Finance and statistics*. Moscow. p. 440.
23. Ministry of Health of the USSR, 1989. Population Health in the USSR and Activities of Public Health Services in 1988. Moscow: Ministry of Health of the USSR. 220 pp.
24. Reayennik L.I., "The Role of Abortion in the Structure of Methods of Birth Control in the USSR and Abroad," in *Problems of Demographic Development of the USSR*. Moscow: ISI AN USSR, 1988, pp. 86–99.
25. *Aborty v 1926 g. (Abortion in 1926)*. 1929. Moscow: Statizdat. 150 pp.
26. Avdeev Alexandre, Alain Blum, Irina Troitskaja, 1993. L'avortement et la contraception en Russie et dans l'ex-USSR: histoire et present. Paris: Institut National d'Etudes Demographiques, 1993. 74 pp.
27. WHO, 1994. *Women's Health Profile*. Conference on the Health of Women in Central and Eastern Europe, February 16–18, 1994. UNO, Vienna.
28. USSR. Ministerstvo Zdravookhraneniya SSSR, 1990 (Ministry of Health of the USSR, 1990). Order of the Minister of Health of the USSR. Moscow, December 14, 1993. No. 484: On Legalizing Surgical Sterilization of Women. Moscow: MZ SSSR, 23 pp.
29. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1993 (Ministry of Health of the Russian Federation, 1993). Order of the Minister of Health of the Russian Federation. Moscow, December 28, 1993. No. 303: On Providing Medical Sterilization of Citizens. Moscow: MZ RF. 28 pp.
30. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1992 (Ministry of Health of the Russian Federation, 1992). Directive of the Minister of Health of the Russian Federation. Moscow, March 3, 1992. No. 171-y: On the Collection and Presentation of Monthly Medical Records. Moscow: MZ RF. 1 p.
31. Russian Federation. Ministerstvo Zdravookhraneniya Rossiiskoi' Federacii, 1988 (Ministry of Health of the Russian Federation, 1988). Order of the Minister of Health of the Russian Federation. Moscow, March 29, 1988. No 250: On Organizing Commercial Clinics (departments, rooms) and Free-of-Charge Clinics (departments, rooms) with State Financing for Patients Who Require Permanent Care and Commercial Gynecologic Clinics (departments, rooms) for Providing Operations of Artificial Interruption of Pregnancy (abortion). Moscow: MZ RF. 10 pp.

Discussants' Comments

Discussants: Catherine Jackson, RAND; and Jack Molyneaux, RAND

The discussants of Dr. Popov's paper noted that the lessons of birth control in the United States could be used in designing the family planning strategy in Russia. Perhaps the most important of these lessons is that a wide availability and accessibility of effective pre-conception birth control methods can substantially diminish the incidence of abortions, since abortion in Russia is often the result of the failure of ineffective contraception.

4. The Russian Epidemiological Crisis as Mirrored by Mortality Trends

by Vladimir M. Shkolnikov and France Meslé⁶⁸

Introduction

In the mid-1960s, life expectancy began to decrease in the USSR and in many Eastern European countries. This occurred several years after life expectancy improvements slowed or reversed in some Western countries, and was the first time since the beginning of the epidemiological transition when the evidence compelled specialists to recognize that mortality decline does not always accompany economic development.⁶⁹ In the 1970s, improvements in life expectancy resumed in Western countries, but in Eastern European countries the epidemiological crisis continues until now.⁷⁰ Jean Bourgeois-Pichat, and later other scholars, pointed out that an excess mortality of adult males was the principal factor in the general stagnation of life expectancy in the East.⁷¹

Unfavorable mortality trends were particularly acute in Russia. Many specific features of Soviet mortality patterns have been analyzed and discussed elsewhere.⁷² However, some principal features remained hidden due to the traditional lack of Soviet mortality data. Recently, a large amount of new data

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⁶⁹Meslé, France, and Jacques Vallin, "Développement Économique et Espérance de Vie: La Transition Sanitaire au Tournant des Années Soixante," paper presented at the General Congress of IUSSP, Montréal, Canada, August 24–September 1, 1993.

⁷⁰Meslé, France, "Mortality in Eastern and Western Europe: A Widening Gap," in Coleman, David, ed., *European Population in the 1990s*, Oxford University Press, 1995.

⁷¹Bourgeois-Pichat, Jean, "Mortality Trends in the Industrialized Countries," in *Mortality and Health Policy*, New York: United Nations, 1984.

Jozan, Peter, "Contrast in Mortality Trends," IUSSP-General Conference, New Delhi, 1989.

Okolski, Marek, "East-West Mortality Differentials," in Alain Blum and J.L. Rallu, eds., "Demographic Dynamics," *European Population, Vol. 2*, materials of European Population Conference, Paris, October 21–25, 1991, John Libbey Ltd, 1993.

⁷²Anderson, Barbara, and Brian Silver, "Trends in Mortality of the Soviet Population," *Soviet Economy*, Vol. 6, No. 3, pp. 191–251, 1990. Andreev, Evgueny, *Prodoljitelnost' jizni i prichiny smerti v SSSR* (Life Expectancy and Causes of Death in the USSR), in A.G. Volkov, ed., *Demograficheskiye protsessy v SSSR* (Demographic Processes in the USSR), Moscow, Finansy i Statistika, 1990. Blum, Alain, and Monnier, Alain, "Recent Mortality Trends in the USSR: New Evidence," *Population Studies*, Vol. 43, No. 2, 1989, pp. 211–241.

was obtained as part of a joint Russian-French project on the reconstruction of continuous time series of Russian mortality by cause of death.⁷³ Whereas previously data were only available for a few points in time (since 1986) and large classes of causes of death, complete and comparable annual mortality data are now available by age and by 185 diagnostic categories from 1965 to 1993.⁷⁴

With improved data availability, it has become possible to evaluate the principal components of the change in life expectancy for the Russian population over time. The influences of different causes of death on the general trend of Russian life expectancy have changed substantially. Since 1985, the effect of violent death has partly overshadowed the more fundamental negative influence of a long-term increase in cardiovascular mortality, which had dominated earlier (in the late 1960s and the 1970s).⁷⁵ These new data provide the opportunity to not only better explore the large classes of causes of death, but also trends for more specific causes of death.⁷⁶

The enormous increase in mortality of 1992–1993 compels us to investigate Russia's historical mortality experience in order to detect something that could help us to understand what is really new and what is linked to the past. Therefore, the general goal of the present paper is to investigate the genesis of the unprecedented Russian epidemiological crisis of the 1990s using the new data on mortality trends and patterns. To accomplish that purpose, we chronologically analyze Russian mortality by age since 1938–39, and by age and cause of death since 1965.⁷⁷ We start from the late 1930s so that we can correctly understand Russia's mortality pattern before World War II, and perhaps find early evidence of excess adult mortality. Then, we will analyze the components of the

⁷³Meslé, France, Vladimir Shkolnikov, and Jacques Vallin, "Mortality by Cause in the USSR in 1970–1987: The Reconstruction of Time Series," *European Journal of Population*, No. 8, 1992, pp. 281–308.

⁷⁴For several years, very little data on causes of death were published in the former USSR. In the 1960s and the early 1970s only some aggregated data on cardiovascular and cancer mortality at the level of the whole USSR were published either in journal *Vestnik Statistiki* or in the statistical yearbooks *Narodnoye Khozyaistvo SSSR* and *Naseleniye SSSR*. During 1974–1986, the Soviet government forbid any publication on mortality and causes of death. Since 1988, a completely new statistical era arose (due to Gorbachev's Glasnost), and Goskomstat started to produce the statistical annuals *Naseleniye SSSR* (*Naseleniye Rossii* since 1992) containing only information about the large classes of causes of death (infectious diseases, neoplasms, circulatory diseases, respiratory diseases, and external causes of death).

⁷⁵Meslé, France, Vladimir Shkolnikov, and Jacques Vallin, "Brusque Montée des Morts Violentes en Russie," *Population*, 3, 1994, pp. 780–790.

⁷⁶Shkolnikov, Vladimir, France Meslé, and Jacques Vallin, "Recent Trends in Life Expectancy and Causes of Death in Russia (1970–1993)," in J.L. Bobadilla and C.A. Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press (forthcoming). Shkolnikov, Vladimir, France Meslé, and Jacques Vallin, "La Crise Sanitaire en Russie, 1970–1993," *Population*, No. 4–5, 1995, pp. 907–982.

⁷⁷We have not yet studied the period before 1970 because the reconstructed cause-specific mortality rates for 1965–1969 became available only recently.

significant rise in life expectancy for the Russian population in the 1940s and 1950s.

The year 1965 introduced the modern epidemiological crisis in Russia. For the period of gradual mortality increase (1965–1980), we point out a divergence in mortality trends among different age groups, focusing on causes of male mortality in their active ages (15–64). Next, we analyze the dramatic mortality fluctuations that have occurred since 1985. They include at least three components. These are: 1) the long-term unfavorable mortality trend; 2) the mortality decrease and then increase caused by the anti-alcohol campaign of 1985–87; and 3) the sharp mortality increase of 1992–93. The paper concludes with some speculations on the main factors likely to be contributing to the recent epidemiological crisis in Russia.

General Trends in Life Expectancy at Birth in Russia

At the beginning of the 20th century, life expectancy for the Russian population was extremely low (30 years for males and about 32 years for females in 1896–1897). It was about 15 years below the life expectancy levels for France, England and Wales, or the United States. In the 1920s, after a period of great social shocks in 1914–1922, important improvements were achieved in Russia. During that period, life expectancy increased by 10 years in men and 13 years in women. However, in the 1930s very little progress was achieved in Russia due to the famine of 1933 and the political persecutions of Stalin's era. As a result, in the 1930s the gap between Russia and the United States became even wider—about 20 years for both males and females (Table 4.1).

Table 4.1
Temporal Changes in Life Expectancy at Birth in Russia, United States, and Japan, by Gender

Year	Russia			United States			Japan		
	Males	Females	Difference	Males	Females	Difference	Males	Females	Difference
1896	30.9	33.0	2.1	-	-	-	35.7	37.2	1.5
1910	-	-	-	48.4	51.8	3.4	40.0	40.4	0.4
1926	39.3	44.8	5.5	55.5	58.0	2.5	44.9	46.7	1.8
1938	40.4	46.7	6.3	61.9	65.3	3.4	47.7	50.1	2.4
1958	61.9	69.2	7.3	66.8	73.2	6.4	65.2	69.8	4.6
1965	64.0	72.1	8.1	66.9	73.7	6.8	67.7	72.9	5.2
1970	63.0	73.4	10.4	67.1	74.7	7.6	69.3	74.7	5.4
1980	61.4	73.0	11.6	70.0	77.4	7.4	73.4	78.7	5.3
1987	64.9	74.3	9.4	71.5	78.4	6.9	75.6	81.4	5.8
1990	63.8	74.4	10.6	72.0	78.8	6.8	75.9	81.8	5.9
1991	63.5	74.3	10.8	72.0	78.9	6.9	76.1	82.1	6.0
1992	62.0	73.8	11.8	72.3	79.0	6.7	76.3	83.0	6.7
1993	59.0	72.0	13.0	-	-	-	-	-	-

NOTE: Sources of Russian data: 1896–1897: Goskomstat, 1987. 1926–1927: Novoselski and Paevski, 1930 (corrected at infant and older ages for underreporting of death rates. Corrections are described in Adamets, Shkolnikov, 1995). 1938–1939: Economic Archives of the Russian Federation, Section 1562, List No. 329, Document No. 151 (corrected, see Adamets, Shkolnikov, 1995). 1958–1959 and 1965: corrected Goskomstat's estimates (see Shkolnikov, Meslé, Vallin, 1995a or 1995b).

Just after World War II, life expectancy rose very rapidly in Russia, while in Western countries it was growing at approximately the same speed as before the war. Between 1938–1939 and 1958–1959 in Russia, life expectancy increased by over 20 years for both sexes—from 40 to 62 for men and from 47 to 70 for women. It was a period of successive efforts by the Soviet centralized health care system against infectious diseases using new antibiotics and mass vaccinations. By the mid-1960s, the gap in life expectancy between Russia and the United States dropped sharply to only 3 years for men and 1.5 years for women.⁷⁸ In the 1960s, when excess mortality from infectious diseases had already diminished greatly and the “civilized ills” (alcoholism, smoking, traffic accidents, environmental pollution) were rising, progress in life expectancy both in Russia and in the United States nearly stopped. Whereas further progress recovered in the United States and in many other Western countries in the 1970s, in Russia the decrease in

⁷⁸ Here we use the corrected (for underreporting of deaths in infancy and older ages) values of life expectancy at birth for Russia (Shkolnikov, Meslé, Vallin, 1994). The official Goskomstat estimates of life expectancy at birth for 1965–66 are 64.3 for males and 73.7 for females. Accordingly, the difference with the United States becomes even smaller—2.5 years for males and 0.3 years for females.

life expectancy generally continued over the 30 years since 1965, especially for males.

The comparison between Russia and Japan is also illustrative—until the 1960s the Russian and Japanese situations were rather similar. Both countries were very much behind Western countries before World War II, but they radically overcame their backwardness in the late 1940s and the 1950s. Since the 1960s, however, the situations in Russia and Japan developed in opposite directions. While Japan achieved spectacular improvements in the control of degenerative diseases and experienced rapidly increasing life expectancy, Russia exhibited a continuous rise in cardiovascular and accidental mortality and a lowering of life expectancy.

Sex differentials in life expectancy were growing over time in Russia, Japan, and the United States. Between the 1920s and the 1970s, the difference in life expectancy by gender increased from 5.5 to 10 years in Russia, from 2.5 to 7.4 years in the United States and from 1.8 to 5.4 years in Japan, with the difference always larger in Russia than in other countries. Since the mid-1980s, excess male mortality has increased significantly in Russia. As a result, the difference in life expectancy by sex increased to 13 years, versus 6.7 years in the United States or Japan.

Russian Mortality: 1938–39 and Postwar Improvements

Our knowledge of mortality in the Russian population before World War II is very limited. Data on deaths by age and sex are kept in the Economic Archive of the Russian Federation (list No. 329). There are also official life tables for 1938–1939, based on 1939 numbers relative to the 1939 census population. Adjustment of these life tables for mortality underreporting at older ages leads to a modest correction in life expectancy at birth by -0.1 years for males and by -0.4 years for females.⁷⁹ However, the real mortality at the end of 1930s was probably substantially higher than these estimates due to incompleteness of death registration for infants and for adults in some regions (for instance, concealing the number of Stalin's victims and/or losses in military conflicts with Finland and Japan). We also incorporate a fragment of archive data on deaths by age and

⁷⁹Adamets, Sergei, and Vladimir Shkolnikov, "On Mortality Tables of the Population of the USSR, Russia, Ukraine, and Byelorussia to the End of the 1930s," paper presented at the workshop on "Population of the USSR in the 1920s in Light of Newly-Declassified Documentary Evidence," University of Toronto, January 27-29, 1994.

Correction for underestimation of death rates in infancy and older ages of Novoselski-Paevski's life tables for 1926–27 diminishes male life expectancy by 0.7 years, female life expectancy by 0.6 years.

cause of death for the urban population of Russia in 1938 (cause-of-death recording did not exist in rural areas at that time), as well as mortality numbers by month for 1932–35. Certainly, these data are also approximate.

Russian mortality by age and cause of death compared with the United States. The ratios of Russian age-specific death rates (ASDR) in 1938–39 to those in the United States show that the major part of the 20-year difference in life expectancy between the two countries can be ascribed to extremely high levels of infant and child mortality in Russia (Figure 4.1). Generally, the ratio of Russian to U.S. death rates declines from younger to older ages. For males ASDRs in Russia are higher than those in the United States even at older ages, while for females at ages beyond 45–49 ASDRs are nearly identical in the two countries.

In the late 1930s the infant mortality rate (IMR) was close to 200 per 1,000 births in Russia and to 50 per 1,000 in the United States. At ages 1–4 and 5–9 the relative difference in mortality is even higher, with Russian death rates about 15 times higher than those in the United States. Thus, the Russian mortality pattern at ages under 15 is similar to that of the “South” family in the Coale-Demeny model life tables⁸⁰ (Figure 4.4). The “South” family is generally characterized by bad sanitary conditions, relatively early abandonment of breast-feeding, and widespread practice of supplementary feeding with unsterilized products. This exact situation has been described by Sergei Novoselski in his study on extremely high IMR in ethnic Russians at the beginning of 20th century.⁸¹

Figure 4.2 shows for each age group the proportion of mortality due to four principal diagnostic categories of causes of death: 1) infectious diseases (tuberculosis, diarrheal diseases, all other food-born or air-born infections, influenza, rheumatism, pneumonia and other acute respiratory diseases, septicemia, inflammatory diseases, venereal diseases, etc.); 2) degenerative diseases (cardiovascular diseases, cancers, chronic respiratory, digestive, geneto-urinary, nervous diseases); 3) external causes (accidents and violence); and 4) other and unspecified causes. The top figure presents information for Russian

⁸⁰ Coale and Demeny regional model life tables (MLT), Coale, Ansley J., and Paul Demeny, “Regional Model Life Tables and Stable Populations,” Princeton Univ. Press, 1966, are used here. They were derived from a set of 192 life tables by sex recorded for actual populations. Therefore MLT provides a kind of aggregation of mortality experiences from different countries and different time periods. Four patterns of mortality were distinguished and were labelled “North,” “South,” “East,” and “West” MLT family patterns. (*Indirect Techniques for Demographic Estimation. Manual X*, United Nations, New York, 1983).

⁸¹ Novoselski, Sergei, 1916. “Obzor glavneishih dannih po demografii i sanitarnoi statistiki Rossii.” In: *Kalendar vracha za 1916 god. ch. II. [Review of the Principal Data in Demography and Sanitary Statistics of Russia. In: Physician’s Calendar for 1916. Part II]*. pp. 66–67.

Ptukha (Mikhail) 1960. *Otcherki po statistike naseleniya. [Essays on the Statistics of Population]*. Moscow, TsS USSR.

males in 1938–1939 while the lower panel presents the same information for U.S. males in 1940.

The proportion of deaths caused by infectious diseases was particularly high in Russia at ages 1 to 14 and accounts for the vast majority of deaths in that age range, especially before age 5. It is significantly higher than in the United States (Figure 4.2).⁸² High incidence of diarrheal diseases, measles, dysentery, scarlet fever, respiratory infections, and tuberculosis caused maximum losses in Russia. In both countries the proportion of deaths from external causes increased in young adult ages. However, in Russia this proportion is higher and its maximum occurs in an older age group (32 percent at age 25–29 in Russia versus 19 percent at age 20–24 in the United States).

The percentage of deaths due to other and unspecified conditions is higher in the United States than in Russia, while the percentage due to degenerative diseases in older ages is higher in Russia than in the United States. These differences probably reflect difference in cause-of-death recording between the two countries. Russian physicians may have been forced to record well-defined diagnoses even in cases where the cause of death was not perfectly evident. This could result in overrecording of degenerative diseases in older ages.

Seasonal variations in Russian mortality. For a better understanding of Russian mortality patterns it is useful to look at the seasonal variation of mortality in the 1930s. Three components can be extracted from the initial series of absolute numbers of deaths by month for Russia (1932–35, 1956–5) and the USSR (1936–37): these are a linear trend, regular seasonal waves, and irregular short term fluctuations⁸³ (Figure 4.3). Here we will just focus on seasonality and not discuss the linear trend or irregular fluctuations (for instance, the enormous explosion of deaths, with its maximum in June, due to the famine of 1933). The regular seasonal variation in the 1930s included two peaks: a smaller one in winter-spring due to respiratory infections and a bigger one in summer-autumn due to food-borne infections. In the 1930s, the number of excess deaths in August was considerable—about 20–30 percent (Table 4.2). By the 1950s, the seasonal variation had already been greatly reduced as the summer peak completely disappeared, suggesting that food-borne infections had been substantially

⁸²Source of mortality data by cause-of-death for the United States: Preston, Samuel H., Nathan Keyfitz, and R. Schoen, *Causes of Death. Life Tables for National Populations*. Seminar Press, New York-London, 1972.

⁸³The method for decomposition of time series into components and the corresponding computer program were developed by Alexander Kovaldjy (Institute for Economic Forecasting, Moscow). These components are: (1) linear trend; (2) seasonal wave which is a regular periodic oscillation within a period of one year; and (3) irregular fluctuations, which are the differences between the observed values and the influence of components (1) and (2).

reduced as a cause of death. The maximum for the cold season remained rather stable from the 1930s to the 1950s.

Table 4.2
Monthly Index of Mortality in Russia and the USSR in the 1930s and the 1950s

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Russia 1932–35	1.00	1.04	1.07	1.03	0.98	0.97	1.12	1.31	1.08	0.87	0.80	0.84
USSR 1936–37	0.88	1.05	1.13	1.06	0.98	0.96	1.05	1.21	1.08	0.92	0.86	0.88
Russia 1956–59	1.08	1.08	1.06	1.04	0.99	0.95	0.93	0.94	0.95	0.94	1.00	1.00

NOTE: Monthly index = (seasonal wave+trend)/trend

Extremely high child mortality in the late 1930s and its reduction after World War II. Comparisons with Coale-Demeny model life tables (MLT) reveal the peculiar age structure of prewar mortality in Russia (Figure 4.4). In 1938–39, infant and child mortality were relatively high in Russia, while adult mortality was moderate. However, there was a relative increase in male mortality between the ages of 40–44 and 60–64. The reason for that is not clear. We do not know whether our data include (completely or partially) deaths in Siberian camps and “special settlements,” where mortality was certainly very high. In a previous paper we have shown that between 1926–27 and 1938–39 male mortality at able-bodied ages increased slightly in spite of decreases at younger ages.⁸⁴ Perhaps these are some early signs of the increase in adult male mortality that has characterized Russia in recent decades. It is obvious, however, that in the 1930s this phenomenon was much less important than high infant and child mortality.

Generally, Russia’s mortality pattern in 1938–39 contains the main elements of mortality patterns in traditional (preindustrial) societies: extremely high death rates for infants and children, prevalence of infectious and diarrheal diseases among causes of death, and summer seasonality. On the contrary, the United States before World War II had already experienced important gains in the reduction of premature mortality. The traditional Russian backwardness in the course of its epidemiological transition, as well as the demographic catastrophes of 1914–1920 (World War I and the Civil War) and 1933 (famine), determined this difference.

A radical reduction of the infant mortality rate (IMR) occurred in Russia in the late 1940s and the 1950s. Between 1940 and 1956, the IMR in Russia decreased by

⁸⁴See, Adamets, Shkolnikov, 1995.

approximately 4 times, from 200 per 1,000 to 49 per 1,000.⁸⁵ In the next decade, the IMR was cut in half to 25.5 per 1,000 in 1965 (Figure 4.5). As a result, the increase in life expectancy at birth was very large between 1938-39 and 1965—24.3 years for males and 27.1 for females (Table 4.3). Decreasing mortality at ages under 5 contributed approximately equal fractions of the improvement for males and females (16.5 and 16.8 years, respectively). The influence of mortality decline at adult ages on overall life expectancy improvements was much smaller and unequal by sex: 7.8 years for males and 10.3 years for females. Hence, during two postwar decades, Russian women gained significantly more than Russian men due to the more favorable mortality trends at adult ages.

Table 4.3
Components of Life Expectancy Increase in 1938–1939 to 1956, by Age

Age	Males	Females
0	8.27	8.03
1-4	8.20	8.72
5-14	1.88	2.04
15-59	4.51	5.39
60+	1.40	2.90
Total	24.26	27.08

NOTE: Each cell of this table shows the number of years by which life expectancy at birth increased between 1938–39 and 1965 due to mortality decrease in corresponding age group.

Mortality Trends Since 1965: The New Epidemiological Crisis

Age patterns of mortality. In the early 1960s, progress in life expectancy for the Russian population slowed considerably. Annual increments in increasing life expectancy became very small until finally improvements ceased. For males the year 1965 was the turning point, when reductions in mortality from infectious diseases no longer offset negative tendencies in chronic diseases and violence. For females this point occurred several years later. The decline in life expectancy was rather slow until the mid-seventies; but after that it accelerated, particularly for males.

Mortality trends since 1965 clearly differ by age. A general deterioration at adult ages, particularly for men, contrasts with the slow progress at ages under 15

⁸⁵ IMR values for 1940–1958 are collected and reconstructed by Sergei Zakharov (Center for Demography and Human Ecology, Moscow).

(Figure 4.6). The probability of survival from birth to age 15 was increasing in spite of some short-term variations.⁸⁶ Simultaneously, probabilities of survival from age 15 to 45, from 45 to 65, and from 65 to 80 have been decreasing. The decrements in survival probabilities over 1965–1992 are approximately equal for the three age intervals (0.05 for men and 0.02 for women). Below we shall see that the negative changes between ages 20 and 60 are to a great extent responsible for a general decrease in life expectancy at birth.

Gorbachev's anti-alcohol campaign, which began in 1985, caused a break from the long-term trends. In 1985–1987 survival probabilities increased by 0.04 for males (0.01 for females), but by 1992 they had returned to the 1984 level. The decrease in survival probabilities was rather slow in 1988–1991 but then accelerated in 1992. The dramatic mortality rise in 1993 resulted in a 0.04–0.05 decrease in survival probabilities for each of the three adult age groups and even for children (Figure 4.6). In 1985–1993, the survival probabilities clearly deviate from the linear trends of 1965–1984 (shown in dotted lines in Figure 4.6). Extrapolating on these very unfavorable trends leading up to 1993 results in values that are still better than the values actually observed in 1993.

The continuous growth in male mortality at active ages has led to a very special age pattern of male mortality in Russia. Comparison of Russian mortality patterns by age to the Coale-Demeny model life tables⁸⁷ indicates clearly the spectacular excess mortality at adult ages since 1985. This excess mortality has been increasing over time and has its maximum at ages 35–45 (Figure 4.7). Whatever model is selected for comparison, the peculiarity of the Russian pattern is absolutely obvious. However, in contrast to the 1930s, infant mortality is lower than corresponding model values.

The method of component analysis⁸⁸ allows us to split the difference between life expectancy for the Russian population in 1965 and 1980 into its components, by age and cause of death (Table 4.4). Once again, increasing mortality at adult ages

⁸⁶Specialists tend to ascribe the increase in IMR in 1972–76 to changes in the registration of perinatal deaths. For more details, see, Anderson, Barbara, and Brian Silver, "Infant Mortality in the Soviet Union: Regional Differences and Measurement Issues," *Population and Development Review*, 12, 4, 1986, pp. 705–738; and Blum, Alain, and Alain Monnier, "Recent Mortality Trends in the USSR: New Evidence," *Population Studies*, Vol. 43, No. 2, 1989, pp. 211–241.

⁸⁷We compare death rates of Russian males with that from MLT level 20. Life expectancy at birth for level 20 is equal to 63.6 in family West and 63.7 in family South. These values do not differ much from observed life expectancies in Russia in the 1960s–1980s.

⁸⁸Andreev, Evgeny, 1982. Metod komponent v analize prodoljitelnosti zhizni. ["The component method in life expectancy analysis"]. *Vestnik Statistiki* No 3, March, 1985 pp. 42–47. Pressat, Roland. "Contribution des écarts de mortalité par âge à la différence des vies moyennes." *Population*, Vol. 40, No. 4–5, 1990, pp. 766–770. Pollard, John. "Cause of death and expectation of life: some international comparisons." In, *Measurement and Analysis of Mortality: New Approaches*, Vallin, Jacques, Stan D'Souza, Alberto Palloni, eds., pp. 291–313. Liege-Oxford, Oxford University Press.

reveals itself as the main factor reducing life expectancy. The active ages (age 15 to 64) contribute 2.8 years to the total 3.1 year decrease for men. Excess mortality of men aged 15 to 44 contributes 1.3 years to the negative total. Most of these losses are due to cardiovascular (circulatory) mortality, injuries, and violence. Declining mortality from infectious, respiratory, neoplastic, digestive, and other diseases for most age groups under 15 partly compensates for the prevailing negative changes at older ages.

