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RUSSIA'S PEACETIME DEMOGRAPHIC CRISIS: *Dimensions, Causes, Implications*

By Nicholas Eberstadt

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Russia's Peacetime Demographic Crisis:

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FOREWORD

This report represents the culmination of a three-year research project, commissioned by The National Bureau of Asian Research and led by Nicholas Eberstadt (American Enterprise Institute), to investigate Russia's emerging political economy through the unique prism of that country's demographic profile, and assess the implications thereof for Russia's future. As posited by Dr. Eberstadt in his initial research proposal, Russia's dependence on resource extraction for economic wealth at the expense of investment in human resources and capital not only bears inherent risks for Russia's ability to sustain domestic economic prosperity and stability in the long run, but also has significant implications for Russia's future political outlook and foreign policy framework.

The challenge of the project undertaken by Eberstadt was to synthesize the disparate issues of Russia's demographic prospects, educational situation, economic outlook, institutional and legal development, domestic political tendencies, foreign policymaking, and security policy into a coherent overall explication of modern Russia's political economy. Toward this effort and to help inform Eberstadt's research, the project's first phase (2007–08) brought together an international team of experts in April 2008 to discuss "Russia's Political Economy: Trends and Implications" at a workshop co-sponsored by NBR and the Hudson Institute in Washington, D.C. Through a series of panels addressing Russia's demographic challenges; policy priorities in the country's health and education sectors, natural resource development, and public finance infrastructure; and the impact of Russia's resource-based economy on its domestic politics and foreign policy outlook, workshop panelists discussed and assessed the complex interplay among social, economic, and political pressures shaping Russia's emerging political economy.

It is significant that the workshop took place prior to the global financial crisis, and the subsequent fluctuation in resource prices, of late 2008. Confidence in Russia's ability to sustain its decade-long economic successes, attributed largely to its vast natural resource wealth and fortunate happenstance of high global price and demand for oil and natural gas, took on a new meaning in the face of the inevitable impact on gas demand and price of a weakened global economy. In that light, the portent of the workshop's conclusions that the "long term growth potential, and indeed the health of its socio-economic fabric, will be threatened when Russia either runs out of resources or when global demand and oil prices decrease" loomed closer on the horizon than perhaps anyone had anticipated. The impact of the crisis also spotlighted the workshop's findings regarding the vulnerabilities of Russia's political economy, described as a "political complacency and lack of economic diversification" that is "compounded by the country's looming demographic problems in the face of a declining population and the concomitant challenges of a healthy and viable critical mass working force to contribute to long-term sustainable growth."

The implications of Russia's demographic crisis are explicated in grave detail in this final phase (2008–09) project report on "Russia's Peacetime Demographic Crisis: Dimensions, Causes, Implications." Eberstadt paints a compellingly grim picture of Russia's future demographic profile, which has serious implications for the country's domestic policy priorities as well as its ambitions to regain a preeminent position on the world geopolitical stage. Indeed, Eberstadt's report leads one to question the very viability of Russia as a resurgent power of the 21st century. The "haunting specter of depopulation," as described by Eberstadt and exacerbated by the policy framework of Russia's political economy today, portends a crisis of alarming proportions for Russia's future human and social capital, with critical implications for the country's internal stability as well as for its future security outlook. Given the importance of Russia today on the global geopolitical stage, Eberstadt's report is a highly recommended read for anyone interested in Russian affairs.

NBR would like to thank the Smith Richardson Foundation for its generous support of this project. We are also grateful for the support of Pfizer Inc. toward research for this study. Finally, we would like to acknowledge the NBR project team, fellows, and editors, whose efforts contributed to the success of this initiative.

A. Mahin Karim
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The National Bureau of Asian Research

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Russia's Peacetime Demographic Crisis:

Dimensions, Causes, Implications

Nicholas Eberstadt

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DEDICATION

To Murray Feshbach

Trailblazer who illuminated Russia's demographic terrain in the dark years;

Unceasingly generous mentor to two generations of protégés and students;

On the occasion of his Eightieth birthday

ACKNOWLEDGEMENTS

If part of the pleasure of any tale is in the recounting, so it is too with the acknowledgement of the considerable debts I have accumulated over the course of this study.

The first of these debts is to the American Enterprise Institute for Public Policy Research (AEI), where I have had the pleasure of serving as a research scholar for the past quarter century, and the honor of holding the Henry Wendt Chair in Political Economy for the past decade. Mr. Christopher C. DeMuth, the president of AEI for over twenty of those years, saw to it that the Institute would offer students of public policy an extraordinarily exciting and congenial haven for their work—a platform today unparalleled in America or elsewhere. Under Dr. Arthur C. Brooks, AEI's current president, I am confident that the Institute's greatest days still lie ahead.

At AEI, my work on this study has been both eased and greatly improved by the superb research assistance of a roster of brilliant and accomplished young research assistants. A special salute is due to the all-stars of "Team Eberstadt." Ms. Megan Davy distinguished herself in her work on the early phases of this project. Extraordinary thanks, furthermore, are due Mr. Apoorva Shah. This investigation would not have managed to achieve its ultimate scope or depth without his heroic contributions, as he and I both know.

Additional thanks go to AEI's Ms. Kara Flook for her generous and cheerful help with my unexpected inquiries on Russian language sources; to Ms. Emily Putze, who compiled the study's reference list and offered critical editorial suggestions that have made the study an easier read; and to Mr. Stephen Gunther, whose background research has informed this study, and whose caliber of work set high and exemplary standards for all future AEI interns.

My debts to the National Bureau of Asian Research (NBR), which is publishing this study, are too great to enumerate in this short space. Suffice it to say that my long and happy relationship with NBR dates back nearly two decades, over which time NBR's President, Richard J. Ellings, has overseen the development of that organization into America's foremost exclusive research center on issues of Asian (and Eurasian) public policy.

During the course of this study it has been a joy to closely work with NBR's Mr. Roy Kamphausen, Ms. A. Mahin Karim, and Mr. Michael Wills, all of whom have helped to shape this work into a more comprehensive and lasting contribution to the literature. Special and fond mention of the late Ms. Brigitte M. Gort-Allen must be recognized—she will be greatly missed by all who had the good fortune to know her. I wish to offer unusually special thanks to Mr. Jared Bissinger, whose editing of my final manuscript unerringly seemed to be able to improve upon what I had submitted. This work is also the better thanks to the hand of the members of NBR's roster of young talent, including Matthew Boswell, Jessica Keough, Jennifer Oetken, and Joshua Ziemkowski.

My intellectual debts in the preparation of this study are deep and diverse; only the very most pressing among them can be mentioned here. I would be sorely remiss, however, if I did not thank Drs. Leon Aron of AEI, Anders Åslund of the Peterson Institute for International Economics, and Harley Balzer of Georgetown University for their valuable insights and advice over the course of this work. In April 2008, at the outset of this study, I benefitted immensely from the prescient analyses of a number of Russian, European and American colleagues at a day-long workshop on "Russia's Political Economy: Trends and Implications," conducted under the joint auspices of NBR and the Hudson

Institute (and although I was formally the workshop's chair, the hard work of actually organizing and arranging for this international gathering was in fact done by NBR's Mahin Karim).

Further: Professor Richard Rose of the University of Aberdeen has helped clarify my thinking on a number of issues addressed in the following pages, as has the valuable work of a number of his co-authors and colleagues. I have also made copious use of certain scholarly resources—work, indeed, that was virtually indispensible to this study. Prime among these are the Human Mortality Database (HMD), an international collaboration headed by Professors John R. Wilmoth of the University of California at Berkeley and Vladimir Shkolnikov of the Max Planck Institute for Demographic Research in Rostock, Germany, and the database of estimates and projections on international educational attainment developed by Drs. Anne Goujon, Wolfgang Lutz, and other colleagues associated with the Vienna Institute of Demography and the International Institute of Applied Systems Analysis (IIASA) in Laxenburg, Austria.

Perhaps most of all, I wish to signal the tremendous intellectual debt I owe to Dr. Murray Feshbach, who brought the importance of Soviet and Russian demographic issues to my attention some three decades ago, who found himself in the role of unofficial tutor to this novitiate over the years to follow, and to whom this study is dedicated.

Lest it go unsaid: I alone am responsible for any errors or shortcomings in the pages that follow.

This study was supported by a generous grant from the Smith Richardson Foundation, whose assistance I gratefully highlight here. Over the years I have also been the beneficiary of longstanding support from Pfizer, Inc. for my research in health, demographics and development, including the specific grant that helped me complete this study.

I would like to thank Ms. Catherine Windels of Pfizer for her abiding confidence in my research. Hans Groth MD and Jack Watters MD, also of Pfizer, have not only supported my research on Russia, but have also backed me intellectually, encouraging me to think through key aspects of the Russian conundrum more carefully. Hans and Jack already know how much difference they have made to this present study, but it pleases me to be able to recognize it at the outset of the volume.

At the end of the day, though, my greatest debt of gratitude lies with my family: with my wife, Mary, and our children, Rick, Kate, Izzi, and Alexandra. I am the much-blessed beneficiary of their wondrous and unplumbable love, and for that reason they are always my most important backers: in this study, and in every other endeavor.

Nicholas Eberstadt
Henry Wendt Chair in Political Economy
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INTRODUCTION

Russia's Demographic Crisis: Not a "Normal Country" Problem

In late 2003 and early 2004, toward the end of Vladimir Putin's first term of office as president of the Russian Federation and during the run-up to his campaign for reelection to a second term, a pair of highly regarded U.S. academics (one an economist, the other a political scientist) published a series of papers that would make a deep impression on informed thinking about Russia in Western political and intellectual circles. The topic of the studies was the Russian transition, the political and economic evolution from the old Soviet order to the new, post-Communist system that emerged after the collapse of the Soviet Union. Marshalling a broad array of economic and political data, and situating the Russian Federation's performance rankings in international perspective, these papers argued that Russia had, at last, become "a normal country." To be sure, the authors noted that, "Russia's political and economic systems remain far from perfect. But their defects are similar to other countries at similar levels of economic development." "In slightly more than a decade," they concluded, "Russia has become a typical middle-income capitalist democracy."[1]

Only a few years later, there are probably few analysts outside Russia who would volunteer a similar evaluation. An unrelenting march of events—Putin's 2005 declaration that the demise of the USSR was the "greatest geopolitical catastrophe of the 20th century"; his belligerent declamations about the United States and the West at the 2007 NATO *Wehrkunde* conference; and the progressive clampdown on press freedom, judicial independence, and electoral choice—have glaringly differentiated Russia from such

[1] Andrei Shleifer and Daniel Treisman, "A Normal Country," National Bureau of Economic Research, NBER Working Paper, no. W10057, November 2003; and *Andrei Shleifer and Daniel Treisman,* "A Normal Country," Foreign Affairs 83, no. 2 (March/April 2004): 20–38. An extended version of this argument was published as Andrei Shleifer, *A Normal Country: Russia After Communism* (Cambridge: Harvard University Press, 2005).

countries as Mexico, Brazil, Malaysia, and Croatia, to which Russia was once likened in these widely discussed studies.

In 2010, the Russian Federation no longer looks much like a typical middle-income capitalist democracy. The point, however, is that only a few years ago such a judgment was not at all eccentric, from certain perspectives. Many well-informed observers concurred with the normality thesis that was being offered at that time about the Russian system. Indeed, given the economic and political facts then available to specialists in those disciplines, it could have been reasonable to designate Russia as a normal country—or a country approaching that status. However, no student assaying the country's population trends could possibly have rendered a similar verdict—then or now. Already by 2003 and 2004, Russia's basic demographic rhythms were fundamentally, even alarmingly, different from those of such countries as Mexico, Brazil, Malaysia, and Croatia, and they remain so today.

From the demographic perspective, the Russian Federation was, and still is, not a normal country. To the contrary it was and is a country in the grip of a highly anomalous, peacetime demographic crisis. This study is an exposition of those terrible and ongoing trends.

To be sure, observers of population are sometimes all too ready to label any given demographic trend as a crisis, be it the rapid increase of human numbers in low income regions or the stagnation of population growth in more affluent societies of Europe and East Asia. By any impartial valuation, however, the Russian Federation is incontestably victim to a genuine and severe population crisis today. The country's population is steadily shrinking, mortality levels are nothing short of catastrophic, and the human resource base appears to be on a trajectory of dangerous erosion. During the decade-long economic boom from 1999 to 2008, when the country's natural resource exports facilitated a spurt of sustained rapid growth, these problems were temporarily obscured. Today, in the wake of the world economic crisis and slumping international demand for natural resources, they are once more inescapably exposed.

Russia's demographic problems are not typical, much less normal, for a contemporary society. Worse still, there is little evidence that any general process of self-correction is as yet underway for the afflicted population.

The following pages will document and analyze this most unusual—indeed abnormal—population crisis. The study is divided into two parts. The first part examines what we might call the arithmetic of Russian depopulation, such as the trends in births, deaths, and migration that are driving the Russian Federation's strange peacetime depopulation, as well some of the factors behind these atypical trends. The second part moves beyond the arithmetic of population change to examine some other aspects of the Russian population profile, such as population aging, patterns of education and labor productivity, and "social capital." These aspects are perhaps less routinely assessed in demographic surveys but are arguably hardly less important to individual well-being and society's prospects.

Russia's demographic travails qualify as nothing short of a humanitarian catastrophe in the modern world. The implications and consequences of this catastrophe, however, extend beyond the realm of humanitarian sentiment alone.

PART I

FEWER BUT NOT BETTER: THE DEMOGRAPHICS OF RUSSIA'S DEPOPULATION

In March 1923, months after the formal constitutional establishment of the Union of Socialist Soviet Republics (USSR), and only months before his own death, Vladimir I. Lenin, the indispensible strategist and prolific theoretician behind Russia's Communist Revolution, wrote his final political essay. Its memorable title—still known to every literate adult in Russia today—was "Better Fewer, But Better."[1]

In "Better Fewer, But Better," Lenin considered the prospects for the fledgling Soviet state. There could be no doubt, he assured his readers, as to the eventual triumph of Communism, and not just in Russia but across the entire earth. Sheer human numbers worldwide, he wrote, were on the side of this revolution. More immediately, however, the success (if not the fate) of the Soviet project would turn not on population mass but on population quality—more specifically on the acumen and dedication of the cadre committed to constructing socialism within the USSR. Thus for now, Lenin instructed, "We must follow the rule: Better [to] get good human material… than work in haste without hope of getting any at all."

In Russia today, Lenin's famous aphorism can only have a bitter and ironic aftertaste. This is, in part, because of the carnage the ultimately failed Soviet experiment would inflict on its own subjects in the name of building utopia. For three generations, "better fewer, but better" was taken to mean that massive human losses at the hand of the state were acceptable as long as the Kremlin's own objectives were advanced in the process.

But only in part. The bitter irony of the aphorism also bites today because independent Russia, while freed from the nightmare of Soviet totalitarian rule and at last unshackled from the quasi-colonial apparatus that bound the country to fourteen "fraternal" socialist states, is currently in the middle of a demographic crisis that could have scarcely been imagined by the Marxist-Leninist theoreticians of yore, much less comprehended by their intellectual descendants today.

Russia is in the throes of a terrible peacetime depopulation. From one year to the next, the population is becoming progressively smaller. Unlike other modern societies facing population decline—Japan, Germany, and Italy among them—this descent is unaccompanied by any improvement in the health outlook for the remaining citizens. Rather, the country is caught up in an alarming upsurge of general mortality, and is witnessing a grim downward spiral in levels of public health. In a modern world that is being transformed by steady health progress, significant elements of the Russian population must contend with less favorable odds for celebrating their next birthday than were enjoyed by their ancestors before Lenin's revolution.

This first section of our study will focus on the basic demographics of Russia's ongoing peacetime depopulation, outlining its dimensions, analyzing its components, and attempting to account for some of the factors and phenomena that may be behind it. From a purely arithmetic standpoint, births, deaths, and migration must account for changing populations in any country. Accordingly, we will examine Russia's trends in each of these areas.

Chapter 1 presents data on the scope and scale of the Russian Federation's current depopulation, placing this peacetime population decline in international and historical perspective. Since the end of the Soviet era, Russia's total population has fallen by nearly 7 million. In the postwar period, only one country has suffered a larger population drop: China in the wake of the disastrous "Great Leap Forward" campaign. In Communist China, however, the country's population stabilized and demographic growth resumed once the Great Leap was abandoned and a more practical

[1] V.I. Lenin, "Better Fewer, But Better," *Pravda*, March 4, 1923, translated in V.I. Lenin, *Collected Works*, vol. 33 (Moscow: Progress Publishers, 1965), 487–502, http://www.marxistsfr.org/archive/lenin/works/1923/mar/02.htm.

policy regimen was embraced. There is no obvious or comparable policy remedy for relieving contemporary Russia's great leap downward.

Chapter 2 considers trends on births and family formation in Russia today. In the years immediately following the end of Soviet power, Russia's birth rates collapsed. This fall-off in fertility, however, is not the principal factor behind the Russian population decline. Furthermore, it is far from evident that Russia's descent into steep sub-replacement fertility is a temporary perturbation. Even in the Soviet epoch, Russian fertility levels were often among Europe's lowest. Over the past two decades, moreover, Russian patterns of marriage, divorce, and co-habitation have been undergoing rapid change, seemingly replicating familiar norms in Western Europe. This transformation would hardly seem auspicious for a sustained birth upsurge, especially considering the enormous income gap that separates parents in Russia and Western Europe today.

Chapter 3 examines Russia's trends in mortality, placing them in international perspective and disaggregating their components. Simply put, Russia is experiencing a health disaster. Even by the unexacting standards of Gorbachev-era survival schedules, the country has suffered, since the end of Communism, over three times the toll of World War I. For males and females alike, life expectancy at birth in Russia is lower today than during the Khrushchev era, well over four decades ago. General health levels in Russia today, in fact, compare unfavorably with those prevailing in many third world countries, and in some respects even with a number of fourth world countries (that is to say, desperately poor contemporary societies where income levels and living standards fall well below those prevailing in the third world). Yet Russia's means of attaining these appallingly high levels of mortality are frighteningly new. No fourth world country, after all, could have the material wherewithal or modern comforts to generate the sorts of death rates from heart disease that have been felling Russia's men and women in droves in recent years.

Chapter 4 takes a closer look at Russia's dreadful new patterns of mortality and health, seeking explanations from both historical analogies and the contemporary literature on public health. However we try to frame it, Russia's health performance is exceptionally bad. Other transitional societies today suffered health setbacks with the breakup of the Soviet imperium. Russia's, though, has been the most extreme, even though other post-Communist societies appear to have experienced even more serious economic shocks. When we look to the prewar era, moreover, we find that a number of Western societies endured steep and prolonged economic slumps, some apparently comparable in magnitude and duration to Russia's post-Soviet economic crisis. None of the societies, however, registered anything like the health setbacks that have occurred in modern Russia. In a proximate sense, modern Russia's mortality explosion has been due mainly to heart disease (CVD) and injuries. Alcohol abuse, smoking, poor diet and inadequate health care stand out as immediate possible explanations for such public health problems. Each of these likely plays a part in modern Russia's health tragedy. The problem is that Russia's mortality problem looks to be even worse than the public health literature would lead us to expect. Russia's greatest killer, for example, is its remarkably high level of deaths from CVD, yet the classical risk factors developed from six decades of research on Western populations simply cannot account for why Russia's CVD mortality rates are so very high. The health disaster underway in Russia, in short, is not only outside Western experience; in important ways, it may still be beyond Western understanding.

Chapter 5 investigates modern Russia's migration situation. Migration is one potential mechanism for improving individual wellbeing, promoting economic development, and, not least important from the purposes of this study, mediating Russia's population decline. Since

the end of the Communist era, voluntary migration—both international and domestic—has become incomparably easier in Russia. Though data on migration is problematic and at times even contradictory, there is little doubt that Russia has enjoyed a very substantial net influx of men and women from beyond its borders during the post-Communist era. These many millions of newcomers have had the beneficial impact of augmenting Russia's manpower pool, expanding national output beyond where the level it would otherwise have been (for their part, Russian migrants overseas have regularly been remitting billions of dollars back home, which underscores the often-overlooked fact that emigration is not necessarily a bad thing for the sending country). All in all, net migration may have cushioned Russia's population decline rather substantially. Absent any international migration, Russia's post-Communist population drop to date would have been closer to 13 million than the roughly 7 million officially registered.

The increasing ease of voluntary travel to and within Russia has also been accompanied by some complications and inadvertent consequences. One of these has been to highlight the question of ethnicity and assimilation in what remains, for all intents and purposes, a multi-ethnic society. Another is to accentuate what some would describe as regional imbalances. Over the past two decades—since the last Soviet-era census—the population of Moscow has steadily swelled, while the Russian Far East (always sparsely populated) has steadily emptied. Few Russians, it seems, wish to live in the Russian Far East. Yet the territory adjoins some populous and densely-population parts of Northeast Asia. We may be prompted at least to ask if Russian sovereignty in these vast and largely uninhabited reaches is, under these circumstances, a sustainable long-term arrangement.

CHAPTER 1

Depopulation, With Modern Russian Characteristics

A specter is haunting the Russian Federation today. It is not the specter of Communism but rather the specter of depopulation—a relentless, unremitting, and perhaps unstoppable depopulation. For Russia and its people, the Communist era is history. The era of depopulation, on the other hand, may only have just begun.

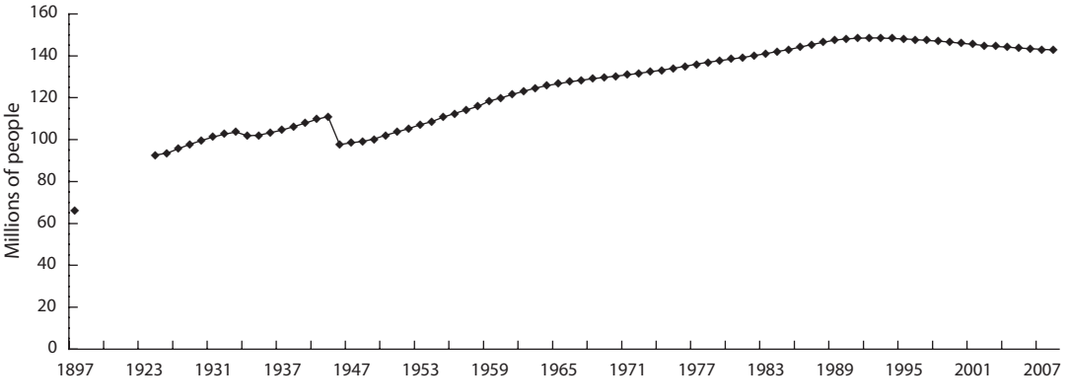
For over a decade and a half, Russia has been in the grip of a steady population decline. Since 1992, in fact, Russia's human numbers have been progressively dwindling. Almost every New Year has been celebrated by fewer people than the one before. Given their star-crossed history, Russians are no strangers to demographic decline. But the current, ongoing process of depopulation in Russia is fundamentally different from all of the temporary population drops that Russia has suffered in the past. The present depopulation, moreover, promises to be of indefinite duration. This depopulation may have monumental implications for the future, for it promises to recast the contours of life and society in Russia, to reshape the horizons for Russian economic development, and, no less portentous, to affect Russia's potential influence on the world stage in the years ahead.

Today's Population Decline in Historical Perspective

From a demographic standpoint, the twentieth century was a period punctuated by tragic reversals and pronounced losses. Over the past hundred years, indeed, Russia has experienced at least four distinct episodes of population decline, wherein national population totals have been characterized by an identifiable contraction during some specific period. These bouts of population decline are illustrated in **Figure 1.1**. The data comes from a study by Dalkhat Ediev of the Vienna Institute for Demography, who used both official statistics and Russian demographers' unofficial estimates for this reconstruction.[1] (It is still impossible to provide a specific figure for Russia's total

[1] Dalkhat Ediev, "Application of the Demographic Potential Concept to Understanding the Russian Population History and Prospects: 1897-2100," *Demographic Research* 4 (2001): 289–336, Figure 1.

FIGURE 1.1 Russia's Estimated Population: 1897-2008



SOURCE: Dalkhat Ediev, "Application of the Demographic Potential Concept to Understanding the Russian Population History and Prospects: 1897–2100," *Demographic Research* 4 (2001): 289–336, Figure 1.1 This graphic has been updated since its initial publication to reflect developments in the 2000–07 period.

population for some year's of the country's relatively recent history—a fact that speaks volumes about conditions of life in Russia at those junctures in and of itself.)

Russia's first bout of depopulation lasted from 1917 to 1923 and was caused by the upheavals that transformed the Russian Empire into the Soviet Union. It is worth noting that Russia's population actually rose between 1914 and 1917—over the course of the First World War—despite the nation's severe wartime losses. Over the six subsequent years, by contrast, Russia's estimated total population declined by over three million, or almost 4%. The fateful years 1917–23 witnessed the Russian Revolution, the Russian Civil War, the great global influenza pandemic, the establishment of the Soviet state, and the first Soviet famine. In arithmetic terms, this depopulation was attributable to the collapse of birth rates, the upsurge in death rates, and the exodus of émigrés that resulted from these upheavals.

Russia's next drop in national population took place between 1933 and 1934. In that terrible period, the country's population fell by nearly two million, or by almost 2%. This was the time of Stalin's war against the "kulaks," the notorious and vicious forced collectivization of Soviet agriculture. The toll from this man-made "killer famine," as Robert Conquest famously termed it, was especially high in the Soviet Ukraine.[2] As is apparent from Figure 1.1, however, the consequences of that policy were brutal and deadly within Russia, too. In this disaster, depopulation was driven almost entirely by a spike in mortality and, to a lesser degree, a drop-off in fertility (since starvation limits "fecundability," the capability of women of childbearing age to conceive and bear babies). With Soviet police state power in force, emigration was no longer an option for victims attempting to escape this catastrophe.

Russia's third depopulation during the past century took place between 1941 and 1946. That, of course, was the devastating cataclysm we call World War II (or as it is still known in Russia today, "The Great Patriotic War"). Over these five years, Russia's population plummeted by more than thirteen million, or over 12%. The magnitude of the overall Soviet demographic decline during this life-and-death struggle, furthermore, was far greater than this—the numbers in Figure 1.1 pertain only to the population encompassed by the present-day borders of the Russian Federation.

[2] Robert Conquest, *The Harvest of Sorrow: Soviet Collectivization and the Terror-Famine* (New York: Oxford University Press, 1987).

So devastating were the human losses that the USSR's rulers, always wary of the potential impact on the international "correlation of forces" of any revelations about their system, did not conduct a national census for twenty years (that is to say, from 1939 to 1959)—during which time human numbers, both within Russia proper and the USSR as a whole, managed to recover to prewar levels and then finally to exceed these.[3] Not surprisingly, pervasive and unnatural loss of life, especially for men, was the main driver behind this depopulation, but birth rates also sank severely during those same years due to chaos and extreme privation. Data from Russia's 1959 census gives some sense of the magnitude of that fertility collapse: for the Russian Federation under its current boundaries, that population count enumerated less than a third as many 15-year-olds (babies born in 1944) as 19-year-olds (the birth cohort from 1940). Russia also experienced net-outmigration during the war, as confusion, disarray, and upheaval suddenly permitted a perilous escape from what had been a nearly airtight "Socialist fortress" before Operation Barbarossa.[4]

The current Russian depopulation—the fourth of the past hundred years—was precipitated by tumultuous events of momentous political significance, just like the first three. The proximate historical trigger for today's depopulation came at the end of 1991, with the final dissolution of the Soviet Union and the end of Communist Party of the Soviet Union (CPSU) rule in Russia and the USSR's fourteen other erstwhile Soviet republics. So far, the post-Communist era has been witness to an almost steady population decline in the Russian Federation—in fact, almost nothing but population decline. Between 1992 and 2009, the Russian Federation experienced only two years when the estimated population did not fall. Over the course of calendar years 1992 and 1994, very slight marginal increases were registered. In fifteen of those past seventeen calendar years, population declines were noted. January 1, 2009 marked the 14th consecutive year that the Russian Federation had experienced population shrinkage. Russia's depopulation, moreover, hardly looks to be over at this writing. According to official data, the Russian Federation's total population size declined still further in the first four months of 2009.[5]

The current depopulation in Russia differs from the previous episodes in three important respects. First, Russia's post-Soviet depopulation is already by far the longest period of population decline in modern Russian history. It has persisted for over twice as long as the depopulation that followed the Bolshevik Revolution and for well over three times as long as the terrifying depopulation that visited Russia during and immediately after World War II.

Second, unlike all the previous depopulations in Russia, this one has been taking place under basically orderly—indeed basically peaceable—social and political circumstances. Whatever else may be said, the end of the Soviet Union and the period of post-Soviet "transition" were attended by very little bloodshed, and arguably as well, by remarkably little state sponsored or condoned violence (at least by any historic Russian measure). Terror and war are not the engines for the depopulation Russia is experiencing today.

This second difference, however, highlights a third: for whereas Russia's previous depopulations were wild and terrible paroxysms, they were also clearly temporary in nature. In each of those earlier depopulations, one could expect with some confidence that the population decline under

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[3] Alain Blum, *Naitre Vivre et Mourir en URSS, 1917-1991* (Paris : Plon, 1994).

[4] On wartime and postwar migration see, N.S. Timasheff, "The Postwar Population of the Soviet Union," *The American Journal of Sociology* 54, no. 2 (1948): 155; S. Maksudov, *Demographic losses of the population of the USSR* (Benson, Chalidze Publications, 1989); F. Lorimer, *The population of the Soviet Union: history and prospects* (Geneva: League of Nations, 1946); and W. Lutz, S. Scherbov, and A.Volkov, eds., *Demographic Trends and Patterns in the Soviet Union Before 1991* (London: Routledge, 1994).

[5] "Russian Population Decline Slows to 50,000 in 4 Mths," *Russia & CIS General Newswire*, June 19, 2008.

consideration would cease more or less as soon as the malign impact of state force ceased and orderly conditions restored themselves. The current Russian depopulation is fundamentally different in nature: it is proceeding gradually and routinely, in a more or less orderly manner, under more or less orderly conditions. There is no obvious external application of state force to relieve, no obvious fateful and unnatural misfortune to weather, in the hopes of reversing this particular population decline. Consequently, it is impossible to predict when (or even whether) Russia's present, ongoing depopulation will finally come to an end.

Russia's Ongoing Depopulation: Components and Dimensions

Table 1.1 outlines the trajectory of Russia's post-Soviet depopulation on the basis of official data from the Russian Federal State Statistical Service (or *Rosstat*, interchangeably called *Goskomstat* these days after the name of its predecessor organization from the Soviet era). On January 1, 1992, the Russian Federation's total population was officially estimated at 148.5 million persons. On New Year's Day 2009, the total was placed at 141.9. By the end of April 2009, it was officially below 141.9.[6] (There are some suggestions, furthermore, that the actual population total for the Russian Federation may be even lower than this reported level.)[7] Over the course of just under seventeen and a half years, Russia's population had thus fallen by nearly 7 million people, or by close to 5%. To date, Russia's ongoing depopulation is thus greater in both absolute and relative magnitude than either the population decline that followed the Bolshevik Revolution or the one that attended the Soviet collectivization.

From an arithmetic standpoint, depopulation—or for that matter, any other variety of inter-temporal population change—must represent the additive sum of three demographic factors: changes in births, changes in deaths, and changes in migration. We can explain Russia's new pattern of depopulation by exploring the data on these three factors.

In this post-Soviet era, official data on migration tends to be problematic and often incomplete, just as is the case in other contemporary European countries and elsewhere. Today would-be migrants in Russia, as elsewhere, often have reason to wish to avoid official documentation—and can succeed doing so. Official birth and death statistics, by contrast, are much more likely to be reliable and relatively complete. For this reason—but not this reason alone—we can begin by examining depopulation decline in Russia through the light cast by birth and death trends.

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[6] Goskomstat estimated Russia's total resident population as of January 1, 2009, at 141,903,979. See http://www.gks.ru/free_doc/2009/demo/popul09.htm. The officially estimated drop in population indicated for the first four months of 2009, per footnote 5 above, would place total population in the Russian Federation at around 141.85 million at the end of the first trimester of 2009.

[7] Paul Goble, "Has Russia's Population Fallen below 140 Million?" *Window On Eurasia,* September 22, 2009, http://windowoneurasia.blogspot.com/2009/09/window-on-eurasia-has-russias.html. Thus Goble:

> In preparing for what was to have been the 2010 census, the Russian State Statistical Committee (Rosstat) concluded that Russia's population may now be below 140 million, two million fewer than it has been reporting and a difference that highlights both why a census is so important and why Moscow officials may have postponed this one.
> According to a report on the Slon.ru portal, "it is possible that now live in Russia not 142 million people as has been considered all this year but 139.98 million," a figure Rosstat [Goskomstat] fixed on but does not yet report "in the process of the preparation for the census," which will now take place in 2013 ….
>
> Summing up its findings, Rosstat calculated that there are 137.8 million people registered and resident and approximately 2.3 million more registered but not resident (the figure drawn from the 2002 count) for a total of 139.98 million – far less than the 141.9 million that Rosstat put out as the country's population on July 1.
>
> Rosstat employees warned the Slon.ru journalists that its data are preliminary and suggested that no one should take them too seriously. But another said that "the difference between the data of the census and those registered should not be [as] large" as Rosstat had found in this case…

TABLE 1.1: Officially Estimated Resident Population: Russian Federation, 1990–2009 (Estimates for January 1 of Each Calendar Year)

Year	Population
1990	147665081
1991	148273746
1992	148514692
1993	148561694
1994	148355867
1995	148459937
1996	148291638
1997	148028613
1998	147802133
1999	147539426
2000	146890128
2001	146303611
2002	145649334
2003	144963650
2004	144168205
2005	143474219
2006	142753551
2007	142220968
2008	142008838
2009	141903979

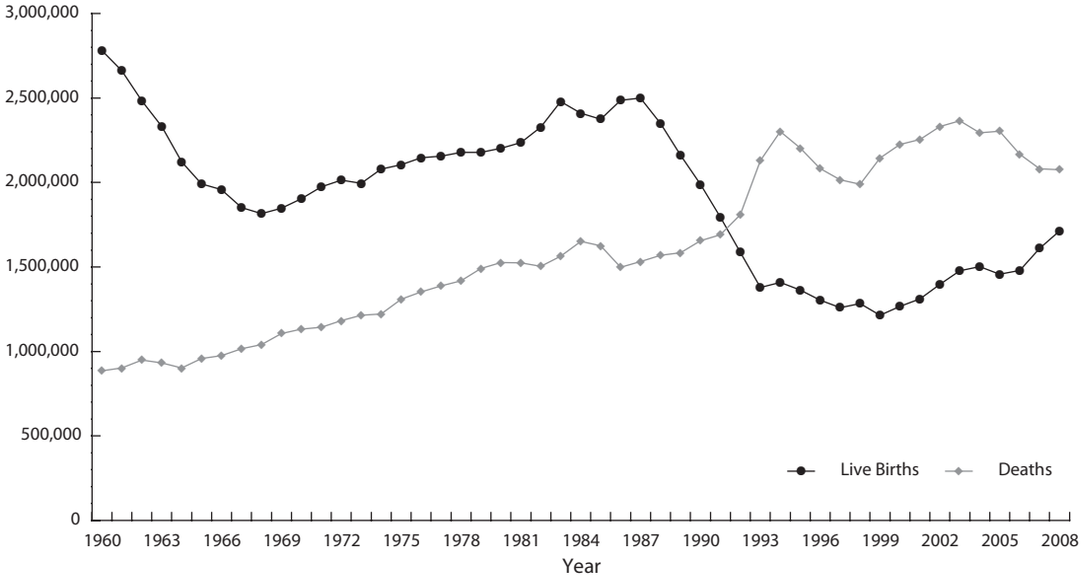
SOURCE: Goskomstat, http://www.gks.ru/scripts/db_inet/dbinet.cgi#1.

Figure 1.2 traces the trends in total live births and total deaths for the Russian Federation (and before 1992, for the territories demarcated by the present federation boundaries) from 1960 through 2008. As is immediately apparent, Russia suffered a tremendous "demographic shock" with the end of Communism: births plunged, and deaths soared. As has been detailed elsewhere, analogous "demographic shocks" attended the end of Soviet-style Communism in virtually all of the states that had been members of the Soviet Bloc[8]—though as we shall see later, the nature of Russia's transition shock differed in both severity and duration from those experienced in many of the other formerly Communist countries.

By strange coincidence, Russia's birth and death totals in the post-Soviet era, at least to date, have almost exactly reversed the totals reported during the last years of Soviet rule, with today's birth trends following old Soviet death totals, and Soviet-era birth totals nearly mirroring aggregate births for the post-Communist period. Between 1976 and 1991—that is to say, under the last sixteen years of Soviet power—Russia recorded 36.0 million births; in the sixteen post-Communist years of 1992–2007, there were just 22.3 million. That was a tremendous and prolonged fertility drop-off, an aggregate decline of nearly two-fifths (39%) from one era to the next. For their part, a total of

[8] Nicholas Eberstadt, "Demographic Disaster: The Soviet Legacy," *National Interest,* no. 36 (Summer 1994): 53–57.

FIGURE 1.2 Live Births and Deaths in Russia, 1960-2008



SOURCES: 1976–2002 data is from Goskomstat (Moscow), "Demographic Yearbook of Russia" (2004), Table 2.25; 2004–07 data is from Goskomstat, "Demographic Yearbook of Russia" (2008); and 2008 data is from Goskomstat website, http://www.gks.ru/bgd/regl/b09_06/IssWWW.exe/Stg/2/01-01.htm.

24.6 million deaths were recorded in the Russian Federation during the USSR's last sixteen years, whereas in the first sixteen years of the post-Communist period the Russian Federation tallied 34.7 million deaths. That huge increase works out to an average rise in total deaths of just over two-fifths (41%) by comparison with the Communist era.

During the last sixteen years of the Communist era, births exceeded deaths in Russia by 11.4 million; in the first sixteen years of the post-Soviet era, deaths exceeded births by a roughly similar absolute magnitude: a deficit of 12.4 million. It is quite clearly this phenomenon of negative natural increase—the surfeit of deaths over births—that has been responsible for driving depopulation in Russia since 1992.

Whereas Russia lost a net of 12.4 million in population to negative natural increase over the years 1992–2007, the country's officially estimated population fell by 6.7 million between year-end 1991 and year-end 2007. The discrepancy between these two figures is explained by migration. Unlike Soviet Russia, today's Russia is evidently capable of attracting voluntary immigrants, and in appreciable numbers. Though only a crude approximation of the true totals for net migration,[9] the discrepancies between net natural increase and net decline in national population would seem of themselves to suggest that Russia enjoyed a net inflow on the order of 5.7 million from abroad during the 1992–2007 period.

Migration (and the problematic particularities of the available Russian statistics meant to track these human flows) will be discussed at greater length later in this study. For now, it may suffice to note that net migration flows have not at all been steady over the course of the Russian Federation's brief history. In October 2002, the Russian Federation's first population census tabulated the

[9] The reason that the difference between overall natural increase and overall population change will not provide an exact total for net migration is that migrants also have children, and migrants themselves also die. The longer the period under consideration, the more significant will be the impact of migrants' descendants on birth numbers (and also migrants and their descendants on death totals). We deal with this matter in greater detail in Chapter 5.

country's population at 145.2 million—about 3.5 million lower than the official estimate for New Year's Day 1992. Over the years 1992–2002, however, Russia's total negative natural increase amounted to about 8.7 million. Very roughly, this would suggest a net influx into the Russian Federation of something over five million persons between the end of the Soviet era and the official population count in late 2002. Between the start of 2003 and the start of 2008, Russia's deaths exceeded births by about 3.7 million, and the country's estimated population dropped by about three million. Crudely calculated, net migration would have totaled about 0.7 million during those five years—a much more moderate tempo than for the first decade-plus of Russian Federation independence. In effect, Russia's population trajectory seems to have become more closely linked to the balance between births and deaths over the course of the ongoing depopulation.

The Russian Federation's Depopulation in International Perspective

The Russian Federation is by no means the only country to have registered population decline during the past two decades. Quite the contrary, depopulation might more properly be seen as a typical characteristic of post-Communist, post-Soviet territories these days. Moreover, a considerable number of developed countries that were never Communist—mainly but not exclusively in Western Europe—have already experienced some episodes of population decline, while others today appear to be on the verge of population decline. We would therefore do well to try to view the Russian Federation's current phenomenon of population decline from an international perspective.

Table 1.2 outlines the postwar record (more specifically, the record for the period since the year 1960) with respect to depopulation for 39 countries from Europe and the former Soviet republics, with depopulation defined as any recorded year-to-year drop in total population. The data for the table, incidentally, is drawn from the Council of Europe's annual compendium on demographics, the latest issue of which was released in 2006.

By the strict definition employed in Table 1.2, quite a few countries in this regional grouping have experienced at least some instances of depopulation. In fact, only a small minority of the countries under consideration—just 9 out of 39—registered uninterrupted year-to-year population growth for the four-and-a-half postwar decades under consideration here.

In Western Europe, both Ireland and Portugal registered relatively prolonged periods of population decline during the Cold War era. Ireland's population, in fact, was actually slightly lower in 1970 than it had been in 1950. Other Western European nations recording at least some year-to-year population declines during this period included Austria, Belgium, Denmark, Finland, Germany, Italy, Luxembourg, Switzerland, and even the United Kingdom. Insofar as eleven of the nineteen countries commonly described as comprising Western Europe reported some annual population declines, we might say that some experience with depopulation was in fact common to Western European countries during the Cold War era.

On the whole, however, these Western European population dips tended to be very brief and very slight in magnitude (Italy's "depopulation", for example, was limited to just one year, 1986, and entailed a decline of fewer than 4,000 persons). Moreover, the population declines in these cases were primarily a consequence of migration trends: either emigration abroad in search of opportunity (Ireland, Portugal) or release of foreign "guest workers" during recessions or cyclical downturns in the domestic economy (most of the rest). Only in a few Western European countries

TABLE 1.2: Episodes of Annual Population Decline Among 29 European and Post-Soviet Countries, 1960–2004: Instances and Magnitudes

Year	Albania	Armenia	Austria	Belarus	Belgium	Bulgaria	Croatia	Czech Republic
1960								
1961								
1962								
1963								
1964								
1965								
1966								
1967								
1968								
1969								
1970					-9210			
1971								
1972								
1973								
1974			-13444					
1975			-26827					
1976								
1977								
1978			-17989			-17140		
1979			-7770					
1980								
1981		-44700			-8785			
1982			-19909					
1983			-4550		-4994			
1984								
1985						-21334		
1986								
1987								
1988		-8400						
1989						-219328		
1990						-98039	-1743	
1991	-69711					-73804		
1992	-22625					-110602	-2820	
1993						-25100	-2587	
1994				-33103		-32345	-1306	
1995				-33145		-42703	-1010	-11817
1996				-35378		-43779	-63722	-12207
1997				-48894		-57736		-10012
1998				-47749		-52829	-9603	-9504
1999				-25757		-39495		-11523
2000	-337880	-1024		-29045		-41408		-46071
2001		-2301		-39494		-44188		
2002		-2571		-52351		-46118	-1867	-3167
2003				-49528		-44568	-933	
2004				-48989				

Year	Denmark	Estonia	Finland	Georgia	Germany	Hungary	Ireland	Italy
1960							-13800	
1961								
1962								
1963								
1964								
1965								
1966								
1967								
1968								
1969			-19015					
1970			-15941		-199613			
1971								
1972								
1973								
1974					-170395			
1975					-417362			
1976					-255847			
1977					-98424			
1978					-37564			
1979								
1980						-3976		
1981	-5115					-10751		
1982	-2815				-169917	-23262		
1983	-4615				-240251	-31282		
1984	-1327				-298943	-41636		
1985					-48680	-38940	-10183	
1986						-50641	11146	-3335
1987						-45092	-10413	
1988						-42684	-19802	
1989						-46376	-8078	
1990		-2850				-1670		
1991		-12871						
1992		-43575		-121600		-8612		
1993		-34351		-415900		-15025		
1994		-28877		-135700		-13310		
1995		-22883		-119700		-15471		
1996		-19196		-116100		-19982		
1997		-12922		-53500		-21523		
1998		-13837		-35100	-20368	-26308		
1999		-7166		-34600		-31772		
2000		-5112		-33800		-21346		
2001		-5717		-29866		-25445		
2002		-5197		-28934		-32491		
2003		-4976		-27400	-5009	-25620		
2004		-4069			-30822	-19193		

Year	Latvia	Lithuania	Macedonia FYR	Moldova	Poland	Portugal	Romania
1960							
1961							
1962							
1963							
1964						-13230	
1965						-60310	
1966						-74900	
1967						-38040	
1968						-37700	
1969						-120190	
1970					-12600	-34358	
1971						-38992	
1972							
1973						-7000	
1974							
1975							
1976							
1977							
1978							
1979							
1980							
1981							
1982							
1983							
1984							
1985							
1986						-7260	
1987						-25680	
1988						-26310	
1989						-35360	
1990						-42210	-19121
1991	-15161			-7200			-380882
1992	-57325	-12370		-11300			-32859
1993	-44771	-22633					-30506
1994	-40324	-28305		-4800			-35633
1995	-31049	-27779		-16036			-56249
1996	-24619	-27199		-14351			-74283
1997	-24123	-25752		-12813			-55769
1998	-21541	-25860		-655			-37498
1999	-21865	-24327		-5830	-13424		-33110
2000	-17461	-25076		-8962	-9348		-25028
2001	-18486	-11412		-7300	-11561		-596974
2002	-14288	-13033	-14997	-9500	-23666		-60709
2003	-12277	-16696		-10877	-27923		-61522
2004	-12769	-20533		-6999	-16773		-52724

Year	Russia	Serbia and Montenegro	Slovenia	Switzerland	Ukraine	United Kingdom
1960						
1961						
1962						
1963						
1964						
1965						
1966						
1967						
1968						
1969						
1970						
1971						
1972						
1973						
1974						
1975				-35307		-9760
1976				-36949		-17904
1977				-5710		-19048
1978						
1979						
1980						
1981						-19481
1982						-20894
1983						
1984						
1985						
1986						
1987						
1988						
1989						
1990						
1991			-1033			
1992	-30923		-4828			
1993	-297592		-4676		-129700	
1994	-58590				-386000	
1995	-329740				-431300	
1996	-471568		-3277		-478700	
1997	-397806		-2066		-447600	
1998	-411808		-6589		-452700	
1999	-768397				-488300	
2000	-740109				-506600	
2001	-864708				-702078	
2002					-398014	
2003	-998526				-381029	
2004	-693986	-21742			-341617	

NOTES: Countries included are: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Macedonia FYR, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia and Montenegro, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and United Kingdom.

SOURCE: "Recent demographic developments in Europe 2005," Council of Europe, 2006.

(Austria, Denmark, Germany, and the United Kingdom) did negative natural increase ever feature as a contributing factor in a year-on-year population decline. In most of these latter cases—all but Germany—such bouts of negative natural increase proved to be temporary and relatively muffled perturbations, best understood as "echo effects" from far greater perturbation induced upon earlier generations by World War II and the interwar Depression.

During the Cold War era, population decline was much less frequent in Communist Europe and the Soviet republics than in Western Europe. The only conspicuous exception to this generalization was Hungary, which shifted into a near-continuous depopulation at the start of the 1980s. Since 1989, however, practically all of these places have seen at least some depopulation.

Of the 22 post-Communist states whose trends are tracked by the Council of Europe, only two—Azerbaijan and the Slovak Republic—failed to register at least some instances of population decline in the period after 1989. In some of these countries—Albania, Georgia, and most of the states to emerge from the breakup of Yugoslavia—the major factor in their respective post-Communist depopulations was migration, with people moving out of their homelands *en masse* to capitalize on opportunities (for example, Albania and Georgia) or to escape the dangers that had suddenly been unleashed by political change (former Yugoslavia). In Albania and parts of the former Yugoslavia, population growth was to resume later in the 1990s.

In a number of the post-Communist states in Europe and the former Soviet Union, however, migration was not the only—or even the main—driver of population decline in those instances when depopulation was in fact registered. In these other territories, negative natural increase—an excess of deaths over births—has been a common and indeed characteristic phenomenon since the advent of the post-Cold War era. In post-Communist Europe, furthermore, negative natural increase is the principal demographic force behind depopulation in several countries today—not just in Russia.

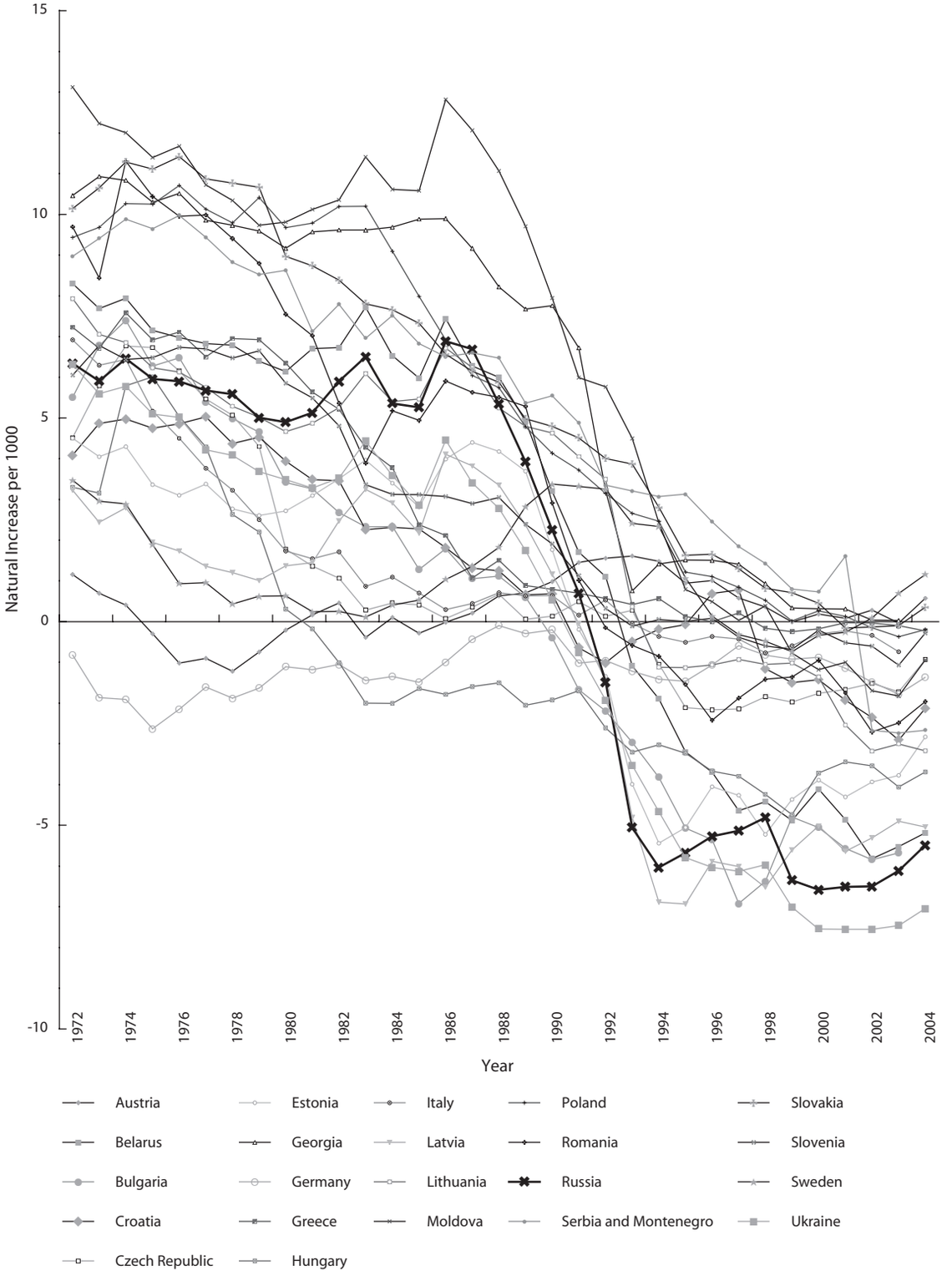
Figure 1.3 illustrates the situation with regard to negative natural increase in the post-Soviet states from 1970 onward—but for good measure, the table includes Western European countries where deaths regularly (or irregularly) exceeded births as well. All in all, according to Council on Europe tabulations, at least 22 countries in the greater European region registered at least some annual instances of negative natural increase over the three and a half decades between 1970 and 2004.

In Western Europe, negative natural increase is by now a characteristic feature of the demographic landscape in Germany. In fact, deaths have actually exceeded births on German territory for over three and a half decades for every calendar year from 1972 to this writing. Italy also appears to be entering a period of prolonged negative natural increase, and the phenomenon is seen, albeit somewhat less regularly, in Austria, Greece, and Sweden. Thus far, however, only in Germany has the excess of deaths over births resulted in year-to-year decreases in total population for a Western European country. Germany's population began falling slightly in the year 2003, and by early 2008 was estimated to be about 300,000 smaller than five years earlier.[10]

An excess of deaths over births currently typifies most of the post-Communist societies of contemporary Europe. In what was formerly Warsaw Pact Europe, the country with the longest trend of negative natural increase is Hungary, where deaths began regularly to exceed births in 1980. After the "revolutions of 1989," negative natural increase came, with greater or lesser alacrity, to characterize the balance between deaths and births in practically all of the other previous

[10] Nicholas Eberstadt and Hans Groth, *Die Demografiefalle: Gesundheit als Ausweg für Deutschland und Europa*[The demographic trap: Health as a way out for Germany and Europe] (Stuttgart: Thieme Verlag, 2008).

FIGURE 1.3: Rate of Natural Increase for Russia and selected European Countries: 1970-2004



SOURCE: "Recent demographic developments in Europe 2005," Council of Europe, 2006.

Warsaw Pact territories as well. Bulgaria has been in the steady grip of negative natural increase since 1990; Romania, since 1992; the Czech Republic, more or less since 1994.[11] Even Poland has recently marked some years in which deaths outnumbered births. For its part, the territory of the former German Democratic Republic (now known as the "new Federal States" within reunified Germany) has registered more deaths than births in 1989[12] and has continued to do so over every successive year. Much of the former Yugoslavia (Bosnia, Croatia, Slovenia, and increasingly Serbia) has likewise registered negative natural increase since the breakup of that state.

Even so, within what were once Warsaw Pact Europe and the state of Yugoslavia, local depopulations have been primarily a consequence of emigration. Only two countries out of the aforementioned grouping have unambiguously been subject to continuing population decline due primarily to negative natural increase. These two countries are Bulgaria and Hungary.[13]

Between the beginning of 1990 and New Year's Day 2009, according to official data collected by the Council of Europe and Eurostat (the European Union's Statistical Commission), Bulgaria's population fell by about 1.16 million; the surfeit of deaths over births during this same period amounted to about 700,000. As for Hungary, during its now three decade long interval of negative natural increase (1980–2009), the nation's population fell by almost 700,000, but total negative natural increase during that interim was nearly 800,000. In Hungary, as in Russia, negative natural increase has accounted for all of the country's recent depopulation and then some.[14]

With the end of the Soviet era, deaths came to outnumber births in all seven of the "European" republics of the former Soviet Union (though, interestingly enough, in none of the other eight former Soviet republics). Belarus, Estonia, Latvia, Lithuania, Moldova, and Ukraine, like the Russian Federation, are all witnessing a continuing tendency of negative natural increase. In each of these countries, furthermore, depopulation is underway at the moment. Yet only three of the former Soviet states find themselves in the midst of a population decline primarily powered by the imbalance between deaths and births. Those three are Belarus, Ukraine, and the Russian Federation. Thus far (through mid-year 2009) in their continuing depopulations, Belarus' numbers have declined by about 500,000, while Ukraine's have fallen by nearly six million.

We can attempt to put the dimensions of depopulation in those European countries where contemporary demographic declines were driven primarily by negative natural increase into comparative perspective. According to estimates and projections by the U.S. Census Bureau's International Programs Center International Data Base (IDB), which offers calculations on annual population changes for the over two hundred countries and territories it tracks around the globe, the population of Hungary declined by about 4% between midyear 1992 and midyear 2008;

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[11] In something of a surprise, however, the Czech Republic reported a slight excess of births over deaths in the year 2006—and then again in 2007 and 2008. Eurostat, "Population Change: Absolute Numbers and Crude Rates," http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database#.

[12] Nicholas Eberstadt, "Demographic Shocks after Communism: Eastern Germany, 1989–93," *Population and Development Review* 20, no. 1 (March 1994): 137–52.

[13] It is possible that there is a third such country in this grouping: namely Serbia under its current, post-Kosovo boundaries. As might be imagined, there are considerable uncertainties attendant to the demographic data series for current-day Serbia; given these ambiguities, which would require extended digression to address, we exclude it from our discussion here.

[14] Council of Europe, *Recent Demographic Developments in Europe 2005* (Strasbourg: Council of Europe, 2006); and Eurostat, "Population change." It is worth noting at this point that while a number of data sources cover demographic trends in Europe and Russia—Eurostat, the Council of Europe, the United Nations Population Division (UNPD), and the U.S. Census Bureau International Data Base (IDB) among them—in practice their actual coverage sometimes tends to be limited or idiosyncratic. UNPD, for example, does not release single-year estimates of demographic trends, offering instead only five-year averages; IDB estimates for vital trends in some European countries only commence at calendar year 1992 or 1993; Eurostat's statistical database does not offer estimates of vital statistics in some countries of the former Soviet Union before the year 1996; and so on. All this means there is no single reference source to which one may currently turn for comprehensive and detailed comparisons of postwar demographic trends in Europe. This explains our perhaps seemingly whimsical or arbitrary shift from one reference source to another for the various international comparisons presented over the course of this study.

the population of Belarus shrank by over 5% over that same period; Ukraine's tumbled by over 11% during those same years; and Bulgaria's plummeted by over 15% between 1993 and 2008. In Hungary, by the IDB reckoning, there were roughly 135 deaths for every 100 births over the 1992–2008 period; in Belarus, the ratio was about 140 deaths for every 100 births; in Ukraine, the corresponding figure was roughly 167 deaths for each 100 live births. Bulgaria, for its part, was estimated to have experienced over 150 deaths for every 100 births between 1993 and 2008. For the Russian Federation, the IDB estimates an overall population decline of just over 5% between midyear 1992 and midyear 2008, and an overall ratio of deaths to births of 156 to 100.[15]

As can be seen from this discussion, Russia's current depopulation is not a unique event. Rather, it shares some important characteristics with circumstances evident in other contemporary European societies, both post-Communist and never-Communist. Quite a few European countries are now net-mortality societies, regularly reporting a surfeit of deaths over births. A number of European countries have also reported population declines over the past several decades. Russia is thus by no means the only country to witness more or less steady shrinkage in the period since the end of the Cold War. Moreover, several other European societies—Germany, Bulgaria, Hungary, Belarus, and Ukraine—are currently experiencing ongoing depopulations primarily propelled by negative natural increase.

While the conditions framing the Russian Federation's depopulation are not unique, they are nonetheless fairly extreme within the reflection of the modern European mirror. Russia's rate of negative natural increase is not Europe's highest, but it is one of the region's highest. Although the ratio of deaths to births in Russia in the post–Cold War era is not the highest in Europe, it is close, and that peacetime disproportion is of a scale reminiscent of the ratios caused by natural disasters, wars, and chaotic upheavals in the European past.

Russia does not hold the record for the longest uninterrupted run of year-to-year population declines in the modern world—that accolade probably goes to Bulgaria—yet Russia is a close runner-up for this global honor. While several other considerably smaller countries in Europe and the former Soviet space have registered a greater relative population loss than has Russia over the past two decades, no country in those regions, or for that matter, in the world as a whole, has experienced as much population decline in the post-Communist era as the Russian Federation. In absolute terms, no country has registered even half as massive a loss from the excess of births over deaths.

In sum, is Russia's current depopulation unique? The answer is clearly no. Is it exceptional and unprecedented? Just as clearly, the answer is yes.

Sub-national Aspects of the Current Depopulation in Russia

Russia's depopulation is not, of course, unfolding uniformly over the entire expanse of the Federation's territories. Several differential subsidiary aspects of the ongoing population decline are worth mentioning here.

First, there is the differential pressure for depopulation now being generated by varying rates of negative natural increase among the regions of the Russian Federation. (Migration, to be sure, is also playing a role in regional population change within Russia—but we will deal with that aspect of population redistribution more thoroughly later in this study.) Local variations in

[15] Derived from U.S. Bureau of the Census International Programs Center, "International Data Base," http://www.census.gov/ipc/www/idb/informationGateway.php.

negative natural increase within the Russian Federation for one recent year (2006) are highlighted in **Figure 1.4**.

In the year 2006, Russia's overall rate of negative natural increase amounted to 4.8 per 1000 population, that is to say, a tempo of just under three-fifths of a percentage point per year. Yet there was considerable regional variation within this overall national average.[16]

Of Russia's 88 provinces (*oblast*), 68 reported more deaths than births that year—many of these entailing very substantial local surfeits of mortality. In 10 oblasts, the net excess in mortality amounted to 1% a year, or more. In the Pskov oblast, net mortality was running at the staggering pace of nearly 1.5 % a year. The areas where rates of negative natural increase tended to be highest, incidentally, also happen to be concentrated in the original, historical "heartland" of Russia, including its "black earth zone" (*chernozem*).

Interestingly enough, the excess of deaths over births was well above the national average in the country's two most important (and affluent) metropolitan centers: Moscow and St. Petersburg. In St. Petersburg, all other things being equal, forces of natural increase would have made for a population decline of roughly two-thirds of a percent in 2006 alone, and for a somewhat less pronounced but nonetheless negative balance in Moscow as well. Given these demographic fundamentals, neither city could grow, or even remain stable in size, without a constant influx of newcomers.

Not all provinces in Russia are subject to negative natural increase these days. In 2006, twenty oblasts reported more births than deaths. As it happens, however, the areas of natural population increase were generally areas in which the country's ethnic and religious minorities were represented disproportionately. In 2006, for example, nineteen of the twenty oblasts with positive natural increase were officially designated either as "republics" for particular indigenous non-Russian nationalities or "autonomous districts" for given non-Russian peoples. Just two regions within the Russian Federation reported rates of natural increase in excess of 1% that year: Ingushetia (where ethnic Russians accounted for barely 1% of the enumerated population in the 2002 census) and adjoining Chechnya, where net natural increase approached 2%.

In 2007, nineteen oblasts or regions within the Russian Federation reported positive natural increase. Fifteen of these nineteen regions were republics or autonomous districts. These nineteen areas, moreover, still accounted for only a tiny share of the Russian Federation's population: less than 10%. About 90% of the Russian Federation's residents in 2007 lived in regions where death rates were higher than birth rates.[17]

Regional ratios of deaths to births are also a matter of interest for a country undergoing prolonged depopulation. For Russia as a whole, nearly three deaths were recorded for every two births in the year 2006—a ratio roughly in keeping with the country's long-term average since the end of Communist era. (In 2007 that ratio came down to "just" 129 deaths for every 100 births.) There have also been tremendous regional variations in this death-to-birth ratio every year, as may be seen in **Figure 1.5**.

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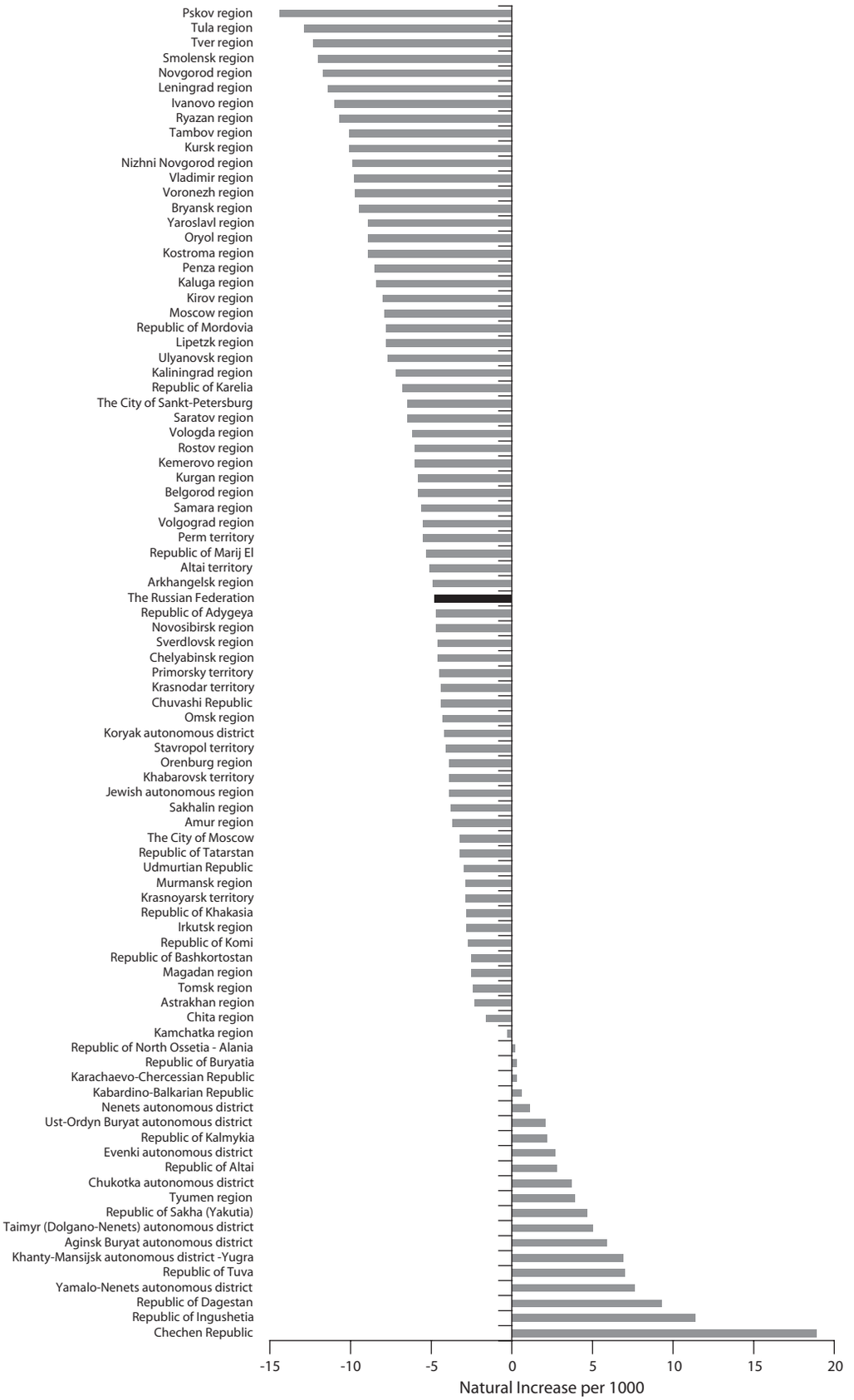
[16] One statistical measure for gauging this variation is the "coefficient of variation." The calculated coefficient or variation for net natural increase by oblast in Russia in 2006, according to Goskomstat data, was -1.22. This speaks to a fairly high degree of regional differentiation by comparison to other regional demographic differences within Russia, as we shall see in coming chapters.

[17] Calculations are based on the regions' enumerated populations in the 2002 census, per Timothy Heleniak, "The 2002 Census In Russia: Preliminary Results," *Eurasian Geography and Economics* 44, no. 6 (September 2003): 430–42. We may note that three additional regions that reported positive natural increase in 2006 were not included in Goskomstat's regional breakdowns for 2007: Taimyr (Dolgano-Nenets) autonomous district; Chukotka autonomous district; and Evenki autonomous district. Their total population as of the 2002 Russian census totaled fewer than 115,000. If these regions had indeed reported positive rates of natural increase, this would have raised the total number of such oblasts and regions within Russia to 22 out of 88—but it would still have been the case that some 90% of the population of the Russian Federation then lived in negative natural increase oblasts or regions.

FIGURE 1.4: Natural Increase per 1000, by region: Russian Federation, 2006



SOURCE: Goskomstat, "Demographic Yearbook of Russia" (2007), Table 2.3.

In both 2006 and 2007, five regions within Russia reported fewer than half as many deaths as births. These regions included Dagestan, nearby Ingushetia, and of course Chechnya (where in 2006 and 2007 an average of over five births were registered for every death). At the same time, a fair number of other regions within Russia saw over twice as many deaths as births: seven of them in 2007 and fourteen in 2006. The most extreme disproportion between deaths and births, again, tended to be seen in the country's historic, Western-most heartland.

A second sub-national aspect of the Russian Federation's depopulation concerns its impact on the ethnic composition of the country. Figures 1.4 and 1.5 strongly suggest that historically Russian regions were especially subject to negative natural increase, while the oblasts registering natural increase were almost exclusively regions originally established for indigenous or ethnic non-Russian minorities. Nationality data from the two most recent censuses—the 1989 Soviet census and the 2002 Russian Federation census—seem to corroborate this surmise by showing a disproportionate decline in the ethnic Russian population within the federation.

Between the 1989 and 2002 censuses, the present-day Russian Federation's population fell from 147 million to about 145.2 million, a drop of about 1.8 million. Over that same period, the reported share of ethnic Russians within the country fell as well, from 81.5% to 79.8%.[18] These numbers implied a drop in the ethnic Russian population of the federation from just under 120 million to just under 116 million—a decline of nearly 4 million persons, over twice the reported countrywide population decline for the period in question. We should remember, though, that the Russian Federation also absorbed a net influx of perhaps 5 million or more immigrants during those same years, and many millions of the new immigrants appear to have been ethnic Russians from the "near abroad" (former Soviet republics). Without that influx, in other words, the Russian Federation's population of Russians would have dropped much more dramatically during those years. According to Goskomstat data, for example, between 1989 and 2005, net in-migration by ethnic Russians accounted for 3.5 million out of a total net inflow to the Russian Federation of 5.3 million net newcomers.[19]

We will have more to say about the impact of migration on post-Communist Russia's demographic profile later. For now, we may simply note that absent immigration, the Russian Federation's ethnic Russian population might have declined by much more between 1989 and 2002 than the notional four million suggested by national census data. A driving force behind Russia's depopulation, in other words, looks to be the demographic decline of the Russians themselves. Indeed, in aggregate, official statistics indicate the non-Russian population of the federation actually increased in size somewhat between 1989 and 2002.

A third noteworthy aspect of the depopulation relates to Russian Federation demographic trends for the country's urban areas. Some observers have already noticed that population decline has been contributing to an emptying of the Russian countryside. According to one news report, for example, "the country's 2002 census, its first since 1989, found that of Russia's 155,000 villages, 13,000 have been deserted and another 35,000 have seen their populations dwindle to fewer than 10 people."[20]

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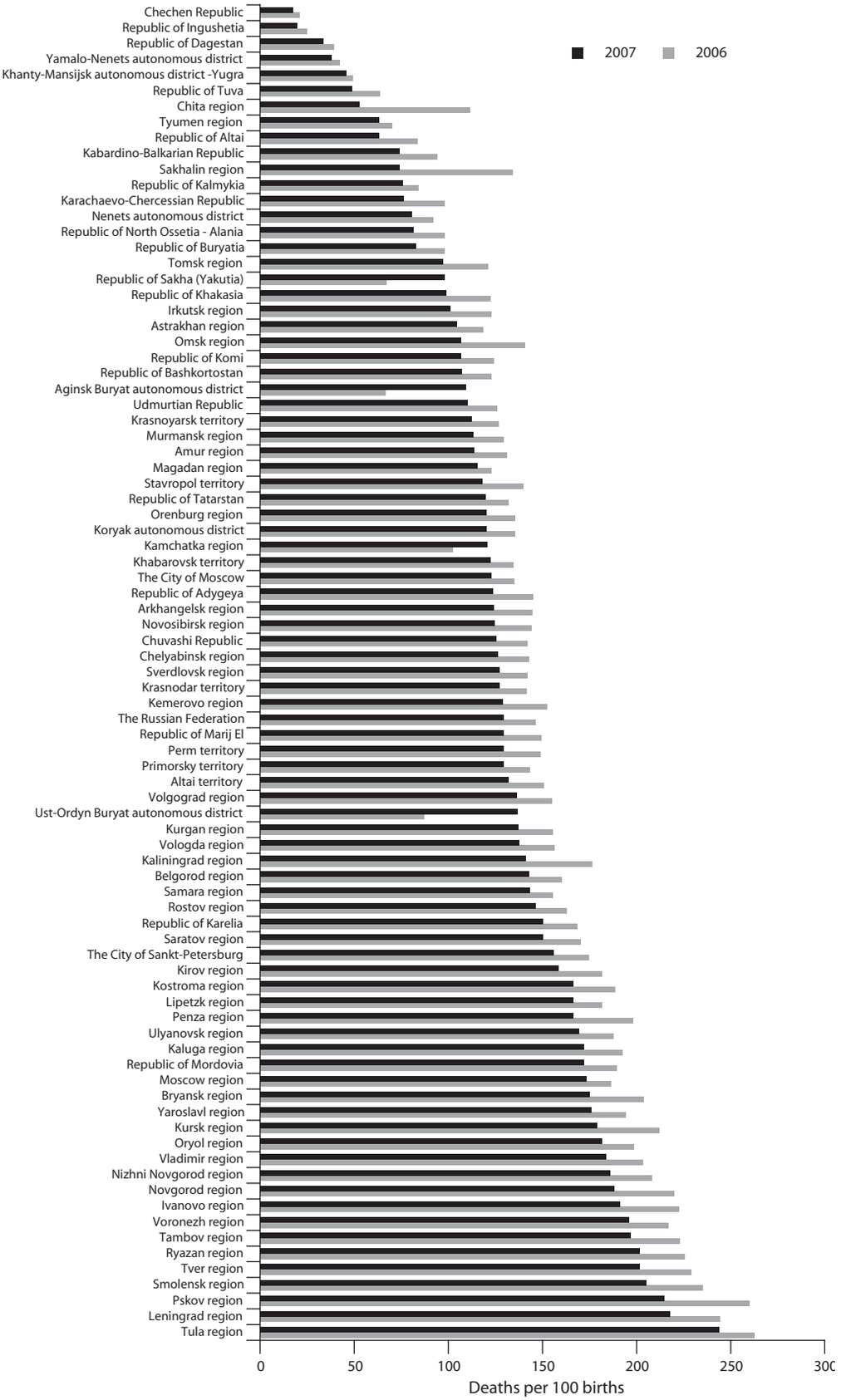
18 Goskomstat, Statistical Yearbook of Russia 2007 (Moscow: FSUE, 2008).