Table 4.4
Components of Life Expectancy Change in 1965–1980, by Age and Cause of Death

MALES								
Age	Infectious	Neoplasms	Circulatory	Respiratory	Digestive	Other Diseases	Injury, Violence	Total
0–14	-0.056	0.008	0.002	0.138	0.121	0.082	0.028	-3.323
15–44	0.129	0.011	-0.284	-0.080	-0.053	-0.053	-0.965	-1.295
45–64	0.180	0.020	-0.805	-0.138	-0.084	-0.043	-0.589	-1.459
65+	0.057	0.073	-0.638	-0.084	-0.019	0.003	-0.064	-0.673
All ages	0.311	0.112	-1.725	-0.164	-0.035	-0.012	-1.591	-3.104
FEMALES								
Age	Infectious	Neoplasms	Circulatory	Respiratory	Digestive	Other Diseases	Injury, Violence	Total
0–14	-0.041	0.004	0.007	0.168	0.111	0.115	0.026	0.391
15–44	0.147	0.050	0.030	-0.031	-0.012	0.023	-0.222	-1.015
45–64	0.066	0.185	-0.869	-0.030	-0.040	-0.026	-0.235	-1.451
65+	0.036	0.153	-0.794	-0.021	0.001	0.013	-0.047	-0.659
All ages	0.208	0.391	-1.127	0.085	0.059	0.125	-1.477	-0.635

For women, the trend in life expectancy is much less unfavorable. Between 1965 and 1980, their life expectancy at birth decreased by 0.7 years. The components of that decline are different than those for males. The most important negative effect for women is attributable to circulatory diseases at older ages, while the negative effect of injury and violence is much smaller than for men. For both males and females, the trend in cancer mortality is surprisingly stable. It has even shown some positive influence on life expectancy.

Causes of Male Mortality at Active Ages

Given that the increasing excess mortality of adult males from cardiovascular diseases and external causes are the main factors in declining life expectancy for the Russian population, we will now focus our attention on males between the

ages of 15 and 64. Age-adjusted (standardized) death rates for men aged 15–64 will be used to compare mortality levels. These standardized death rates, or SDRs, are weighted averages of age-specific death rates.

Table 4.5 presents a set of standardized death rates (SDRs)⁸⁹ for twenty-one principal causes of death for Russian males at active ages. Below we will examine the situations in 1965 and 1980 (the beginning and end points of gradual mortality growth), 1987 (the year of minimum mortality due to anti-alcohol policies), and in 1993 (the most recent maximum). For comparison with a Western country, corresponding SDRs for the United States (1989) are also presented.

⁸⁹ Here and below the “old” WHO European population standard (before its revision in 1992) is used. SDR values do not depend on the age structure of populations under study.

Table 4.5
Standardized Death Rates, by Selected Causes of Death in Russia and in the
United States: Males, Ages 15–64

Cause of Death	Death Rate Per 100,000					Ratio of Russian to 1989 U.S. Rates			
	Russia 1965 (1)	Russia 1980 (2)	Russia 1987 (3)	Russia 1993 (4)	USA 1989 (5)	1965 (1)/(5)	1980 (2)/(5)	1987 (3)/(5)	1993 (4)/(5)
Infectious and parasitic diseases	47.63	23.31	14.58	25.00	5.07	9.4	4.6	2.9	4.9
Neoplasms	146.46	142.61	151.28	159.36	96.65	1.5	1.5	1.6	1.6
– Cancer of stomach	56.49	36.17	30.91	26.83	2.90	19.5	12.5	10.7	9.3
– Cancer of intestine and rectum	5.65	8.85	9.21	10.53	8.20	0.7	1.1	1.1	1.3
– Cancer of bronchus and lung	37.91	46.55	53.25	54.99	33.92	1.1	1.4	1.6	1.6
– Cancer of prostatic	1.15	1.56	1.86	2.26	3.19	0.4	0.5	0.6	0.7
– Other neoplasms	45.26	49.48	56.05	64.75	48.44	0.9	1.0	1.2	1.3
Circulatory diseases	155.27	250.29	219.96	345.72	112.67	1.4	2.2	2.0	3.1
– Rheumatism	13.06	8.89	6.51	6.33	0.66	19.8	13.5	9.9	9.6
– Hypertensive disease	8.46	5.14	3.46	6.07	4.60	1.8	1.1	0.8	1.3
– Ischaemic heart disease	74.37	151.78	134.28	210.70	65.66	1.1	2.3	2.0	3.2
– Other heart diseases	5.96	9.92	10.66	32.79	26.96	0.2	0.4	0.4	1.2
– Cerebrovascular	48.10	65.29	57.75	78.84	10.40	4.6	6.3	5.6	7.6
– Other circulatory	5.32	9.27	7.30	10.99	4.39	1.2	2.1	1.7	2.5
Respiratory diseases	40.69	57.78	33.80	58.17	16.14	2.5	3.6	2.1	3.6
Digestive diseases	19.09	30.04	21.13	35.13	17.73	1.1	1.7	1.2	2.0
– Liver cirrhosis	5.88	13.18	8.38	14.23	11.74	0.5	1.1	0.7	1.2
– Other digestive diseases	13.21	16.86	12.75	20.90	5.99	2.2	2.8	2.1	3.5
External causes	150.22	249.69	138.08	346.99	56.54	2.7	4.4	2.4	6.1
– Road accidents	9.24	24.96	17.94	35.78	21.23	0.4	1.2	0.8	1.7
– Accidental poisonings	21.68	54.36	23.52	68.18	3.39	6.4	16.0	6.9	20.1
– Suicide	38.62	53.98	32.80	60.77	15.88	2.4	3.4	2.1	3.8
– Homicide	8.39	17.52	10.36	46.43	12.55	0.7	1.4	0.8	3.7
– Other Injury/Violence	72.29	98.87	53.46	135.83	3.49	20.7	28.3	15.3	38.9
Other causes of death	18.83	25.63	19.46	33.12	44.57	0.4	0.6	0.4	0.7
All causes combined	578.19	779.35	598.29	1003.49	349.37	1.7	2.2	1.7	2.9

NOTE: Standardized death rate-age-adjusted death rate.

Russian male SDRs from all causes between the ages of 15 and 64 have been increasing since 1965. In 1987, mortality returned approximately to the level of 1965 (in fact, in 1987 it was a little higher), and finally, in 1993, it reached

approximately twice the level in 1965. Most of this variation over time is related to changes in cardiovascular and accidental and violent mortality. In Russia, as in the United States, circulatory diseases account for approximately 33 percent of total active-age SDR, while the proportion due to injuries and violence is much higher in Russia (32 percent versus 16 percent in the United States). In contrast, the proportion of cancer mortality is greater in the United States (28 percent versus 19 percent).

Looking at specific causes of death, we find that, by 1993, mortality in active ages from infectious diseases, rheumatism, and hypertensive disease (reflecting Russia's initial delay in its epidemiological transition) and mortality from stomach cancer had dropped below the levels of the 1960s. On the other hand, Russia has lost its former advantages over the United States in mortality due to some cancers, liver cirrhosis, and traffic accidents. This is also true for "other heart disease" and homicide.

The leading role in the general increase in SDR for men aged 15 to 64 belongs to such causes of death as cerebrovascular disorders and ischaemic heart disease, lung cancer, accidental poisoning, suicide, and homicide. In 1965, SDRs for these causes were already high, but they became even higher in 1993. For instance, the ratio of Russian SDRs in 1993 to that in the United States in 1989 are: 3.2 for ischaemic heart disease, 7.6 for cerebrovascular disorders, 1.6 for lung cancer, 20.1 for accidental poisoning, 3.8 for suicide, and 3.7 for homicide.

The steady rise in the SDR for active ages was interrupted in the mid-1980s by a sharp decline caused by the anti-alcohol campaign (Figure 4.8). The rapid mortality decrease lasted only 3 years, from 1985 to 1987. Reduced mortality from external causes played the most important role in reducing total active-age mortality during the anti-alcohol campaign, although many other causes of death such as ischaemic heart disease, respiratory diseases, and liver cirrhosis contributed to the rapid changes in mortality since 1985. This will be discussed further below. The mortality level increased again after 1987, with the 1984 level nearly restored by 1992. In 1993, active-age mortality greatly exceeded that of the previous year, and grew beyond expectations based on long term trends (upper panel in Figure 4.8). (Similar results for survival rates were shown in Figure 4.6.)

Some variations in mortality trends for men aged 15 to 64 within the broad classes of causes of death are noteworthy. For instance, different directions in trends for stomach cancer (decreasing) and lung cancer (increasing) resulted in relative stability of total mortality from neoplasms. Since 1988, deaths from certain causes rose sharply compared to others of the same class, e.g., "other heart diseases" among diseases of the circulatory system; homicide and

accidental poisoning among external causes of death). The dramatic increase in “other heart diseases” was probably induced by improvements in diagnosis of several specific heart diseases within that classification.⁹⁰

Russian Mortality Trends in the International Context

Comparing Russian mortality by leading causes of death to that in Western countries helps us to detect the distinct epidemiological outcomes of two fundamentally different social systems and approaches to public health. Comparisons with Eastern European countries show many similarities due to similar social and medical care mechanisms, although some important peculiarities of Russian trends are also evident.

In this section, we compare the Russian trends in SDRs in 1970–1993 by circulatory diseases, external causes of death, neoplasms and respiratory diseases with those in the United States (1979–1989), with average SDRs weighted by population sizes for European Community countries (EC, 1970–1992), and with weighted average SDRs for Eastern and Central European countries (CEE, 1970–1992).⁹¹ Whatever cause of death we consider, mortality levels and trends are better for the EC and the United States than for CEE countries and Russia, particularly for men (Figure 4.9). Nevertheless, the general situation in CEE countries is substantially better than in Russia, in spite of the long-term worsening in mortality trends in many CEE countries. The 1993 rise in Russian mortality is clearly visible for all causes of death except cancers.

The part played by *circulatory diseases* in the differences between groups of countries is overwhelming (Figure 4.9). Not only has this level always been higher in Russia, but it has been increasing, whereas trends in circulatory diseases have been improving in the EC and the United States.

The enormous level of male mortality from *injuries and violence*, and especially its rapid increase in the 1990s, sharply differentiates the Russian trend from the Eastern European and Western countries. For women the gap in violent mortality is much smaller, but again the Russian excess mortality is obvious, especially in recent years.

Cancer mortality in men has become more and more significant as a component of the general mortality gap between Russia and the West. Until the early 1980s,

⁹⁰ See Shkolnikov, Meslé, Vallin, 1995a and 1995b.

⁹¹ Sources of mortality data for EC and CEE: “Health for All,” Eurostat PC, the personal computer system for data collecting and analysis. WHO, Regional Office for Europe, 1993.

cancer mortality for men in Russia was higher than in the reference countries, but it was also rather stable. While in the 1970s cancer mortality was growing in EC, CEE, and in the United States, the difference between these countries and Russia became very small by 1979–1980. Thereafter, the Russian trend began to increase, while the EC and U.S. trends stabilized or even declined. Like Russia, the CEE average also exhibited a continuous increase. For females the difference in levels of cancer mortality across countries is much less significant; however in the 1980s and the 1990s, the Russian position is becoming relatively worse.

Mortality from *respiratory diseases* has been declining for both sexes and in all countries except the United States. Progress in Russia continued with some fluctuations until the 1990s, when it slowed down. The sudden 1993 increase returned mortality due to respiratory diseases to its 1984 level.

To examine the reasons for very low life expectancy in Russia in terms of causes of death, in Figure 4.10 we look at age- and cause-specific components of the difference in life expectancy between Russia and the United States, and between Russia and Hungary. In order to investigate the “normal” Russian pattern, we select the moment just preceding the unfavorable changes of 1992–1993. Later, we shall specially investigate the most recent mortality increase. The United States represents the Western countries, while Hungary represents the CEE countries. Hungary is chosen as a country of deep epidemiological crisis, which is probably rather similar to Russian’s deterioration. During the 1970s and the 1980s, the values of life expectancy at birth in Hungary were not very different from that in Russia.

The United States versus Russia. The total difference in male life expectancy between the United States and Russia was 7.7 years in 1989. This amount consists of three main parts: 1) at ages above 40 there is a strong influence of high mortality from circulatory diseases in Russia and, to much smaller extent, mortality from neoplasms (Figure 4.10); 2) at younger adult ages (15–39) the role of excess mortality from injuries and violence is very clear for males; at middle ages (45–64) the negative contributions of external causes of death are also substantial; and 3) there is also a less important, negative effect from the relatively high Russian IMR, due to a high infant mortality rate from “other diseases” (e.g., perinatal conditions and congenital anomalies), and respiratory and infectious diseases. For all ages together, the contribution of circulatory diseases to the total difference in male life expectancy between the United States and Russia is 3.8 years, while the contribution by external causes is 2.4, and neoplasms add another 0.9 years.

For women, the structure of the gap in life expectancy (4.2 years in 1989) is much more uniform, because it depends mostly on excess mortality from circulatory diseases at older ages (Figure 4.10). Excess mortality from external causes is significant at active ages, but is much less important than for men.

The relatively low mortality of Russian women at older ages from neoplasms and respiratory and digestive diseases slightly compensates for the negative influence of very high cardiovascular mortality. There is a hypothesis that the coding practice at advanced ages in Russia differs from many other countries. Many physicians and statisticians in Russia believe that there is a tendency to over-record cardiovascular deaths and under-record deaths from neoplasms and some other specific conditions. However, in our previous studies we have not found any hard evidence for such an assumption.⁹²

Hungary versus Russia. Comparing the Russian male mortality pattern with that in Hungary, we discover a very peculiar structure of total difference in life expectancy (1.6 years in 1991). It depends mainly on external causes of death, while the contribution of circulatory diseases is rather low (Figure 4.10). Besides, mortality from certain chronic diseases, particularly diseases of the digestive tract, is substantially higher in Hungary than in Russia. This means that mortality from chronic diseases is very high in both countries, and is even worse in Hungary than in Russia for some causes of death. However, the enormously high Russian mortality from external causes in able-bodied ages reflects poorly on Russia in terms of the difference in male life expectancy.

For females the total difference in life expectancy between Russia and Hungary is rather small. In 1991, life expectancy for Russia was higher by 0.4 years than that for Hungary. The components related to external causes at young ages and circulatory diseases at older ages are unfavorable for Russia; however, the components related to cancers, digestive diseases, and other diseases are unfavorable for Hungary.

Differences in Life Expectancy by Sex

We have already emphasized several times the differences between male and female mortality. Russian male excess mortality is probably the highest in the world. As has been shown, during the rapid mortality decline in the early 1950s females gained considerably more than males due to better trends at adult ages. This tendency has been strengthening over time. From 1958–59 to 1993, the

⁹²See Shkolnikov, Meslé, Vallin, 1995.

difference in life expectancy between males and females grew from 7.3 years (with life expectancy values corrected for mortality under-estimation in infant and older ages) to 13 years. To quantify the Russian mortality differentials by sex, we once again decompose the total difference in life expectancy according to leading classes of causes of death (Table 4.6).

Table 4.6
Differences in Life Expectancy Between Females and Males, by Cause of Death

Cause of Death	1965	1970	1975	1980	1984	1987	1992	1993
Infectious/ Parasitic	0.68	0.53	0.43	0.39	0.33	0.27	0.29	0.36
Neoplasms	1.57	1.51	1.47	1.51	1.62	1.83	1.86	1.68
Circulatory	2.31	2.76	3.12	3.46	3.50	3.23	3.68	4.19
Respiratory	1.05	1.23	1.19	1.24	1.10	0.84	0.87	1.03
Digestive	0.31	0.31	0.34	0.39	0.38	0.28	0.34	0.37
Other diseases	0.35	0.51	0.48	0.53	0.53	0.56	0.50	0.44
Injury, poisoning, and violence	2.95	3.68	3.83	4.09	3.87	2.50	4.26	4.94
Total	9.22	10.53	10.86	11.63	11.33	9.51	11.80	13.01

Throughout the 1959-93 period, more than 60 percent of the difference between males and females is due to only two classes of causes of death: injury, poisoning, and violence; and circulatory diseases. In each year, except the very unique year 1987, the injuries, poisoning, and violence explains around 35 percent of the total. The difference in mortality due to circulatory disease grew from 25 percent in 1965 to 30–32 percent in the 1980s and the 1990s.

In sum, the widening gap between the sexes is due to increasing male excess mortality in cardiovascular circulatory diseases and cancer, but also from external causes of death. The spectacular reduction of the difference between male and female life expectancies in 1987 (the difference fell from 11.3 in 1984 to 9.5 in 1987) is closely related to the diminution of the difference in mortality from injuries, poisoning, and violence. The recent increase in the gap from 1987 to 1993 is due to a new deterioration in injuries, poisoning, and violence as well as in cardiovascular diseases, all of which have been especially acute in men.

The Anti-Alcohol Campaign and Variations in Russian Mortality

Usually it is very difficult or even impossible to extract the impact of certain environmental factors or personal behavior on the mortality trend because, in

actuality, all these factors are developing simultaneously. The anti-alcohol campaign of 1985–1987 provides the unique possibility to extract a pure effect of alcohol abuse on mortality. The action was so rapid and sharp that it is possible to assume that virtually nothing changed in other conditions of public health within that short period. In fact, these “other” conditions were changing rather slowly at that time.

In June 1985 the Gorbachev government organized a great experiment on the Soviet population. They tested the results of the introduction of a 2.5-fold reduction in state alcohol sales. They were able to directly implement this policy because in the mid-1980s state trade was the only legal source of alcohol in Russia. The main aspects of the anti-alcohol campaign were: reduction of state alcohol production; enforcement actions against distillation and distribution of homemade beverages (“samogon,” or moonshine); elevation of state prices for alcohol in August 1985 and in August 1986; and further development of state institutions for compulsory treatment of alcoholism.

All of the anti-alcohol actions were directed to restriction of public access to alcohol, but they did not affect the motives and underlying factors of alcohol abuse. Thus, there was no hope to derive a long-term positive effect. Nevertheless, the anti-alcohol campaign brought about very strong-short-term fluctuations, which are clearly visible in Russian mortality trends. This paper points out only several principal findings, because we have already provided detailed analysis of the alcohol situation in Russia and mortality outcomes from the anti-alcohol campaign in another paper.⁹³

A sharp mortality drop is seen immediately after the introduction of anti-alcohol restrictions.⁹⁴ The drop was much more substantial for males than for females. The number of avoided deaths, estimated by comparison with the long-term trends in ASDRs, exceeds 900,000 (about 600,000 among males and about 300,000 among females). In 1987 the Russian mortality rate reached its absolute minimum, and in 1988 the reverse (upward) trend began. In 1988–1991 the mortality rate increased rather moderately, whereas in 1992 (when actual alcohol consumption in Russia jumped from 12 to 14 liters of pure ethanol per capita) mortality increased sharply.

⁹³ Shkolnikov, Vladimir, and Alexander Nemtsov, “The Anti-Alcohol Campaign and Variations in Russian Mortality,” in Bobadilla, J.L. and C.A. Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press (forthcoming).

⁹⁴ Shkolnikov, Vladimir, and Sergei Vassin, “Spatial Differences in Life Expectancy in European Russia in the 1980s,” in Lutz, W., A. Volkov, and S. Scherbov, eds., *Demographic Trends and Patterns in the Soviet Union Before 1991*, Routledge-IIASA, New York-London: 1994, pp. 379–402.

The overwhelming role of injuries and violence in active ages for the general mortality decrease in 1985–87 and subsequent increase in 1988–92 is obvious (Figure 4.11); the structures of mortality decrease and increase are similar. Death rates for males aged 20 to 54 exhibit very large decrements in 1985–87 and increments in 1987–92, compared to the minimum level of 1987. For instance, at ages 30–34 and 35–39 (ages of the biggest relative changes in death rates) the difference between ASDRs in 1980 and 1987 exceeds 0.7 of the ASDR value in 1987, and the increase from 1987 to 1992 is also about this magnitude. Injuries and violence are responsible for the predominant part of these changes. However, a part of the variation in male ASDRs, particularly at older ages, is due to cardiovascular diseases.

Between 1980 and 1987, life expectancy at birth increased by 3.5 years for males and by 1.3 years for females; then from 1987 to 1992 it decreased by 2.9 years for males and 0.6 years for females (Table 4.7). So, the improvement of 1985–87 is slightly bigger than the later deterioration, although the positive and negative contributions of external causes of death and digestive diseases (mostly liver cirrhosis) are exactly symmetrical.

Table 4.7

Changes in Life Expectancy of Russian Population by Cause of Death: 1980–1987 and 1987–1992, by Gender

Cause of Death	Males		Females	
	1980–1987	1987–1992	1980–1987	1987–1992
Infectious/Parasitic	0.23	0.00	0.14	0.07
Neoplasms	-0.13	0.01	-0.04	-0.05
Circulatory	0.56	-0.34	0.29	0.23
Respiratory	0.77	0.05	0.56	0.16
Digestive	0.16	-0.11	0.05	-0.03
Other diseases	-0.12	-0.31	-0.16	-0.38
Injury and poisoning	2.01	-2.16	0.50	-0.56
Total	3.48	-2.86	1.34	-0.56

The leading influence of accidental and violent causes of death in 1985–1992 is obviously due to their exceptional level in Russia, which is far above any value observed elsewhere, but also due to the especially close relationship between these causes of death and alcohol consumption. So, external causes of death compose the most important part of alcohol-related mortality in Russia. This mortality pattern does not correspond to the main causes of alcohol-related deaths in other countries with high alcohol consumption. For example, in France

the level of mortality from alcoholism is about 5 times the level in Russia, while mortality from accidental poisoning by alcohol is negligible in France and enormously high in Russia. Hence, alcohol abuse in Russia results mostly in immediate and acute consequences (e.g., accidents).

For an explanation of this phenomenon, we can refer to the influence of the Russian style of drinking. The immediate effect is often produced by drinking large doses of vodka in a short time with very little to eat. That can result in the loss of self control and in irresponsible or aggressive behavior.

However, we have to be cautious when comparing Russian death rates due to alcohol-related causes with those in Western countries because, in part, the difference depends on registration habits. It seems that many deaths caused by the acute effects of alcoholism are recorded in Russia as poisonings (by alcohol) or other accidents, without reference to the underlying alcoholism.⁹⁵

Another interesting matter concerns the significant reduction in mortality from cardiovascular and some other degenerative diseases during the anti-alcohol campaign. At first this seems surprising given the rather long pathogenesis of this sort of disease. However, a sudden reduction of alcohol consumption for people who are already predisposed to die from cardiovascular disease (for instance, cardiac patients) could certainly induce a rapid decrease in their mortality. Besides, before the campaign it is possible that some of the deaths from alcoholism were recorded as "acute heart disorders," according to the immediate cause of death.

Dramatic Mortality Increase in 1992-1993

In 1992–1993, life expectancy at birth for the Russian population took an unprecedented fall. Between 1991 and 1992, Russian males lost 1.5 years in life expectancy and females lost 0.5 years. As we have seen, a big share of this decrease is linked to the increase in alcohol consumption, following its reduction during the anti-alcohol campaign. However, in 1992 some new and alarming tendencies, not related to alcohol abuse, appeared in the Russian mortality pattern. In the following year they manifested themselves very clearly.

In 1993 the public health situation worsened so much that at first it seemed unbelievable. Between 1992 and 1993 life expectancy decreased by 3 years for males and by 1.8 years for females. By 1993, male life expectancy was 59 years,

⁹⁵See Meslé, Shkolnikov, Vallin, 1994.

female life expectancy was 72 years. No country has exhibited such an abrupt change in peacetime.

In this section we shall analyze several important aspects of the increase in Russian mortality in 1992–93. First of all, we shall look at the absolute increase in deaths to try to evaluate the pure effect of rising mortality on the natural decrease in the Russian population. Then we shall discuss specific changes in Russian mortality by age (paying special attention to older age and infant mortality) and by cause of death. Changes in death rates for selected avoidable causes of death are to be considered as good indicators of deterioration in medical care practices. Finally, we apply a simple extrapolation of trends in ASDRs (assuming cohort effects on mortality to be negligible) in order to clarify what part of the 1993 life expectancy decrease may be associated with long-term mortality tendencies, which will be considered later.

Absolute mortality increase. The year 1992 was the first when population decline was registered in Russia. Certainly, the long-term fertility decline and population aging predisposed this event,⁹⁶ although in recent years the decrease in the natural growth rate has accelerated due to a sharp fall in births and a sharp rise in deaths. In 1992 the annual number of births was lower than the annual number of deaths by 220,000; in 1993 this difference increased to 750,000.

Changes in the absolute number of deaths can be decomposed into two components: changes in age-specific death rates (the force of mortality) and changes in population size and age structure (aging). To extract a pure effect of mortality rates, we calculate the expected numbers of deaths for each year 1989–1993 period, applying age-specific death rates for the year under consideration to the population figures by age from the 1989 census (“expected deaths” in Table 4.8). The expected deaths correspond to the assumption of constancy in population size and age structure.

⁹⁶See paper by A. Vishnevsky in this volume.

Table 4.8
Recent Increase in Total Deaths for Both Sexes: Observed Values Versus
Expected Values, Based on Census Population of 1989
(in thousands)

Year	Total Deaths			Annual Increase		
	Observed	Expected	Difference	Observed	Expected	Difference
1989	1583.4	1583.4	0.0	-	-	-
1990	1656.0	1624.9	31.1	72.6	41.5	31.1
1991	1690.7	1627.2	63.5	34.7	2.3	32.4
1992	1807.4	1724.9	82.5	116.7	97.7	19.0
1993	2129.3	2015.5	113.8	321.9	290.6	31.3

NOTE: Expected death numbers are yielded by applying observed ASDRs to the census population figures of 1989.

Between 1989 and 1993, the observed annual number of deaths increased by 546,000 (from 1.583 million to 2.129 million). The increase in expected deaths, assuming the population size and age structure did not change between 1989 and 1993, is 432,000. The difference between the two figures (114,000) shows the influence of population aging. Hence, the majority of the increase in the annual deaths in 1989–93 is due to increases in age-specific mortality rates. The portion of the increase in the number of deaths due to increases in age-specific mortality rates increased over the 1989–93 period: over 90 percent of the increase in number of deaths between 1992 and 1993 is due to the increase in age-specific death rates. That is opposite to the overwhelming influence of population aging in 1990–1991. Between 1990 and 1991, aging accounted for over 90 percent of the increase in the number of deaths.

Age pattern of mortality increase. As noted above, the long-term tendency of overwhelming deterioration of life expectancy at active ages was interrupted by the anti-alcohol campaign. Deterioration was resumed in 1988 and was reinforced in 1993. The biggest relative increase in ASDRs occurred for men aged 25–44 and women aged 15–44, while in older and younger ages the increases are much smaller (Figure 4.12). For the ages of maximum relative mortality increase, the ratios of current male ASDRs to corresponding minimum levels of 1987 were about 1.3 in 1991, about 1.5–1.6 in 1992 and about 2.0 in 1993. For females aged 15 to 44, these ratios were about 1.2 in 1991, 1.35 in 1992, and 1.6 in 1993. Therefore, at these ages mortality rates were 20–100 percent higher in 1991–1993 than in 1989.