19 A. G. Vishnevskii, ed., *Naseleniye Rossii 2005* [The Population of Russia 2005] (Moscow: MAKS Press, 2007), 201. We should flag a perhaps obvious but nonetheless critical point at this juncture: ethnicity is a somewhat malleable construct. That is to say, one's ethnic identity, and self-identification, is by no means a fixed and invariant quantity. To the contrary, it can change according to context and circumstances. "Ethnic re-identification" is a very real feature of modern life, and not only in Russia. But it certainly needs to be borne in mind in all our discussions of ethnic trends within Russia today. We will have more to say about this later in the study.

20 Michael Mainville, "Ghost Towns a Sign of Crisis in Russia," *Toronto Star*, March 12, 2005, D21.

FIGURE 1.5: Deaths per 100 births by region: Russian Federation, 2006 and 2007



SOURCE: 2006 data is from Goskomstat, "Demographic Yearbook of Russia" (2007), Table 2.3; and 2007 data is from Goskomstat, "Demographic Yearbook of Russia" (2008), Table 2.3.

Striking as this may sound, there is really nothing exceptional about the decline of rural population numbers during the course of industrial development per se. Quite the contrary, the relative and absolute population of rural regions has typically declined over time in practically all currently industrialized countries. Between 1980 and 2000, the population of the United States increased by over 50 million; yet by the estimates of the United Nations Population Division (UNPD) (which employs its own standardized international definition or rural and urban areas), the United States' rural population dropped by more than a million persons during that same period.[21] What is striking—and exceptional—in the Russian situation today is the evidence that the populations of the Russian Federation's cities are in decline, as well. Not perhaps since the days of Pol Pot has the spectacle of de-urbanization been witnessed in the modern world.

The Emptying of Russia's Cities

Russian authorities realized something quite unusual was underway once the returns from the 2002 census were available. In a 2003 report to the UN Economic Commission for Europe, Goskomstat officials noted that "the urbanization process [in the Russian Federation] has come to a halt."[22] According to those Goskomstat figures, Russia's urbanization ratio was just slightly lower in 2002 (73.3%) than in 1989 (73.4%). Since Russia's population had declined over the inter-censal period, this meant that Russia's urban population had also declined, and had in fact dropped by slightly more, in relative terms, than the rural population.

Subsequent data has reaffirmed that Russia's depopulation meant not only a shrinkage of Russia's cities but a disproportionate decline in the country's urban population. Between 1991 and 2008, Goskomstat estimates indicated that Russia's urban population fell by over 5.5 million—a trajectory traced out in **Figure 1.6**—and that the country's urbanization ratio was simultaneously dropping as well (from 73.8% to 73.1%). With depopulation, Russia is witnessing an emptying of its cities and even some incipient de-urbanization.

Along with the spread of "ghost villages" and the disappearance of rural hamlets, shriveling cities and even dying cities are now part of the Russian landscape. In 1989, the Russian Federation counted 688 urban settlements with populations of 20,000 or more; by 2006, it only had 680 of these. In 2002, Russia had 330 cities of 50,000 or more, but just 324 of them in 2006. Further, in 2002 Russia had 13 cities of one million or more; just four years later, there were only 11.[23]

Of the 36 cities that reported a population of half a million or more at some point in the 1989–2006 period, fully 23 were smaller in 2006 than they had been seventeen years earlier, including nine of the dozen largest cities in the nation. Between 2002 and 2006, another 5 of these cities—including St. Petersburg, the county's second largest city—lost population.

Virtually alone among Russia's very largest cities, Moscow grew dramatically and more or less steadily over this period, gaining about 1.75 million inhabitants and increasing in size by about 20% between 1989 and 2006. If one lived and worked only in Moscow, it would perhaps be possible to gather the impression, or rather the severe misimpression, that Russia's urban centers are

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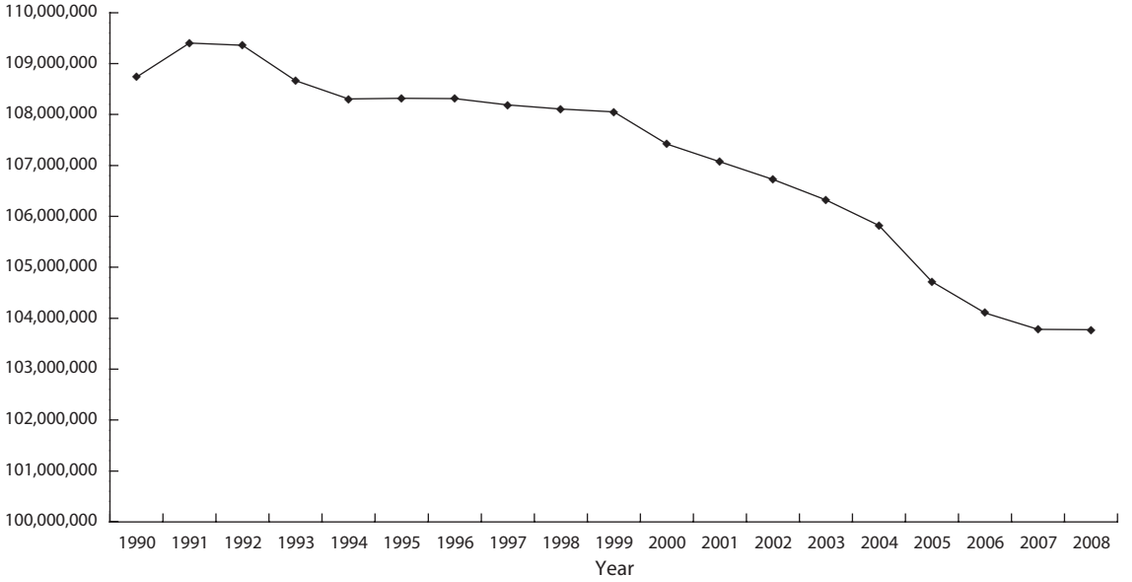
[21] UN Population Division, "World Urbanization Prospects: The 2007 Revision Database," http://esa.un.org/unup/index.asp.

[22] State Committee of the Russian Federation on Statistics (Goskomstat), "Dissemination of the Results of the Population Census," submitted to the UN Economic Commission for Europe, December 2003, http://www.unece.org/stats/documents/2003/12/commentary/crp.2.e.pdf. The paper also asserts—quite incorrectly—that a cessation of urbanization is common to "most of the developed countries of the world."

[23] A. G. Vishnevskii, ed., *Naseleniye Rossii 2005* (Moscow: MAKS Press, 2007), 35.

FIGURE 1.6: Urban Population: Russian Federation, 1990-2008



SOURCE: Goskomstat, "Demographic Yearbook of Russia" (2008).

thriving and that urban life in Russia is burgeoning today. Beyond the confines of the capital city, of course, any such notion would be virtually impossible to maintain.

Russia's recent declines in urban population stand in sharp contrast to trends evident in the rest of the world, and even in other countries with which the Russian Federation is sometimes likened nowadays, as may be seen in **Figure 1.7**.

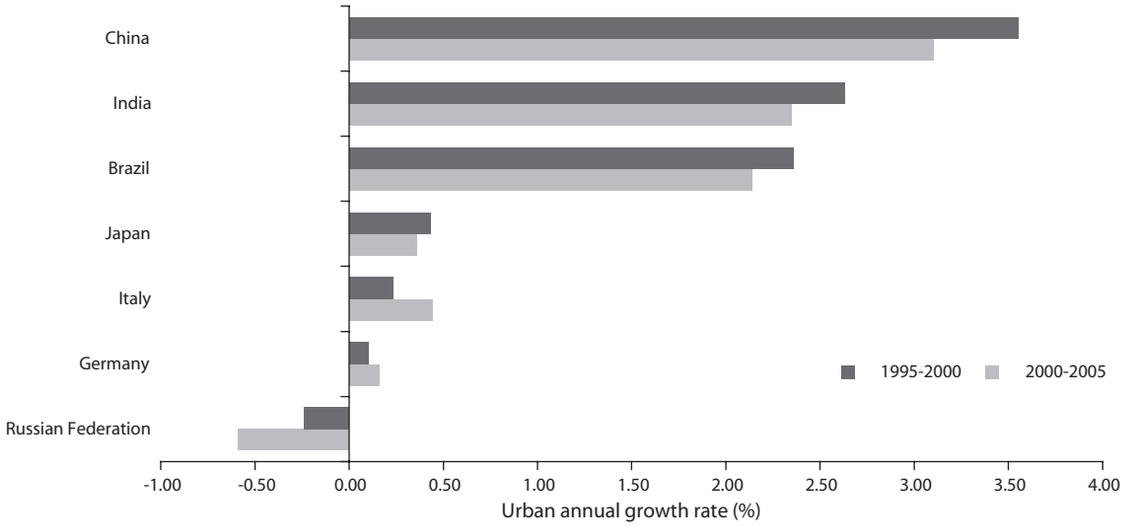
Russia is sometimes categorized as a "BRIC" country (the acronym for Brazil, Russia, India, and China, famously coined by financial market researchers at Goldman Sachs earlier in this decade[24]). By this classification, Russia should be considered as one of the world's promising emerging market economies that will be able to maintain high long-term rates of growth over the coming generation. Yet urban growth patterns in one of these BRICs is radically discordant from all of the others. Whereas UNPD estimates suggest that Brazil, India, and China all witnessed robust population growth in their urban centers over the decade between 1995 and 2005, Russia's urban population declined, and by an increasing tempo.

Another perspective on Russia's urban population trends is afforded by those Western countries currently on the verge of population decline. Italy, Germany, and Japan all appear to be countries on the cusp of prolonged depopulation. In each of these countries, though, overall urban population also happened to increase, albeit modestly, over the 1995–2005 decade.

Russia is not utterly alone in experiencing negative urban growth in recent years. Bulgaria, Hungary, Poland and Ukraine, for example, have also been subject to this same trend. Nor is Russia entirely unique in undergoing de-urbanization. According to UNPD estimates, the Czech Republic, Moldova and Romania likewise saw the share of their national populations residing in cities fall between 1995 and 2005. But there are important economic implications to the shrinkage of the urban population for all societies in the grip of such a trend.

[24] Cf. Jim O'Neill, "Building Better Global Economic BRICs," Goldman Sachs, *Global Economics Paper* 66, 2001.

FIGURE 1.7: Estimated Annual Urban Growth Rates, 1995-2005, Russia and selected other countries



SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision," http://esa.un.org/unup.

Almost invariably, productivity levels are higher in a country's urban areas than in its rural regions (this basic economic fact, indeed, informed the Soviet leadership's push for forced-march urbanization throughout the Communist era). Insofar as urban centers seem to play a special role in the process of modern economic growth (perhaps all the more so in the process of globalized economic growth), the withering of urban population, all other things being equal, stands perhaps to complicate Russia's quest to achieve steadily higher levels of per capita productivity today and in the years immediately ahead. From the standpoint of modern economic development, de-urbanization can be a fundamentally "anti-modern" tendency, but it is one with which the Russian Federation today nonetheless seems to be flirting.

Russia's Depopulation: Nearing a Turnaround?

Between 1992 and 2007, Russia's average annual negative natural increase came out to about 775,000 a year. The smallest of these annual surpluses of deaths over births came in 1992, the first year of this new trend, when deaths exceeded births by about 220,000. The most severe surfeit of deaths over births to date was seen in the year 2000, when that annual gap approached one million (959,000) souls. In 2007, negative natural increase in the Russian Federation was "only" 478,000—the lowest decline, in fact, since 1992. Calendar year 2008 was even "better," with an excess of deaths over births of "just" 362,000.

This attenuation of negative natural increase has given rise to hopes, in the Kremlin and elsewhere, that Russia may be on the threshold of re-attaining population stability. Those hopes are understandable. But it is important in this regard to distinguish between evidence-based analysis and wishful thinking.

How so? We should start by noting that year-to-year changes in the gap between births and deaths are the result of a complex interaction between survival trends, fertility trends, and the country's evolving age structure, so that linear extrapolations of this gap are hazardous at best (when not altogether unwarranted). Russia's birth-death balance, in any case, shows scant signs of righting itself as yet. In the first four months of 2009, Russia's officially reported aggregate surfeit of deaths over births amounted to roughly 131,000—a total which, if annualized, would imply a level of nearly 400,000.[25]

In the years immediately ahead, moreover, the outlook for any sustained balancing of births and deaths within the Russian Federation is far from auspicious, considering the powerful and basic demographic forces in play. Russia's population of women of childbearing age (conventionally defined as the 15–49 grouping), for example, is set to decline markedly between now and the year 2025. By the "medium variant" projections by the UNPD, Russia's cohort of women of childbearing ages would be about 21% smaller in 2025 than in 2005.[26] (Less surmise is involved in these projections than in many others insofar as nearly all of the future women for the period in question have already been born). Absent a significant increase in general fertility levels, Russian birth totals in the coming years would be expected to decline. At the same time, Russia's demographic structure is almost inexorably slated to undergo further population aging between now and 2025. All other things being equal, this would tend to increase the country's death rate. Taken together, these two trends would seem to portend increasing pressures to open the gap between deaths and births even wider in Russia's immediate future—not to close it.

We will have more to say about fertility and mortality in the Russian Federation in coming chapters. For now, we may simply observe that, no matter how desirable a progressive elimination of the phenomenon of negative natural increase for the Russian Federation may be considered, it is at best highly premature to suggest that the Russian Federation is approaching such a milestone. It might be more realistic instead to suggest that a surfeit of deaths over births could be Russia's lot for as far as the demographer's eye can see.

Projections of Russia's Demographic Trajectory over the Coming Decades

Where is the Russian Federation headed demographically in the years and decades immediately ahead? Obviously, there is no way to answer that question with certainty in advance. We can, however, get a sense of where some of the world's leading demographic institutions expect that Russia could be heading. Their anticipations are laid out in their 2008 projections for the Russian Federation. These projections, we must emphasize, are not forecasts; rather, they are simulations that generate internally consistent outcomes based on assumptions about future fertility, mortality, and migration patterns that are taken by their authors to be plausible today. Current demographic projections for Russia thus reveal what population experts regard as reasonable anticipations in the years ahead, at least from our current, necessarily limited, vantage point.

The two leading organizations offering global demographic projections would arguably be the UNPD and the U.S. Bureau of the Census (also known as the Census Bureau). Their latest projections

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25 "Russian Population Decline Slows to 50,000 in 4 Mths," *Russia & CIS General Newswire*, June 19, 2008.

26 Derived from United Nations Population Division, "World Population Prospects: The 2008 Revision—Population Database," http://esa.un.org/unpp/index.asp.

for the Russian Federation are illustrated in **Figure 1.8**. UNPD offers three projections—a high, medium, and low variant, based on what its staff regards as plausible alternative outlooks for future fertility trajectories. The Census Bureau offers just one projection for every country. As we see, current Census Bureau and UNPD projections all trace a continuing, indeed unstopping, downward course for the Russian Federation's population over the generation ahead. As of midyear 2005, Russia's estimated population was around 143 million. UNPD projections for the year 2025 range from a high of about 137 million to a low of about 127 million; for the year 2030, they range from 135 million to 122 million. The Census Bureau's single projection for the Russian Federation's population in 2025 and 2030 is 128 million and 124 million, respectively—very close to the low variant projections offered for Russia by UNPD.[27]

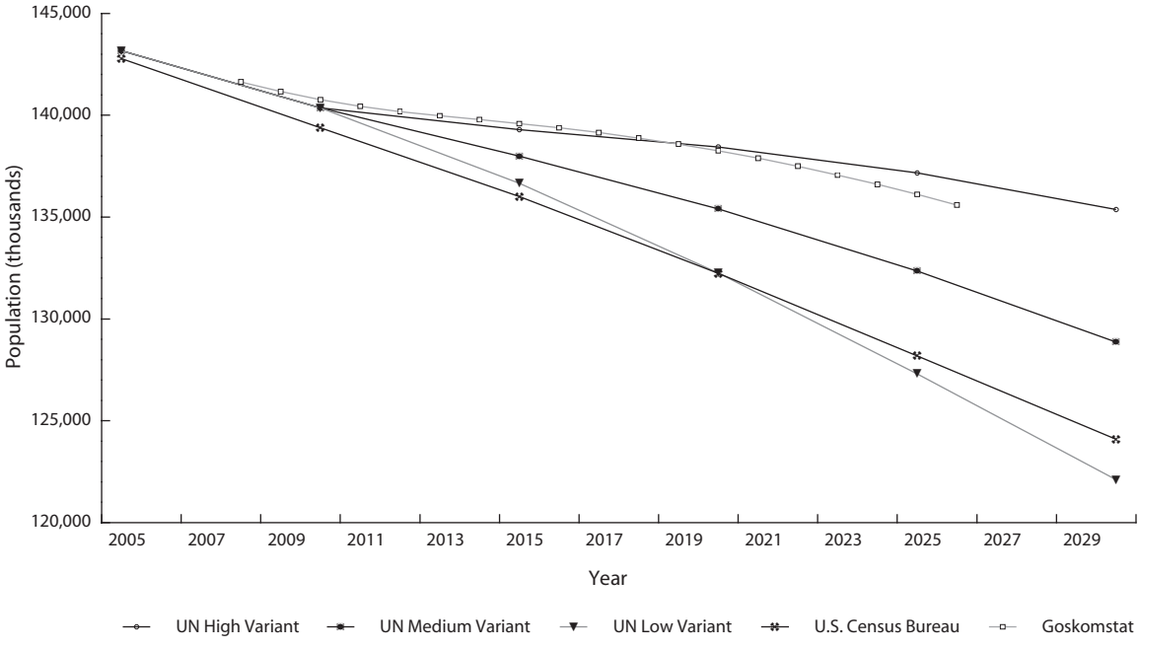
Demographic projections for the Russian Federation are also available from statisticians and population specialists in Russia itself. These latest Goskomstat projections run through the year 2025, and they envision a continuing and uninterrupted depopulation of the Russian Federation. In these projections, Russia's population would fall by another 5.5 million between 2008 and 2025—a long-term decline averaging over 300,000 persons per year. By this scenario, Russia's population in 2025 would be less than 136 million. That would be higher than the level currently projected by the U.S. Census Bureau and higher than the UNPD's medium variant, but also somewhat lower than the UNPD's high variant alternative. The current assessment of Russia's population outlook by the Russian Federation's official demographic specialists, in other words, is broadly consistent with the evaluation offered by international demographic specialists.

Russia's central authorities, we must note, today promote a vision of the Russian demographic future that differs fundamentally from the trajectories suggested in prevailing international projections. This "new demographic concept"—officially unveiled in 2007 and championed at the highest levels of government (by both then president Vladimir Putin and current president Dmitry Medvedev)—envisions a Russian demographic resurgence in the years ahead, stimulated by official policy interventions that reduce death rates, increase birth rates, and ultimately reverse the country's trend of population decline.

Let us leave aside the Kremlin's new demographic concept, and its feasibility, for the moment. For now, let us instead simply consider the available independent demographic projections. If the Census Bureau and UNPD projections turn out to be relatively accurate—admittedly, a big "if" for any long-range demographic projection—the Russian Federation will have experienced over 30 years of continuous demographic decline by 2025 and the better part of four decades of depopulation by 2030. If the Census Bureau's current projection, or the UNPD's medium variant projection, end up being approximately on target for Russia and other countries, for example, the population of the Russian Federation would have dropped by about twenty million between 1990 and 2025, and Russia would have fallen in international ranking from the world's sixth to the twelfth most populous country. If, on the other hand, the UNPD's high variant projection ultimately turns out to be closer to the mark, Russia would experience a decline in population of only thirteen million between the early 1990s and 2030. In relative terms, that would amount to not quite as dramatic a demographic drop as the one Russia suffered during World War II. In absolute terms, it would actually be somewhat comparable in magnitude. Even in the high variant version of a Russian demographic future, the depopulation would still be underway in 2030 and beyond.

[27] Note that the UNPD and Census Bureau series are prepared independently of one another.

FIGURE 1.8: Population Projections for the Russian Federation, 2005-2030



SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision," http://esa.un.org/unup.

Portents For a Smaller Russia

The Russian Federation's extraordinary peacetime depopulation has already taken us out of the realm of familiar social, economic, and demographic relationships widely canvassed on the contemporary world stage and into *terra incognita* for the modern student of global affairs. By many indications, Russia is heading still further into these historically unfamiliar reaches and may remain there, indeed, for decades to come.

Russia's demographic explorations into the dominions of depopulation are, of course, a matter of more than purely academic interest. The circumstances generating population decline in the Russian Federation today, for example, should arouse tremendous humanitarian concern. From an economic standpoint, moreover, there is no obvious historical example of a society that has demonstrated sustained material advance in the face of long-term population decline.

Yet strikingly, and perhaps paradoxically, Moscow's leadership is advancing into the uncertain terrain of depopulation with highly ambitious goals. In late 2007, for example, the Kremlin outlined the objective of achieving and maintaining an average annual pace of economic growth in the decades ahead on the order of nearly 7% a year. On this path, according to Russian officials, Russia's GDP would quadruple in the next two decades, and the Russian Federation will emerge as the world's fifth largest economy by 2020. As is perhaps all too evident these days, an urge to regain geopolitical influence is redolent in Moscow's political circles, as well—the prospect of a potentially significant relative decline in Russia's global population share notwithstanding.

Will Russia's demographic constraints hinder the attainment of these ambitious objectives? If they do, how would Russian leadership respond—domestically and internationally—to such an involuntary lowering of its expectations? In this event, the answers to these questions may tell us much about Russia's social, economic, and political landscape in the years ahead, and they may prove no less informative about the tenor and disposition of Moscow's external interactions.

To approach these questions—or, at a minimum, to attempt a better appreciation of the role demographic forces in Russia's development outlook and her political economy—we will have to focus at higher resolution, and in greater detail, on both the factors accounting for population change in the Russian Federation and on the changing profile of qualities and capabilities of the many tens of millions of individual men, women, and children who collectively compose Russian society. This we will do in the following pages.

CHAPTER 2

Russia's New Patterns of Fertility and Family Formation since the End of Communism: Shock or Transition?

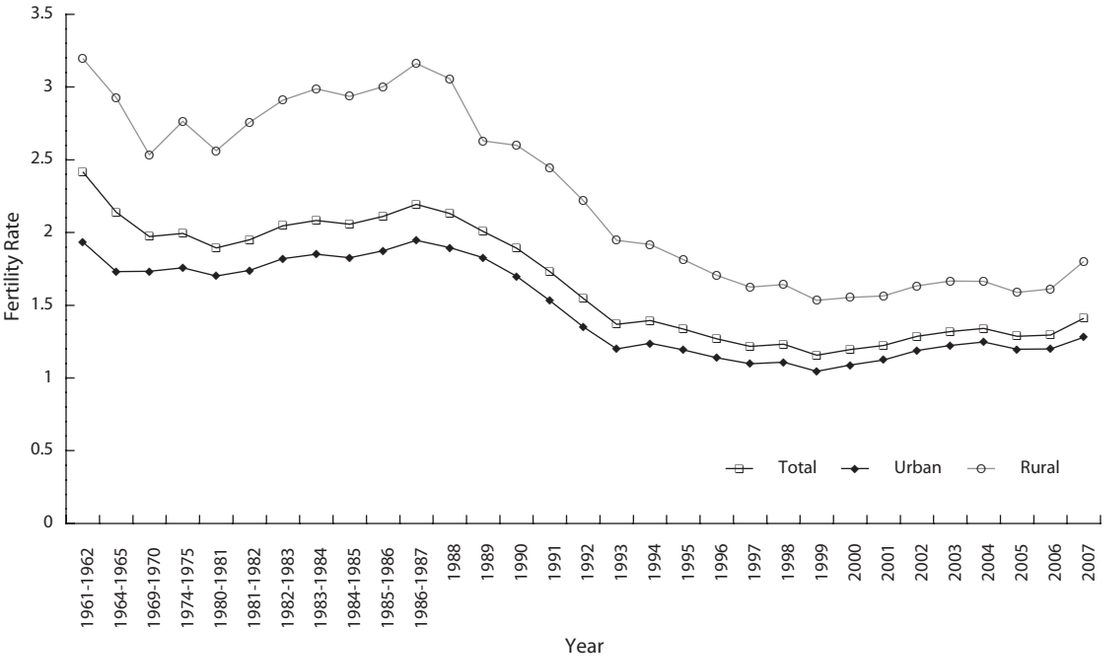
Fertility trends are, so to speak, the mother of all demographic change. Births determine the maximum demographic potential for any closed population (including the planet as a whole). Perhaps counterintuitively, childbearing patterns also have a powerful and indeed decisive influence on the overall demographic structure of any fixed population.

Social scientists have struggled for—pardon the expression—generations to develop a comprehensive overall theory for explaining fertility change in modern societies, thus far in vain. It is clear enough, nonetheless, that the family formation process bears directly upon childbearing patterns and that those patterns, in turn, have implications for the process of family formation for subsequent rising cohorts.

Marxian theory famously envisioned the "withering away" of the state upon the full attainment of Communism. By that criterion, full Communism was never achieved under Soviet power. Yet with the collapse of Soviet rule, Russia has seen a pervasive and profound change in childbearing patterns and living arrangements—what might be described as a "withering away" of the family itself.

The convulsive perturbations registered in national fertility levels—the collapse in national birth rates—could have been regarded as a "transition shock" if they had been limited to the first few years of post-Communism alone. But the Russian Federation has been post-Communist for the better part of two decades; any putative "recovery" to a *status quo ante* with respect to fertility patterns or family formation patterns is not yet in sight. Meanwhile, ongoing fertility patterns are consigning the Russian Federation in the next few decades to a "withering away" of, among other things, its labor force.

FIGURE 2.1 Total Fertility Rate: Russian Federation, 1961-2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 2.7.

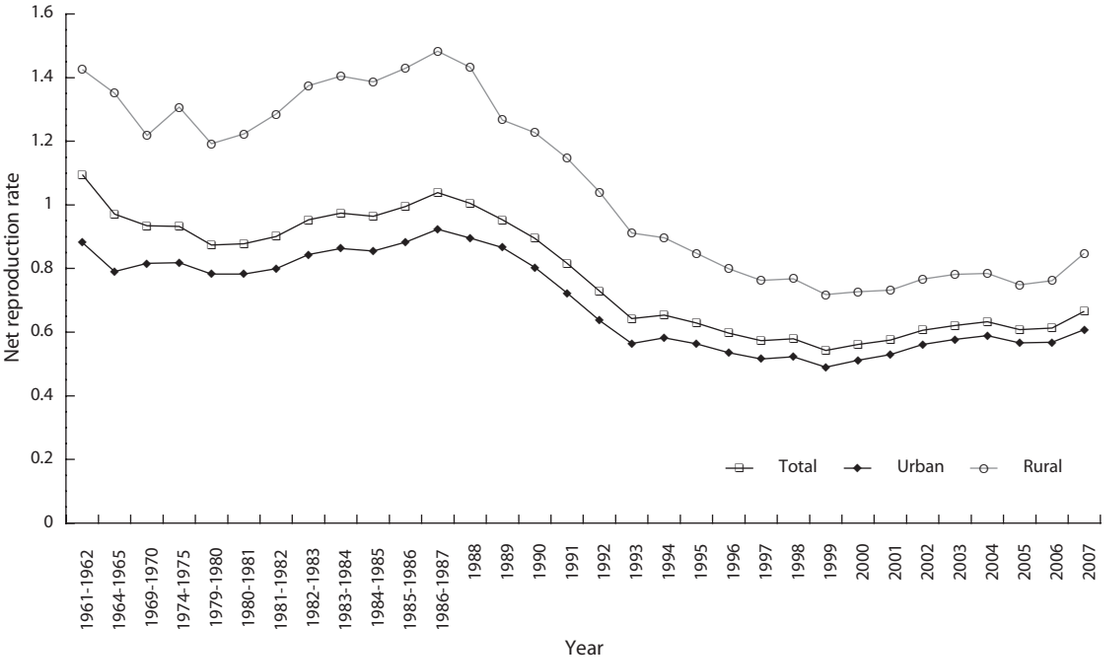
Russia's Post-Communist Fertility Collapse

In the previous chapter in Figure 1.2 we saw the stark and dramatic fall-off in total births after the end of Communism, a drop averaging about 40% when the years 1992–2007 are compared with the sixteen years immediately preceding them. While these total birth numbers are informative up to a point, there are also more refined statistical measures for explaining and measuring the importance of given patterns in childbearing.

One of these is the "total fertility rate" (TFR) that calculates the total number of births a typical woman would be expected to have, given age-specific childbearing trends for the group under consideration, as she passes through her childbearing years. Another is the "net reproduction rate" (NRR) that estimates, on the basis of the age-specific childbearing patterns in question and in the absence of migration, the relative size of the "rising" cohort of girls to reach childbearing age in relation to their mothers' generation. Any calculated result above 1.0 indicates an impulse, *ceteris paribus*, toward an intergenerational population increase, and any figure lower than 1.0 suggests the opposite.

In the postwar Soviet era, Russia's TFR typically exceeded 2.0 and in the early years of the Gorbachev era, Russia's total fertility rate temporarily exceeded 2.2. After 1989, the TFR fell far below 2.0, with no signs as yet of recovering to anything near that level. Russia's post-Communist TFR hit its low point (or perhaps it is better to say its low point to date) in 1999, when it was 1.17—just 52% of the level from 1987. By 2005, the total fertility rate in the Russian Federation was up to about 1.3, and by 2007 it had climbed still further, to 1.4, but this still represented a collapse of about two-fifths from the peak level in the Gorbachev years (**Figure 2.1**).

FIGURE 2.2 Net Reproduction Rate: Russian Federation, 1961-2007



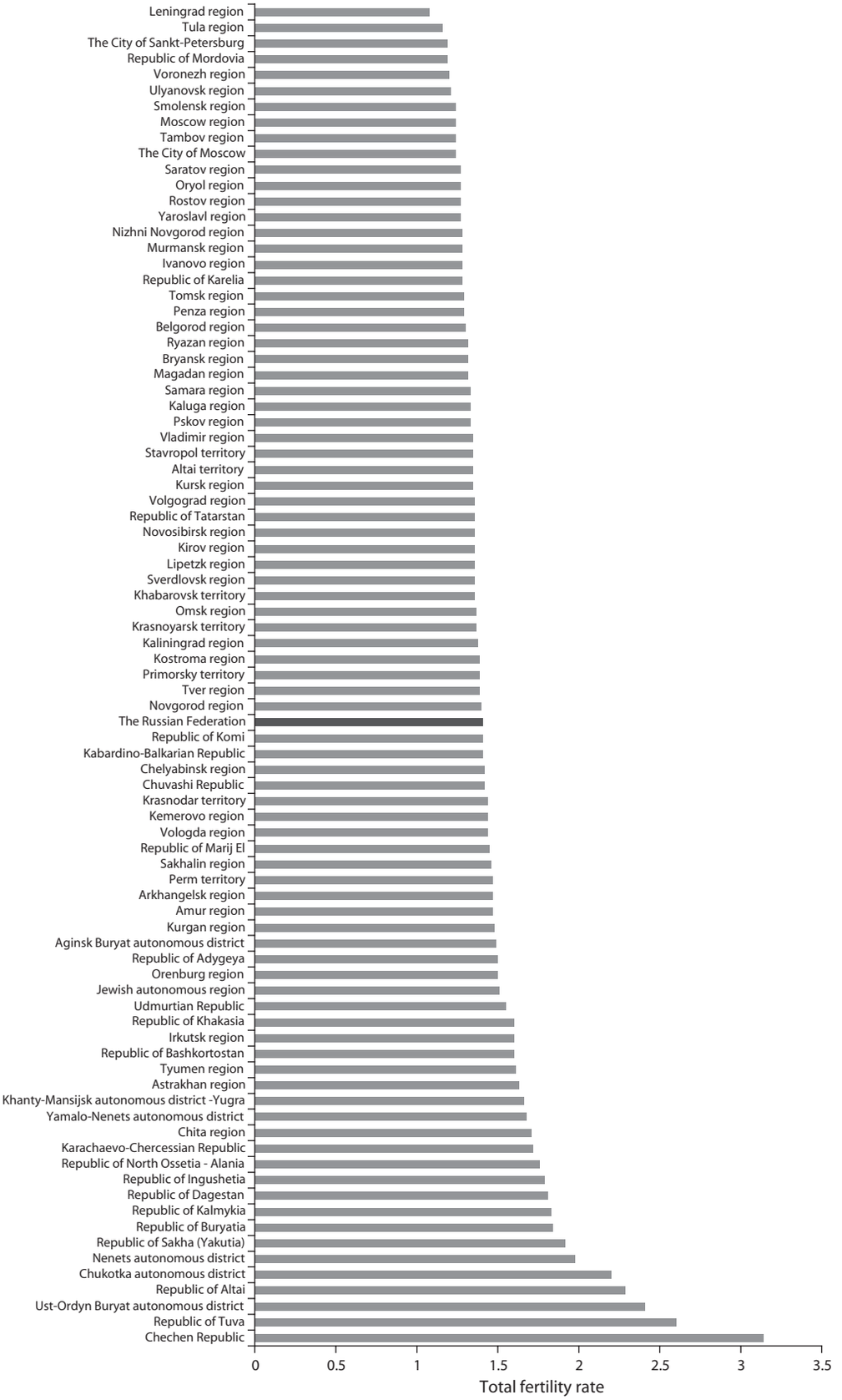
SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 2.7.

What does a sudden drop of this magnitude portend? The NRR may better illuminate the implications (**Figure 2.2**). In 1987, Russia's net reproduction rate was 1.01—indicating that overall childbearing patterns in that year, if continued indefinitely, would have been capable of replacing the country's population in the absence of immigration (and actually to achieve very slight long-term population growth). By 1999, the Russian Federation's NRR was down to 0.55, a schedule, that if maintained would make for a shrinkage of 45% from one generation to the next, all other things being equal. Though Russia's NRR is higher now than it was in 1999, the scope of the recovery should not be exaggerated. By 2005, the level was still just 0.62, implying, *ceteris paribus,* a momentum for generation-to-generation population decline of about 38%. In 2007, Russia's NRR was a bit higher than in 2005, but at roughly 0.67, the rate still presaged a prospective inter-generational shrinkage in population cohorts by roughly one-third.

The regional contours of Russia's new fertility situation are illustrated in **Figure 2.3**. Perhaps the strongest impression this graphic conveys is the pervasive regularity of the current patterns of steep sub-replacement fertility within Russia's otherwise often diverse regions. By standard statistical measures, there appears, perhaps surprisingly, to be a fair degree of uniformity in fertility levels among Russia's oblasts—certainly much less variation with respect to fertility regimens than in regional patterns of natural increase.[1] As of 2007, just 5 of the 84 provinces or regions for which data was available recorded total fertility rates of 2.0 or more, while 60 of the regions reported TFRs

[1] The coefficient of variation for TFR by oblast in 2005, for example, was 0.233—barely a fifth of the absolute level for variations in rates of natural increase by oblast that same year.

FIGURE 2.3 Total Fertility Rate by region: Russian Federation, 2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 2.8.

below 1.5.[2] Moscow's reported rate was only 1.24, and St. Petersburg's was just 1.19. The very lowest level for the nation, 1.08, was set by Leningradskaya oblast, the area immediately surrounding St. Petersburg. These are among the very lowest fertility levels being registered around the globe nowadays—not so different from the estimated 2007 TFR of the current world's lowest-fertility countries, Singapore (1.07) and Taiwan (1.12).[3]

Perhaps not surprisingly, the very highest fertility rate within Russia is in the Chechen Republic. Given Chechnya's reputation within Russia for high fecundity, purportedly supported by Chechen ethnic heritage and Muslim cultural background, what may be somewhat surprising is how the actual level of fertility reported by Russia's very highest TFR region looks when placed in international perspective. The Chechen Republic's total fertility rate in 2006 was reportedly 2.77 and 3.18 in 2007. This would be well above the replacement rate, as demographers tend to use a TFR of 2.1 as the notional demarcation for replacement (although that is not actually a strict numerical benchmark for replacement fertility[4]). Yet Chechnya's fertility rate is far below the levels prevailing today in traditionally Muslim countries such as Pakistan (where the Census Bureau's estimate of 2007 TFR is 3.7) or Iraq (4.1).[5] In a U.S. context, moreover, such childbearing patterns would not at all look unfamiliar. Chechnya's registered fertility level in 2006, for example, is only a bit higher than that of the state of Utah (2.6). The Chechen region's fertility level in 2007, moreover, is not much higher than the TFR currently registered in the U.S. for the Mexican-American population (3.0),[6] who comprise a much larger share of the U.S. population than do Chechens in the Russian Federation.

If Chechnya's fertility looks amazingly high to Russians today, it may be partly because Russian Federation fertility levels overall are so remarkably low. Indeed, apart from Chechnya, not a single region in the vast Russian expanse reported above-replacement childbearing patterns in 2005.[7] This is true even of Dagestan, Russia's region containing the country's single largest concentration of people who trace their ancestry to Islamic cultural roots (and itself comprised almost entirely of such people).[8] For 2007, Dagestan reported a TFR in 2007 of just 1.81—a level well below the officially estimated U.S. TFR that same year of 2.12.[9] Dagestan's TFR in 2007, moreover, was lower than the corresponding fertility levels recorded in 2006 in such U.S. states as Connecticut, Minnesota, and Kansas, and was in fact lower than the nationwide U.S. average for the "Anglo"

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[2] Goskomstat's 2007 TFR figures excluded one region, the Evenki autonomous district, which had reported a total fertility rate of 2.3 in 2006 and likely would have reported above-replacement fertility in 2007 as well. Also not reporting was the Kamchatka region, which had reported a TFR of 1.38 in 2006, and may well still have had a TFR under 1.5 in 2007. These omissions do not, however, appreciably alter the table here.

[3] U.S. Census Bureau, International Data Base, http://www.census.gov/ipc/www/idb/informationGateway.php. Note that the estimated TFRs for Hong Kong and Macau are even lower, but these are not independent countries.

[4] A population's precise TFR for replacement fertility will in practice depend upon both sex ratios at birth (the more boys per 100 baby girls, the higher the TFR necessary) and the survival schedule for females from infancy to childbearing ages (the higher the mortality levels, the higher the requisite TFR). Thus, for example, replacement fertility would currently (2005–2010) coincide with a TFR of 2.08 in Japan, and of 2.76 in Equatorial Guinea, according to UNPD projections. The level of 2.1 births per woman per lifetime is thus simply a serviceable approximation for the TFRs needed for replacement in more developed societies (where mortality levels are low, and sex ratios at birth are not distorted by parental intervention).

[5] U.S. Census Bureau, International Data Base.

[6] See the National Center for Health Statistics, Centers for Disease Control.

[7] Goskomstat, *The Demographic Yearbook of Russia 2007* (Moscow: FSUE, 2007), table 2.12.

[8] For background and estimates, see Timothy Heleniak, "Regional Distribution of the Muslim Population of Russia," *Eurasian Geography and Economics* 47, no. 4 (July–August 2006): 426–48.

[9] Brady E. Hamilton, Joyce A. Martin, and Stephanie J. Ventura, "Births: Preliminary Data for 2007," *National Vital Statistics Reports* 57, no. 12 (March 18, 2009): 3.

(non-Hispanic Whites) population.[10] Suffice it to say that a country's fertility level must be very low indeed for a sub-replacement region such as Dagestan to be regarded as relatively prolific.

In 2006, in addition to Chechnya, just two other regions had crept above net replacement, and the combined population of these two places that year was negligible: less than 200,000 persons, barely a tenth of one percent of Russia's national total.[11] In 2007, the total number of regions registering above-replacement fertility rose to five, and the total 2007 population of these five spots, including Chechnya, was officially placed at under two million.[12] Evidently, over 98% of Russia's population that year resided in oblasts, republics, and autonomous districts (or *okrugs*) where childbearing patterns were not on course for replacement fertility.

In each of the years 2005, 2006, and 2007, sixteen or more areas in the Russian Federation were reporting more births than deaths. To go by the more technical metric of net replacement rates, the surfeit of births over deaths in most of those regions looks to be, at least for now, unsustainable. On existing fertility schedules and absent immigration, none of the regions—apart from Chechnya—have consistently reported the levels of fertility that would be necessary to avoid an eventual depopulation.

Russian Fertility in the European Mirror

The Russian Federation, to be sure, is hardly the sole European population to experience sub-replacement fertility these days. **Figures 2.4** and **2.5** place Russia's trends in a broader perspective, comparing and contrasting them against total fertility rates and net reproduction rates of countries from Western Europe, and other formerly communist societies from the erstwhile Soviet bloc and ex-Yugoslavia for the decades since 1960.

In the late 1980s, near the end of the Communist era, Russia qualified as a high-fertility society within the pan-European space; in 1987, there were just a handful of European countries with higher TFRs or NRRs (most of these under Communist rule). By 2004 or 2005, however, Russia looked like a low-fertility European society—by then, only a few European societies (perhaps ironically, most of them ex-Communist) had lower TFRs or NRRs.

If we looked only at these endpoints, we might conclude that Russia's fertility collapse over the past two decades was a consequence of post-Communism. However, a longer record than that is available for inspection and it presents a rather more qualified and nuanced picture of Russia's long-term fertility changes. As we can see, back in 1960, Russia also had one of the lower European fertility levels, just as it does today. To judge by this longer perspective, the Gorbachev era may have been the aberration in Russian fertility trends, rather than the current period. For whatever complex reasons, Russia seems to have evinced relatively low fertility levels for a European country over much of the past half century, that is to say, both under Communism and after it.

This point is reinforced by "completed fertility" trends for the Russian Federation—that is to say, TFRs calculated for women of given birth years at the end of their childbearing ages (as opposed to the "snapshot" or period TFRs that are usually reported, which are composed of fertility results for women of all ages in some given calendar year). The situation may be further clarified

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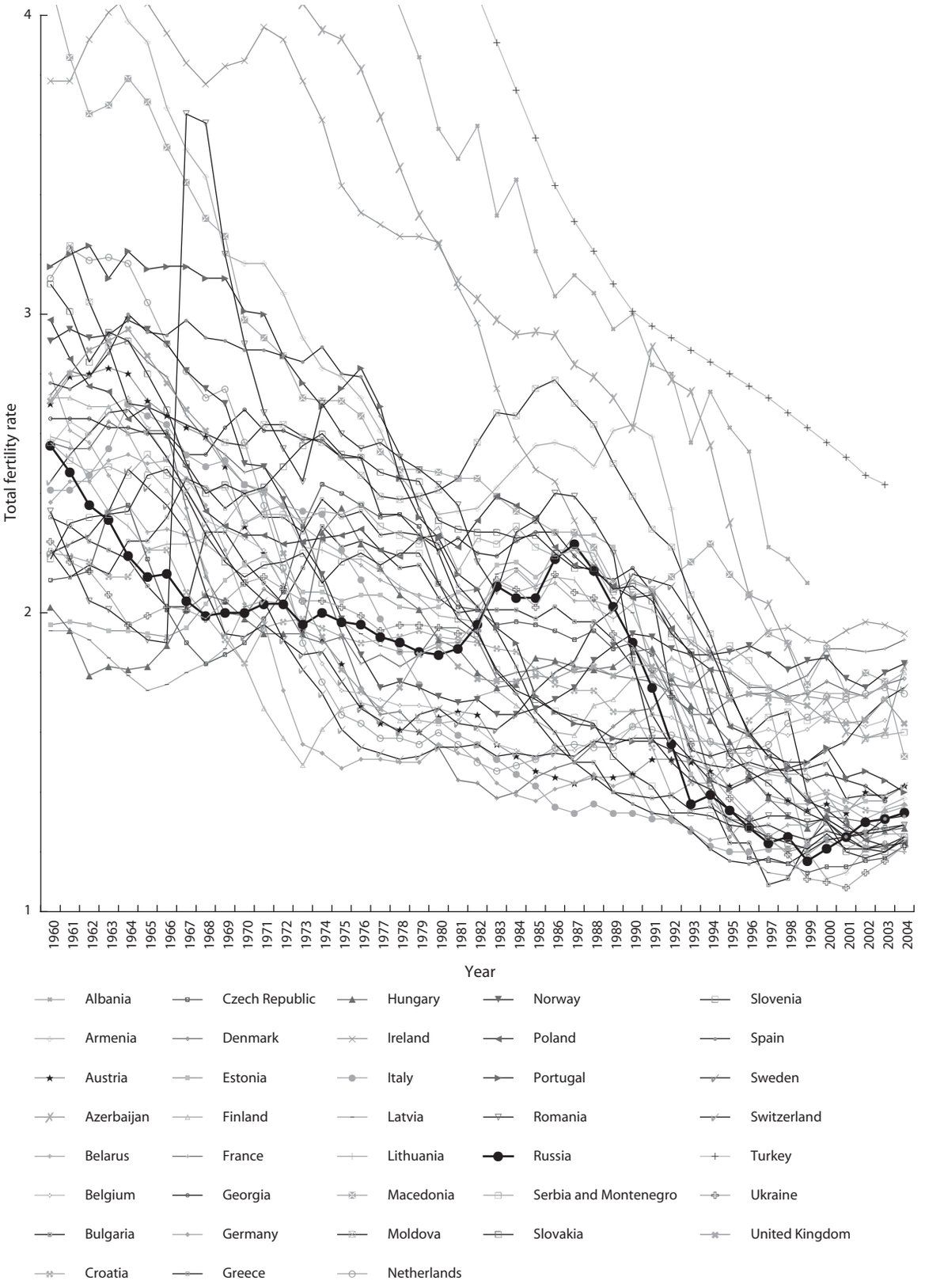
[10] Joyce A. Martin et al., "Births: Final Data for 2006," *National Vital Statistics Report* 57, no. 7 (January 7, 2009), http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_07.pdf.

[11] Hamilton, Martin, and Ventura, "Births: Preliminary Data for 2007," tables 1.6, 2.12.

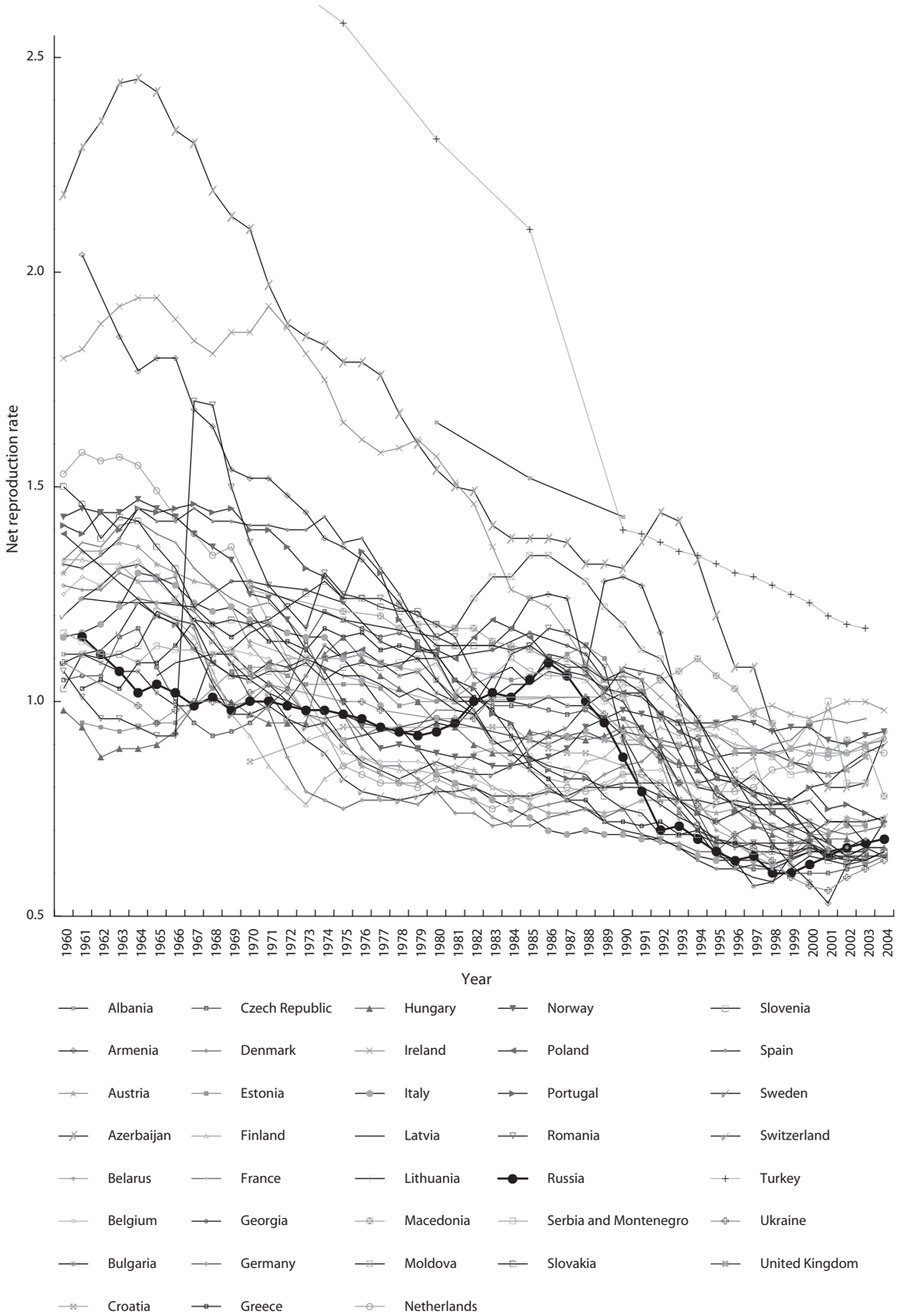
[12] Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 2.12.

FIGURE 2.4 Total Fertility Rate - Europe 1960-2004



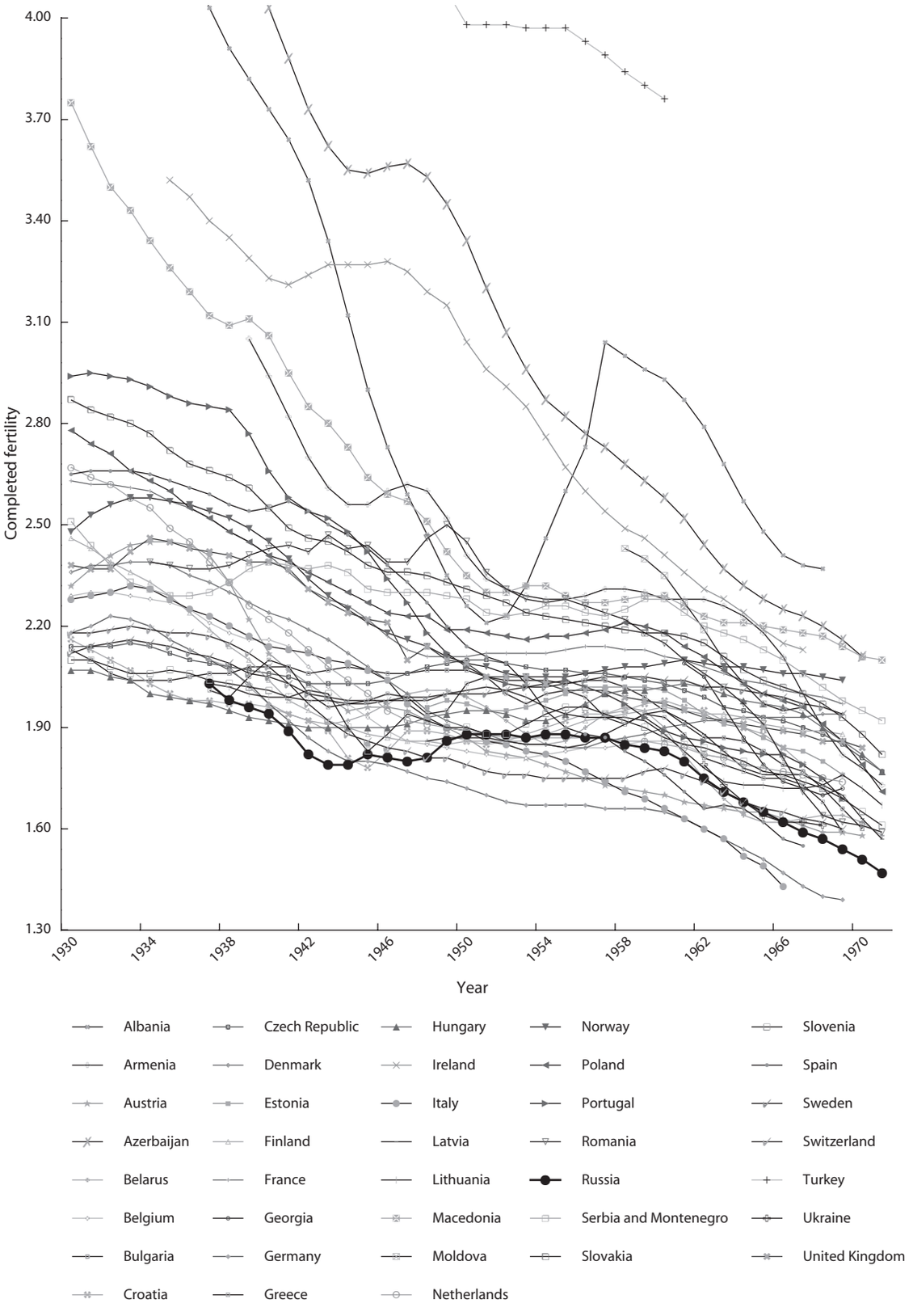
SOURCE: "Recent Demographic Developments in Europe 2005," Council of Europe, 2006.

FIGURE 2.5 Net Reproduction Rate - Europe 1960-2004



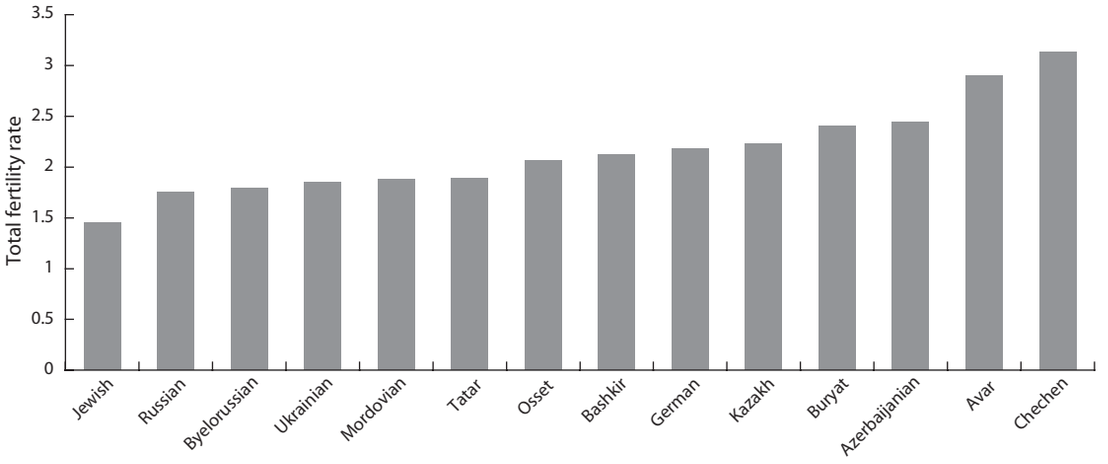
SOURCE: "Recent demographic developments in Europe 2005," Council of Europe, 2006.

FIGURE 2.6 Completed Fertility by Birth Year of Mothers - Europe 1930-1971



SOURCE: "Recent demographic developments in Europe 2005," Council of Europe, 2006.

FIGURE 2.7 Completed Fertility for Women Age 40-44 by selected Nationality Groups: Russian Federation, 2002 Census



SOURCE: Irina E. Kalabikhina, "Fertility in Russia," Moscow State University, table 1, available at http://www.infostat.sk/vdc/epc2006/papers/epc2006s60535.pdf.

by comparing Russia's trends in completed fertility with trends for other European societies (see **Figure 2.6**).

Like the rest of Europe, Russia's completed fertility levels have been trending downward for decades. Russia's long-term trends in completed fertility, however, are distinctive in two respects. First, completed fertility has been below the replacement level in Russia since at least the cohort of women who were born in the year 1937—the cohort of women who came to their peak childbearing years in the early 1960s. For this "cohort of 1937," completed fertility was just over 2.0 but still slightly under the level necessary for population replacement. For every cohort of women born after the year 1938, total completed fertility has been less than 2.0. Thus Russia can claim to have one of modern Europe's longest unbroken runs of sub-replacement fertility. Second, Russia's recent levels of completed fertility look to be among Europe's very lowest. Only Germany and Italy have reported consistently lower levels among women now approaching the end of their childbearing years.

Further decomposition of the Russian Federation's completed fertility levels by ethnicity is possible on the basis of the 2002 census, and is presented in **Figure 2.7**. According to Goskomstat data, as of 2002 Russian Federation women born in 1958–62 averaged 1.82 births but self-identified Russians averaged just 1.76. Of the 43 ethnic groups or nationalities in Russia for whom completed fertility was calculated, only Russia's Jews reported a lower level of fertility. At the same time, it should be noted that a country-wide convergence over time in fertility trends is also evident from the 2002 data. The statistical dispersion in fertility levels by ethnicity for women born between 1958 and 1962 was just one-fourth as great as it had been in their mother's generation (birth cohorts from 1933 to 1937).[13]

In short, extreme sub-replacement fertility is clearly new to peacetime Russia, but sub-replacement fertility, just as manifestly, is not. This point needs to be kept in mind in any discussion

[13] Irina E. Kalabikhina, "Fertility in Russia," Moscow State University, 2006, table 1, http://www.infostat.sk/vdc/epc2006/papers/epc2006s60535.pdf.

about future fertility prospects for the Russian Federation—not least in regard to the Kremlin's bold new "demographic concept" for reversing the country's demographic decline.

A Health Problem?

What explains the Russian Federation's low levels of fertility? One immediate suspicion might be heath constraints. Russia's overall health situation today is woeful (as will be more fully documented in the next chapters of this study). Might not maternal health problems therefore be depressing Russian fertility?

The question of reproductive health is thrown into even sharper relief by the extraordinary propensity for abortion in Russia.[14] In the Soviet Union, abortion had been relied upon, in effect, as a primary means of contraception, with the average woman undergoing not just one but many abortions over the course of her childbearing years. Indeed, Russian demographers Viktoria Sakevich and Boris Denisov argue that Soviet Russia positively embraced what they term an "abortion culture."[15] Though this predilection for abortion may have reflected a mindset, it was also based to no small degree on practical considerations. As Louise Grogan of the University of Guelph noted:

> Prior to 1990, Soviet contraceptives were considered to be all but poisonous, and western alternatives were not available. Thus, contraception costs (price plus harmful consequences) were considered to have made abortion an almost-universally preferred option.[16]

Russia's age specific abortion patterns for 1991—the last year of the Soviet era—would have meant, if continued, an average of 3.4 abortions per woman per lifetime for the country in its entirety (these were abortions, remember, that were performed under Soviet medical conditions and Soviet hygienic standards).[17] In 1992, Russian authorities reported that 3.3 million pregnancy termination procedures took place in the Russian Federation; in that first year of the post-Communist era, abortions outnumbered live births by well over two to one.[18]

As the Soviet era has receded, dependence upon abortion as a contraceptive technique has steadily and significantly diminished. Even so, abortions still outnumbered live births in 2005, and age-specific abortion patterns in 2005 (if continued over the childbearing years) would have implied a lifetime average over 1.5 abortions for contemporary Russian women. Despite the

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[14] Note that this analysis focuses upon the "demand side" impact of abortion—that is to say, the constraints that abortion procedures may place upon achieving desired fertility levels due to health-impairing complications of those interventions. Abortion can also be analyzed form the "supply side" in terms of the reduction of potential births, but this approach is much less straightforward than might at first be assumed. In purely demographic terms, one abortion does not always, or even often, equal one averted birth, insofar as induced abortion and other forms of birth control are instruments for helping to achieve the objectives of birth spacing and family planning for prospective parents. For classic treatises on the population mathematics of abortion and averted birth, see Nathan Keyfitz, "Population and Mathematics," *SIAM Review* 15, no. 2, part 1 (April 1973): 370–75; and Nathan Keyfitz, "Population Appearances and Demographic Reality," *Population and Development Review* 6, no. 1 (March 1980): 47–64.

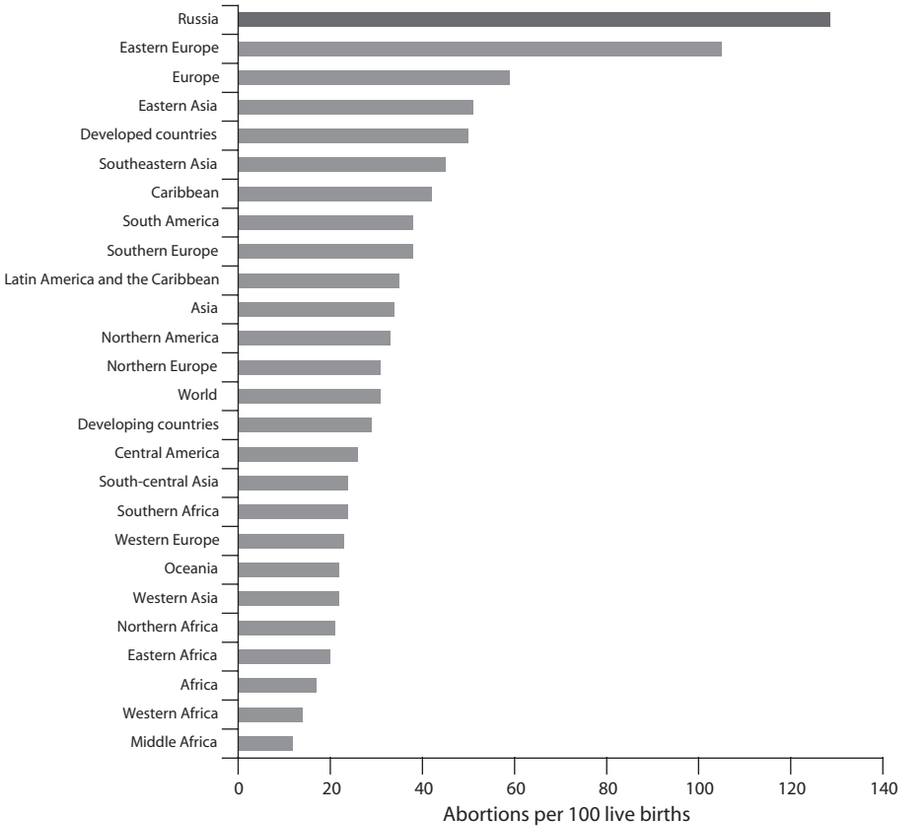
[15] V.I. Sakevich and B. P. Denisov, "The Future of Abortions in Russia" (paper presented at European Population Conference, Barcelona, Spain, July 9-12, 2008), http://epc2008.princeton.edu/download.aspx?submissionId=80419.

[16] Louise Grogan, "An Economic Examination of the Post-Transition Fertility Decline in Russia," *Post-Communist Economies* 18, no. 4 (December 2006): 399–425.

[17] This discussion draws upon Sakevich and Denisov, "The Future of Abortions in Russia"*; Andrej A. Popov, "*Family Planning and Induced Abortion in Post-Soviet Russia of the Early 1990s: Unmet Needs in Information Supply," in *Russia's Demographic "Crisis,"* eds. Julie DaVanzo and Gwen Farnsworth (Santa Monica: RAND, 1995), http://www.rand.org/pubs/conf_proceedings/CF124/CF124.chap3.html; *The Demographic Yearbook of Russia*; various editions; and "Historical Abortion Statistics, Russia," Johnston's Archive, October 25, 2008, http://www.johnstonsarchive.net/policy/abortion/ab-russia.html.

[18] World Health Organization (WHO), European Health for All Database (WHO HFA-DB), http://data.euro.who.int/hfadb/.

FIGURE 2.8 Abortions per 100 live births in International Perspective, Russia and international regions, 2003



SOURCES: International region data from Sedgh et al., "Induced Abortion: Estimated Rates and Trends Worldwide," The Lancet 370, no. 9,595(2007): 1,338–45; and Russia data from V.I. Sakevich and B.P. Denisov, "The Future of Abortions in Russia" (paper presented at European Population Conference, Barcelona, Spain, July 9-12, 2008), http://epc2008.princeton.edu/download.aspx?submissionId=80419.

welcome drop-off in propensity for abortion after the collapse of Communism, Russia's disposition toward abortion is still high by any international measure.

This may be seen from **Figure 2.8**, which places Russian ratios of abortions per 100 live births in global perspective for the year 2003.[19] In 2003, Russia reportedly undertook 121 abortions for every 100 live deliveries—a level nearly four times the global ratio, and well over twice the estimated ratio for East Asia (where the figures are dominated by the effects of China's coercive "one child policy"). Even within the grouping of Eastern European countries—former Soviet bloc states, where abortion culture likewise prevailed during the Cold War era—contemporary Russia's ratio of abortions to live births stands out as conspicuously high. By way of context, in the United States, where concerned parties on all sides of the domestic abortion debate seem to agree that the country's level of abortions is too high, the reported 2003 ratio of abortions to live births was 30.6:100—barely a quarter of the corresponding Russian level.[20]

[19] *Gilda Sedgh* et. al., "Induced Abortion: Estimated Rates and Trends Worldwide," *The Lancet* 370, no. 9,595 (October 13, 2007): 1, 338–45.

[20] Derived from Stephanie J. Ventura, Joyce C. Abma, William D. Mosher, and Stanley Henshaw, "Estimated Pregnancy Rates by Outcome for the United States, 1990–2004," *National Vital Statistics Reports* 56, no. 15 (April 14, 2008), http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_15.pdf.

By the year 2006, Russia had passed a milestone of sorts on abortion. For the first time in at least half a century, the country's live births reportedly exceeded abortions, albeit just barely (a ratio of 95 per 100 live deliveries). Even so, Russia's ratio of abortions to live births remained the highest in Europe. According to data compiled by the World Health Organization's European Health for All Database (HFA-DB), Russia's ratio of abortions to live births in 2006 (the most recent year for which pan-European figures are available) was nearly four times as high as the European average—and nearly 40% higher than for the European society with the next highest abortion ratio, Romania.[21]

Though Russia's "culture of abortion" appears to be waning (or at least attenuating), the practice of abortion is still common in much of the vast Russian expanse. This can be seen in **Figure 2.9**, which presents ratios of abortions to live births for Russia's regions in 2007. Pronounced variations in the disposition toward abortion are evident within the Russian Federation.[22] Perhaps to no surprise, abortion ratios in some of the country's historically Muslim regions—Chechnya, Ingushetia, and Dagestan—registered at only a fraction of the national level. At 13 abortions per 100 live births, Chechnya's ratio would in fact stand as one of the lowest within the WHO-Europe area, roughly equal, in fact, to the ratio in Israel.[23] By the same token, affluent and educated Moscow also reports one of Russia's lowest abortion ratios, a sign that Russians do indeed prefer less arduous methods of everyday fertility regulation than abortion if the means are available to them. But reported abortions still equaled or outnumbered live births in 44 of Russia's oblasts or regions in 2007 and these tended to be Russia's more remote or impoverished reaches. Russia's highest abortion ratios occurred in the Russian Far East (in Sakhalin and Magadan, both over 3,500 miles from Moscow). Reviewing the trends in Figure 2.9, one may wonder if there is not an inverse correlation in Russia today between the local quality of medical care on the one hand and the likelihood that a pregnant woman will undergo an abortion on the other. Needless to say, any such inverse correlation could not stand the country's reproductive health in good stead.

Further cause for concern about the reproductive health of Russian women may be seen from international estimates of maternal mortality. A consortium headed by the World Health Organization, for example, estimated for 2005 that maternal mortality rates (the risk of a woman's death in childbirth for any given number of births) were over two and a half times higher in Russia than the United States, and over six times higher than in Germany or Switzerland.[24]

Overall mortality levels for women in their twenties (the decade in which childbearing is concentrated in contemporary Russia) have been rising, not falling, in recent decades,[25] and this is unquestionably a worrisome trend. There is little doubt that reproductive health conditions are not what they could be—or arguably should be—in the Russian Federation today. Yet at the same time, the case that health problems are a major factor in Russia's low and declining levels of fertility is far from convincing. Maternal mortality rates for Russia, for example, are surely far too high, but at an estimated 28 per 100,000 births in 2005, they are distinctly lower than those of a great many Asian, African, and Latin American countries where fertility rates are well above replacement.

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21 Derived from WHO HFA-DB.

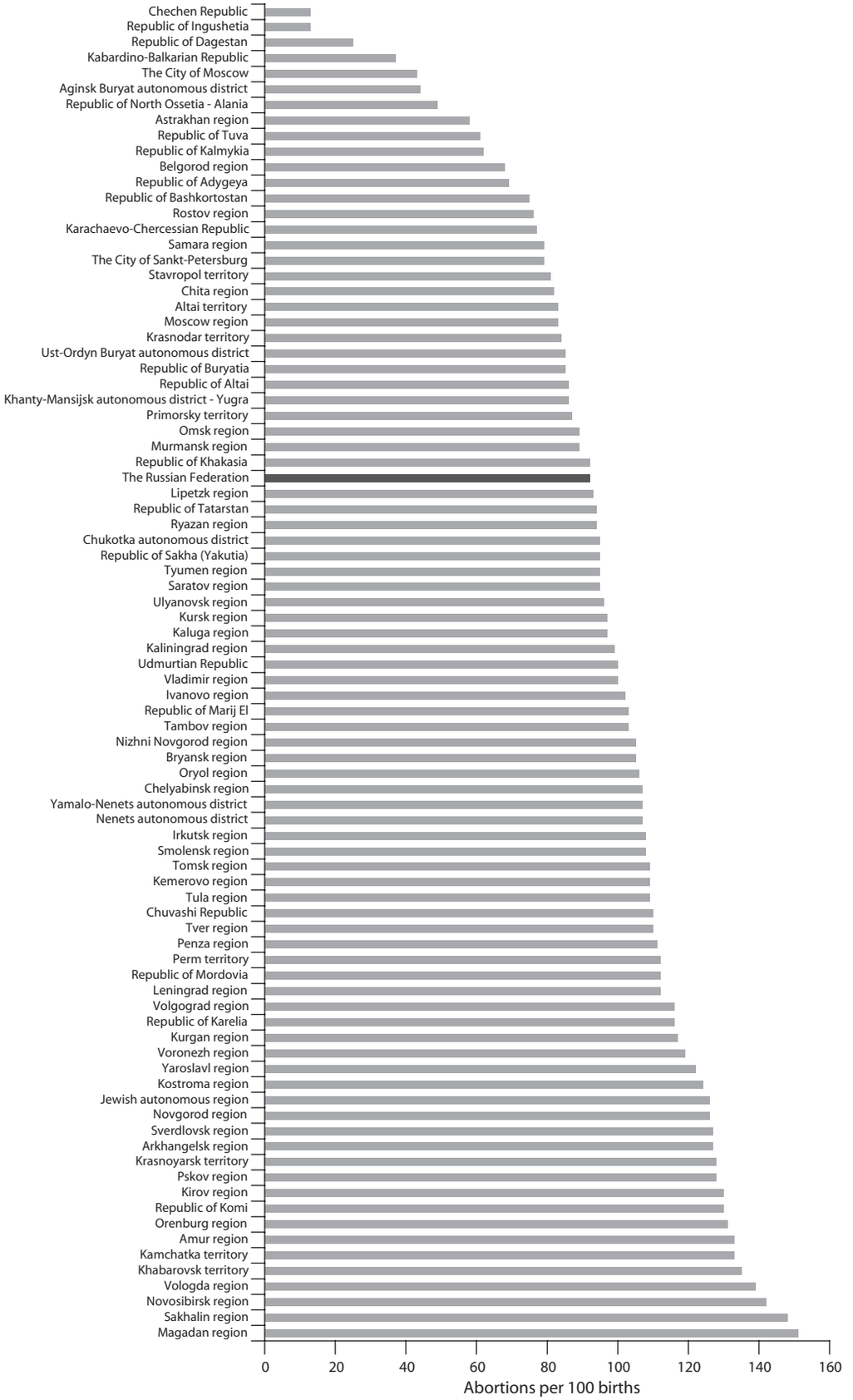
22 The coefficient of variation for abortion ratios in the Russian Federation in 2007 was 0.30—meaning, as we may recall from the beginning of this chapter, that Russia witnessed more regional variation in abortion ratios than in fertility levels.

23 Derived from WHO HFA-DB.

24 "Maternal Mortality in 2005: Estimates Developed by WHO, UNICEF, UNFPA and the World Bank," available at the WHO, http://www.who.int/reproductive-health/publications/maternal_mortality_2005/mme_2005.pdf.

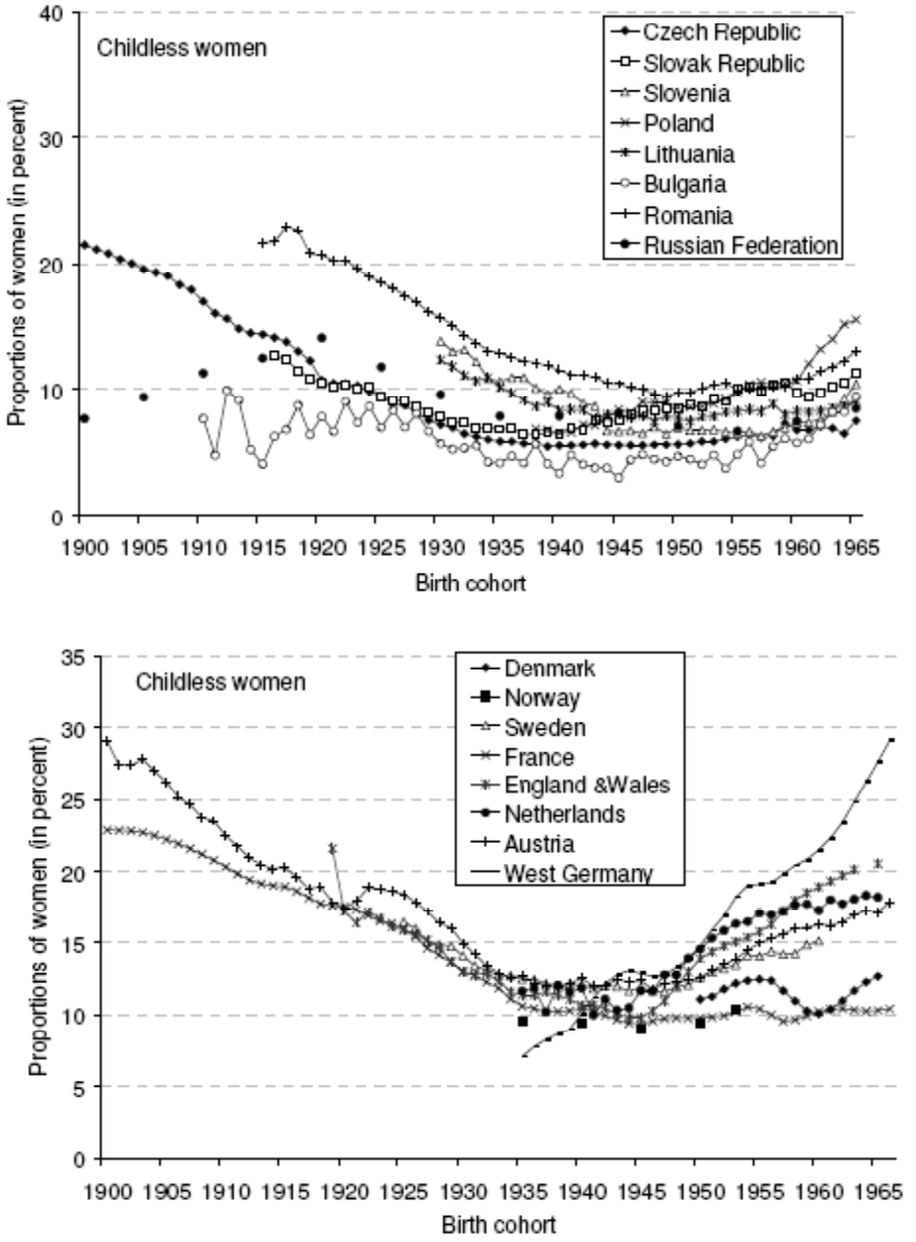
25 Calculations based upon the Human Mortality Database, http://www.mortality.org.

FIGURE 2.9 Abortions per 100 births by region: Russian Federation, 2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 4.10.

FIGURE 2.10 Childless Women by birth cohort in Europe

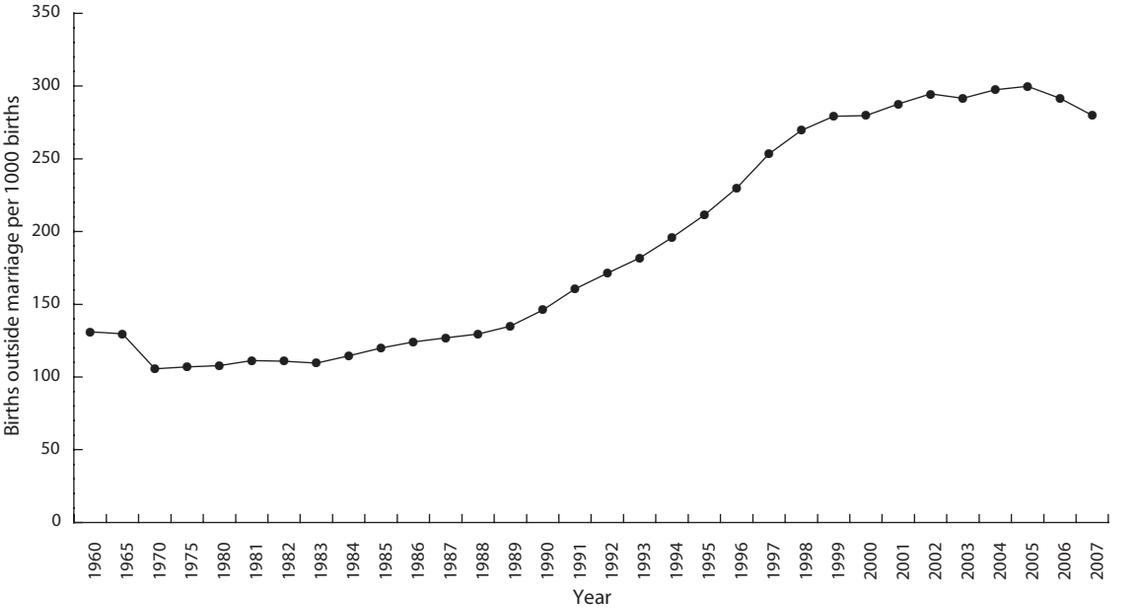


SOURCE: Tomas Frejka, "Parity Distribution and Completed Family Size in Europe," Demographic Research 19, article 4 (2008): 47–72.

These adverse mortality trends, and the country's continuing propensity toward abortion, do not in themselves presage an unusual or rising prevalence of infertility for Russian women. A counter-example to these apprehensions is provided by long-term trends on childlessness in Russia and other countries. As demographer Tomas Frejka has shown in a recent study,[26] the overwhelming majority (well over 90%) of Russian women who entered their childbearing years in the postwar era have given birth to at least one baby. The propensity to childlessness, indeed, has

[26] Tomas Frejka, "Parity Distribution and Completed Family Size in Europe," *Demographic Research* 19, article 4 (July 2008): 47–72.

FIGURE 2.11 Out of wedlock birth ratio (births outside marriage per 1000 births): Russian Federation, 1960-2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), 4.6.

to date been lower in Russia than in virtually all of Western Europe and much of post-Communist Europe as well (see **Figure 2.10**). The prevalence of childlessness in Russia today, we may further note, is appreciably lower than in the United States,[27] although current TFRs are over 50% higher in the U.S. than Russia.

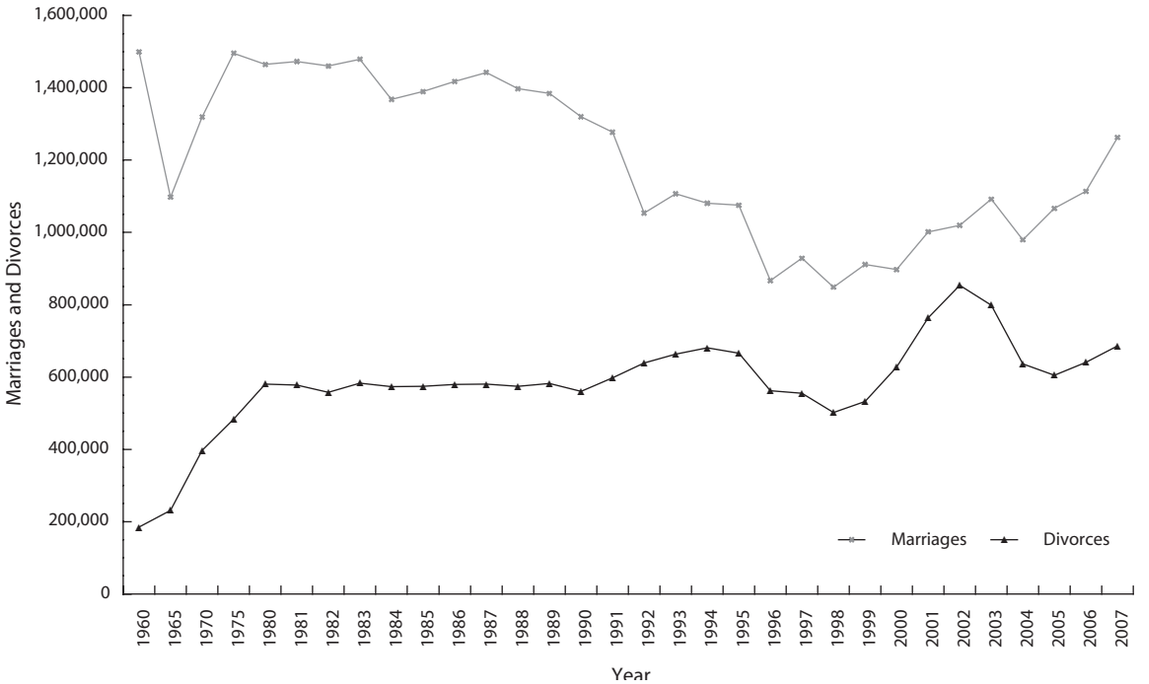
Childlessness per se conflates two very different phenomena: voluntary and involuntary infertility. Even so, as a purely arithmetic matter, Russia's low fertility patterns are not due to any extraordinary inability of Russian women to conceive, but rather to the strong and growing tendency among childbearing women to have no more than two children, and perhaps increasingly, not more than one. The new evident limits on family size in Russia, in turn, speak far less to health constraint than to a veritable sea-change currently underway in the country's norms concerning family formation.

The Russian Family and the "Second Demographic Transition"

The Russian Federation's changing norms on the family are underscored by trends in out-of-marriage childbearing (see **Figure 2.11**). In 1980, fewer than one newborn in nine was reportedly born out of wedlock. By 2005, the country's illegitimacy ratio was approaching 30%—almost a tripling in just 25 years. Interestingly enough, in Moscow and St. Petersburg, the nation's most affluent and "modern" population centers, out-of wedlock births accounted for a lower proportion of births (around a quarter of the total) than for the nation as a whole. Conversely, and no less surprising, in Russia's rural regions, births to unmarried mothers accounted for a distinctly higher

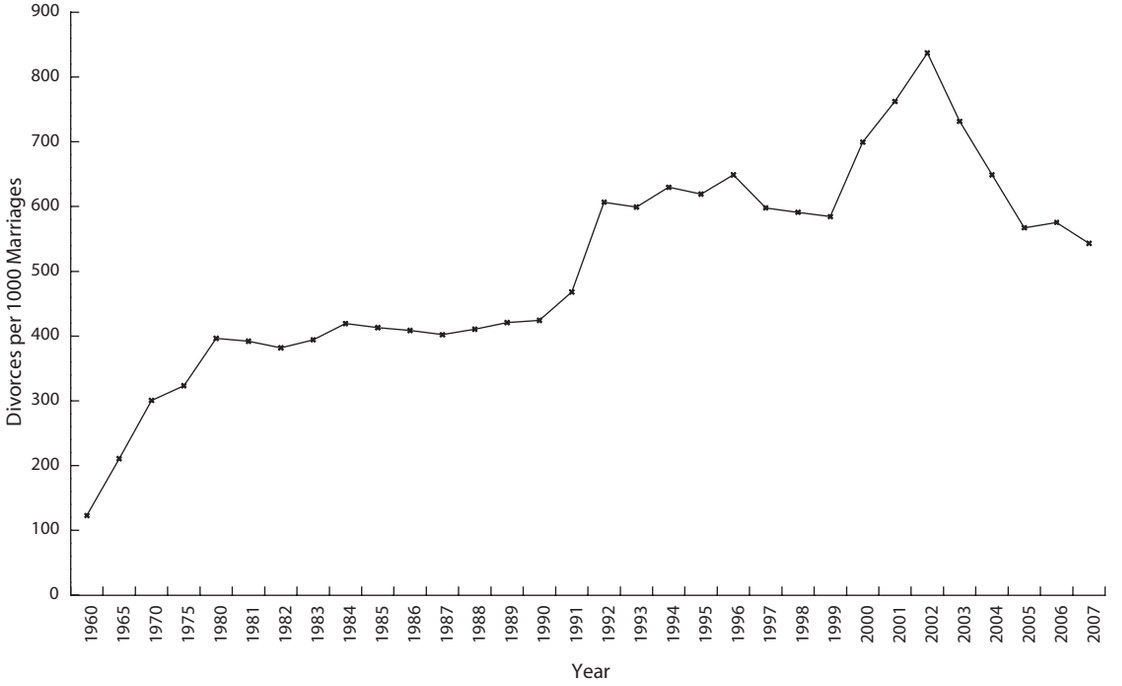
[27] Tomas Frejka and Jean-Paul Sardon "Cohort Birth Order, Parity Progression Ratio and Parity Distribution Trends in Developed Countries," *Demographic Research* 16, no. 11 (April 2007): 315–74.

FIGURE 2.12 Total Marriages and Divorces: Russian Federation, 1960-2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 3.1.

FIGURE 2.13 Divorces per 1000 Marriages: Russian Federation, 1960-2007



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 3.1.

share of childbearing—fully 34% as of 2005—than in the cities. Russia's highest illegitimacy ratios are being registered in some of the country's most remote regions, with a number of territories in Siberia and the Russian Far East reporting half or more newborns registered to unmarried parents.

The increasing likelihood that a Russian baby will be born to parents not themselves married, however, is only one aspect of the profound change in family patterns that can be highlighted in contemporary Russia. Marriage is not only less common in Russia today than in the recent past, it is also markedly less stable. This much can be divined from aggregate data in marriage and divorce for the country as a whole (see **Figure 2.12**).

In 2005, the total number of marriages celebrated in Russia was down by nearly one fourth from 1980 (a fairly typical Brezhnev-era year, at least for marriages). The country's crude marriage rate fell by 27% over this period. On the other hand, the total number of divorces recognized in Russia has been on an erratic rise over the past generation, with crude divorce rates trending unsteadily upward since the end of Communism. Consequently, the ratio of divorces to marriages has tilted markedly over the past generation, rising from under 400 divorces per 1,000 marriages in 1980 to a peak over 800 in 2002 (see **Figure 2.13**). The reported ratio fell substantially after 2002 but was nonetheless close to 600 as of 2005 and 2006. A high crude ratio of divorce to marriage prevails across practically all of the Russian Federation today. As of 2007, that ratio was below 500 in just 16 of Russia's 86 reporting oblasts, republics, and okrugs, and the ratio was said to be at its lowest in some of the traditional areas of Muslim heritage—Dagestan, Ingushetia, and Chechnya (see **Figure 2.14**).

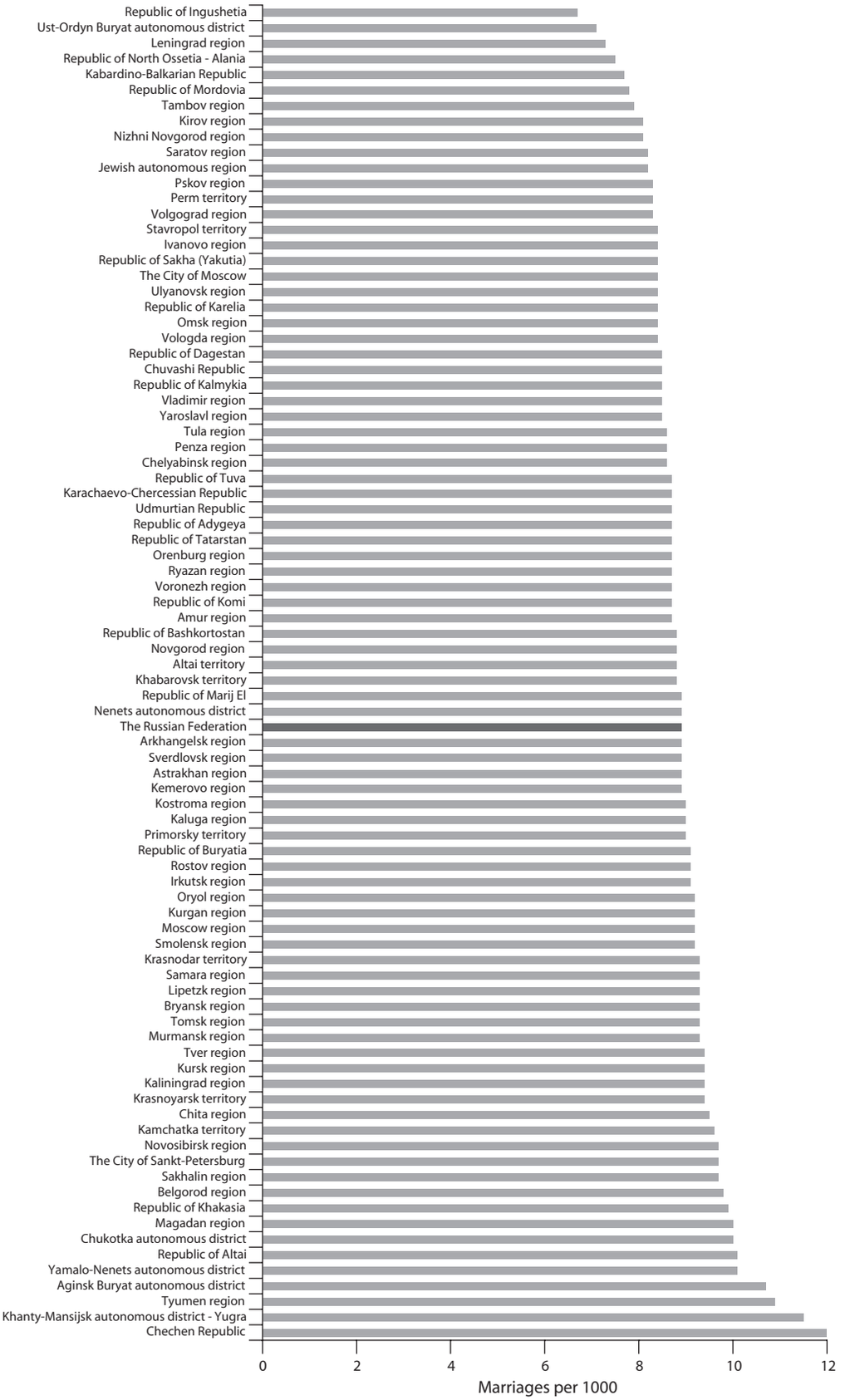
This crude ratio of divorces to marriages, it should probably be cautioned, does not offer an accurate indication of the true probability that marriages will end in divorce, either in Russia or any other land. The annual number of marriages and divorces constitute a flow, whereas the proper denominator for such calculations would be a stock—namely the total number of extant marriages in a society. Conceptually, the appropriate measures for gauging the prevalence of marriage and the likelihood of divorce would be what demographers call the "total marriage rate" and the "total divorce rate." The former measures the likelihood, under prevailing age-specific marriage patterns, that a random women could expect to have been married by the time she reached age 50, and the latter utilizes age-specific divorce data to calculate the odds that a married woman would find herself divorced by age 50. Data on total marriage rates and total divorce rates available for Russia is presented in **Figure 2.15.**

Between 1970 and 1990, Russia's reported total marriage rate was reportedly stable, and virtually universal marriage was apparently the norm. For practically all young women, eventual marriage appeared to be almost a certainty.[28] In the first years of the post-Communist era, however, the Russian Federation's total marriage rate went into virtual free-fall. Between 1990 and 1996, the rate plummeted by fully 40% from 1.00 to 0.60.

Divorce, for its part, was already quite common in Russia by 1970, with approximately a third of all married women consigned to divorce by age 50 in the patterns that prevailed in that particular year. As the Communist era approached its end, this total divorce rate gradually increased, reaching 0.40 in 1990; with the end of Communism, the total divorce rate rose still further, hitting 0.51 in 1994 and registering a conditional rate of 0.43 in 1996.

[28] Note that for some years under consideration, Russia's reported total marriage rate exceeded 1.00—a conceptual impossibility. The paradox can be explained by two factors: (1) misreporting of first marriages—i.e., indicating a re-marriage to be a first marriage, and (2) slight changes in the timing of first marriage for women of different birth cohorts, leading to a bunching effect for period calculations of total marriage rates.

FIGURE 2.14 Crude Marriage Rate by region: Russian Federation 2007 (Marriages per 1000 population)



SOURCE: Goskomstat, *The Demographic Yearbook of Russia 2008* (Moscow: FSUE, 2008), table 3.2.

FIGURE 2.15 Total Marriage and Divorce Rates: Russian Females, 1960-1996

SOURCE: "Recent Demographic Developments in Europe 2005," Council of Europe, 2006.

Taken together, Russia's total marriage and total divorce rates indicate an extraordinary—and extraordinarily rapid—shift in family formation patterns immediately upon the end of the Soviet era. In 1990, the late Gorbachev era, universal marriage was still the norm, and while divorce was very common, given prevailing nuptiality and divorce patterns, a distinct majority of Russian Federation women (60%) could expect to have entered into a first marriage and still remain in that marriage by age 50. By 1996, the picture was radically different. Given the sudden plunge in nuptiality and the continuing rise in divorce, the new patterns for the country implied that barely a third of Russia's women (34%) would get married and stay in that same marriage until age 50.

There is a reason these data on total marriage and divorce rates for Russia end in 1996. Due to changes in official procedures in 1997, Russia's Federal State Statistics Service in effect directly reduced the scope and detail of the marriage and divorce data it had heretofore collected, making the calculation of total marriage and total divorce rates thereafter impossible.[29] Even so, by other quantitative soundings, Russia's retreat from marriage appears to have continued after 1997, with the fragility of those marriages contracted continuing to rise.

For recent years, the most important data source on family formation in the Russian Federation may be the "Generations and Genders Surveys in Russia" (RusGGS), a panel survey supervised by the Moscow-based Independent Institute for Social Policy, that comprised about 11,000 interviewees and has been conducted to date in two waves (2004 and 2007). According to data from the 2004 wave, the probability of divorce in Russia for any given length of marriage was

[29] A. Avdeev and A. Monnier, "Marriage in Russia: A Complex Phenomenon Poorly Understood," *Population: An English Selection* 12 (2000): 7–50.

typically, and often markedly, higher for the years 1998–2003 than it had been in 1994–98 (when the risk of divorce, in turn, had been higher than in the preceding period).[30]

But as the odds of failure for any given marriage were rising, young women in Russia increasingly seemed to be choosing to avoid marriage altogether. **Figures 2.16** and **2.17**, prepared from RusGGS data by the Russian Academy of Science's Sergei Zakharov, demonstrate as much.

In the Communist era and before, early marriage was the norm in Russia (in 1990, the average age for first marriage for women was slightly under 22 years).[31] Since the end of the Soviet era, intimate contacts between young Russian men and women have hardly become less likely. To the contrary, the age of sexual debut for boys and girls alike has reportedly been progressively declining in Russia in recent years.[32] Yet when it comes to establishing relationships with men, young women in Russia today seem to be opting for cohabitation before marriage, and to a striking extent, instead of marriage. In the early 1980s, about 15% of women had been in consensual unions by age 25; twenty years later, the corresponding proportion was 45%. Many fewer of those once-cohabiting young women, moreover, seem to be moving into marital unions. Whereas roughly a generation earlier fully half of those cohabiters were married within a year, today fewer than a third are married after a year. The same holds true for the chances of moving from a consensual union into a first marriage after three years of living together; after five years the time expectations for converting a live-in relationship into a marriage in Russia are more or less exhausted. Sergei Zakharov put this plainly:

> …if the [consensual] relationship is not formalized within 3–5 years of living together, the chances the marriage will be registered at some time in this partnership are minimal: there is virtually no difference between the percentage of registered marriages by the fifth and the tenth year from the start of relations.[33]

In the 1980s, European demographers began to talk of a "second demographic transition." The original concept of the demographic transition, of course, refers to the stylized historical and social shift from high death rates and high birth rates to low death rates and low birth rates (or, put another way, from large families and short lives to smaller families and long lives). The second demographic transition was a term meant to describe the new patterns of family formation that were occurring in Western Europe: declining total marriage rates in tandem with rising total divorce rates, the spread of cohabitation and other living arrangements that served as alternatives to marriage, delayed age at marriage, less stable or more contingent unions (measured by the criterion of time), and sub-replacement fertility regimens.[34] By those particulars, current trends in the Russian Federation exhibit most (though not all) of the characteristics of the second demographic transition previously witnessed in Western Europe. Zakharov further states:

> In the industrialized world, the second demographic transition manifested itself in the generation born in the 1950s and 1960s…In Russia, no changes were

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30 Cf. A. G. Vishnevskii, ed., *Naseleniye Rossii 2005 [The Population of Russia 2005]* (Moscow: MAKS Press, 2007), figure 2.8, 70.

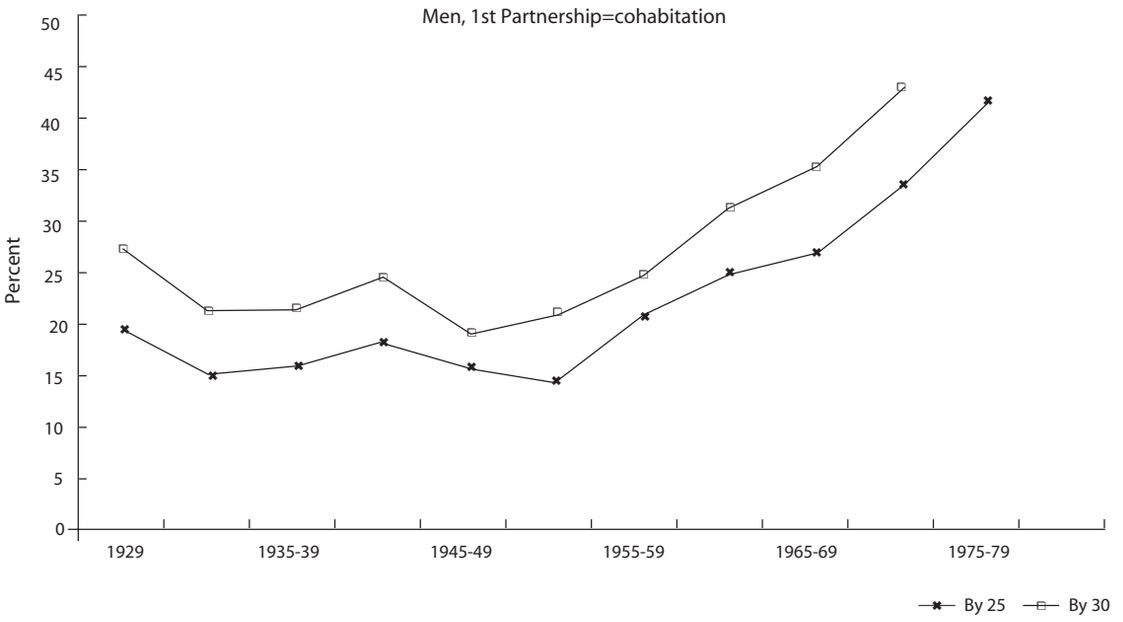
31 *Naseleniye Rossii,* 2005, table 2.3, 48.

32 Sergei Zakharov, "Russian Federation: From the First to Second Demographic Transition," *Demographic Research* 19, article 24 (July 2008): 907–72.

33 Zakharov, "Russian Federation."

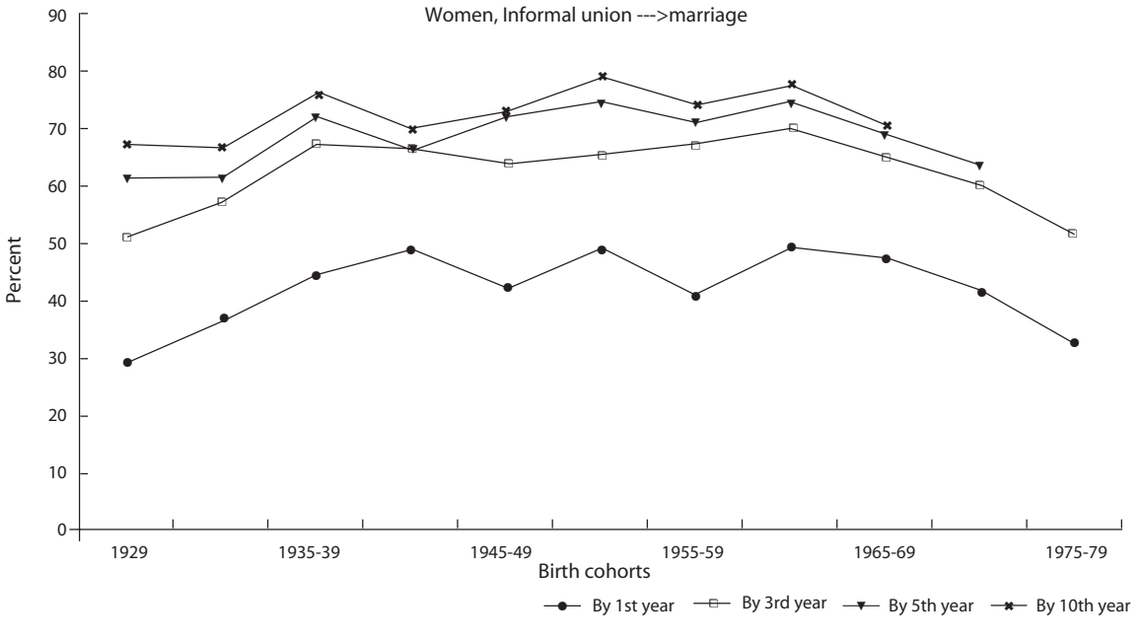
34 R. Lesthaeghe and D. van de Kaa, "Twee Demografische Transities?" [Two Demographic Transitions?] in eds. R. Lesthaeghe & D. van de Kaa, *Bevolking - Groei en Krimp, Mens en Maatschappij* [Population—Growth and Decline, People and Society] (Van Loghum Slaterus: Deventer, 1986), 9–24.

FIGURE 2.16 Cumulative percentage of women who had, by the specified age, entered a first partnership which was a consensual union: Russia, birth cohorts



SOURCE: Sergei Zakharov, "Russian Federation: From the First to Second Demographic Transition," *Demographic Research* 19, article 24 (July 2008): 907–72.

FIGURE 2.17 Cumulative percentage of women whose first partnership was a consensual union later converted into marriage, since start of first partnership: Russia, birth cohorts



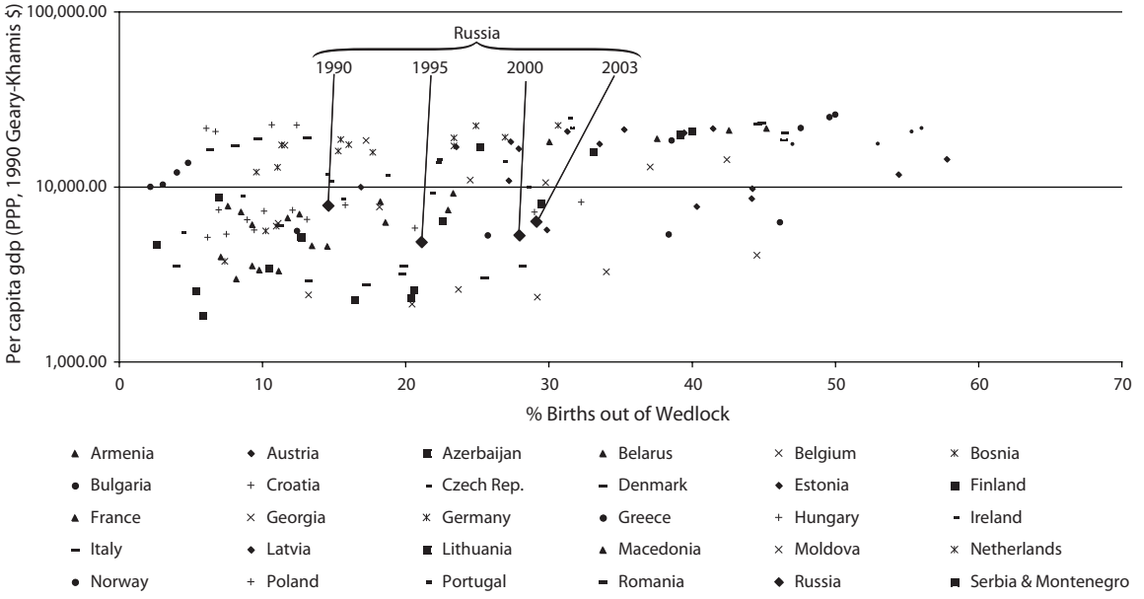
SOURCE: Sergei Zakharov, "Russian Federation: From the First to Second Demographic Transition," *Demographic Research* 19, article 24 (July 2008): 907–72.

> observed before the cohorts born in the first part of the 1970s….The Russian cohorts born in the 1970s and more recently, whose socialization had already begun in the "new, post-Soviet Russia," tend to differ from their parents. They marry and become parents at more mature ages. They delay the first and the second birth. They increasingly prefer to begin a partnership with cohabitation rather than with legal marriage. Family planning becomes more effective, i.e. contraception replaces abortion….Data…convincingly demonstrate that in Russia over the past two decades a "quiet revolution" has taken place…[35]

Is Russia's post-Communist plunge in births the consequence of a demographic shock or the handmaiden of what Zakharov calls a quiet revolution in patterns of family formation? At the moment, it is possible to see elements of both in the Russian Federation's unfolding fertility trends—although it might be hazardous to assign relative weights to the respective contributions of those two distinct and separate phenomena. Demographic shocks tend by nature to be transient; demographic transitions or revolutions, considerably less so. Over the past two centuries, no country to undergo the first demographic transition has ever reverted to the erstwhile regimen of large families and low life expectancy. And to date, no European society that has embarked upon the so-called second demographic transition has as yet reverted to more "traditional" family patterns and higher levels of completed family size. So far the directionality seems all to point just one way. Thus the outlook for Russian Federation fertility trends over the coming generation may

[35] Zakharov, "Russian Federation," 907–72.

FIGURE 2.18 Percentage of Births out of Wedlock vs. Per capita GDP (PPP), Russia and Europe, 1990-2003



SOURCES: Angus Maddison, "Historical Statistics of the World Economy: 1-2006 AD"; and Eurostat Database, http://epp.eurostat.ec.europa.eu.

be said to depend precisely on the extent to which Russia's recent birth patterns portend a shift, rather than just a shock.

Implications and Consequences of Russia's New Birth Rate and Family Formation Trends

Of the many ramifications to be divined from the evidence presented in this chapter, three in particular seem to merit mention at this point for their bearing on the outlook for development and/or national security for the Russian Federation.

First, while Russia is by no means as far along in its second demographic transition as many Western European societies today, practically no society has progressed so far on that path while remaining at such very low levels of per capita income. **Figure 2.18** underscores this circumstance. This figure details the correspondence between out-of-wedlock birth ratios and per capita income levels within the greater European space over the generation since 1990. Russia's current ratio, as already noted, verges on 30%. When Western European states reached that same 30% threshold, their levels of per capita output were all dramatically higher. For the comparison between Russia on the one hand and France, Austria and Britain on the other, the ratio of per capita was almost three to one. For Russia and Germany, the ratio was over three to one. In relation to Ireland and the Netherlands, the ratio was over 3.5 to one.

Effectively, a second demographic transition at far lower income levels suggests, among other things, that Russia's "new pioneers" in this spontaneous social experiment—the country's mothers and their children—will be afforded far less of the social protections that their Western European counterparts could count on by dint of their own societies' generous welfare states.

A second and related point pertains to investment in children in the era of steep fertility decline in the Russian Federation. According to prevailing tenets of Western economic thought, a decline in fertility—to the extent it occurs under conditions of orderly progress, and as a consequence of parental volition—should presage auspicious changes in the material environment for the rising cohort of newborns and children. The reasoning here (theories that go under such names as "the new family economics" and "the new household economics") holds that a shift to smaller desired family size, all else being equal, signifies an increase in the "relative price" of children—meaning, in effect, an increase in parents' expected commitments to each child's education, nutrition, health care, and the like. With fewer children in any given family, moreover, each given child *ceteris paribus* should also be the beneficiary of more time, attention, and personal care from parents, relatives, and perhaps also other adults.[36]

All this, of course, is not just plausible in theory, but actually corroborated by evidence in many diverse settings in our contemporary era. Yet post-Communist Russia, unfortunately, provides a troubling "existence proof" that fertility decline under conditions of general order need not always result in a broad improvement in child wellbeing. In the Russian Federation, despite a substantial and sustained increase in measured per capita income over the past decade, there are unambiguous indications of worsening social wellbeing for a nontrivial proportion of the country's children—in effect, a disinvestment in children in the face of a pronounced downward shift in national fertility patterns.

To be clear, not all trends bearing on childhood wellbeing in Russia are adverse. Quite a number in fact look positive. To judge by UNICEF's compilations of the apposite data, early childhood mortality (under age 5) and child nutrition trends, for example, have generally (if erratically) increased since the end of the Communist era, and the prevalence of childhood immunizations against preventable diseases are much higher today than in the Communist period.[37] Conventional measures (i.e., calculations using the World Bank international benchmark of $2 purchasing power parity [PPP] per capita per day) also indicate a decreasing prevalence of child poverty in Russia, at least for the period since 1998.

Yet two enormous setbacks in child wellbeing have evidently also been witnessed during the period of dramatic fertility decline. The first concerns net enrollment in school. Enrollment data for Russian educational institutions is somewhat problematic, especially for the period since the end of Soviet rule. But according to UNESCO's figures, net enrollment rates for primary school-age children in Russia were sharply and conspicuously lower in 2003–04 (at 91%) than they had been in 1990–91 (a reported rate of 99%). Note that since the primary school age in Russia runs from ages 6–7 to ages 10–11, this means that the drop in net enrollment affected children born in 1992 and subsequent years, the cohort characterized by the steep fertility drop.

Universal primary education, by UNESCO's reckoning, is no longer completely characteristic among Russia's children. According to the same data source, gross enrollment ratios for lower secondary schooling in Russia (children roughly 10–11 to 14–16 years of age) also dropped during the recent period of rapid economic growth, declining from 92% in 1998–99 to 89% in 2003–

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[36] There is a rich literature on this subject. For classic contributions, see Gary Becker, "An Economic Analysis of Fertility," in *Demographic and Economic Change in Developed Countries*, Conference of the Universities-National Bureau Committee for Economic Research (Princeton: Princeton University Press, 1960): 209–40; Theodore W. Schultz, *Economics of the Family: Marriage, Children and Human Capital* (Chicago: University of Chicago Press for the National Bureau of Economic Research, 1974); and Gary S. Becker, *A Treatise on the Family* (Cambridge: Harvard University Press, 1981).

[37] UNICEF, *Innocenti Social Monitor 2006: Understanding Child Poverty in South-Eastern Europe and the Commonwealth of Independent States* (Florence: UNICEF, 2006), http://www.unicef-irc.org/publications/pdf/ism06_eng.pdf.

04.[38] These indicators provide what amounts to virtually a textbook example of disinvestment in human capital.

Another setback—hardly less alarming—has been the re-emergence of the phenomenon of "abandoned children" in the Russian Federation. Given modern Russian history's tragic particulars, orphans, foundlings, and otherwise parentless children were an all-too-familiar feature of the social landscape during much of the Soviet era. Soviet Russia's disposition toward parentless children, however, reflected the catastrophic upheavals of the politics and wars of the times. By the end of the Soviet era, orphanhood was much more limited in Russia than in earlier generations. Today, however, abandoned children are a stark presence in Russian society.

As one might expect, reliable data on the prevalence of child abandonment for the Russian Federation is limited. Widely divergent estimates are currently in circulation, and many of these numbers are difficult if not impossible to substantiate. But official statistics on institutionalized children are available for Russia, and according to these over 400,000 Russian children below eighteen years of age were in "residential care" as of 2004.[39] By those numbers, 1.4% of all Russian children were living under official institutional arrangements, meaning almost 1 child in 70 was in a children's home, orphanage, or state boarding school. By UNICEF's figures, no other post-Communist society reported such a high fraction of children under institutional care. In addition, Russia is also home to a large and possibly growing contingent of street children. This proportion of Russian youth could well exceed the fraction under institutional care. According to a report from 2002, in Moscow alone, the Russian Interior Ministry put the number of homeless children at 33,000. The International Labor Organization (ILO) has suggested the total might be closer to 50,000.[40] The Russian Children's Welfare Society cites estimates from Russia's official authorities that suggest as many as 2.5 million children in Russia today suffer homelessness.[41] According to Human Rights Watch, over 100,000 children in Russia have been abandoned by their parents each year since 1996.[42] If accurate, this number when compared to the annual tally of births for the Russian Federation—which averaged a little less than 1.4 million a year for the 1996–2007 period—implies that somewhere in excess of 7% of Russia's children are being discarded by their parents in this new era of steep sub-replacement fertility. Devising an upbeat interpretation of the portent of such trends for human resource development would tax the talents of Russia's greatest state censors, past or present.

In addition, troubling indications concerning child wellbeing have been emerging from some of the anthropometric data that is being collected on the generation of post-Communist newborn infants. According to one study for St. Petersburg, for example, the mean birthweight and birth stature (length) of the cohort of newborns born in that city since 1991 has been markedly lower than for those who were born in the late Soviet era. According to the author of that study, trends in birth height and weight turned downward in the early 1990s, only recovering to their *perestroika* levels in 2004. Even now, they reportedly remain lower than they were in the early 1980s, nearly

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38 UNICEF, *Innocenti Social Monitor,* 52, table 3.10.

39 UNICEF, *Innocenti Social Monitor,* annex, table 6.1

40 Francesca Mereu, "Russia: Homeless Children—Helpless Victims of Collapsing Welfare, Family Systems," reprinted in *Johnson's Russia List,* no. 6317, June 20, 2002, available at http://www.cdi.org/russia/johnson/6317-3.cfm.

41 Russian Children's Welfare Society, "Statistical Snapshots: Russia's Children at Risk," http://www.rcws.org/aboutus_statistics.htm.

42 Clementine K. Fujimura, Sally W. Stoeker, and Tatyana Sudakova, *Russia's Abandoned Children: An Intimate Understanding* (New York: Praeger, 2005): 5.

a generation earlier.[43] Birth weight and birth height can convey important information about a child's health status, and can be meaningful predictors of performance later in life. It is perhaps especially noteworthy that these particular negative trends were registered in St. Petersburg, one of Russia's wealthiest and healthiest locales. These patterns seem to mark a reversal from the trends of the early postwar era. An array of regional anthropometric data for the 1950s and 1960s suggests those decades were a period of rapid increase in heights and weights for Russia's newborns, children, and adult men and women alike[44] (a finding that tracks with the improvements in general health conditions otherwise registered during those years, particularly in the 1950s).

There are a number of possible explanations for a decline in weight and stature for Russian newborns in the regions where this has occurred in the post-Soviet era. One of the most compelling, however, may have to do with the influence of heavy drinking by pregnant Russian women on birth outcomes. This possibility is underscored by an ingenious study undertaken by Andreea Balan Cohen of Tufts University, who examined anthropometric data from the era of the Gorbachev anti-alcohol campaign (1986–87), and discovered that Russian babies born during that episode were on average, measurably less likely at any given age to suffer from stunting (low height-for-age) than their counterparts born both before and after the campaign.[45] Further, she found that low height-for-weight scores tended to be much more prevalent for children from Russia's "high intensity regions" of alcohol consumption than those from "low intensity regions."

While Cohen's study did not present data on the weight and stature of newborns, we might well expect those same sort of adverse indications she documented among children would have also shown up at the time of birth, in both times and regions of heavier alcohol consumption. Estimated alcohol intake levels for Russia overall surged in the 1990s[46] and the early years of the 2000s,[47] hitting levels above the peak years from the Soviet era. Thus there is every reason to suspect that this upsurge in drinking has compromised the health of many of today's Russian infants and children, and at the very start of their lives.

Finally, the inevitable, and all but inescapable, consequence of the past decade and a half of sharply lower birth levels will be a drop-off in Russia's working age population and an acceleration of the tempo of population aging in the period immediately ahead.

As of mid-year 2008, there were a little more than twenty million children under the age of fifteen in the Russian Federation. Over the next decade and a half, those boys and girls will all be moving into the "population of working ages" (conventionally defined as the 15–64 cohort). Fifteen years from now, today's children under fifteen will constitute the pool of potential workers between 15 and 29 years of age. Currently, however, Russia's 15–29 group stands at 33 million men and women—over 60% larger than today's under-15 group. Barring only steady and massive in-

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43 Paul Goble, "Window on Eurasia: More Disturbing Demographic Data from Russia," January 20, 2009, http://social.moldova.org/news/more-disturbing-demographic-data-from-russia-177696-eng.html.

44 Elizabeth Brainerd, "Reassessing The Standard of Living in the Soviet Union: An Analysis Using Archival and Anthropometric Data" (unpublished paper, 2008), http://www.williams.edu/Economics/brainerd/papers/ussr_july08.pdf; and Stephen G. Wheatcroft, "The Great Leap Upwards: Anthropometric Data and Indicators of Crises and Secular Change in Soviet Welfare Levels, 1880–1960," *Slavic Review* 58, no. 1 (Spring 1999): 27-60.

45 Andreea Balan Cohen, "Sobering Up: The Impact of the 1985–1988 Russian Anti-Alcohol Campaign on Child Health" (Northeast Universities Development Consortium Conference, Harvard University Center for International Development, Cambridge, Massachusetts, October 26–27, 2007), http://www.cid.harvard.edu/neudc07/docs/neudc07_s3_p01_cohen.pdf.

46 For evidence and estimates, see A.V. Nemtsov, "Alcohol-Related Human Losses in the 1980s and 1990s," *Addiction* 97, no.11 (November 2002): 1,413–25.

47 Yurii Andrienko and Alexander Nemtsov, "Estimation of Individual Demand for Alcohol," , Centre for Economic and Financial Research, Economics Education and Research Consortium Working Paper Series, no. 05/10, 2005, http://www.eerc.ru/details/download.aspx?file_id=7495.

migration, Russia's potential labor pool will shrink markedly over the coming decade and a half, and will continue to diminish thereafter, absent a radical upsurge in fertility in coming years.

We will discuss the dimensions and implications of Russia's labor force outlook and its population aging situation in greater detail later in this study. For now, we may simply observe that population aging in Russia stands to be affected directly by the country's pronounced drop-off in births. Although this may sound counterintuitive, the median age and percentage of older citizens in any naturally constituted population is always influenced much more by birth rates than by changes in longevity. This is because childbearing patterns set the base of the population pyramid: a population structure with a wide base will be youthful, while a population with a small contingent of young people will perforce be grayer.

We will have more to say about Russia's coming problem of population aging later in this book. For now, we may simply underscore this point: due primarily to its birth patterns, Russia has already become an aged society of a special sort—an aged society with an exceptionally low level of per capita income. Despite Russia's poor survival schedules, steep sub-replacement fertility means that Russia's median age and proportion of elderly citizens are set to increase still further over the decades immediately ahead.

CHAPTER 3

Russia's Ominous Patterns of Mortality and Morbidity: Pioneering New and Modern Pathways to Poor Health and Premature Death

Disaster, calamity, tragedy: these are the sorts of terms that the Russian Federation's current public health situation calls to mind. It serves no purpose, intellectual or political, to cloak the woeful state of the country's health conditions beneath more diplomatic euphemisms for describing the ongoing crisis.

In its raw dimensions, Russia's public health losses today are of a scale akin to what might be expected from a devastating and unending general war. Since the end of the Communist era, "excess mortality" has cost Russia hundreds of thousands of lives each and every year. The Russian Federation's horrifying health problems did not just suddenly erupt. To the contrary, today's terrible patterns instead represent merely the latest culmination of ominous trends that have been darkly evident on Russian soil for almost half a century.

Long ago, after the death of Stalin and the end of the Stalin era's terror and total warfare, there was a moment when Soviet Socialism seemed to offer a vista of almost unlimited promise for improvements in health and longevity for the Russian population. But then Communist Russia's post-Stalin modernization took Russian public health off in a strangely unfamiliar and indeed menacing direction. The Soviet Union's own fateful version of peacetime industrialization brought forth an eerie new pattern of socio-economic development in the 1960s and 1970s, one never before witnessed.

This brave new path entailed simultaneous increases in general levels of urbanization, general levels of educational attainment, and general levels of mortality for key elements of the population. Far from representing a temporary and limited anomaly, rising death rates came instead to define the life chances of a steadily expanding proportion of the

population of Soviet Russia, eventually characterizing public health circumstances for the public as a whole. By the late Soviet era it was clear that Soviet Russia's health trajectory was veering badly off course from the rest of the postwar world's general trends of pervasive, regular, and incremental annual improvements.

Russia's health patterns did not, however, correct course with the collapse of the USSR. To the contrary, while the end of the USSR marked one the most momentous political changes of the twentieth century, that transition has been attended by a gruesome continuity in adverse health trends for the Russian population. In fact, in the first decade and a half of its post-Communist history, the country's terrible aberration in health conditions has actually become more intense and more extreme. As hard as this may be to believe, life expectancy in the Russian Federation today is actually lower today than it was in the late 1950s—almost half a century ago.

Russia's continuing and acute health crisis presents the world not only with a humanitarian tragedy but also with something of an analytical mystery. The spectacle of such stagnation and even deterioration in health conditions would seem to challenge our most fundamental precepts about social development and public policy in industrial societies. How could a literate European country with a strong technical and scientific base gradually but inexorably retrogress toward a third world mortality profile? Why would government policy prove so manifestly incapable of arresting this deterioration? That general enigma is even more acutely puzzling for the past decade of the Russian experience. From 1999 through 2008—up to the eve of the current world financial crisis—the nation's per capita income grew vigorously, reportedly almost doubling, while death rates barely budged.

Like the urbanized and literate societies in Western Europe, North America, East Asia, and Oceania, the overwhelming majority of deaths in urbanized, literate Russia today accrue not from infectious but rather chronic diseases: heart disease, neoplasms (cancers), cerebrovascular disease (strokes), and the like. This is where the similarity ends. In all those other venues, death rates from chronic diseases are quite low, relatively stable, and declining regularly over time. In the Russian Federation, by contrast, overall mortality levels from chronic diseases are astonishingly high—indeed, they look impossibly high. To make matters worse, Russia's death rates from chronic diseases are manifestly unstable, oscillating wildly and erratically. Moreover, these chronic mortality levels seem to be rising, not falling, over time.

Something terrible and new is underway in contemporary Russia. The country is pioneering eerie new modern pathways to poor health. It is generating overall levels of premature mortality much like those in third world societies but through specific cause-of-death patterns that any truly impoverished society could never afford to replicate. For most of the world, health levels have progressively improved over recent decades, irrespective of the income levels or educational attainment of the population under consideration. In the Russian Federation, by contrast, the new technical and scientific opportunities of our era have somehow been harnessed to a nation-wide formula for preventing health progress—indeed, for driving life expectancy down. Somehow, Russia has modernized the "production" of high death rates and abysmal public health.

Postwar Life Expectancy Trends: Russia Leaves the West

The single clearest and most comprehensible summary measure of a population's mortality prospects is its estimated expectation of life at birth. Russia's trends in life expectancy at birth from

1959 through 2006 are illustrated in **Figure 3.1**. These estimates come from the Human Mortality Database project, an international research consortium based at the University of California–Berkeley and the Max Planck Institute for Demography in Rostock, Germany. They are based on official Soviet and Russian Federation statistics, but are preferable to the official numbers because they are likely to be somewhat more accurate. The expert Human Mortality Database team has thoroughly reviewed the official data and has produced its own reconstructions to remove small quirks, inconsistencies, and errors from the series previously published by Moscow. Although these reconstructions do not result in any major differences with the official Goskomstat series, they do assure better comparability with mortality and life expectancy data from other countries.

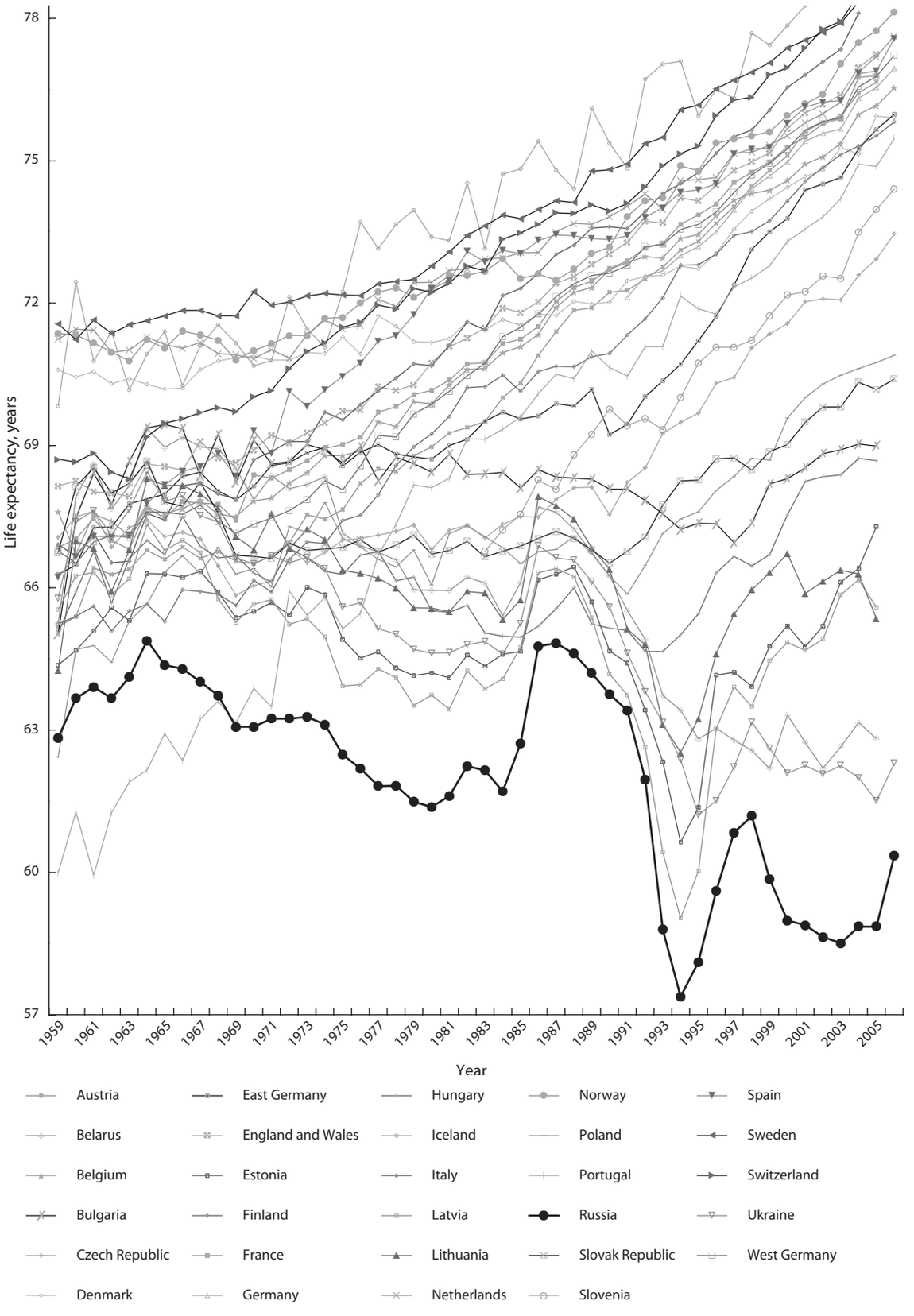
In the late 1950s and early 1960s, Russia's life expectancy was rising briskly. In the five years between 1959 and 1964, overall expectation of life at birth increased by more than two years, a robust tempo of improvement by any standard. Then, inexplicably, overall health progress in Russia came to a sudden and spectacular halt. The year 1964 saw the Kremlin ouster of Nikita Khrushchev and the start of the Brezhnev era, which lasted until Leonid Brezhnev's death in 1982. Over that eighteen-year period, Russia's life expectancy not only stagnated but actually declined, with overall life expectancy falling by about a year and a half and life expectancy for men dropping by more than two and a half years.

Russia's life expectancy recovered these losses during the Gorbachev period, which represented the apex of Soviet-era health achievement. Even at its pinnacle in 1986 and 1987, however, overall life expectancy at birth for Russia was only marginally higher than it had been in 1964. It never actually managed to cross the symbolic 70-year threshold. With the end of Communism, moreover,

FIGURE 3.1 Life Expectancy at Birth: Russian Federation, 1959–2006

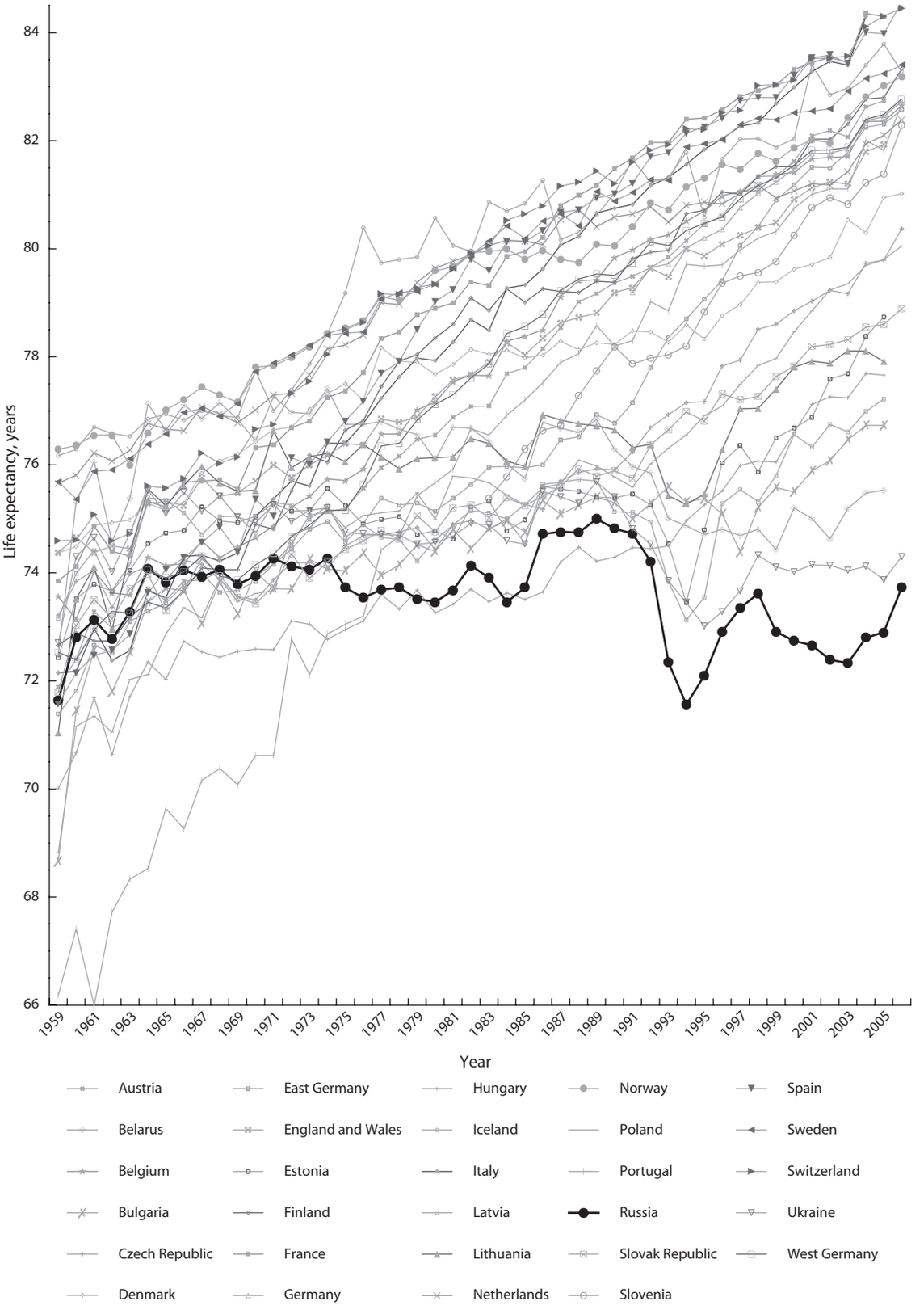
SOURCE: Human Mortality Database, University of California, Berkeley, and Max Planck Institute for Demographic Research, http://www.mortality.org.

FIGURE 3.2 Life Expectancy in Europe, 1959–2006 (males)



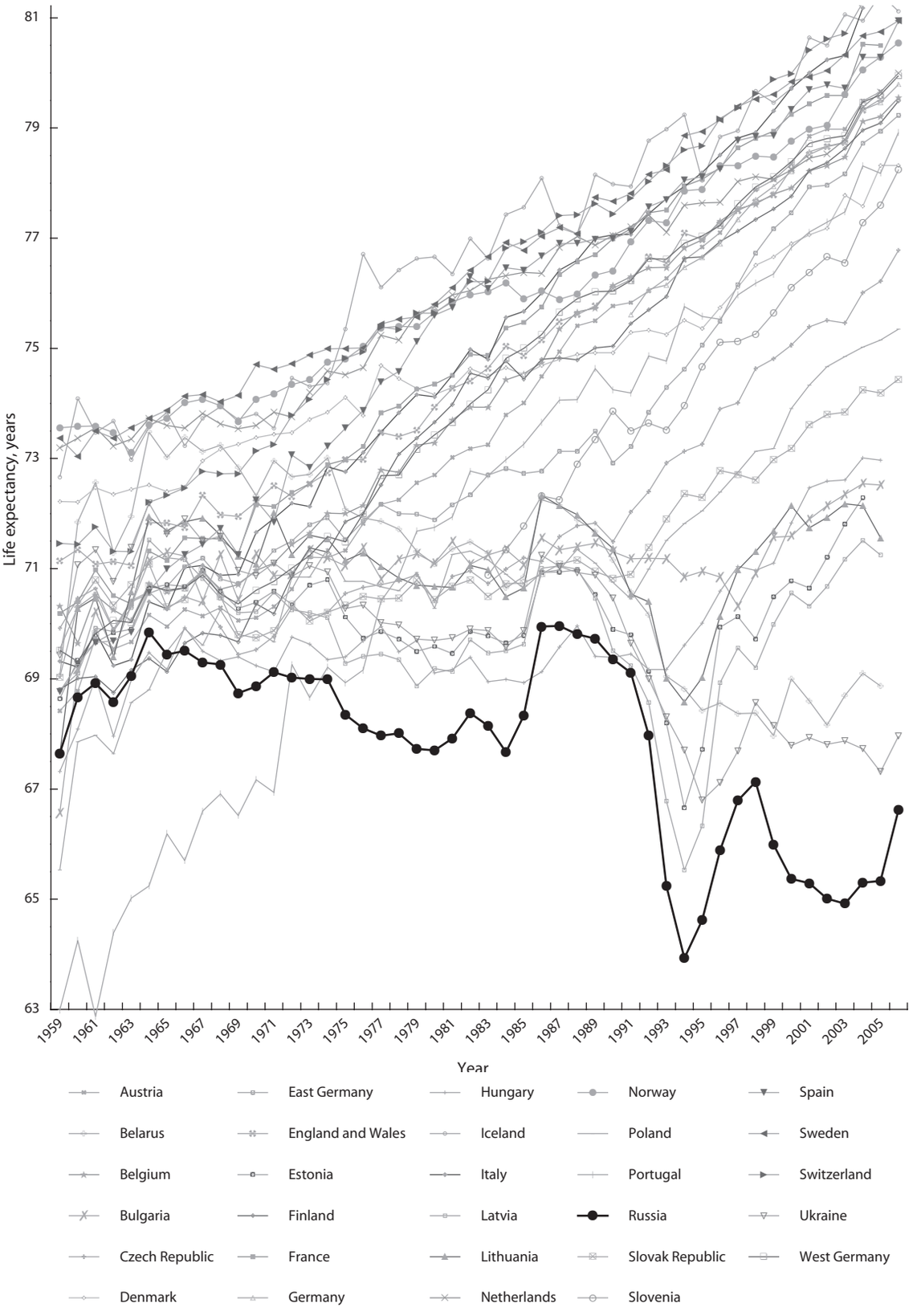
SOURCE: Human Mortality Database.

FIGURE 3.3 Life Expectancy in Europe, 1959–2006 (females)



SOURCE: Human Mortality Database.

FIGURE 3.4 Life Expectancy in Europe, 1959–2006 (males and females combined)



SOURCE: Human Mortality Database.

life expectancy went into erratic decline. Overall life expectancy plummeted for a frightful three years between 1992 and the *annus horibilis* 1994, then recovered through 1998. Yet with the financial collapse of 1998, life expectancy again spiraled downward.

In 2006, the most recent year for which we have such data at the time of this writing, life expectancy for the country as a whole was still lower than it had been in 1998. Overall Russian life expectancy at birth, in fact, was over three years lower in 2006 than it had been in 1964. Female life expectancy was slightly lower than it had been 42 years earlier, and male life expectancy was down by over four and a half years. No less chilling, male life expectancy in 2006 was about two and a half years lower under Putin than it had been in 1959, under Khrushchev. Overall life expectancy for Russia was about a year lower in 2006 than it had been in 1959, almost half a century earlier.

Regarded simply on its own terms, Russia's record of overall health performance over the past decades, or by now generations, sounds dismal enough. The record, though, appears more shocking still if we place it in a European, or even a global, perspective.

In **Figures 3.2** through **3.4**, we can see the Human Mortality Database estimates of life expectancy at birth for males, females, and the overall population for Russia and 28 other European countries for the period 1959–2006. In the late 1950s and early 1960s, by the health metric of life expectancy, Russia definitely looked like a developed country. Russian life expectancy was well within the range for other European societies—comparable to, or higher than, that of some countries in Western Europe.

In the year 1964, for example, overall life expectancy at birth was about the same for Soviet Russia (69.9 years) and Austria (70.2 years). For women, Russia's life expectancy in 1964 actually looks to have been slightly higher than for the corresponding females in Spain or Italy (73.6 years vs. 73.2 years and 73.1 years, respectively). As regards the male populations of other European countries, Russian life expectancy was already comparatively low in the early 1960s, but it was not the lowest. As of 1964, in fact, male life expectancy was over two and a half years higher in Russia than in Portugal (64.9 years vs. 62.2 years). Perhaps no less significant, less than a year apparently separated male life expectancy in Russia and the Scandinavian locale of Finland (where male life expectancy was an estimated 65.7 years).

Four decades later, huge and alarming gaps would separate life expectancies in the Russian Federation from those of its erstwhile peers. By 2005 (the most recent year with data for both countries in the Human Mortality Database at the time of this writing) overall life expectancy at birth was more than fourteen years higher in Austria than in the Russian Federation (79.7 years vs. 65.3 years). By 2006, life expectancy for females was over a decade higher in Spain than in Russia (84.1 years vs. 73.2 years). The most recent corresponding data at this writing for Italy comes from the year 2006 as well, and in that year Italian female life expectancy at birth was almost twelve years higher than in the Russian Federation (84.1 years vs. 72.3 years). The discrepancies were even more dramatic for men. By 2006, male life expectancy was fully fifteen years lower in Russia than in either Portugal or Finland (60.4 years vs. 75.5 years and 75.8 years, respectively).

By the dawn of our current century, Russia's life expectancy for men and women alike was the lowest in Europe. Indeed, Russian life expectancies nowadays can be said to qualify as "European" only by dint of geography. Thanks to two generations of stagnation and decline, Russia's overall levels of public health now rank as quintessentially third world.

Figures 3.5 through **3.7** document this descent. They are drawn from estimates by the United Nations Population Division (UNPD), which prepares detailed demographic reconstructions and

projections on population trends in over two hundred countries and territories for the period from 1950 onward. The UNPD's demographic estimates offer nearly complete global coverage, omitting only some of the world's smallest spots, and extend further into the past than any other global demographic data-series. For countries and years where the UNPD and Human Mortality Database both offer life expectancy figures, those estimates tend to be very close, with no appreciable discrepancies.

Figure 3.5 traces out Russia's descent from first world to third world health status over the postwar era. In the 1950s and early 1960s, overall life expectancy for Russia was slightly lower than the average for the more developed regions as a whole. Yet because life expectancy was rising somewhat more rapidly in Russia, the gap was eliminated by the early 1960s. In those years, by the criteria of health and mortality, Russia would have qualified as a "typical developed society." Over the following four decades, Russia fell ever further behind the more developed regions in overall life expectancy.

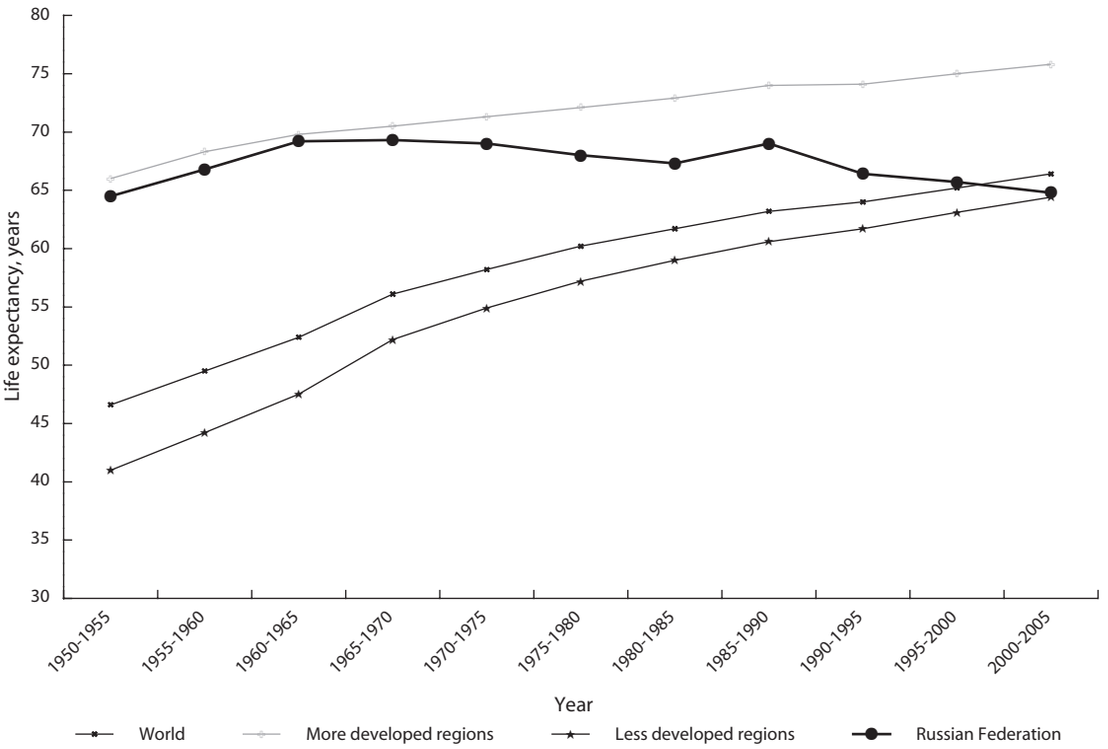
By the first half of the 2000s, that estimated difference was about eleven and a half years. Note however that the implied difference actually understates the true difference because the Russian Federation is still included among the UNPD's "more developed regions." When we compare Russia's estimated life expectancy at birth for both sexes in the period 2000–2005 with the population-weighted average for the rest of the more developed regions, the gap turns out to be over thirteen years.