Although the bell-shaped age patterns of excess mortality in 1991, 1992, and 1993 seem to be similar, there are indeed some peculiarities for the year 1993. First of all, the level of excess mortality in 1993 is enormously high. Besides, the relative

mortality increase in middle and older ages (e.g., ages 45–74) is much more significant than in previous years. This is especially obvious for women, because the age of maximum excess mortality has moved from 15–19 in 1991–92 to 40–44 in 1993. In 1991–92 age-specific death rates at ages over 70 were slightly below the level of 1987, while in 1993 they were higher. The mortality increase in older ages between 1992 and 1993, visible in Figure 4.12, is seen even more clearly in terms of the age-specific death rates shown in Figure 4.13.

Increase in infant mortality. We have already seen that over the period since 1965, except several years in the 1970s, the infant mortality rate (IMR) was declining in spite of unfavorable trends at adult ages. This long-term tendency was violated in the 1990s (Figure 4.13). In 1990 the IMR reached its minimum (17.4 per 1000 live births). In 1991 and 1992 it became slightly higher: 17.8 and 18.0, respectively. Infant mortality rates at this level are also characteristic for other former Soviet republics and Romania.

Some of the apparent deterioration in the IMR may have been induced by changes in the registration of live births, introduced at the beginning of 1993.⁹⁷ That modification should, however, affect only mortality in the first month of life (neonatal mortality) and not data for later infancy. Data on infant mortality by age allow us to split the observed increase in IMR according to the subperiods of the first year of life. Infant deaths during the first month explain less than half of the total rise in IMR between 1992 and 1993, implying that over half of the increase is real and not due to the change in registration practice. Therefore, the value of IMR in 1993 should be at least 19 per 1,000 live births, according to the old registration procedure.

Certainly, a significant increase in IMR is a very alarming sign of a general deterioration in health conditions. Even “exogenous” causes of infant death (such as respiratory, infectious, and digestive diseases) increased substantially in 1993. However, as we have already seen, the increase in the infant mortality rate is substantially smaller than that for death rates in able-bodied ages.

⁹⁷ The rules for registration of live births were changed on January 1 of 1993 according to a directive released by the Health Care Ministry of the Russian Federation and the Goskomstat on December 4, 1992. This reformation could effect some increase in early infant deaths due to more complete registration of live births. The old Soviet definition of life birth was more restrictive than the WHO definition. According to the old Soviet practice, children born before 28 weeks of gestation or whose weight is less than 1,000 grams or length is less than 35 centimeters were supposed *not* to be counted as either live births or infant deaths if they die before the end of their first week of life. For more details about the old Soviet system for registration of live births, see, Anderson, Silver, 1986. The new regulations state that live births in Russia are to be recorded at hospitals according to the WHO definition of a live birth. It is not clear, however, how much this change affected the practice of civil registration of births and infant deaths.

Decrease in life expectancy. All the extremely unfavorable changes mentioned above have induced a strong negative influence on life expectancy at birth (Table 4.9). For males, the contribution of injuries and violence to the total decrease in life expectancy between 1992 and 1993 is still the highest (1.3 years). However, in contrast to 1988-1992, the contribution of cardiovascular diseases is also very high (1.1 years).

Table 4.9
Components of Life Expectancy Decrease in 1992-1993, by Age and Cause of Death

MALES								
Age	Infectious	Neo-plasms	Circulatory	Respiratory	Digestive	Other Diseases	Injury, Violence	Total
0-14	-0.023	0.008	0.003	-0.034	0.002	-0.047	0.009	0.110
15-44	-0.050	-0.009	-0.216	-0.066	-0.046	-0.057	-0.815	1.258
45-64	-0.039	-0.025	-0.561	-0.134	-0.049	-0.047	-0.434	1.288
65+	-0.004	-0.009	-0.307	-0.047	-0.002	-0.004	-0.034	0.406
All ages	-0.116	-0.035	-1.086	-0.281	-0.100	-0.155	-1.292	3.062
FEMALES								
Age	Infectious	Neo-plasms	Circulatory	Respiratory	Digestive	Other Diseases	Injury, Violence	Total
0-14	-0.017	-0.002	-0.01	-0.043	-0.002	-0.083	-0.033	0.182
15-44	-0.017	-0.004	-0.080	-0.024	-0.017	-0.015	-0.244	0.400
45-64	-0.010	-0.003	-0.353	-0.034	-0.044	-0.037	-0.189	0.670
65+	-0.002	0.006	-0.501	-0.026	0.001	-0.014	-0.024	0.560
All ages	-0.046	-0.003	-0.936	-0.127	-0.062	-0.149	-0.490	1.812

Increasing mortality from circulatory diseases has its maximum negative impact at ages 45-64, while the highest negative impact of external causes occurs at ages 15-44. All other classes of causes of death, except cancers, contribute substantially to the general deterioration of life expectancy. Even infectious diseases, which had never before been a factor of worsening in postwar times, induced a loss of 0.1 years in male life expectancy at birth.

For women the contributions of circulatory diseases and external causes of death to the decrease in life expectancy between 1992 and 1993 differ from that for men due to a much more pronounced influence of cardiovascular diseases at ages over 45, rather than injuries and violence. Increasing mortality from circulatory diseases caused a loss of 0.94 years, while an increased number of deaths from external causes corresponds to a loss of 0.5 years.

Finally, it is important to point out that, in 1993, mortality from all causes of death combined brought significant losses in life expectancy, even at ages under 15 (0.1 years for males and 0.2 years for females).

Changes in specific causes of death. For a more comprehensive analysis of the reasons for the rapid mortality increase in 1992–93, we should look at the changing pattern of Russian mortality in terms of specific causes of death (Table 4.10). We shall try to find out some new tendencies in 1992–93 which were not characteristic in the previous period.

Table 4.10
Standardized Death Rates for Selected Causes of Death: 1980, 1991, 1992, 1993 (per 100,000)

	Males					Females						
	1980	1991	1992	1993	1993/1980	1993/1992	1980	1991	1992	1993	1993/1980	1993/1992
Infectious/Parasitic	39.18	21.95	24.99	33.36	0.85	1.33	11.49	5.71	5.57	7.27	0.63	1.31
Stomach cancer	74.24	59.30	58.93	58.22	0.78	0.99	32.76	25.53	24.96	23.90	0.73	0.96
Cancer of intestine and rectum	21.73	28.09	28.25	29.78	1.37	1.05	16.33	19.46	19.75	19.92	1.22	1.01
Cancer of bronchus and lung	84.69	103.74	104.83	105.67	1.25	1.01	9.48	10.57	10.80	10.77	1.14	1.00
Breast cancer	0.48	0.55	0.59	0.62	1.29	1.05	14.89	20.04	21.40	21.93	1.47	1.02
Cancer of uterus							14.68	13.66	13.89	14.28	0.97	1.03
Cancer of prostatitis	8.04	10.58	11.79	11.94	1.49	1.01						
Other neoplasms	96.02	117.44	120.89	124.41	1.30	1.03	47.92	55.19	56.31	56.17	1.17	1.00
Rheumatism	10.63	6.98	6.91	8.01	0.75	1.16	10.84	8.32	8.04	8.90	0.82	1.11
Hypertensive disease	13.47	8.74	9.66	12.02	0.89	1.24	8.16	8.13	8.21	9.82	1.20	1.20
IHD	539.55	458.60	482.60	581.76	1.08	1.21	313.85	248.32	254.26	295.36	0.94	1.16
Other heart diseases	28.50	40.08	47.05	61.62	2.16	1.31	16.34	22.73	24.57	30.40	1.86	1.24
Cerebrovascular disorders	295.69	287.09	299.74	343.76	1.16	1.15	221.67	228.54	237.22	263.72	1.19	1.11
Other circulatory diseases	59.40	67.73	69.84	82.17	1.38	1.18	40.05	51.92	53.61	61.88	1.55	1.15
Respiratory diseases	183.24	110.88	116.88	149.54	0.82	1.28	70.03	35.87	35.30	41.92	0.60	1.19
Liver cirrhosis	22.97	18.11	19.13	24.16	1.05	1.26	10.09	9.92	10.33	12.86	1.27	1.24
Other digestive diseases	30.44	26.44	32.16	35.38	1.16	1.10	11.83	11.84	13.42	14.00	1.18	1.04
Traffic accidents	30.61	43.49	41.99	42.30	1.38	1.01	7.62	11.06	10.81	11.38	1.49	1.05
Accidental poisonings	59.74	34.95	48.48	74.56	1.25	1.54	14.66	8.62	11.45	19.27	1.31	1.68
Suicide	64.06	48.50	57.41	71.40	1.11	1.24	13.38	10.26	11.21	12.46	0.93	1.11
Homicide	19.52	24.68	37.85	50.18	2.57	1.33	7.23	6.81	10.04	13.80	1.91	1.37
Other injuries and violence	119.83	96.05	118.68	161.58	1.35	1.36	25.23	22.68	27.77	37.27	1.48	1.34
Other causes of death	65.80	69.31	72.31	82.77	1.26	1.14	40.07	49.59	50.57	56.62	1.41	1.12
All causes combined	1867.82	1683.29	1810.96	2145.15	1.15	1.18	958.61	884.76	919.49	1043.91	1.09	1.14

The total increase in the standardized death rate (SDR) in 1992–93 was equal to 440/100,000 for males and 150/100,000 for females. More than 80 percent of these increases are due to circulatory diseases and external causes of death. The ratio of the increase in the SDR due to circulatory diseases to the change in SDR due to external causes is 1.4:1 for males and 3.5:1 for females.

Mortality from *neoplasms* is growing gradually over time without unexpected changes. Mortality from diseases of an *infectious nature* (including rheumatism and respiratory diseases) had been declining until the 1990s, but in 1992, and especially in 1993, it exhibited a substantial and unexpected rise. However, due to previous improvements, the death rate from infectious diseases in 1993 was less than that in 1980.

Mortality from *diseases of the circulatory system* was slowly increasing in the 1970s. In the 1980s, the situation was rather stable (except “other heart diseases” and “other circulatory diseases,” which probably increased due to changing coding practices). A moderate increase resumed in 1992, though the SDRs were still below the levels of 1980, except “other” and cerebrovascular disorders. However, with the sharp increases between 1992 and 1993, cardiovascular mortality reached levels in 1993 substantially above the levels of 1980 (except for hypertensive disease in men and ischaemic heart disease in women).

Perhaps the most striking changes occurred in mortality from *external causes of death*. First of all, this class of causes of death has the highest relative rate of growth in the 1990s. As we have already seen (Figure 4.8), the mortality decrease during Gorbachev’s anti-alcohol campaign corresponded to reduction in all types of violent deaths, but the subsequent reversal was induced by different dynamics. In the late 1980s and 1990s, growing alcohol consumption is no longer the only explanation of increased deaths from external causes. Homicides, suicides, accidental poisonings, and other causes of accidents and trauma exhibited a very large increase. In 1993, mortality from homicide, suicide, and accidental poisonings (by alcohol) were about the highest in the world. The Russian male SDR by suicide was higher than in Hungary (by 17 percent), and the Russian male SDR by homicide was 2.5-fold higher than in the United States. The Russian male SDR by accidental poisoning is at least 10-fold higher than that in any other country except the former Soviet republics. On the contrary, the SDR by traffic accidents rose sharply in 1987–1989, but it ceased to increase in the 1990s. The reasons for that are not clear. Perhaps it was due to shortages in oil supplies and/or activities of traffic police.

Increase in avoidable causes of death. Avoidable causes of death refers to causes of death amenable to medical intervention. A variety of mortality studies have

confirmed that mortality due to certain diagnostic categories is particularly sensitive to medical care, either treatment or prevention.⁹⁸

Table 4.11 contains SDRs for selected avoidable causes of death. Mortality from many of these causes has been generally declining since 1965 (tuberculosis, intestinal infections, pneumonia, appendicitis, abdominal hernia, rheumatism, hypertensive disease, cancer of the uterus, and complications of pregnancy and childbirth). However, some avoidable causes of death were increasing or stagnating during the 1970s and the 1980s (bronchitis and lung emphysema, asthma, gastric ulcer, diabetes mellitus, and skin cancer).

⁹⁸Rutstein D.D., et al, "Measuring the Quality of Medical Care," *New England Journal of Medicine*, Vol. 11, 1976, pp.582-588. Poikolinen K., J. Eskola, "The Effect of Health Services on Mortality: Decline in Death Rates from Amenable and Non-amenable Causes in Finland," 1969-81. *Lancet*, I, Holland, W.W.,ed., *European Community Atlas of Avoidable Death*. Oxford University Press, Oxford, 1988, pp. 199-202.

Table 4.11
Standardized Death Rates for "Avoidable" Causes of Death: 1965, 1980, 1985, 1990–1993 (per 100,000)

	Males							Females						
	1965	1980	1985	1990	1991	1992	1993	1965	1980	1985	1990	1991	1992	1993
Infectious and parasitic diseases	71.9	39.2	30.4	22.3	21.0	25.0	33.4	22.9	11.5	8.9	5.9	5.7	5.6	7.3
- Dysentery and other intestinal infections	2.9	2.8	2.7	1.4	1.5	1.4	2.0	1.9	2.1	2.3	1.2	1.3	1.0	1.4
- Tuberculosis	61.9	27.8	21.8	17.3	17.1	20.1	25.9	15.5	3.7	2.6	1.9	1.9	2.1	2.7
Respiratory diseases	150.8	183.2	157.9	119.3	110.9	116.9	149.5	68.2	70.0	55.5	35.9	35.9	35.3	41.9
- Pneumonia	31.3	32.3	25.7	15.4	15.1	19.4	30.1	19.9	16.1	11.3	6.6	6.6	6.6	9.2
- Bronchitis and lung emphysema	36.3	35.8	51.8	62.4	56.3	57.4	69.3	14.5	14.3	17.0	16.7	14.7	14.7	16.0
- Asthma	6.7	5.6	5.7	7.6	7.9	8.7	8.8	3.1	3.3	3.7	4.3	4.4	4.6	4.5
Digestive diseases	39.2	53.4	50.9	44.8	44.6	51.3	59.5	21.6	21.9	22.7	21.9	21.8	24.8	26.9
- Gastric ulcer	5.3	9.1	9.0	8.4	8.8	12.3	12.9	1.4	1.6	1.6	2.0	1.9	2.5	2.8
- Gastritis and duodenitis	0.7	0.7	0.4	0.4	0.4	0.5	0.6	0.5	0.2	0.2	0.1	0.1	0.2	0.2
- Appendicitis	2.3	2.0	1.5	1.1	0.9	0.8	0.9	1.2	1.0	0.7	0.4	0.4	0.4	0.4
- Abdominal hernia	3.9	1.8	1.3	1.0	1.1	1.3	1.4	1.8	1.7	1.4	1.3	1.4	1.9	1.7
- Gallstone disease and cholecistitis	3.8	4.6	3.7	3.4	3.1	3.1	3.0	3.4	3.4	3.3	3.1	3.0	2.8	2.8
Rheumatism	24.7	10.6	9.1	7.2	7.0	6.9	8.0	24.8	10.7	10.2	8.5	8.3	8.0	8.9
Diabetes mellitus	1.8	2.8	3.4	5.1	5.6	6.3	7.2	1.9	3.0	4.1	7.3	8.0	8.6	9.8
Diseases of genito-urinary system	21.6	20.6	21.8	20.6	20.2	21.0	20.7	6.6	7.5	8.6	9.0	8.9	9.2	9.2
Hypertensive disease	22.6	13.5	8.7	9.4	9.8	9.6	12.0	17.5	8.2	6.9	8.0	8.1	8.2	9.8
Cancer of skin	1.6	2.2	2.3	2.8	2.7	2.9	2.9	1.1	1.5	1.6	1.9	1.9	2.1	1.9
Cancer of uterus	-	-	-	-	-	-	-	21.1	14.7	13.8	13.7	13.7	13.9	14.3
Complications of pregnancy and childbirth	-	-	-	-	-	-	-	3.8	2.0	1.8	1.2	1.2	1.0	1.0

Obviously, a considerable deterioration occurred in 1992–1993. For many causes of death an increase in SDR is especially sharp in 1993. These are: tuberculosis, dysentery, pneumonia, bronchitis and lung emphysema, gastric ulcer, rheumatism, and hypertensive disease. Between 1991 and 1993, the SDR for tuberculosis increased by 51 percent among males and by 28 percent among females. For dysentery the rise was 33 percent and 8 percent; for pneumonia—99 percent and 39 percent; for bronchitis and lung emphysema—23 percent and 9 percent; for gastric ulcer—47 percent and 47 percent; for rheumatism—15 percent and 7 percent; for diabetes mellitus—29 percent and 23 percent; and for hypertensive disease—22 percent and 21 percent, respectively. As a result, mortality from many avoidable causes which were previously declining in 1993 returned to the levels characteristic of the early 1980s.

Observed levels of mortality in 1993 and expectations. Striking shifts in mortality of the Russian population indicate a transition from gradual deterioration in public health to a new and particularly acute stage of epidemiological crisis in Russia. The above consideration of mortality trends in Russia gives a clear impression that the level of mortality in 1993 lies substantially above the values expected from the long-term trends. To evaluate the magnitude of this difference we developed two simple scenarios of expected changes in age-specific death rates. The first corresponds to a linear continuation of trends observed in 1970–1984 (before the anti-alcohol campaign). The second scenario is based on the same data, but it describes each ASDR as $A*(t)^B$, where t is a calendar year and A and B are parameters to be estimated. This function has an upper limit and therefore corresponds to mortality stabilization (in fact, a very slow increase) instead of an unlimited rise.

The first scenario leads to a predicted male life expectancy of 60.4 in 1993 and female life expectancy of 72.8, while the second scenario results in higher values—61.4 and 73.1, respectively. This means that, by extrapolating according to these scenarios, actual life expectancy in 1993 is lower than the predicted values by 1.4–2.4 years for males and by 0.8–1.1 years for females, and therefore a large part of the mortality increase in 1993 cannot be ascribed to long-term mortality trends. (A similar point was shown in Figure 4.6.) The deviations of observed life expectancies from their expected values are likely to be valid indicators of the real strength of the recent deterioration in the health of the Russian population.

Some Speculations on Factors Contributing to the Russian Epidemiological Crisis of the 1990s

The above analysis shows that the general lowering of Russian life expectancy at birth during the last three decades is mostly explained by a long-term increase in premature mortality from cardiovascular diseases and mortality from injuries and violence at ages 15–64. A rapid and especially sharp increase in cardiovascular mortality, mortality from injuries and violence, infectious and respiratory diseases, and some other causes of death occurred in 1992–93. Although a substantial part could be ascribed to restoration of the long-term mortality trends, another substantial part cannot be explained in such a way.

Michael Specter, in his recent article for the *New York Times*⁹⁹ on Russian mortality increase, pays particular attention to environmental pollution. It is true that cancer mortality (especially the death rate from lung cancer) has been gradually increasing in Russia since the early 1980s. However, as we have seen, the impact of this process, as well as its influence on the overall life expectancy trend, is relatively small.

Certainly, new negative factors linked to the recent political and socio-economic transformations in Russian society may provide some explanation. Below we discuss what seem to be the more important of these factors.

First of all, the socio-economic transformations of the 1990s led to a general failure of Soviet *state paternalism*. Theoretically, the Soviet state had given an unprecedented set of social guarantees to the Russian people, including state promises of guaranteed housing, pensions, cheap public transport, cheap food, free medical care, etc. The Soviet economy and Soviet social policies were never really effective and only relatively poor standards of goods and services were provided. Nevertheless, the former situation was rather stable and people had always been sure of at least maintaining their quality of life standards in the foreseeable future. In the 1990s, the situation changed radically. Suddenly, the Russian people realized that the state would not be able to keep the former guarantees any longer and that they would have to take care of themselves. This created severe social stress. The situation has become particularly complicated for people aged 45–50. Many of them felt that it was too late or too difficult to change profession or occupation, and that it was impossible to earn enough money to maintain their former standards of living in their old profession.

⁹⁹Specter, Michael, "Plunging Life Expectancy Puzzles Russia," *New York Times*, August 2, 1995.

A *low value of individual life and individual health* was characteristic of the former Soviet society.¹⁰⁰ The priority of state aims and interests over personal needs and wishes taught people that their individual values were of minor importance. According to this ideology, there was no reason to pay much attention to one's future health. Many people believed that the state would help them in case of a serious health problem or any other disaster. Their resulting careless lifestyle has become especially dangerous under the new circumstances, when the general weakness of the Russian state has made its social and health efforts even more inadequate than in previous years.

Serious changes in living standards occurred in Russia in 1991–1992 (Figure 4.14). Real per capita *income*, which was growing in the 1970s and 1980s, fell sharply by 40 percent and returned to the level of the early 1970s. However, it is possible that the living conditions of certain population groups are currently much worse than in the early 1970s because the distribution of wages in the population is now much less uniform. In 1993, the difference between the highest and lowest income deciles was 11-fold and about a quarter of the total population was below the official poverty level. In the 1980s, it was a five-fold difference.

The registered decrease in wages for the Russian population in 1991–93 was very sharp. However, we have to be cautious about the quality of income statistics because, for many reasons, people tend to underreport their true incomes. It has been impossible to know how much money is passing from hand to hand, thus avoiding any type of registration.

In the 1990s, state food subsidies for meat and other products were removed and food markets were privatized. This led to a rapid rise in prices and a considerable decrease in daily *protein intake* by 23 percent in 1991–1992, according to Goskomstat. Total energy intake from food decreased, as well. The poorest part of the Russian population is likely to have significant nutritional deficiencies and particularly a shortage of vitamins.

In spite of shifts in nutrition, the Russian population generally continues to consume a high-protein and high-fat diet,¹⁰¹ and under-nutrition is clearly not a

¹⁰⁰Field, Mark, "The Health Crisis in the Former Soviet Union: A Report from the 'Post-War Zone,'" paper presented at the XIII International Conference on the Social Science and Medicine, Lake Balatone, Hungary, October 10-14, 1994. Michael Specter describes this situation as following: "The Soviets demanded that men in Russia sacrifice their lives for Communism. Nobody put the cost of life before the cost of building . . . society . . . we were taught to suffer, and we are taught that we will probably die in the next war. In that event, why worry about how you are going to survive to an old age?" Specter, Michael, "Climb in Russia's Death Rate Sets Off Population Implosion," *New York Times*, March 6, 1994.

¹⁰¹Popkin, Barry, Lenore Kohlmeier, Namvar Zohoori, et al, "Nutritional Risk Factors in the Former Soviet Union," paper presented at the workshop, "Mortality and Adult Health Priorities in

major health problem. Moreover, a survey of the nutrition of the Russian population, conducted by Barry Popkin, showed that the rate of obesity is high in Russia and that the percentage of adults who gained weight in 1992–93 is higher than the percentage of those who lost weight.

Slight decreases in the numbers of *physicians and hospital beds* (Figure 4.14) are not of principal importance because the general level of these indicators continues to be very high. For instance, the number of physicians per 10,000 inhabitants in Russia was about 45 in 1993, whereas it was 25 in Sweden, 28 in Denmark, 31 in Norway, 30 in France, 26 in Finland and 17 in Great Britain (in 1988–1992). However, it is possible that in many regions of Russia there is a lack of highly qualified specialized medical care. The institutions providing this type of medical services are traditionally located in Moscow, St. Petersburg, and several other big cities of Russia. Rapid growth in transportation prices and, in many cases, the necessity to pay for medical treatment leads to restricted access to advanced medical care for provincial residents.

The rapid decrease in the 1990s in the already low salaries for physicians and nurses constitutes a much more serious problem. The average salary in this sector was always about 70–75 percent of the general average for all branches of the economy combined. This situation contrasts sharply with the United States and other western countries where physicians' salaries are very high. It is obvious, however, that the 75 percent in the 1980s was much higher in real terms than the 75 percent in the 1990s, given the sharp reduction in the overall average real wage rate. The share of total budget outlays going to medicine, physical culture, and sport declined from 12.4 percent in 1970 to 9.4 percent in 1993. Numerous underpaid medical personnel are working in poorly equipped and poorly organized clinics that are receiving insufficient funds even for the continuation of normal functioning.¹⁰² Generally, the Russian medical care system is trying to survive in new conditions and is currently not able to undertake any significant modifications or improvements.

The growth in deaths from avoidable causes reflects a general weakening of Russian medical services. For instance, the return of diphtheria, a disease which had been virtually eliminated by the 1970s, is very illustrative. The number of deaths due to diphtheria was 10 in 1970 and 1981, 32 in 1989, 124 in 1992, and 482

the New Independent States," Washington, D.C., November 17-18, 1994, forthcoming in Bobadilla, J.L., and C.A. Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press.

¹⁰²The system of obligatory medical insurance was introduced at the beginning of 1993. Until now it has not improved the financial situation in majority of medical care institutions. See paper by Boris Rozenfeld in this volume.

in 1993. It seems that in the 1990s, even some basic medical and sanitary needs are not being treated in Russia.

The strong influence of excess *alcohol consumption* on Russian mortality has been already discussed in this paper. A great fluctuation in estimated real alcohol consumption¹⁰³ (Figure 4.14) was caused by the anti-alcohol campaign of 1985–87. In 1992–93, a growth in real alcohol consumption probably was accelerated by social stress and the relatively slow increase in the prices of alcoholic beverages. Between December 1990 and December 1994 consumer prices increased by 2,020 times for all goods and services, by 2,154 times for food products, but only by 653 times for alcoholic beverages. This means that over this period, in relative terms, alcohol became over three times cheaper than these other products.

Growing criminality has brought a sharp rise in mortality from violence, now one of the highest in the world. In 1993, Russia's SDR for homicide was perhaps only exceeded by that for Colombia and the black male population of the United States. Between 1985 and 1993, the number of recorded crimes increased by 1.9 times, and the number of felony homicides increased by 2.4 times. Growing alcoholism, general weakness of the police and judicial system, political instability, and armed ethnic conflicts are the main factors behind the criminal explosion in the 1990s.

As such, a large part of the striking rise in mortality in the 1990s can be ascribed to the effects of a number of serious shifts in Russian society. All of them are closely interrelated. It is possible, however, to extract the two principal factors among them. These are: 1) lower living standards; and 2) social disorganization. We cannot discuss the links between these two here. However, we can say that the negative changes in living conditions themselves are not as bad as to lead to the massive deterioration in public health evident in the shifts in mortality by age and cause of death in 1992–93. In many countries, where living standards are much worse than in Russia—even in some developing countries—male life expectancy is significantly higher. We can suppose that some kind of complex interaction effect, coming from both principal factors, is responsible for the deteriorating health situation. In that case, the negative influence of the first component (real living conditions) is reinforced by the second group of factors (socio-psychological conditions) and vice versa.

¹⁰³ See Shkolnikov, Nemtsov, 1995.