In the early postwar era, Russia's overall life expectancy was far above the world average. In the early 1950s, for example, Russia's edge amounted to an estimated eighteen years. But astonishingly, that advantage was entirely eroded over the following decades. By the late 1990s, Russia's estimated life expectancy at birth was only barely above the planetary average. By the first half of the current decade, Russia's life expectancy was actually a year lower than the planetary average. In just two generations, Russia had completely reversed its health standing in the international community. Where it had once been among the leaders, now it ranked with the laggards.

No less startling is the transposition of postwar life expectancy trends between Russia and the "less developed regions." In the early 1950s, overall life expectancy at birth was nearly a quarter century longer for Russia than for this amalgam of low income countries. By the early 1960s, Russia's life expectancy was still 22 years longer than that of the less developed regions—which is to say, almost 50% higher. By the 2000–05 period, estimated life expectancy at birth for both sexes was only a few years higher for the Russian Federation than for the less developed regions as a whole (68.8 years vs. 64.1 years). At the dawn of the 21st century, judged only by its people's life expectancy, the Russian Federation would be deemed a third world country—and not an especially healthy one, at that (see **Figure 3.6**).

The situation for Russian males has been particularly woeful, as Figure 3.6 underscores. In the immediate postwar era, life expectancy for men was somewhat lower than in other developed countries, but this differential might partly be attributed to the special hardships endured by Russian men who had survived World War II (and Stalin's punitive policies). Between the early 1950s and the early 1960s, in any case, the male life expectancy gap between Russia and the more developed regions narrowed somewhat. Then life expectancy for Russian men entered into a prolonged and agonizing decline, while continued improvements characterized most of the rest of the world. By the 2000–05 period, male life expectancy at birth was fully fifteen years lower in the Russian Federation than in the rest of the more developed regions. It was also five years below

FIGURE 3.5 Russian Life Expectancy in Global Perspective, 1950–2005 (males and females combined)



SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "World Population Prospects: The 2008 Revision," http://esa.un.org/unpp.

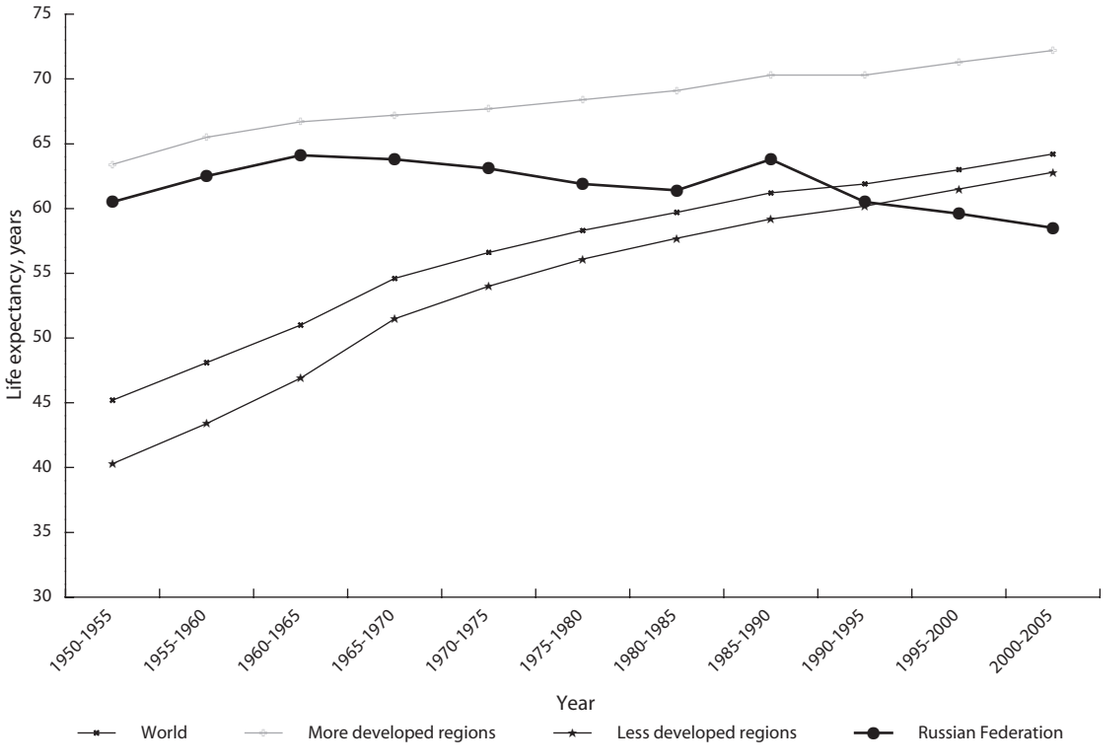
the global average for male life expectancy and three years below the average for the less developed regions (whose levels Russia exceeded by fully two decades in the early 1950s).

The long-term record for female health performance in Russia is also grim. By the early 1960s, Russia's life expectancy for women had caught up to the average levels for the rest of the developed world. Forty years later, it was almost a decade lower than for the rest of the more developed regions. Female life expectancy in Russia remained above the global average at the start of the 21st century, but by just three years, compared to nineteen years in the early 1960s. A quarter century separated Russia's female life expectancy levels from those of the less developed regions in the early 1960s, but forty years later the margin was just six years. Over the intervening decades, overall life expectancy for women in the third world had risen by eighteen years, whereas Russia's had dropped by a year.

Russian Life Expectancy in the Mirror of Developing Societies and Emerging Economies

According to both Goskomstat and the Human Mortality Database, life expectancy at birth for Russia's male population has never yet gotten up as high as 65 years. Moreover, to date (the most recent data at the time of writing being for the year 2006) life expectancy for Russia's females has

FIGURE 3.6 Russian Life Expectancy in Global Perspective, 1950–2005 (males)



SOURCE: Population Division, "World Population Prospects."

still not managed to hit the 75-year mark. Furthermore, according to calculations by the Human Mortality Database, overall life expectancy for Russia has yet to reach, much less exceed, the threshold of 70 years.[1]

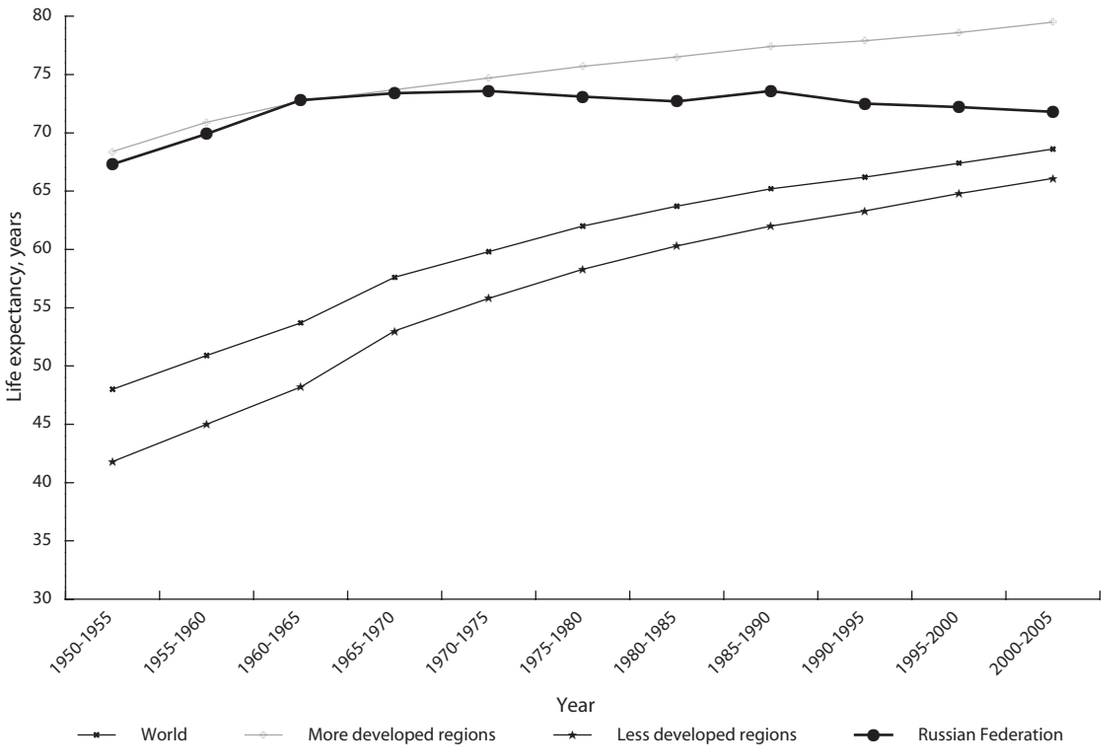
There was a time, to be sure, when a life expectancy at birth of 65 for men, 75 for women, or 70 for the total population, would have looked creditable. Before World War II, for example, no country on earth had ever attained a life expectancy of 75 years for women. Norway, as of the year 1953, appears to have been the first nation to have passed this milestone.[2] But over half a century has passed since 1953, and what once would have passed as exceptional levels of health achievement are now in fact commonplace throughout the third world. Indeed, Russia's current health levels do not even look especially favorable in comparison with those from less developed regions.

Estimates and projections from the U.S. Census Bureau's International Data Base in **Table 3.1** make the point. This database offers projected life expectancy levels and rankings for the year 2007 for Russia and some of her presumptive "competitors" (that is to say, countries with life expectancies in roughly the same vicinity). The figures in Table 3.1, it should be said, involve a measure of conjecture, insofar as the apposite official life expectancy data for calendar year 2007 are at this writing not yet available for practically any of these countries. The levels and rankings

[1] Goskomstat figures report that overall life expectancy in Russia did edge slightly over 70 in 1986–87, whereas the Human Mortality Database estimates that combined life expectancy at birth for those years was just fractionally under 70 years. For reasons already mentioned, we regard figures from the Human Mortality Database as more accurate than those from Goskomstat.

[2] See James Oeppen and James W. Vaupel, "Broken Limits to Life Expectancy," *Science* 296, no. 5570 (May 10, 2002): 1029–31.

FIGURE 3.7 Russian Life Expectancy in Global Perspective, 1950–2005 (females)



SOURCE: Population Division, "World Population Prospects."

indicated should therefore be regarded only as approximations. But these census figures have their virtues, too. Unlike the UNPD, the Census Bureau offers annual projections for life expectancy trends. The Census Bureau's coverage, with figures offered for 226 countries and territories, is also slightly greater.

By the Census Bureau's reckonings for the year 2007, Russia was said to rank 161 out of 226 globally in overall life expectancy. When the developed countries and territories are excluded from the rankings, Russia's rating would be 106 out of 171. For females, Russia fares only somewhat better: 137 out of 226 globally, and against developing countries and territories, 85 out of 171 covered. For males, though, Russia's rankings look truly abysmal. Here Russia is placed at 181 of 226 globally, and 126 out of 171 for the less developed regions. In fairness, the Census Bureau's projection for Russian male life expectancy for 2007 looks a bit too low—59.1 years, even though male life expectancy in 2006 was estimated at 60.4 years by both Goskomstat and the Human Mortality Database. Yet even hypothetically raising by 2 years the 2007 male life expectancy figure attributed to Russia by the Census Bureau would still leave the country ranked 170 out of 226 globally, and 115 out of 171 in the third world.

These rankings give a sense of where the Russian Federation currently stands internationally in relation to health performance. With respect to overall life expectancy at birth, Russia is projected to fall below Bolivia, South America's poorest (and least healthy) country. Russia's life expectancy would be lower than either Iraq's or India's, albeit somewhat higher than Pakistan's. For females, the Russian Federation life expectancy would be a little higher than in places such as Iran, Syria, and

TABLE 3.1 Expected Life Expectancy in Selected Countries and Russia, 2007, males, females, and total

Country (2007)	Both	Males	Females
Ukraine	67.9	62.2	74.0
Sao Tome and Principe	67.7	66.1	69.3
Kazakhstan	67.2	61.9	72.8
Turkmenistan	67.2	64.3	70.3
Mongolia	67.0	64.6	69.5
Timor-Leste	66.6	64.3	69.0
Bolivia	66.2	63.6	69.0
Azerbaijan	66.0	61.9	70.7
Russia	65.9	59.1	73.0
Guyana	65.4	61.4	69.6
India	65.4	64.5	66.4
Grenada	65.3	63.4	67.1
Papua New Guinea	65.2	63.0	67.5
Bhutan	64.9	64.2	65.7
Nepal	64.8	63.7	65.9
Tajikistan	64.6	61.6	67.8
Pakistan	64.5	62.8	66.3

SOURCE: U.S. Census Bureau, International Data Base. Available at http://www.census.gov/ipc/www/idb/region.php.

Indonesia but not as high as in Nicaragua, Morocco, or Egypt. Male life expectancy for Russia, for its part, is said to be in the same league as Cambodia, Ghana, and Eritrea. Even if these projections underestimate Russian male life expectancy somewhat, an illustrative upward correction of two years would still leave the Russian Federation's level of male life expectancy near those of impoverished Yemen and Nepal and below the projected male life expectancy for Pakistan.

Another aperture for assessing Russia's overall health performance in international perspective comes from disaggregating life expectancy at birth into urban and rural components. In the postwar era, mortality differential between urban and rural locales have tended to be relatively small in more developed societies, whereas they are often fairly pronounced in less developed societies (the differential typically favoring urban populations).[3] Strangely enough, data for the Russian Federation reveals that an appreciable, and persistent, difference in rural-urban life expectancies seems to have emerged in Russia over the past half century.

Back in the early 1960s, when Russia's life expectancy was comparable to those of the more developed countries, there was no gap to speak of between rural and urban life expectancies for the Russian population as a whole. Yet subsequently, during Russia's prolonged period of public health deterioration, a measurable urban-rural gap did open up, indicating that retrogression in health conditions had been more severe for the Russian countryside than in Russia's cities. In the

[3] See United Nations, *The Determinants and Consequences of Population Trends*, vol. 1 (New York: UN Department of Economic and Social Affairs, 1973), 132–36; and United Nations, *Levels and Trends of Mortality since 1950* (New York: UN Department of International Economic and Social Affairs, 1982). Note that definitions of "urban" and "rural" can vary greatly among countries and over time.

year 2006, according to Goskomstat data, life expectancy was about two and a half years lower for rural Russia than for urban Russia. Quite a few less developed countries, we should note, report greater disparities in health between their rural and urban populations than does the Russian Federation today. Disparities of this sort, though, are decidedly characteristic nowadays of less developed societies, not developed ones (see **Figure 3.8**).

The Russian Federation is an overwhelmingly urban country. As we noted in Chapter 1, nearly three-quarter's of the Russian population currently resides in places that Moscow defines as "cities." It may therefore be informative to compare life expectancy in urban Russia with corresponding levels of life expectancy in urban areas from various developing countries. This data is assembled in **Table 3.2**.

Insofar as Russia today is widely described as an "emerging economy," we might begin by comparing urban life expectancy in Russia with urban life expectancy in other emerging economies. Given the special currency today of the BRIC construct—the world financial community's newfound convention of grouping Brazil, Russia, India, and China into a single category of promising international markets—we start with a comparison of urban life expectancy in Russia and those three other dynamic economies.

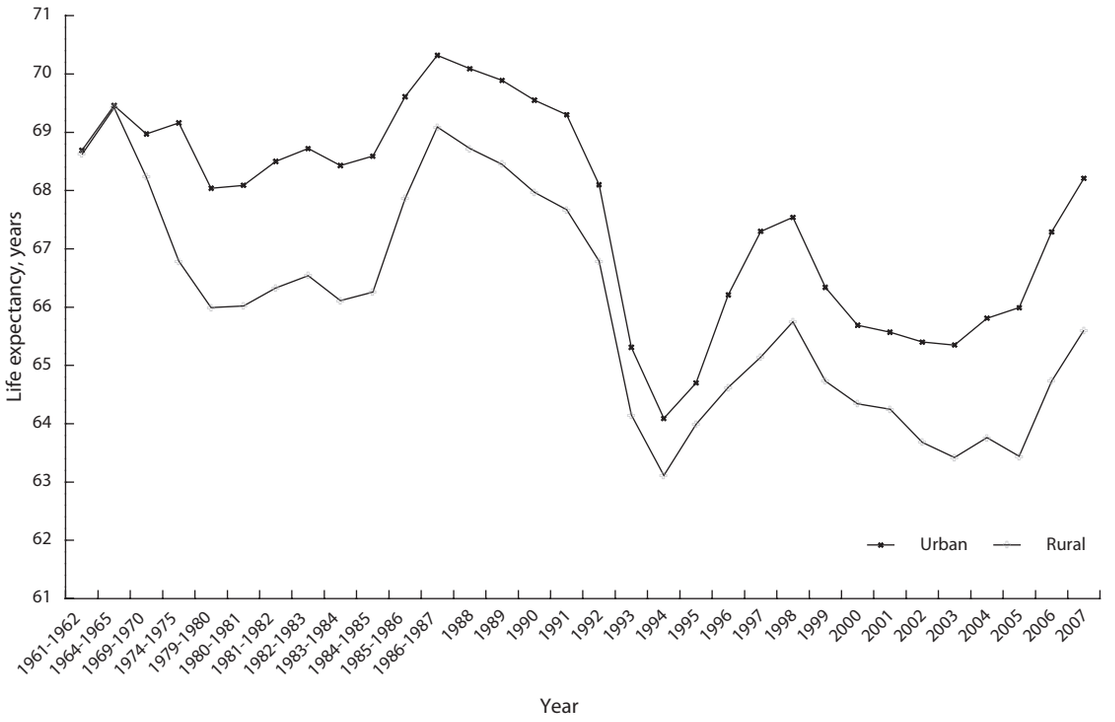
In 2006, overall life expectancy at birth was a little over 67 years for urban Russia as a whole, and higher in the country's leading cities—over a year and a half higher in St. Petersburg, for example, and about four and a half years higher in Moscow. To go by those numbers, urban life expectancy is markedly lower throughout Russia today than it is in China. According to official Chinese estimates, overall life expectancy in China's cities was over 75 years in 2000—almost eight years higher than for urban Russia. Female life expectancy was about four years longer in urban China than in urban Russia, and male life expectancy was about twelve years longer. Life expectancy in Beijing, for its part, was roughly six years higher than in Moscow for males and females together. A gap of almost a decade (nine years) separated the combined male and female life expectancies for the populations of St. Petersburg and Shanghai.

Comparisons are more problematic for Brazil, because Brazilian statistical authorities do not specifically release life expectancy estimates for the country's urban population. However, Brazil does publish estimates of life expectancy by region, and three of the regions officially delineated—Brasilia, Sao Paulo state, and Rio de Janeiro state—happen to be almost entirely urbanized population centers.[4] To go by these indicators, life expectancy—male, female, and combined—was higher in each of these leading urban areas from Brazil in 2005 than in either St. Petersburg or Moscow in 2006.

Perhaps the most striking contraposition of urban life expectancies between BRIC countries involves the comparison between the Russian Federation and India. As it happens, for the period 1992–96, overall urban life expectancy was apparently slightly higher in India than in the Russian Federation (66.3 years vs. 65.7 years). Using vital registration data and the India 2001 census, Indian demographers have estimated all-India urban life expectancy for males and females together at 67.9 years for the period 1998–2002. That level would compare with urban Russia's 66.1 years during that same period and with 66.3 years for 2006 (the most recent data available at the time of this writing). Urban life expectancy for females, according to this data, is consistently higher in Russia than in

[4] According to official Brazilian data, the states of Rio de Janeiro and Sao Paulo are both over 90% urban; the capital is 96% urban. See Instituto Brasileiro de Geografia e Estatistica (IBGE), "Demographic Census 2000, Table—Resident Population, by Urban or Rural Household and Sex, by Major Regions and Federative Units," http://www.ibge.gov.br/english/estatistica/populacao/censo2000/tabelagrandes_regioes211.shtm.

FIGURE 3.8 Urban vs. Rural Life Expectancy, 1961–2007



SOURCE: "Russian Demographic Yearbook 2008," Goskomstat, Table 2.9, http://www.gks.ru/bgd/regl/b08_16/Main.htm.

India (roughly three and a half years higher for the 1998–2002 period, for example). The striking fact, however, is that male life expectancy and overall life expectancy both appear to have been higher in urban India than in urban Russia throughout the Russian Federation's entire post-Communist era.

No less noteworthy is the comparison of life expectancies in major urban centers for India and Russia. According to those figures, overall life expectancy at birth was roughly comparable in Delhi and St. Petersburg, whereas life expectancy in both Chennai (Madras) and Kolkata (Calcutta) are significantly higher than in either St. Petersburg or Moscow. What makes these health comparisons so very arresting is urban India's famously high prevalence of poverty. According to World Bank estimates, for example, nearly 40% of the country's urban inhabitants in 2002 lived on incomes equivalent to $1 per day or less.[5] Yet despite such acute poverty, levels of overall life expectancy in urban India appear today to be similar to, and in some respects superior to, those of urban Russia.

In Chapter 1 we saw that the urban population was in decline in the Russian Federation, whereas it is growing robustly in the other BRIC countries. Just now, we have seen that life expectancies for urbanized regions in Russia do not look especially favorable when matched against corresponding profiles from urban areas of the other BRIC countries—including urban areas with per capita income levels much lower than Russia's own.

Urban population centers are "growth poles" for emerging market economies. They concentrate the human resources that facilitate, or even catalyze, sustained material advance. What then

[5] Shaohua Chen and Martin Ravallion, "Absolute Poverty Measures for the Developing World, 1981–2004," World Bank Policy Research Working Paper WPS 4211 (April 2007), http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2007/04/16/000016406_20070416104010/Rendered/PDF/wps4211.pdf, 23.

TABLE 3.2 Urban Life Expectancy in BRIC countries, most recent year available

		Male	Female	Total
Russia (2006)		**61.03**	**73.70**	**67.29**
	Moscow (2006)	67.17	76.50	71.81
	St. Petersburg (2006)	62.84	74.83	68.90
China (2000)		**73.11**	**77.51**	**75.21**
	Shanghai (2000)	77.49	81.19	79.36
	Beijing (2000)	76.13	79.92	77.96
India (2002-06)		**67.10**	**70.00**	**68.80**
	Chennai (2004)	77.15	77.56	
	New Delhi (2000)	69.50	69.50	69.50
	Kolkata (2001)	74.00	75.00	
	Maharashtra (1998-02)	68.70	72.00	70.30
	Mumbai (2007)			71.00
Brazil (2005)		**68.35**	**75.93**	**72.05**
	São Paulo (1970)			58.50
	Rio De Janeiro (1970)			57.10
	São Paulo (2005)	69.49	78.03	73.66
	Rio De Janeiro (2005)	68.08	77.02	72.44
	Brasilia (2005)	71.19	78.74	74.87
Mexico (2004)		**71.79**	**77.21**	**74.50**
	Nuevo Leon (2004)	72.69	77.79	75.24
	Mexico City (2004)	72.81	78.00	74.58
Turkey (2002)				
	Istanbul (2002)	69.00	74.20	72.40
Indonesia (2002)		**64.20**	**68.10**	**66.20**
	Jakarta (2002)	70.30	74.20	72.30
Egypt (2006)		**68.98**	**73.60**	**71.30**
	Cairo (2006)	70.20	74.80	71.40

SOURCES: Russia: Russian Demographic Yearbook, 2007, Goskomstat; China: China Human Development Report, 2005; India: Chennai - City Report of Chennai 2005; Kolkata - West Bengal Human Development Report 2004; Urban Maharashtra - Human Development: Strengthening District Level Vital Statistics in India by F. Ram, Chander Shekhar and S.K Mohanty; India Total - ORGI, MHA, GOI (New Delhi), "Life expectancy at birth by sex and residence, India 1970-75 to 2002-06"; Brazil: Indicadores Sociodemograficos, IBGE, 2006 (Note: 2006 Data is total, not urban only) Brazil 1970 Data (Note: Total LE, not divided by male/female): "Mortality, Income Distribution, and Rural-Urban Residence in Brazil"; Jose Alberto M. de Carvalho and Charles H. Wood, Population and Development Review, Vol. 4, No. 3 (Sep., 1978), pp. 405-420; Mexico: Conapo (2006a). Indicadores de mortalidad y fecundidad, 1990-2006. Serie histórica basada en la conciliación demográfica a partir del XII Censo General de Población y Vivienda 2000 y el II Conteo de Población y Vivienda 2005. Note: Total Mexico not divided by urban and rural; Indonesia: Human Development Report 2004; Turkey: Human Development Report 2004; and Egypt: Human Development Report 2008.

do these figures portend for Russian economic development? If urban numbers in the Russian Federation are shrinking at the very time when Russian urban health levels have also dropped below corresponding levels in China and Brazil, and maybe even India, the implications can hardly be auspicious. Regarded within the context of the emerging market economies, Russia's urban demographic profiles reveal powerful pressures for relative decline in the years ahead. This impression is still further reinforced by the additional data in Table 3.2 on urban life expectancy for selected cities from other less developed countries.

First, consider Turkey and Mexico. These two countries, like Russia, are classified by the World Bank as "upper middle income economies." In Turkey, overall life expectancy at birth is somewhat higher for Istanbul than for either St. Petersburg or Moscow. In Mexico, life expectancy in Mexico City is markedly higher for males and females alike than for their counterparts in Russia's two leading metropolitan centers.

Next, consider Egypt and Indonesia. Egypt and Indonesia, both categorized by the World Bank as "lower middle income economies," are countries with much lower levels of national income per capita than Russia. According to the World Bank, for example, per capita GDP in the Russian Federation in 2005 was over two and a half times higher than in Egypt and nearly four times higher than in Indonesia.[6] Life expectancy in both Cairo and Jakarta, however, is higher than the Russian urban average for males and females alike. Overall life expectancy in both Cairo and Jakarta, in fact, is higher than in St. Petersburg. Life expectancy in Jakarta, further, is somewhat higher than in Moscow, Russia's healthiest city.

Moscow may be the most modern and affluent urban agglomeration in the Russian Federation, but ironically its overall level of life expectancy is comparable to that of impoverished Cairo, with its famous vast "City of the Dead" slum expanse.

Excess Mortality in Russia: Demographic Dimensions of the Crisis

The demographic impact of the ongoing public health failure that has pushed Russia's health standing out from the league of more developed countries and down—as we have seen, rather far down—into the roster of less developed countries can be quantified in different ways. Perhaps the first of these should be to assess the demographic toll implied from "excess mortality."

Excess mortality is the aggregate differential in deaths that would have been experienced by a given population at some point in time if, instead of its own actual survival schedules, it had been subject to alternative (and less severe) mortality patterns.[7] We will utilize estimates from the Human Mortality Database here for our calculations for the scale of excess mortality in the Russian Federation.

Figures 3.9 and **3.10** offer some perspective on the magnitude of post-Communist Russia's demographic losses from excess mortality for the fifteen years 1992–2006. Our first benchmark for measuring excess mortality is taken from Russia's own health patterns from 1986–87, during the Gorbachev era. As we have already seen, life expectancy levels in Soviet Russia in the late 1980s were hardly impressive by European, or even global, standards. Those years do, however, represent

[6] Estimates are for year 2005 GDP per capita with PPP adjustments (constant 2005 international dollars). World Bank, *World Development Indicators,* http://go.worldbank.org/B53SONGPA0.

[7] That differential is derived from the product of the age structure of the population under consideration, on the one hand, and the two contrasting age-specific mortality schedules, on the other.

the high water mark, at least to date, for life expectancy in Russia. Such a standard, therefore, offers a highly pertinent point of reference for measuring the magnitude of the demographic impact of the health deterioration in post-Soviet Russia.

By this particular benchmark, aggregate excess mortality for Russia from 1992–2006 would have amounted to a net total of 6.6 million premature deaths: almost 4.9 million for men and over 1.7 million for women. How does one place such an enormous toll of human losses into a more comprehensible perspective?

According to the Soviet-era demographer Boris T. Urlanis, the Russian Empire suffered approximately 1.8 million military deaths, and an additional 1.5 million civilian deaths, during World War I.[8] To go by Urlanis' estimates, the scale of excess mortality for the population as a whole (men and women together) would have been over twice as high in aggregate during Russia's first fifteen post-Communist years as it was during Russia's years of active combat in World War I. Excess mortality for men in the post-Soviet era, further, would have been over two and a half times higher than Russia's total combat deaths during World War I. We must bear in mind the crucial distinction between premature mortality due to war and upheaval and premature mortality under peacetime conditions of civil order. Even so, when we recall that Imperial Russia's population on the eve of World War I stood at about 160 million,[9] and the Russian Federation's population at the end of the Soviet period was just under 149 million, we can see that, by these selected benchmarks, the magnitude of premature mortality in the post-Soviet era to date would actually be far higher than the corresponding toll from the World War I—not just in absolute terms but also proportionately.

Another way of thinking about this scale of implied premature mortality is to compare it with more current population trends in the Russian Federation. The estimate of 6.6 million "excess deaths" for 1992–2006, for example, can be weighed against the Russian Federation's actual reported population decline of 6.3 million over those same years. It is a telling comparison. If Russia had just been able to maintain the survival schedules that its population had faced at the end of the Soviet era, the country's post-Soviet population decline would not have taken place.

An alternate benchmark for excess mortality in post-Communist Russia comes from placing the Russian Federation's health crisis in a European perspective using a mortality standard from contemporary Western Europe rather than from Russia's own recent past. **Figure 3.10** illustrates excess mortality for Russia 1992–2006, as calculated against the mortality patterns found in France in the year 1992 (the Russian Federation's first year as a fully independent and non-Soviet state). By this metric, excess mortality for post-Soviet Russia would exceed 18 million deaths.

No, this is not a typographical error. Calculated against the 1992 mortality schedules for France's men and women, Russia's aggregate excess mortality for 1992–2006 would come out to just over 18 million premature deaths. An astonishing 10 million of these premature deaths would be attributed to Russia's male population. Scarcely less amazing, over 8 million premature deaths would be tallied for Russia's women. Note, moreover, that the notional toll of excess mortality here would have been even higher if we had used rolling, contemporaneous mortality schedules for

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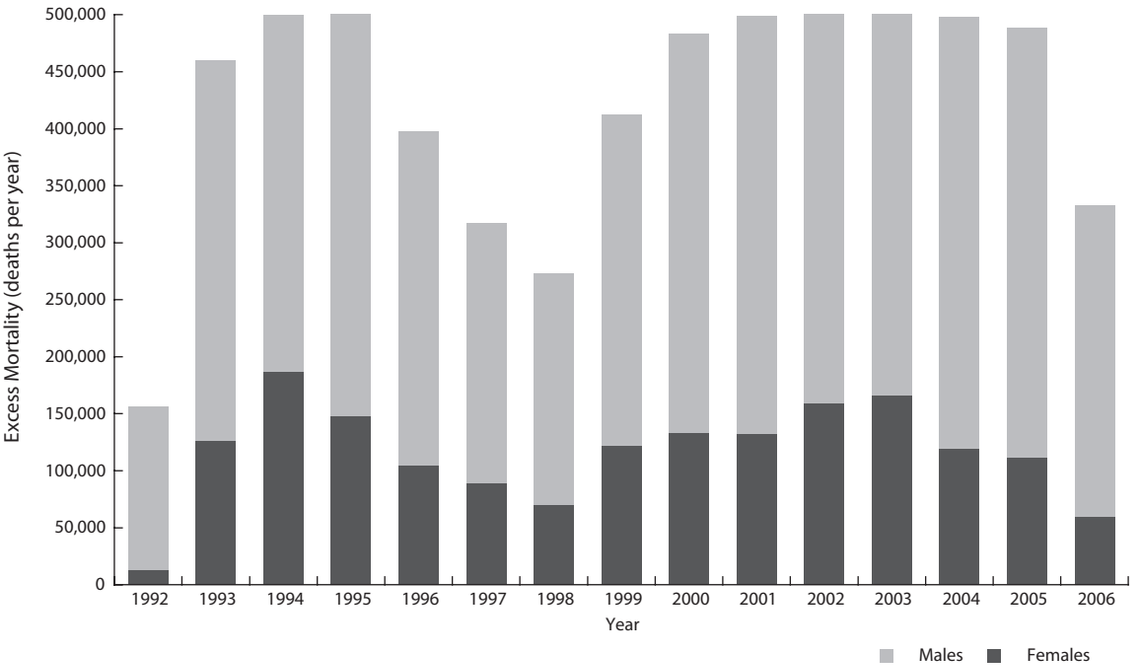
[8] Boris T. Urlanis, *Wars and Population* (Moscow: Progress Publishers,1971): 209, 266. Urlanis also notes that a certain fraction of the Russian Imperial soldiers who died as a result of war would have been expected to die of natural causes during the years 1914–17, a total he estimates at roughly 250,000. Thus, he suggests that "net excess mortality" burden shouldered by the Russian Empire as a consequence of World War I came to about 3.1 million—1.5 million in civilian losses and about 1.6 million in net losses from the military population. We prefer to use the actual estimated deaths due to battle in our comparisons here.

[9] Cf. Nicholas Spulber, *Russia's Economic Transitions: From Late Tsarism to the New Millennium* (New York: Cambridge University Press, 2003): 7, Table 1.1.

FIGURE 3.9 Excess Mortality in Russia, 1992–2006 (using Russia 1986/87 mortality schedules as benchmark)



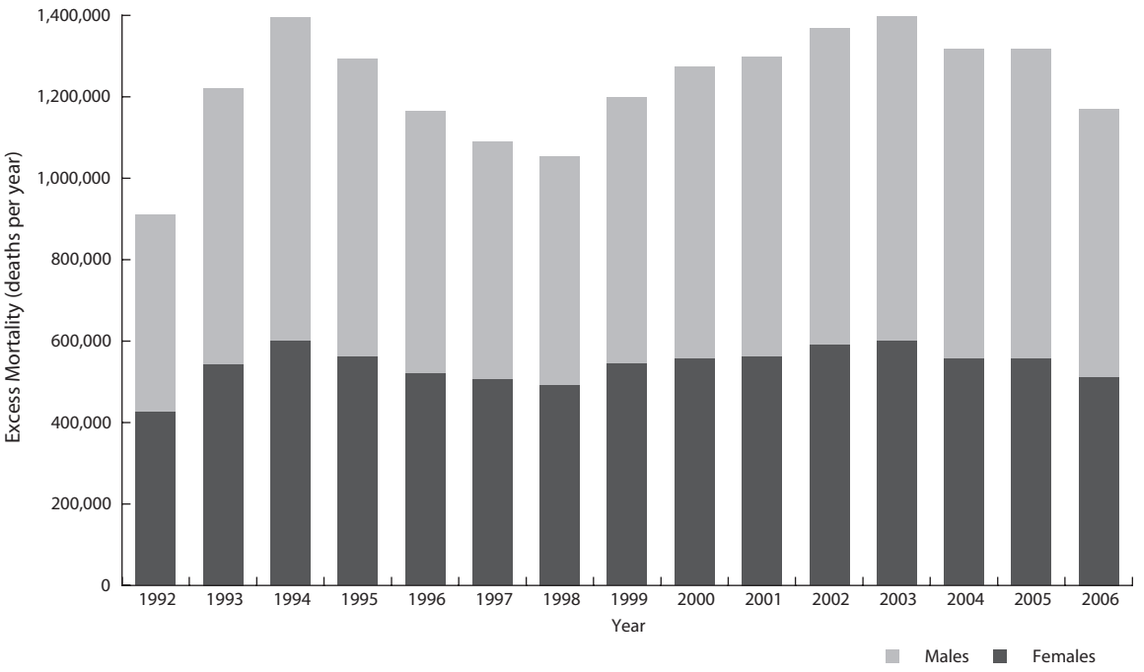
SOURCE: Human Mortality Database.

France rather than a single static set of patterns from 1992. For unlike Russia, France's mortality levels were steadily declining between 1992 and 2006.

What are we to make of these mind-boggling totals? Three implications immediately come to mind. First, accustomed as we may be to regarding Russia's male health problems as exceptionally severe, this calculation of Russian females' excess mortality against a French contemporary standard should emphasize just how dire Russia's current health crisis is for women, too. Second, against this Western European benchmark, Russia's excess mortality in the post-Soviet era would utterly dwarf the country's wartime losses in World War I. These losses instead approach the cataclysmic scale of wartime deaths suffered during World War II (the Great Patriotic War) throughout the Soviet Union as a whole, and very likely substantially exceed the toll suffered by the Russian Federation in and of itself.[10] Finally, calculated against this contemporary Western European survival standard, Russia's excess mortality in the post-Soviet period would significantly surpass the country's actual excess of deaths over births during the years 1992–2006. Indeed, in every year from 1992 to 2006, the level of excess mortality for Russia—calculated against this French benchmark—would have been higher than the reported annual net imbalance between deaths and births. In other words,

[10] Evgeny M. Andreev, Leonid E. Darksy, and Tatiana L. Kharkhova, "Population Dynamics: Consequences of Regular and Irregular Changes," in *Demographic Trends and Patterns in the Soviet Union before 1991*, ed. Wolfgang Lutz, Sergei Scherbov, and Andrei Volkov (London and New York: Routledge, 1994): 423–40. The authors estimate the excess mortality at 26.6 million: 20.0 males and 6.6 million females. For obvious reasons, a precise figure is impossible to determine. For some of the methodological issues surrounding the Andreev-Darsky-Kharkhova estimate, see Michael Ellman and S. Maksudov, "Soviet Deaths in the Great Patriotic War," *Europe-Asia Studies* 46, no.4 (1994): 671 –80. Erlikhman suggests that about 14 million of those deaths should be attributed to the populations of present-day Russia. See V. V.Erlikhman, *Poteri Narodonaseleniia v XX Veke: Spravochnik* [National Population Losses in the 20th Century: A Handbook] (Moscow: RusskaiaPanorama, 2004).

FIGURE 3.10 Excess Mortality in Russia compared to France, 1992–2006 (French mortality schedules for 1992 used as benchmark)



SOURCE: Human Mortality Database.

if post-Soviet Russia had somehow been able to achieve the same mortality patterns as France of 1992, non-Communist Russia would have experienced a modest but steady trend of population growth based on natural increase rather than the steep plunge into negative natural increase that actually took place—this, despite the dramatic slump in Russian births after 1992.

Excess Mortality as a Constraint on Contemporary Russian Fertility

A secondary demographic consequence of Russia's public health crisis—far less extreme in absolute magnitude than the implied toll from excess mortality, but hardly inconsequential—also merits mention here. This is the additional, fertility-suppressing pressure that Russian patterns of excess mortality tend to generate.

As we noted in the previous chapter, the evidence for unusual levels of infecundity in contemporary Russia is far from conclusive. Russia's health crisis is not necessarily driving down birth rates through an abnormal prevalence of infertility for women of childbearing age. Russia's health situation can influence fertility in other ways as well.

Figure 3.11 contrasts the cumulative mortality for the childbearing ages (typically defined as the years 15 through 49) for Russia and Italy in 2005. In Italy, given those mortality trajectories, practically everyone can expect to survive their reproductive years. A mere 1.7% of young women and 3.5% of young men would not make it from age 15 to age 49. In Russia, the situation is very different indeed, as avoiding death during childbearing years is not a thing that can be taken for granted. In fact, on Russian survival schedules, over 8% of women and nearly 27% of men

who had reached the age of 15 would be expected to die by age 49. For young Italian men, the odds of surviving from 15 to 49 were better a century ago—in 1909, when the country's male life expectancy at birth was a mere 44 years—than they are for Russian men nowadays.[11]

Modern day Russia's cruelly high death rates for young men and women surely reduce the country's fertility levels, and not only by eliminating potential mothers or fathers in the prime of their childbearing years. No less important, these jarring mortality schedules mean that the risk of widowhood, and of orphaned children, is a very real one for families in the Russian Federation. This risk must be taken into consideration by prospective parents in their childbearing behavior. In addition to the human tragedy that attends the loss of a young spouse or parent, the death of a breadwinner almost inescapably exposes a family with children to economic uncertainty and the palpable possibility of financial hardship. In the face of today's exceptionally elevated mortality levels for Russia's young adults, some unspecified proportion of the country's would-be mothers and fathers will respond by opting for, or resigning themselves to, fewer offspring than they would otherwise desire in a more ideal world. We will not attempt to estimate the quantitative impact of this dynamic on childbearing in Russia today.[12] It may suffice here to observe that, to a degree not generally appreciated, Russia's current fertility crisis is a consequence of its mortality crisis.

Proximate Components of the Russian Mortality Crisis: Overall Trends

If we cannot pinpoint with confidence the broader "social forces" behind Russia's ongoing health disaster, we can at least describe with some precision the drivers of the health decline arithmetically through a decomposition of aggregate mortality by age group and reported cause of death. We begin this exercise with **Figures 3.12–3.14**. These figures estimate cumulative excess mortality for males and females at every age for the period 1992–2006, using 1986/87 as the benchmark for subsequent excess mortality.

As Figures 3.12–3.14 underscore, survival prospects during the post-Communist era have been appreciably superior to those of the late Soviet period for but a single group in Russia: infants under one year of age. Infant mortality trends, in fact, represent the one arguably positive health achievement in the Russian Federation in recent years. Though infant mortality rates in the Russian Federation are still much higher than in Western Europe—with deaths per 1000 live births estimated at 10.2 in 2006, compared with the EU-15's reported rate of 3.9—Russian infant mortality levels are nevertheless lower than at least seven other former Communist societies covered by Eurostat.[13] Perhaps more importantly, Russia's infant mortality level in 2006 was barely half as high as it had been twenty years beforehand. Some improvements in survival prospects are

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11 Comparison derived from the Human Mortality Database, http://www.mortality.org.

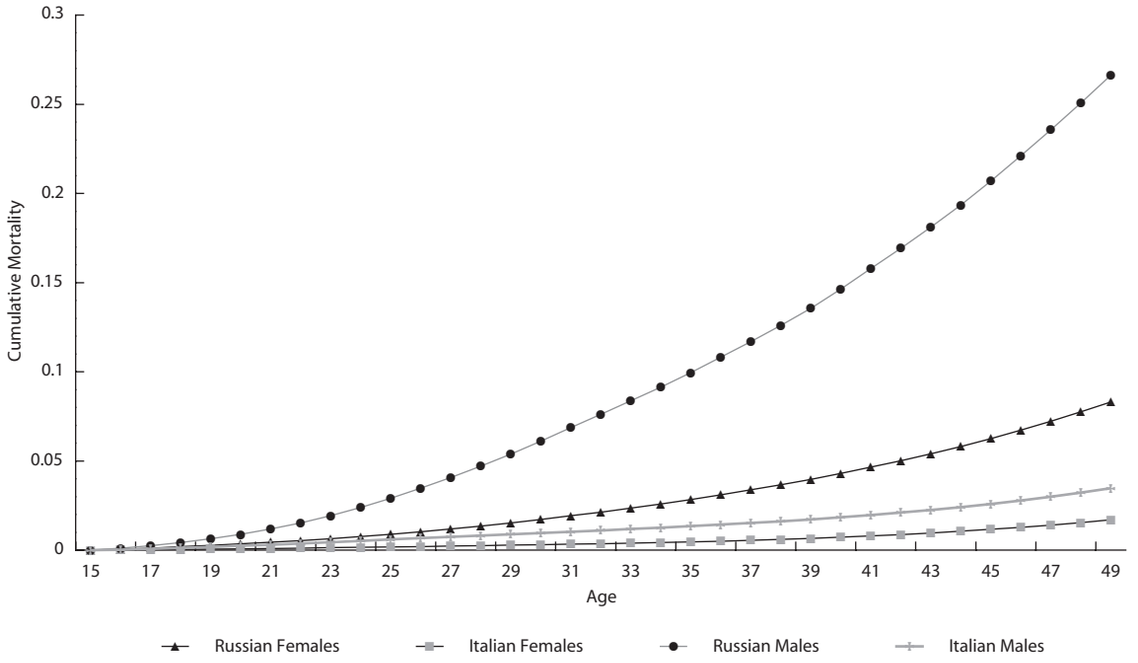
12 An econometric exercise that could be driven to a considerable degree by assumption (discount rates, risk tolerance, etc.)

Consideration of the consequences of today's Russian upsurge in male mortality, however, may be approached from a variety of perspectives. One of these is to place the situation in a historical perspective. Postwar Russia's pattern of demography and family formation, for example, were framed by the reality of truly dire 'excess mortality' among men of marriageable age.

Elizabeth Brainerd of Williams College has demonstrated that the local sex ratios (for men and women in their 20s) had very meaningful implications for the odds of spinsterhood, out-of-wedlock birth, and abortion. No less portentous, she found that regions with a more acute shortage of prospective husbands seemed to invest less in the 'human capital" of their children, reducing the wellbeing and potential of the following generation as well. See Elizabeth Brainered, "Uncounted Costs of World War II: The Effect of Changing Sex Ratios on Marriage and Fertility of Russian Women," (unpublished paper, March 2008), http://www.williams.edu/Economics/brainerd/papers/rfwomen.pdf.

13 Eurostat Statistics Database, European Union, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes.

FIGURE 3.11 Cumulative Mortality for Ages 15–49, Russia and Italy 2005



SOURCE: Human Mortality Database.

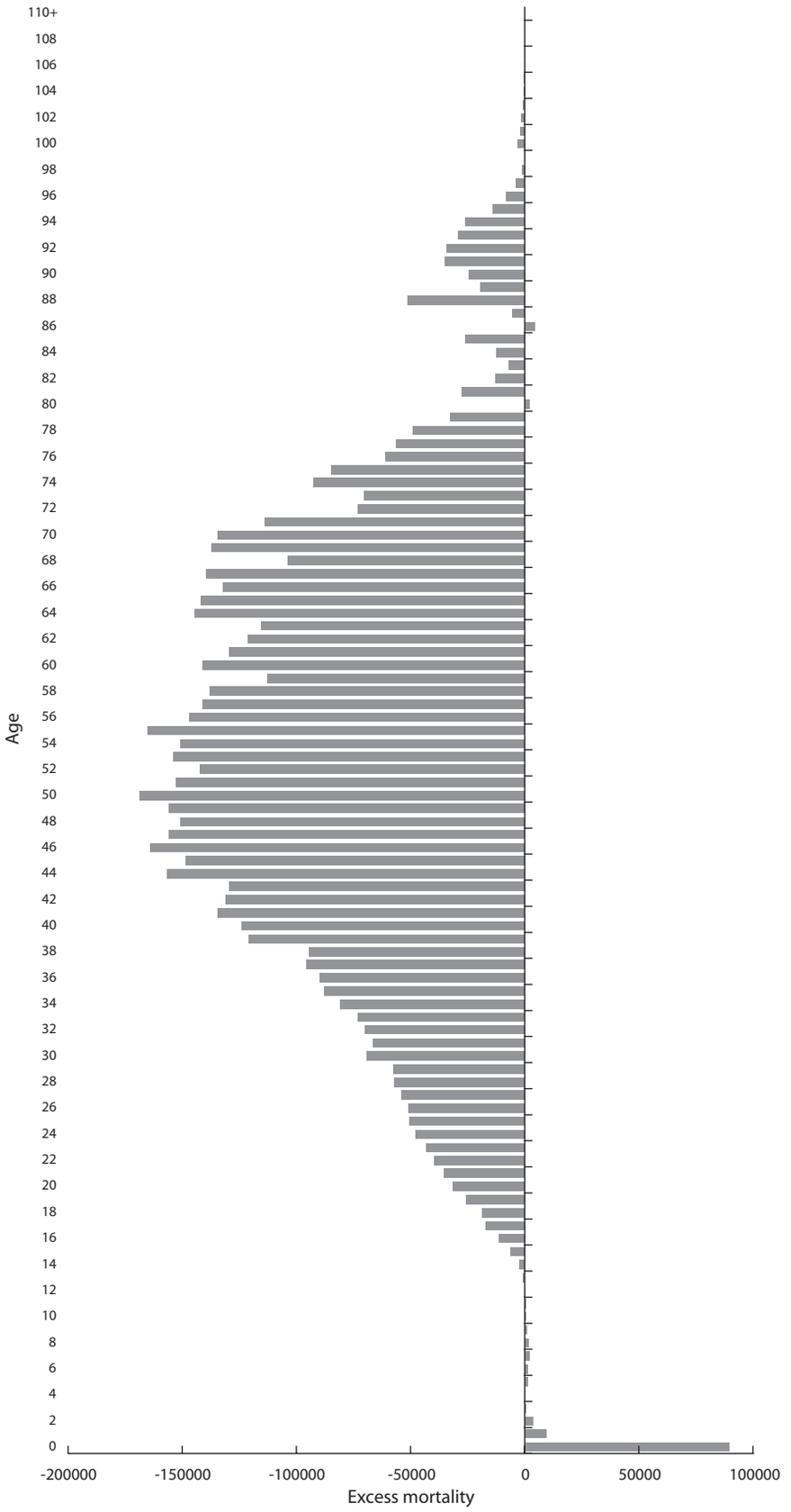
also evident in Figure 3.12–3.14 for children between the ages of one and twelve, although these were much more marginal.

For virtually all Russians thirteen year of age or older, however, the mortality situation since the end of Communism has been worse than it was in the late 1980s. Overall, by the criterion of excess mortality, it has been overwhelmingly worse. For every notional year of life saved cumulatively by the 12-and-under group in Figure 3.12, fully 60 have been lost to excess mortality by the population thirteen years of age and older. Russia's overall notional gains from improvements in infant mortality over this period were more than erased by the mortality setbacks for the population between the ages of 36 and 71. To put the matter a little more finely, excess mortality at each and every calendar age within the entire 36–71 population cohort outweighed the total mortality improvement registered in the Russian Federation through progress in infant mortality.

Scanning Figures 3.12–3.14, it will appear that most of Russia's burden of post-Communist excess mortality fell on the population 50 and older. While this is arithmetically correct, this fact in and of itself provides only one perspective on Russia's slide to poorer health, and not necessarily the most intuitively comprehensible perspective. After all, death rates tend to go up at older ages, so we would ordinarily expect an over-representation of excess mortality for persons in their 60s, 70s, and 80s, even with entirely proportional mortality increases across the whole age spectrum in society.

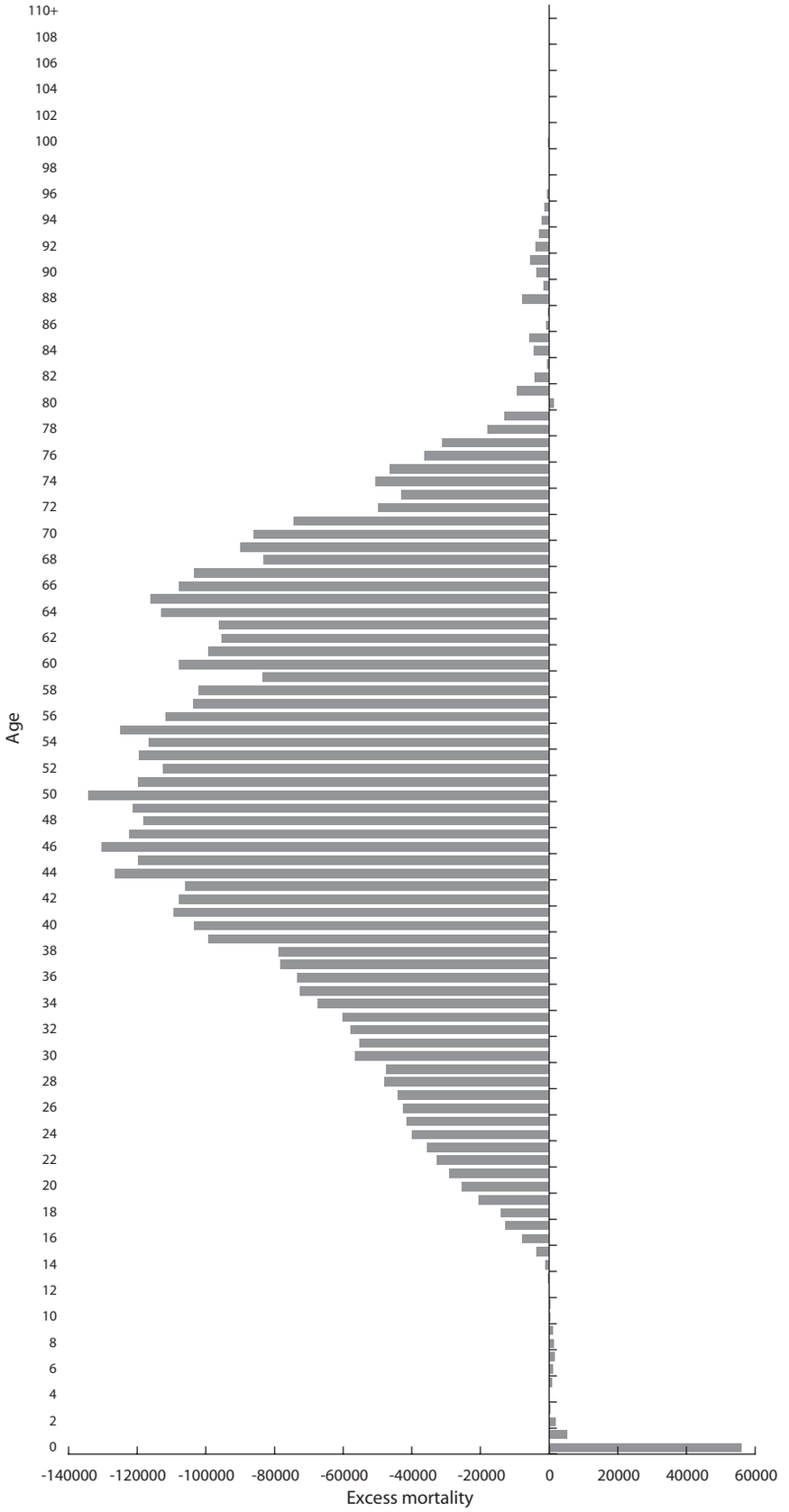
A clearer picture of what has been ailing Russia may come from examining changes in remaining life expectancy at various ages. We can start with life expectancy for Russia's senior citizens, the population 65 and older. By the reckoning of the Human Mortality Database, we will recall, overall life expectancy at birth in Russia shrank by about a year over the period between 1959 and 2006, falling for men while rising somewhat for women. For Russia's male and female senior citizens taken altogether, life expectancy at age 65 was also lower in 2006 than it had been

FIGURE 3.12 Total Excess Mortality in Russia, 1992–2006 (males and females)



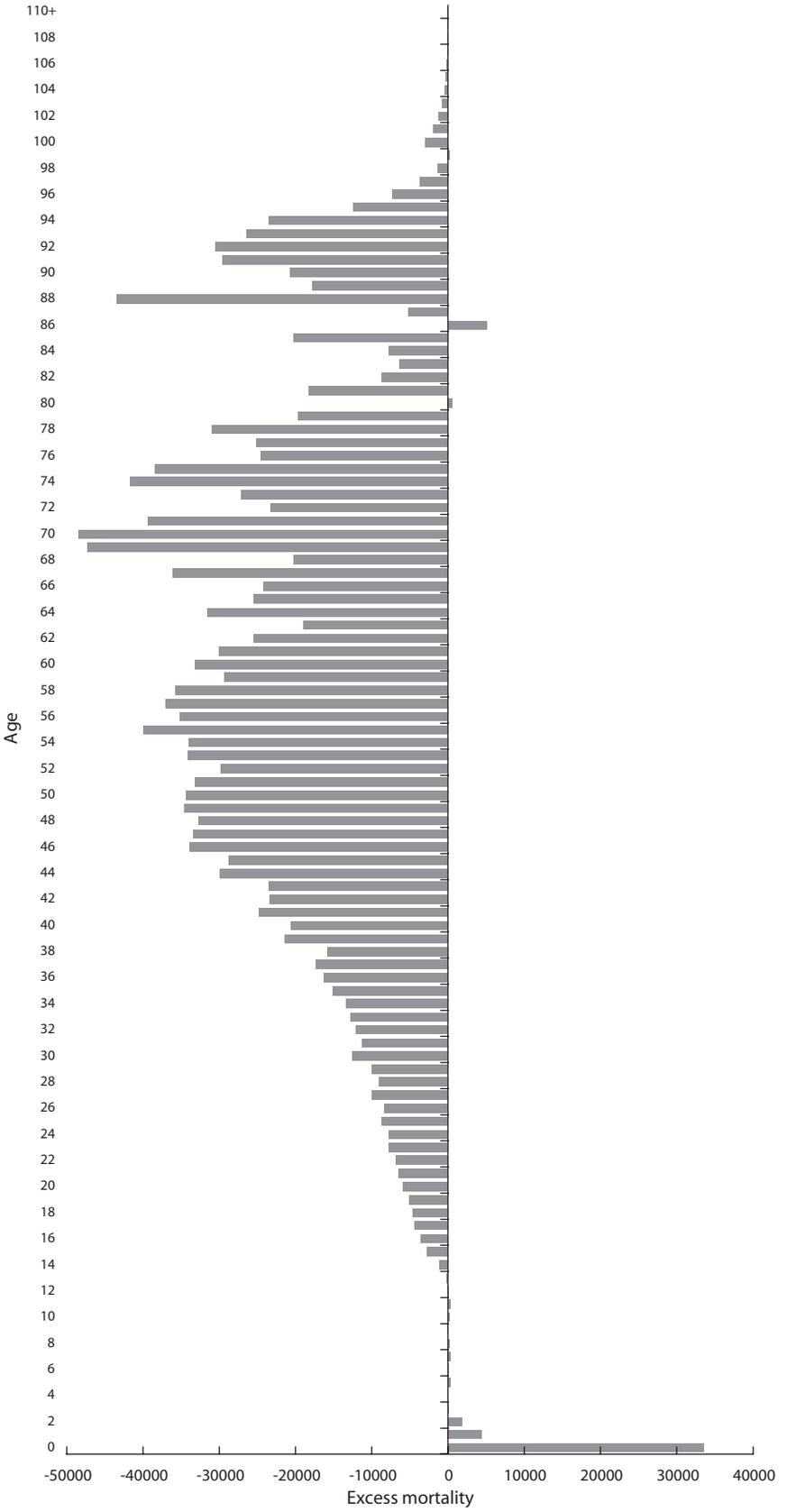
SOURCE: Human Mortality Database.

FIGURE 3.13 Total Excess Mortality in Russia, 1992–2006 (males)



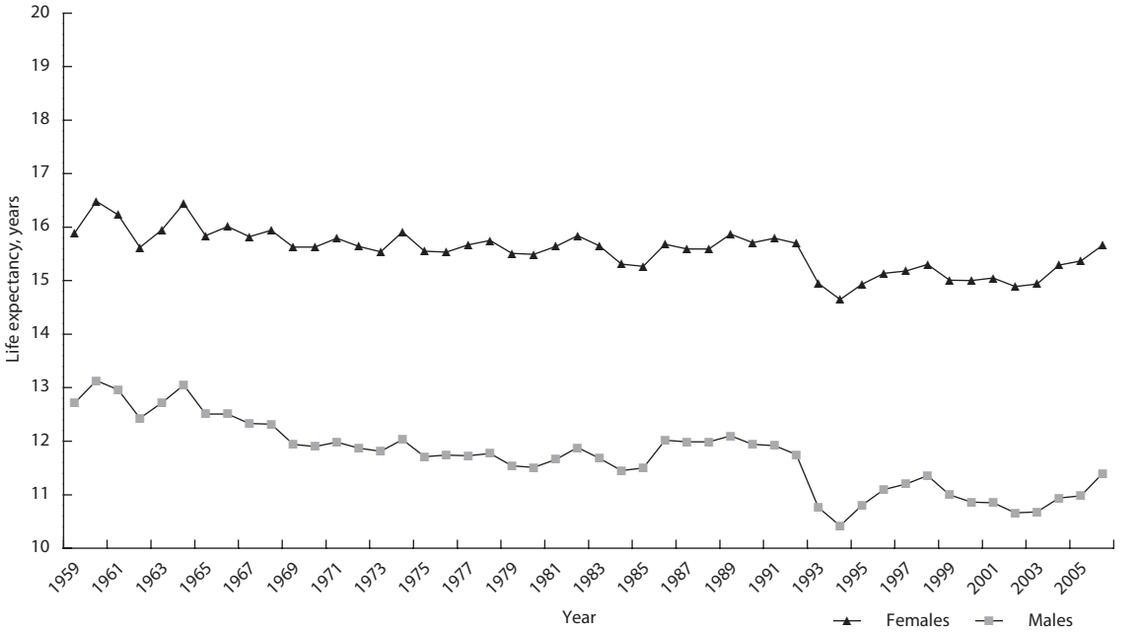
SOURCE: Human Mortality Database.

FIGURE 3.14 Total Excess Mortality in Russia, 1992–2006 (females)



SOURCE: Human Mortality Database.

FIGURE 3.15 Life Expectancy in Russia at Age 65, 1959–2006



SOURCE: Human Mortality Database.

in 1959. According to the Human Mortality Database, it fell from 14.8 years to 14.1 years over these decades. Life expectancy for older Russian men dropped more steeply, from 12.7 years to 11.4 years. Whereas life expectancy at birth for females in Russia rose somewhat over these years, life expectancy for older Russian women actually dropped slightly, from 15.9 years to 15.7 years (see **Figure 3.15**).

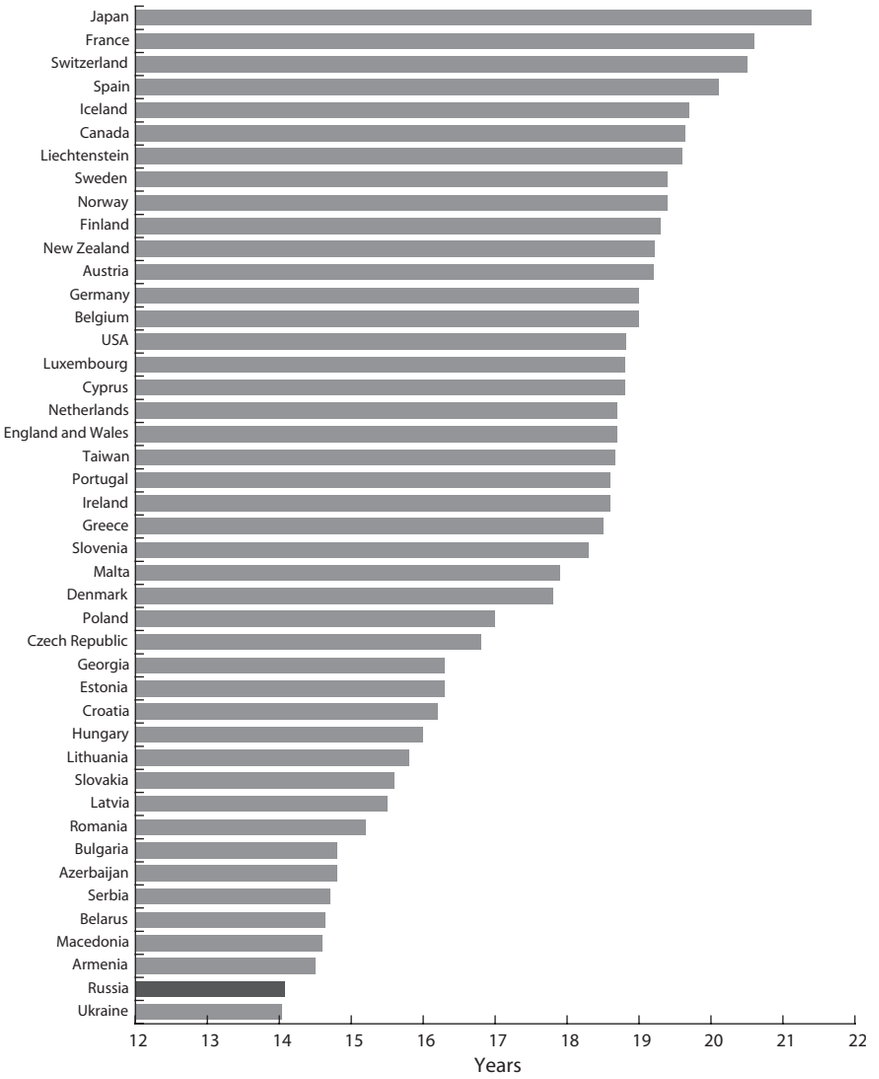
By the centrally important criterion of life expectancy, Russia's older citizens, male and female alike, were less healthy in 2006 than they had been nearly half a century earlier. In absolute terms, the retrogression in overall life expectancy for Russia's older citizens was not as great as the country's drop in life expectancy at birth. In proportional terms (that is, in comparison to the expected years of life remaining) it was considerably greater (a 5% decline in life expectancy at age 65, as against a 1.5% drop in life expectancy at birth).

In remarks before the Valdai Discussion Club, a now-annual gathering of Russians and prominent Western visitors hosted in the Russian Federation since 2004, then president Putin was quoted as observing that "Russian men who live to age sixty five have a life expectancy thereafter that is comparable to that in the West."[14] Such an assertion, unfortunately, is patently and painfully wrong (see **Figures 3.16 A,B,C**).

In 2004, Russia's male life expectancy at age 65 was 10.9 years. For that same year, according to Eurostat, male 65-plus life expectancy for the EU-27 was 16.4 years—fully half as high again. In point of fact, among all the European societies covered by Eurostat, and all the Western and post-Soviet societies covered by the Human Mortality Database, none appears to have a male life expectancy for its older population as low as Russia's today (although Ukraine and Belarus come close). Nor does any European, post-Soviet, or Western society covered by Eurostat and the Human

[14] Marshall I. Goldman, *Petrostate: Putin, Power and the New Russia* (New York: Oxford University Press, 2008): 198.

FIGURE 3.16A Life Expectancy in Select Countries, Age 65, 2006 (total)



SOURCE: Human Mortality Database; and Eurostat, http://epp.eurostat.ec.europa.eu.

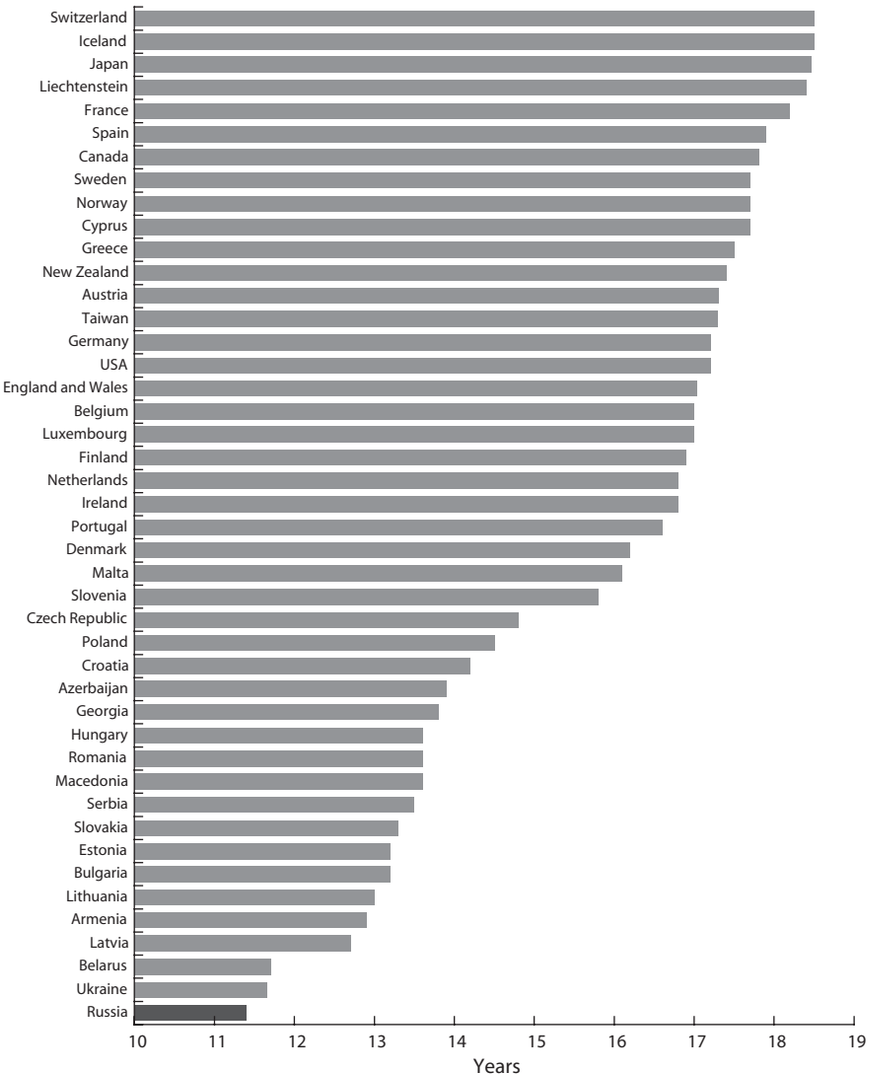
Mortality Database evidence quite so low an overall life expectancy for its older population as the Russian Federation today (although older women in Russia may now be very slightly better off with respect to survival prospects than their counterparts in some parts of former Yugoslavia and the former USSR).

Today's life expectancy for older people in Russia is third world rather than first world. In fact, if we go by the estimates in international "life tables" produced for the year 2006 by the World Health Organization (WHO),[15] life expectancy at 65 would be substantially lower in the Russian Federation than in many of the low-income societies in Asia, Africa, and Latin America today (to name just a few: Algeria, Belize, the Dominican Republic, Jordan, Mauritius, and Vietnam).

Yet poor as the health trends for Russia's 65-plus population may appear, the situation is palpably worse for the Russian population 15 years of age and older (see **Figure 3.17**). Between

[15] World Health Organization (WHO), "Life Tables for WHO Member States," http://www.who.int/whosis/database/life_tables/life_tables.cfm.

FIGURE 3.16B Life Expectancy in Select Countries, Age 65, 2006 (males)

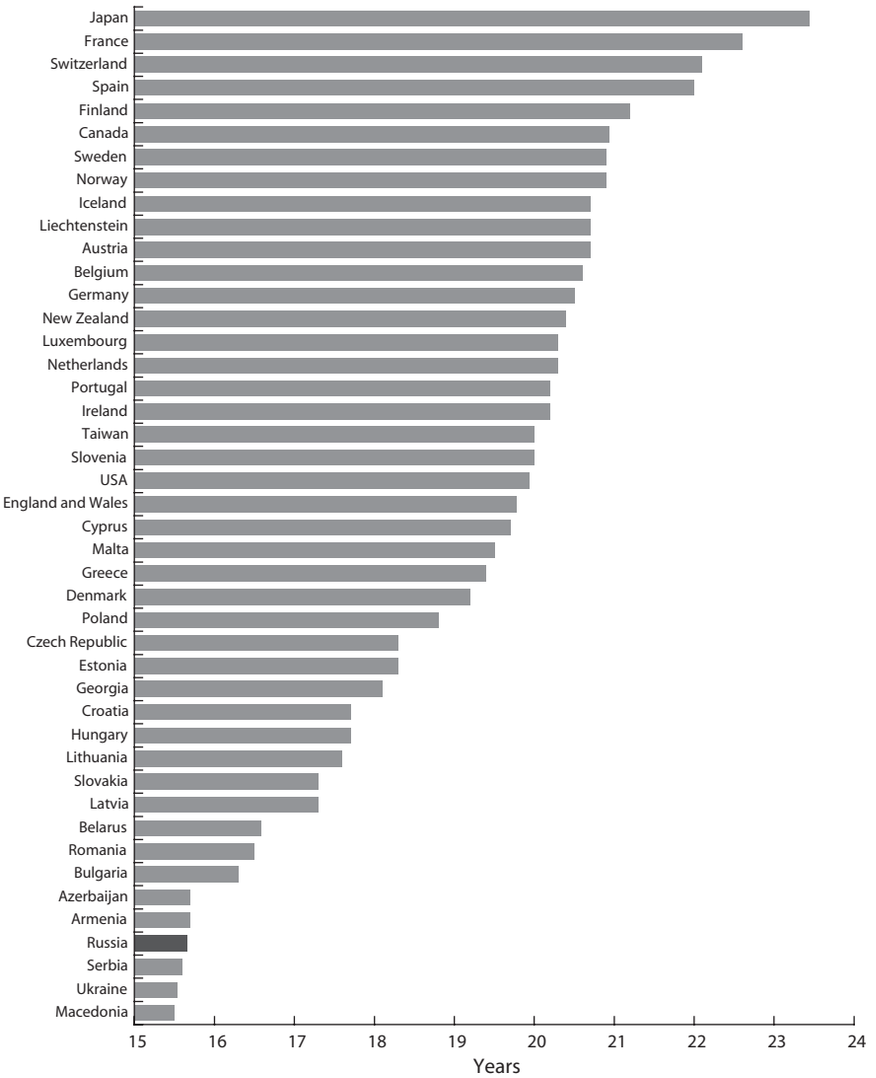


SOURCE: Human Mortality Database; and Eurostat.