References

1. Adamets, Sergei, and Vladimir Shkolnikov, "On Mortality Tables of the Population of the USSR, Russia, Ukraine and Byelorussia to the End of the 1930s," paper presented at the workshop, *Population of the USSR in the 1920s in Light of Newly-Declassified Documentary Evidence*, University of Toronto, January 27-29, 1994.
2. Anderson, Barbara, and Brian Silver, "Infant Mortality in the Soviet Union: Regional Differences and Measurement Issues," *Population and Development Review*, 12, 4, 1986, pp. 705-738.
3. Anderson, Barbara, and Brian Silver, "Trends in Mortality of the Soviet Population," *Soviet Economy*, Vol. 6, No. 3, 1990, pp. 191-251.
4. Andreev, Evgueny, "Metod komponent v analize prodoljitelnosti zhizni," [Method of the components in the life expectancy analysis]. *Vestnik Statistiki*, No. 3, March, 1992, pp. 42-47.
5. Andreev, Evgueny, "Prodoljitelnost' jizni i prichini smerti v SSSR." [Life expectancy and causes of death in the USSR], in A.G.Volkov, ed., *Demograficheskiye protsessy v SSSR [Demographic Processes in the USSR]*, Moscow, Finansy i Statistika, 1990.
6. Blum, Alain, and Alain Monnier, "Recent Mortality Trends in the USSR: New Evidence," *Population Studies*, Vol. 43, No. 2, 1989, pp. 211-241.
7. Bourgeois-Pichat, Jean, "Mortality Trends in the Industrialized Countries," in *Mortality and Health Policy*, New York: United Nations, 1984.
8. Coale, Ansley J., and Paul Demeny, *Regional Model Life Tables and Stable Populations*, Princeton University Press, 1966.
9. Field, Mark, "The Health Crisis in the Former Soviet Union: A Report From the 'Post-War' Zone," paper presented at the *XIII International Conference on the Social Science and Medicine*, Lake Balatone, Hungary, October 10-14, 1994.
10. Holland W.W., ed., *European Community Atlas of Avoidable Death*, Oxford University Press, Oxford, 1988.
11. *Indirect Techniques for Demographic Estimation, Manual X*, New York: United Nations, 1983.
12. Jozan, Peter, "Contrast in Mortality Trends," paper presented at the *IUSSP General Conference*, New Delhi, 1989.
13. Ksenofontova, Natalya Yu, "Nekotoryye tendentsii mladencheskoy smertnosti v posledneye desyatiletie," [Some trends in infant mortality

- in the last decade] in: A.G.Volkov, ed., *Demograficheskiye protsessy v SSSR* [*Demographic Processes in the USSR*]. Moscow, Finansi i Statistika, 1990.
14. Meslé, France, "Mortality in Eastern and Western Europe: A Widening Gap," paper presented at the meeting of the British Society for Demographic Studies, London, April, 1993.
 15. Meslé, France, Vladimir Shkolnikov, and Jacques Vallin, "Mortality by Cause in the USSR in 1970-1987: The Reconstruction of Time Series," *European Journal of Population* 8, 1992, pp. 281-308.
 16. Meslé, France, Vladimir Shkolnikov, and Jacques Vallin, "Brusque Montée des Morts Violentes en Russie," *Population*, 3, 1994, pp. 780-790.
 17. Meslé, France, Vladimir Shkolnikov, and Jacques Vallin, "Développement Économique et Espérance de Vie: La Transition Sanitaire au Tournant des Années Soixante," paper presented at the General Congress of IUSSP, Montréal, August 24-September 1, 1993.
 18. Novoselski (Sergei), Obzor glavneishih dannih po demografii i sanitarnoi statistiki Rossii. In, Kalendar vracha za 1916 god. Ch. II. [*Review of the Principal Data in Demography and Sanitary Statistics of Russia. In Calendar of Physician for 1916, Part II, 1916*, pp. 66-67.
 19. Okolski, Marek, "East-West Mortality Differentials," in Alain Blum and J.L.Rallu, eds., *European Population, Vol. 2, 1993, "Demographic Dynamics,"* John Libbey Ltd. (Materials of European Population Conference, Paris, October 21-25 1991.)
 20. Poikolinen K., and J. Eskola, "The Effect of Health Services on Mortality: Decline in Death Rates from Amenable and Non-amenable Causes in Finland, 1969-81," *Lancet*, I, 1986, pp. 199-202.
 21. Pollard, John, "Cause of Death and Expectation of Life: Some International Comparisons," in Vallin, Jacques, Stan D'Souza, and Alberto Palloni, eds., *Measurement and Analysis of Mortality: New Approaches*, pp. 291-313, Liege-Oxford: Oxford University Press, 1990.
 22. Popkin, Barry, Lenore Kohlmeier, Namvar Zohoori, et al, "Nutritional Risk Factors in the Former Soviet Union," paper presented at the workshop, "Mortality and Adult Health Priorities in the New Independent States," Washington, D.C., November 17-18, 1994, forthcoming in Bobadilla, J.L., and C.A.Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press.
 23. Pressat, Roland, "Contribution des Écarts de Mortalité par âge à la Différence des Vies Moyennes," *Population*, Vol. 40, No. 4-5, 1985, pp. 766-770.
 24. Preston, Samuel H., Nathan Keyfitz, and R. Schoen, *Causes of Death: Life Tables for National Populations*, New York-London: Seminar Press, 1972.

25. Ptukha, Mikhail, *Otcherki po statistike naseleniya. (Essays on the Statistics of Population)*, Moscow, TsSU SSSR, 1960.
26. Rozenfeld, Boris, "The Crisis of Russian Health Care and Attempts of its Transformation," paper presented at the Workshop: Russia's Demographic Crisis in Comparative Perspective, June 5-6, 1995, RAND, Santa Monica, Calif. (chapter in this volume).
27. Rutstein, D.D., et al, "Measuring the Quality of Medical Care," *New England Journal of Medicine*, Vol. 11, 1976, pp. 582-588.
28. Shkolnikov, Vladimir M., France Meslé, and Jacques Vallin, "Recent Trends in Life Expectancy and Causes of Death in Russia (1970-1993)," in Bobadilla, J.L., and C.A. Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press (forthcoming).
29. Shkolnikov, Vladimir M., France Meslé, and Jacques Vallin, "La Crise Sanitaire en Russie (1970-1993), *Population*, No. 4-5, 1995, pp. 907-982.
30. Shkolnikov, Vladimir, and Alexander Nemtsov, "The Anti-alcohol Campaign and Variations in Russian Mortality," in Bobadilla, J.L., and C.A. Costello, eds., *Mortality Patterns in the New Independent States and Adult Health Interventions*, National Academy Press (forthcoming).
31. Shkolnikov, Vladimir, and Sergei Vassin, "Spatial Differences in Life Expectancy in European Russia in the 1980s," in Lutz, W., A. Volkov, and S. Scherbov, eds., *Demographic Trends and Patterns in the Soviet Union Before 1991*, New York-London: Routledge-IIASA, 1994, pp. 379-402.
32. Specter, Michael, "Climb in Russia's Death Rate Sets Off Population Implosion," *New York Times*, March 6, 1994.
33. Specter, Michael, "Plunging Life Expectancy Puzzles Russia," *New York Times*, August 2, 1995.
34. Vishnevsky, Anatoly, "Family, Fertility and Demographic Dynamics in Russia: Analysis and Forecast," paper presented at the workshop: Russia's Demographic Crisis in Comparative Perspective, June 5-6, 1995, RAND, Santa Monica, Calif. (chapter in this volume).

Sources of Statistical Data

Mortality Data:

1. Meslé, France, Vladimir M. Shkolnikov, Veronique Hertrich, et Jacques Vallin, "Tendances Récentes de la Mortalité par Cause en Russie 1965-1993," Paris: INED, forthcoming.

Socio-Economic Indicators:

1. Narodnoye khozyastvo SSSR 1922-1982: Yubileyny statisticheskiy yezhegodnik (The Economy of the USSR 1922-1982: Anniversary Statisticakl Yearbook). Moscow: Statistika, 1982.
2. Narodnoye khozyastvo SSSR za 70 let: Yubileyny statisticheskiy yezhegodnik (The Economy of the USSR During the Last 70 Years: Anniversary Statisticakl Yearbook). Moscow: Statistika, 1987.
3. Narodnoye khozyastvo RSFSR v 1989 g. Statisticheskiy yezhegodnik (The Economy of the Russian Federation in 1989. Statistical Yearbook). Moscow, Goskomstat of the Russian Federation, 1990.
4. Rossiyskaya Federatsiya v 1992 Godu. Statisticheskiy yezhegodnik (The Russian Federation in 1992. Statistical Yearbook). Moscow, Goskomstat of the Russian Federation, 1993.
5. Standards of Living in the Russian Federation. Goskomstat of the Russian Federation, 1993.

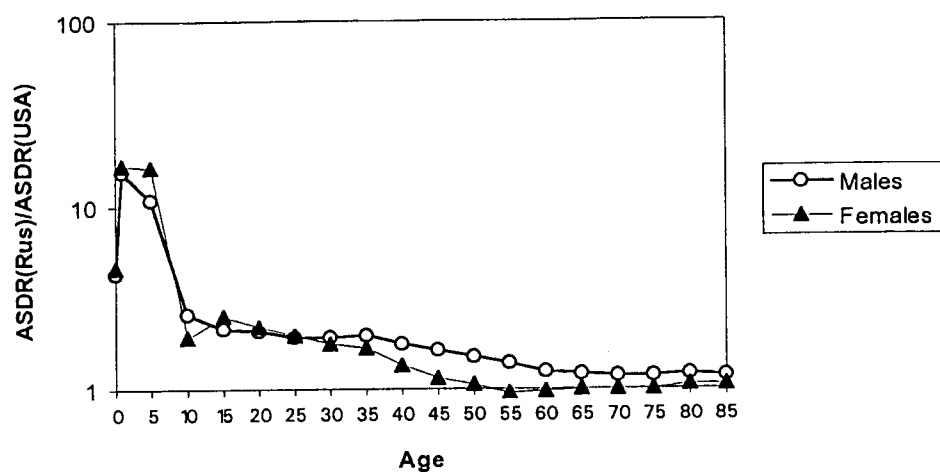


Figure 4.1—Ratio of Age-Specific Death Rates of the Russian Population (1938–1939) to Corresponding Death Rates of the U.S. Population (1939–1941)

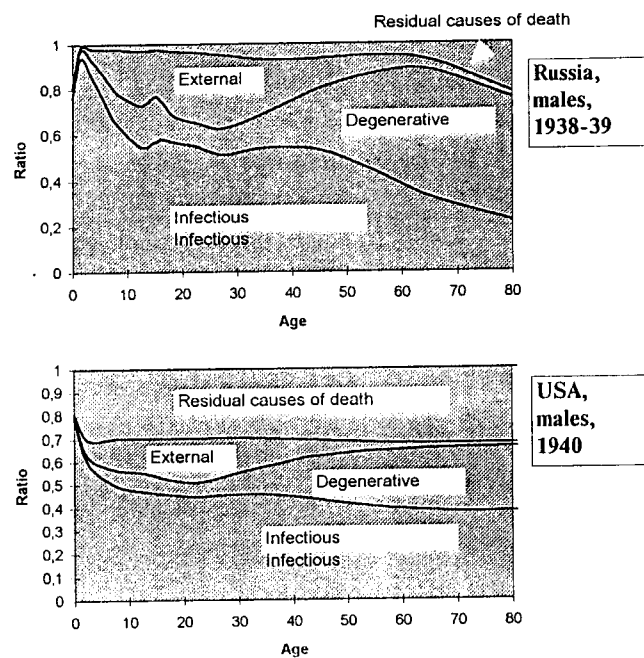
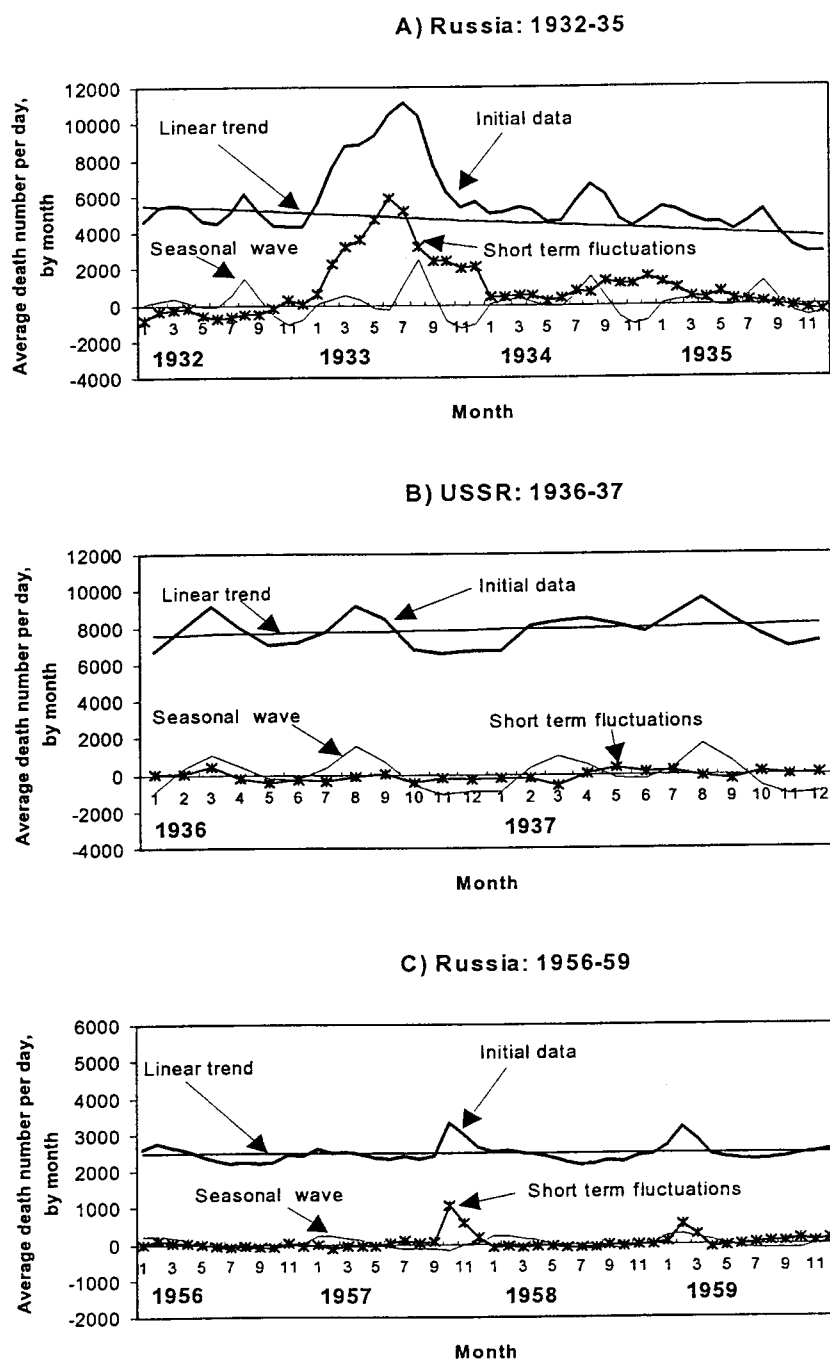


Figure 4.2—Proportion of Four Principal Classes of Causes of Death for Males, by Age in the Russian Urban Population (1938) and in the United States (1940)



NOTE: Excess deaths in Russia in 1933 (upper panel) correspond to period of famine in rural areas.

Figure 4.3—Variation in Number of Deaths by Month in the 1930s and the 1950s: Russia and the USSR

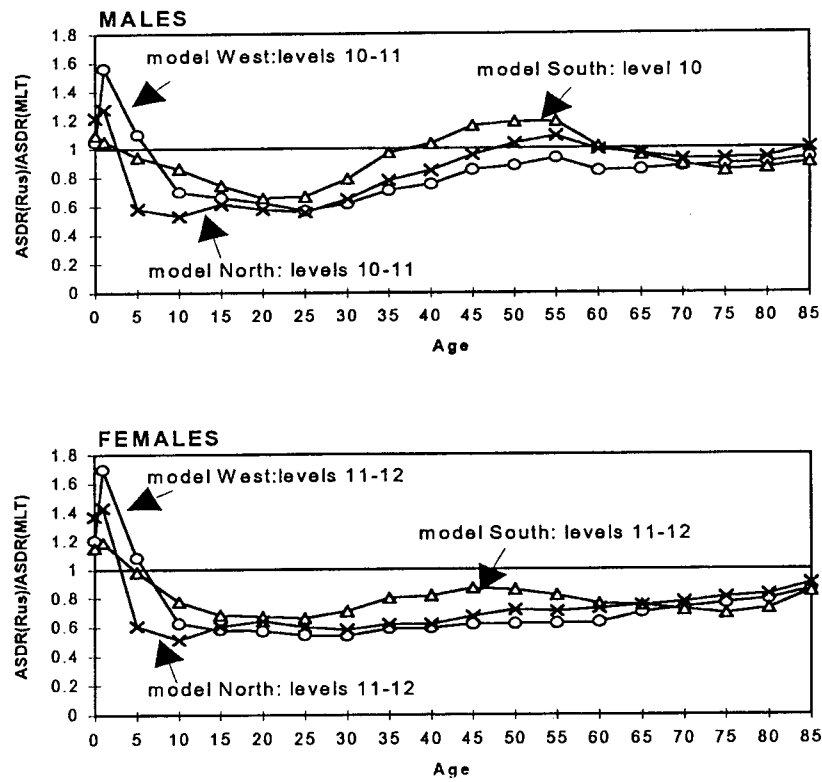


Figure 4.4—Ratios of Russian Age-Specific Death Rates in 1938–1939 to Corresponding Values from Coale-Demeny Model Life Tables

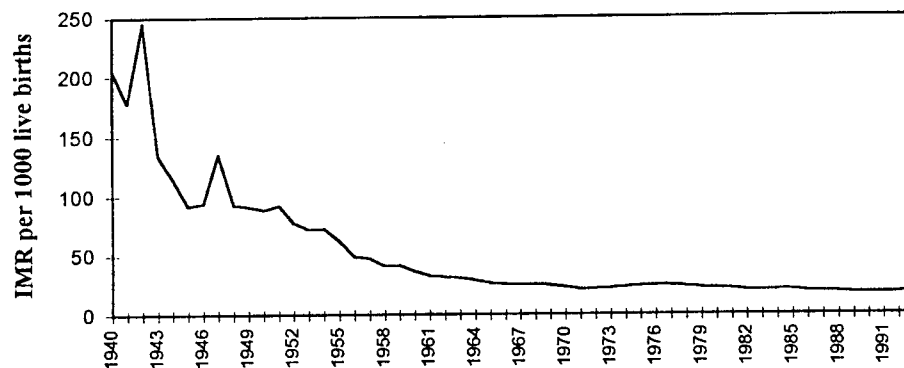
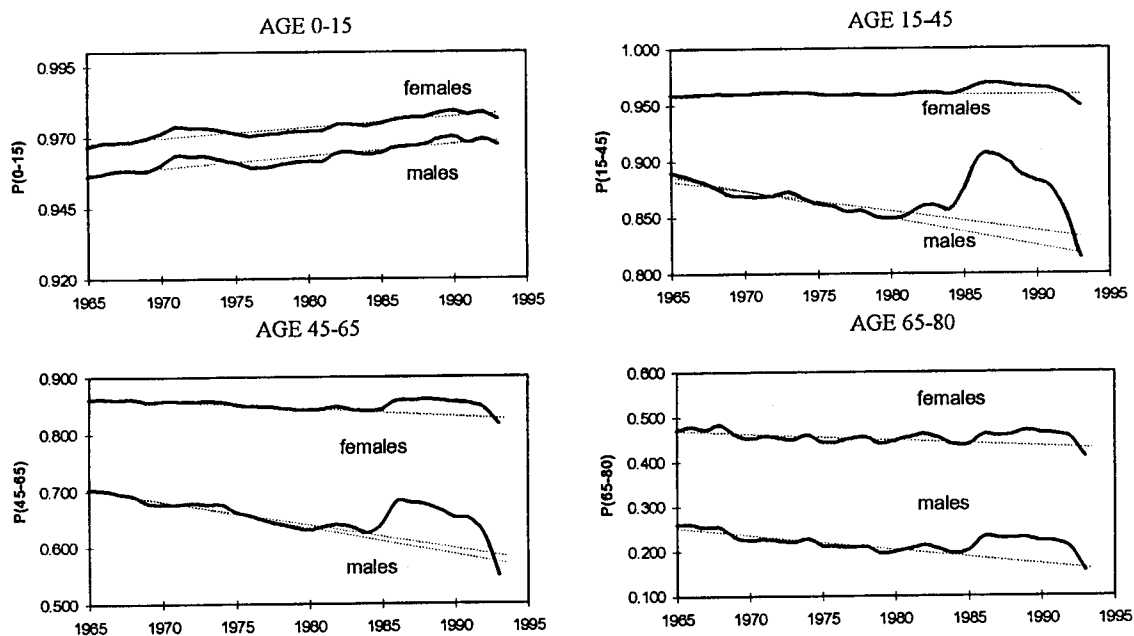


Figure 4.5—Infant Mortality Rate in Russia: 1940–1993



NOTE: Dotted lines show extrapolations of trends based on 1965-1980.

Figure 4.6—Probabilities of Survival: From Birth to Age 15, from 15-45, from 45-65, and from 65-80: Russia, 1965-1993

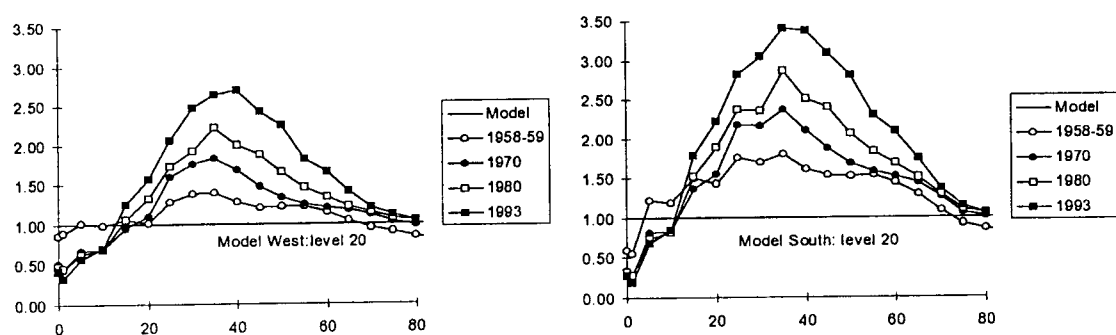
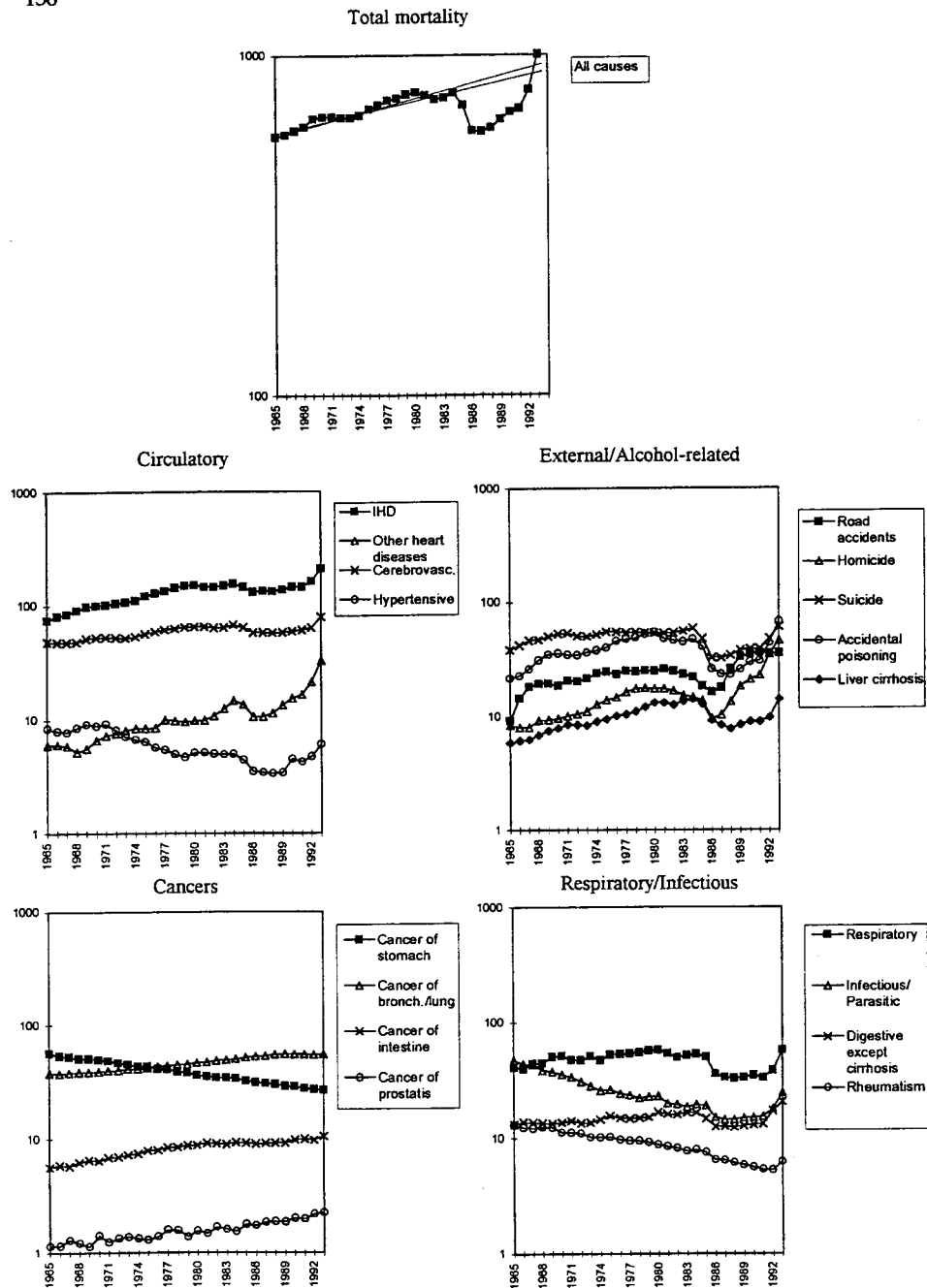


Figure 4.7—Ratios of Male Age-Specific Death Rates to Corresponding Death Rates from Coale-Demeny Model Life Tables (Families West and South)



NOTE: Standardized death rates per 100,000 at ages 15–65, 1965–1993

Figure 4.8—Trends in Russian Male Mortality in Active Ages: All Causes Combined and Principal Causes of Death

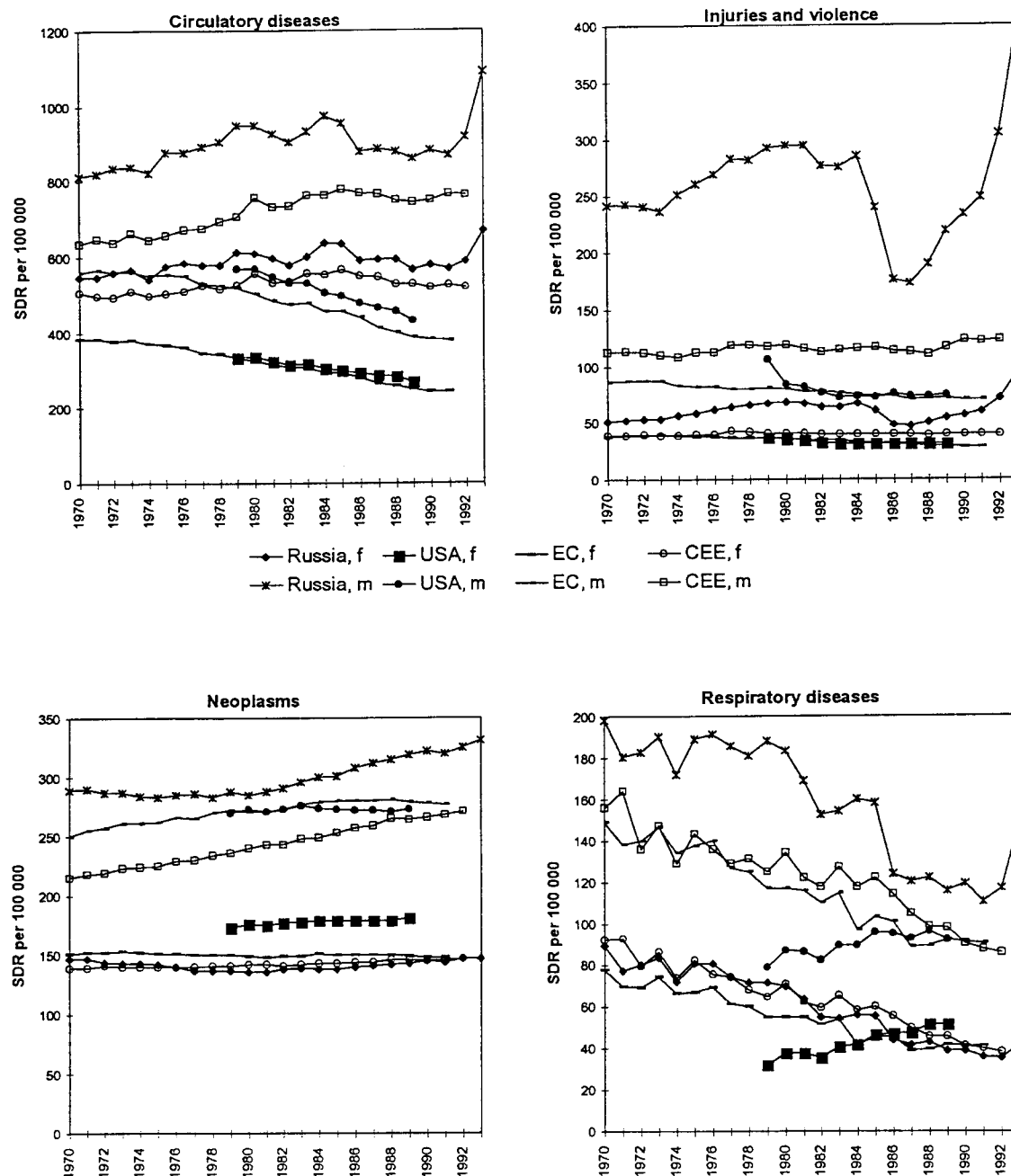


Figure 4.9—Time Trends in Standardized Death Rates for All Ages: Russia, European Community Countries, Countries of Central and Eastern Europe, and United States

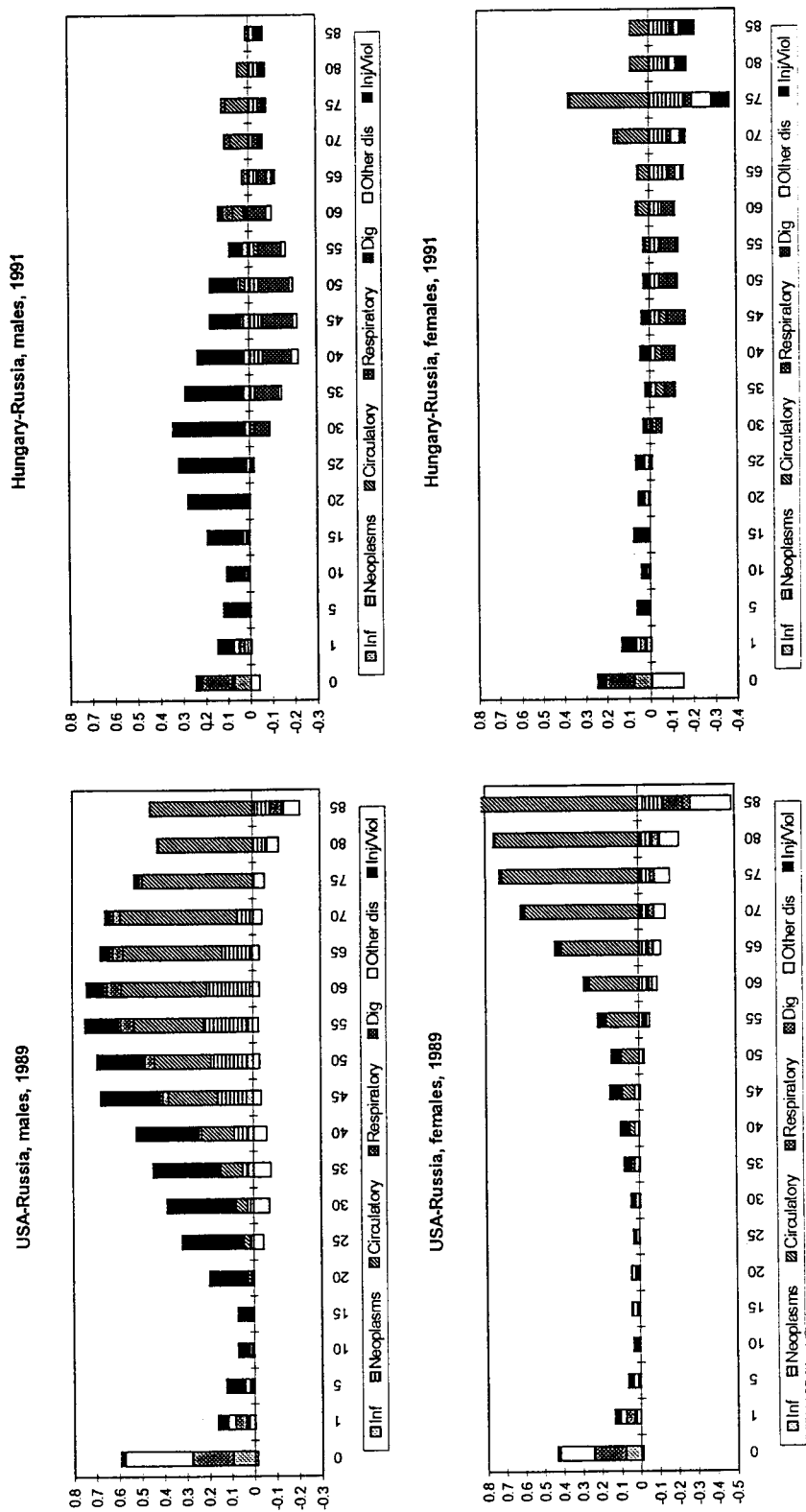


Figure 4.10—Contributions of Different Ages and Causes of Death to the Total Difference in Life Expectancy Between the United States and Russia in 1989, and Between Hungary and Russia in 1991

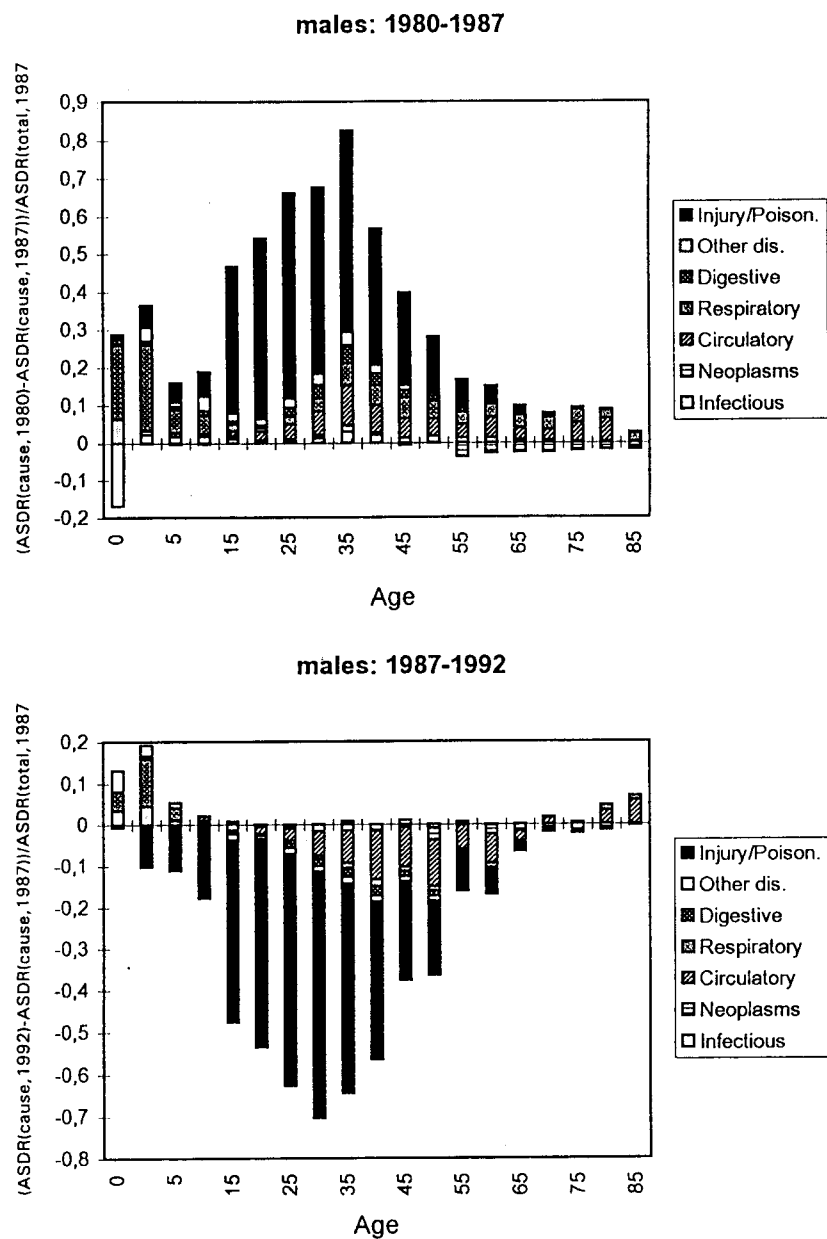


Figure 4.11—Proportions of Decrease and Increase in Russian Male ASDRs Associated With the Anti-Alcohol Campaign, 1985–1987

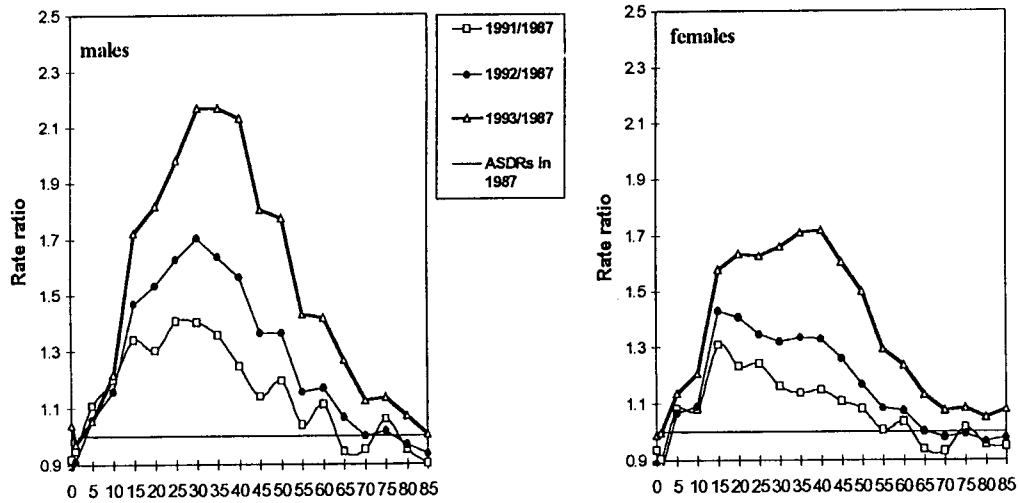


Figure 4.12—Age-Specific Death Rates in 1991, 1992, and 1993, Divided by Corresponding Death Rates in 1987, by Gender

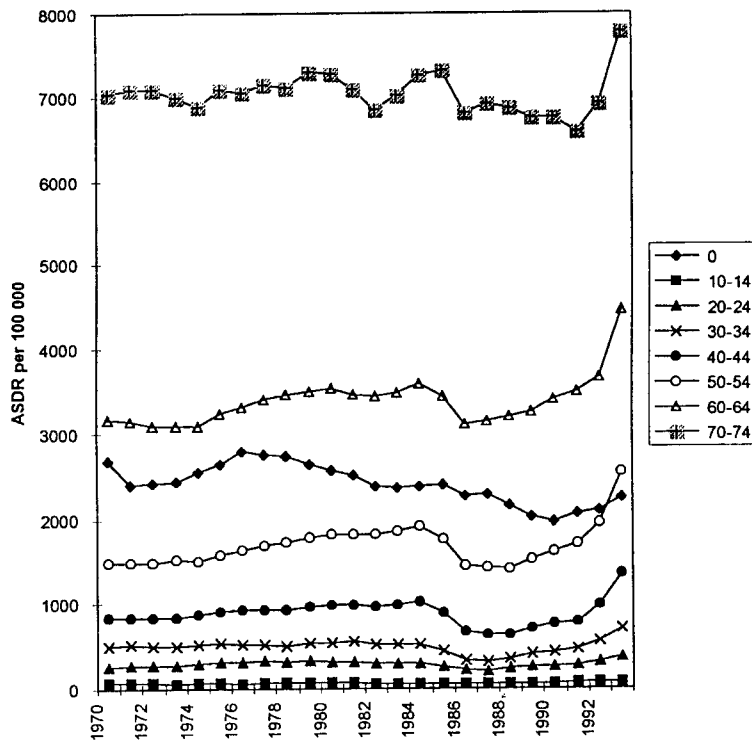


Figure 4.13—Male Death Rates for Different Ages: 1970–1993

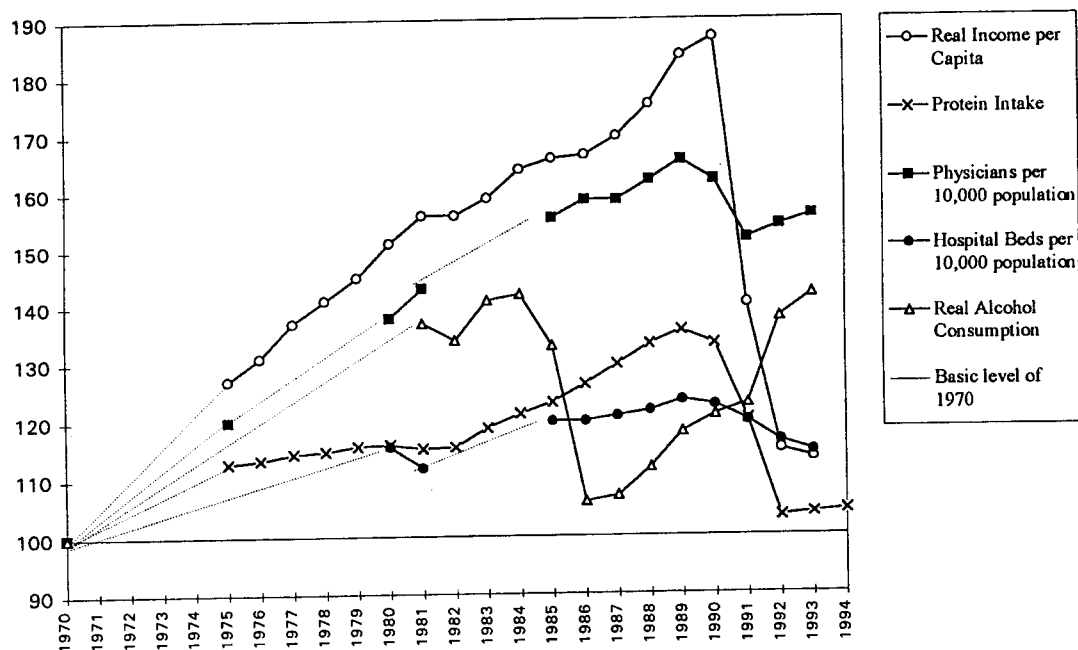


Figure 4.14—Real Per Capita Income, Daily Protein Intake, Number of Physicians and Hospital Beds per 10,000, and Real Alcohol Consumption, Each Compared to the Basic Level of 1970: Russia, 1970–1994

SOURCES: Real Per Capita Income and Daily Protein Intake provided by the Laboratory for Prognosis of Population Wages and Consumption, Institute for Economic Forecasting, Moscow; Physicians and Hospital Beds Per 10,000 Population from "Sources of Statistical Data," given in this paper; Real Alcohol Consumption, by Shkolnikov, Nemtsov, 1995, and evaluated by A. Nemtsov.

Discussants' Comments

Discussants: Elizabeth Frankenberg, RAND; and Ward Kingkade, U.S. Census Bureau

Unlike the fertility debate of the previous day, the discussion of Dr. Shkolnikov's paper showed little disagreement with the characterization of the mortality situation in Russia as an obvious and serious crisis. However, the discussants pointed out that further research is needed to understand regional and socio-economic differentials in mortality trends, especially with respect to the effects of such policies as the anti-alcohol campaign. The lessons of this campaign's initial success and eventual failure need to be closely studied in designing future policy measures, utilizing the detailed morbidity and mortality data that are now available. Specifically, more research is needed (and is possible) on such questions as regional and socio-economic differentials of the anti-alcohol campaign's effects. The recent mortality rise is undoubtedly linked to the degradation of the entire health care system, but the rapid criminalization and "alcoholization" of the country are the most important factors behind the dramatic increase in death rates, especially among men of working age. Thus the solution for the mortality problem should be sought not only in improving public health but also in strengthening public order.

5. The Crisis of Russian Health Care and Attempts at Reform

*by Boris A. Rozenfeld*¹⁰⁴

Introduction

A search for new forms of development in all spheres of public health care and health promotion is currently being conducted in Russia. Accordingly, the understanding of health as a socially significant aspect of well-being is becoming widely recognized, and the importance of preventive care in individuals' value systems has increased.

Simultaneously, negative trends are developing in this sphere, specifically, in health indices and in the health care system. Uneven development of the health care system has become more apparent, and popular dissatisfaction with medical personnel and the quality of delivered services has grown.

Origins of the Current Crisis

The crisis in Russia's health care system has continued for a number of years. Despite the large number of hospitals and a huge army of medical doctors, they have been unable to provide people with an acceptable level of health care services. This is mainly due to a continued lack of funds, medical and technical equipment and supplies, and, finally, to the ineffective organization of health care delivery services. As a result, the quality of services and their accessibility remains quite low.

The recent economic crisis did not create the crisis in the health care system, but it did exacerbate it. The lag in health care in Russia has accumulated over many years. The health care system was distorted by a perception of it as a set of social services that may be provided in greater or smaller amounts in response to certain circumstances, but not linked to the real state of health in the population.

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All previous attempts to reform Russia's health care system may be seen as various tactical approaches that did not affect the principal problems or the overall strategy in the field. Many of Russia's health care problems have been rooted in the accepted political model of state-paternalistic social system development. From this approach follows an inattentive government attitude to the problems of health care, a reliance on primitive investment in extensive growth of health care delivery facilities, manpower, and other resources and supplies, and a lack of attention to the quality of care or its effectiveness in improving people's health. One of the characteristics of the Soviet period was the complete absence of incentives for improvement of services in all kinds of medical institutions.

The paternalistic approach manifested itself in the slogan, "The State cares for the health of its citizens," which in many ways defined the very character of medical service organizations across the country, as well as people's attitudes toward this sphere of policy. According to such an approach, every person is under the umbrella of the State and its medical facilities, which undertake entire responsibility for his or her health. In this way, a health care system was created which found itself fully dependent on the state and its governing bodies.

Of course, any state should bear some responsibility for the health of its citizens. But the ideological interpretation of such a principle and the propagandistic character of it in the former USSR led to the development of priorities such that quantitative measures and indices were considered most important. Indices such as volumes of services provided were considered sufficient indicators of growing state activity in public health protection and care.

Paternalism had many different features. This included an irresponsible attitude adopted by many people toward their health combined with consumption regardless of cost. But the consumer was also deprived of his right to complain about services rendered (often touted as "higher than established norms"), and he delegated fully to the state his right to defining consumption limits and needs in individual health care. The state took into its hands all manner of decision-making in the field, together with all methods of evaluating the effectiveness of state actions and their results.

When changes in the health of the population occurred at times, the health care system did not react properly. Excessive reliance on ideology led to goal distortion and emphasis on activities that did not correspond to the medical problems at hand, the level of national socio-economic development, medical capabilities, or public demand.

Current Policy Issues

Policies to resolve the above problems are still being sought. Issues considered extensively in scholarly journals, professional conferences, and the public media include the following:

- the search for real goals for further development, de-ideologisation of the entire health care sphere;
- democratization and enhancing the rights of health care providers and consumers of health services;
- securing freedom from monopolistic dominance of central governing bodies; and
- diversification of all kind of activities and development of new approaches to the delivery of services, including services provided on a fee-for-service basis.

A transition to the predominance of noninfectious diseases has not yet been completed and will require changes in health care strategies in Russia. But to reach this goal, such obstacles as general economic instability must be overcome, as that has undoubtedly fertilized the soil for growing morbidity and mortality in the Russian population. The same applies to the growth of operational difficulties in health care servicing.

In Russia, in comparison to other developed countries, the interconnection between the structure of pathology and the health care system's organizational and technological capabilities has increasingly deteriorated. This deterioration has generated long-term problems which are different from those in other countries and which, therefore, should be resolved independently.

The peculiarity of today's situation is characterized by the fact that the normal responses and progressive approaches to addressing problems of public health are not relevant. This impedes efforts to achieve the goals of the first epidemiological transition, i.e., to totally eradicate the occurrence of infectious diseases and epidemics, in order to concentrate manpower and financial resources on problems of life-span elongation and other goals of the second epidemiological transition.

The general basis for the situation described above is the attitude of policy makers who put the goals of health protection behind other "protected state priorities." Therefore, the health care system is, for the moment, financed just at the survival level. At the same time, with the above-mentioned changes in the

structure of pathology requiring reorganization of the existing health care system and introduction of new medical technologies, diseases typical of previous periods of lower socio-economic development are still present. In the 1980s, this situation was considered temporary, but during recent years a decrease in life expectancy appeared¹⁰⁵ and may prove that the present situation has become the norm, at least for the near term.

More than in former years, prospects for the development of the health care system in Russia presently depend on whether they are linked to the management of medical enterprises, which are the first to sense all contradictions and problems of the reform period. Formerly, many different experiments were implemented in rather limited circles of medical caregivers and health care facilities, but the general conditions of medical care delivery to the broad population were not affected.

The following basic principles for reforming health care are widely accepted in Russia:

- decentralization of management;
- creation of a health services market;
- multi-channeling of financial support for medical enterprises in order to attract additional reliable resources;
- transition to a financing scheme under which payments depend on the quantity and quality of provided services;
- introduction of obligatory medical insurance for the entire population; and
- development of voluntary insurance schemes and “fee for service” (direct payment) for health care.

The Health Care Financing Crisis

Under present conditions of economic crisis, most medical facilities have given the highest priority to problems of lack of finances and financial instability. The initial reforms liberalized economic relationships and placed the health care system in a market environment. The entire health care system, being formerly financed by the federal budget, found itself in a very difficult situation—immersed in a market environment without the capacity to be an active member of that market.

¹⁰⁵See paper by Shkolnikov and Meslé in this volume.

Medical facilities at many different levels of the formerly hierarchical system have become deeply involved in the problems of day-to-day financing of their activities and have been frustrated by their inability to take the necessary steps towards achieving financial stability. This makes their prospects rather uncertain.

Left without proper funding, health care facilities were forced to cut off new construction, reconstruction, and other fundamental investments. In an effort to cut costs, they had to switch to simpler and cheaper technologies, which are insufficient to reach formerly attained levels of care. The available funds are spent on current needs only, particularly on salary payments, the amount of which constantly lags behind salaries in other industries. For example, the average salary of health care workers in 1994 was only 80 percent of the mean earnings for the average worker in Russia.

Medical organizations, first forced by necessity and later quite voluntarily, tried to take advantage of the situation to combine unusual sources of funding in order to obtain a reliable financial basis to start anew. For this purpose, they used residual state budget financing, revenue from other sponsors, etc., in attempts to identify a way (independently or with support of people with interests at stake, but of non-governmental origin) out of the complicated situation in which they found themselves. They tried to improve their situation by increasing commercial activities, providing more directly paid services for the population, renting some of their workspace to third parties, or depositing money in bank accounts to earn interest, etc. Sometimes they violated existing legislation, since many of the responsible persons did not possess proper legal knowledge or have relevant experience in bookkeeping, accounting, etc.

Left with insufficient financial support, many medical organizations tried to operate in the market economy independently, keeping in mind that such a transition was in general recommended as a strategic goal of the ongoing reform period. As a result, people now have to pay for services that yesterday they had received free of charge. In some cases, the charges for treatment have become very expensive. The growing number of directly paid services has created some possibilities for choice, but that is relevant to only the small proportion of the population that can afford the higher prices. To the remaining majority, conditions for obtaining medical care worsened. This process has not led to the creation of new supporting funds, but, on the contrary, has stimulated the irregular and often illegal usage of state institutions.

The uncivilized struggle for funds in an as yet under-developed market for health services has begun. This applies mostly to the charged services provided

to people, the share of which, according to various recent evaluations, amounted to 5–20 percent of total funds available to medical organizations.

Emphasis on charging for services rendered (fee-for-services) together with the simultaneous cutting of government budget support to medical organizations has forced these organizations to restrict technological development and cut the more expensive services, which tend to be the highest quality services. Thus, as the share of charged services grows, the quality of care is becoming poorer. Hence, in actuality, the increasing share of charged services has led not to the widening of possibilities for most of the population, but to a decrease in the quality of services provided. This cannot be considered a goal of wise social policy.

Financing Shifts from Federal to Local Sources

One of the most important developments in health care financing is the shift of funding flows from the federal to the local level. Budgetary financing of health care is carried out mainly from local budget sources. This has put the organizations dependent on the federal budget in a complicated situation. Health care's share of the federal budget is relatively small, and has been steadily decreasing. In 1994 this share in the consolidated budget was 12 percent, while in 1990 it was approximately 20 percent.

The transfer of health care budgeting to the local level disrupted the former system, which had induced people to travel to specialized medical centers in other regions to get proper medical care. Nonresidential consumers are now required to pay for services rendered, and, as a consequence, there has been a distortion of the former system of transferring patients to regional centers for specialized care. The changes induced a kind of "atomization" of the health care system, following the process of territorial "sovereignization." The emerging incentives, then, are towards the inefficient approach of having all types of specialized care available in each administrative region.

The changes in financing have led not only to shifts in proportions of federal and local budgeting, but have also caused real shortages of funds (accounting for monetary inflation) at the federal level and have disrupted entirely the balance in the health care system. The federal facilities are still open (with some exceptions) to render services that cannot be provided by locally funded facilities. The best manpower is still concentrated in these federal facilities and, in many cases, the best technical equipment.

The better a medical center is equipped and the more advanced the technology it uses, the greater are the current expenses and the more difficult are the financial problems of such centers. Therefore, the most advanced centers, which had been financed from the federal budget, have been forced to speed up the introduction of charged services and to increase their share. Commercialized entities successfully selling services are, for the moment, concentrated in dentistry (including prosthetic dentistry), obstetrics and gynecology, and ultrasound and endoscopic diagnostics.

Innovative possibilities are imminent in the non-governmental sector, which arose on the basis of state property and, in many cases, was initially oriented around technological development. But this sector (and its potential for technological innovation) does not, and is very unlikely to, influence the general level of health care services for the broad population because it is oriented to its clients—foreign equipment and pharmaceuticals distributors. It exists as an autonomous element, separate from the whole system of health care.

While it should make use of the mainstream Western medical technologies, Russia should not put forward ambitious and unattainable goals and should ensure that costly, advanced technologies, domestic or imported, do not destroy the nation's health care system. Given the current state of the Russian economy, the presumption that health care expenses could be covered by private payers is obviously false. Such an orientation may in some way distort the medical system, especially in the absence of relevant marketing studies.

Fee-for-Service Financing

It is dangerous to overestimate the likely desire of the population for charged services. The demand for high quality services is not yet formulated, and family budgets are already heavily stressed by other financial pressures. This suggests that demand may be generally limited to the simplest and cheapest services and to those left still free of charge. The simultaneous restriction of supply and demand for medical services will in reality mean the degrading of the level of health care services.