1959 and 2006, life expectancy at 15 in Russia dropped by over four years (from 57.0 years to 52.7 years). For females, life expectancy for this population fell by about one year (from 60.2 years to 59.2 years), while for males the drop during those same decades amounted to almost six years of life expectancy (from 52.3 years to 46.5 years). In both relative and absolute terms, Russia's long-term deterioration of life expectancy was more severe for the 15-plus group than for the 65-plus group, indicating that Russia suffered its worst health setbacks in the population of traditional working ages (ages 15 to 64). This is a point to which we will return momentarily.

Perhaps not surprisingly, Russia's long-term trends in life expectancy at age 15 compare even less favorably with corresponding trends in European and Western societies than the country's performance with respect to life expectancy at birth or at 65. For males and females alike, life

FIGURE 3.16c Life Expectancy in Select Countries, Age 65, 2006 (females)



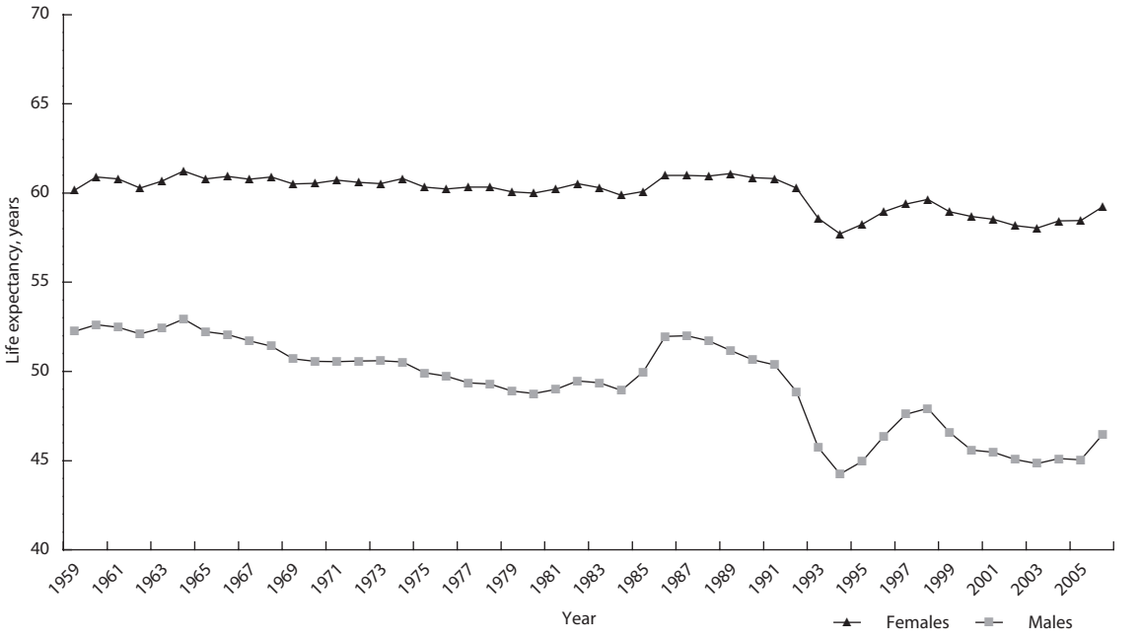
SOURCE: Human Mortality Database; and Eurostat.

expectancy at 15 is lower today in Russia than in any other place under the purview of Eurostat or the Human Mortality Database (see **Figures 3.18–3.20**).

For 2006, the most recent year for which comparable data is available at the time of writing, life expectancy at 15 for males and females together was 52.7 years in Russia, compared to 65.8 years for the EU-15.[16] At the commencement of the economically active ages, life expectancy rates in Russia and Western Europe were thus separated by a gap of thirteen years. For young men, the life expectancy difference between Russia and Western Europe in 2006 stood at over sixteen years, meaning that the relevant lifespans in Western Europe looked to be over one-third longer than in Russia. For young women the life expectancy chasm was not quite as wide, but female life expectancy at age fifteen for the EU-15 was nonetheless almost a decade longer, and thus about one-sixth higher, than in the Russian Federation.

[16] WHO, "European Health for All Database," http://data.euro.who.int/hfadb/.

FIGURE 3.17 Life Expectancy in Russia at Age 15, 1959–2006

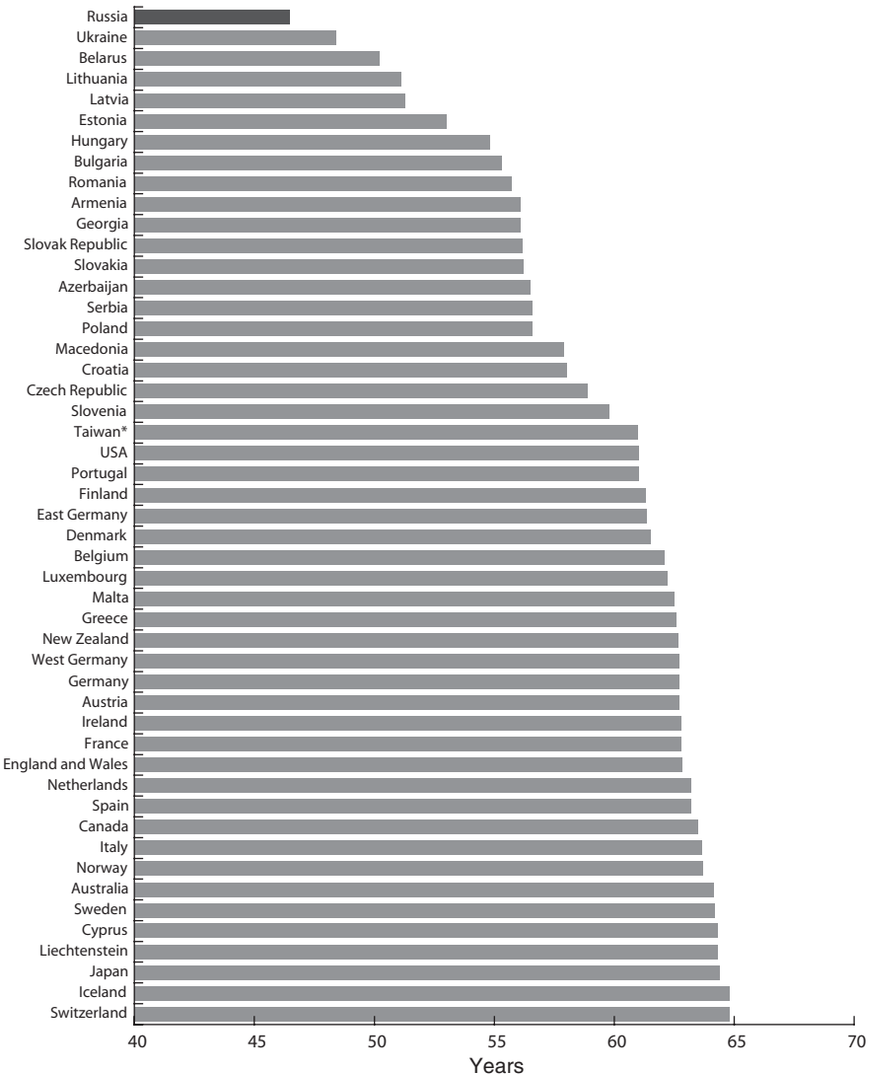


SOURCE: Human Mortality Database.

The longevity outlook for Russia's population of working ages (conventionally defined) is not just third world these days; it is almost fourth world. To go by the WHO's life table estimates for the year 2006, overall life expectancy at age fifteen in the Russian Federation appears in fact to be lower than for some of the countries the UN designates to be least developed (as opposed to less developed), among these, Bangladesh, Cambodia, and Yemen. Life expectancy at fifteen is apparently only slightly higher these days in Russia than in Myanmar or Haiti (two other least developed societies). And of course things look even worse for Russia's men. Their life expectancy at fifteen comports with levels seen in the least developed parts of sub-Saharan Africa. In point of fact, male life expectancy at age fifteen looks to have been lower in Russia in the year 2006 than in such desperate places as Benin, Djibouti, Ethiopia, Gambia, and Somalia.

Russia's great leap backward in health conditions for its working age population can be illustrated even more vividly by comparing death rates by age for today's men and women to those of their forebears. In **Figure 3.21**, we present the ratio of age-specific death rates for males and females 20 to 64 years of age, with mortality rates in the year 2005 expressed as a fraction of the corresponding rates from the year 1965. With the single exception of women exactly twenty years of age, whose death rates were lower in 2005 than in 1965, every other group experienced higher death rates in 2005 than their counterparts experienced 40 years beforehand. For the most part, death rates for the working age Russian population look to be massively higher nowadays. For men, almost every age group reports a jump in age-specific death rates of more than 50%. Men between the ages of 30 and 50 suffered an upward surge in death rates averaging 100% or more. Women fare better only by comparison: an upswing in death rates averaging 50% or more governs conditions for Russian females between the ages of 30 and 50. Over those same decades, by way of an external benchmark, the average death rate for persons 30 to 50 years of age, according to

FIGURE 3.18 Life Expectancy at Age 15, Most Recent Year (males)



SOURCE: Human Mortality Database; and Eurostat.

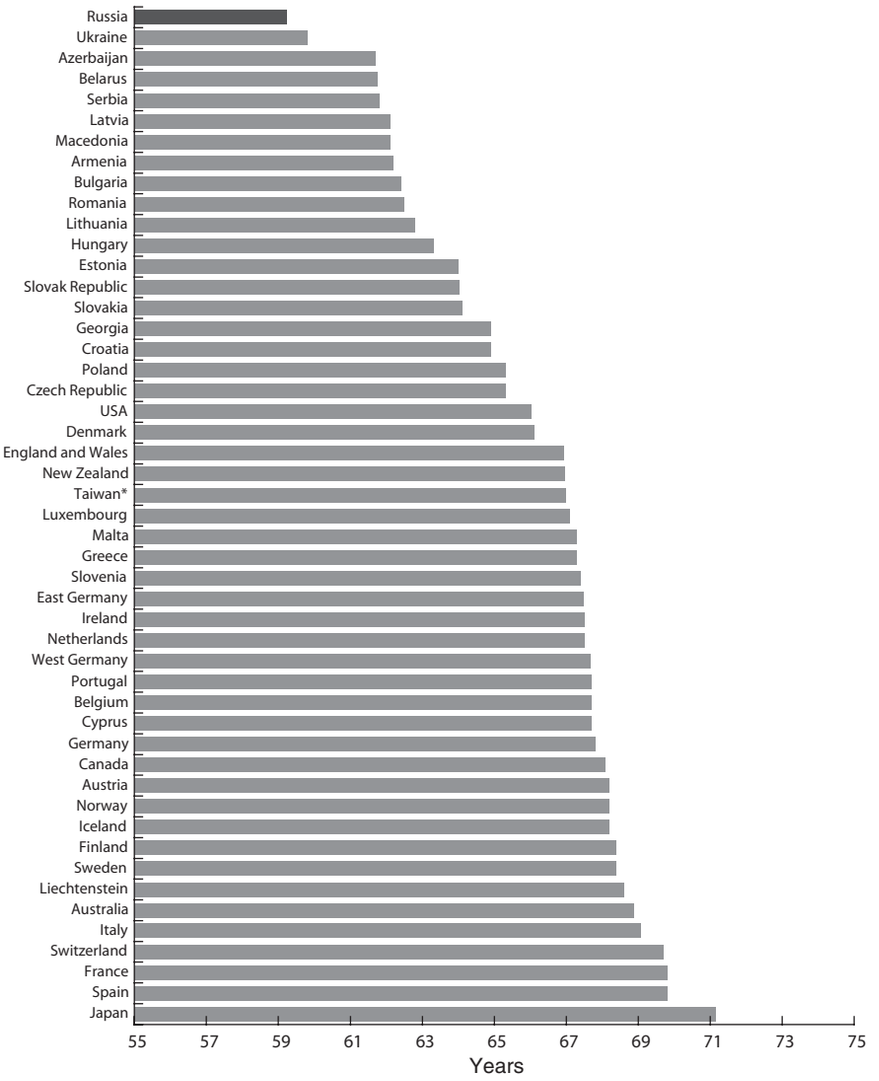
Human Mortality Data estimates, dropped by 37% for American men and by 38% for American women over the 1965–2005 period.

Geographic and Regional Variations in the Russian Mortality Crisis

Another way to think about the Russian mortality crisis is as a regional phenomenon. To what extent does excess or premature mortality seem to vary over this vast and diverse country? Data from Goskomstat and the WHO Regional Office for Europe's European Health for All Database (HFA-DB) helps us to answer this question.[17] These sources offer estimates of age-standardized mortality for the Russian Federation at the *oblast* (or provincial) level and for the rest of the European region,

[17] WHO Regional Office for Europe, "European Health for All Database," http://www.euro.who.int/hfadb.

FIGURE 3.19 Life Expectancy at Age 15, Most Recent Year (females)



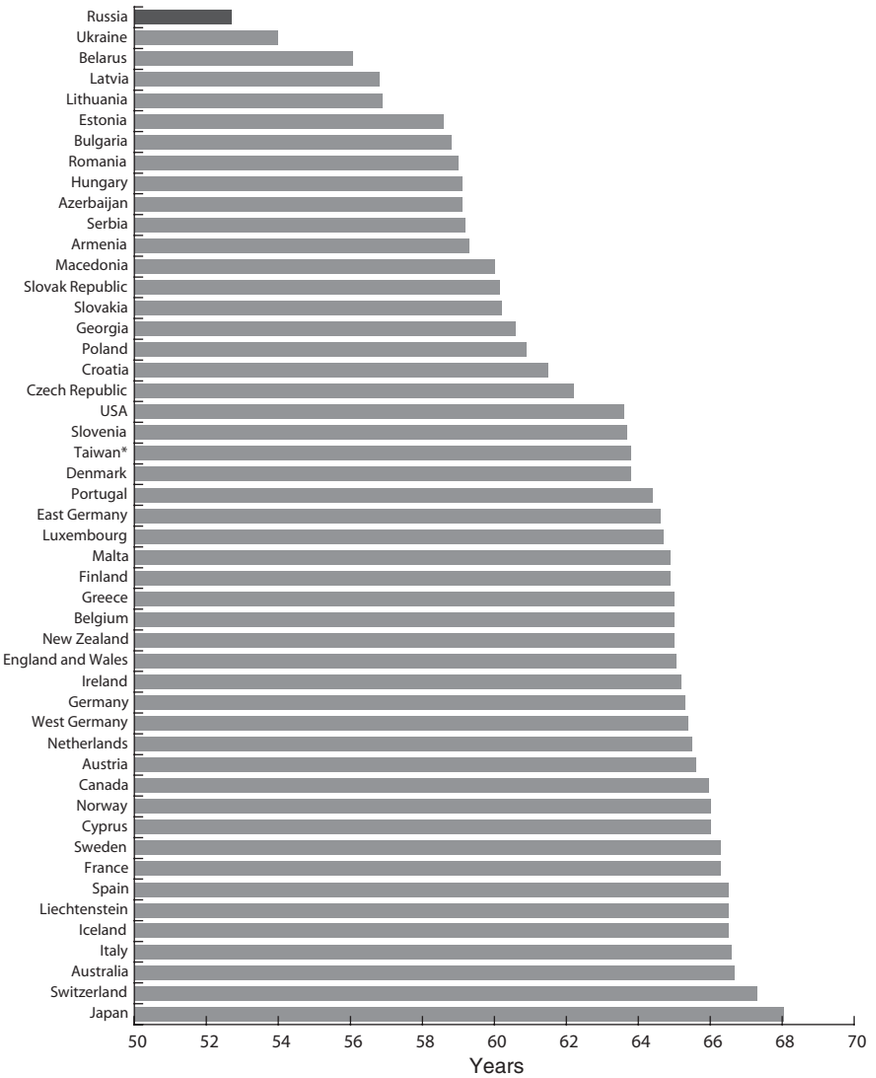
SOURCE: Human Mortality Database; and Eurostat.

respectively. Calculating these mortality rates against a common "European standard population"[18] model structure, the death rates for Russia's diverse regions will be in principle comparable with corresponding mortality rates from other locales in the WHO's European region. The WHO HFA-DB offers regional mortality data for both Russia and Western Europe, but as of this writing, that series is updated only through the year 2001. By relying on Goskomstat data for Russian regional mortality patterns and DFA-DB data for requisite EU comparisons, we can examine the regional dimensions of the Russian mortality crisis (in conjunction with international benchmarks) for the year 2006 in **Figures 3.22** and **3.23**.

As is immediately apparent in these graphics, pronounced regional variations characterize age-standardized levels of aggregate mortality (deaths from all causes) for both males and females in Russia nowadays (2006). While the particulars for the two stories differ, the general storyline is

[18] For details, see WHO Regional Office for Europe, "European Health for All database: User manual," 13, ftp://ftp.euro.who.int/hfa/hfa-db.pdf.

FIGURE 3.20 Life Expectancy at Age 15, Most Recent Year (total)

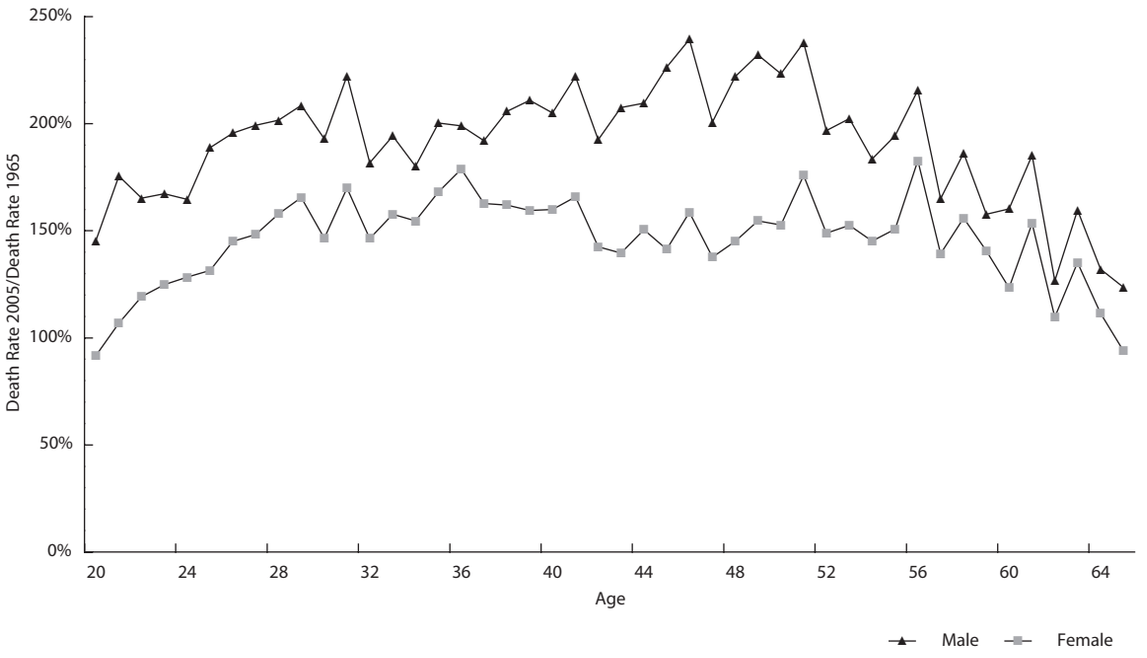


SOURCE: Human Mortality Database; and Eurostat.

much the same. In each case, the region with the highest death rates suffers from mortality levels well over twice as high as Russia's lowest mortality provinces. In both of these stories, further, Moscow and St. Petersburg, the nation's very largest and most prosperous metropolitan areas, enjoy decidedly better than average mortality levels (with Moscow's being the consistently lower of the two). Curiously, however, the regions immediately surrounding Moscow and St. Petersburg turn out to be areas of unusually poor health, even in Russia's awful current context.

In Moscow oblast, age-standardized death rates lie distinctly above the Russian national average, for males and females alike. For its part, age standardized mortality in Leningrad oblast in 2006 was over 27% higher for females and nearly 43% higher for males than in adjacent St. Petersburg. Clearly, proximity to affluence and amenities did not confer any health advantages on suburban Moscow or St. Petersburg. Controlling for differences in population structure, indeed, the total death rate reported for Leningrad oblast in 2006 was a chilling 19% higher for males and 15% higher for females

FIGURE 3.21 Death Rate Ratio by Gender, Ages 20–65: Russia, 2005 vs. 1965 (1965 = 100)



SOURCE: Human Mortality Database.

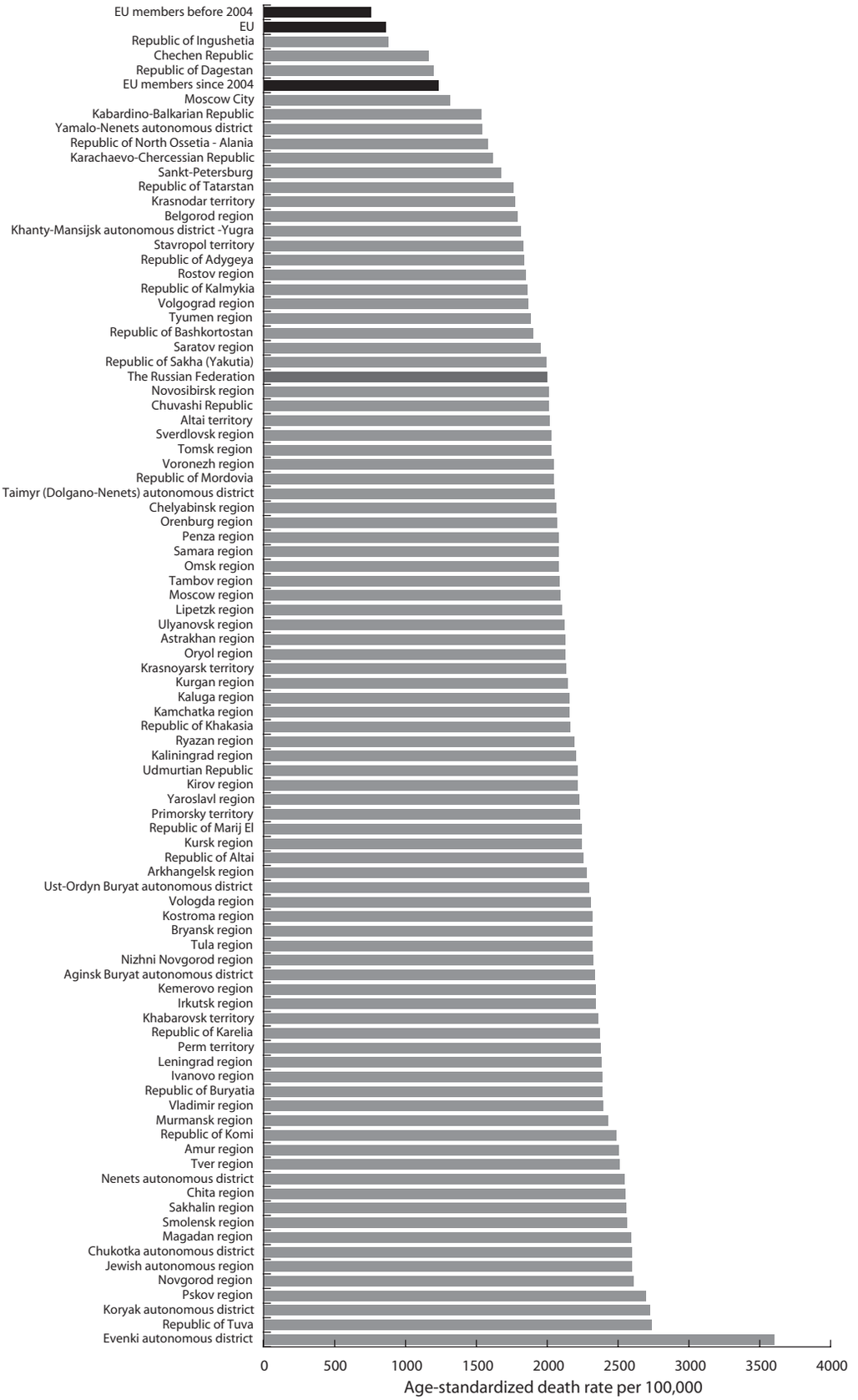
than Russia's already dismal national average. To go by the metric of mortality, residents of suburban St. Petersburg would have been better off if they had lived in Siberia.

There appear to be some broader regional patterns in Russia's more local mortality differences. Goskomstat provides age-standardized mortality rates for 88 oblasts and territories within Russia for the year 2006. For males, seven of the ten regions with the highest mortality were found in remote Siberia or the harsh Russian Far East (for females, nine of the ten regions with the country's worst mortality tolls were likewise in Siberia and the Russian Far East in 2006). It is worth noting, however, that the country's westernmost, "European" areas generally tend to have mortality levels above the national average. These oblasts are representative of what might be called "the Russian heartland." They include some of the earliest territories of the Russian state, places of tremendous cultural and historical significance in their "Russian-ness," and areas that remain today overwhelmingly Russian in terms of ethnicity.

By contrast, the country's healthiest (or perhaps more accurately, least unhealthy) regions, to go by this mortality data, look to be Ingushetia, Chechnya, and Dagestan. These localities are overwhelmingly peopled not simply by non-Russian ethnicities but by folk of Muslim descent or cultural heritage. This speaks to a broader pattern, for seven of the ten lowest-mortality provinces for men, and eight of the ten lowest for women, are places with sizeable non-Russian ethnic populations, including a considerable representation of peoples from Muslim cultural traditions. Exceptionally wealthy Moscow, with a reported per capita income roughly three times the national level, is one of only two predominantly Russian regions to rank at this better end of the country's health spectrum for both males and females (the other place is St. Petersburg).

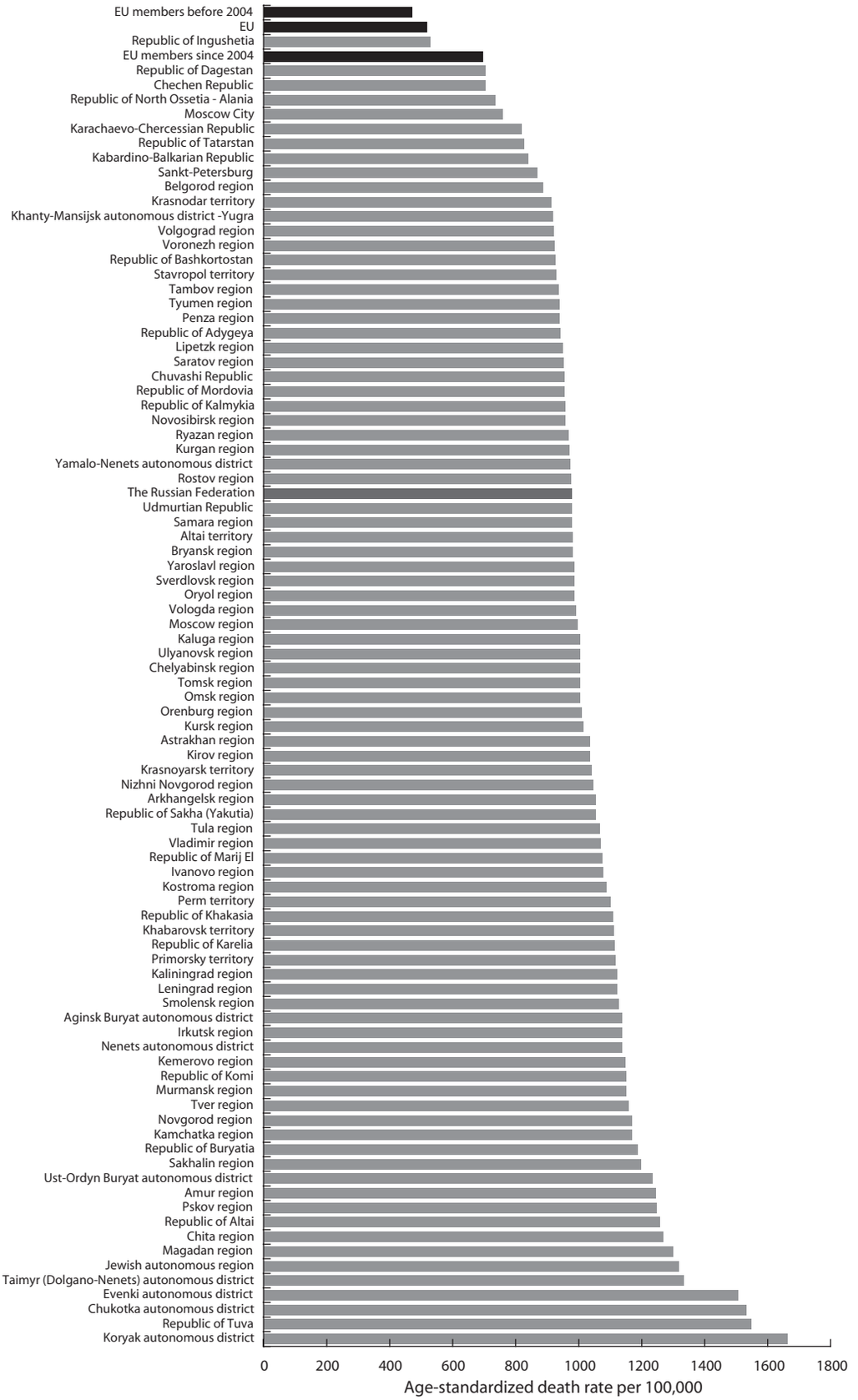
These regional differences in mortality are meaningful in themselves and suggestive of some of the underlying factors and tendencies generating mortality differentials within Russian society

FIGURE 3.22 Age Standardized Death Rates for All Causes, Males, 2006: Russia by Oblast or Region vs. EU



SOURCES: Russian Demographic Yearbook 2007, Goskomstat; and WHO Health for All Database.

FIGURE 3.23 Age Standardized Death Rates for All Causes, Females, 2006: Russia by Oblast or region vs. EU



SOURCES: Russian Demographic Yearbook 2007, Goskomstat; and WHO Health for All Database.

today. What is required to place these differentials in perspective is, in fact, some perspective. For when all is said and done, a view possessed of perspective will corroborate the critical fact that Russia's regional variations in mortality are rather modest in comparison to the differential between Russia and other European countries.

It is not that Russia's regional mortality differentials are insignificant—**Figures 3.22** and **3.23** attest directly to the contrary. Rather, the point here is that the most dramatic regional mortality differentials involving Russia are not internal but external; not the ones within the country but instead the ones that separate the country as a whole from Europe (and for that matter, the rest of the Western world).

Consider, to begin, the health situation in Moscow. Age-standardized mortality rates there in 2006 were roughly 22% below the national average for females and 34% below the national average for males. This made Moscow one of the healthiest places to live—if, of course, one had to live within the Russian Federation. Yet Moscow's death rate for women that same year was over 60% higher than the comparable rate for the fifteen Western European countries that had joined the European Union before the EU's rounds of expansion in 2004 and after. In Moscow, similarly, the mortality level for men in 2006 was over 70% higher than in Western Europe's (as represented by these old EU members).

Remember, Moscow is one of Russia's most prosperous and developed regions. In terms of per capita income, it in fact appears to be on par with some Western European populations (after making the appropriate adjustments for purchasing power parity). Yet even more dismaying may be the comparison between Moscow and the new EU members. For males and females alike, age-standardized mortality is higher in Moscow than in the new EU on average. This is true even though the average PPP-adjusted, population-weighted income levels in that collection of countries is today far lower than in Moscow itself. We are accustomed to thinking that "health equals wealth" in the modern world and vice versa. The mortality situation in Moscow today may provide a conspicuous local exception to this global generalization.

Consider, further, St. Petersburg—Russia's second largest city, her second most affluent metropolis, and her second-healthiest urban agglomeration. St. Petersburg's death rates in 2006 were almost 90% above the EU-15 level for females and no less than 110% higher for males. In relation to the new EU states, the overwhelming majority of whose populations live in post-Communist societies, St. Petersburg's age standardized mortality is 25% higher for females and 40% higher for males. These are truly stunning differentials, but perhaps not really surprising ones, given what we have already seen of St. Petersburg's life expectancy in comparison with third world urban centers.

Dagestan and Chechnya may have reported the lowest credible death rates for any Russian regions in 2006.[19] These rates were over 50% higher for women and over 60% higher for men than the corresponding average levels prevailing throughout the EU-15 that same year. Death rates in "healthy" Dagestan, further, were 24% higher for females and 45% higher for males than the

[19] The Republic of Ingushetia consistently reports the lowest age-standardized mortality rates in the Russian Republic, but there are reasons to question the reliability of these figures. For one thing, its reported death rates are consistently lower than the corresponding rates in adjoining Chechnya and North Ossetia—in 2006, over 25% lower for males and females alike—despite the similar socio-economic fundamentals of the three regions. For another, reported age-standardized mortality rates in Ingushetia rose markedly (by 13% or more) between 2001 and 2006 for both men and women, whereas the corresponding male and female death rates in practically all the rest of the Russian Federation were reported to have declined over that same period. The simplest plausible explanation for these seeming anomalies would be under-reporting of mortality in Ingushetia.

corresponding levels reported for Denmark, the Western European country with the very highest mortality rates as of 2006.

In effect, there was no mortality overlap whatsoever between Western Europe and Russia, big intraregional variations in mortality within both of those geographic zones notwithstanding. If we could somehow transport them through space, Western Europe's very worst health region would immediately qualify as Russia's very best, and vice versa. Without minimizing the importance of understanding the reasons why some regions in Russia have higher, or lower, mortality levels than others, the key finding in a geographical review of mortality differentials within the Russian Federation today is the overarching dreadful sameness of the tableau—the relative lack of differences in death levels from one part of the country to the next.[20] From one end to the other in the world's largest country, astonishingly high death rates are the unremitting norm.

Proximate Components of the Russian Mortality Crisis: Cause of Death Patterns in International Perspective

How are we to make sense of such a protracted and pervasive retreat in survival prospects for an urban and literate society during peacetime? This health failure, further, appears to have disproportionately afflicted persons who would otherwise ordinarily be described as in the prime of life. Our autopsy of the Russian health disaster can continue with cause-of-death data. Information on the causes of death can provide important clues about the factors that have contributed to Russia's terrible and abnormal affliction.

For a variety of reasons, we must use this cause-of-death data with caution. After all, in the final analysis, it is easier to tell whether a person is alive or dead than to diagnose unambiguously the final cause of their demise.[21] International cause-of-death comparisons can be problematic if they demand too much from the data at hand, and our analysis will be mindful of that risk.

We will examine reported levels and trends for three major and overarching categories within the WHO's "International Classification of Diseases"[22] (ICD): (1) overall deaths from "infectious and parasitic disease";[23] (2) overall deaths from "diseases of the circulatory system";[24] and (3) "external causes of morbidity and mortality."[25] We will compare levels and trends in Russia with those of other countries in the European region, and we will also see how Russia's mortality levels for these major cause-of-death components look from a global perspective. For the following comparisons we will use data compiled, prepared or estimated by the WHO—specifically, the

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20 We can make this point more precisely to the statistically inclined through calculations on the coefficient of variation by oblast. The coefficient of variation (c.v.) by oblast for TFRs in the Russian Federation as of 2006 was 0.24, but the c.v. for age-standardized mortality rates in 2006, according to Goskomstat data, was just 0.19 for males and 0.18 for females. Russia's fertility levels, as we will recall from a previous chapter, are low and fairly even from one region to the next. Age-standardized mortality, on the other hand, is very high, but still more uniform across regions.

21 The factors limiting the accuracy and comparability of Soviet and Russian cause-of-death data include: politicized reporting of causes of death (e.g., suicide) and allied ideological pressures for misreporting certain kinds of death at various points in the Soviet period; burdensome bureaucratic and administrative processes that may have encouraged under-reporting or over-reporting of specific causes of death; limited and uneven knowledge on the part of medical examiners and others responsible for completing death certificates; and differing dispositions and practices in death certificate completion across countries and over time.

22 For further details, see WHO, "International Classification of Diseases (ICD)," http://www.who.int/classifications/icd/en/.

23 WHO, "International Classification," Ch. I.

24 WHO, "International Classification," Ch. IX.

25 WHO, "International Classification," Ch. XX.

HFA-DB maintained by the WHO/Europe Office,[26] and the global, 192-country database known as WHOSIS (World Health Organization Statistical Information System).[27]

Long-term trends in mortality from all causes, standardized for population age structure and taking males and females together, are depicted for Russia and for Europe in **Figure 3.24**.

The overall story illustrated here will by now be familiar to the reader. In 1980, Russia's mortality level was roughly 38% higher than Western Europe's (more specifically, that of the pre-2004 accession European Union), but by 2006 it was an astonishing 135% higher. The grim widening of this Russia–Western Europe mortality gap was due both to steady decline in death rates for Western Europe and erratic upward movements in Russia's own mortality levels. Thus, in absolute terms, the differential separating Russia and Western Europe was fully twice as great in 2006 as it had been a generation earlier.

No less noteworthy is the divergence that would emerge between mortality trends in Russia and the new EU states (in the main, ex-Communist countries from Central and Eastern Europe and the Baltic[28]). As of 1989, Russia's mortality level was just about the same as the level reported in the EU's post-2004 accession states. Yet by 2006, it was fully 50% higher. Between 1989 and 2006, Russia's age standardized death rates rose about 20%, whereas mortality in the new EU states averaged a drop of almost the same proportion during those same years.

What role did communicable and infectious disease play in Russia's fateful health retrogression and mortality deterioration? By any reading, the situation in Russia today sounds awful.

The Russian Federation, to begin, is afflicted with a very serious HIV/AIDS epidemic. According to UNAIDS, as of 2007 somewhere around one million Russians were living with HIV,[29] a disease for which there currently exists no cure and which is thus almost always eventually fatal.[30]

Russia also faces a related and evidently growing burden of tuberculosis.[31] As of 2007, according to WHO estimates, Russia was experiencing about 220,000 new TB infections a year. To make matters worse, almost half of Russia's treated tubercular cases over the past decade have been the variant known as extreme drug-resistant tuberculosis (XTR-TB).

Russia's HIV and TB problems have prompted extensive comment and concern in public health circles, both within Russia and internationally. But these are not the only manifestations of the country's infectious disease burden. Russia's prevalence of curable sexually transmitted diseases (STD)—syphilis, gonorrhea, Chlamydia, and the like—also appears to be dozens or in some cases even hundreds of times higher than the levels registered in Western Europe.[32] Additionally, contemporary Russia still suffers illness and death from a number of "re-emerging diseases," including infectious diseases—pertussis, measles, cholera, and the like—that have generally ceased to afflict the populations of affluent Western societies. Other diseases—such as the currently

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26 WHO Regional Office for Europe, "European Health for All Database," http://www.euro.who.int/hfadb.

27 WHO, "WHOSIS Search," http://www.who.int/whosis/data/Search.jsp?indicators=[Indicator].Members.

28 Malta and Cyprus were also "new," post-2004 EU members, but they accounted for less than one percent of this EU "enlargement" population.

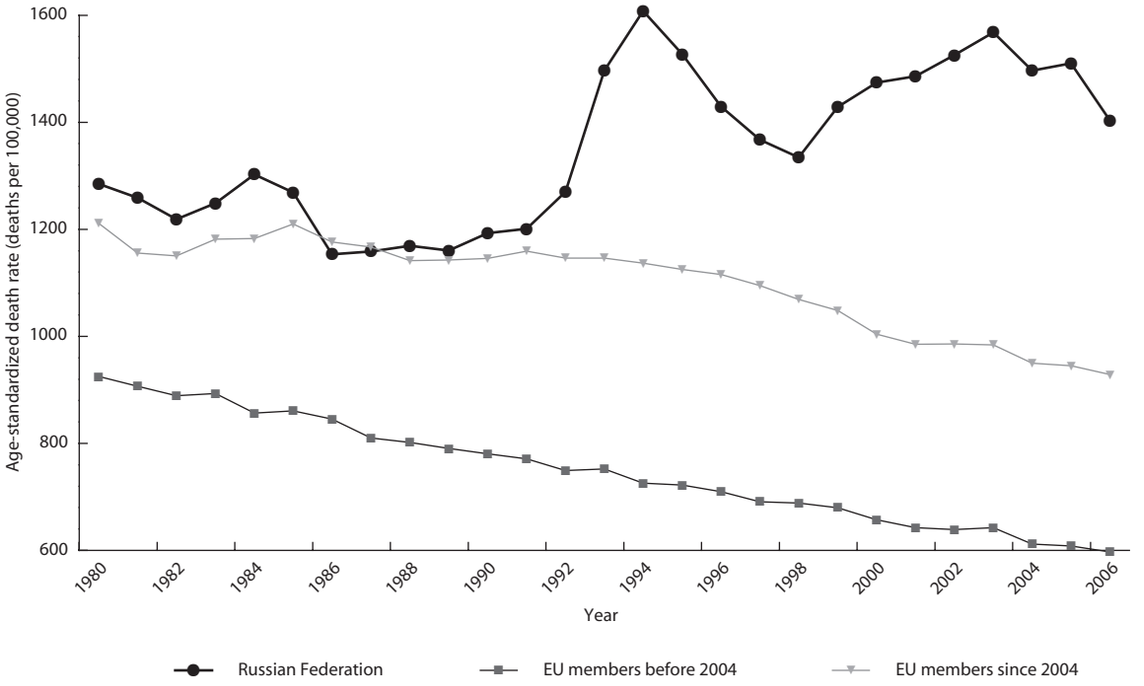
29 In the 2008 report from UNAIDS on the global AIDS epidemic, the number of Russians living with HIV was estimated at between 630,000 and 1.3 million, with a central estimate of 930,000. See UNAIDS, "Latest Epidemiological Data: Estimated Number of People Living with HIV by Country, 1990–2007," http://data.unaids.org/pub/GlobalReport/2008/20080818_gr08_plwh_1990_2007_en.xls.

30 Russia's HIV nexus appears to be closely associated with a burgeoning phenomenon of local drug use, sex trafficking and other forms of prostitution or commercial sex, and other practices relating to extramarital sex.

31 WHO, "Global Tuberculosis Control 2009: Epidemiology, Strategy, Financing," "Country Profile: Russian Federation," http://www.who.int/tb/publications/global_report/2009/pdf/rus.pdf.

32 Some of these disparities are graphically illustrated in WHO Regional Office for Europe, *Atlas of Health in Europe* (Copenhagen: WHO Europe, 2003), http://www.euro.who.int/Document/E79876.pdf; and WHO Regional Office for Europe, *Atlas of Health in Europe, 2nd Edition* (Copenhagen: WHO Europe, 2008), http://www.euro.who.int/Document/E91713.pdf.

FIGURE 3.24 Death rates from all causes, 1980–2006: Russia vs. EU (males plus females)



SOURCE: Europe Health for All Database, World Health Organization, August 2009. http://www.euro.who.int/HFADB.

incurable hepatitis C—that are on the rise in the West today are apparently spreading even more rapidly within the Russian Federation.[33]

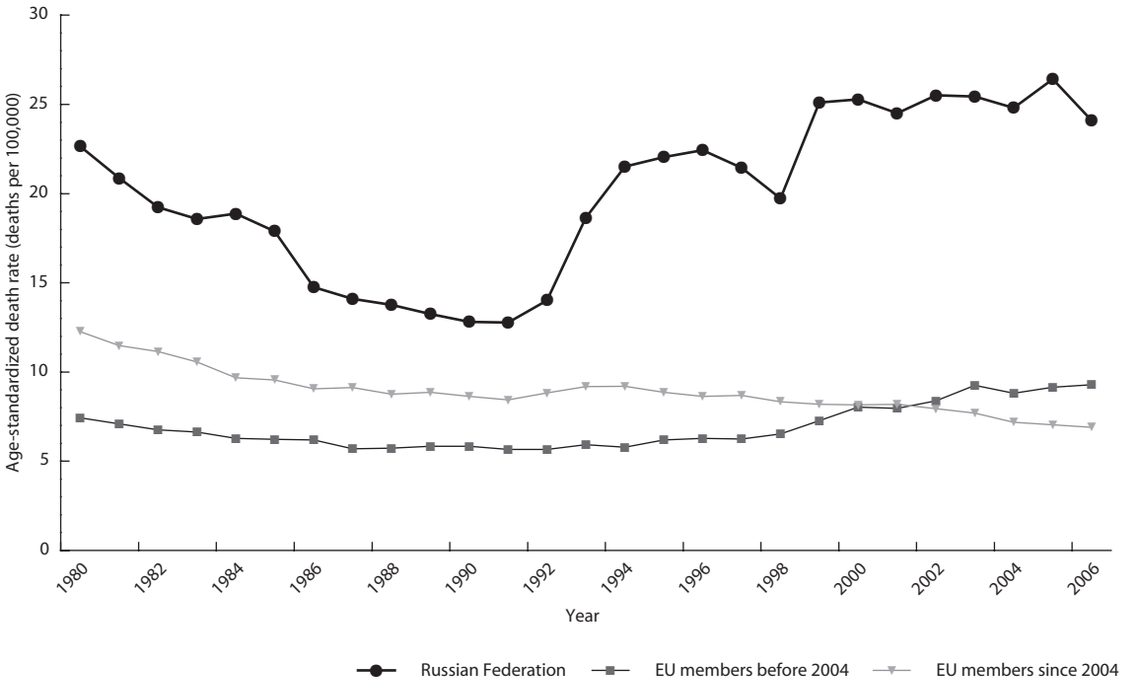
According to WHO estimates, mortality rates from communicable causes nearly doubled in Russia between 1991 and 2006. By 2006, moreover, officially tabulated death rates from infectious and parasitic diseases were nearly two and a half times higher in the Russian Federation than in Western European (old EU) countries, as may be seen in **Figure 3.25**.

Yet dismaying as these disparities may be, simple arithmetic underscores the fact that adverse trends in deaths from infectious and parasitic diseases have not had much to do with Russia's dreadful overall patterns of excess mortality in the post-Communist era (at least to date). According to the WHO, deaths attributed to communicable causes accounted for less than 2% of total mortality in the Russian Federation in 2006. This was, to be sure, up from about 1% in 1991, but the increment accounted for less than one-sixteenth of the total increase in age-standardized mortality in Russia between 1991 and 2006. Differences in deaths due to communicable diseases, moreover, explain less than one-fiftieth of the gap in overall mortality levels between Russia and Western Europe as of 2006.

Russia's mortality profile from infectious and parasitic diseases today is clearly less favorable than Western Europe's, but there is nothing necessarily exceptional about such a distinction per

[33] Especially noteworthy here is the work of Murray Feshbach, long of the U.S. Census Bureau and Georgetown University and now at the Woodrow Wilson International Center for Scholars. See inter alia Murray Feshbach, ed., *Environmental and Health Atlas of Russia* (Moscow: PAIMS, 1995); "Russia's Demographic and Health Meltdown," in *Russia's Uncertain Economic Future: Compendium of Papers* (Washington, DC: Government Printing Office, 2001): 283–305; idem., *Russia's Health and Demographic Crises: Policy Implications and Consequences*, Chemical and Biological Arms Control Institute, 2003, 27–39; and Murray Feshbach and Christina M. Glavin, "HIV/AIDS in Russia: An Analysis of Statistics," Woodrow Wilson International Center for Scholars, January 2005.

FIGURE 3.25 Death rates from Infectious and Parasitic Diseases, 1970–2006: Russia vs. EU (males plus females)



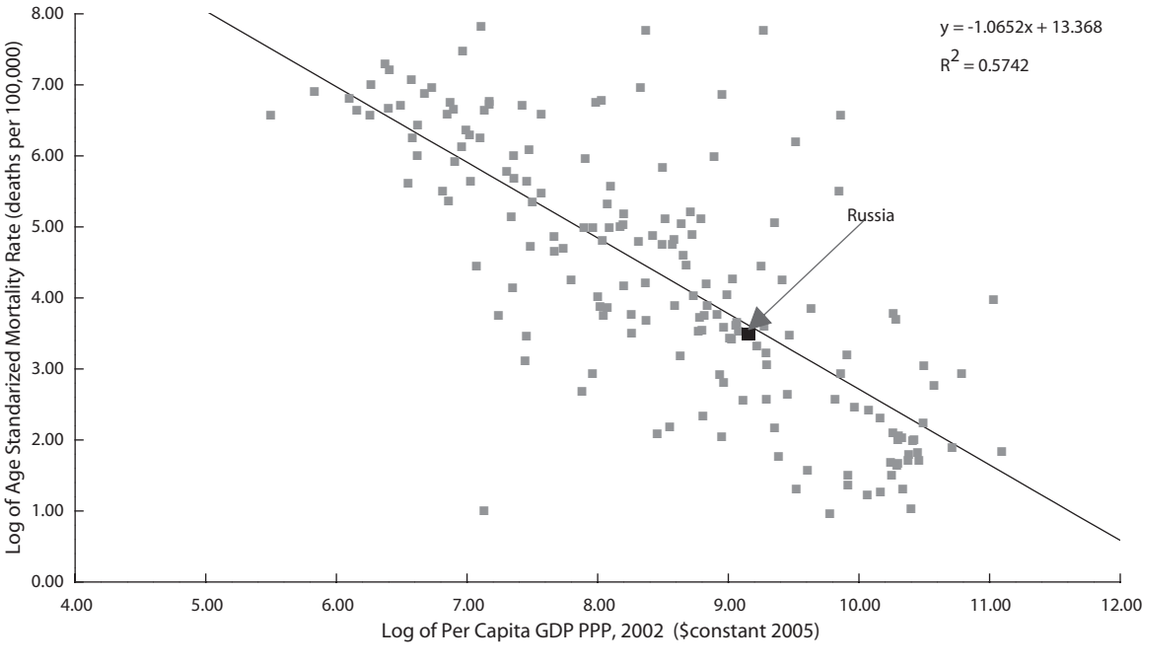
SOURCE: Europe Health for All Database, World Health Organization, August 2009. http://www.euro.who.int/HFADB.

se—at least, from an epidemiological standpoint. Russia is poorer than Western Europe, and the burden of deaths from communicable disease generally tends to be higher in lower-income areas.

Figure 3.26 makes the point. It shows the international correspondence in the year 2002 between deaths from communicable disease (age standardized estimates from the WHO) and per capita GDP (PPP-adjusted estimates from the World Bank). In this sample of 175 countries from around the globe, changes in per capita income levels track rather closely with differences in mortality levels from communicable disease. In this cross-section of countries, the elasticity of income with respect to death from communicable disease is strongly negative. That is to say, a 10% increase in real per capita output is associated with a drop in communicable mortality levels of over 10%.

In point of fact, Russia's death rate from infectious and parasitic disease looks entirely normal in Figure 3.26, considering the country's income level. As of 2002, communicable mortality levels in Russia were just about exactly where global correspondences between income and infectious

FIGURE 3.26 Age-standardized Mortality Rates from Infectious and Parasitic Diseases vs. PPP-Adjusted Per Capita GDP, 2002



NOTE: Mortality rates in this figure are weighted against the WHO's "World Standard Population" model; age-standardized mortality figures from the WHO European Health for All Database and from Goskomstat are adjusted against the "European Standard Population" model.

SOURCE: World Development Indicators 2008 CD-ROM, World Bank; and "World Health Report 2004 Annex Tables," WHOSIS, December 2004, http://www.who.int/healthinfo/statistics/bodgbddeathdalyestimates.xls.

mortality would have suggested. This may come as a somewhat surprising finding, considering all that has been written about the dual HIV-XTR TB plagues unfolding over the Russian expanse.

Some under-reporting of deaths from AIDS and TB clearly occurred in Russia over the past decade, owing not least to the stigma attached to these diseases in Russian society.[34] There may also be political pressures at play within Russia as well that weigh toward the undercounting of these and other dreaded "emerging diseases." Recently, for example, a leading Russian virologist accused his government of dramatically understating the number of cases of swine flu due to the late 2009 global H1N1 pandemic—an accusation hardly dispelled by the menacing counter-charge from the Ministry of Health that the virologist had committed an "informational terrorist act."[35]

By the same token, it is possible that the World Bank's PPP-adjustments overstate Russia's per capita income to some degree in relation to other countries. But revisions are unlikely to alter the overall picture to any appreciable degree. The situation may change in the decades ahead, but thus

[34] Note, for example, that the WHO European Health for All Database, which bases its figures on the data reported by corresponding governments, indicates the total number of deaths in the Russian Federation from all infectious and communicable diseases to have totaled about 34,000 for the year 2006 (the latest year available at this writing)—whereas UNAIDS offers a central estimate for the year 2007 of mortality from AIDS alone of 40,000 (23,000 to 70,000) for the Russian Federation! See, for example, WHO, UNAIDS and UNICEF, "Epidemiological Fact Sheet on HIV and AIDS: Russian Federation, 2008 Update" (December 2008), http://apps.who.int/globalatlas/predefinedReports/EFS2008/full/EFS2008_RU.pdf. But even if Russia's true level of deaths from infectious disease were currently 100% higher than the official statistics suggest (a perhaps shocking albeit not altogether outlandish possibility), this would change very little with respect to the basic analysis in our preceding pages. Russia's level of age standardized mortality from communicable diseases would still lie reasonably close to the level that would have been predicted simply on the basis of the country's per capita income. Deaths from infectious diseases would still account for only a tiny fraction of overall mortality in the country—and for only a few percentage points of the upsurge in mortality since the collapse of the Soviet system.

[35] Gregory L. White, "Doctor Says Russia Understating Swine-Flu Cases," *Wall Street Journal*, September 23, 2009.

far post-Communist Russia's burden of infectious mortality is more or less what one would expect for a country at its income level.

Let us now consider cardiovascular disease (CVD) mortality trends. There are no two ways about it—by any metric we might care to use, modern Russia's mortality levels from CVD are truly appalling. The basic outlines of Russia's CVD disaster may be seen in **Figure 3.27**, which compares trends for EU countries and Russia over the years 1970–2006.

Western industrial societies, as is by now well known, suffered an epidemic upsurge in CVD mortality in the decades immediately following World War II. By the late 1960s that epidemic had peaked, or would soon peak, in almost all Western countries.[36] The readings from the early 1970s in Figure 3.27 for old EU members, therefore, represent a juncture fairly close to the apogee of CVD's toll in Western Europe. From the mid-1970s onward, age-standardized death rates from diseases of the circulatory system steadily declined for Western Europe as a whole. Between 1970 and 2006, the level fell by over 55% in the EU-15, a tempo averaging about 2.3% per annum.

In Russia, by stark contrast, CVD mortality in 1980 was well over 50% higher than it had been in old EU states as of 1970. That is to say, as of 1980, the Russian population may well have been suffering the very highest incidence of mortality from diseases of the circulatory system that had ever been visited on a national population in the entire course of human history—up to that point in time. Over the subsequent decades, unfortunately, the level of CVD mortality in the Russian Federation veered further upward. By 2006, that level was down somewhat from that recorded in 2003, its highest reading to date. Even so, Russia's CVD mortality was over 10% higher in 2006 than it had been a quarter century earlier.

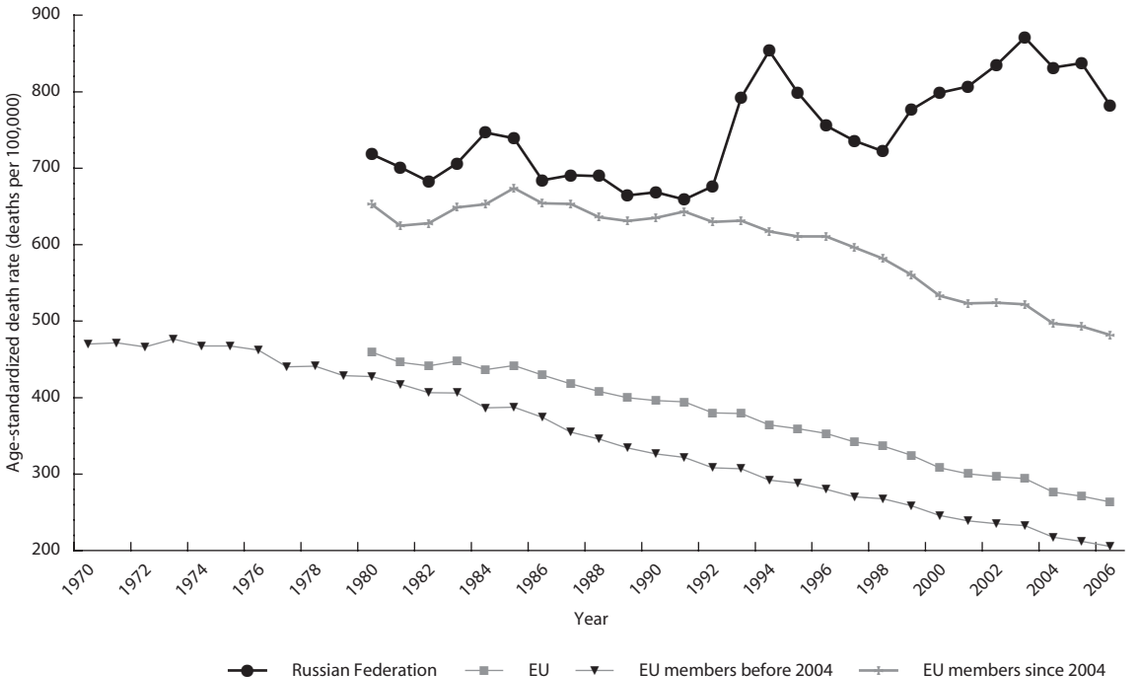
By 2006, Russia's CVD mortality rate, standardizing for population structure, was an almost unbelievable 3.8 times higher than the population-weighted level reported for Western Europe. Scarcely less alarming, a tremendous disparity in CVD mortality in the post-Communist era opened up almost immediately between the countries that would go on to join the EU, on the one hand, and the Russian Federation, on the other. In the years 1989–91, CVD mortality levels were only slightly higher in Russia than in what would become the new EU states. By 2006, Russia's levels were over 60% higher. Whereas CVD death rates fell further between 1991 and 2006 in these erstwhile Communist European states, mortality from circulatory diseases rose by nearly a fifth (19%) in post-Soviet Russia over the same period.

In European perspective, modern day Russia's mortality toll from cardiovascular disease looks positively disastrous. By 2006, deaths from diseases of the circulatory system accounted for over two-thirds of the aggregate mortality differential between Russia and Western Europe. In fact, Russia's mortality levels from CVD alone were some 30% higher than deaths in Western Europe from all causes combined.

The picture is scarcely better when Russian CVD mortality rates disaggregated by oblast or region. As may be seen in **Figures 3.28** and **3.29**, death rates from diseases of the circulatory system varied very widely across Russia. For both males and females, for example, levels reported for Magadan in the Russian Far East were over twice as high as those for Dagestan (in the Caucasus and on the Caspian Sea). Yet no matter where one happened to live within Russia, the risk of death

[36] For the specific data on age-standardized mortality from diseases of the circulatory system in OECD countries, we consulted the OECD's "OECD Health Data 2009: Version June 2009," http://ecosante.org/index2.php?base=OCDE&langh=ENG&langs=ENG&sessionid=. Mortality had peaked by 1969 in 18 of the 23 "classic" OECD states (from Western Europe, North America, and Japan). During the 1970s, CVD rates would peak in three more (Austria, Iceland, and Portugal). Greece appears to be the outlier in its collectivity reported CVD mortality levels, which did not peak until 1987.

FIGURE 3.27 Death Rates from Cardiovascular Disease, 1970-2006: Russia vs. EU (males plus females)

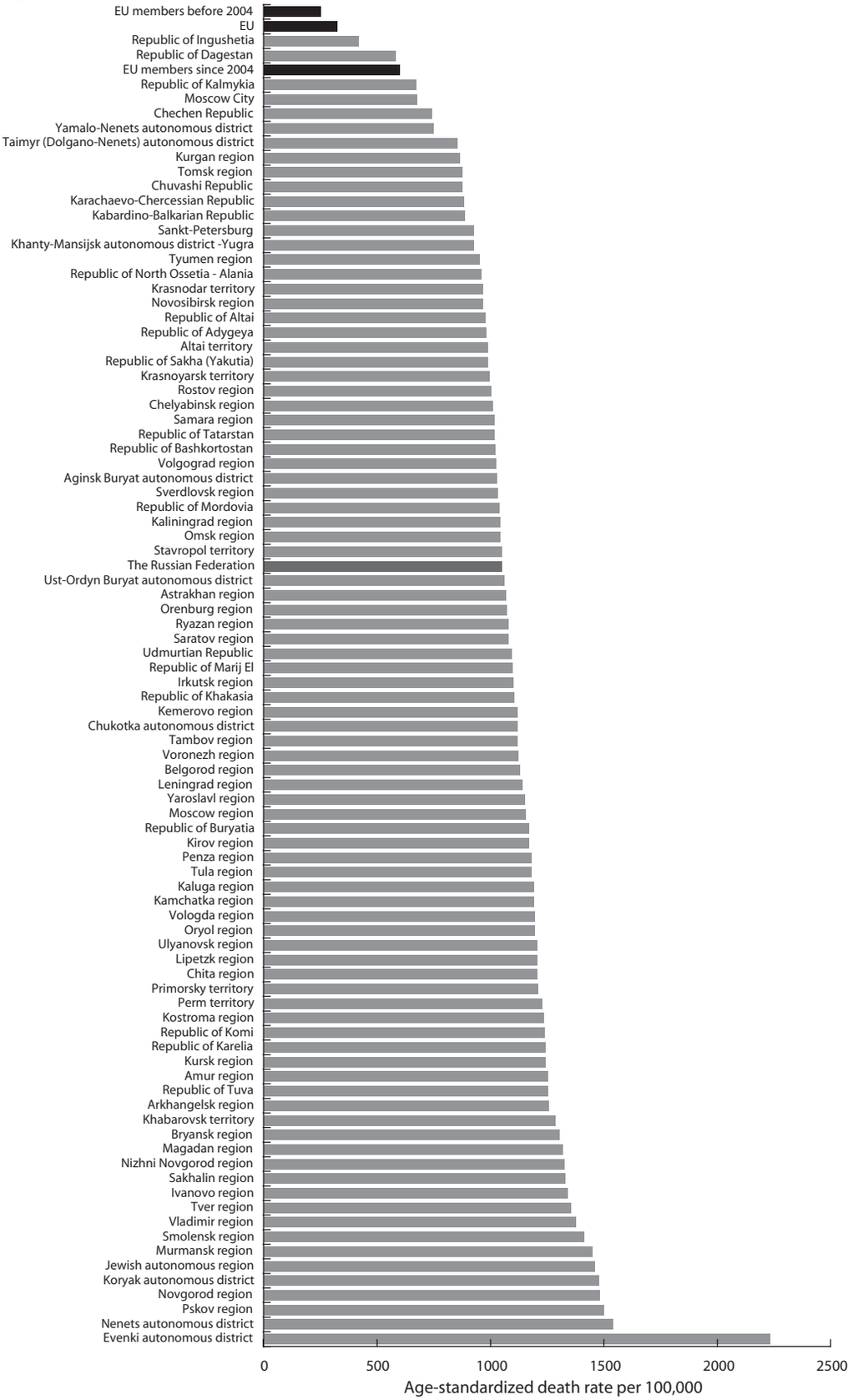


SOURCE: Europe Health for All Database, World Health Organization, August 2009, http://www.euro.who.int/HFADB.

from heart attack, stroke, and the like was appallingly high. Moscow boasts one of Russia's very lowest levels of CVD mortality, but adjusting for population structure, Moscow's 2006 levels were over two and a half times higher than the corresponding EU-15 averages (and significantly, the disparity was as great among women as it was for men). By the same token, Dagestan's 2006 CVD levels looked remarkably low in comparison to other Russian regions, but they were 61% higher and 83% higher than the highest CVD levels in the EU-15 that same year for females and males, respectively. Once again, by this health sounding, Western Europe's worst region looks to be better off than Russia's best region—there is no overlap between these two worlds.

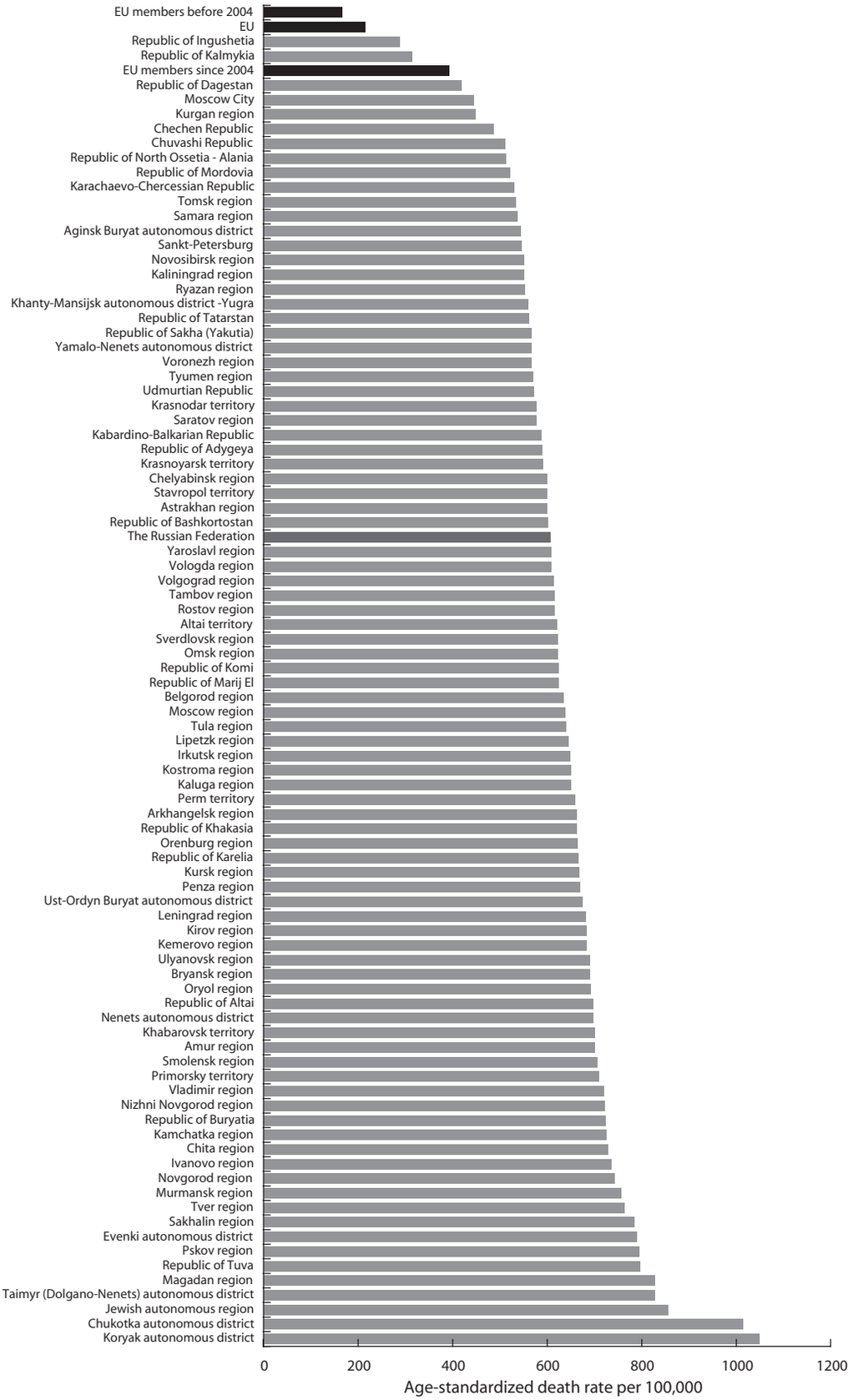
Russia's CVD problem appears even more ominously unnatural when placed in a broader international perspective. **Figure 3.30** compares WHO estimates of age-standardized CVD mortality with World Bank estimates of per capita GDP (adjusted for PPP) for the year 2002. The relationship between cardio mortality and income traces out a parabolic trajectory. Initially CVD mortality rises with increased affluence, but then a turning point is reached. Further improvements in income are associated with continuing declines in CVD death rates. This cross-sectional international storyline is consistent with the longitudinal, or historical, evidence from today's Western industrial societies, where CVD mortality likewise rose with per capita income for a time, and then commenced a universal and continuing movement downward, with specific inflection points differing from one country to the next.

FIGURE 3.28 Age Standardized Death Rates for Circulatory Disease, Males, 2006: Russia by Oblast or Region vs. EU



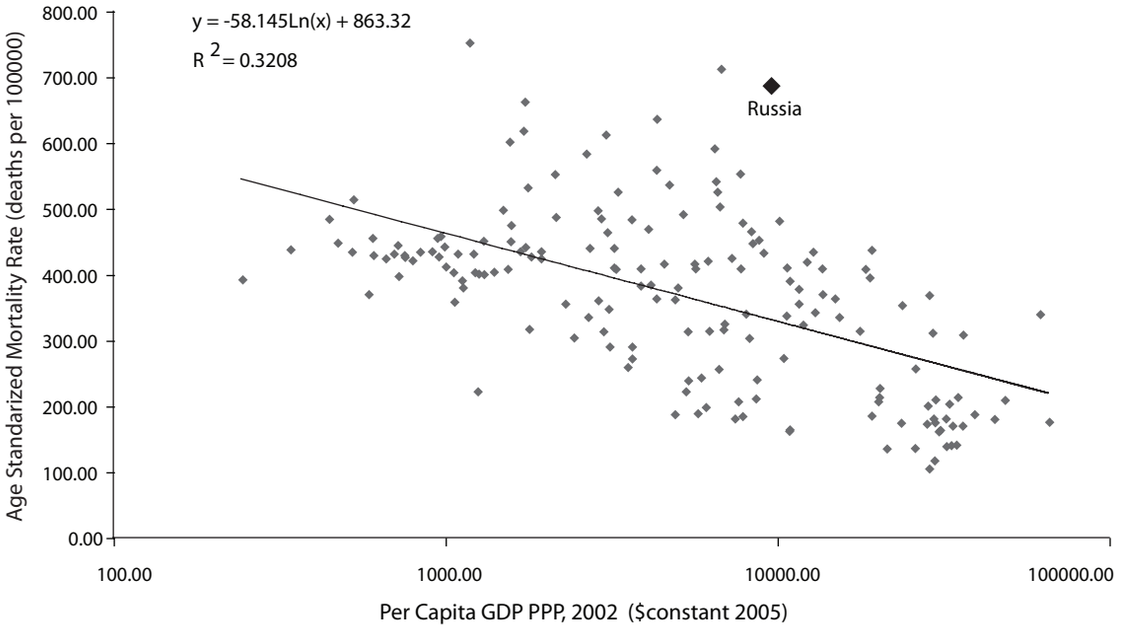
SOURCES: Russian Demographic Yearbook 2007, Goskomstat & WHO Health for All Database, http://www.euro.who.int/hfadb.

FIGURE 3.29 Age Standardized Death Rates for Circulatory Disease, Females, 2006: Russia by Oblast or Region vs. EU



SOURCES: Russian Demographic Yearbook 2007, Goskomstat; and WHO Health for All Database, http://www.euro.who.int/hfadb.

FIGURE 3.30 Age-standardized Mortality Rates from Cardiovascular Disease vs. PPP Adjusted Per Capita GDP, 2002



NOTE: Mortality rates in this figure are weighted against the WHO's "World Standard Population" model; age-standardized mortality figures from the WHO European Health for All Database and from Goskomstat are adjusted against the "European Standard Population" model.

SOURCE: World Development Indicators 2008; and "World Health Report 2004 Annex Tables."