As in other fields, the liberalization policy in general has not increased the demand for a greater volume and higher quality of health services. The mean price of services has increased (taking into account that the share of free services has diminished). Competition has not begun at all, and market relationships are still not sufficiently present. A domestically-focused market for medical technology and pharmaceuticals is still practically absent. Furthermore, underdeveloped individual initiative in seeking medical care, due to the long-

standing habit of dependence on a paternalistic state health care system, and the lack of proper legislative regulations for practicing health care under the new economic conditions both play a role.

Hence, if one wants to conceive of social policy in health care only as maintaining a certain volume of medical care free of charge, and the remaining volume is considered in the fee-for-service sphere, then the most important part of care to the broader population would be reduced. In particular, modern technologies would be totally cut off from public (free) care, being left to develop in scattered medical institutions. The present, unified system may divide into two distinct parts: an elite one, using modern medical technologies and pharmaceuticals to render services to a rather small population group, and another part, providing hopelessly backward medicine for the rest of people.

Insurance Financing

As an instrument to push health care system reform further, the transition of medical organizations toward insurance principles of operations has been attempted. The legislative base for this transformation was created by issuing a state law on "Medical insuring of the citizens of the Russian Federation." The prospects and hopes for radical improvements in the health care system were linked to this document.

The principal issue of this law is the introduction of a system of obligatory insurance for all citizens of Russia, which should secure social guarantees of health care accessibility within the framework of its basic programs. The content of this program depends on the volume and structural characteristics of people's health care requirements and the resources available locally. Hence, this type of insurance is different from voluntary (private) insurance, also prescribed by that law, with the first type being a form of state social security.

To realize the state program of obligatory medical insurance, special federal and local funds were created in order to accumulate the necessary financial resources. The amount of obligatory payments to these funds by factories, enterprises, and other institutions are calculated as a percent of salaries paid to workers. The premium was established at 3.6 percent, of which 0.2 percent is to be paid to the federal level and 3.4 percent to the local level. Medical organizations are financed through local funds and their affiliated units. All such organizations must obtain local governmental licenses for their activities. By the end 1994, 86 local obligatory medical insurance funds were created, with more than 1,000 affiliated units. They began collaboration with about 300 insurers.

In principle, social guarantees promised to citizens in accordance with the above-mentioned law contribute to the improvement of the health of the population. The main focus of the legislation is the management of medical organizations, neglecting issues of programs for public health promotion. In spite of the legislation requiring the creation of the Obligatory Medical Insurance (OMI) system as of January 1, 1993, the results have so far not been encouraging because of the evident unwillingness on the part of health care organizations and the inability of many enterprises with low and negative profits to pay insurance premiums for their workers as is prescribed by the law.

The creation of a system designed to guarantee funds and resource accumulation could help the health care system if the proper management and controls can be organized. But this has nothing to do with the medical insurance system. Here the manner of obtaining resources has changed, but not the principles of medical management. In this case, no real incentives are present, and no real responsibility to the consumer exists either. The whole reform process, for the moment, is taking place in the financial field only; but the very idea of medical insurance concerns many other issues, such as the organization, management, and delivery of health care, and not only the payment mode.

The chosen model of OMI accepted recently in Russia violates the general principles of insurance and essentially serves to simply transfer money from the insurance funds, through insurance companies, and ultimately to the medical facilities without regard to the actual volume of services rendered. The OMI system functions presently, but not as a true insurance system because market conditions are still absent. This has stopped any increase in the effectiveness of medical care and the development of medical organizations.

Initially, the amount of government financial support for health had very little connection to the real volume and quality of services rendered, and there is little evidence that this pattern will soon change. The financial proposals for 1995 introduced a billing and payment system that only covered the direct costs of delivering services, and the newly prepared price lists for reimbursing expenses by insurance companies are often not even sufficient to cover current expenses, and do not include any expenses for facility maintenance, construction, or purchase of equipment.

In 1994, the multi-channel mode of financing, which was conceived by health care reformers, for the first time demonstrated some results. An emphasis was put on enlarging the number of financial sources and flows. The prioritization of state policies for health protection was temporally suspended, waiting for a resolution to the problem.

In this situation, the potential role of OMI funds seems to have increased. The money provided through OMI became a more reliable financing source than government budgetary allocations. This happened not only because these funds received more money from payers this year, but also because, at the same time, the budget expectations at both federal and local levels were not fulfilled and, therefore, this source of health care funding lost some of its reliability. But the OMI funds also didn't collect as much money as they expected. This was the case both for the working population (deductions from salary funds) and for the nonworking population (deductions from local budgets). In some cases, underfunding impeded the performance abilities of medical organizations. In 1993, only a few regions paid OMI premiums for nonworking people. But in 1994, after the first three months already 15 percent of all funds were collected through this source and in the second quarter another 18 percent was collected.

The creation of OMI mitigated and hid the effect of diminishing total government allocations for health care that the system needs to be viable. It was presumed that budget allocations would persist at a stable level and that premiums collected by OMI funds would be an additional surplus. But, in fact, all funds for health care need operate separately and are divided into two parts: the old (under government programs) and the new (under the insurance scheme). The second part immediately created their own bureaucracy, at the moment filled with large numbers of underqualified personnel.

Conclusions

As in the former system, the main state programs for improving the health of the Russian population are underfunded and suffer from lack of resources in general. No conditions can yet be foreseen for the reanimation of an effective preventive and curative health care system. Many famous medical research centers, especially on the federal level, are left without proper financial support. Progress in all spheres of health care is under great stress.

Attempts to seriously consider plans for such centers at the federal level are made in all projects and programs and in the framework of proposals for the OMI system. But, for the moment, they are not sufficient in the absence of a firm state policy for public health. The amount of money collected today by all local OMI funds is too little to finance larger goals and is sufficient only for supporting the most basic set of health needs.

Local OMI funds are mainly financing state-approved basic health care. OMI programs operated by medical enterprises are still owned by the state.

Nongovernmental institutions are still rare, and the services offered by them are rather expensive and cannot be covered by limited OMI reimbursements. Voluntary insurance schemes can bear such costs only on the basis of a corresponding process of contracting such services by institutions.

The OMI funds currently are collected more effectively than taxes, with 80 percent of the amount planned by legislation collected. They provide important help to the health care system, but the established tariff level (3.6 percent from an enterprise's total salary amount) is still insufficient because of constantly diminishing budgetary support.

Hence, the introduction of insurance principles into medical organization financing has begun. Many rules and standards have been prepared or are under preparation, which could be accepted as a legislative basis for this field of activities. More than 50 percent of hospitals and about 70 percent of polyclinics have been licensed for medical insurance. But for the time being there are more problems than achievements.

Although it has provided a new source of funds for health care, the established premium amount (3.6 percent) alone does not provide a secure financial foundation for improving health care. The problem is that this has been accompanied by a reduction of state financial support, under the rationale of a faster transition to a market economy. Many stable subsystems which have a long history of successful functioning have been threatened by these changes. No real competition between medical organizations or insurance companies has appeared so far. Thus, the insurance schemes exist more as a wish than as practical realities. These conditions have led to many violations of existing rules and legislation.

There are many problems in the health care system that could not be solved simply by providing more funds. Current spending is insufficient; there are no clearly defined federal and local health protection policies, no effective programs for monitoring of results, and no openly declared system of control and delegation of responsibilities for state structures and public health institutions. Without these, additional funding is likely to have a negligible effect.

It is evident that the prospects for health care in Russia are directly interwoven with the nation's future socio-economic development. What happens in the future depends on the extent to which and by whom health care will be funded as a system—through the state budget, by special funds, or by people directly. Because this sphere of life is extremely important for the future of the nation, it would be very unwise to abandon a state-approved health protection and care policy now or in the future.

Discussants' Comments

Discussants: Paul Gertler, RAND; Dana Goldman, RAND; and Jack Molyneux, RAND

Discussants of Dr. Rozenfeld's paper pointed out that the American health care system is fundamentally different from the Russian. In the United States, most health care is offered by the private sector while the public sector provides a safety net for the poor. The United States has a powerful and diverse private insurance industry. Moreover, current trends in the health sectors of the two countries are almost opposite: while in Russia the government attempts to offer more autonomy to health care providers and users; in the United States their autonomy is being limited by the proliferation of managed care. Nevertheless, the United States' experience, especially in the area of health insurance, can prove very useful to Russian reformers. Specifically, the American example of excessive consumption and skyrocketing costs of health care suggests that controlling utilization and costs is a crucial prerequisite for a sustainable health insurance scheme. The failure of the current U.S. administration's attempt to introduce compulsory health care coverage can also serve as an important lesson to Russian politicians who propose obligatory national health insurance.

Although different from the United States, the health care problems of Russia are not exceptional. Many countries that traditionally relied on the public health sector have suffered from a shortage and misallocation of resources, declining quality, and, as a result, worsening health conditions of the population. The design of health care reform in Russia, like in any other nation, must take into account both local peculiarities and international experience. As the examples of many countries show, a thorough analysis and crafting of all the reform components is essential; an ill-designed benefit package, hasty decentralization, and over-reliance on the private sector can only worsen the situation.

6. The Determinants and Implications of an Aging Population in Russia

*by Sergei A. Vassin*¹⁰⁶

Introduction

This paper examines rates of growth and changes in the age structure of the Russian population. Shifts in population and subpopulation growth rates, as well as waves in the population age structure, can be traced to the reverberating effects of several demographic crises in Russia in this century. Fertility has had the most prominent influence on Russia's population structure. It is due to low fertility that more than 10 percent of the Russian population is elderly (ages 65 and over) and the share of elderly will grow another 4 percentage points by the year 2015. Russia's present and anticipated fertility rates and subpopulation dependency ratios carry important policy implications for the nation's economy and social institutions.

Data

In this paper, age distributions and natural changes in the Russian population are studied for the period of 1959–1993 using statistics of Goskomstat RF (the national statistical agency of the Russian Federation), including single-year age distributions based on the 1959, 1970, 1979, and 1989 censuses. Data for 1994–2015 are the results of projections prepared in 1994 by the Center for Demography and Human Ecology (CDHE) of the Institute for Economic Forecasting of the Russian Academy of Sciences. International data are taken from the database of the U.S. Bureau of the Census (prepared by the International Programs Center).

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Population Growth

Annual Growth Rates

The last time a population growth rate of over one percent (10/1,000) per annum was observed in Russia was more than three decades ago (Figure 6.1). Since 1959, Russia has twice experienced a 'crisis' decrease in the population growth rate—in 1962–1968 and 1988–1992. In 1959, the growth rate was 1.4 percent, but only a decade later it was already 0.8 percentage points lower. In 1970–1987, the growth rate increased from 0.57 to 0.80 percent—higher than in Western and Eastern Europe, but less than in North America. The second population growth crisis happened 26 years after the first. Between 1988 and 1992, the growth rate again declined by 0.8 percentage points and, for the first time after World War II, became negative (-0.2 percent in 1993).

The rate of population growth is a result of both natural increase (births less deaths) and net immigration. Although the number of emigrants from Russia exceeded the number of immigrants until the mid-1970s, the contribution of net immigration to the decline in population growth was negligible, if it had an effect at all (Figure 6.2). Until the end of the 1980s, the growth of Russia's population was determined by natural increase. Thus, the main factor that triggered both post-war decreases in population growth was a sharp decline in natural increase, due to low fertility and the peculiarities of the age structure of the Russian population. Since fertility issues are discussed in detail in the papers presented by A. Vishnevsky and by S. Zakharov and E. Ivanova in this volume, it is enough to say here that for the last 30 years the fertility level was not sufficient for natural replacement, and only a favorable age structure could maintain natural growth of the population in Russia during this period. However, under the long predominating conditions of low fertility in the 1990s, the effect of the age structure ultimately lost its momentum and it can no longer maintain a natural population increase.

In the case of Russia, on the one hand, distortions in age structure because of World War II and other catastrophic events of Soviet history made for weaker population momentum; on the other hand, they initiated the two sharp declines in natural increase. The second decline is essentially an echo of the first, as the interval between the two crises is approximately equal to the mean length of a generation. However, the second 'crisis' of population growth differs considerably from the first. At the beginning of the 1990s—for the first time in its history—Russia faced a new demographic situation, where age structure is no longer able to make up for the long-term trend of a low fertility level. Moreover, evidence from the early 1990s has made clear the fact that the age structure in

Russia is such that it will promote a natural *decrease* rather than an increase in the population. Maintenance of the low fertility trend will accelerate this negative effect of age structure.

From this perspective, net external migration is becoming more important. Since the beginning of the 1990s it has played a considerable role in affecting Russia's population growth. However, its now positive contribution to the growth of Russia's population is not sufficient to compensate for the natural decrease. As a result, Russia now has one of the lowest rates of population growth in the world, and this negative or almost zero growth rate will persist in the decades ahead, according to the medium CDHE projections.

Projections

The projections of Russia's total population used in this paper are for the period from 1994 to 2015 and were made by the Center for Demography and Human Ecology at the Institute for Economic Forecasting (CDHE) of the Russian Academy of Sciences. Although nine projection variants were constructed, the projected population figures presented in this paper are mostly drawn from the medium scenario, which assumes an increasing total fertility rate (TFR) from 1995 to 2002, reaching a maximum of 1.64 and stabilizing at approximately 1.6.¹⁰⁷ This level implies sub-replacement fertility, with a net reproduction rate of 0.74 in the year 2015.¹⁰⁸ In the medium scenario, life expectancy at birth is expected to decline to 57.4 years for men and to 71.1 years for women by 1996, and then to increase steadily to 66.5 years for males and 75.6 years for females.

The CDHE short-term projections demonstrate with considerable certainty that future growth rates will have an upward trend from 1997 to 2004 and a downward trend after 2004. This certainty is due to the fact that, in the future, natural population change will continue to be negative (Figure 6.2) and will lead to a population decrease of 5.4 million from 1994 to 2001. Hence, the answer to the principal question—whether Russia will be among the countries with slowly growing populations (0.2 percent per annum) or among countries experiencing population decrease—depends on future trends in net external migration. In Figure 6.1, the two trends in growth rates for the 1994-2015 period correspond to two extreme scenarios, one with high fertility, low mortality, and high net

¹⁰⁷The total fertility rate (TFR) is the sum of the average number of births for female cohorts age 15-49 in a population, divided by 1000. It is the average number of total births a woman would have over her lifetime if she experienced current age-specific fertility rates.

¹⁰⁸The net reproduction rate is the TFR multiplied by a survival probability (from the mother's birth through her childbearing years) and by the proportion of female to all births.

immigration (A), and the other with low fertility, high mortality and no net immigration (B). The difference between these two projection trends is not large. Nevertheless, the former scenario guarantees that Russia will gain population after the year 2000. According to the CDHE migration scenarios, a moderate flow of immigrants will not prevent a population decrease in Russia. Only annual net immigration of at least 500,000–600,000 would allow Russia to avoid this situation.

The influence of the age structure on population growth is evident from the wave-like trend of births (see Zaharov/Ivanova paper in this volume). The favorable effect of the age structure of the female population (i.e., large numbers of women at the more fertile ages) will itself accelerate the rise of fertility incorporated in the CDHE projection. This effect will erode by 2009, when a negative effect will appear. As such, the annual number of births will reach a maximum of 1.8 million in 2004 and then shrink to 1.6 million by the year 2009.

Population Composition

Population Pyramids

Single-year age pyramids tell the demographic history of Russia in the 20th century. Like a kind of social memory, the age structure of any population retains changes in fertility, mortality, and migration in the relatively recent past, reproducing them over an interval of time which may be defined as the mean interval between successive generations.

In the first half of the 20th century, Russia passed through a number of social shocks and accompanying demographic crises that left indentations on its age structure (see Figures 6.3 and 6.4). This chain of demographic disasters included: World War I (1914–1917); the Civil War of 1917–1922; the famine of the early 1920s; collectivization of agriculture (1929–1932); the famine of the early 1930s (1932–1933); Stalin's political and military purges in the 1930s; World War II (1941–1945); and the famine of 1947.

Russia's population pyramid for 1989 (Figure 6.3) reveals many bulges and indentations attributable to Soviet history. The direct effects of some disasters have mainly disappeared, but others persist. The three most significant social catastrophes are apparent in this age pyramid (see also Andreev and Darsky, 1991). Summaries of the observed population effects from these events follow.

World War I and Civil War. Large fertility declines during World War I and the Civil War caused a decrease in the size of cohorts born during 1914 to 1922. At

the same time, the effects of increased mortality due to actual combat and other hardships of war are not very evident in the 1989 age pyramid because they relate to persons aged 80 and above.

The famine of the early 1930s. Both higher mortality and lower fertility rates sharply reduced the size of cohorts born during 1933–1934, who are now entering the ranks of the elderly (i.e., persons aged 54 to 55 in 1989).

World War II. This war produced the most noticeable distortions in the age structure of the Russian population, which, in turn, continue to influence the current demographic situation. As combat deaths were mostly to males of military age, the very low number of males age 65 and over in 1989 is evidence of the enormity of military losses in Russia. Another consequence of World War II is the sharp fertility decrease during that time and its subsequent increase at the end of war and into the 1950s. This is of great importance for the current and future demographic situation.

During the war the number of births declined twofold, which is why cohorts born in 1943 and 1944 are the smallest in Russia this century. The indentation around ages 45 to 50 is due to the decrease in fertility during World War II. The bulges in the pyramid at ages 30 to 40 are evidence of a post-World War II increase in fertility. There was a gradual increase in the annual number of births that began after the war but did not reach its peak until the late 1950s. Large differences in the size of cohorts produced a strong demographic waves, the influence of which is noticeable in population dynamics long after the war itself.

Post-World War II “Echoes.” The fertility declines during World War II have reproduced themselves (or “echoed”) twice since the war. The first time was in the 1960s, when cohorts of the 1940s entered their fertile ages. This effect may have been enhanced by the smaller cohorts born during the famine in 1933, who were in their thirties by the 1960s. A real decline in fertility in the 1960s, triggered by intensive rural to urban migration, also contributed to the small size of birth cohorts in the 1960s.

Twenty years later, the small birth cohorts of the second half of the 1960s entered into fertile ages and produced a second-order “echo.” That echo appears in the 1989 pyramid. The 2015 pyramid (Figure 6.4) also reflects this indentation—a third echo. Hence, the original fertility decline during World War II contributed to the demographic crisis of the 1990s. Moreover, these unfavorable aspects of age structure coincide with a real decline in fertility rates. As a result, the new indentation at the bottom of Russia’s age pyramid is even more noticeable than it would be in terms of the World War II effect alone.

Cohorts born during the late 1980s to the early 1990s will, in turn, produce a drop in the number of births in the second decade of the 21st century. Part of this future indentation is visible in the 2015 pyramid (Figure 6.4). However, due to the weak ergodicity of human populations (Coale, 1957, 1962; Lopez, 1967), the influence of the distortions made by World War II will gradually disappear.

Sex Imbalance

Another major demographic change affecting population composition has been the imbalance in the numbers of males and females in the population, with the latter outnumbering the former. However, the number of males per 1,000 females shows a steady upward trend throughout the period of 1959–1993, as well as for the projection period. Sex ratios have risen from 805 males per 1,000 females in 1959 to 885 in 1993 and are projected to be a little higher by the year 2015. This reflects the passage of smaller male cohorts, which were decimated in World War II, as they survive to the later stages of life. However, female domination in population size is mainly due to the high male mortality. In Russia, the gap in life expectancy at birth between females and males is the highest in the world (see paper by Shkolnikov and Mesle in this volume).

The sex imbalance is most evident for the older age group (Figure 6.5). The sex ratio for ages 60 and over was only 390 males per 1,000 females in 1985. However, by the mid-1990s it reached 500 males per 1,000 females, due to the aging and dying off of the cohorts decimated by the war. Eventually (by 2015), the sex ratio will rise to 600 males per 1,000 females for the older age group. This process may be viewed as the age and sex structure of the Russian population “forgetting” the horrible effects of World War II.

Population Aging in Russia

As just discussed, changes in population structure reflect historical trends in births, deaths, and migration, and they portend the future dynamics of these forces. The main feature characterizing the age distribution of the Russian population has been and will continue to be population aging, by which we mean progressively larger numbers of persons at older ages and an increasing proportion of older persons in the total population. The aging process can be measured in a number of ways. Changes in four measures of aging are presented below, including: the percentage of the population in broad age groupings, including for age groups 60 or 65 and over, and 75 and over; the

dependency or support ratios, such as the elderly support ratio; the median age of the population; and the aging index.

Broad Age Distributions

Figure 6.6 displays the trends in the proportions of persons in broad age categories. A wave-like decline in the proportion of youth and steady increases in the proportion of the elderly (aged 60 and over) are revealed, including the growing proportion of the oldest ages (75 years and over).

Youth population (ages 0–14). In spite of the fact that there was no marked change in the number of young people in 1959–1992, its percentage dropped from 30 to 23 within one decade (1965–1975). After a period of stabilization, that percentage began to decline again in 1990s. More significant changes in the youth population are anticipated for the next decade, when the number of children at age 0–14 will decline from 30.4 million to 25.1 in 2004, and their percentage will reach 16.5 percent of the population. It should be noted that the proportion of children at age 0–4 will almost stabilize then, and the most important changes will be observed in the 5–14 age group.

Elderly population (ages 60+). From 1959 to 1990, the elderly group demonstrated the most rapid growth. The numbers of persons aged 60–74 and 75 and over both doubled over this period. As a result, at the beginning of the 1990s the proportion aged 60+ reached 16 percent, and will increase to 20 percent by the year 2015. It is worth pointing out that the increase in the oldest old (ages 75 and over) will be the fastest. By the year 2015, nearly one out of every three people age 60 and over is projected to be in the oldest old category (75 percent).

Working age population (ages 15–59). As a result of steady growth in 1960s and 1970s, the working age group gained 15 million people between 1960 and 1979. During the next 14 years (from 1980 to 1993) its size did not change, but the percentage relative to the total population dropped from 65 to 61. According to the medium variant of CDHE projections, in the year 2006 this age category will reach its peak—the highest in all Russian history in terms of absolute numbers (97 million) and in percentage terms (66 percent). However, this will not last long. The year 2006 is a turning point for this trend, after which, in the next nine years, the size and percentage of this group will drop again to the level of the mid-1990s.

Dependency Ratios

Population age structure ratios, sometimes referred to as dependency or support ratios, are often presented to capture relative changes in the sizes of different age groups. Figure 6.7 shows that in the year 2015, the total support ratio—the ratio of persons in the combined young (0–14) and old (60 and over) groups to those at ages 15–59—will be at almost the same level as in 1959. However, between these two time points, the total support ratio will have passed through three periods of increase and two periods of decrease. The highest level of the total support ratio was 67.6 percent in the year 1965, while the lowest level is projected to be 50.7 percent in the year 2006.

The elderly support ratio (the age 60-and-over group relative to the 15–59 group) demonstrates a steady increase over this period, with only moderate deviations from the linear trend. The waved trend of the total support ratio, therefore, is mainly due to the irregular changes in the youth support ratio (the age 0–14 group relative to the 15–59 group). Fluctuations in numbers of births played and will continue to play the main role in these changes. This is especially true for the periods of decline in total support ratios. From 1965 to 1980, the total support ratio was decreasing when the large birth cohorts of the 1950s came to be of working age and were replaced by the small birth cohorts of the 1960s. This situation will be repeated in the 1990s, because the 1980s cohorts will become of working age and the small birth cohorts of the 1990s will take their place.

In spite of the uneven character of support ratios, the general trend is very clear. Figure 6.7 reveals that the youth support ratio has been decreasing from 47.1 percent to 37.2 in 1992, and to 28.8 in 2015, whereas the elderly support ratio has been growing, from 14.5 percent in 1959 to 32.4 in the year 2015. In other words, the size of the elderly support ratio will surpass that of the youth support ratio in the next century. A clear aging shift is evident in these changing ratios. Though the youth ratio rises slightly after 2006 (because of a larger number of births), the relative growth of the aged group is striking after 2010. Thus, future changes in the total ratio will depend more strongly on the changes in the elderly group.

Median Age and the Aging Index

The changes in broad age groups and age-structure ratios described above indicate that the Russian population became older over the last three decades and that this process will continue into the next century. The median age of the population and the aging index (the percentage of persons aged 65 and over to persons under age 15) demonstrate this tendency even more clearly. From 1959

to 1993, the Russian population aged by 7 years, with the median age reaching 34 years overall (see Figure 6.8); the median ages in the year for males and females were just under 32 and just over 36, respectively. During the same period, the aging index rose from 20 to 50 percent for the overall population and is projected to reach almost 90 percent in the year 2007 (Figure 6.9). Therefore, it is reasonable to anticipate that by 2025 the number of children will equal the number of elderly. As with the median age, the index for females is much larger than that for males.

Thus, all measures of aging affirm that the Russian population has been growing older since 1959, and that Russia's present proportion of elderly is similar to that in other developed countries.

Aging in Russia: International Comparisons

International comparisons provide a basis for interpreting how far the aging process has progressed in Russia and reveal Russia's unique pattern of aging. As is apparent in Figures 6.10–6.12, the Russian population is far from the oldest (it ranks 25th by aging index and percent of oldest old, and 28th by percent of elderly). Moreover, the projected population aging in Russia is not as dramatic as in a number of Eastern European countries such as Romania, Serbia, and Bulgaria, or in a number of other developed countries such as Japan, Germany, Italy, Belgium, etc. In fact, in comparison to other developed countries, Russia has shown a relatively moderate pace of aging. The U.S. population, however, will age even more slowly. As a result, by the year 2015, the populations of these two countries will have approximately the same pattern of aging.

The fact that Russia has a younger population than most other countries with high proportions of elderly is not a surprise. Russia is still at the first stage of the aging process, in which the size of the middle-age group remains somewhat stable while the older group grows as a percentage of the population and the percentage of children declines. However, the middle-age population also continues to age, serving to strengthen the population aging process.

Russia has one of the oldest working-age populations among 30 selected developed countries, measured by the percentage of persons aged 15–64 who are aged 55–64 (Figure 6.13) and by the aging index for that category of the population (the ratio of number of persons aged 55–65 to the number aged 15–24, see Figure 6.14). This index could also be referred as the "index of replacement of the working age population." During the 1980s, it rose from 40 percent to 80

percent, and it is expected to drop to 50 percent between 1997 and 2004, after which it should rise again sharply to 130 percent by 2015.

Aging of the working-age population does not help Russia's transition to a market economy. Economic restructuring implies changes in professional composition and in employment. As in other former Soviet republics, the labor force participation rate in Soviet Russia has been enormously high (Figure 6.15). Such a rate could exist only under an ineffective economic system. Russia inherited a rigid professional structure and low professional mobility from the former USSR. Professions did not die in the former USSR, and most of the population did not ever have to change professions. Now, the situation is the opposite, and adaptation is more difficult for generations approaching the age of retirement. Thus, from the point of view of economic reforms, the age structure of the working age population plays an unfavorable role.

Most social and economic implications of aging are universal and have been studied extensively. A peculiarity of aging in Russia is that Russia is simultaneously going through a transition to a market economy. Such a transition process is always very complicated and painful, especially for the most vulnerable social groups like the elderly.

Russia's Aging Population: Discussion

Population aging is the product of a demographic transition that is the consequence of a global tendency towards social modernization. Basic changes in the economy and society associated with industrialization and urbanization have generated changes in values, attitudes, behavior, institutions, and technology, and have generally resulted in fertility and mortality decreases. These societal changes constitute the framework within which the implications of population aging have to be considered.

The main cause of population aging is the fertility transition, i.e., fertility decline and its stabilization at the sub-replacement level (Lachapelle, 1991). However, in the future, the role of mortality decrease in older age cohorts is expected to make a significant contribution to aging (Caselli and Vallin, 1990). In a number of Western countries the result of this so-called second epidemiological transition can already be seen (e.g., Martinelle, 1991).

In Russia, as in many countries of Eastern Europe, mortality trends have not yet had much influence on population aging (Velkoff and Kinsella, 1993). Russia's population is young in comparison to Western societies; the higher level of Russian mortality has contributed to this.

Two factors have determined, and will determine in the future, population aging in Russia—fertility and the consequences of demographic catastrophes of the recent past. Fertility is a universal and the ultimate determinant of population aging; it is of great importance for the aging of *any* population. By contrast, catastrophes define the specific character of population aging. Because of the ergodicity of human populations, the influence of catastrophes becomes noticeably weaker over time as the age structure forgets them. Hence, their influence is temporal by nature and is of relatively little importance for the remote future. But, for several reasons, the current and short-term consequences of such catastrophes are important, especially for social policy.

The first, and least important, reason is that demographic catastrophes affect aging rates and, in this way, can be misleading in evaluating the situation. For example, the aging of the male cohorts that had undergone the highest losses during World War II resulted in lowering the male rate of aging in comparison to that for females. As a result, the rate for the total population, which is commonly used in the demographic analysis of aging, was also lowered.

The second, but more important, reason is that demographic waves caused by catastrophes often have negative impacts on social institutions and a nation's economy, as the current situation in Russia shows. Considering the demographic experiences of other countries, this is particularly unfavorable for large cohorts which follow small ones. This development has been observed for the cohorts of the 1950s and is expected to be the destiny of forthcoming generations born at the beginning of the next millennium, following the small cohort born in the early 1990s. The difference in the size of kindergarten, school, and conscript-age population subgroups of these cohorts is expected to be several million persons, and will put considerable stress on the nation's social institutions. For countries with transitional economies, like Russia, it is unclear how to address this problem.

The last example discussed shows that demographic waves are reproduced again and again by age distribution. It is evident in Figures 6.3 and 6.4 that the number of indentations in the Russian population age pyramids are expected to grow, such that there will be four large indentations in the 2015 pyramid, in contrast to the three in 1959. Over the longer term, however, the waves in the age pyramids should become smoother, due to the fact many different fertile-age female cohorts are contributing to fertility. Also, the experience of family policy in the former Soviet Union in the 1980s demonstrated that it is possible to influence

fertility and increase the number of births within a short period of time.¹⁰⁹ Thus, if such a policy were successfully implemented in 2008, it could eliminate the appearance of a new indentation in Russia's age pyramid in the second decade of the next century.

Conclusions

The dominant features characterizing Russian population dynamics since 1991 have been negative natural population growth, an aging population structure, and demographic waves induced by irregularities in age distribution. In fact, the 1990s have turned a new page in Russian demographic history. The 1990s have been characterized by an unfavorable population age structure from the point of view of slow natural growth, natural population attrition, and greater numbers of pension-age people (above age 55 for female and 60 for male) than children (0–14 years). The aging process is occurring in all regions of the country, and it is projected that the pace of change in the age structure will be especially rapid in the years 2010–2015.

Population aging occurs not only within the total population, but also within and across subpopulations, such as those of kindergarten and school ages, working and voting ages, and even the oldest-old segment of the population. It is projected that the numbers of persons approaching draft age, ages of entry for kindergarten, school, employment, retirement and the oldest ages will change dramatically through the 1990s to 2015. The changes will have wave-shaped patterns, but the general tendency in the size of any youth subpopulation is toward decrease, whereas for older sub-populations it is toward increase. Population waves require more flexibility from the social security system and decision makers. They have to be taken into consideration by policy-makers to avoid potentially negative effects on the economic and social situation, and to make maximum use of favorable situations.

Changes in the size of entry and exit cohorts have specific effects on the structure of the labor force. In Russia, new labor force entrants will exceed those leaving the labor force until the beginning of the second decade of the 21st century. In fact, between 1993 and 2006, the dependency rate will drop from 58.6 to 48.5 percent. Thus, the short-term provides a demographic "window of opportunity" to the Russian economy for approximately 10–12 years.

¹⁰⁹See paper by Zakharov and Ivanova in this volume.

By the end of the first decade of the next century, this window will be closed. Due to the long-term trends of retirement-age subpopulation growth and the decline of the youth subpopulation, the balance between entering and exiting cohorts will become negative by the year 2015. The negative impact of these trends is exacerbated when they occur simultaneously with poor economic performance, high unemployment, inflation, and stagnant productivity growth. Thus, Russia's economic growth is a crucial linchpin in averting major adverse consequences created by changes in population structure.

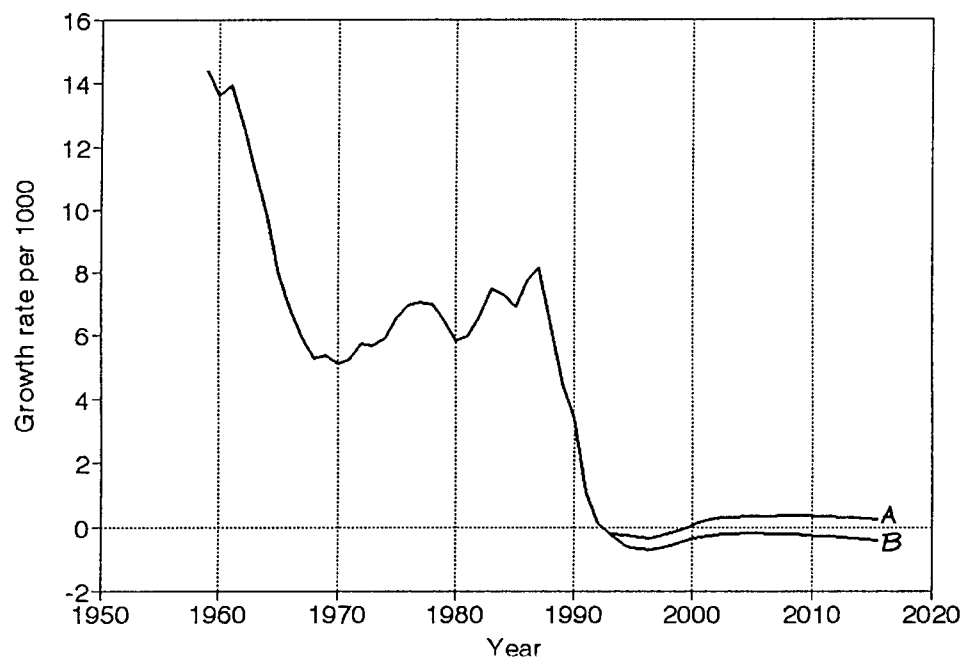
In the short-term, it is important to emphasize that Russia's demographic and economic conditions require more concerted attention. As in other former Soviet republics, Russia has had unusually high employment rates (over 90 percent for working ages, see Figure 6.15), especially for women (compared with those in other countries). However, this high level of employment now includes considerable hidden unemployment, and the surplus labor force in Russia presents immediate problems for a society shifting from a controlled to a more market-oriented economic system. Policy responses to cope with this situation could include increasing productivity through training of younger workers and retraining of older workers, and assuring income maintenance for persons of all ages.

Potential intergenerational conflicts arising from the changing proportions of younger and older persons could affect political structures and processes. The progressive aging of the voting-age population calls for further efforts to develop some system of sharing resources across generations. The political and economic transition to democracy and the market economy makes intergenerational issues especially important now in Russia for two reasons. First, the generations who devoted their labor to the former Soviet Union are in a dubious position because the resulting wealth either never existed or was lost during the reforms in the 1990s. Second, the welfare system itself is now in flux.

The geographic variation in social, economic, and demographic characteristics across Russia's large territory calls for more attention to interregional issues. Considerable variation exists in population growth rates, age distribution, and population density among the subregions of Russia, and across rural and urban subpopulations. The crucial concern for all Russian regions is sustained economic growth, which may be stimulated by greater regional economic integration. Ethnic or other social and political conflicts and poor economic performance could well undermine the capacity of the Russian nation to respond favorably to the consequences of low or negative population growth, changes in age structure, and demographic waves.

References

1. Andreev, Evgeny M. and Leonid E. Darsky, "The Population Age and Sex Structure in the USSR: Causes of Deformation and Prospects of Normalization," in *Social and Economic Consequences of Aging*, New York: United Nations, 1991, pp. 90–96.
2. Caselli, Graziella, and Jacques Vallin, 1990, "Mortality and Aging," in *European Journal of Population*, 6(1), 1990, pp. 1–25.
3. Coale, A., "How the Distribution of Human Population is Determined," *Cold Spring Harbor Symposium on Quantitative Biology*, Vol. 22, 1957, pp. 83–89.
4. Coale, A., "Estimates of Various Population Through the Quasi-Stable Age Distribution," *Annual Conference of the Milbank Memorial Fund*, 1962.
5. George, M.V., and A. Romaniuc, "Effects of Fertility and International Migration on Changing Age Composition in Canada," in *Social and Economic Consequences of Aging*, New York: United Nations, 1991, pp. 260–271.
6. Lachapelle, Rejean, "Effects of Mortality, Fertility, and International Migration on Age Structure: An Application of the Open Stable Population Concept, in *Social and Economic Consequences of Aging*, New York: United Nations, 1991, pp. 272–280.
7. Lopez, A., "Asymptotic Properties of a Human Age Distribution Under a Continuous Net Maternity Function," in *Demography*, 4(2), 1967, pp. 680–87.
8. Martinelle, Sten, "On the Causes of Changes in the Age Structure: The Case of Sweden," in *Social and Economic Consequences of Aging*, New York: United Nations, 1991, pp. 84–89.
9. Velkoff, Victoria A., and Kevin Kinsella, *Aging in Eastern Europe and the Former Soviet Union*, Washington, D.C.: U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1993.
10. *Population of Russia*, Moscow: Eurasia Publishers, 1994. (In Russian: "Economically Active Population.")



A: For 1994–2015, estimates that assume high fertility, low mortality, and high net immigration.
 B: For 1994–2015, estimates that assume low fertility, high mortality, and no net immigration.