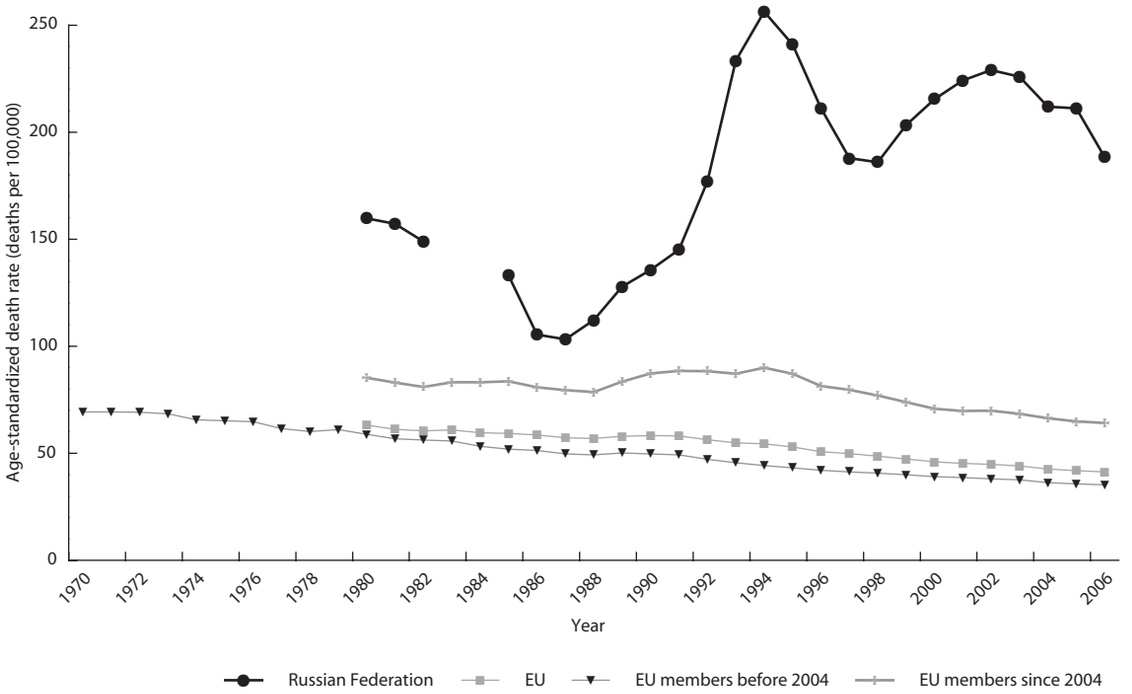
Given the relationships traced out in Figure 3.30, the Russian Federation would be expected to suffer higher cardio mortality than Western Europe (by dint of levels of per capita income lower than Western Europe's but nonetheless considerably higher than that required to surmount the CVD mortality turning point). In actuality, however, CVD mortality levels in the Russian Federation in 2002 were fully twice as high as would have been predicted for a country of its income level. Russia, indeed, is a conspicuous outlier in the income-CVD relationship. The country achieves seemingly impossibly high levels of cardio mortality, considering the degree of socio-economic development suggested by its per capita income level.[37]

Finally, we must consider trends in mortality from "external causes"—non-communicable deaths from injuries of various origins. For Russia, the tale here is broadly similar to the story of CVD. That is, of all but impossibly high levels of death being tallied for a society of such a place and station.

In Western Europe, age-standardized mortality from external causes, injury, and poisoning fell by almost half between 1970 and 2006. The descent was steady and quite regular. In Russia, on the other hand, mortality from external causes, as tabulated by the WHO, oscillated wildly and generally increased over the quarter century up to 2006. Deaths from injuries and poisoning had been much higher in Russia than in Western Europe in 1980—well over two and a half times higher, in fact. As of 2006, the corresponding differential was a factor of 5.3. By the same token, trends in mortality from injuries and poisoning for those ex-Communist countries that would

[37] Only two other countries in Figure 3.28 appear to suffer from comparably severe magnitudes of "excess" CVD: Tajikistan and Kazakhstan.

FIGURE 3.31 Death Rates from External Causes, Injury, and Poison from 1970–2006: Russia vs. EU (males plus females)



SOURCE: Europe Health for All Database, World Health Organization, August 2009, http://www.euro.who.int/HFADB.

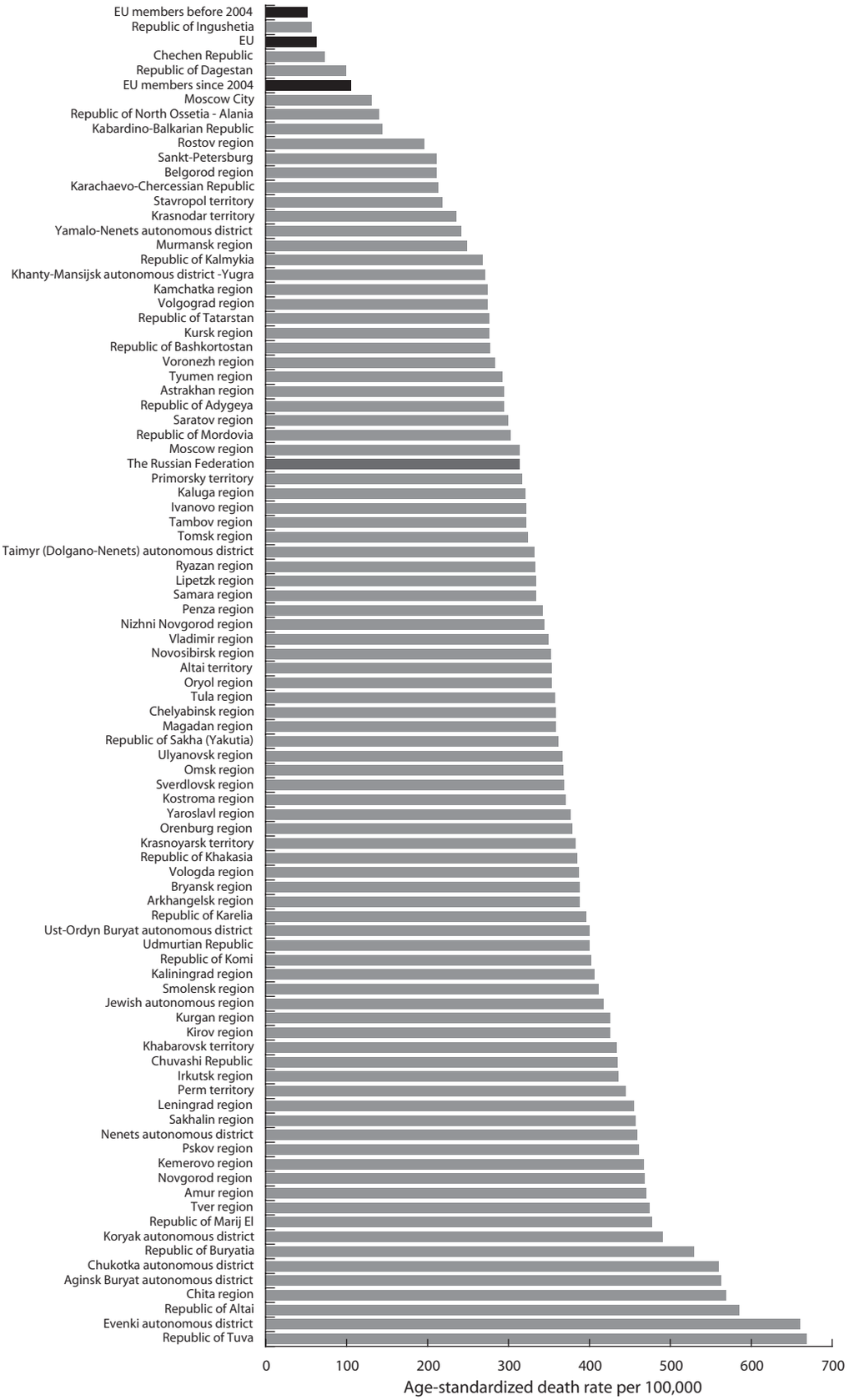
join the EU and for post-Soviet Russia moved in entirely different directions in the post–Cold War era. In 1991, external cause mortality was just under 70% higher in Russia than in the eventual new EU states, but by 2006 it was nearly three times higher. Between 1991 and 2006, death rates from injury had dropped by over one-fourth in the new EU countries, while they had risen by about 30% in Russia (see **Figure 3.31**).

Across the Russian Federation, death rates from injury and poisoning span an extraordinary range, as may be seen in **Figures 3.32** and **3.33**. In 2006, for example, the level in Tuva (a sparsely populated Siberian region on the Mongolian border) was over fives times as high as in Moscow for men and over six times as high for women. Yet Moscow's mortality rates from injury and poisoning, adjusted for population structure, were nevertheless well over twice as high as the EU-15 average—not only for men but also for women. Further, Moscow's reported mortality from external causes in 2006 was markedly higher for both men and women than Finland's—the Western European country with the very worst contemporary toll of deaths from such causes.[38]

When placed in a global perspective, Russia's patterns of injury mortality, if anything, appear even more anomalous and disturbing than its patterns of CVD mortality. In 2002, a broadly negative relationship was evident between estimates of mortality from injuries and per capita income. In our sample of countries, an increase of 10% in per capita GDP was associated with a drop of about two points in injury deaths per 100,000 population (by way of context, this would

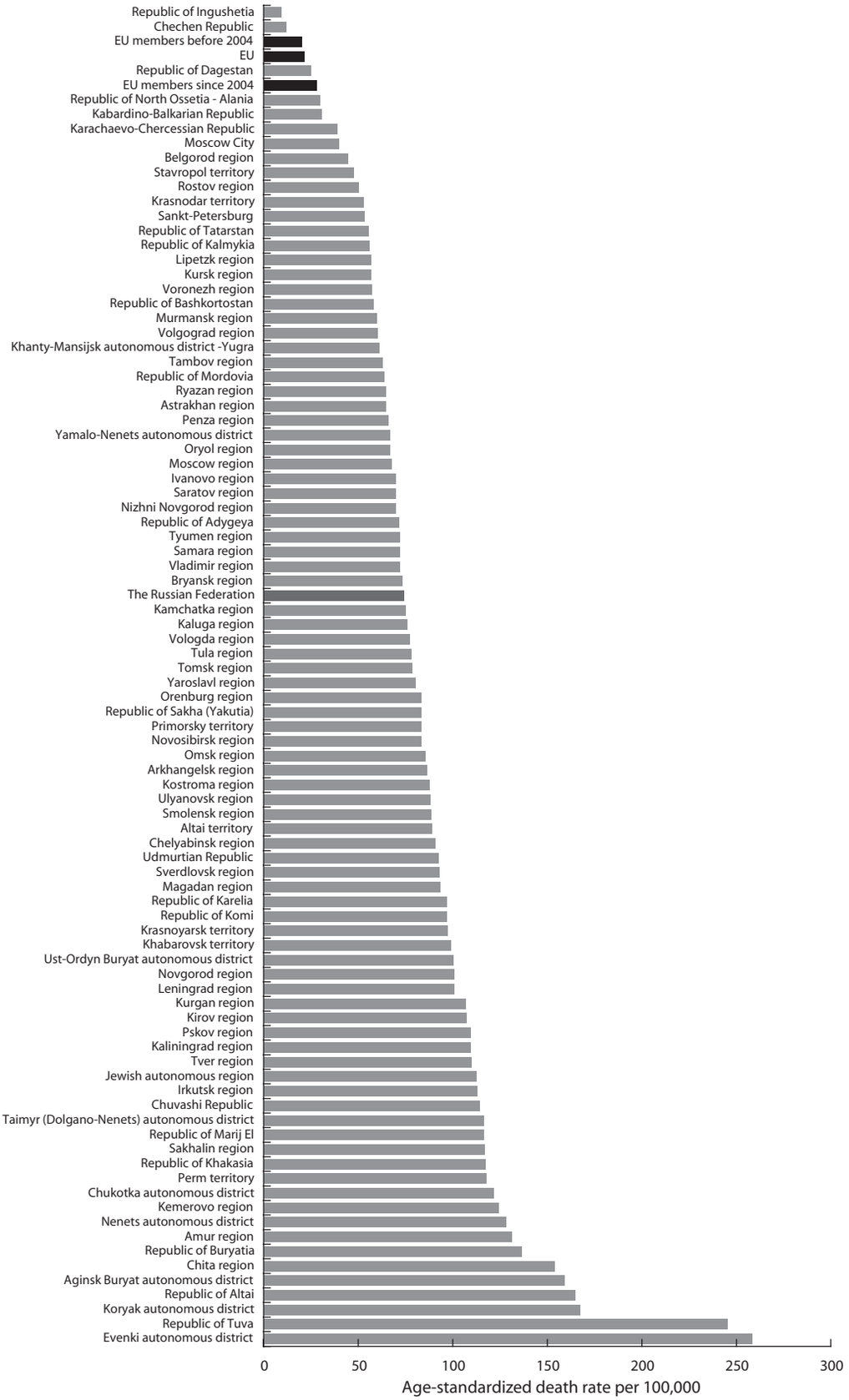
[38] Finland's 2006 age-standardized mortality rates from external causes were reportedly higher than those from Dagestan, however, for both males and females. In this instance, we finally see some overlap between the best mortality levels in Russia and the worst in Western Europe.

FIGURE 3.32 Age-Standardized Death Rates for External Causes, Males, 2006: Russia by Oblast or Region vs. EU



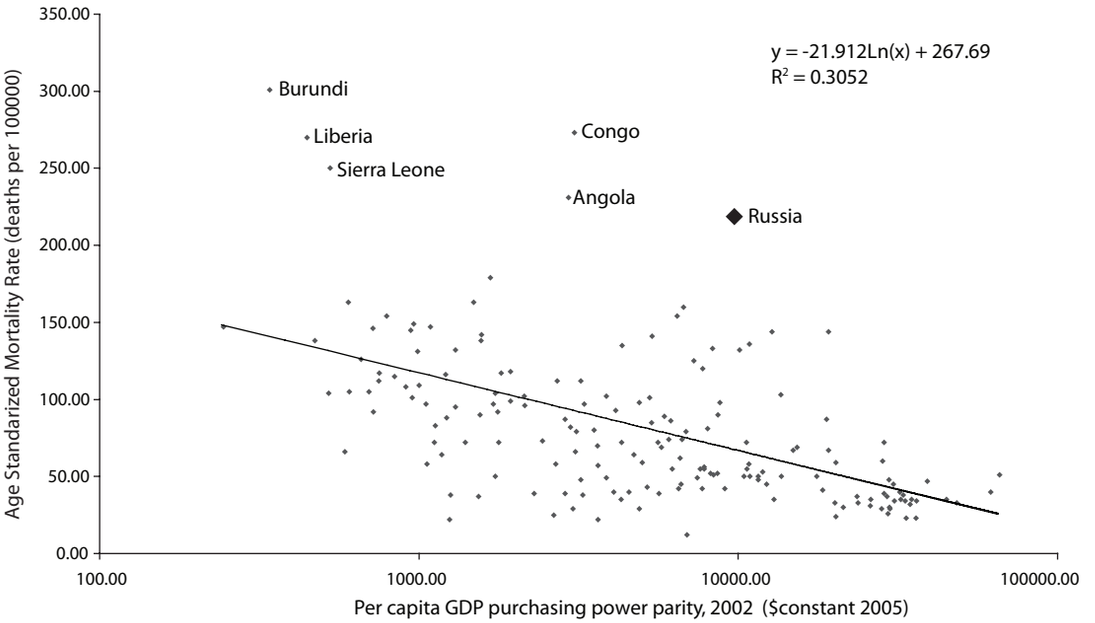
SOURCES: Russian Demographic Yearbook 2007; and WHO Health for All Database.

FIGURE 3.33 Age Standardized Death Rates for External Causes, Females, 2006: Russia by Oblast or Region vs. EU



SOURCES: Russian Demographic Yearbook 2007; and WHO Health for All Database.

FIGURE 3.34 Age-standardized Mortality Rates from Injury/External Causes vs. PPP-Adjusted Per Capita GDP, 2002



NOTE: Mortality rates in this figure are weighted against the WHO's "World Standard Population" model; age-standardized mortality figures from the WHO European Health for All Database and from Goskomstat are adjusted against the "European Standard Population" model.

SOURCE: World Development Indicators 2008; and "World Health Report 2004 Annex Tables."

suggest that levels of injury mortality might be expected to drop by about one-seventh in a country whose per capita income level doubled from $1000 to $2000). Yet Russia's toll of deaths from mortality is practically off the chart in **Figure 3.34**. It is nearly three times as high as would be predicted by Russia's income alone. No country in the modern world, indeed, is so poor as to face a predicted national risk of deaths from injuries as high as the one that Russia actually experiences.

As it happens, there were several countries in 2002 estimated to suffer losses from mortality from external causes comparable to Russia's, but the comparison only underscores Russia's "injury exceptionalism." Russia's patterns of death from injury and violence (by whatever provenance) are so extreme and brutal as to be incomparable with any but the most tormented spots on the face of the planet today. The five places estimated to be roughly in league with Russia as of 2002 were Angola, Burundi, Congo, Liberia, and Sierra Leone. To go by its level of mortality injury alone, Russia does not look like an emerging middle-income market economy at peace but instead like an impoverished sub-Saharan conflict or post-conflict society. Impossible as it might once have been to imagine, this urbanized and literate society—the country that had first managed to launch cosmonauts into space—was now regularly generating mortality patterns that would, in some respects, look disturbingly bad even in the mirror of the fourth world.

CHAPTER 4

The Terrible Mystery of Extreme Mortality in Modern Russia: Searching for Explanations and Answers to a Deadly Puzzle

There is much we still do not understand about the grim new patterns of death and disease that have by now become almost as familiar for Russia, and nearly as distinctively Russian, as the *matroyshka* (or nesting doll). Yet this much we do know: achieving such extraordinarily poor survival prospects is something of a feat in itself, albeit a terrible and frightening one.

Russia's contemporary patterns of bad health and high mortality did not just "happen." The country did not simply revert to the patterns of illness and death that had typified Russia in an earlier era, or that may be witnessed today in undernourished, predominantly rural and illiterate, low-income societies in Asia or Africa. Instead Russia has developed unique new profiles of mass debilitation and foreshortened life—patterns previously unknown in all of human history.

Russia is not, to be sure, the only relatively developed country in the modern era to have taken a great leap backward in health and mortality during peacetime. As we have already seen, a number of other successor states to emerge from the breakup of the USSR—among them, the Baltic countries, Belarus, and perhaps most acutely, Ukraine—would also suffer severe and prolonged retrogressions in general levels of public health with the dawn of the post-Communist era. But by any measure one chooses, none of these other societies has been afflicted so grievously as the Russian Federation. The ongoing Russian health crisis may not be utterly unique, but it is truly exceptional in scope, duration, and toll.

It is incumbent upon us to do more than just describe this continuing demographic tragedy. We must also try to understand it. Understanding, after all, must inform any deliberate and concerted effort to address this quiet catastrophe. This chapter will attempt to examine and disentangle some of the potential factors—systemic, socioeconomic,

behavioral, and policy-related—that might have contributed to Russia's new and modern patterns of debilitation and foreshortened life.

Russia's Current Health and Mortality Crisis: A Consequence of Systemic Shocks? International Analogies and Historical Parallels

Modern Russia's health failure looks truly historic in scale and sweep. Does this mean we can we also turn to history as we attempt to come to terms with the factors that might explain this terrible situation? Are there historical analogies or international parallels that can help us to understand just what has gone so badly wrong with the country's health performance? Today and in the very recent past, Russia has been subject to truly monumental social, economic, and political discontinuities. These sudden and radical changes would qualify as major systemic shocks by any reasonable criterion. Can Russia's unfolding health disaster be explained in terms of these systemic shocks? Are there commonalities, in other words, between Russia's own health and mortality crisis today and the health trends of societies elsewhere that have been subject to wrenching systemic adjustments?

As we know, the Russian Federation's overall health conditions deteriorated appreciably with the end of Soviet rule and the advent of the new, post-Communist era. This might seem to suggest that Russia's public health travails these days may be due in part to the stresses and dislocations that attended its "systemic transition." But is a sharp and prolonged reversal in health progress really characteristic of the "transition shock" out of Communism for Soviet-type systems?

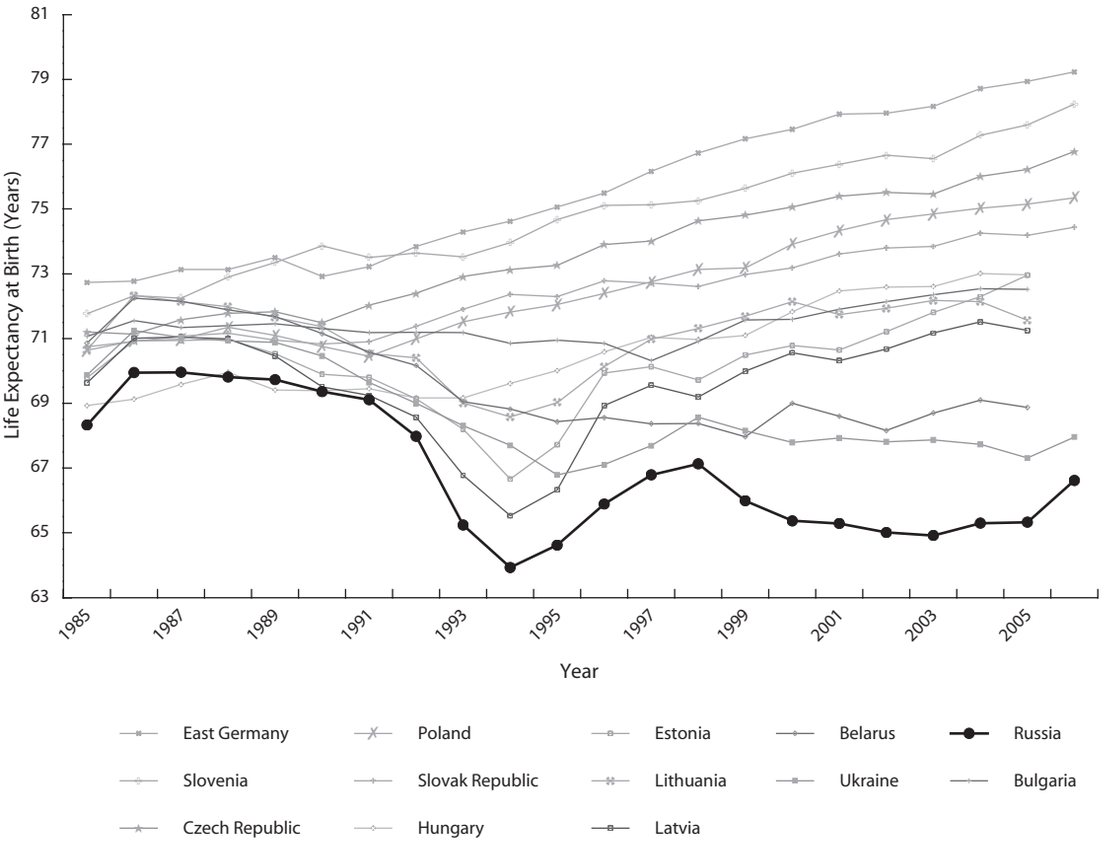
Data from the Human Mortality Database (HMD) can help test that proposition. **Figure 4.1** presents its estimates for overall life expectancy at birth for 1985–2005 for the Russian Federation and the dozen other European ex-Communist countries or territories that the HMD currently tracks. By covering the two decades between 1985 and 2005, we can get a sense of health trends before, during, and after the revolutions of 1989–91 in each of these countries. At best, however, Figure 4.1 provides highly qualified support for the notion that Russia's current health woes can be seen as characteristic of the transition shocks common to the European societies that experienced a sudden end to Soviet-style Communism.

It is true that all of these countries registered some decline in overall life expectancy in the immediate aftermath of Communism's collapse. In most of these countries, however, the drop in life expectancy was limited in magnitude (less than one year), and in many of these cases, limited in duration as well to the first several years of post-Communism. Most countries listed in Figure 4.1, furthermore, have already witnessed not only recovery to pre-transition health levels, but subsequent and continuing improvements in overall health levels.

Clearly, neither the shock of the transition process nor the legacy of Soviet-style Communism has prevented dramatic advances in health in some parts of ex-Communist Europe. Between 1989 and 2006, overall life expectancy at birth jumped by nearly five years in Slovenia, and by over five and a half years in Eastern Germany. In both of these spots, it may be worth noting, overall life expectancy at birth is currently higher than in the United States. Eastern Germany reportedly surpassed U.S. levels in 1999, and Slovenia in 2006. Over the years 1989–2006, by contrast, the combined male and female life expectancy at birth fell by over three years in Russia.

Nor has prolonged health stagnation under Communism precluded post-Communist health progress in other former Soviet bloc states. Hungary offers the most vivid counter-example to the

FIGURE 4.1 Life expectancy at birth in Russia and other post-Communist countries (males and females combined)



SOURCE: Human Mortality Database, University of California, Berkeley, and Max Planck Institute for Demographic Research, http://www.mortality.org.

Russian experience. On the eve of its "revolution of 1989," life expectancy in Hungary was no higher than was in 1966. Between 1989 and 2006, life expectancy rose by four years.

Status as a former state within the USSR has not kept all erstwhile Soviet Republics from enjoying health progress after their transitions: the Baltic states of Estonia, Latvia and Lithuania have all registered continuing health progress since the mid-1990s, and each today reports higher levels of overall life expectancy at birth than these states had ever achieved during the Communist era.

It is true that Belarus and Ukraine—two other erstwhile Soviet Republics—register lower life expectancies nowadays than they did back in the days of the Soviet empire. But as Figure 4.1 illustrates, the post-Soviet retrogression in life expectancy has been more severe in the Russian Federation than in either Ukraine or Belarus, and no other part of post-Communist Europe has health levels as low as Russia's today. Among post-Communist societies in Europe, Russia's health record is distinctly and uniquely poor.

Another systemic lens through which to frame an understanding of the Russian Federation's present health travails might be response to severe economic shock (an effect that might overlap with transition shocks, but could also be distinct from these). Although calculations of macro-economic trends are notoriously problematic when they dare to span the transition from central economic planning to market economy, Western economists widely believe that Russia suffered

TABLE 4.1: Historical GDP per capita, post-Communist countries

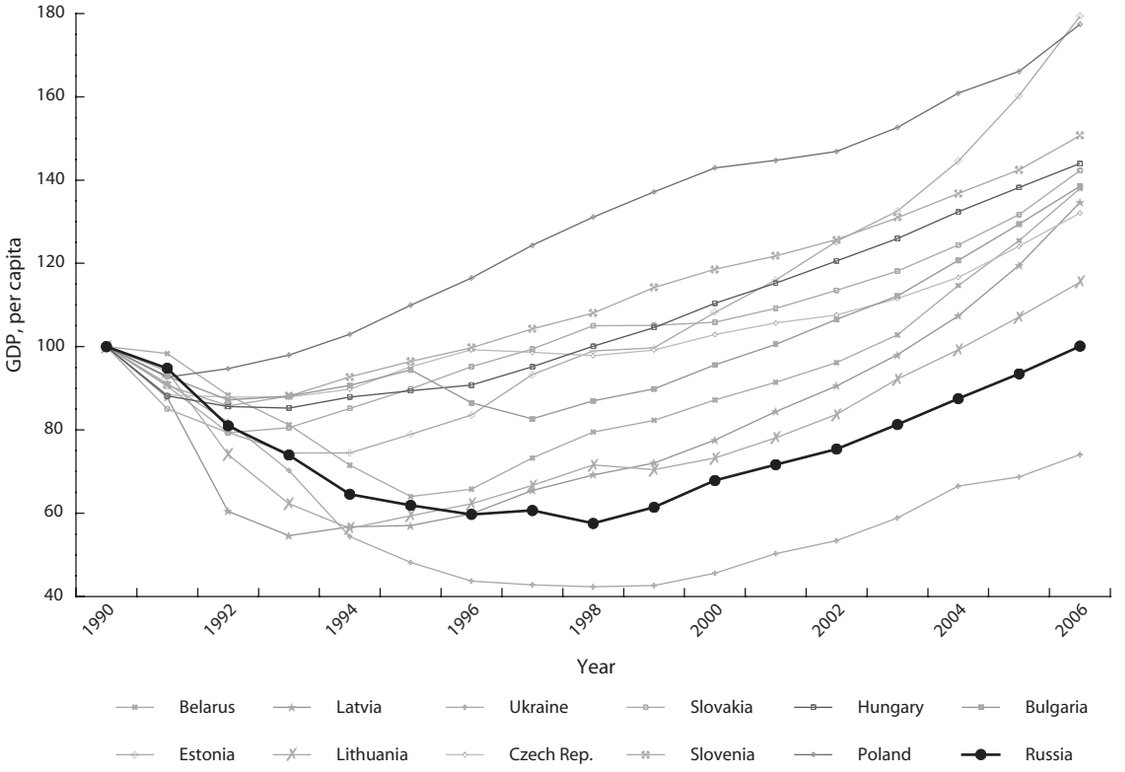
	Belarus	Estonia	Latvia	Lithuania	Ukraine	Czech Rep.	Slovakia
1987							
1988							
1989							8,513
1990	7,184	10,820	9,916	8,663	6,027	8,895	7,763
1991	7,063	9,799	8,707	8,154	5,491	7,865	6,606
1992	6,347	8,587	5,992	6,420	4,934	7,818	6,158
1993	5,834	8,054	5,413	5,396	4,232	7,814	6,251
1994	5,138	8,054	5,624	4,880	3,279	7,985	6,612
1995	4,596	8,539	5,653	5,142	2,901	8,464	6,977
1996	4,723	9,040	5,934	5,392	2,633	8,826	7,390
1997	5,264	10,091	6,491	5,775	2,576	8,772	7,716
1998	5,711	10,710	6,860	6,202	2,549	8,703	8,151
1999	5,912	10,785	7,144	6,101	2,567	8,825	8,158
2000	6,265	11,710	7,694	6,346	2,745	9,156	8,220
2001	6,569	12,549	8,372	6,769	3,029	9,401	8,476
2002	6,908	13,550	8,977	7,254	3,216	9,573	8,813
2003	7,387	14,340	9,722	7,986	3,547	9,924	9,172
2004	8,238	15,636	10,644	8,598	4,007	10,376	9,658
2005	9,013	17,343	11,855	9,281	4,142	11,038	10,223
2006	9,913	19,411	13,356	10,006	4,463	11,749	11,045

	Slovenia	Hungary	Poland	Bulgaria	Russia	Czechoslovakia	USSR
1987				6,382		8,534	
1988		7,031	5,789	6,335		8,709	
1989		6,903	5,684	6,216		8,768	7,109
1990	10,860	6,459	5,113	5,597	7,779	8,513	6,890
1991	9,852	5,694	4,738	5,198	7,373	7,439	6,419
1992	9,312	5,528	4,842	4,882	6,300	7,254	5,470
1993	9,569	5,507	5,011	4,932	5,752	7,282	4,928
1994	10,071	5,678	5,265	5,074	5,020	7,517	4,247
1995	10,474	5,772	5,623	5,283	4,813	7,956	4,025
1996	10,826	5,861	5,956	4,842	4,645	8,334	3,911
1997	11,322	6,146	6,357	4,624	4,717	8,410	3,995
1998	11,735	6,464	6,705	4,866	4,475	8,514	3,907
1999	12,399	6,756	7,014	5,028	4,776	8,595	4,098
2000	12,877	7,132	7,309	5,350	5,277	8,833	4,454
2001	13,220	7,444	7,400	5,627	5,573	9,082	4,741
2002	13,654	7,789	7,510	5,962	5,865	9,311	5,006
2003	14,221	8,137	7,804	6,278	6,323	9,664	5,397
2004	14,855	8,548	8,226	6,755	6,807	10,128	5,852
2005	15,473	8,928	8,493	7,244	7,270	10,756	6,264
2006	16,364	9,297	9,074	7,754	7,786	11,505	6,766

SOURCE: Maddison, "Statistics on World Population, GDP and Per Capita GDP."

NOTE: Estimates in 1990 Geary-Khamis international dollars.

FIGURE 4.2 GDP Per capita levels for Russia and selected other post-Communist countries



SOURCE: Angus Maddison, "Statistics on World Population, GDP and Per Capita GDP, 1-2006 AD (March 2009, vertical file)," http://www.ggdc.net/maddison/Historical_Statistics/vertical-file_03-2009.xls.

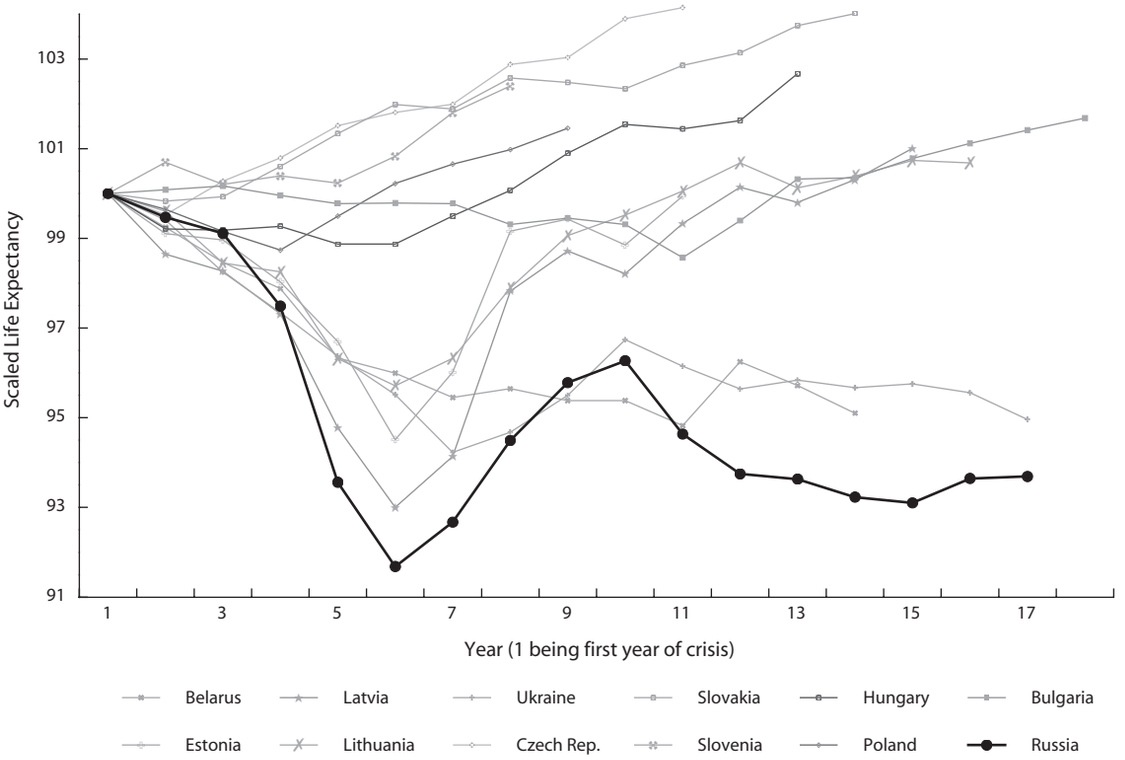
NOTE: 1990=100. Estimates in constant 1990 Geary-Khamis international dollars.

a dramatic and prolonged economic downturn with the collapse of Communism. For example, Angus Maddison, the renowned economic historian, estimates that purchasing power parity–adjusted per capita GDP in the Russian Federation fell by over 40% between 1990 and 1998, and did not re-attain 1990 levels until 2006.[1] Might not an economic dislocation of that magnitude be expected to compromise the health of vulnerable elements in society and to depress overall life expectancy? What is the evidence regarding big economic shocks and health trends in other parts of the modern world? **Tables 4.1–4.2** and **Figures 4.2–4.5** provide some perspective.

Here again, the economic shock hypothesis appears to offer no more than limited support for the contention that Russia's severe post-Communist health problems can be seen as part of a broader dynamic common to all modern societies that fall victim to extreme and prolonged economic crises.

[1] Angus Maddison, "Historical Statistics of the World Economy: 1-2006 AD" (March 2009), http://www.ggdc.net/maddison/Historical_Statistics/vertical-file_03-2009.xls; and World Bank, World Development Indicators (WDI), http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=6. Maddison's estimates track closely with WDI's, the other major data source commonly used for such comparisons. Whereas WDI suggests that Russia's post-Communist level of per capita GDP bottomed out in 1998, and that the Russian Federation had slightly exceeded 1990 levels by the year 2006, WDI also indicates a less severe drop between 1990 and 1998 than in Maddison's analysis (37% vs. almost 43%). Note, however, that Maddison's estimates are denominated in constant 1990 Geary-Khamis International dollars while the WDI series is in constant 2005 international dollars. This may be perhaps regarded as simply a reflection of some of the uncertainties in measuring the performance of transitional economies. In any case, this chapter will use the Maddison series rather than the WDI series for comparisons as it extends much farther into the past and thus affords comparison of Russia's post-Communist economic shock with others in the twentieth century.

FIGURE 4.3 Trajectories in overall life expectancy at birth in selected post-communist countries over the course of their respective transition



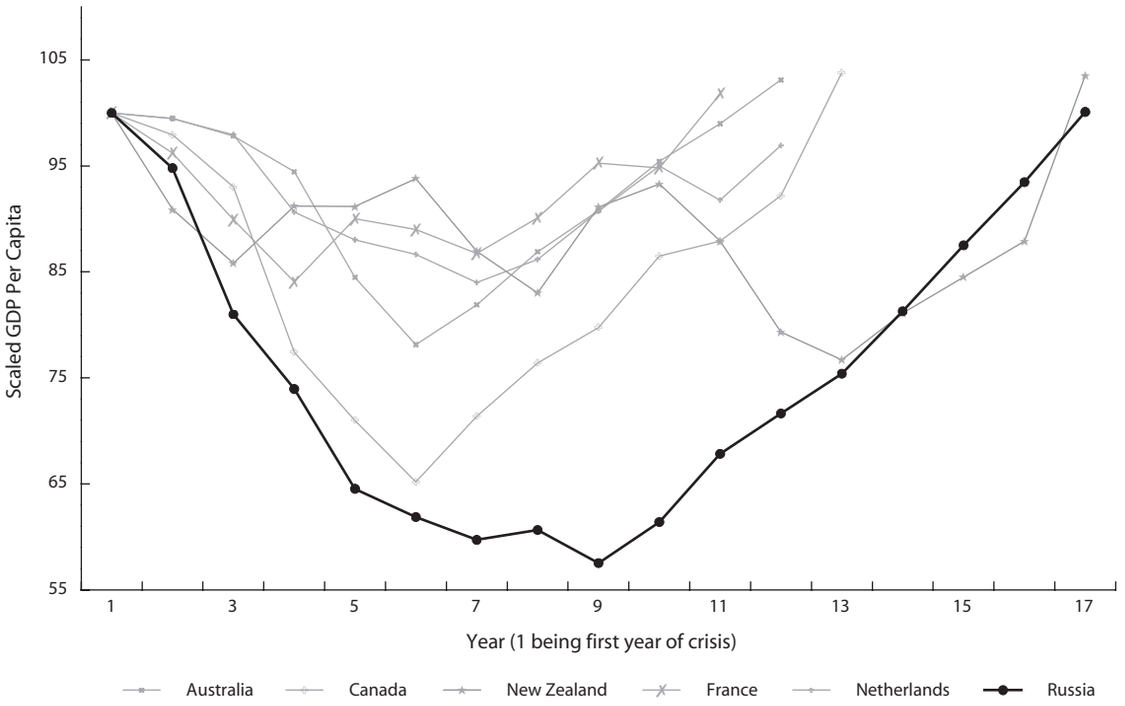
SOURCE: Human Mortality database; and Maddison, "Statistics on World Population, GDP and Per Capita GDP."

NOTE: Highest pre-shock level of per capita GDP set as year 1; overall life expectancy at birth in year 1 = 100.

Consider first the economic shocks sustained during the post-Communist transition process in the former Soviet bloc. By Maddison's calculations, and judging by the criterion of per capita GDP estimates, Russia's post-Communist economic depression was incontestably long and deep. But Russia was not alone in experiencing a severe long-term economic crisis during its transition process. From Maddison's figures, this was common to all the post-Soviet economies.

The post-Soviet economic crisis may have been least severe in Hungary, where per capita GDP dropped an estimated 12%, and briefest in Slovenia, where it took a mere six years (1990–96) for per capita output to re-attain Communist-era levels (see **Figure 4.3**). But of the twelve post-Soviet countries for which we have both detailed annual mortality data from the HMD and annual per capita GDP data for 1989–2006 from the Maddison data series, eight ostensibly suffered a fall in per capita output levels of over 20%. Eight states also required a decade or more to recover and exceed Communist-era levels of per capita GDP. Several of these other post-Communist societies appear to have suffered even steeper economic depressions than did Russia. Moreover, the period required for economic recovery in Russia (1990–2006) was evidently not the most extended in the post-Soviet space. Bulgaria took seventeen years (1987–2004) to exceed per capita output levels from the Warsaw Pact era. Ukraine is apparently still far from reaching that milestone, with per capita

FIGURE 4.4 Economic crises in historical perspective: Russia's post-Communist transition vs. the interwar depression



SOURCE: Maddison, "Statistics on World Population, GDP and Per Capita GDP."

NOTE: Highest pre-shock level of per capita GDP set as year 1; per capita GDP level in year 1=100.

output in 2006 estimated at just three-quarters of its 1990 level.[2] Yet as we have already noted, Russia's health deterioration after Communism has been by far the most severe and prolonged of any post-Soviet society under consideration.

What about economic shocks *simplicatur*—that is to say, massive economic dislocations that were not attended by a simultaneous demise of political systems and replacement of basic economic institutions, as was the case with the post-Communist transition in the former Warsaw Pact area?

Here, for a somewhat more comprehensive comparison, we might perhaps be best served by consulting the historical record, and comparing the interplay between health and macroeconomic performance in the Western industrial democracies during the Great Depression era with the corresponding results in contemporary Russia. The Human Mortality Database provides the relevant annual life expectancy estimates for five countries that experienced severe economic shocks during the interwar period: Australia, Canada, France, the Netherlands, and New Zealand (see **Figure 4.4** and **Table 4.2**).

For every one of these countries, a drop in per capita output of over 15% was registered during their respective economic crises. For Australia and New Zealand, per capita GDP fell by more than 20%, and in Canada it plunged by 35%. Thus the magnitude of the Great Depression-era shocks in these countries looks to have been at least as severe as in many of the contemporary post-Soviet societies, and in the case of Canada, almost as grave as in Russia. Further, these economic crises

[2] According to WDI estimates, Ukraine's per capita GDP remained below its 1990 level as of 2008.

TABLE 4.2: Historical GDP per capita, 1920–1940 and 1989–2006: Selected Western Countries vs. Russian Federation

	Australia	Canada	New Zealand	France	Netherlands		Russia
1920			5,641				
1921	4,911	3,357	5,128	3,075	4,431	**1989**	7,109
1922	5,064	3,793	4,841	3,610	4,599	**1990**	7,779
1923	5,192	3,976	5,144	3,754	4,635	**1991**	7,373
1924	5,417	3,977	5,143	4,179	4,895	**1992**	6,300
1925	5,553	4,340	5,292	4,166	5,031	**1993**	5,752
1926	5,573	4,497	4,905	4,249	5,358	**1994**	5,020
1927	5,544	4,847	4,683	4,154	5,504	**1995**	4,813
1928	5,452	5,172	5,141	4,431	5,720	**1996**	4,645
1929	5,263	5,065	5,262	4,710	5,689	**1997**	4,717
1930	4,708	4,811	4,960	4,532	5,603	**1998**	4,475
1931	4,354	4,004	4,475	4,235	5,185	**1999**	4,776
1932	4,564	3,671	4,327	3,959	5,035	**2000**	5,277
1933	4,842	3,370	4,576	4,239	4,956	**2001**	5,573
1934	5,060	3,691	4,768	4,192	4,805	**2002**	5,865
1935	5,318	3,951	4,959	4,086	4,929	**2003**	6,323
1936	5,516	4,124	5,840	4,244	5,190	**2004**	6,807
1937	5,746	4,473	6,102	4,487	5,433	**2005**	7,270
1938	5,886	4,546	6,462	4,466	5,250	**2006**	7,786
1939	5,846	4,768	6,460	4,793	5,544		
1940	6,166	5,368	6,300	4,042	4,831		

SOURCE: Maddison, "Statistics on World Population, GDP and Per Capita GDP."

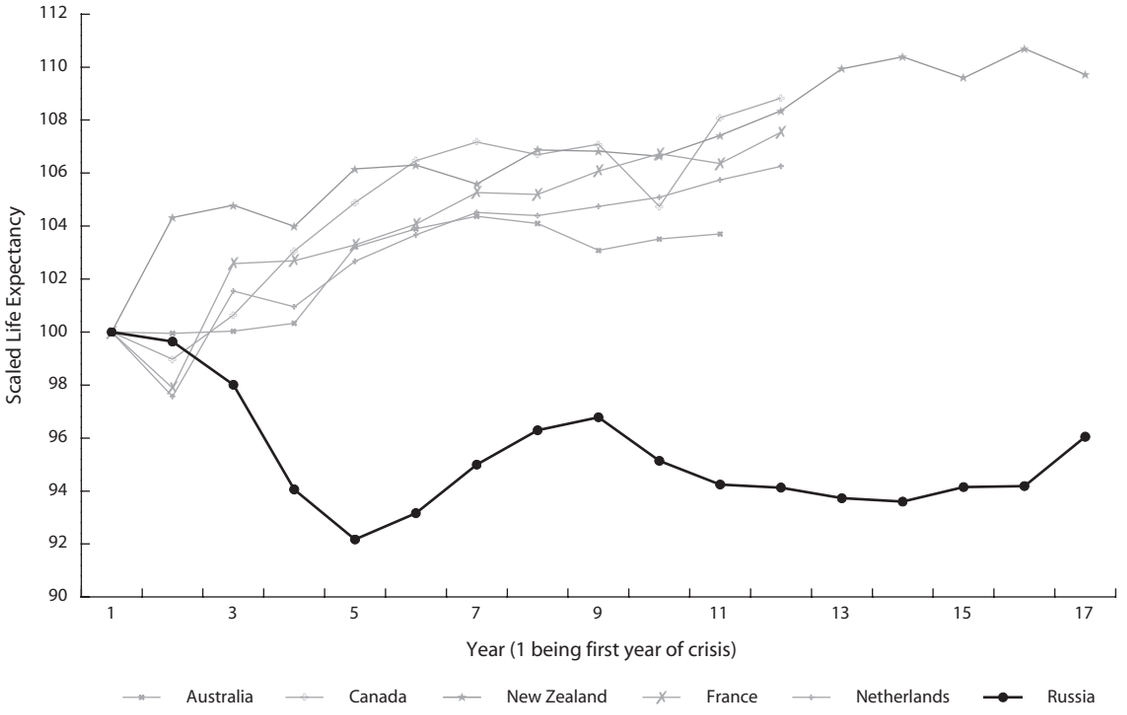
NOTE: Estimates in constant 1990 Geary-Khamis international dollars.

were also painfully prolonged, just as were the post-Communist economic dislocations. In each of these instances, recovery to the pre-crises level of per capita output took at least a decade. In the case of New Zealand, the recovery took sixteen years (just as in modern-day Russia), and in the Netherlands full recovery could not be completed before the onset of World War II.

In the economic mirror provided by the interwar period, Russia's recent macroeconomic paroxysms appear by no means to be unprecedented. From this data, it is apparent that other non-Communist industrialized societies have undergone wrenching economic dislocations of roughly the same order within living memory. The fundamental contrast between modern-day Russia and these Great Depression-era societies lies not in the dimensions of their respective economic crises, but in the response of their general health conditions to economic crisis.

In two of those five Western societies, the onset of economic shock occasioned no drop in life expectancy whatsoever. In the other three, the estimated drop in life expectancy was brief, with recovery after a single year, and on the whole limited, with a decline of overall life expectancy at birth of more than one year only registered in the Netherlands (see **Figure 4.5**).

FIGURE 4.5 Life expectancy during economic crises in historical perspective: Russia's post-Communist transition vs. the interwar depression



SOURCE: Human Mortality database; and Maddison, "Statistics on World Population, GDP and Per Capita GDP."

NOTE: Highest pre-shock level of per capita GDP set as year 1; overall life expectancy at birth in year 1=100.

No less noteworthy is the divergence in life expectancy trends during the course of the respective economic crises. Whereas Russia's life expectancy continued to sink erratically as estimated per capita GDP was declining, all five of these Great Depression-era societies reported substantially higher levels of overall life expectancy at birth at the nadir of their economic slumps than in the year before their economic crises struck. Whereas Russia's life expectancy was 2.6 years lower in 2006 (when pre-crisis output levels were finally re-attained) than in 1990, life expectancy was uniformly higher in these Great Depression-era Western industrial societies at the end of their long economic downturns than at the outset. During the years in question, the witnessed improvements in overall life expectancy ranged from 2.9 years in Australia to 6.0 years in New Zealand, and averaged 4.7 years for the five countries as a group.

Three additional aspects of the comparison in Figure 4.5 deserve comment. First, the Western industrial societies under consideration managed to stabilize and actually improve life expectancy during their economic crises on the basis of medicine and public health technology. They did so with a dramatically more limited storehouse of medications, life science technologies, and knowledge about what are now called "best practices" than is available to public health practitioners in the Russian Federation today. Second, general government outlays for the Russian Federation for 2006 amounted to about 32% of GDP,[3] a lower ratio than is currently typical for OECD countries but a much higher ratio than prevailed in Western industrial societies in the Great Depression-era before

[3] International Monetary Fund, *Government Finance Statistics 2007* (Washington, D.C.: IMF, 2007): 13, table W3.

the postwar advent of the modern "welfare state." By 1938, for example, overall government spending still amounted to less than 22% of GDP in both France and Holland, two economies for which such metrics are readily available,[4] and those figures included pre-war expenditures on armaments and defense mobilization. Thus the scope for purposeful public sector interventions and state-funded social protection efforts should in principle have been considerably greater for modern-day Russia than for the Western industrial societies several generations earlier. Finally, we should note that (by Maddison's estimates at least) per capita GDP would have been higher in contemporary Russia on the advent of its economic shock than it was in any of the five Western societies under consideration here. Per capita GDP in fact remained higher at the lowest depths of the Russian economic crisis than in four of the five Great Depression-era societies in question (i.e., all but the Netherlands). The dramatic contrast in health performance in the face of severe economic shocks cannot therefore be explained in terms of absolute lack of economic resources per se.

To summarize, Russia has undergone wrenching systemic shocks over the past two decades. The proposition that the dual shocks—a transition shock and an economic shock—might translate into a health and mortality shock certainly sounds plausible. But the record from other societies, past and present, does not offer convincing evidence for treating contemporary Russia's real existing health crisis as a characteristic, much less typical, consequence of twentieth-century systemic shocks.

While almost every post-Soviet society has apparently suffered a health shock of some magnitude during its transition period, none has been so long and deep as Russia's. While other industrialized societies, both post-Communist and never-Communist, have suffered economic crises of roughly comparable depth and duration to modern-day Russia's, none for which we have data has witnessed such a severe mortality crisis. In fact, very little in the way of mortality shocks at all seems to have attended the severe economic downturns suffered by never-Communist societies in the era of the Great Depression, their relatively low income levels and welfare-state capabilities notwithstanding. Of course the systematic shock hypothesis manifestly cannot explain Russia's exceptionally poor health performance in the last decades of the Soviet era—the period that preceded these systemic shocks. With regard to the country's health performance, Russia was an outlier under Communism and has remained an outlier after Communism. This distinctive continuity of the Russian health experience can be pointed out and formally identified but has yet to be satisfactorily explained, much less fully understood.

Russia's Excess Mortality Problem: Identifying Correlates and Determinants

Taken together, deaths from cardiovascular disease (CVD) and mortality from injuries and poisoning have evidently been the main drivers of modern Russia's strange upsurge in premature mortality and broad, prolonged retrogression in public health conditions. In fact, these factors appear to be the overwhelming drivers of contemporary Russia's health decline and Russia's fateful divergence from mortality patterns in the modern West. According to official figures, mortality from CVD and external causes account for over 90% of the total difference in mortality levels separating Russia and Western European societies today. Almost four-fifths of the Russian rise in

[4] Angus Maddison, "Origins and Impact of the Welfare State, 1883-1983," *Banca Nazionale del Lavoro Quarterly Review* (March 1984): 55-87.

age-standardized death rates between 1980 and 2006, moreover, appears to be due to increases in injury and CVD mortality.

We can identify these proximate factors in Russia's downward slide in public health easily enough, but how to explain them? The epidemiological approach would be to focus upon behavioral, social and policy factors that might help account for severe excess mortality from CVD and injury in Russia. The present study is not an epidemiological treatise, however, and is not intended to offer the detailed and exhaustive inquiry into this question that the matter so clearly deserves. For our purposes here, it may suffice briefly to indicate what is thought to be known, and what remains still unknown, about the determinants and correlates of contemporary Russia's ongoing health disaster.

Four factors below will be examined that might ordinarily be expected to help account for extraordinary patterns of excess death from cardiovascular disease and external injury: drinking, smoking, diet, and medical care.

Alcohol Abuse

Consumption of beer, wine and hard spirits is not automatically associated with health risk. Handled responsibly and sensibly, the drinking of alcoholic beverages poses no general health risks to the imbiber. Quite to the contrary, an emerging medical literature has demonstrated that the consumption of a certain limited amount of alcohol, even on a daily basis, may actually be associated with a reduction in certain health risks, such as CVD[5] (the only questions here being the quantitative limits to such so-called healthy drinking and the differential impact on health of various types of alcoholic beverages). However, Russia's passion for heavy drinking is an enduring historical fact, commented upon routinely by outsiders for hundreds of years.[6] For over five centuries, since the innovation that brought distilled spirits to Russia supposedly in 1503, Russia has been in the throes of a deadly romance with vodka.

Unlike drinking patterns prevalent in, for example, the Mediterranean regions, where wine is regarded as an elixir for enhancing conversation over meals and in other social gatherings, and where public drunkenness carries an embarrassing stigma, the binge-drinking of hard spirits is accepted in Russia, and obliterating one's consciousness or drinking oneself into unconsciousness is neither uncommon nor socially unacceptable. In contrast to the Mediterranean model of drinking, which seems to be associated with reduced mortality risk, Russia's drinking norms and customs pose lethal risks for many of the most enthusiastic adherents. For one thing, severe, self-obliterating drunkenness greatly increases the danger of fatal injury, through falls, traffic accidents, violent confrontations, homicide, suicide, etc. Further, extreme binge drinking (especially of hard spirits) is associated with stress on the cardiovascular system and heightened risk of CVD mortality.

How many Russians are actually drinkers, and how heavily do they actually drink? Available data is somewhat problematic. Officially, Russia classifies some 7 million out of roughly 120 million persons over 15 years of age—or roughly 6% of the country's adult population—as alcoholics.[7] The number of problem drinkers, however, is surely much higher than this. A recent cross-country

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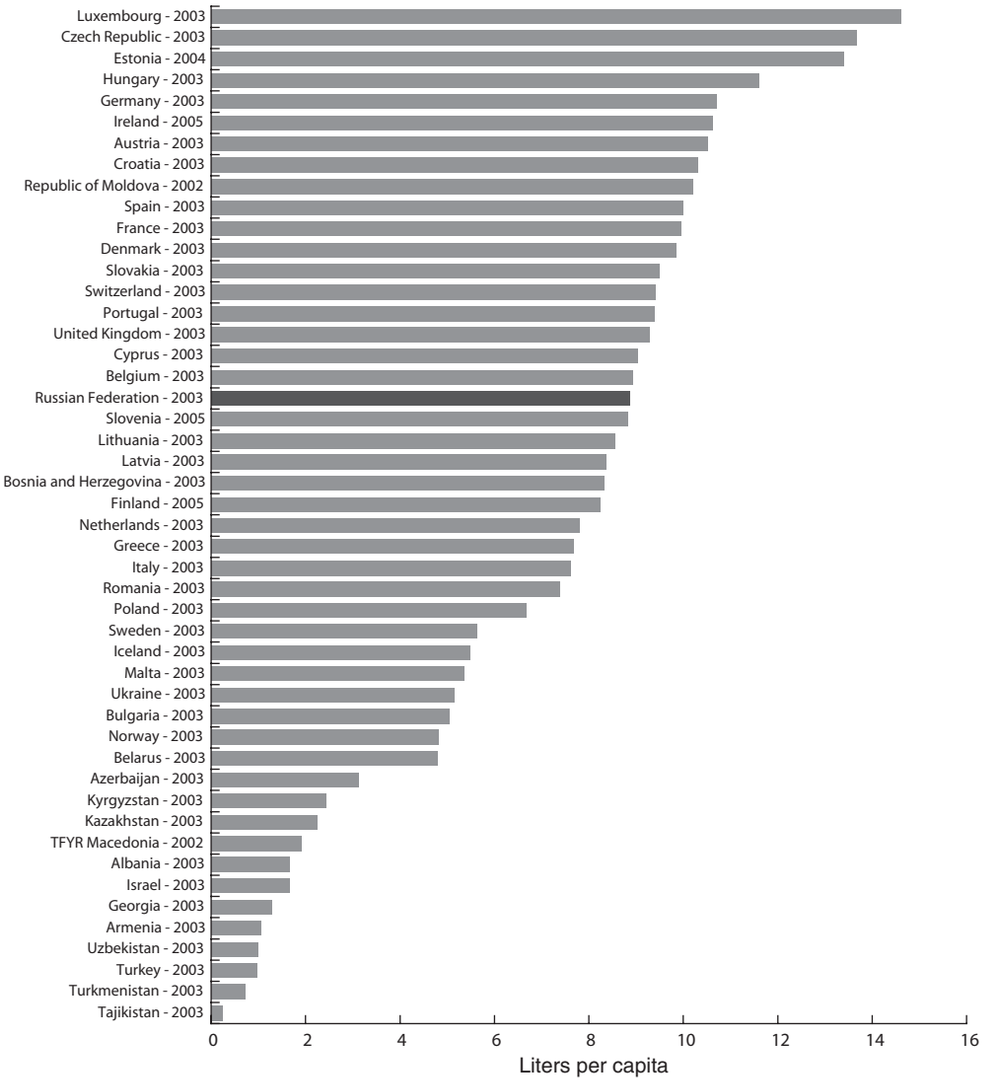
[5] See, for example, Eric B. Rimm et al., "Review of moderate alcohol consumption and reduced risk of coronary heart disease: is the effect due to beer, wine, or spirits?" *British Medical Journal* 312 (March 23, 1996): 731–36; and Eric B. Rimm, "Invited Commentary—Alcohol Consumption and Coronary Heart Disease: Good Habits May Be More Important than Just Good Wine," *American Journal of Epidemiology* 143, no. 11 (June 1, 1996): 1,094–98.

[6] See, for example, Alexander Nemtsov, "Russia: alcohol yesterday and today," *Addiction* 100, no. 2 (January 28, 2005): 146–49. For some historical accounts that touch upon Russian drinking patterns in the pre-Communist period, see Henri Troyat, *Ivan the Terrible* (Phoenix Press, 2001); and Astolphe de Custine, "Letters From Russia," *New York Review of Books*, 2002.

[7] "Each of 7 million Russian alcoholics drinks 27 liters of alcohol a year," *Pravda*, November 9, 2006, http://english.pravda.ru/society/stories/09-11-2006/85432-alcoholism-0.

FIGURE 4.6 Pure alcohol consumption, liters per capita in the Russian federation vs. other European countries (most recent year available)

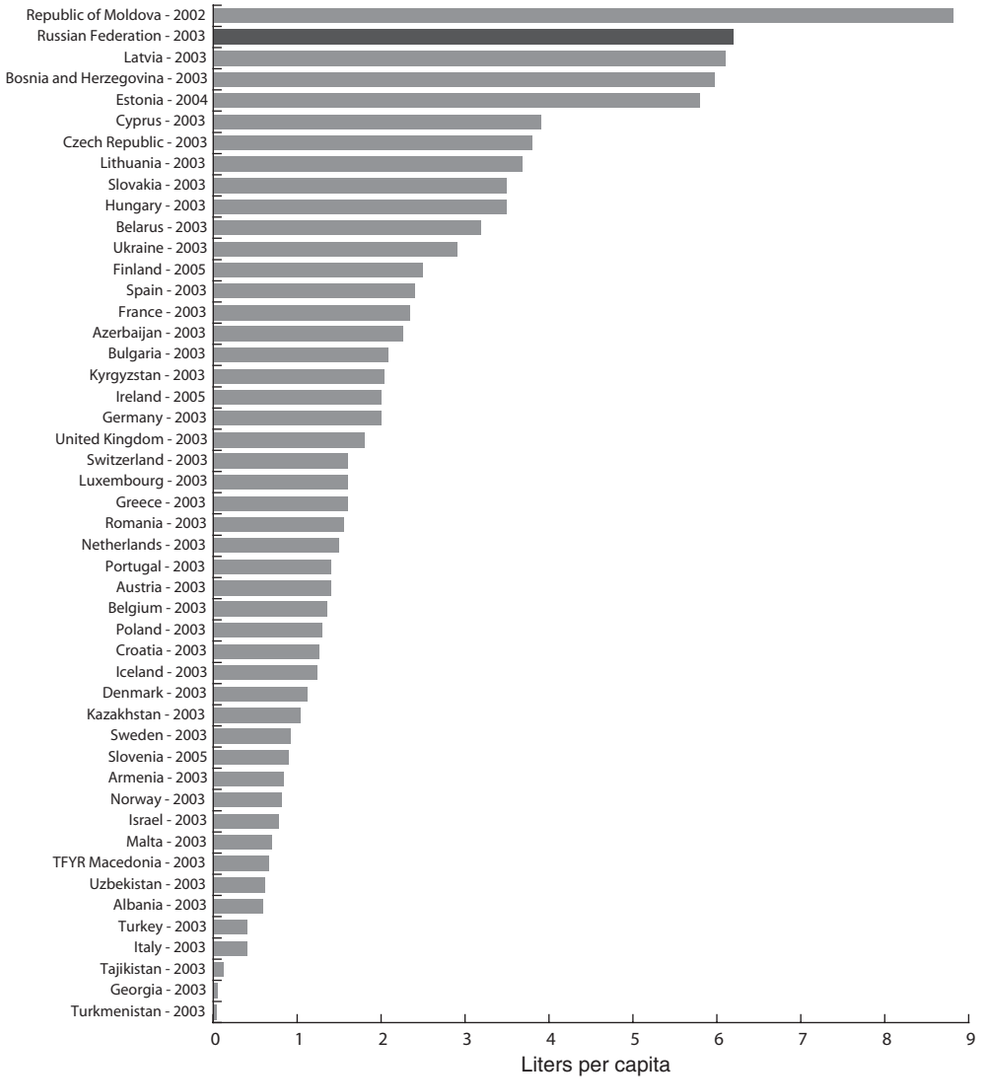


SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)," http://data.euro.who.int/hfadb/.

study of problem patterns in three urban settings, for example, concluded that problem drinking was much more prevalent among the study's Russian men than among their counterparts in urban Poland (35% versus 14%). This is a truly evocative differential, when one considers how entrenched the tradition of hard drinking is also in Poland itself. There is little doubt that heavy drinking and binge drinking are all too characteristic of current social patterns in Russia, but we probably cannot pinpoint the differences between Russia and other countries with the available quantitative information currently at hand.

As for average levels of alcohol consumption, here again the data is somewhat more ambiguous and less consistent than we might wish or expect. According to estimates from the WHO European Health for All database, total alcohol consumption per capita in the Russian Federation ranked essentially in the middle of the European range as of the year 2003, and decidedly lower than for

FIGURE 4.7 Spirits consumed in pure alcohol, liters per capita for the Russian Federation vs. other European countries (most recent year available)



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

such countries as Spain, Germany, Portugal and Switzerland! This peculiar and counterintuitive result conflates two potentially confounding factors: first, an underestimate of alcohol intake in Russia (for reasons we will come to in a moment); and second, the aggregation of alcohol consumption from all sources, even though binge drinking of hard spirits would be the aspect of greatest public health concern. When we look at WHO estimates for hard liquor consumption, a much more plausible international profile is reported (see **Figure 4.6** and **4.7**). According to these data, as of 2003 Russia was Europe's heaviest per capita spirits imbiber (surpassed only, purportedly, by Moldova). Russia's reported hard liquor intake is over four times as high as Portugal's, three times that of Germany or Spain, and over two and a half times higher than that of France.

Yet these numbers may also substantially understate hard spirit use in Russia. The WHO data relies upon official Goskomstat estimates, which follow the retail sale of hard liquor. But *samogon*

(home-brew or "moonshine") figures prominently in slaking Russia's great thirst. According to some Russian researchers moonshine is a huge component of the country's overall intake. Professor Alexander Nemstov, perhaps Russia's leading specialist in this area, argues that Russia's true per capita level of hard spirit intake in the 1990s may have been roughly twice as high as Goskomstat estimates[8] (and almost three times as high as the self-reported numbers that the Russia Longitudinal Monitoring Survey [RLMS] suggest[9]). If Nemstov's estimates are approximately correct, they would imply that the adult Russian population consumes the equivalent of a bottle of vodka per week, an average inclusive of not only men of all ages but women as well. Such prodigious consumption would in fact track with much of the more anecdotal description and reportage on contemporary drinking mores in post-Soviet Russia.

There is little doubt that Russia's extraordinary affection for vodka and samogon contributes directly to the country's tragic levels of excess mortality. Statistically, a number of studies have shown that estimated trends in per capita alcohol consumption for the Russian Federation correspond with the rise and fall of the country's life expectancy (and correspond even more closely with the movement in male life expectancy).[10] The correspondence is more than a statistical artifact. As it happens, Russia's very highest level of life expectancy over the past quarter century or so was achieved in 1986–87, during Gorbachev's brief and ultimately abortive anti-alcohol drive in the late Soviet era. The Gorbachev Politburo was eventually forced to abandon the sobriety campaign because of financial implications. Like the Tsarist treasuries before it, Soviet public finance was heavily dependent upon the revenues from the government's alcohol monopoly, and Moscow simply could not afford the deficit created by those foregone sales.[11]

From the epidemiological standpoint, local-level studies have offered fairly chilling proof that alcohol is a direct factor in premature mortality. One forensic investigation of blood alcohol content by a medical examiner's office in a city in the Urals, for example, indicated that over 40% of the younger male decedents evaluated had probably been impaired or severely intoxicated at the time of death. This included one quarter of the deaths from heart disease and over half of those from accidents or injuries.[12] But medical and epidemiological studies have also demonstrated that, in addition to the many deaths from consumption of ordinary alcohol (ethanol), Russia also suffers a grisly toll from alcohol poisoning. Russian drinkers down not only sometimes severely impure samogon, but also perfumes, alcohol-based tinctures, cleaning solutions, and other deadly liquids.[13] Death rates from such alcohol poisoning appear to be at least one hundred times higher in Russia than the United States, possibly encouraged by the fact that the retail price in Russia is lower for a liter of vodka than for a liter of milk.

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8 A.V. Nemtsov, "Alcohol-related human losses in the 1980s and 1990s," *Addiction* 97, no.11 (November 2002): 1413–25.

9 A. Nemtsov, "Letter to the Editor: Alcohol Consumption in Russia: A Viewpoint on Monitoring Health Conditions in Russia (RLMS)," *Addiction* 98, no. 3 (March 2003): 369–70.

10 See, for example, Vladimir M. Shkolnikov and Alexander Nemstov, "The Anti-Alcohol Campaign and Variations in Russian Mortality," in José Luis Bobadilla, Christine A. Costello, and Faith Mitchell, eds., *Premature Mortality in the New Independent States* (Washington, D.C.: National Academy Press, 1997): 239–61; and Julie Da Vanzo and Cliford Grammich, *Dire Demographics: Population Trends in the Russian Federation* (Santa Monica: RAND, 2001).

11 Daniel Tarschys, "The Success of a Failure: Gorbachev's Alcohol Policy, 1985-88," *Europe-Asia Studies* 45, no. 1 (January 1993): 7–25.

12 V.M. Shkolnikov, M. McKee, V. Chervyakov, N. Kyrianov, "Is the link between alcohol and cardiovascular death among young Russian men attributable to misclassification of acute alcohol poisoning? Evidence from the city of Izhevsk," *Journal of Epidemiology and Community Health* 56, no. 3 (March 2002) : 171–75.

13 David A Leon et al., "Hazardous alcohol drinking and premature mortality in Russia: a population based control study," *Lancet* 369, no. 9,578 (Jun 16, 2007): 2001-2009.

Yet even while Russia's hard alcohol problem manifestly costs a huge number of lives, it is not clear just how much of the country's excess mortality can or should be attributed to it. It seems reasonable, for example, to presume that alcohol abuse is associated with a very large share of Russia's appallingly high level of mortality due to injuries and poisonings. Yet even if mortality from external causes could somehow be eliminated altogether, only about a fifth of the existing gap in age-standardized death rates that currently separates Russia from Western Europe would be bridged. Reported mortality levels in Russia would still remain fully twice as high as in the "old" EU states.

Tobacco and Smoking

Smoking is a well-recognized public health hazard, and by all indications, the Russians are avid smokers. For Russia, WHO estimates on the prevalence and scale of smoking may be somewhat less subject to dispute than estimates on alcohol consumption, insofar as there is no analogous "grey market" for home-produced tobacco. Thus the WHO data on smoking in Russia may be regarded as fairly comparable to its data for other European countries (see **Figures 4.8** and **4.9**).

According to those estimates, Russian men were practically Europe's heaviest smokers in recent years (just behind their counterparts in Ukraine) with over 60% designated as daily tobacco users in the year 2004. Russia's estimated level of cigarette consumption, moreover, was one of the very highest in Europe. In the year 2000, consumption was on average over 2,400 cigarettes per year, or nearly seven a day for every man, woman, and child in the country. In the European region, Russia's estimated level of tobacco consumption is reportedly exceeded only in Greece, Bulgaria and Spain. Smoking trends for Russia and Western Europe moreover look to be heading in different directions. Over the past generation, both the prevalence of smoking and the average levels of cigarette consumption have been generally declining in Western Europe. By contrast, per capita cigarette consumption and smoking prevalence in Russia show no signs of downward movement as of yet. Instead, the habit of daily smoking appears to be holding steady, or perhaps even spreading slightly, and per capita tobacco use still appears to be on the rise. Survey data, such as RLMS and the New Russian Barometer, suggest that younger people in post-Communist Russia are not only smoking more heavily than older people but are also smoking more heavily than younger people did in the past.[14] This sign can hardly be auspicious for public health.