Figure 6.1—Annual Population Growth Rates, Russia, 1959–2015

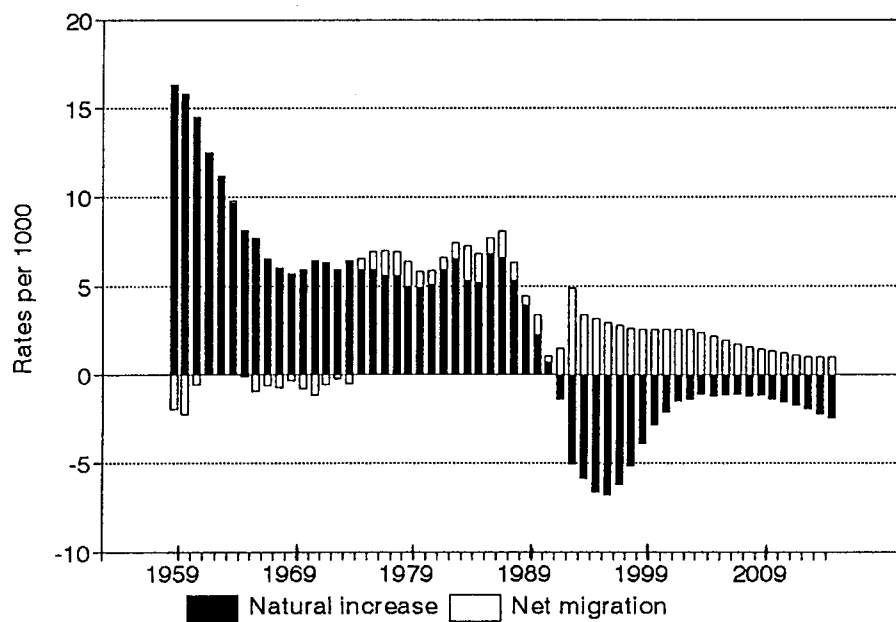


Figure 6.2—Components of Population Growth, Russia, 1959–2015

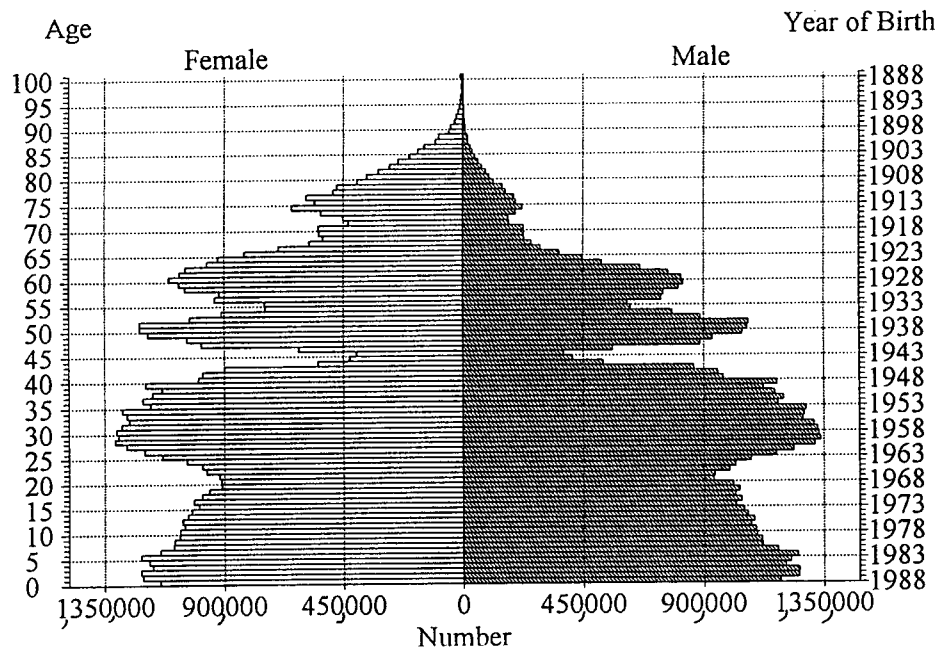


Figure 6.3—Population Pyramid: Total Russian Population, 1989

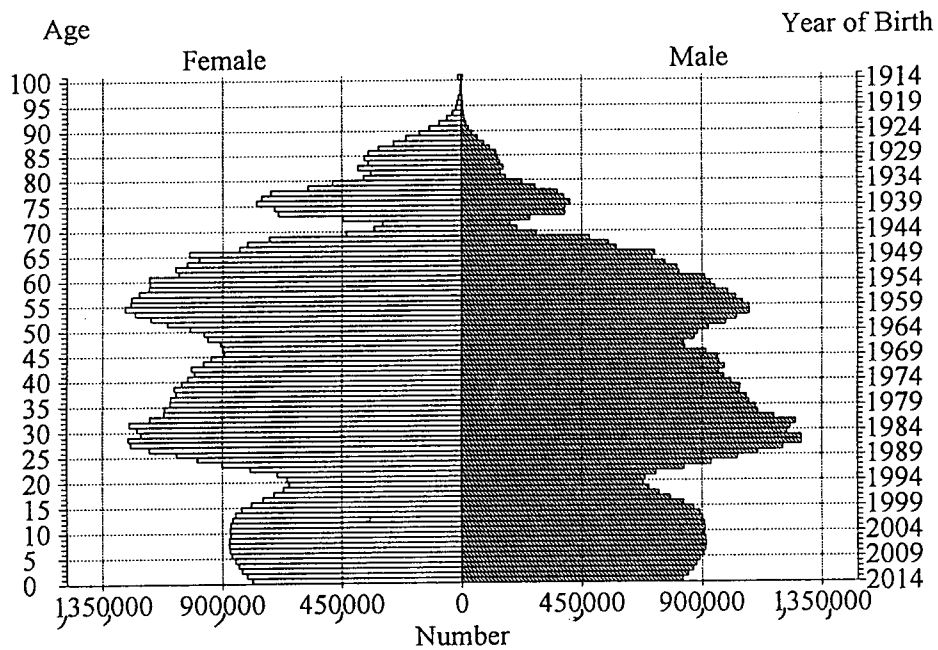


Figure 6.4—Population Pyramid: Total Russian Population, 2015

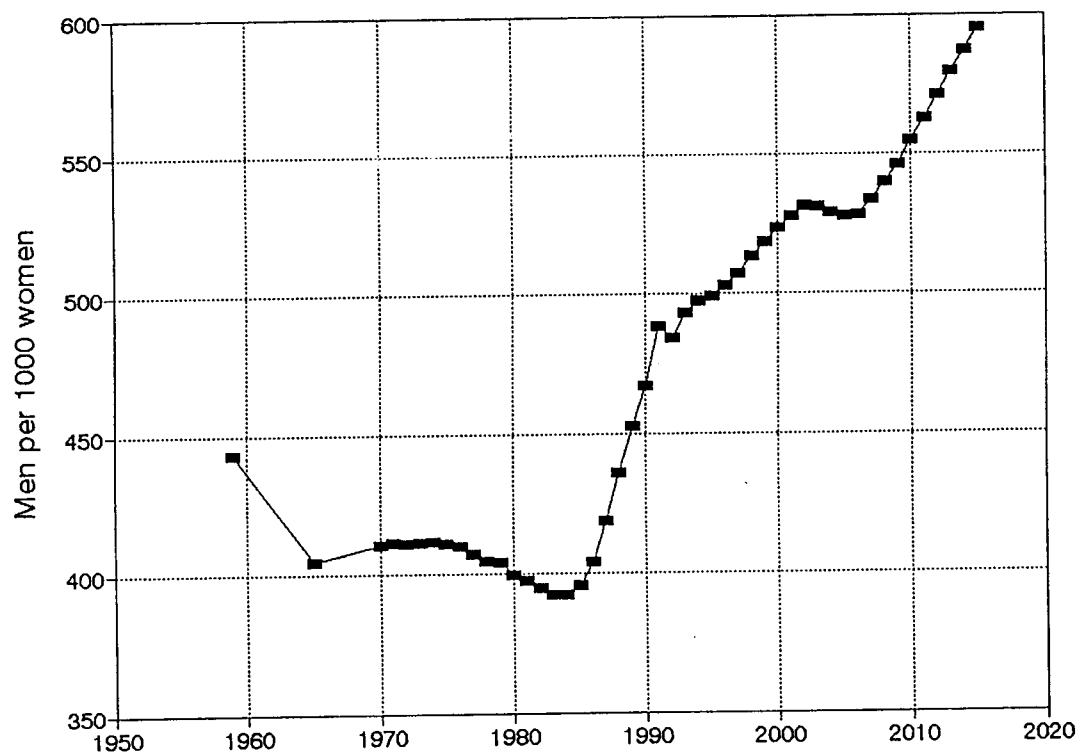


Figure 6.5—Sex Ratio For Persons Age 60 and Over, Russia, 1959–2015

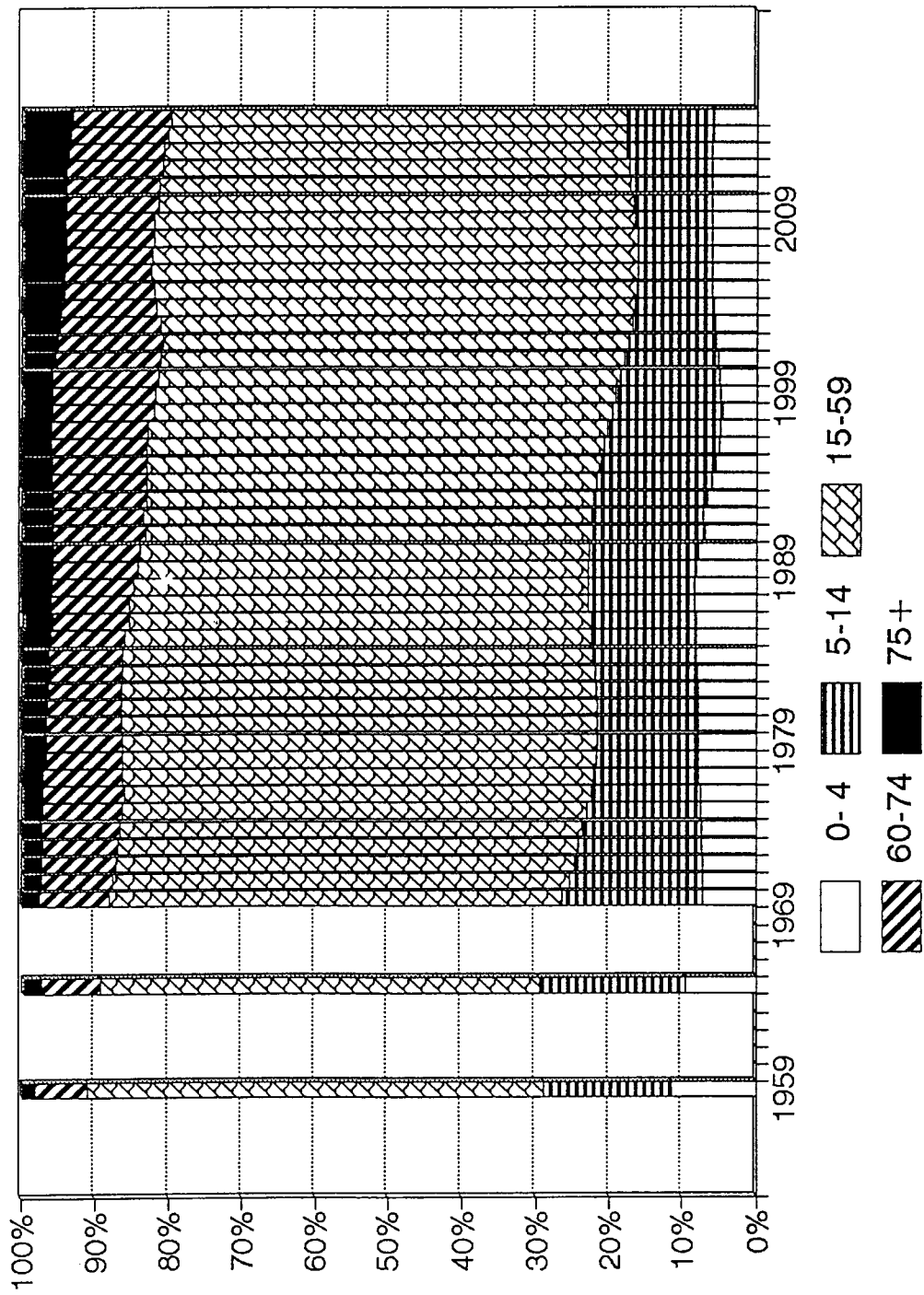


Figure 6.6—Percentages of Five Broad Age Groups, Russia, 1959–2015

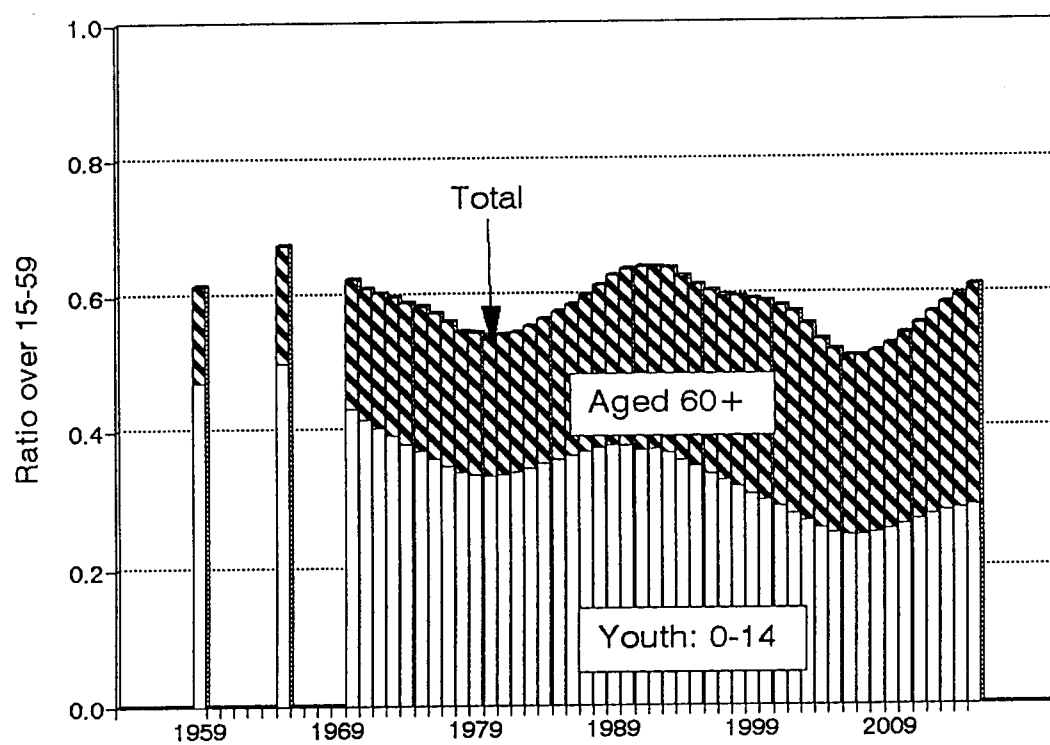


Figure 6.7—Age Structure Ratios, Russia, 1959–2015

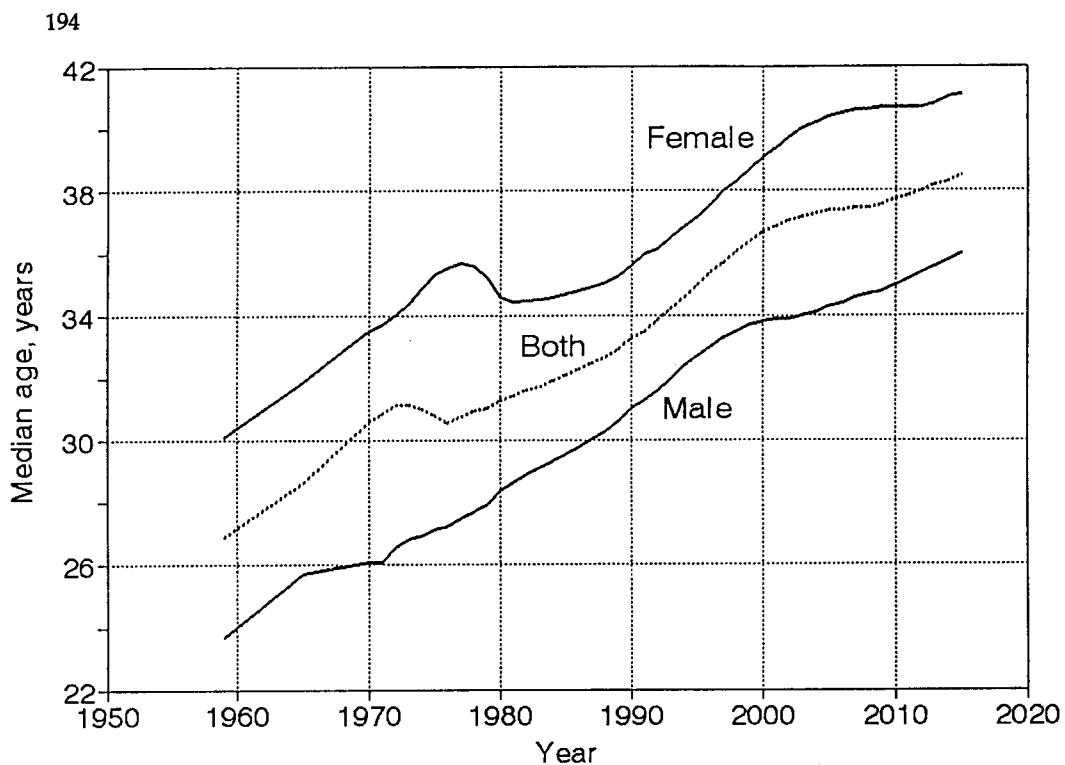


Figure 6.8—Median Age, Russia, 1959–2015

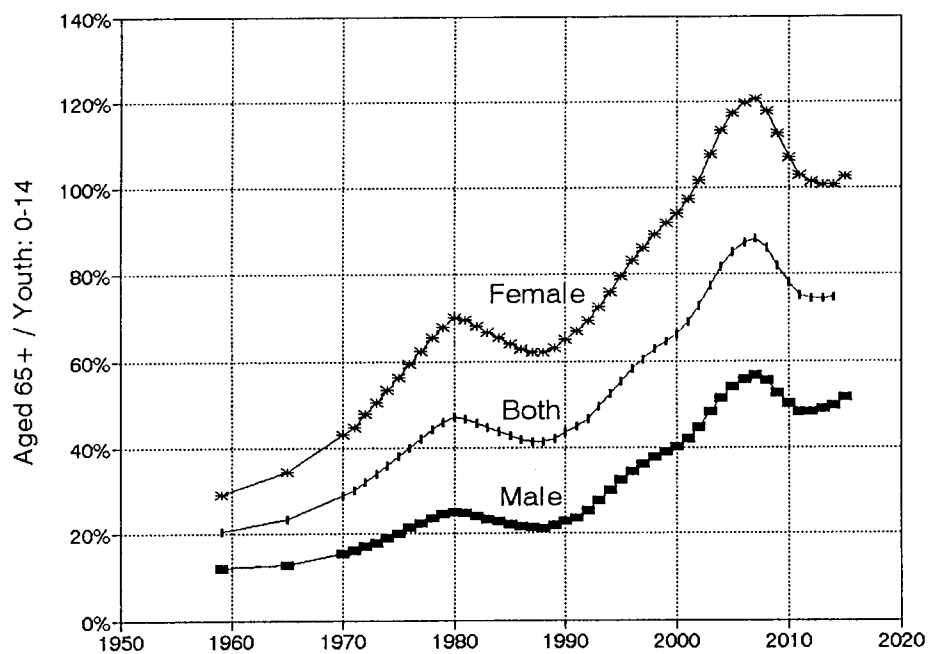


Figure 6.9—Index of Aging in Russia, 1959–2015

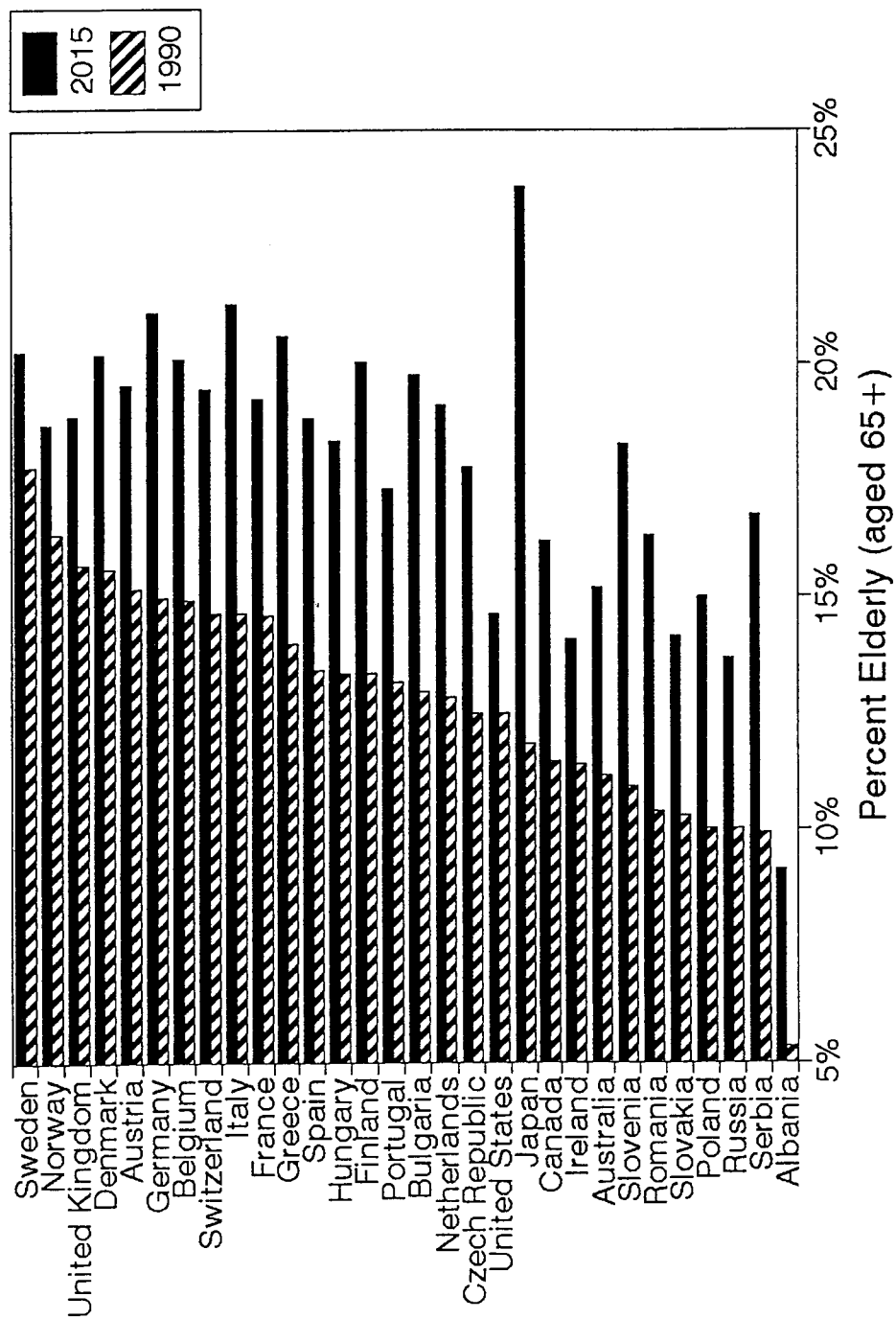


Figure 6.10—Percent Elderly in Developed Countries, 1990–2015

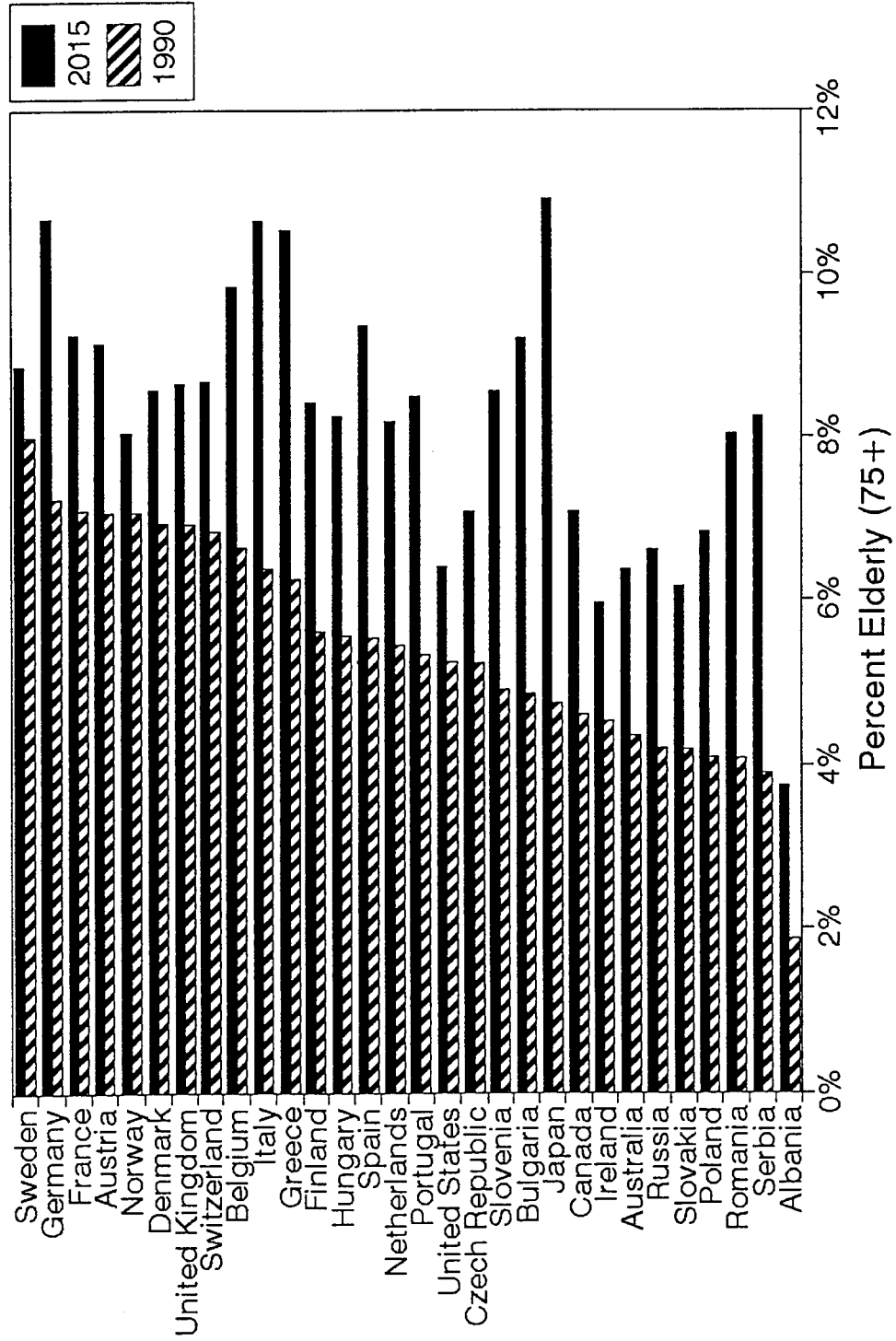


Figure 6.11—Percent Oldest Old in Developed Countries

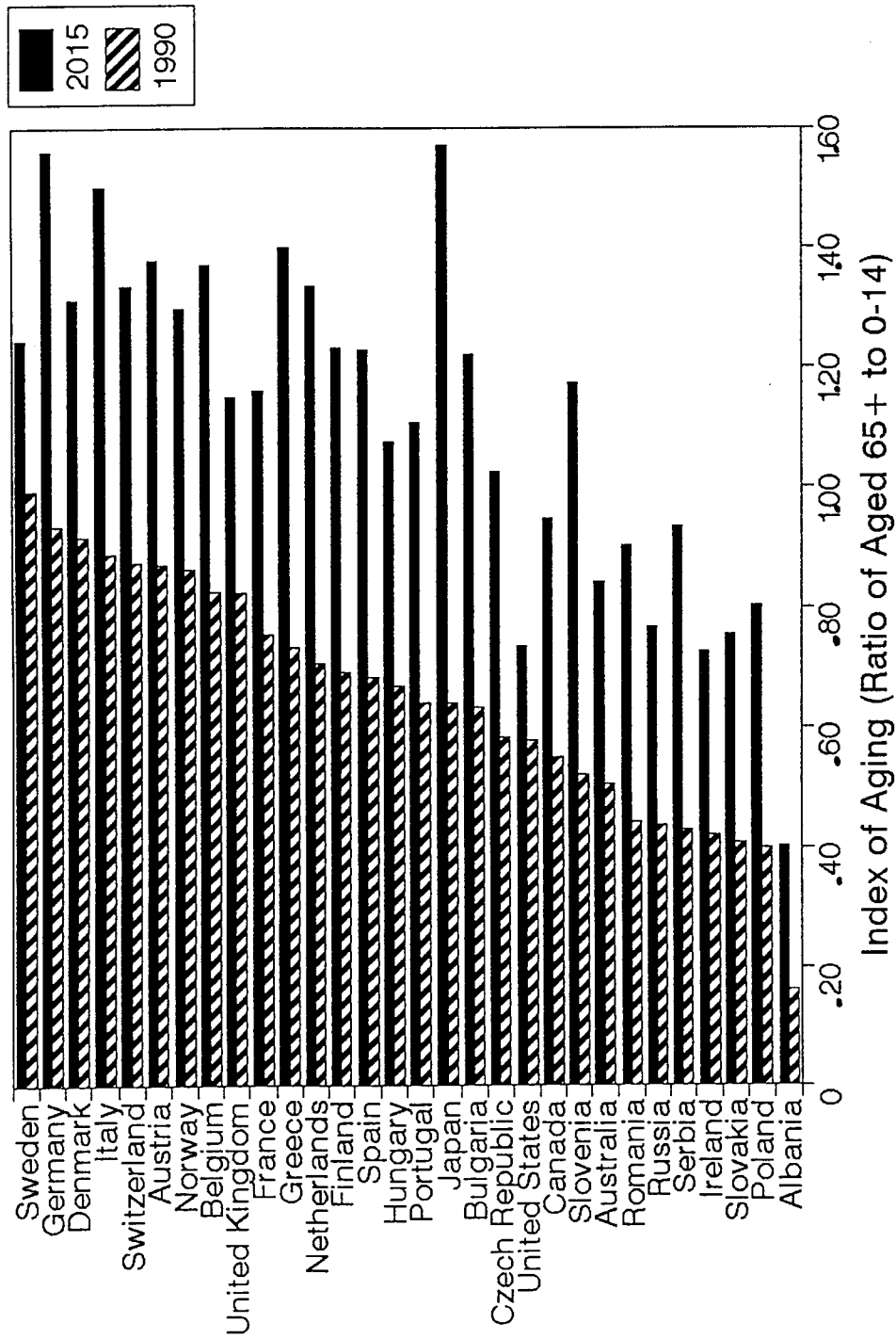


Figure 6.12—Index of Aging in Developed Countries, 1990–2015

30 Selected Developed Countries: 1990 to 2015

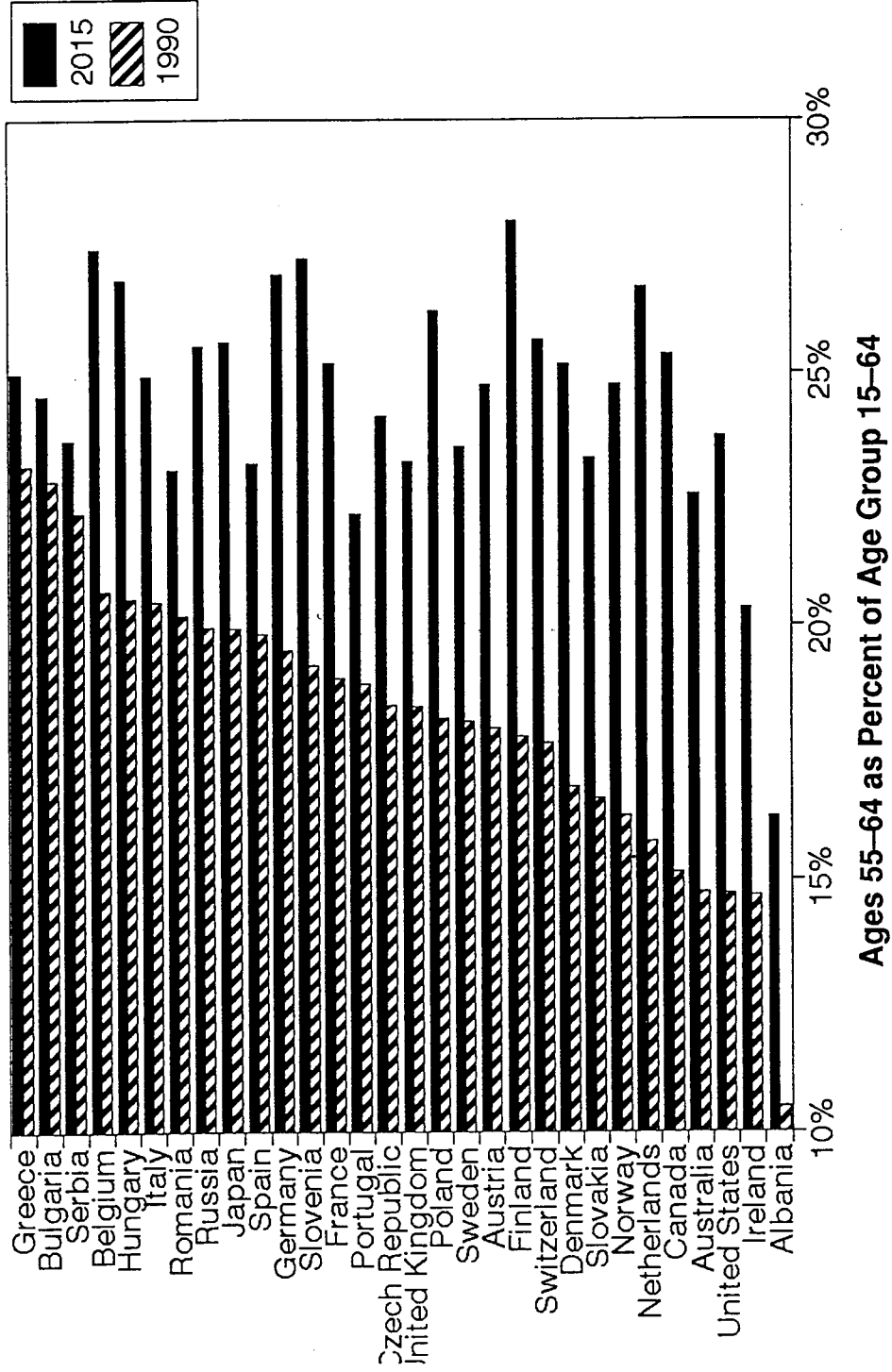


Figure 6.13—Percent Working-Age Population (Ages 15–64) Who Are Aged

30 Selected Developed Countries: 1990 to 2015

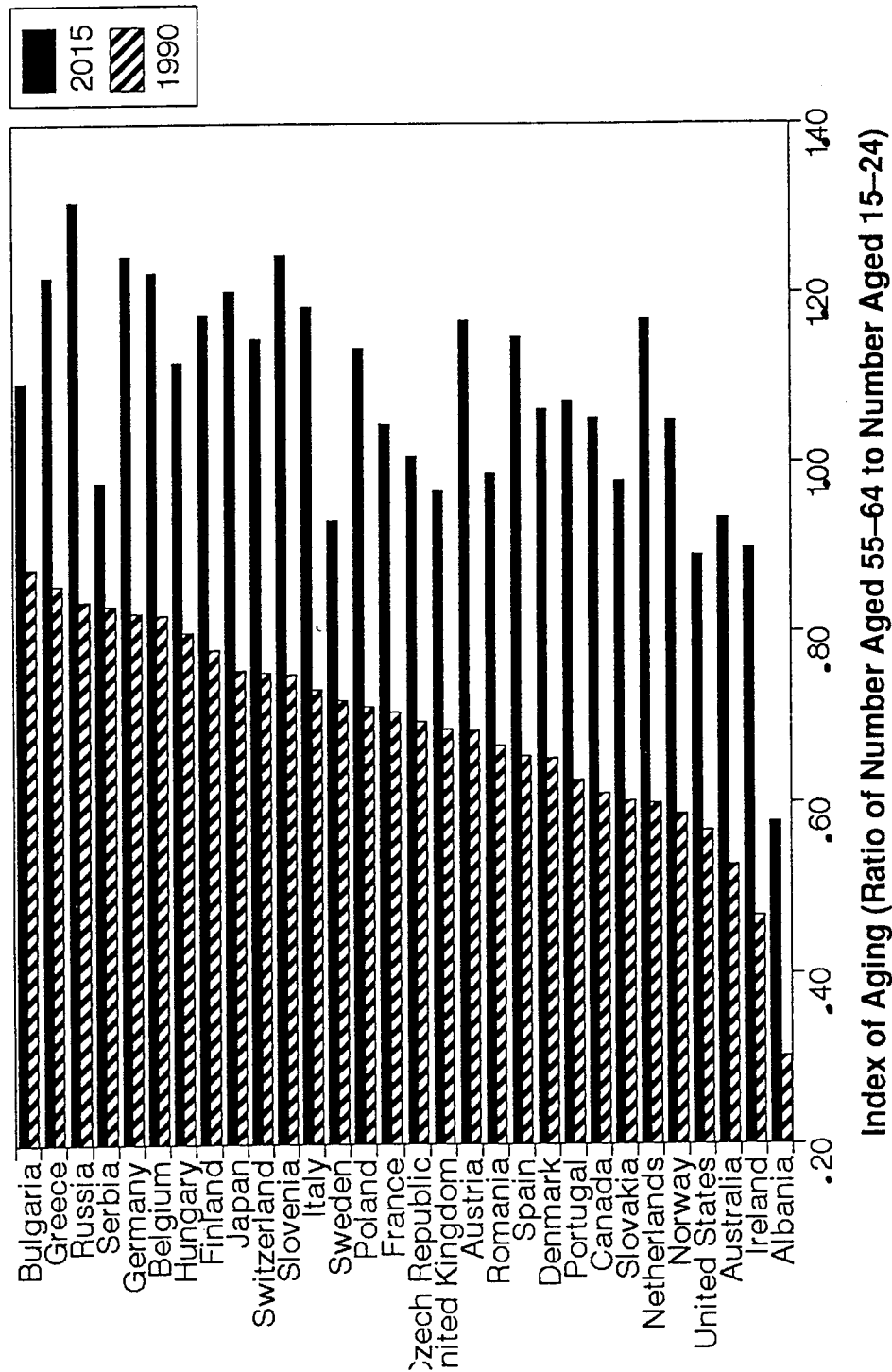


Figure 6.14—Index of Aging of Working-Age Population

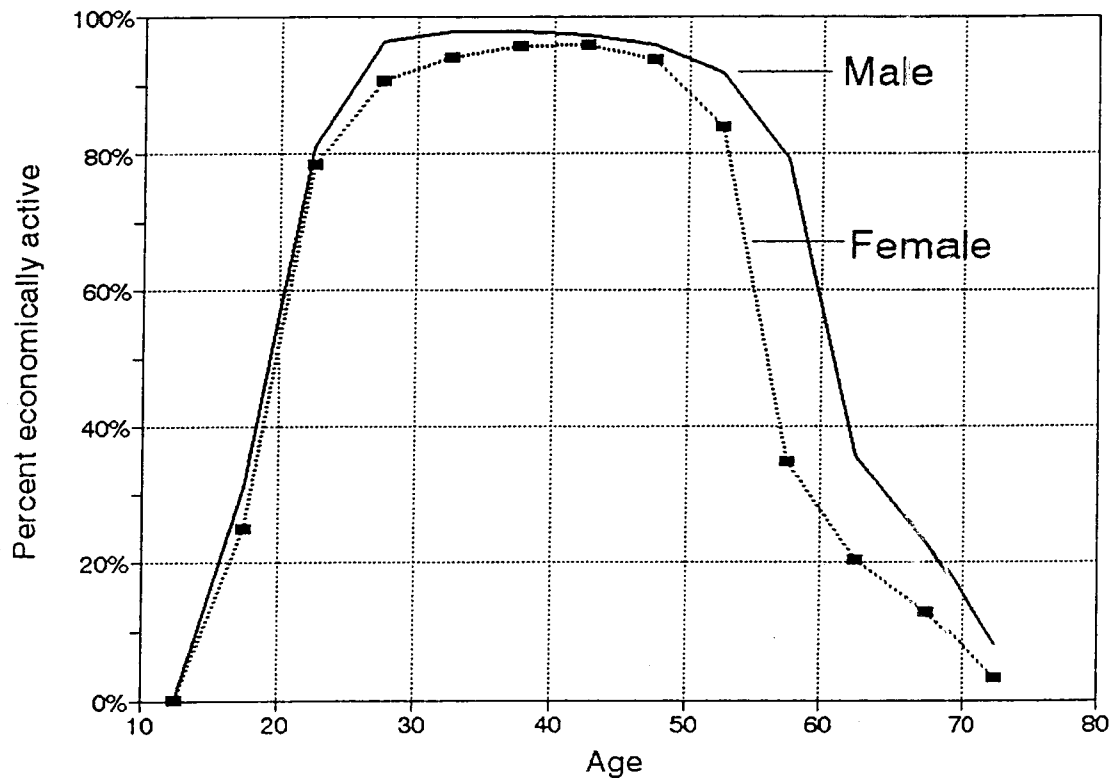


Figure 6.15—Labor Force Participation Rates for Russia, 1989

Discussants' Comments

Discussants: Constantijn Panis, RAND; and Jim Smith, RAND

Discussants of Dr. Vassin's paper noted that Russia and the United States have very similar proportions of older people, although the shares of the elderly in both countries are still lower than in many other developed nations. Unlike the United States and other western countries, however, aging in Russia has been driven mainly by the decline in fertility, while the stagnated mortality levels have had little effect on it. In most developed countries, rapid aging places strong pressure on social security programs. For example, the U.S. social security system will face a profound crisis if no radical modifications are enacted. Possible ways to avoid or mitigate the approaching crisis could include reducing benefits, increasing retirement age, and promoting individual savings. In Russia, the situation is aggravated by the fact that the old pay-as-you-go pension system is completely inadequate in the new economic environment. At the same time, high inflation has depleted individual savings and continues to be a strong disincentive for saving in the future. The official retirement age in Russia is very low—60 years for men and 55 years for women—and any future pension reform will have to contemplate its increase, regardless of an inevitable social opposition. However, the well-being of older people in Russia, as in other countries, will depend not only on the viability and flexibility of a formal social security program but also on family and other informal intergenerational networks of support.

CONFERENCE AGENDA

Russia's Demographic Crisis in Comparative Perspective

June 5–6, 1995

RAND, Santa Monica

Monday, June 5, 1995

10:00 **Introductory Remarks**

Speakers: Jeremy Azrael
 Julie DaVanzo

10:15 **"Family, Fertility, and Demographic
 Dynamics in Russia: Analysis and
 Projections"**

Presenter: Anatoly G. Vishnevsky
 Chair: Jim Hosek
 Discussants: Ward Kingkade
 Julie DaVanzo

11:45 *Lunch: Patio 6*

13:15 **"Fertility in Russia: The Second
 Demographic Transition"
 and
 "Family Planning in Russia: We Gained
 More Than We Lost," by the late Andrei A.
 Popov**

Presenter: Sergei V. Zakharov
 Chair: Anne Pebley
 Discussants: Catherine Jackson
 Jack Molyneaux

15:15 *Break*

15:30–17:00 **"Brain Drain: Current Trends and Migration
 of Russian Scientists and Engineers"**

Presenter: Valentin A. Tikhonov
 Chair: Georges Vernez
 Discussants: Vladimir D. Shkolnikov
 Kevin McCarthy

17:00 *Reception: Patio 6*

Tuesday, June 6, 1995

9:00 "Epidemiological Crisis in Russia"

Presenter: Vladimir M. Shkolnikov
 Chair: Sandra Geschwind
 Discussants: Ward Kingkade
 Elizabeth Frankenberg

10:30 *Break*

10:45 "Health Policy Issues in Russia"

Presenter: Boris A. Rozenfeld
 Chair: Joan Buchanan
 Discussants: Dana Goldman
 Jack Molyneaux and Paul
 Gertler

12:15 *Lunch: Patio 6*

13:30 "The Problems of an Aging Population in Russia"

Presenter: Sergei A. Vassin
 Chair: Lee Lillard
 Discussants: Constantijn Panis
 Jim Smith

**15:00 Panel Discussion:
 "Political, Economic, and International
 Implications of Russia's Demographic
 Processes"**

Panelists: Jeremy Azrael
 Anatoly G. Vishnevsky

16:00 *Break*

**16:15 Panel Discussion:
 "Data Needs and Key Issues for Further
 Research"**

Panelists: Julie DaVanzo
 Lynn Karoly
 Ward Kingkade
 Jim Smith
 Anatoly G. Vishnevsky

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Russia's Demographic Crisis in Comparative Perspective
June 5–6, 1995
RAND, Santa Monica

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