Not surprisingly, public health researchers, activists, and policymakers express alarm about the implications of Russia's smoking habit on the country's mortality. Studies from the WHO, for example, have argued that tobacco abuse may be costing Russia over 300,000 premature deaths each year,[15] with some estimates placing the toll as high as 500,000 deaths a year.[16] No less ominously, Russian officials have warned that the Russian Federation now stands as the third-largest market in the world for tobacco products, and due to the almost complete lack of restrictions on cigarette marketing within the country, smoking is expected to increase yet further in the years ahead.[17]

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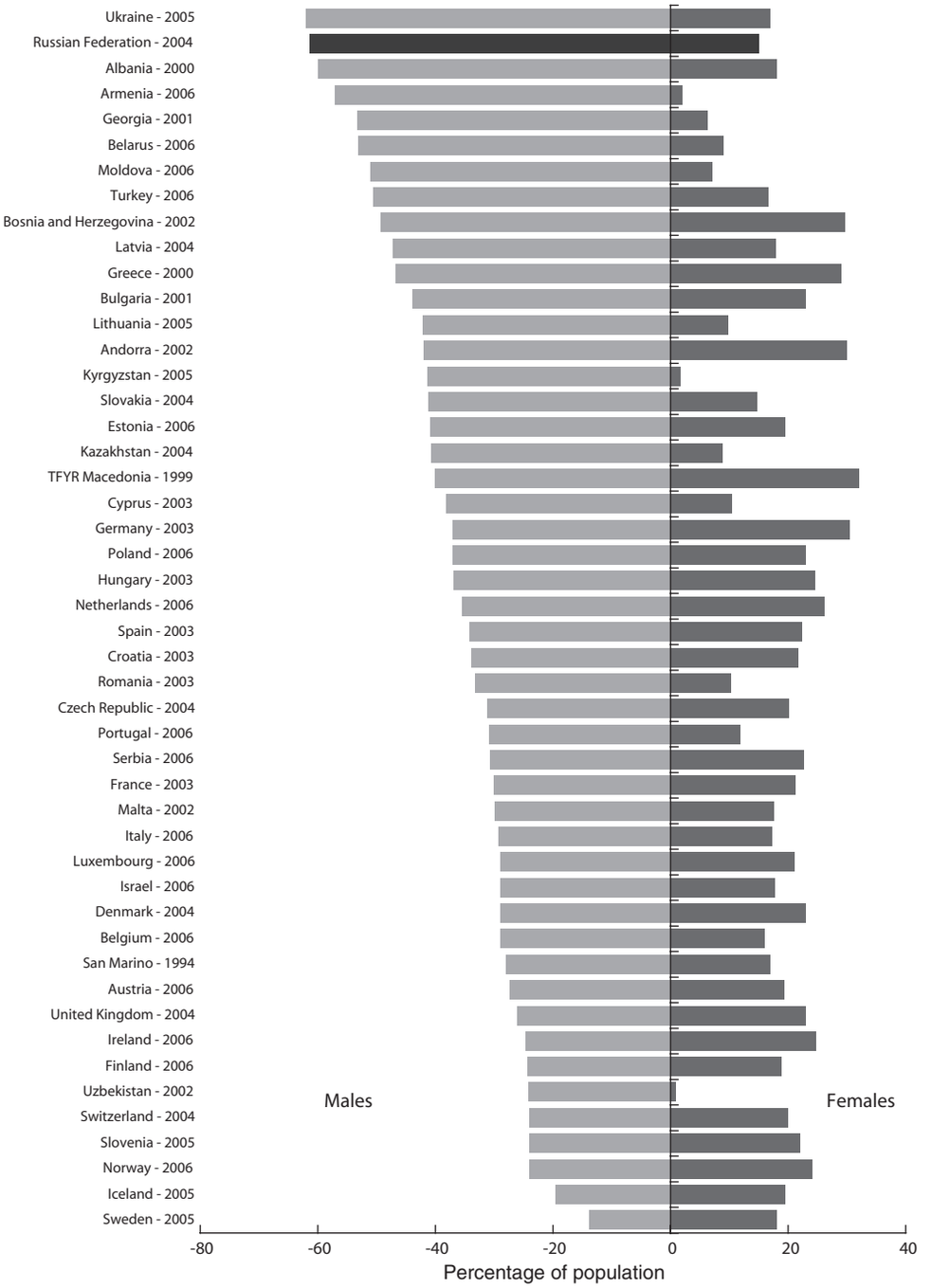
[14] See, for example, Martin McKee, Martin Bobak, Richard Rose, Vladimir Shkolnikov, Laurent Chenet, and David Leon, "Patterns of Smoking in Russia," *Tobacco Control* 7, no. 1 (March 1998): 7–26; and Francesca Perlman, Martin Bobak, Anna Gilmore, and Martin McKee, "Trends in the prevalence of smoking in Russia during the transition to a market economy, *Tobacco Control* 16, no. 5 (May 2007): 299–305.

[15] WHO, "Russian Federation Smoking Prevalence Tobacco Economy," http://www.who.int/tobacco/media/en/Russian_Federation.pdf.

[16] "Russia joins global anti-smoking convention," *RIA-Novosti,* April 25, 2008, http://en.rian.ru/russia/20080425/105915892.html.

[17] "Russian cigarette market grows to become world's third largest," *Pravda.ru,* March 2, 2004. Although the Russian Federation did become a signatory to the World Health Organization's anti-smoking convention in 2008, the provisions of that convention are not overly imposing on Russia's current and prospective smokers—mandating as it does, for example, health warnings on just 30% of all cigarette packs sold today, and a ban on tobacco advertising not until five years after ratification. See "Russia joins global anti-smoking convention," *RIA-Novosti,* April 25, 2008, http://en.rian.ru/russia/20080425/105915892.html.

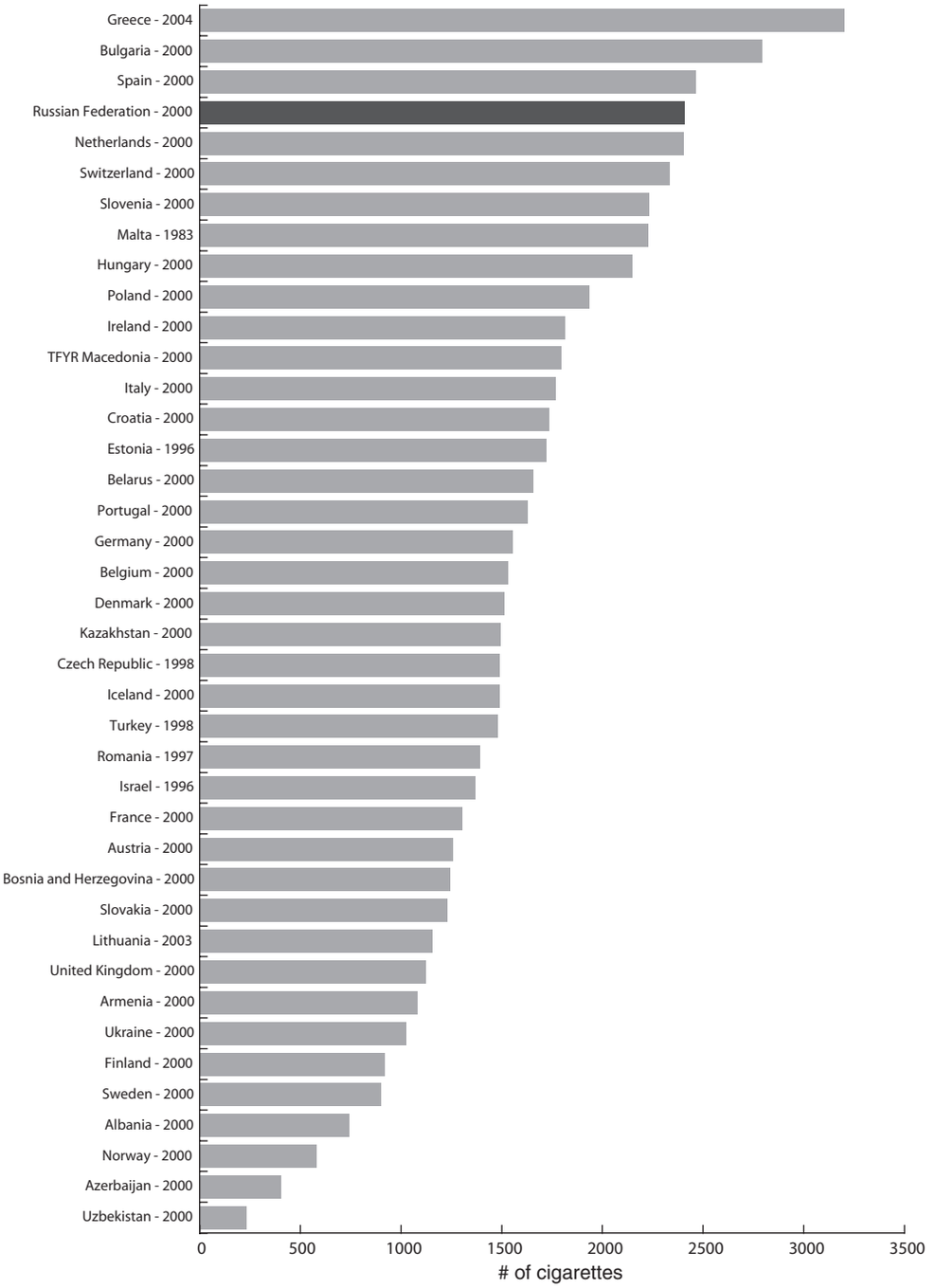
FIGURE 4.8 Estimated percentage of regular daily smokers in the population, age 15+ for Russia vs. other European countries (latest available year)



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

There is no question that smoking's impact on public health in Russia is adverse—quite plausibly, severely adverse. That said, however, it is not clear how much of Russia's disastrous health picture is due to the country's smoking patterns per se. For one, the reported prevalence of smoking among Russian women in recent years is still rather low by contemporary European standards: about 15%

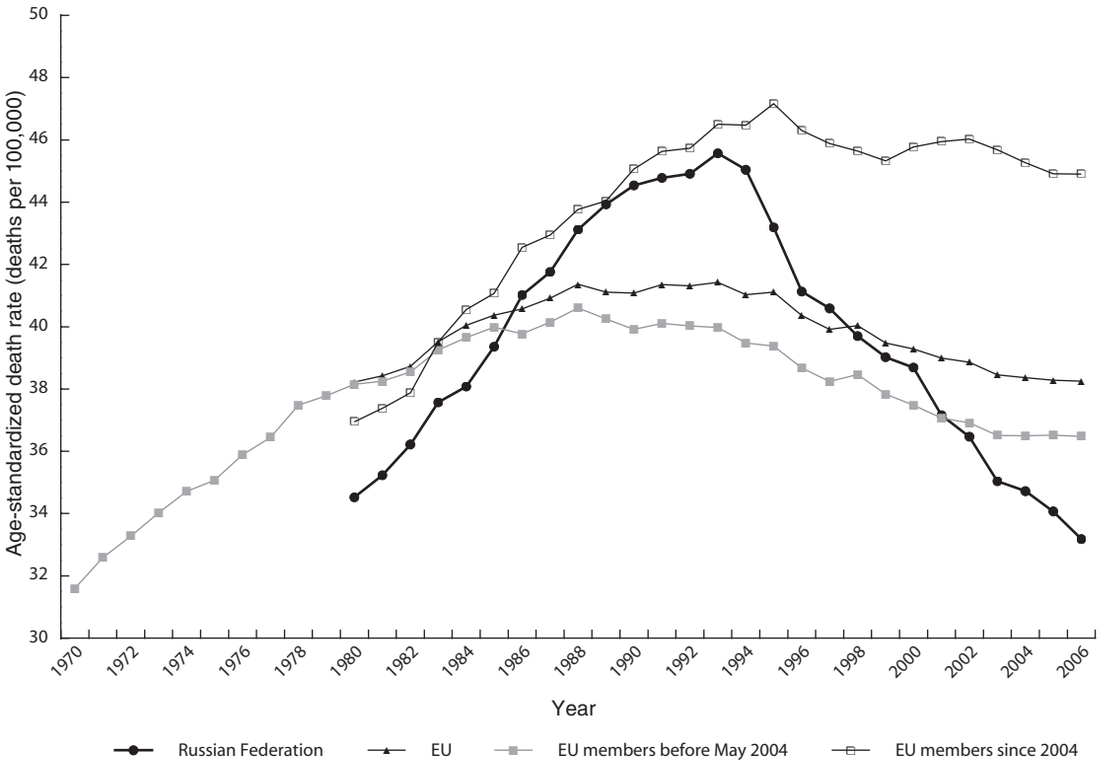
FIGURE 4.9 Estimated number of cigarettes consumed per person per year for the Russian Federation vs. other European countries (most recent available year)



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

in 2004, as compared to 21% in France in 2003, 24% in Norway in 2006, and 30% in Germany in 2003. Overall, Russia's prevalence of adult smokers in recent years is estimated to be around 36% as of 2004. This is among the highest for Europe, to be sure, but not appreciably different from the Tooverall prevalence of smoking in much lower-mortality European countries such as Germany

FIGURE 4.10 Total death rates from lung cancer, 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

(34% in 2003), the Netherlands (34% in 2002), or Spain (32% as of 2001), and perhaps somewhat lower than the prevalence in low-mortality Greece (a reported 38% as of 2000).[18] By the same token, estimated per capita cigarette consumption is about the same in Russia and the Netherlands, and somewhat lower in Russia than in Greece or Spain. Yet all three of those Western European societies enjoy radically better health and mortality profiles than the Russian Federation.

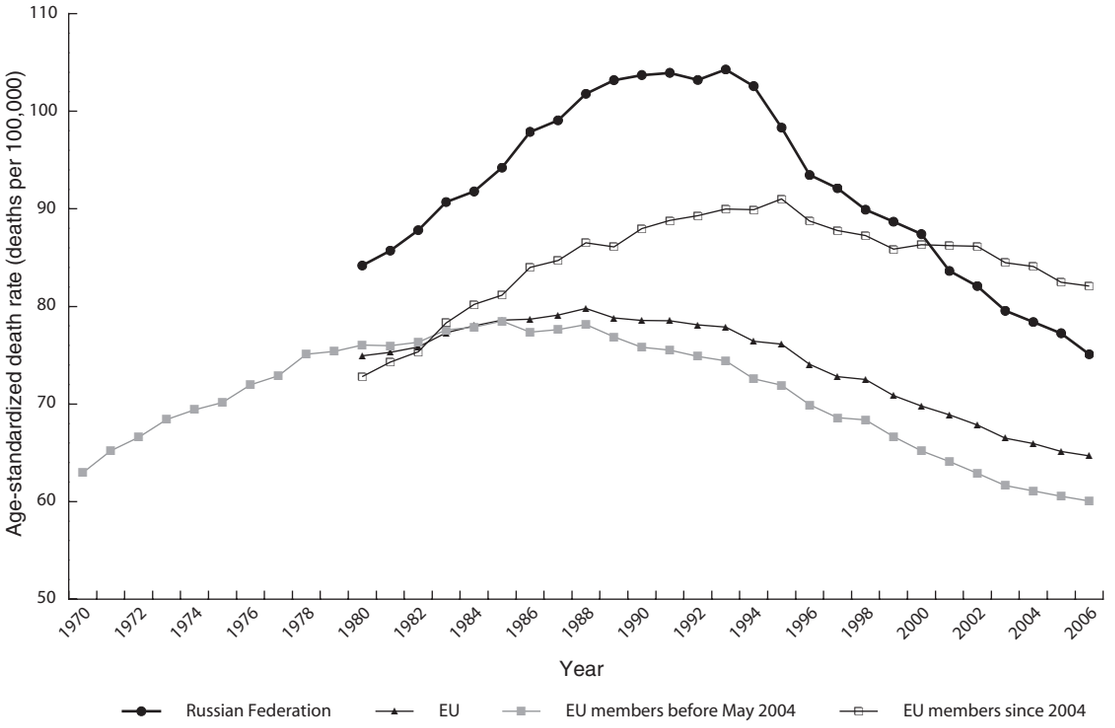
Closer analysis of the health impact of tobacco in Russia should track causes of death most directly associated with smoking: in this case, lung cancer. **Figures 4.10–4.15** contrast reported trends for mortality from lung cancer (and also from cancers of all types) in Russia and the EU. As may be seen, over the past generation overall mortality levels from lung cancer have not been dramatically higher in the Russian Federation than in Western Europe. In recent years, they have apparently been somewhat lower in Russia than in the "old" EU states. Although mortality from lung cancer appears to be about a third higher for Russian males than their Western European counterparts, lung cancer deaths for Russian women are only about half as high as for women in Western Europe.

Smoking, of course, can lead to other forms of cancer as well (and some lung cancers may be misclassified as other forms of neoplasm).[19] But overall levels of cancer mortality in Russia

[18] World Health Organization Regional Office for Europe, Europe Health for All Database (HFA-DB), http://data.euro.who.int/hfadb/.

[19] Majid Ezzati and Alan D Lopez, "Estimates of global mortality attributable to smoking in 2000," *Lancet* 362, no. 9387 (September 13, 2003): 847–52.

FIGURE 4.11 Male death rates from lung cancer, 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

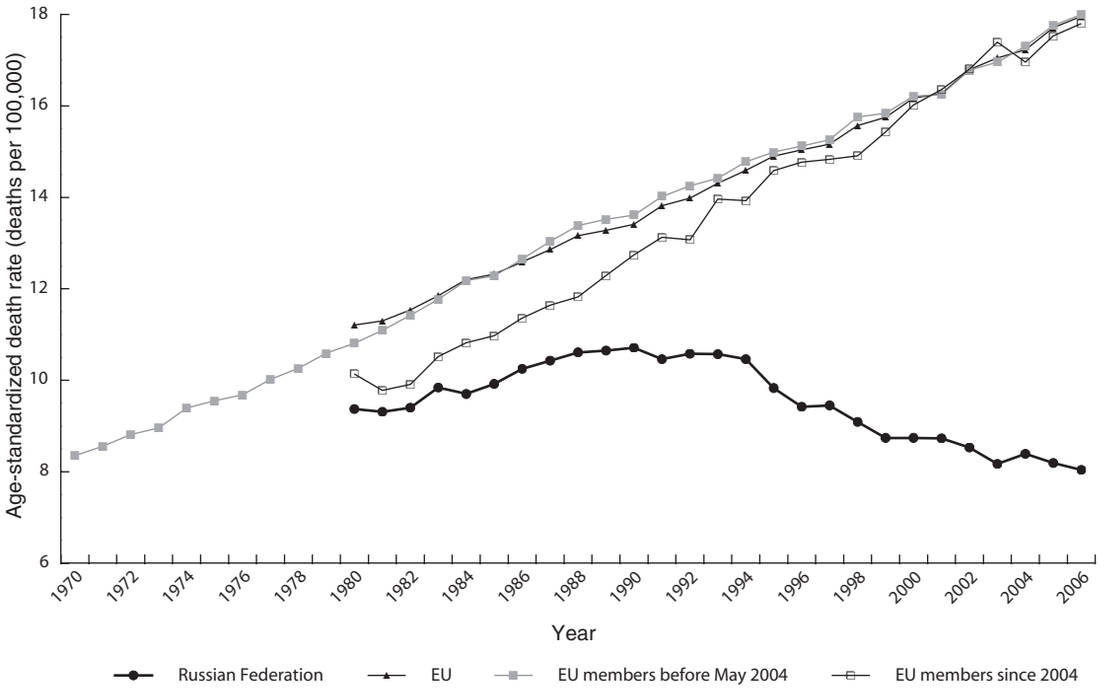
have been only somewhat (less than 10%) higher than in Western Europe since the end of the Communist era. The total mortality differential due to neoplasms accounts for less than one-fiftieth of the overall gap in death rates between Russia and the "old" EU states.

Contrary perhaps to popular impressions, most of the deaths attributed to smoking actually accrue through CVD stresses.[20] Russia's mortality levels from CVD, as we have seen, are almost unimaginably high today. But CVD mortality in Greece and Spain, countries with overall tobacco consumption profiles roughly similar to Russia's, are vastly lower than Russia's. Greece's level in 2006 was just 37% of that in the Russian Federation, and as of 2005 (the most recent data available), Spain's was just 21%.

By way of qualification, we should note that lifetime patterns of smoking exert a direct influence on current smoking mortality levels, a potentially confounding effect in the comparisons offered above. The potential upsurge in mass smoking of which Russian officials have warned has thus only ominous implications for future health trends in the Russian Federation. But that prospect does not affect the mortality patterns already registered. The situation with regard to smoking in Russia is assuredly a major public health problem, and smoking reduction stands to improve the health outlook for the nation. Bad as smoking may be, however, it is hard to see how differentials in smoking can account for much of the real existing mortality gap between Russia and Western Europe today.

[20] Ezzati and Lopez, "Estimates," 847–52.

FIGURE 4.12 Female death rates from lung cancer, 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

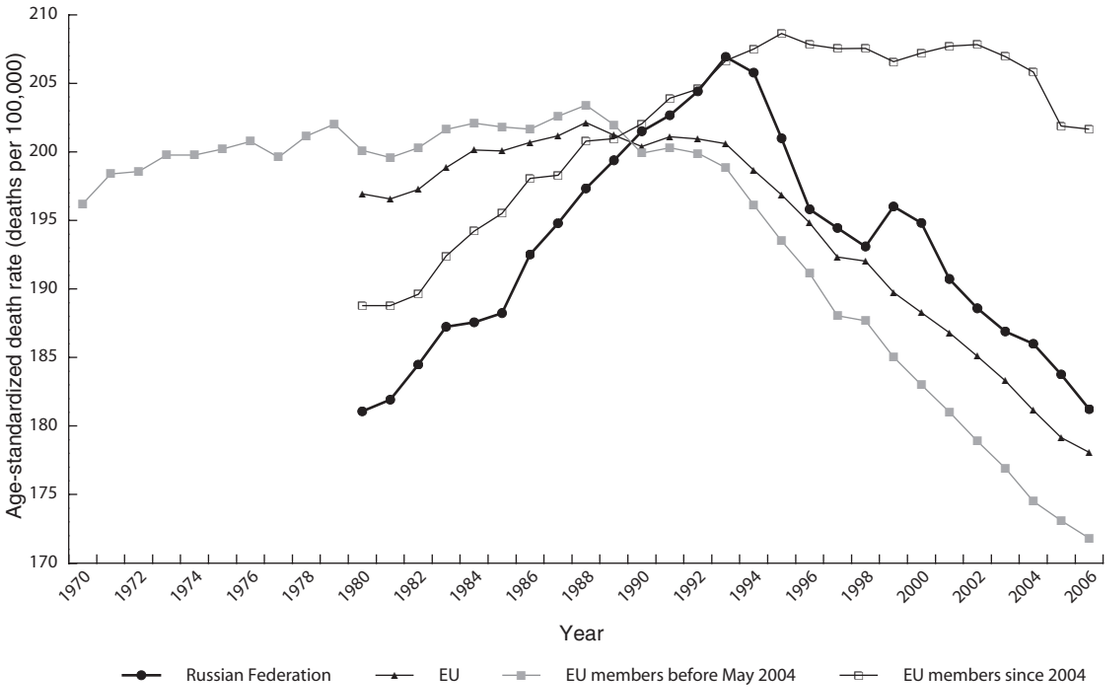
Nutrition and Diet

Nutrition is another potentially significant factor bearing on health and mortality. Undernutrition and overnutrition can both pose serious health risks to modern populations; both overall consumption levels and composition of intake are important here. Russia's dietary circumstances can be assessed two ways: through "food balance sheets," which estimate average daily availabilities for the population as a whole, and through population-based or biometric surveys, which can offer information on direct intake and on measured or probabilistically inferred incidences of being underweight and overweight.

The Russian diet was notoriously limited and monotonous in Soviet times. According to food balance sheet data, the availability and composition of food for the Russian population is still noticeably different from the diet in the rest of Europe. To no surprise, per capita availability of fruits and vegetables—a desirable component of a healthy and diversified diet—is sharply lower in Russia than in Western Europe, and also lower than in the former Communist states that have recently joined the EU.

But some of the food availability data may also surprise. Given Russia's reputation for maintaining an unhealthy diet, it is interesting for example, to note that the Russian diet appears to be distinctly less dependent on fat than either the newer or older areas of the EU. As of 2003, the latest data available, the fractions of total caloric intake from fat were 25% for Russia versus 38% for Western Europe and 30% for the new EU states. Per capita daily caloric availability is likewise somewhat lower in Russia than in the rest of Europe. By the WHO's estimates Russian diet averages about 3,100 calories per day, as compared to 3,500 for Western Europe and 3,400 for

FIGURE 4.13 Total death rates from all malignant neoplasms (cancer), 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

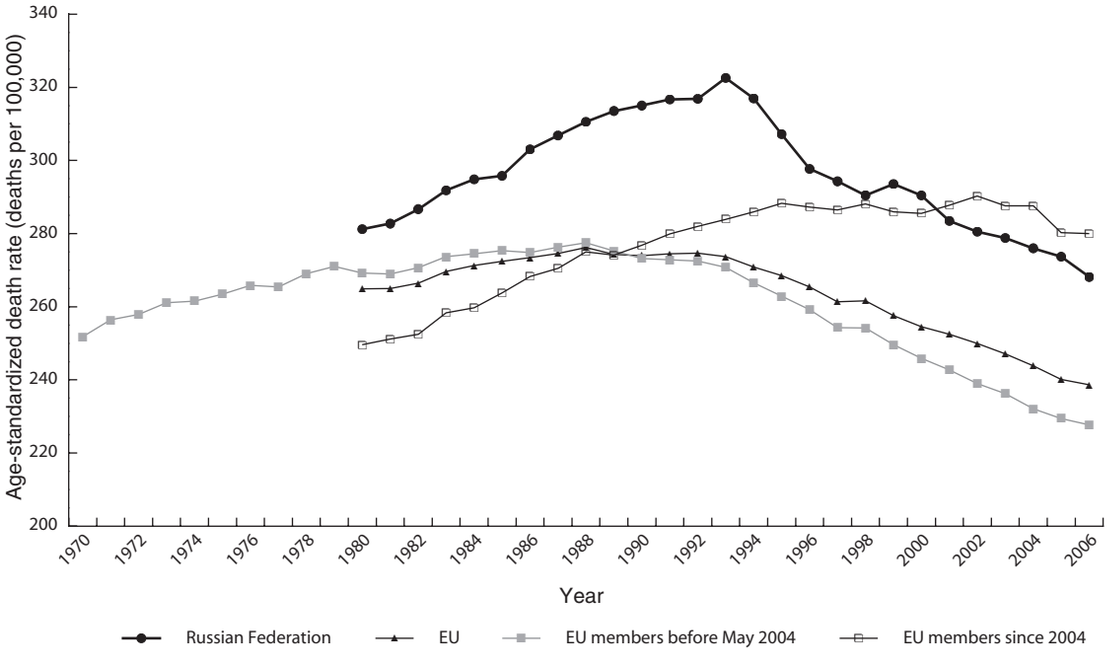
the new EU states. Insofar as nutritionists caution that both total caloric intake and total intake of energy from fat may today be higher than optimal in the European diet, the Russian dietary breakdown may actually seem more favorable in these respects.

The biometric data collected by the WHO indicate that tendencies toward being overweight and obesity are indeed present today in Russia, but that the obesity problem is generally not as pronounced in Russia as in some other European populations.[21] Among Russian women, however, obesity is all too common. Almost 30% of Russia's female adults are currently thought to be obese, one of the very highest proportions in the WHO-Europe region. But among adult men, obesity is evidently less pronounced in Russia than in much of Europe, including such low mortality societies as Spain, Germany, Finland, and Israel (a WHO Europe member state). As for children, Russia's obesity ranking is among Europe's very lowest at the moment.

According to other survey data, being underweight—exhibiting a potentially unhealthy low body mass index (BMI) reading—is a common phenomenon in contemporary Russia. As we saw in chapter 2, furthermore, there is some evidence to suggest that height and weight for newborns in at least some regions of Russia have declined in the post-Communist era. Nationwide survey data provide evidence that the phenomena of stunting (low height for age) and wasting (low weight for height) are also evident in older Russian children. In a biometric investigation of RLMS data from 1996, almost as high a proportion of examined Russian children registered underweight as

[21] World Health Organization (WHO), "The challenge of obesity in the WHO European Region," Fact Sheet EURO/13/05, September 12 2005, http://www.euro.who.int/document/mediacentre/fs1305e.pdf.

FIGURE 4.14 Male death rates from all malignant neoplasms (cancer), 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

overweight (11% versus 13%).[22] According to RLMS data, the prevalence of wasting among Russian children under seven years of age did markedly decline over the course of the first post-Communist decade (1992–2003). However, trends in stunting moved more erratically and with less obvious longer-term direction, rising and falling from one wave of surveying to the next.[23]

The reported fluctuations in the prevalence of stunting is statistically meaningful, and might seem to suggest that the nutritional status of Russian children (and by extension, perhaps Russian adults as well) was directly affected by the instability of evolving macroeconomic trends in post-Communist Russia. Some international observers, including researchers associated with the UN Food and Agricultural Organization, have flagged nutrition and food security as a genuine issue for the Russian Federation today, especially for the most vulnerable elements in society.[24] On the other hand, a detailed examination of dietary patterns of low income Russian households over the economic turbulent decade of the 1990s by Barry M. Popkin and his colleagues at the University of North Carolina concludes that low-income Russian families were in fact generally successful at stabilizing caloric intake for their children through what they describe as "effective behavioral strategies to maintain dietary stability in times of economic crisis."[25] In other work, Popkin and

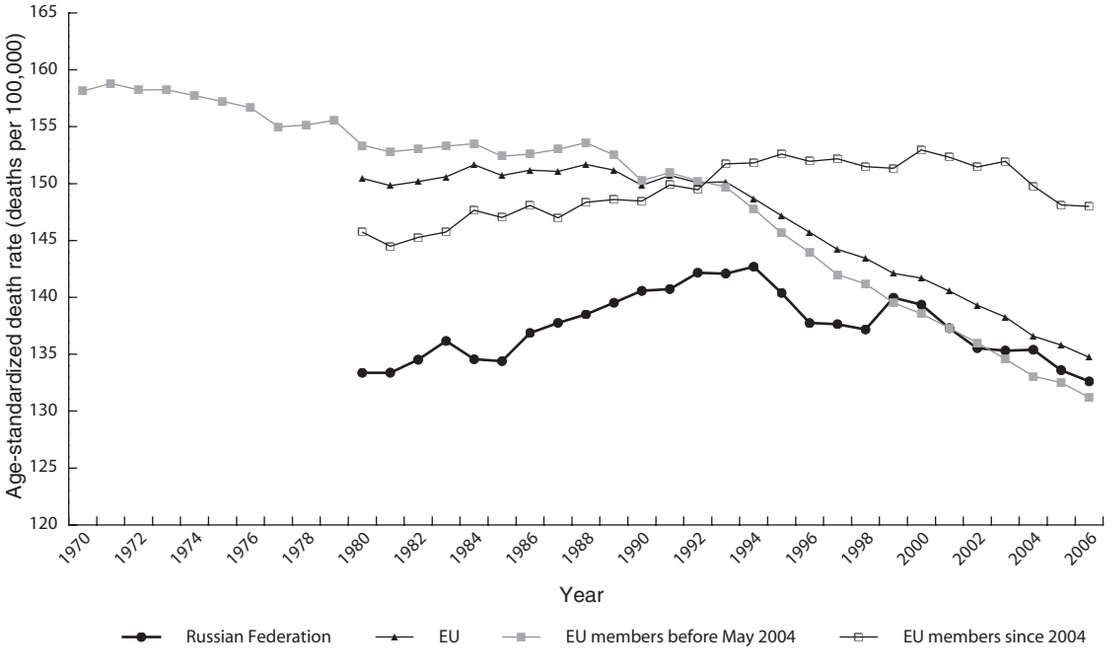
[22] L. Jahns, A. Baturin and B.M. Popkin, "Obesity, diet, and poverty: trends in the Russian transition to market economy," *European Journal of Clinical Nutrition* 57 (2003): 1,295–302.

[23] Namvar Zohoori, "Monitoring Health Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992–2003," http://www.cpc.unc.edu/projects/rlms/papers/health_03.pdf.

[24] See, for example David Sedik, Sergey Sotnikov, and Doris Wiesmann, "Food Security in the Russian Federation," FAO Social and Economic Development Paper 153, FAO, 2003.

[25] Anna R. Dore, Linda S. Adair, and Barry M. Popkin, "Low Income Russian Families Adopt Effective Behavioral Strategies to Maintain Dietary Stability in Times of Economic Crisis," *Journal of Nutrition* 133, no. 11 (November 2003): 3,469–475.

FIGURE 4.15 Female death rates from all malignant neoplasms (cancer), 1970–2006, in the Russian Federation vs. EU countries



SOURCE: World Health Organization Regional Office for Europe, "Europe Health for All Database (HFA-DB)."

colleagues demonstrated in the 1990s that stunting was more prevalent among Russian children than their counterparts in the United States[26] (and, presumably, other affluent Western societies). At the same time, however, stunting was markedly less prevalent among Russian children than among children in Brazil and China[27]—countries, as we have seen, whose overall health and mortality profiles are decidedly superior to Russia's today.

All in all, it may be that the nutritional situation today for the Russian public is less favorable than in low-mortality Western European societies. The Russian diet is clearly substantially lower in fruit and vegetables than most others in Europe. It also appears to be lower in its availability of micro-nutrients and vitamins (including vitamin C), quantities associated in recent medical research with resistance to the risks of CVD. Russian citizens have doubtless suffered more in the way of nutritional stresses and anxieties in the post-Communist transition period than their counterparts in the old EU states, although food balance sheets do not reflect sharp fluctuations in overall food availability for the post-Soviet era and bio-medical surveys suggest household coping strategies were tolerably successful in maintaining dietary security during the macroeconomic perturbations of the 1990s.[28] Available data, however, does not point to appreciable health-threatening nutritional differentials between post-Communist Russia and Western Europe—still less so between Russia and the new EU states of the former Soviet bloc, whose death rates have been progressively diverging from Russia's over the past decade and a half.

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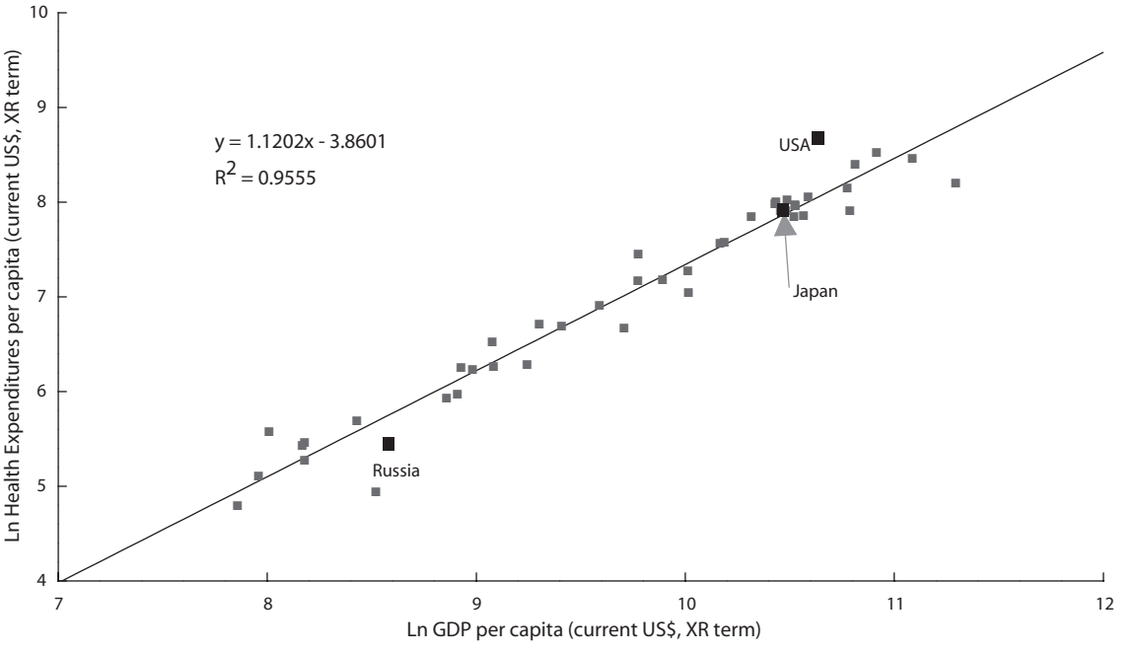
[26] Barry M. Popkin, Marie K. Richards and Carlos A. Montiero, "Stunting is Associated with Overweight of Children of Four Nations that Are Undergoing the Nutrition Transition," *Journal of Nutrition* 126, no.12 (December 1996): 3,009–16.

[27] Popkin, Richards, and Montiero, "Stunting is Associated with Overweight of Children," 3,469–75.

[28] Steven Stillman and Duncan Thomas, "The Effect of Economic Crises on Nutritional Status: Evidence from Russia," IZA Discussion Paper No. 1,092, March 2004.

FIGURE 4.16 Health expenditures vs. GDP per capita (nominal exchange-rate based): Russia vs. OECD and selected European Countries, 2005



SOURCE: World Bank, International Comparison Program, 2005, http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=208.

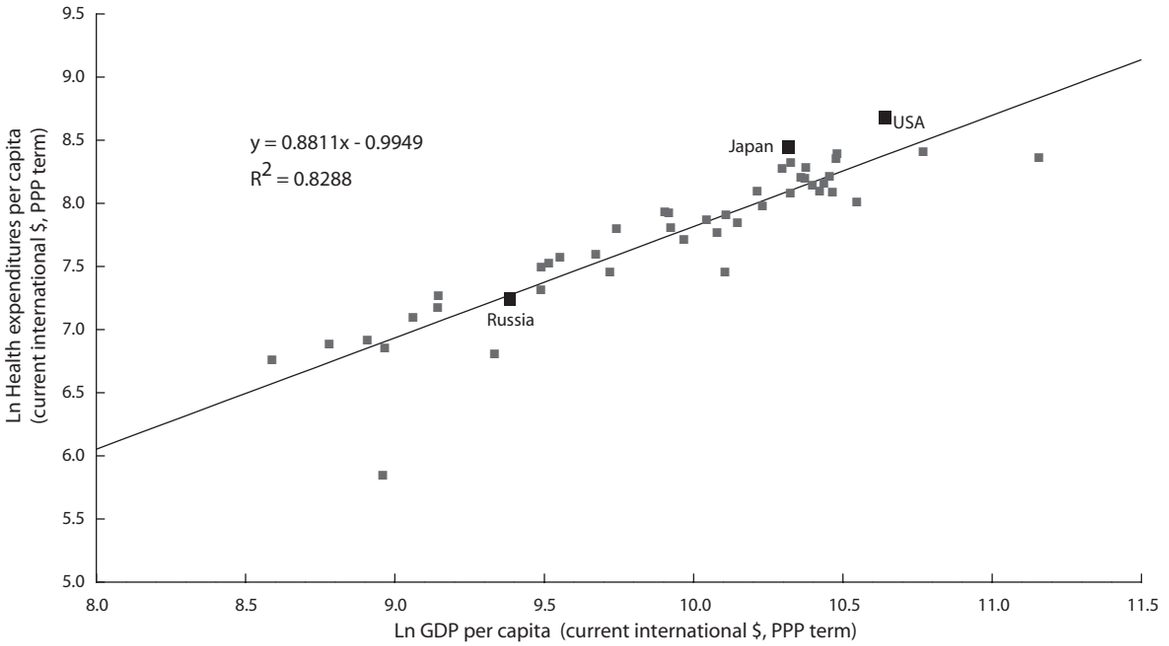
The greatest nutritional risks to health in Europe at this point are overnutrition, overweight and obesity. Yet judging by food balance sheets and BMI, the Russian public is not at extreme risk here, at least in European perspective. Apart from the component in diet that alcohol comprises, differentials in diet would not seem to explain that much of the huge mortality gap between Russia and the EU states.

Health Care

Availability and quality of health and medical care makes a huge difference to mortality and wellness outcomes, both individually and on a national scale. The scope and scale of Russia's morbidity and mortality problems might well be taken as a prima facie indication of a pervasive and overarching failure of the health system to meet and deal with the preventive and curative challenges it faces. But this amounts to a surmise, since the actual quantitative data necessary for testing this proposition more rigorously are not readily available, and without these we are in effect attributing a residual to an unobserved variable. One need not be an epidemiologist or an econometrician to recognize that this is a problematic proposition from a methodological standpoint.

That being said, it may also be useful to note what is not necessarily amiss with the Russia's health and medical economy. One such aspect is the proportion of output currently devoted to health and medical services. Although it may come as some surprise to learn, the total consumption of health and medical resources by the Russian population does not look particularly unusual for the country's level of economic development. The International Comparison Project (ICP), supported by the World Bank, offers estimates for over one hundred national economies on the composition of output and consumption for the year 2005. By these numbers, health care would have accounted for about 4.2%

FIGURE 4.17 Health Expenditures vs. GDP per capita (PPP-based) for Russia vs. OECD and selected European Countries, 2005



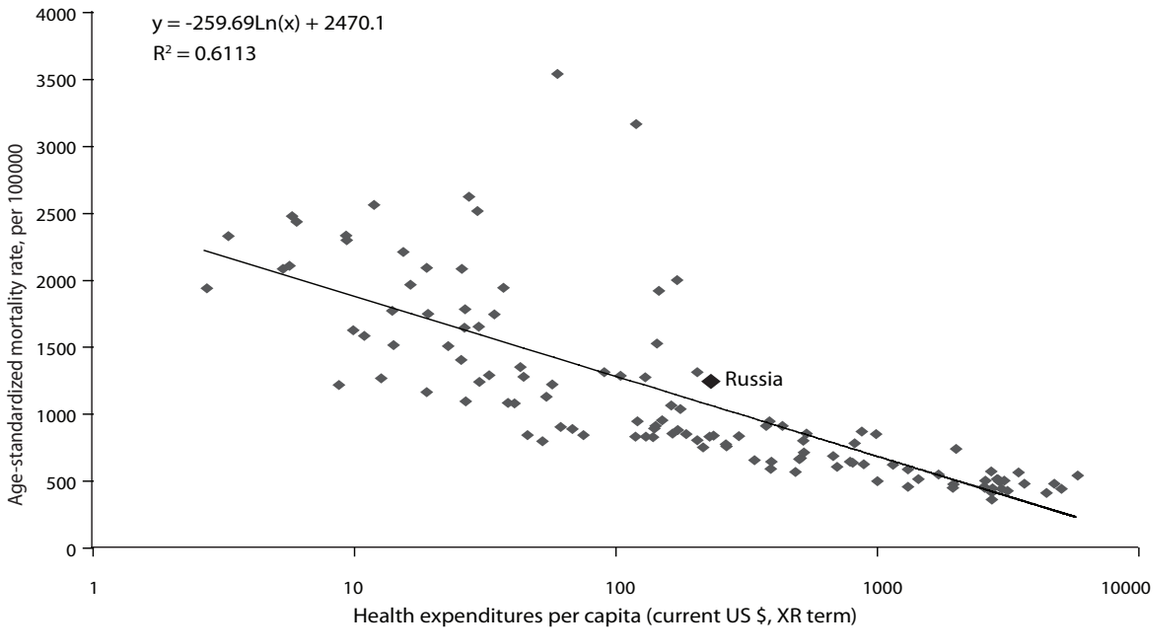
SOURCE: World Bank, International Comparison Program.

of GDP in local prices. This share would have been significantly lower than most (though not all) countries in the European region, but the share of health expenditures as a proportion of national income rises with income levels (see **Figure 4.16**). In relation to Russia's level of income per capita, Russia's estimated health care expenditures still look to be below trend, but the country is not an extreme outlier. When further adjustments are made for purchasing power parity (PPP)—to concord prices for local non-traded services—Russia's ratio of health and medical care expenditures to GDP is almost exactly on the trend line for the greater European area (see **Figure 4.17**). Admittedly, these adjustments may or may not accurately take quality differentials into proper account. But at first glance, they do not suggest that anything is obviously irregular about Russia's allocation of overall resources to health care, in terms of developmental considerations.

If we think in broader, more global terms, we might expect to see a worldwide international relationship between domestic health care spending and local mortality levels (adjusted for population structure). WHO estimates of age-adjusted mortality levels and ICP estimates of per capita health care expenditures (from both public and private sources) allow us to trace this relationship. These data demonstrate that Russia's death rates are distinctly higher than would be suggested by health spending levels per se. Indeed, a country-to-country comparison only further accentuates this finding (see **Figure 4.18** and **4.19**).

India's overall age standardized mortality levels, for example, were only very slightly higher than Russia's. Yet India's per capita health care spending was just one seventh of Russia's on an

FIGURE 4.18 Health expenditures vs. age-standardized mortality rates (nominal XR based) for Russia vs. 120 other countries, early 2000s



SOURCE: World Health Organization, Department of Measurement and Health Information, http://www.who.int/healthinfo/statistics/bodgbddeathdalyestimates.xls; and World Bank, International Comparison Program.

NOTE: Per capita health expenditures are for 2005; age-standardized mortality rates are for 2002.

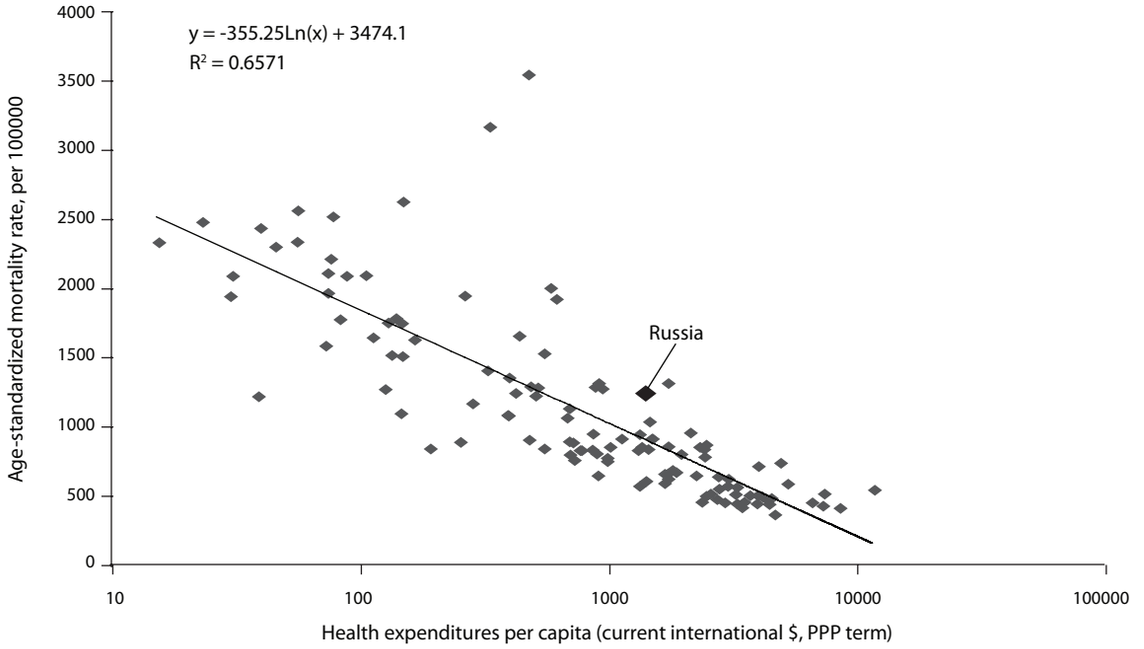
exchange rate basis, and still remained just barely over one third as high as Russia's after PPP adjustments. China's per capita health outlays were one-fifth of Russia's on the exchange rate basis, and just two-fifths of Russia's after PPP adjustments, but the China's overall mortality level was one-third lower than Russia's. On a PPP basis, Russia reportedly had a slightly higher level of per capita health care expenditures than Brazil. Then again, Russia's age-standardized mortality rate was also over 27% higher.[29] Clearly, when in the relationship between health care spending and health results in the BRIC countries, Russia is the odd man out.

Russia's ongoing crisis of excess mortality, furthermore, cannot plausibly be attributed to any shortage per se in medical professionals within the Russian health care system. Figures 4.18 and 4.19 vividly and incontrovertibly demonstrate this much. Quite the contrary, Russia can in fact claim one of the highest ratios of medical doctors to total population within the entire European region. The problem, considered in a European context, is that Russia's overall life expectancy at birth is nearly a decade lower than would be predicted for any European society on the basis of the sheer availability of medical personnel alone.

The contradistinction between Russia's relative abundance of doctors and the evident scarcity of positive medical outcomes appears even more acute when framed in a global rather than more narrowly European perspective. Of the 153 countries for which such data are available from the World Bank's World Development Indicators database, Russia ranked as fifth highest in the

[29] On an exchange-rate basis, it should be noted that Russia's level of health care spending was substantially (40%) lower than Brazil's, meaning that the relative prices of health and medical services were significantly higher in the Brazilian economy than in the Russian economic system.

FIGURE 4.19 Health expenditures vs. age-standardized mortality rates (PPP-based) for Russia vs. 120 other countries, early 2000s



SOURCE: World Health Organization, Department of Measurement and Health Information; and World Bank, International Comparison Program.

NOTE: Per capita health expenditures are for 2005; age-standardized mortality rates are for 2002.

world for its 2006 ratio of physicians to total population. At the same time, however, Russian life expectancy was fully a dozen years lower than what should be expected, given the international correspondence between availability of doctors and that life expectancy levels at birth.

Russia's health and medical system, both in Communist and the post-Communist era, has been extensively criticized for its shortcomings and limitations. There is probably no need to dwell on those criticisms here, except to acknowledge their general validity. International studies have pointed out the possibilities for substantial reductions in mortality levels in the Russian Federation through relatively inexpensive health system improvements or reforms. Chief among these would be initiatives regarding Russia's immense problems with CVD and injury, including: smoking reduction measures, alcohol education programs, greater use of blood pressure control medication, and nationwide establishment of trauma treatment units. Such measures might prevent a great many deaths annually from premature mortality, even without any appreciable increase in overall health system expenditures.[30]

An improved health system, or even improved health policies, could surely help Russia to close the open wound that is represented in text and tables by the current data on the Russia-EU mortality gap. These international comparisons, though, illustrate a corollary of that same point. Viewed

[30] For some cogent analyses of the shortcomings of the existing Russian health care system and recommendations for improving its effectiveness see, inter alia, Gerard F. Anderson et al., "Non-Communicable Diseases and Injuries in Eastern Europe and Eurasia," Johns Hopkins Bloomberg School of Public Health and USAID, October 2006; Edward J. Burger and E. Wayne Merry, "Engagement with Russia – not isolation – in the health sector," *Eurohealth* 14, no. 4 (2005): 25–29; Patricio V. Marquez and Marc Suhrcke, "Combating non-communicable diseases," *British Medical Journal* 331, no. 7510 (July 23, 2005): 174; and World Bank, *Dying Too Young: Addressing Premature Mortality and Ill Health Due to Non-Communicable Diseases and Injuries in the Russian Federation* (Washington, D.C.: World Bank, Europe and Central Asia, Human Development Department, 2005).

from one perspective, it might be reassuring to conclude that Russia's appalling mortality reflects an equally obvious and appalling underinvestment of social resources in public health (i.e. resource shortage that might in principle be directly remedied). The evidence, though, does not suggest that this is in fact the case. Russia's levels of expenditures on health care and medical services are not in themselves exceptional. To the contrary, viewed in an international and developmental perspective, these levels of expenditure could be described as rather ordinary. Nor does the availability of trained medical personnel within the Russian health care system in relation to the population look unusually constrained; quite the opposite appears to be the case. What appears to be extraordinary, rather, is how remarkably little in the way of health protection and mortality reduction these expenditures appear actually to purchase, and these physicians to provide.

The Enigma of Russian Mortality

The preceding summary presentation of evidence regarding potential risk factors that might help account for Russia's mortality explosion and public health degeneration was not a comprehensive review of the many possible risk factors that might have been involved in Russia's great plunge downward in general survival prospects over the past decades—nor was it intended to be. Quite a number of additional and potentially important contributors to this state of affairs could be plausibly adduced, among them pollution and environmental hazards,[31] drug addiction and illicit substance abuse,[32] and aftershocks for the country's older cohorts today from the privations and upheavals of the 1930s and the World War II.[33]

The topic of pollution and environmental degradation in the Russian Federation deserves separate treatment in a study of its own, of which there are many. There obviously is no gainsaying the fact that contemporary Russia is forced to cope with a devastating legacy of environmental destruction—a poisoning of the country's air, water, and land—due to the policies and practices associated with Soviet-style industrialization. There is also no doubt that Russia's pollution problems have had direct and adverse consequences for public health.

Perhaps the most vivid and disturbing depiction of the greater health toll exacted by the USSR's war against nature came from photographer Gerd Ludwig's now-famous images of Russia in 1992, later showcased in *National Geographic* magazine. In one unforgettable photo, eight small children, all of them from just two neighborhoods within Moscow, are seen standing shoulder to shoulder, commonly displaying their deformed left arms. Each of them happens to be missing his or her left forearm, evidently due to the very same (extremely rare) birth defect. Viewers of this scene the

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31 For more information, see Murray Feshbach and Alfred Friendly, Jr., *Ecocide in the USSR: health and nature under siege* (New York: Basic Books, 1992); Murray Feshbach, *Ecological Disaster cleaning up the hidden legacy of the Soviet regime* (New York: Twentieth Century Fund Press, 1995); and Murray Feshbach, ed., *Environmental and Health Atlas of Russia* (Moscow: Paims Publishing House, 1995).

32 News sources, for example, report that Russian authorities currently estimate that roughly 2 million–2.5 million of the country's citizens, including 140,000 underage youth, are addicted to illegal drugs. "Number of drug addicts in Russia reaches 2.5 million," *RIA-Novosti*, March 3, 2009.

33 Mortality aftershocks in later life for youthful populations subjected to the extreme stresses, privation and injuries inflicted by World War I were documented for males, and perhaps more surprisingly, for females as well in Shiro Horiuchi, "The long-term impact of war on mortality: old-age mortality of the First World War survivors in the Federal Republic of Germany," *Population Bulletin of the United Nations* 15 (1983): 80-92. The later-life mortality impact of World War II on surviving cohorts from Russia and the rest of the Soviet Union has been treated, among other places, in Rainer Dinkel, "The seeming paradox of increasing mortality in a highly industrialized nation: the example of the Soviet Union," *Population Studies* 39, no. 1 (January 1985): 87–97. Horiuchi and Dinkel note that CVD levels in later life appear to be harshly effected by the health insults attendant upon youthful exposure to the horrors of total war. As we have seen, modern Russia's CVD levels are dreadfully high. Yet wartime upheaval and its later-life health consequences cannot plausibly explain the long-term rise in mortality for Russia's population boorn well after the end of the World War II, that is to say, adults currently in their thirties, forties, and fifties. Yet this is the grouping wherein most of modern Russia's mortality upsurge is concentrated.

world over immediately recognized that the heart-rending coincidence that was captured on film here was virtually impossible to attribute to ordinary and random genetic variation. No one who has seen this pictorial will ever be in doubt as to whether Russian public health has suffered as a direct result of environmental hazards.[34]

It is by no means clear, however, that environmental degradation has played a major role in Russia's recent decline in general public health levels. For example, although the proposition that congenital birth anomalies in Russia are on the rise is regarded as an established fact by many, there is surprisingly little medical or statistical evidence available to substantiate this hypothesis. Indeed, the incidence of congenital anomalies among newborns, as measured in 2002, is not appreciably different in the Russian Federation (2.9 per 1000 live births) and the EU overall (2.6 per 1000 live births).[35] A number of environmentally proactive Western European countries, including Switzerland (4.9 per 1000 live births in 2005), Norway (5.7 per 1000 live births in 2004), and Denmark (7.6 per 1000 live births in 2007) report considerably higher incidences of congenital birth defects than does Russia.[36]

Further, the attribution of excess mortality in Russia to environmental degradation requires the specification of specific pathways, etiologies, and resultant causes of death. It is certainly plausible that Russia's despoiled air, soil and water would exact a toll of elevated mortality through mechanisms such as renal failure, respiratory disease, and neoplasms (cancers) of various sorts. As we have already seen, however, official cause of death data would suggest that levels and trends for cancer mortality are not dramatically different in Russia and Western Europe. The same is true for kidney disease and respiratory disease. According the WHO Regional Office for Europe's European Mortality Database, age standardized death rates for mortality from diseases of the respiratory system were about 18% higher in Russia than the average for Western Europe (old EU members) in 2006. That gap was much smaller than the 51% differential that separated Russian and Western European respiratory mortality back in 1980. In other words, mortality from respiratory diseases today accounts for a smaller fraction of the overall mortality disparity between Russia and Western Europe than a generation ago (1% in 2006 vs. 8% in 1980). In fact, respiratory mortality rates have been going down over time in Russia, and fairly rapidly at that. As for mortality from disease of the genitourinary system (in which grouping kidney-related mortality is classified), Russia's reported levels today are actually somewhat lower than Western Europe's (8 per 100,000 population vs. 10 per 100,000 population).[37]

As we have already noted in this study, the main proximate drivers of higher mortality levels in Russia over the recent decades have been CVD and injury. The theoretical linkages between pollution and those causes of death are immediately less self-evident. It is of course possible that more detailed epidemiological data, and more accurate information on morbidity and mortality patterns, will eventually permit public health researchers to identify and quantify the health burden the Russian population is forced to bear due to pollution and environmental degradation. This is precisely the point: for the moment at least, the health impact of pollution in Russia remains unexpectedly, some might say infuriatingly, difficult to measure.

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[34] See Mike Edwards, "Lethal Legacy: Pollution in the Former U.S.S.R.," *National Geographic* (August 1994): 70-99; and Gerd Ludwig's website, http://www.gerdludwig.com/html/stories_soviet.html.

[35] World Health Organization Regional Office for Europe, Europe Health for All Database (HFA-DB), http://data.euro.who.int/hfadb/.

[36] World Health Organization Regional Office for Europe, Europe Health for All Database (HFA-DB), http://data.euro.who.int/hfadb/.

[37] World Health Organization Regional Office for Europe, Europe Health for All Database (HFA-DB), http://data.euro.who.int/hfadb/.

Yet while we could continue with that epidemiological exercise in even greater depth, the point that would emerge is by now already fairly clear. On the one hand, Russia's risk factors bearing upon mortality and health consistently do tend to look decidedly less favorable than those facing populations in most of the rest of Europe and the affluent democratic West today. However, there is also an other hand here, and it is scarcely less significant.

The other hand is this: inauspicious as these Russian public health disadvantages just reviewed may be, they do not seem capable of accounting, in any convincing and satisfactory fashion, for the full scope and magnitude of the chasm that separates survival prospects and health conditions in the Russian Federation from those in the West today.

To put the point more sharply, in purely quantitative terms, the sorts of risk factors conventionally identified in the modern Western public health literature for explaining differences in mortality prospects and health status between one population and another seem to provide a singularly limited and inadequate explanation for the phenomenon of catastrophically high mortality, and stagnating or deteriorating life expectancy, as witnessed in modern-day Russia.

New, original calculations of risk attribution for Russian Federation mortality are not introduced into the discussion in this chapter for a number of reasons (not the least of these being that such estimates would focus attention on the particular methods and techniques we might have selected, rather than the looming puzzle of catastrophic excess mortality in Russia itself). An enormous corpus of literature on risk attribution already exists on health hazards that bear directly on Russia's mortality profile. The findings of this literature are by now well-established and accepted in Western medical and public health circles, and yet this literature seems to comport surprisingly poorly with the empirics of the health situation in Russia today. Paradoxically, many of the received models for predicting health risks that have been developed over the past generations in the West seem to fare quite poorly in accounting for health and mortality problems with Russian characteristics.

The Apparent Failure of the "Classic Risk Factors" to Explain Russia's CVD Epidemic

The place where this seemingly mysterious paradox is most apparent is in the Western medical and public health literature on the study of risk from cardiovascular disease. As we have already seen, Russia's level of mortality from CVD is vastly higher than those prevailing in Western countries today. According to WHO-Europe's estimates, the country's CVD level is roughly four times Western levels. On an age-standardized basis, in 2006 CVD mortality accounted for 56% of deaths from all causes in Russia, while differences in CVD mortality levels accounted for over 70% of the overall mortality differential between the Russian Federation and the EU-15. Accounting for CVD mortality in Russia, then, should in principle offer the possibility of identifying (in at least a proximate sense) the major factors involved in Russia's excess mortality syndrome, as well as the major factors distinguishing overall mortality in Russia from the far less brutal profiles of today's Western world.

Over the course of the postwar era, Western researchers have compiled an enormous and exacting body of studies on the risk of CVD in contemporary Western populations. Beginning over six decades ago, with the initiation of the Framingham Heart Study in 1948, medical researchers and social scientists have been tracing these risks through large-scale longitudinal surveys that

offered in-depth information on the subjects' biometric conditions, lifestyles, and socioeconomic circumstances.[38] The Framingham survey was followed by analogous studies in specific Western societies (such as the Whitehall Study in the UK, initiated in the late 1960s)[39] and by multi-country studies (such as the pioneering Seven Countries Study, started in the late 1950s under the auspices of Ancel Keys at the University of Minnesota[40]). The most ambitious and expensive of these studies to date has been the WHO-sponsored MONICA (Monitoring Trends and Determinants of Cardiovascular Disease) survey, a 21 country collaboration that has been underway since the 1980s.[41] Importantly, the MONICA study included panels from the Russian Federation, with one population from Moscow, and another from Novosibirsk.

Based upon these and other studies, Western specialists have developed a paradigm for CVD risk that is sometimes referred to as "classical risk factors" for cardiovascular disease. These factors, which appear to be powerful predictors across all surveyed Western populations, are: systolic and diastolic blood pressure, serum cholesterol levels in the blood, obesity/BMI, smoking and tobacco use, and lack of exercise. Yet strikingly these classical risk factors fare rather poorly in predicting CVD risk in Russia, both on an individual and an aggregate basis.

In a major study of MONICA data from nine countries, for example, a team of Finnish researchers determined that classical risk factors actually offered little insight into patterns of mortality from cerebrovascular mortality (strokes) in contemporary Russia. Russia's levels were far higher than the classical models would have suggested. Moreover, stroke mortality in Russia was reportedly rising at the very time that the incidence of measured classical risk factors seemed to be declining.[42] The possibility that Russia's apparently anomalous reported trends in stroke and CVD mortality might have resulted from systematic miscoding or other data errors was carefully examined subsequently by an international team of demographers and public health experts headed by Vladimir Shkolnikov of the Max Planck Institute for Demographic Research. They concluded such statistical artifacts were not responsible for Russia's seemingly aberrant mortality patterns.[43]

The same perplexing contradictions seen with respect to stroke risk in Russia were evident in the MONICA data on CVD risk more generally. One study undertaken by University College of London's Martin Bobak and Sir Michael Marmot (a principal investigator in the Whitehall studies) systematically examined CVD patterns and measured risk factors from the MONICA data in all the post-Communist societies included in the survey.[44] They found that classical risk factors on the whole suggested there should have been higher CVD risk in post-Communist Europe than in Western Europe in the 1990s, but that the actual levels of CVD throughout post-Communist

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38 For background, see the website of the Framingham Heart Study, http://www.framinghamheartstudy.org/about/history.html.

39 The Whitehall Study was followed up by a successor study, by Whitehall II, which started in the mid-1980s. For details on both of these, see Michael Marmot and Eric Bruner, "Cohort profile: the Whitehall II study," *International Journal of Epidemiology* (December 2, 2004), http://www.ucl.ac.uk/whitehallII/Cohortprofile.pdf.

40 See Henry Blackburn, "Overview: The Seven Countries Study in Brief," http://www.epi.umn.edu/research/7countries/overview.shtm. The findings of the study were published in Ancel Keys, ed., "Coronary heart disease in seven countries," *Circulation* (1970): 1–211 (supplement to vol.41).

41 For more details, see "Background, Development and Organization of MONICA," http://whqlibdoc.who.int/publications/2003/9241562234_p1-40.pdf.

42 Hanna Tolonen et al., "Do Trends in Population Levels of Blood Pressure and Other Cardiovascular Risk Factors Explain Trends in Stroke Event Rates? Comparisons of 15 Populations in 9 Countries within the WHO MONICA Stroke Project," *Stroke* 33 (October 2002): 2,367–75.

43 Vladimir Shkolnikov et al., "Russian mortality beyond vital statistics: Effects of social status and behaviors on deaths from circulatory disease and external causes—a case control study of men aged 20–55 years in Udmurtia, 1998–99," *Demographic Research*, special collection 2, article 4 (April 2004).

44 Martin Bobak and Michael Marmot, "East-West mortality divide and its potential explanations: proposed research agenda," *BMJ*, no. 312 (February 17, 1996): 421–25.

Europe were much higher than the classical factors would have predicted. Within that post-Communist grouping, Russia appeared to be an especially acute instance of mismatch between classically predicted and actually measured CVD risk.

Other studies have corroborated this general finding and elaborated upon it. In a series of papers on the so-called Arkhangelsk 2000 Survey, for example, a joint Norwegian and Russian team has concluded that Russia's CVD mortality risks are indeed exceptionally high, but that the population's incidence of classical risk factors is not.[45] Indeed, in a study succinctly titled "High cardiovascular mortality in Russia cannot be explained by the classical risk factors," the authors conclude that,

> Though the cardiovascular mortality [level] is high in Russia, the calculated risk for coronary heart disease (the Framingham risk score and the Norwegian risk score) was lower in all age groups of men and women in Arkhangelsk compared with studies from Western Europe and the USA.[46]

The demonstrated mismatch between classical risk factors for CVD and real existing Russian cardiovascular mortality patterns poses profound and troubling questions to those who would propose to explain Russia's present health disaster. It is surely not the case that epidemiological reasoning fails to work within the boundaries of Russia, or on a population holding Russian Federation passports. Rather, the enigma of Russian mortality today would appear to be that today's high death rates are not predominantly generated by the same risk factors that have accounted for variations in the levels and trends of mortality among national populations in Western countries. Russia's population may be exposed to fundamentally different health and mortality risks, with respect to individual behavior, lifestyle routines, and social context, from those with which we in the West are intuitively familiar. This surmise would seem at least superficially consistent with the fact that Russia's patterns and dimensions of mortality are also completely unfamiliar outliers from the context of the Western experience.

Sociologist Richard Rose, in a series of penetrating studies, has provocatively argued that the Soviet system, in the generation before its demise, required of its subjects an "anti-modern" mentality and adaptive lifestyle. Only through these, he argued, could one hope to protect oneself and one's family from the uncertainties and irrationalities that subjects of late-era Communist rule routinely faced. Whether post-Communist Russia's populace still adheres to an anti-modern mentality by Rose's criteria is a question that will not detain us here. We will suggest that better understanding the enigma of contemporary Russian mortality will require public health researchers to pursue models and paradigms that do not resonate with the modern Western experience.

As the World Bank's Patricio Marquez and Marc Suhrcke have observed, "If we really intend to make a difference to health in Eastern Europe and beyond we must use the universal language of decision makers, based on sound epidemiological, clinical, and economic evidence."[47] This charge perforce requires, in the case of Russia, both further research to advance our understanding of the health disaster that has befallen modern Russia, and an unflinching recognition of how very much we still do not understand about the particulars of that public health crisis.

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45 Maria Averina et al., "High cardiovascular mortality in Russia cannot be explained by the classical risk factors. The Arkhangelsk Study 2000," *European Journal of Epidemiology* 18, no. 9 (2003): 871-78.

46 Averina et al., "High cardiovascular mortality in Russia," 871-78.

47 Patricio V. Marquez and Marc Suhrcke, "Combating non-communicable diseases," *British Medical Journal* 331, no. 7510 (July 23, 2005): 174.

Implications for Economic Development and Human Capital

In the modern era, powerful patterns of correspondence between health and socioeconomic development have emerged—patterns so apparent both across countries and in given populations over time, patterns so regular, routine and generally predictable that they may almost be described as "rules." Over the past two generations, the Russian experience has challenged nearly all of these ostensible rules, and has defied some of them outright. Russian citizens and government representatives bristle at comparisons that liken their country to states in Africa, perhaps understandably. Yet when it comes to international patterns of health and socioeconomic development, the two largest and most conspicuous outlier populations from tendencies observed elsewhere would clearly be the Russian Federation and the sub-Sahara's AIDS-ravaged societies. In many ways, it is Russia's deviation from health patterns observed elsewhere that is the more curious, and difficult to explain.

In the modern world, the risks of illness and mortality are supposed to decline with the spread of literacy and improvements in educational attainment. Yet in Russia levels of urbanization, educational attainment and age-standardized mortality have risen more or less in tandem for well over three decades. In the modern world, wealth is supposed to mean health, that is to say, lower general levels of mortality and morbidity. Yet Russia's economic progress has resulted in manifest degradation of public health conditions. In rich and poor societies alike, an epidemiological transition is supposed to be underway, in which socioeconomic development not only lowers mortality and levels but shifts the burden of disease toward non-communicable afflictions. Until Russia offered an "existence proof" to the contrary, no researcher or theorist seriously considered the possibility that the epidemiological transition might make a reverse course, with mortality from non-communicable diseases skyrocketing rather than regularly subsiding as industrialization proceeds. Russia has managed to attain impossibly high levels of injury for a moderately affluent country at peace, and to achieve CVD levels never before witnessed in history by countries at any income level.

Understanding the determinants of "high mortality and poor health with Russian characteristics," as we have already seen, is (at best) still a work in progress.[48] The implications and consequences of Russia's patterns of illness and premature mortality, unfortunately, are all too clear, especially as regards human wellbeing and prospects for economic development.

Russia's public health crisis, to begin, counts as a humanitarian tragedy of truly historic proportions. The homicidal dictator Josef Stalin is said to have coldly joked that one death was a tragedy, while one million deaths were just a statistic. But post-Communist Russia's toll of premature mortality is more than just a number to the many millions of persons at risk and the millions of loved ones whose own lives are disrupted. For the better part of a generation, independent Russia has suffered something akin to wartime population losses under year after year of peacetime political order. During wartime, mass loss of life can sometimes be justified as a sacrifice for greater reasons of state, or for the goal of national survival. There is no such redeeming justification for Russia's ongoing demographic hemorrhage of lives foreshortened. The loss is tragic, and all the more poignant because it is pointless.

Russia's catastrophically elevated mortality levels, of course, bear directly and adversely on the general wellbeing of the current population. Quite immediately and unavoidably, they affect

[48] We will address some of the additional evidence bearing on Russia's public health tragedy in the discussion of social capital.

living standards and quality of life. In purely economic terms, a foreshortened lifespan reduces an individual's own stream of consumption and may well influence lifetime consumption of other family members, imposing very real economic costs and welfare losses. Some pioneering economic research has suggested that the welfare gains through increased consumption via improved life expectancy may have equaled or exceeded gains from formally measured economic growth in a number of low-income countries in the postwar era. Russia's great leap backward in health raises the grim possibility that life expectancy reversals may have imposed corollary welfare losses on the Russian population that have gone unmeasured in official national income accounting.

Somewhat less rigorously, the toll on wellbeing that Russia suffers from its dreadful health crisis is suggested by the statistical rankings in the United Nations Development Program's annually tabulated Human Development Index (HDI). The metric attempts to offer insight into a country's living standards as they affect quality of life, in contradistinction to measures of GDP, GNI, or GNP which only approximate value added for the population as a whole. The HDI is calculated on the basis of indicators for health, education, and income levels. As such, the HDI is an arbitrary but by no means entirely unreasonable composite. Judged by this metric, Russia ranking is remarkably low. The 2008 HDI rankings evaluate 179 countries from around the world, and Russia is listed as number 73. Russia's ranking is over twenty places below Mexico's, for example, and far below Libya's and Venezuela's as well. Russia's immediate neighbors in the latest HDI rankings are Mauritius, which the Russian Federation just barely outranks, and Ecuador, which Russia falls slightly behind. These rankings, of course, should not be expected to specify quality of life in the countries under consideration with perfect precision. Even so, it is shocking that the Russian Federation, a country of virtually universal literacy and ostensibly high levels of general educational attainment, with a scientific cadre that mastered nuclear fission over half a century ago and launches orbital spacecraft and interplanetary probes today, should find itself with such a meager international developmental ranking. It is Russia's health situation that brings the country's ranking down so low.[49]

Russia's mortality crisis is not only driving down wellbeing today, it is also placing unforgiving constraints on economic productivity and growth, both today and tomorrow.

As we have seen, Russia's ongoing health crisis accounts for the entirety of the country's population decline over the past decade and a half. The upsurge of illness and death, furthermore, has been disproportionately concentrated among men and women of working age, meaning that Russia's labor force has been contracting more rapidly than the population overall.

To make matters worse, health and economic potential are intimately related, both for people in economically active age groups and for society as a whole. Health is a critical and central element in the complex quantity that economists have termed "human capital." Just as improvements in health promote human capital accumulation, so do stagnation and retrogression in health status compromise the entire project of human capital augmentation.

The robust correspondence between health and economic potential across nations today is evident, among other places, in international comparisons of life expectancy at birth and per capita output. In the contemporary international economy, one additional year of life expectancy

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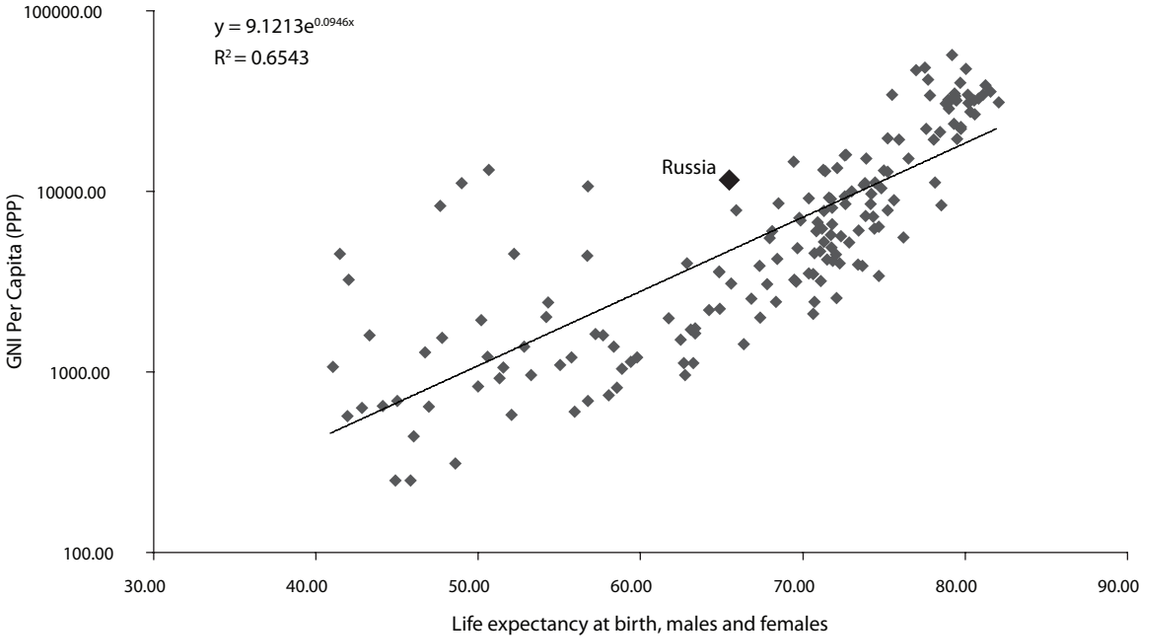
[49] United Nations Development Program, "Human Development Indices," http://hdr.undp.org/en/media/HDI_2008_EN_Tables.pdf. It is worth mentioning that Russia's ranking in the Human Development Index is dramatically lower than the country's global ranking in GDP per capita—a ranking comparable to Saudi Arabia's. Such a disparity is suggestive of extreme structural distortions of the sort often found today in societies with weak human resource bases and relatively high dependence upon enclave sectors generating revenues from the sale of natural resources.

FIGURE 4.20 GNI per capita vs. total life expectancy in the Russian Federation vs. 167 other countries, 2005



SOURCE: World Bank, World Development Indicators (Washington, D.C.: World Bank, 2008).

at birth is associated with an increase in per capita output of about 8% (see **Figure 4.20**). A decade of lost life expectancy improvement, *ceteris paribus*, would correspond with a missed doubling of per capita income.[50]

In effect, Russia's health crisis translates into a smaller and more debilitated workforce. This makes for less productive potential now, and the implications for the future are hardly more reassuring. We will discuss the health and mortality outlook for Russia in further detail in the coming pages. At this point, we may simply note that the general expectation that greater wealth will conduce to better health in Russia in the years immediately ahead receives no great support from the Russian experience over the past decade.

[50] Some readers will correctly object that a single-variable association between life expectancy and per capita output will lead to statistically biased results, since other factors that also contribute to higher levels of wealth and productivity (such as education, for example) may be strongly correlated with health but go unmeasured here. A more econometrically sophisticated examination would undoubtedly produce somewhat lower estimates of the expected international correspondence between an additional year of life and proportional increase in per capita GDP. This is, however, beside the point for our purposes here. We are using life expectancy as a simple, short-cut predictor of per capita GDP levels. Under such circumstances, it is indeed appropriate to proxy the entire package of socio-developmental changes that attend improvements in life expectancy through the life expectancy variable itself.

CHAPTER 5

Migration: Russia's Unfamiliar New Dilemmas of Personal Choice

Despite the Russian polity's well-chronicled and widely lamented drift away from its initial liberal aspirations in the early years of the post-Communist era, the Russian population today almost certainly enjoys greater freedom to move about as they please, both at home and abroad, than at any previous time in the past several centuries, and perhaps even than at any previous juncture in their country's history. This centrally important fact of demographic life should not be overlooked, for it holds true despite the past decade's consolidation of an increasingly unaccountable and closed political apparatus under the Putin coterie. Unlike so much of the demographic terrain in contemporary Russia, furthermore, this enhancement of personal choice in the realm of migration is full of positive portent for individual wellbeing and national economic potential.

The Russian population's unprecedented ease of movement today speaks in part, but only in part, to the broader global revolution in transport and communications, which has made travel progressively cheaper and more commonplace around the world over these past several decades. The main factor, of course, has been political in character, as erstwhile state shackles that bound Russia's people have loosened or broken altogether.

The Character of Migration in Soviet And Tsarist Times

In the Soviet era, voluntary migration by the Kremlin's subjects did sometimes occur but was always essentially contingent on when personal preferences actually coincided with state plan or decree. From its very beginnings to its final demise, the Soviet totalitarian project was always informed by Lenin's ominous dictum: "we recognize nothing

private."[1] Voluntary migration at the citizen's own behest had no place in this vision. Indeed, migration was "counter-revolutionary." Emigration overseas, for example, was regarded as tantamount to treason, and officially permitted only under the rarest and most exceptional of circumstances. Voluntary immigration from abroad, for its part, was never an issue with which planners had to contend—in the seven decades of Soviet rule, it almost never took place. New people from abroad were at times added to the Soviet ranks, sometimes in large numbers, but this was almost always due to territorial annexation or conquest.

To a truly terrifying degree, the relocation of people during the Soviet era betokened tragedy and catastrophe, either of an individual nature or on a national scale. The mass exodus of people (and productive plants) from western Russia in the face of the Nazi invasion may have been the most momentous of these migration-convulsions,[2] but it was also representative of the character of many others. Forced migration, often under conditions intended by official design to imperil the victims' survival, was the lot of untold millions in Russia during these decades. The *gulag* swelled, pharonic construction projects gobbled workers, and entire ethnicities, in accordance with the Soviet judicial theory of "collective responsibility" and practice of "collective punishment," were deported and resettled at gunpoint into forbidding or altogether unlivable environs.[3]

While the conditions of migration, and the status of migrants, in imperial Russia could hardly but compare favorably with the horrors of the Soviet era, the inescapable fact of the matter is that the staggering absolutism of Tsarist rule likewise left most Russians with very little free choice over their own personal travel or more extended movement in the centuries leading up to the Soviet nightmare.

As historian Marshall Poe reminds us, as long ago as the sixteenth century the Russian state insisted upon sealing the borders of its territory: "foreigners were not allowed to enter Moscovy, and Russians were not permitted to leave the country without the express permission of the tsar."[4] No less significant, the empire also bound the overwhelming majority of its subjects to the land through the institution of serfdom. This system of controls was gradually expanded, and methodically tightened, during the sixteenth and seventeenth centuries, the very time, ironically, when freedom of personal movement in the rest of Europe was markedly increasing.[5] Severe state strictures against volitional migration or mobility, indeed, stand out as an integral and indeed defining feature of Russian imperial rule. In the early nineteenth century, Marquis de Custine (who visited Russia a few years after De Tocqueville's travels in the United States) famously referred to the Russian empire as the "prison of the peoples." He was specifically referring to the tsarist treatment of the realm's subjugated nationalities, but his words might equally have been applied to the Russians' own situation, given his depiction of what he termed "the compulsory immobility of things" for Russians of every station:

> Existence [here] is so fettered and restrained, that everyone seems to me secretly to cherish the desire of changing his abode, without possessing the power. The

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[1] V. I. Lenin, "Address to the Young Communists," in *Collected Works* Vol. 31 (Moscow: Foreign Languages Publishing House, 1996): 291–92.

[2] Cf. Richard J. Overy, *Why The Allies Won* (New York: W.W. Norton, 1996): 180–182.

[3] A number of fine accounts of this tragic chapter in history are available, including Robert Conquest, *Kolyma: The Arctic Death Camps* (New York: Viking Press, 1978); Anne Applebaum, *Gulag: A History* (New York: Doubleday, 2003); and Pavel Polian, *Against Their Will: The History And Geography of Forced Migrations in the USSR* (Budapest: Central European University Press, 2004).

[4] Marshall T. Poe, *The Russian Moment in World History* (Princeton, NJ: Princeton University Press, 2006): 54.

[5] Cf. Jerome Blum, *Lord and Peasant in Russia, From the Ninth to the Nineteenth Century* (Princeton, NJ: Princeton University Press, 1961).

> great have no passports, the poor no money, and all remain as they are, patient through despair.[6]

The tsarist complement to "compulsory immobility," of course, was coerced movement, which also played an important administrative role in imperial Russia. Indeed, throughout the entire Romanov dynasty, Russian policy deliberately used penal exile as a political instrument, mainly to colonize and populate the unwelcoming Siberian expanse.[7] While the imperial system for controlling the movement of its subjects relaxed markedly, and in some respects even liberalized, in the second half of the nineteenth century, forcible mass deportations were being promulgated in Russia almost up to the eve of the October Revolution.[8]

The Character And Challenges of Migration in the Post-Soviet Era

As the twentieth century drew to a close, Russia's traditions and legacies concerning domestic and international migration would have doubtless qualified as the very least free among any of the countries of Europe. Arguably, they might have ranked as one of the very least free of any land. Now this is all, so to speak, ancient history. With the end of Communism, independent Russia's population was, suddenly, no longer effectively enserfed. Instead the Russian population immediately came to enjoy a range of liberties in movement and travel it had never before experienced.

This is not complete and unqualified freedom, to be sure. Every Russian over the age of fourteen is obliged by law to carry official identification documents on their person, but these papers are now akin to the national identity cards used in some Western European countries (including France), not as "internal passports." A citizen's ability to make good on the Constitution's legal guarantee to "the freedom of movement and the place to stay and reside" (Article 27-1) is compromised by a number of realities today. They range from the turmoil that has notoriously beset certain areas, such as Chechnya, to the reported corruption that allegedly requires some would-be Russian citizens to pay extralegal bribes to officials for what should be the automatic formality of registering when they arrive in new locales.

All the same, the U.S. government's annual compendium of "Country Reports on Human Rights Practices," the most recent edition of which criticizes the Russian Federation for a wide variety of identified and alleged abuses, has this to say about the Russian citizen's new rights to travel:

> The law provides for freedom to travel abroad and citizens generally did so without restriction; however, there were exceptions. Citizens with access to classified material needed to obtain police and FSB clearances to receive an external passport.
>
> The law prohibits forced exile, and the government did not employ it. The law provides all citizens with the right to emigrate, and this right was generally respected.[9]

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6 Astolphe de Custine, *Letters From Russia* (New York: New York Review Books, 2002): 536.

7 Cf. Andrew A. Gentes, *Exile To Siberia, 1590–1822* (New York: Palgrave, 2008).

8 Eric Lohr, *Nationalizing The Russian Empire: The Campaign Against Enemy Aliens During World War I* (Cambridge: Harvard University Press, 2003).

9 U.S. Department of State, "2009 Human Rights Report: Russia," http://www.state.gov/g/drl/rls/hrrpt/2009/eur/136054.htm.

That qualified but guardedly positive assessment underscores what for Russia amounts to truly revolutionary recasting of policy.

This recasting of Russia's approach to migration has opened up new demographic vistas for the country and its people. In the Soviet era, the notion of moving abroad was all but unthinkable; the idea that ordinary people might voluntary immigrate into territory governed by the Kremlin would have been utterly unimaginable. Within established Soviet boundaries, "voting with one's feet" would have sounded only slightly less outlandish than voting for change via the ballot box. The powerful new political fact of migration due to personal choice rather than political *ukase* [i.e., command] in Russia brings with it commensurately important new implications for the individual, society, and the economy —most of these overwhelmingly beneficial in nature. With patterns of domestic and international migration shaped nowadays largely by personal preferences and citizen's own motivations and calculations, ordinary geographic flow of population in the new Russia can be regarded as a mechanism that supports human development and enhances productivity and prosperity.

Yet while the implications of Russia's new migration patters are overwhelmingly beneficial, they are not exclusively and invariantly so. Greatly increased freedom of movement also poses some unexpected dilemmas for Russia. Two of these loom especially large for country and state.

The first of these entails the ramifications of major influxes of immigration to the Russian Federation by non-Russian nationalities and ethnic groups—ethnicities including, but by no means limited to, populations of Islamic heritage. Independent Russia's record of assimilating such newcomers may not justify the outright alarm that has been voiced in some domestic political circles, but the country's performance in integrating non-Russian immigrants into the fabric of society appears to have been only a limited success to date, with the future of this project remaining an open question.

The second unanticipated complication, not entirely unconnected to the first, relates to the role of voluntary domestic migration in further unpeopling what are already sparsely settled but geographically vast tracts of Russian Federation territory. These are areas where a concerted in-movement of outsiders could (if only in theory) tilt the local demographic balance, in the process raising profound questions for the Kremlin about national security, or even national sovereignty. The region where these questions loom largest, of course, is the Russian Far East, the six million-plus square kilometers of easternmost Siberia where population density averages barely one person per square kilometer, and where Russia shares a long land border with China, the world's most populous country.

International Migration Trends in Post-Communist Russia: What We Know And How We Know It

What sorts of information on international migration does the Russian government collect, and how good is this data? Addressing these questions would seem to be of the essence before proceeding to any discussion of what the available statistics seem to say about patterns of international migration for Russia today. **Table 5.1** helps us to address them.

Olga Chudinovskikh of the Laboratory of Population Economics and Demography at Moscow State (M.V. Lomonosov) University identifies eleven separate sources of statistical information currently being compiled by Moscow that relate to migration in and out of Russia, outlined in Table

TABLE 5.1: Main Migration Data Systems in Russia

Main migration data systems in Russia 2-11- parts of Central data bank of foreigners (in future)	Authority	Quality of data and methodology	Availability
1. Current statistics of migrants (based on registration procedure) – both foreign and internal flows	Ministry of home affairs/ Federal statistics service	Unsatisfactory, considerable underestimation	Available
2. Data on permits on arrival for residence (foreigners) and departure for residence (Russian citizens)	Ministry of home affairs	Moderate. Not processed since 2002.	Was partially available up to 2002
3. Data on refugees and asylum seekers	Ministry of home affairs (Federal migration service- FMS)	Satisfactory	Available
4. Data on work permits for foreign employees and Russian citizens employed abroad via Russian employment agencies	Ministry of home affairs (FMS)	Unsatisfactory, considerable underestimation	Available
5. Data on residence permits and permissions for temporary residence	Ministry of home affairs (FMS)	No information on methodology	Not available
6. Migration cards statistics	Ministry of home affairs (FMS)	No information on methodology	Not available
7. Border statistics	Federal security service (Federal Border Service)	No information on methodology	Partially available
8. Data on foreign students	Ministry of science and education	Satisfactory	Available
9. Visas and invitations statistics	Ministry of foreign affairs	No information on methodology	Not available
10. Ministry of Taxes data	Ministry of Taxes	No information on methodology	Not available
11. Population Census	Federal statistics service	Satisfactory	Available

SOURCE: Olga Chudinovskikh, "Migration Statistics in Russian Federation: basic problems and possible solutions," (PowerPoint presentation at UNECE/UNFPA/NIDI Workshop on Migration Statistics, January 24-28, 2005), www.unece.org/stats/documents/2005/01/migration/5.e.ppt.

5.1. A multiplicity of organs, agencies, and ministries are responsible for contributing to the country's statistical tableau on cross-border population movements. In addition to the Federal Statistical Service (Goskomstat/Rosstat) and the Federal Migration Service (a branch of the Ministry of Home Affairs, or Interior Ministry), the generation of official Russian data on international migration involves the Ministry of Science Education, the Ministry of Taxes, the Ministry of Foreign Affairs, and even the Federal Security Service (FSB, the successor to the KGB).

To make matters worse, the numbers gathered for many of these data series still lack the most basic degrees of methodological transparency. This is true of visa statistics, border control statistics, residence permit statistics, migration card statistics, and tax data. For better or worse,

however, these methodological issues do not immediately pose problems for our research, since the information collected for those purposes is not available in any case to the general public.

Of the remaining sources of data on Russian migration, two of the most important, publicly available series are deemed to be of poor quality and reliability. These include the oft-cited figures on international migration from the Interior Ministry and Goskomstat, and the Interior Ministry's data on work permits for foreigners in Russia and Russians overseas.[10]

This leaves just three data sources that are both publicly available, and, in Chudinovskikh's judgment, of satisfactory reliability: data on refugees and asylum-seekers, data on foreign students, and census-based migration data (such as the stock of foreign-born population living in Russia at the time of the national population count). Yet even here, as we will see with the census data on migration, some big questions about accuracy can be raised without any entirely satisfactory answers.

It seems fair to say that the available data on immigration and emigration for the Russian Federation is highly problematic, being incomplete, irregular, and riddled with contradictions and inconsistencies. While this may be disappointing, it should not be surprising. For today's modern societies with relatively sound vital registration systems, migration data is invariably the weakest link in the overall system of demographic statistics. In its manifest shortcomings and limitations, furthermore, Russia's migration data looks more or less similar to the current figures on immigration being compiled in the rest of Europe and the non-European OECD countries.

The problems with migration statistics in the United States are notorious. Indeed, Washington is demonstrably incapable of keeping track of the numbers of foreign citizens entering, leaving, and/or residing in the United States. The trouble was vividly highlighted by the U.S. Census in 2000. That population count enumerated 281 million persons, over five million more people than the Census Bureau's own inter-censal population estimate had projected for that year.[11] The discrepancy derived from a seriously inaccurate estimate of net migration over the intervening decade, major inflows of undocumented or illegal immigrants had simply gone unregistered and unrecognized by the entire U.S. statistical apparatus.

According to estimates by researchers at the Pew Hispanic Center in Washington, the "unauthorized" immigrant population in 2008 amounted to roughly twelve million persons, accounting for about 4% of the total U.S. population and about 30% of the country's foreign-born.[12] These figures turn out to be quite close to the official U.S. estimates for the size of the illegal or undocumented alien population, which was placed at 11.6 million for early 2008 by researchers at the U.S. Department of Homeland Security.[13] For the European Union, interestingly enough, some estimates likewise suggest that around 30% of net migration to the region may be irregular or unauthorized.[14] However, there seems to be much more uncertainty about the absolute size of

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[10] An additional source of once-relatively reliable information—Interior Ministry data on permits for residence—reportedly stopped being processed in 2002.

[11] Cf. Steven A. Holmes, "After Standing Up to Be Counted, Americans Number 281,421,906," *New York Times*, December 29, 2000.

[12] Jeffrey S. Passel and D'Vera Cohn, *A Portrait of Unauthorized Immigrant in the United States,* Pew Hispanic Center, April 2009, http://pewhispanic.org/files/reports/107.pdf.

[13] Michael Hoefer, Nancy Rytina and Bryan C. Baker, "Estimates of the Unauthorized Immigrant Population Residing in the United States: January 2008," *Population Estimates,* Department of Homeland Security, Office of Immigration Statistics Policy Directorate, February 200), http://www.dhs.gov/xlibrary/assets/statistics/publications/ois_ill_pe_2008.pdf.

[14] Yuri Andrienko and Sergei Guriev, "Understanding Migration in Russia," *CEFIR Policy Paper Series*, No. 23, Center for Economic and Financial Research at New Economic School, November 2005, http://www.cefir.ru/download.php?id=216, 16.

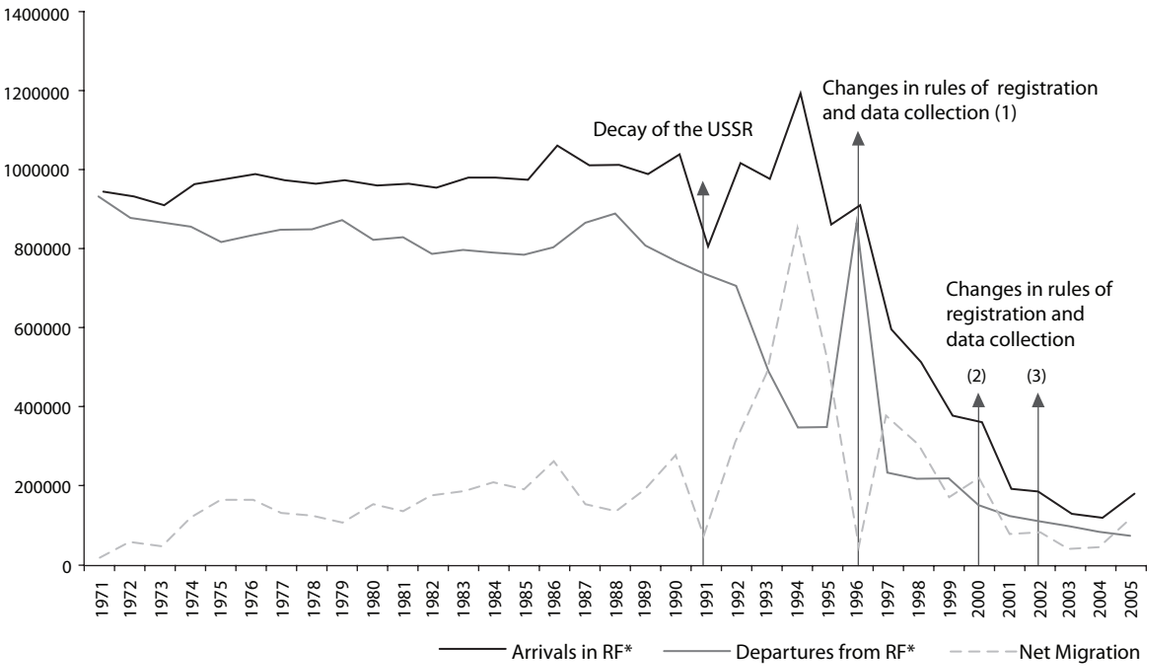
the undocumented alien population for the European Union than for the United States, as the estimates for the EU conventionally fall in a wide range of three million to seven million.[15]

This brief review of the availability and reliability of international migration data for the Russian Federation should underscore two points for us. First, we cannot simply take Russia's migration data as "given." It requires more careful scrutiny than the birth and death numbers we have mainly used up to this juncture. Second, shortcomings of Russia's migration data have likely resulted in an underestimate of net immigration into the Russian Federation due to unauthorized and undocumented immigration, as is the case for the United States and the European Union.

International Migration Flows for the Russian Federation: Official Data vs. International Estimates

Russia's officially tabulated figures on international migration are presented in **Figure 5.1**. According to this data, during the first fifteen years after the end of Soviet power (1992–2006) the Russian Federation attracted about 7.4 million immigrants, while releasing roughly 3.1 million emigrants abroad. The implication of these official figures is that the Russian Federation would have experienced a net positive balance of migration of roughly 4.3 million over this period.

FIGURE 5.1: Official In-migration, Out-migration, and Net migration in Russia, 1971–2004



SOURCE: Olga Chudinovskikh, "Statistics of International Migration in the CIS Countries." (PowerPoint presentation at United Nations Expert Group Meeting on Measuring International Migration: Concepts and Methods, December 4-7, 2006, New York United Nations Department of Economic and Social Affairs - Statistics Division, DESA), http://unstats.un.org/unsd/Demographic/meetings/egm/migrationegm06/DOC%206%20Moscow%20Univ%20CIS%20STATISTICS%20OF%20INTERNATIONAL%20MIGRATION%203.ppt.

[15] Franck Düvell, "Clandestine Migration in Europe," *Social Science Information* 47, no. 4 (December 2008): 479–97.

In itself, that total for net migration into Russia in the decade and a half immediately following the Soviet era does not necessarily sound implausible. But Figure 5.1 looks to be patently implausible in a number of other respects. These official numbers would seem to suggest that the demise of the Soviet system brought on a virtual collapse of migration into, and out of, the territory now known as the Russian Federation.

Officially recorded immigration totals for Russia averaged 873,000 persons a year during the last Soviet decade (1982–91), as against a reported average of 494,000 a year for the decade and a half from 1992 through 2006. Such numbers imply that the absolute annual volume of immigration into Russia would have fallen with the end of the Soviet system, and by over 40%. Even more surprising, to go by the official figures, the end of Communism brought about a radical drop-off in emigration. Whereas Russia's emigration officially averaged 728,000 persons a year for 1982–91, it was reportedly just 206,000 a year for 1992–2006, an implied drop of over 70%.

These results, needless to say, are a statistical artifact, and a distortion of true and underlying trends that must be understood in the context of Russia's overall transition over the period under consideration. The "international" migration traced by these numbers during the Soviet era was, in fact, almost entirely intra-Soviet population movement to and from the fourteen other Soviet Republics of the USSR. With the end of the Soviet system, moreover, the nature of international travel to and from the Russian Federation fundamentally changed, as did the political imperative that had previously informed the monitoring of cross-border population movements.

When totalitarianism in Russia ended, the urgent political priority of tracking of migration necessarily ended as well. This relaxation had direct implications for administrative resources, bureaucratic procedures, and ultimately the completeness and accuracy of Russian Federation data on immigration and emigration. The changes in laws, policies, and rules for the collection of Russian Federation migration information since the end of Communism have been described in detail by Russian specialists.[16] Suffice it to say that these emendations were, for better or worse, responsible for a progressive degradation in the quality of Russia's international data (and the capacities to gather it). We should heed Chudinovskikh's warning and judgment, here:

> [t]he decline in [reported] migration inflow [into Russia]… is caused by changes in rules of migration data collection and not only by some objective factors. Total number of immigrants since the middle of 1990s should be at least two times higher than official statistics shows.[17]

Insofar as official Goskomstat/Rosstat numbers place total immigration over the decade at about 3.3 million, this would suggest a major undercount of international migratory activity for Russia in recent years.

Perhaps paradoxically, even as the official statistics for the post-Communist era were registering an ostensible slump in gross migration for the Russian Federation by comparison to the Soviet era, other official statistics were depicting a boom in international travel across Russia's borders (as **Figure 5.2** illustrates). In the year 2005, Goskomstat/Rosstat identified a total of just 177,000 immigrants relocating into Russia but recorded over 22 million entries into the country

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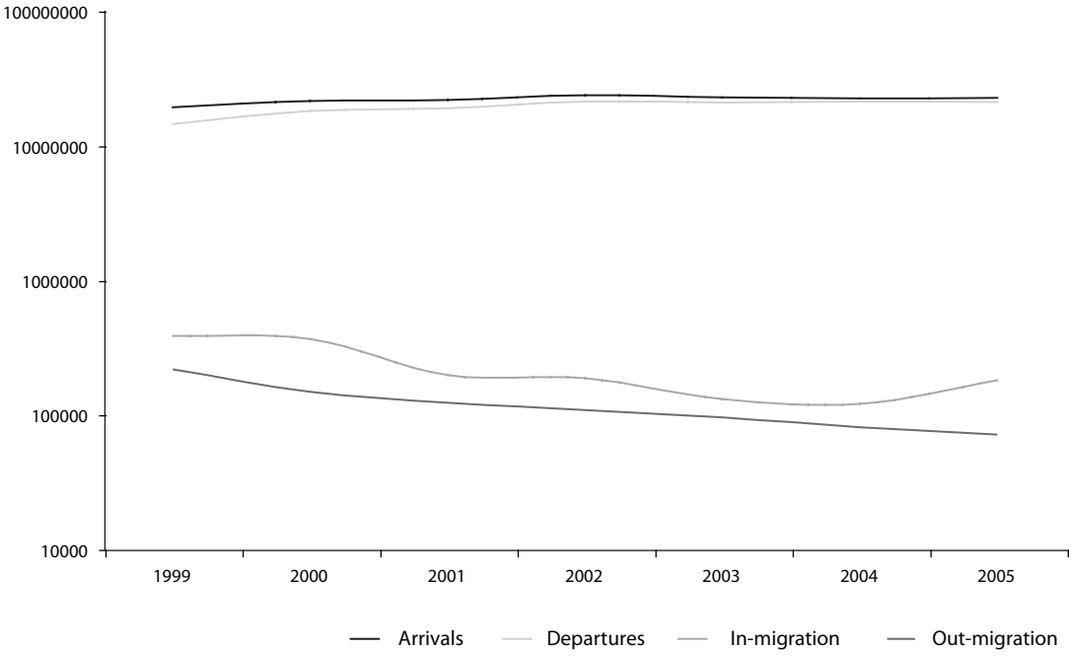
[16] Olga Chudinovskikh, "Comparability and Exchange of International Migration Statistics in CIS Countries," United Nations Statistical Commission and Economic Commission for Europe, December 2007, www.unece.org/stats/documents/ece/ces/ge.10/2008/wp.5.e.ppt.

[17] Olga Chudinovskikh, "Statistics of International Migration in the CIS Countries (Provisional Version)," (paper presented at the UNECE Workshop on International Migration Statistics for Countries of CIS and SEE, Edinburgh, Scotland, November 23–24, 2006): 8, http://www.unece.org/stats/documents/ece/ces/ge.10/2006/mtg1/3.e.pdf.

FIGURE 5.2: Reported Arrivals and Departures, and Reported In-migration and Out-migration in Russia, 1999–2005



SOURCE: Olga Chudinovskikh, "Statistics of International Migration," Presented at United Nations Expert Group Meeting on Measuring International Migration: Concepts and Methods, December 4-7, 2006, United Nations, New York.; and Olga Chudinovskikh, "Migration Statistics in the Russian Federation: basic problems and possible solutions", report on UNECE/UNFPA/NIDI Workshop on Migration Statistics, January 24-28, 2005.

by international travelers.[18] Furthermore, between 1993 and 2005, whereas officially registered immigration flows into Russia plunged by over 80%, reported cross-border travel into Russia jumped nearly fourfold. Clearly and incontrovertibly, vastly more people are traveling into and out of the Russian Federation nowadays than in Soviet times.[19] When over one hundred times as many entrants as immigrants are being tabulated by official authorities each year, the scope and scale for the potential under-reporting of both immigration and net migration should be immediately apparent (this is a point to which we will return later in this chapter).

The state of uncertainty regarding net migration in post-Soviet Russia is indicated by **Table 5.2**. This contrasts official Russian figures bearing on net migration with corresponding estimates by the United Nations Population Division (UNPD) and the U.S. Census Bureau. Unfortunately, the numbers provided by the UNPD and the Census Bureau are not fully comparable with one another, in terms of years of coverage. UNPD offers only five-year averages, permitting us to span the period 1991–2005, and while the Census Bureau published annual net migration estimates, these only begin in 1996. Neither series, in any case, offers complete annual coverage for the post-

[18] United Nations, *Statistical Yearbook 2007* (New York: United Nations, 2008): 656, Table 61.

[19] Data from the United Nations *Statistical Yearbook* makes the point. In 1976, international tourist entries into the USSR were reported to total under 3.9 million. The number of visitors overseas from the USSR was said just barely to exceed 2 million (and almost all of this to "fraternal" Warsaw Pact countries). These figures, recall, encompassed international travel to and from all of the Soviet Union—not just Russia. Source: United Nations, *Statistical Yearbook* 1977 (New York: UN, 1978): Table 164. By way of comparison, in 2002, over 20 million arrivals and departures from the Russian Federation were being officially processed each year. Source: Olga Chudinovskikh, "Migration Statistics in Russian Federation: basic problems and possible solutions," (PowerPoint presentation at UNECE/UNFPA/NIDI Workshop on Migration Statistics, January 24–28, 2005): www.unece.org/stats/documents/2005/01/migration/5.e.ppt.

TABLE 5.2: Net Migration Estimates, 1990-2008, Russia

	Goskomstat Official	Goskomstat Implicit	UNPD	U.S. Census Bureau
1990	183,756	275,800		
1991	16,741	136,977		
1992	252,877	266,799		
1993	440,252	544,529		
1994	845,732	997,277		
1995	519,519	671,706	444,000	
1996	355,384	514,586		526,507
1997	364,664	529,356		518,236
1998	300,174	442,745		433,093
1999	164,763	280,329		284,390
2000	213,610	372,015	442,000	319,828
2001	72,284	288,975		147,450
2002	77,927	248,916		78,388
2003	35,126	93,080		34,634
2004	39,362	98,914		38,747
2005	107,432	122,332	193,000	39,977
2006	132,319	153,517		39,779
2007		265,570		39,586
2008				39,397

SOURCES: The Demographic Yearbook of Russia: 2007 Statistical Handbook, State Committee of the Russian Federation on Statistics (Goskomstat), Moscow, 2007; U.S. Bureau of the Census International Programs Center, "International Data Base," http://www.census.gov/ipc/www/idb/informationGateway.php. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2008 Revision, http://esa.un.org/unpp.

NOTE: Implicit migration calculated as natural increase (births minus deaths) minus population change. UNPD Estimates are averages for 5-year periods.

Soviet era that commenced more or less at the start of 1992. Even so, the demographers at UNPD and the Census Bureau commonly seem to judge Russia's formal statistics on migration flows as under-registering net migration. Where official Goskomstat/Rosstat numbers would place Russia's cumulative net migration over the years 1991–2005 at about 4.4 million, UNPD estimates the net inflow at about 5.4 million—roughly a million more. For 1996–2006, Russia's formal figures on immigration and emigration indicate a net influx of 2.1 million, while the Census Bureau estimates a net immigration of more than 2.4 million for those same years. For 1996–2005, the years for which they commonly offer estimates of net migration into Russia, UNPD estimates are almost 30% higher than Census Bureau estimates (3.1 million vs. 2.4 million).

Yet interestingly enough, the net migration estimates from both the Census Bureau and the UNPD appear to be substantially lower than the implicit estimate of net migration available from other Goskomstat/Rosstat data. This implicit estimate of migration flows, which is also shown in Figure 5.2, can be derived by subtracting net natural increase from total estimated population change for each given calendar year. This measure of implicit migration flows suggests a total net influx to the Russian Federation for 1996–2006 around 47% higher than the Census Bureau

estimates and about 14% higher than UNPD's. For the years 1991–2005, this implicit estimate of net migration into Russia is close to 30% higher than UNPD's—a difference of over a million and a half.

Even more striking is the difference between the formal and the implicit Goskomstat/Rosstat estimates of net migration into Russia in the post-Soviet era. According to the formal migration numbers, Russia's cumulative net inflow of population during over the period 1992–2006 amounted to 4.3 million. To go by the implicit estimates, the total instead would have been 6.4 million—a difference of close to 50% and over two million persons.

Net Surviving Migrants: An Estimate of International Migration Flows Based on Official Russian Data

The discordance between these four time series, needless to say, is far from trivial. Which set of numbers appears most accurate? It may be useful to offer one additional estimate of migration flows in the hope of diminishing rather than adding to the uncertainties confronting the reader. This metric we might term "net surviving migrants."

Since we have detailed estimates of Russian population for key dates,[20] additional official estimates of population structure for other useful dates,[21] fairly accurate birth totals from 1989 onward, and carefully estimated age-specific Russian death rates by year for 1989 through 2006,[22] we can calculate the expected number of survivors of the 1989 census by age and sex for future years, under the assumption of zero migration. We can then subtract those totals from Russia's actually enumerated or actually estimated population totals by age and sex in subsequent years. Finally, for those born after the 1989 census, we use official annual birth data from 1989 onward and annual mortality schedules from the Human Mortality Database (HMD) to complete the overall calculation of the Russian Federation's net surviving migrant population for the 1989–2006 period.

This metric does not quite provide an estimate for the post-Communist period per se, since we are obliged, by dint of data limitations, to use the 1989 census year as the starting point for our calculations, rather than the actual end of the Soviet era (late December 1991). Our calculations are perforce for the period 1989–2006, and as such these figures must be used with the understanding that they offer a necessarily imperfect first approximation of the actual but unobserved trends during the first decade and a half of Russia's post-Communist experience (1992–2006). This metric, furthermore, cannot measure or proxy total net migration flows for the period under consideration. Our method can only estimate the number of survivors from the post-1989 migration flows as of the beginning of 2007. The period under consideration spans eighteen calendar years. Inevitably, some (perhaps considerable) proportion of the contingent of migrants who had arrived in Russia during those years would be expected to die of accidents or natural causes before the period's end. Our metric will necessarily understate overall net migration flows into Russia in direct proportion to the pertinent survival schedules for these newcomers. What this metric will offer, quite simply, is a reading of the role migration has played since 1989 in compensating for Russia's domestically generated depopulation trends.

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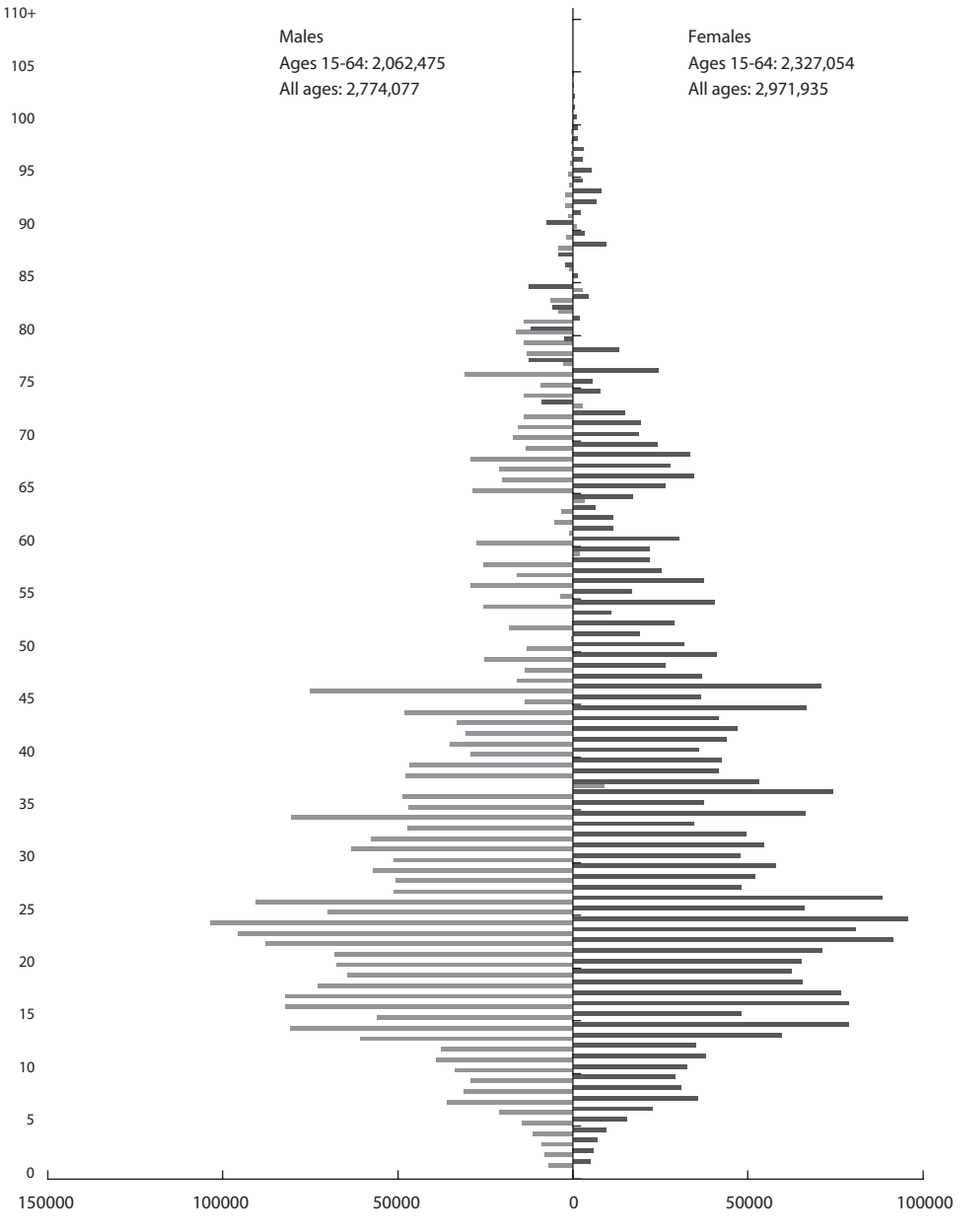
20 For these estimates, see the 1989 and 2002 censuses.

21 A recent date for which an officially estimated age-sex breakdown of the Russian population that concords with available mortality data is January 1, 2007.

22 The most recent year available in the Human Mortality Database.

FIGURE 5.3: Indicative Net Immigration, by Age and Sex, Russia, January 1, 2007
(Estimated Net Surviving Migrants) Total ages 15–64: 4,389,529; All Ages: 5,746,413

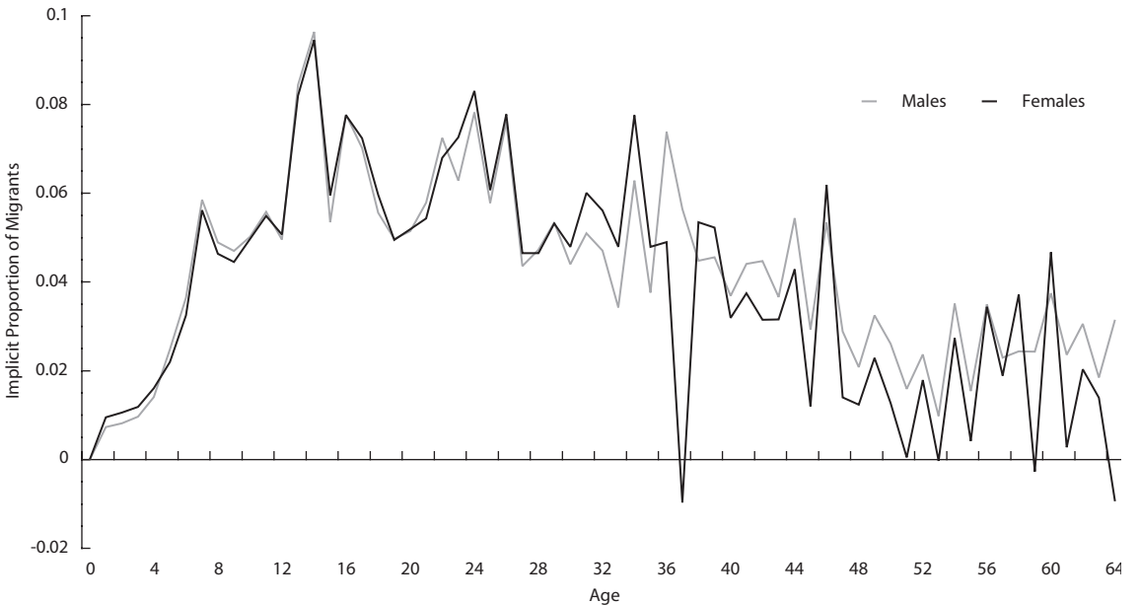


SOURCE: Human Mortality Database, www.mortality.org; and The Demographic Yearbook of Russia: 2007 Statistical Handbook.

The results of our calculations are presented in **Figures 5.3** and **5.4**. As of the start of 2007, the Russian Federation's estimated population was about 5.7 million higher than would have been the case if the country had experienced its selfsame mortality patterns from 1989 through 2006, but in the absence of all international migration.

Our estimated "net surviving migrant" population is mainly (52%) female, while Russia overall population was 54% female at the beginning of 2007. Thus our estimated net migrant population is slightly more male than is Russia overall. At first glance, that sort of discrepancy might appear mildly consistent with what we would expect to find if economic factors were important in shaping

FIGURE 5.4: Indicative Proportion of Net Surviving Migrants in Total Population by Age and Sex: Russia, January 1, 2007



SOURCE: Human Mortality Database, www.mortality.org; and The Demographic Yearbook of Russia: 2007 Statistical Handbook.

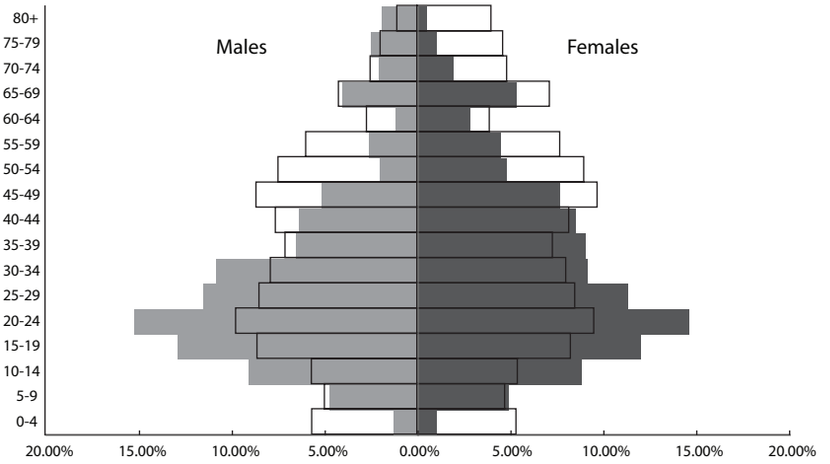
the migration into Russia. Under an "economic paradigm of migration," we would further expect migrants of working age to account for a disproportionate share of our estimated population grouping, and for people of younger working ages to be especially heavily represented. Sure enough, where just 63% of Russia's overall population in 2007 fell within in the country's official working age cohorts (16 through 59 for men, 15 through 54 for women), over 70% of the net surviving migrants came from these same age groups (see **Figure 5.5**). By the same token, where adults in their twenties and thirties accounted for 31% of the Russian Federation's overall population at the beginning of 2007, they made up over 42% of our net surviving migrant population.

Our estimated population, in sum, exhibits a generally plausible structure and composition for a migrant population in which economic factors had helped affect the decision to move to a new country.[23] To be sure, some of the migration flow into Russia in the initial years after the breakup of the Soviet Union has been classified as "forced migration." Under non-catastrophic circumstances, such migrant flows would be expected to mirror the overall demographic structure of the populations from which they were drawn. Russia's net surviving migrant population includes and represents those who were subject to such forced migration, but the overall contours

[23] We say this while noting that our calculations do betray a few quirks and anomalies, especially for the extremely elderly age groups (persons in their eighties, nineties, and older).Our method suggests that an entirely disproportionate share of Russia's elderly population would be due to net migration, including over half of Russia's centenarians. We discount these results, and attribute them to the technical issues entailed in the accurate count of the most elder members of the population by year of age, and in the accurate estimation of survival schedules for these same groups. In any event, these quirks do not have an appreciable bearing on our overall estimates of net surviving migrant population, insofar as the eighty-plus grouping makes up only a little more than 1% of this total estimated population.

Our method also suggests that a strikingly high proportion of the Russian Federation's teens (13–18 years of age) would have been comprised of migrants as of New Year's Day 2007. We regard this result as curious, and somewhat suspicious. Working age in Russia is officially designated as 16. Thus, an influx of would-be laborers in their late teens would not seem *prima facie* outlandish. There is less of an obvious explanation for why the country's 13–15 age group should seem, in our calculations, to be comprised of youthful immigrants from other countries. It is possible that inconsistencies or inaccuracies in the Goskomstat intercensal estimates of the residential population of the Russian Federation may account for some of this seeming overrepresentation of foreign youth. Presumably we will have a better basis for estimating net surviving migrant population after the next census is completed, and its returns released.

FIGURE 5.5: Age Distribution of Estimated Net Surviving Migrant Population vs. Total Population: Russian Federation, January 1 2007



SOURCE: Human Mortality Database, www.mortality.org; and The Demographic Yearbook of Russia: 2007 Statistical Handbook.

of the net surviving migrant population suggest that economic influences were the more powerful determinant of migration into Russia during the post-Communist era.[24]

Our indicative estimates of net surviving migrant population for the period 1989–2006 suggest that migration has played an important role in cushioning population decline in the Russian Federation, and that it has played an even greater role in slowing the drop of Russia's working age population. Between the census of 1989 and the start of 2007, according to Goskomstat figures, Russia's population declined by about 4.8 million, falling from 147.0 million to 142.2 million. Absent the next influx depicted in Figures 5.4 through 5.6, we would expect Russia's population to have dropped by well over ten million by the start of 2007, or by more than twice that much. Put another way, by these calculations, migration looks to have compensated for a bit more than half of the population decline Russia would otherwise have experienced.

The demographic contribution of migration to Russia's potential workforce is equally apparent. Officially, the Russian government defines its population "of working ages" to comprise men 16–59 and women 16–54. By that definition, between the 1989 census and New Years Day 2007, Russia's official working age population actually increased in size, from 83.7 million to 90.1 million. Nearly two thirds of this increment—4.1 million out of 6.4 million—would have been explained by estimated net immigration.

If we consider instead the definition of working age population conventionally used by demographers and others internationally, that is, ages 15 through 64 for men and women alike, an even starker picture would emerge. By that taxonomy, Russia's population of working ages would have increased by just 2.6 million, from 98.8 million in 1989 to 101.4 at the start of 2007. But our estimated net surviving migrant population made up 4.4 million members of Russia's conventionally construed population of working ages at the beginning of 2007. For this more

[24] Note in addition that our calculations present an estimated net surviving population by year of age at the end of the 18-year period under consideration—a framework that tends to bias the measured age of the indicated population upward, certainly by comparison with the notional age at immigration. Despite these inherent methodological biases, median age for our net surviving migrant population as of Jan. 1, 2007 was under 30 years. This compares with the U.S. Census Bureau's estimate of 38.5 years for the Russian Federation population at mid–2007.

broadly defined working-age population, in other words, migration made the difference between modest growth and what otherwise would have been absolute decline.

Not least important, migration apparently played a significant role in augmenting the ranks of Russia's younger labor force. Net migration could not forestall the decline of Russia's cohorts of twenty- and thirty-somethings, which shrunk between 1989 and 2007 by over three million (from 46.9 million to 43.8 million). Without the net immigration Russia experienced after 1989, however, the country's pool of population between the ages of 20 and 40 would have fallen by almost another 2.4 million (that is, from 46.9 million to 41.4 million).

By our calculations, the net influx of migrants after 1989 accounted for about 4% of the officially estimated Russian Federation population as of January 1, 2007, an addition equivalent to every 25th person in the country. For the population "of working ages" (as Moscow defines it), such net migrant flows would have increased the prospective demographic pool by 4.8%, equivalent to every 22nd prospective worker in these age groups. For Russia's young men and women in the twenties and thirties, the net migration after 1989 accounted for about 5.6%, an addition equivalent to every eighteenth person in this grouping.

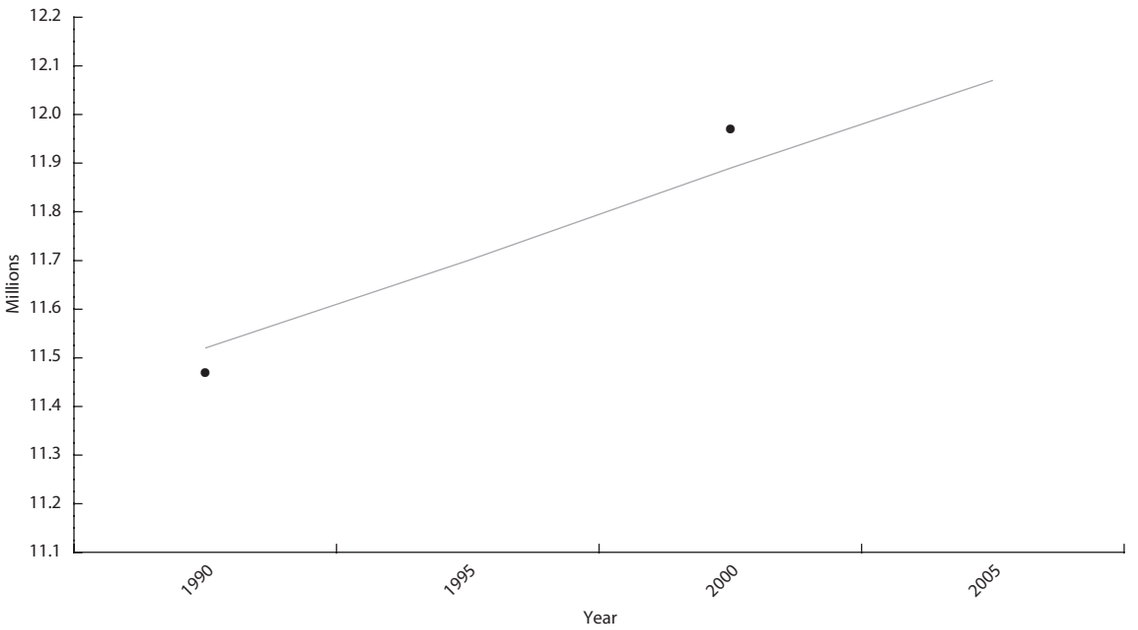
By these estimates, we may glean some sense of the demographic, and by extension the economic, contribution of net migration flows to post-Communist Russia. Of course, these estimated figures tend to understate those contributions, rather than exaggerating them. For one thing, the computations depend upon official Russian estimates of the country's 2007 population. To the extent that illegal or undocumented entrants and others are underestimated, our estimates of the impact of net migration will correspondingly fall short of reality. Moreover, we are attempting to describe the significance of net flows rather than gross flows, much less stocks. We know that many millions of people chose to leave Russia after the end of Soviet rule. Despite their departure, those people are still making a tangible economic contribution to their native country, as we shall see below. Evidently, immigration flows were more than adequate to compensate numerically for the throngs of Russian citizens who seized the opportunity to move abroad once this freedom was generally available.

International Migration Stocks: Estimates of Foreign-Born Population in Contemporary Russia

International migration may be considered in terms of flows (as we have already done), or alternatively in terms of stocks: that is, the number and composition of immigrants physically present in the receiving country at any given point in time. Estimates of foreign-born residents thus afford yet another aperture on the phenomenon of migration into the Russian Federation. The Soviet census of 1989 and the Russian Census of 2002 both compiled information on country or place of birth and nationality, permitting tabulations of Russia's foreign-born population over time. Independent estimates of foreign-born population stock for Russia are also provided by the UNPD and the World Bank, as part of more comprehensive studies on the worldwide distribution and composition of migrant populations.

In 2002, according to the Russian Federation census, Russia's self-identified foreign-born population totaled nearly twelve million persons. These totals do not include the 430,000 people were classified as "stateless persons" and the nearly 1.3 million additional people who did not reply to the relevant questions, though presumably at least some of the people from these two

FIGURE 5.6: Stock of Foreign Born Population in Russia, 1990–2005: UNPD Estimates vs. Goskomstat/Rosstat Estimates



SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "Trends in Total Migrant Stock: The 2005 Revision," http://esa.un.org/migration; and USSR Statistical Committee, 1989 USSR Population Census; Federal State Statistics Service, Census 2002, Table "Population by place of birth and current place of residence in the Russian Federation," Migration Policy Institute's Country and Comparative Data Database, http://www.migrationinformation.org/DataHub/countrydata/data.cfm.

groupings would also be included in a fully accurate tally of the foreign-born. This would have been an only slightly higher total for Russia than in 1989, when the Soviet census enumerated 11.5 million persons born outside the boundaries of the then Russian Soviet Federative Socialist Republic (RSFSR). The UNPD and the World Bank, for their part, offer estimated trends for the growth of the foreign-born population in the Russian Federation that are close to Russia's official figures but also bounded by them (see **Figure 5.6**).

The UNPD and World Bank numbers permit us to place Russia's estimated migration patterns in international perspective (see **Table 5.3**). As of 2005, Russia, with its roughly 12 million estimated immigrants, would in absolute terms be the world's second-largest receiving country. It falls behind only the United States (with an estimated foreign-born population that year of more than 38 million), and ahead of third-ranked Germany (10 million). By the UNPD's reckoning, every sixteenth international migrant on the planet in 2005 resided in the Russian Federation.

Gosomstat/Rosstat statistics and UNPD estimates also permit us to place Russia's proportion of foreign-born population in international perspective. Because Russia's enumerated foreign-born population grew a bit between these two censuses and national population totals declined a bit during the same inter-censal period, the estimated proportion of the foreign-born in Russia's population rose from 7.8% in 1989 to 8.3% in 2002. UNPD estimates for 2005 place Russia's foreign-born population stock at 8.4% of the total population. If accurate, this would make the Russian Federation look like an "ordinary" European country, as Europe's overall proportion of foreign-born residents is placed at 8.8% for 2005. Russia's foreign-born population share, however,

TABLE 5.3: Top Ten Countries with the Greatest Stock of Foreign Born Population, 1990–2005: UNPD Estimates (Migrants as Percentage of Total Population in parentheses)

	1990	1995	2000	2005
USA	23,251,026 (9.1)	28,522,111 (10.6)	34,802,754 (12.2)	38,354,709 (12.9)
Russia	11,524,948 (7.8)	11,706,951 (7.9)	11,891,829 (8.1)	12,079,626 (8.4)
Germany	5,936,181 (7.5)	9,092,443 (11.1)	9,802,793 (11.9)	10,143,626 (12.3)
Ukraine	7,097,100 (13.7)	7,062,900 (13.7)	6,947,100 (14.1)	6,833,198 (14.7)
France	5,906,752 (10.4)	6,089,154 (10.5)	6,277,189 (10.6)	6,471,029 (10.7)
Saudi Arabia	4,743,010 (29.0)	4,610,708 (24.7)	5,136,418 (23.9)	6,360,730 (25.9)
Canada	4,318,805 (15.6)	5,003,496 (17.1)	5,555,019 (18.1)	6,105,722 (18.9)
India	7,493,204 (0.9)	6,950,740 (0.7)	6,270,666 (0.6)	5,700,147 (0.5)
United Kingdom	3,753,370 (6.6)	4,198,050 (7.3)	4,764,824 (8.1)	5,408,118 (9.1)
Spain	765,585 (1.9)	1,009,021 (2.5)	1,628,246 (4.0)	4,790,074 (11.1)

SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, "Trends in Total Migrant Stock: The 2005 Revision," http://esa.un.org/migration.

NOTE: Ranking is for estimated absolute size of foreign born population as of 2005.

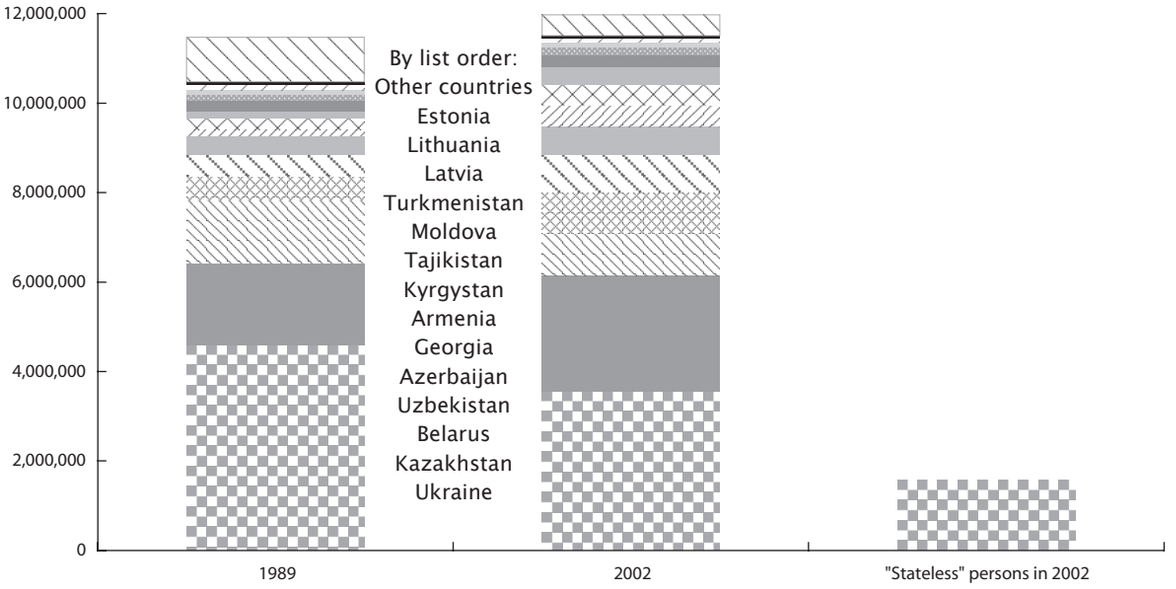
would be somewhat lower than the corresponding level for the more developed regions as a whole that same year (9.5%).

Curiously, however, the UNPD figures would seem to suggest that Russia has experienced less net immigration of newcomers than the rest of Europe over the past two decades. The result seems curious because it is well-known that the Russian Federation experienced major cross-border population movements in the immediate aftermath of the breakup of the Soviet Union, and then subsequently with the inflow of migrant laborers from Central Asia and elsewhere. Yet whereas the rest of Europe is estimated to have witnessed a fairly rapid increase in the share of foreign-born population during those years (from 6.6% in 1990 to 8.9% in 2005), Russia's increase is calculated to have amounted to less than one percentage point.

Are the figures for Russia a faithful reflection of actual trends, or do they somehow distort the true record of recent migration patterns? To approach that question, we can begin by attempting to check the estimates for internal consistency. **Figure 5.7** presents Russia's official data on the composition of the self-identified foreign-born population in the 1989 and 2002 censuses.

According to Goskomstat/Rosstat, Russia witnessed some major changes in the distribution of foreign-born residents between 1989 and 2002. The totals for foreign-born residents from certain countries dropped sharply, in Ukraine and Belarus in particular. The former reportedly fell by almost 22% (over one million); the latter, by 37% (or over 440,000). At the same, there was an upsurge in representation among the foreign born by people from other places, notably Kazakhstan (41%), Georgia (48%), Uzbekistan (74%), Azerbaijan (77%), Kyrgyzstan (77%), Tajikistan (150%), and Armenia (219%). In all, these countries accounted for an inter-censal increase in Russia's foreign-born of about 2.5 million.

FIGURE 5.7: Reported Stock of Foreign-Born Population in Russia by Country of Origin, 1989 vs. 2002 Censuses



SOURCE: USSR Statistical Committee, *1989 USSR Population Census*; and Federal State Statistics Service, *Census 2002*, Table "Population by place of birth and current place of residence in the Russian Federation," Migration Policy Institute's Country and Comparative Data Database, http://www.migrationinformation.org/DataHub/countrydata/data.cfm.

On their face, these numbers generally track with what we would have expected to find—namely, evidence of a big movement out of Russia by Slavic nationalities (attendant to the dissolution of the USSR) and a big movement in by people from other CIS countries (seeking economic opportunities in the post-Soviet environment).

But does the arithmetic actually work? Recall that we estimated the net influx of post-1989 population alive in Russia at the beginning of 2007 at roughly 5.7 million. Consider further that not all the foreign-born residents counted in Russia in 1989 would have survived to be enumerated in 2002, much less 2007, in the absence of any migration whatever. Given Russia's survival schedules from 1989 through 2006, as estimated by the Human Mortality Database, a rough approximation suggests that the country's 1989 foreign born population would have been expected to drop through mortality by about 2.15 million as of 2002, and by about 2.8 million as of year-end 2006, all other things being equal.[25]

Can these apparently disparate quantities be reconciled? Hypothetically so, but the key would be repatriation from abroad of "Russian" nationals, who would not be counted in the "foreign-born" population.[26]

What then of "Russian" immigration to Russia? Between 1989 and 2002, Russia reported 7.7 million more deaths than births, a net population drop of 1.8 million, and an increase in foreign-born population of about 500,000. To make the math work, Russia would have needed around 5.4

[25] This crude estimate presumes that the non-Russian nationalities in the Russian Federation shared both Russia's overall population structure and her age-specific annual mortality rates. In all likelihood, these are counter-factual assumptions, but they at least indicate the general magnitude of the totals under consideration here.

[26] Note that unauthorized or otherwise undocumented immigration into Russia is a factor that cannot help reconcile these accounts since such people by definition do not appear in the demographic ledgers in the first place.

TABLE 5.4: Stock of Foreign-born Population in Russia, 1989 Census, 2002 Census, and Hypothetical 1989 Census Survivors as of 2002 (estimated)

	1989	2002 (actual)	2002 (estimated)
Ukraine	4,595,811	3,559,975	3,733,325
Kazakhstan	1,825,035	2,584,955	1,482,535
Belarus	1,408,619	935,782	1,144,267
Uzbekistan	529,814	918,037	430,385
Azerbaijan	478,594	846,104	388,777
Georgia	423,040	628,973	343,649
Armenia	151,484	481,328	123,055
Kyrgyzstan	260,914	463,521	211,949
Tajikistan	153,806	383,057	124,942
Moldova	228,795	277,527	185,858
Turkmenistan	140,551	175,252	114,174
Latvia	99,932	102,518	91,178
Lithuania	116,115	86,199	94,324
Estonia	65,485	67,402	53,196
Other	994,088	466,192	807,530
Total	11,472,083	11,976,822	9,329,143

SOURCES: USSR Statistical Committee, *1989 USSR Population Census*; and Federal State Statistics Service, *Census 2002*, Table "Population by place of birth and current place of residence in the Russian Federation," Human Mortality Database, http://www.mortality.org.

NOTE: Hypothetical 1989 census survivors in 2002 calculated using 1989 overall age structure and 1989–2002 age- and sex-specific death rates from Human Mortality Database.

million Russian newcomers between 1989 and 2002, uncounted both by the 1989 census and by subsequent birth and death statistics. For 2005 (the year of the UNPD's most recent stock estimate at the time of this writing), the requisite totals would have been roughly similar. With a net surfeit of deaths over births estimated at about 10.2 million for the years 1989–2005, a net population drop of 4.3 million, and an increase in the foreign-born of approximately 600,000 between 1989 and 2005 (using Goskomstat/Rosstat figures for the starting point and UNPD estimates for the endpoint), we would need a net immigration on the order of 5.3 million Russians to square the official accounts and the international estimates.

Yet as we noted already in chapter 1, official migration statistics report that the net inflow of ethnic Russians was just 3.5 million between 1989 and 2005—less than two thirds of the totals needed.[27] It would still leave an apparent gap of about 1.8 million persons between the foreign-born stock numbers and flow-based estimates, not a trivial discrepancy, even in a country the size of Russia.

We can identify that puzzle here, but for now we cannot solve it. One can speculate, of course. The solution might have something to do with such factors as "ethnic self re-identification, although one would tend to think that the phenomenon would reduce rather than increase the population

[27] For more on the dynamics and economics of Russian migration to the Russian Federation, see Olga Lazareva, "Russian Migrants to Russia: Choice of Location and Labor Market Outcomes," (unpublished paper, Center for Economic and Financial Research, April 2008): http://papers.ssrn.com/sol3/papers.cfm?abstract_id=947057.

totals tallied as Russian, at least in the post-Soviet period. Illegal and otherwise undocumented immigration, if fully and faithfully tracked, would surely add to Russia's total estimated foreign-born population (more about this momentarily). The fact of the matter, for better or worse, is that those migrants are not being enumerated, and thus cannot bear directly on the puzzle at hand.

Further research will be needed before we can hope to untangle the apparent inconsistencies currently embedded within Russia's existing data on international migration. Appreciable progress in such research, in turn, may depend upon obtaining new and better data on both Russia's total residential population and her total stock of foreign-born residents. The pending Russian Federation census could help in both regards, but this undertaking, originally scheduled for 2010, was officially postponed. Moscow provisionally rescheduled its national population count for 2013,[28] but recent word is that the census may indeed take place in 2010 as originally planned. A better understanding of the demographics of immigration in contemporary Russia, consequently, must for now remain an agenda for the patient.

Russia's International Financial Remittances: A Consequence And Reflection of Cross-Border Migration

Despite the uncertainties we have already identified in Russia's data on international migration, we know that cross-border population movements have played an appreciable role in the Russian Federation in both mitigating general population decline and augmenting working-age population in the era of post-Communist independence. Migration thus may be said to have economic and well as demographic significance for modern Russia. Among the economic consequences of these contemporary migratory movements, new patterns of international financial remittances—transfers back home of funds, claims, and assets from overseas workers and entrepreneurs—are especially striking.

Like estimates of the international migratory population, estimates of international remittances are bounded by considerable margins of uncertainty at both the national and the global level. Uncertainties notwithstanding, the magnitudes in question are large. The UNPD, for example, estimates worldwide remittances in 2004 came to about $225 billion, with remittances to developing countries accounting for around $145 billion of that total.[29] By way of comparison, this would amount to almost twice the $79 billion the developing regions obtained that same year through official development assistance, or ODA.[30]

There are two principal sources for estimates on remittances flows to and from Russia: the World Bank and the Central Bank of Russia (Russian Federation Central Bank). Their estimates, however, are quite far apart. For the year 2005, for example, the Russian Central Bank's figures for Russia's remittances abroad were only half as high as the World Bank's, and its numbers for remittances into Russia were less than three-fourths. Given the inherent methodological difficulties that almost always weigh toward underestimation of remittances, we might tend to prefer the World Bank's series over the Russian Central Bank's in our analysis, with the understanding that even the higher series here may undercount true remittance levels. In any case, we can use both

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28 "Russia postpones nationwide population census to 2013," *RIA-Novosti,* September 18, 2009, http://en.rian.ru/russia/20090918/156176042.html.

29 UNPD, "International Migration 2006," http://www.un.org/esa/population/publications/2006Migration_Chart/Migration2006.pdf.

30 ODA estimates from World Bank, *World Development Indicators 2009.*

TABLE 5.5: Estimated Remittances to and from Russia (Million Current $U.S.), 1994–2008

	Outflows - World Bank	Outflows - RCB	Inflows - World Bank	Inflows - RCB
1994	$3,695		$4,563	
1995	$3,939		$2,503	
1996	$4,037		$2,771	
1997	$3,502		$2,268	
1998	$2,552		$1,925	
1999	$1,409		$1,292	
2000	$1,101		$1,275	
2001	$1,823		$1,403	
2002	$2,226		$1,359	
2003	$3,233		$1,453	
2004	$5,188		$2,495	
2005	$6,989	$3,112	$2,918	$2,154
2006	$11,438	$5,529	$3,091.40	$3,580
2007		$8,780		$4,545
2008		$12,673		$4,778

SOURCE: Source: World Bank figures are from World Development Indicators CD-ROM, World Bank; and Russian Central Bank Figures are from The Central Bank of the Russian Federation, "Cross-border Transactions of Resident Individuals in Breakdown by Purposes," http://www.cbr.ru/eng/statistics/crossborder/print.asp?file=C-b_trans_purp_08_e.htm.

NOTE: Russian Central Bank (RCB) remittance inflows and outflows calculated as sum of categories: "remittances without quid pro quo" and "other."

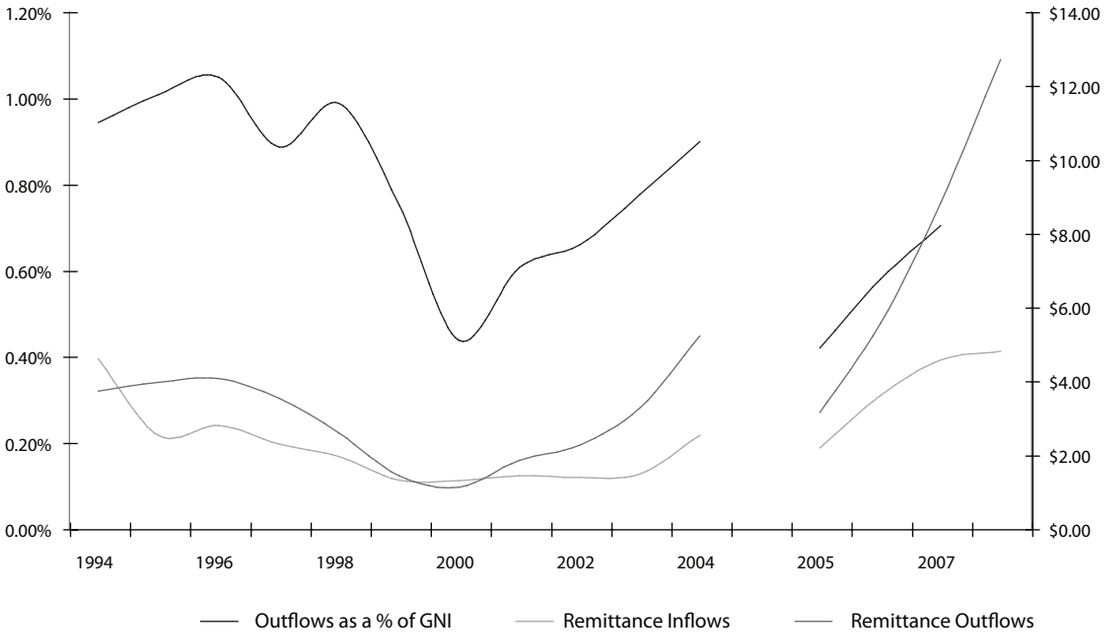
series to illuminate the role that remittances are playing in Russia due to international migration (see **Table 5.5**).

Between 1994 and 2000, according to World Bank estimates the total volume of remittances coming into Russia was roughly of the same order of magnitude as the volume of funds remitted abroad ($16 billion versus $20 billion). In two of those years—1994 and 2000—the flow of remittances into Russia exceeded the flow overseas. Such findings may surprise, but they are a reminder of the important fact that many citizens chose to move abroad after the end of the Soviet era, but not to end their ties with their motherland. The economic contributions of overseas Russians, as shown in **Figure 5.8**, figure materially in their country's domestic development and wellbeing—a point we shall return to momentarily.

By the World Bank's reckoning, 1994–2000 was a period of stagnation for the Russian economy. By some measures the Russian economy actually appeared much smaller in 2000 than six years earlier.[31] Denominated in current U.S. dollars, according to World Bank calculations, the volume of remittances to and from Russia stagnated and even declined over those same years. Thereafter, with the Russian Federation's big upsurge in economic growth and the attendant strengthening

[31] For example, using constant 2005 international dollars, Russian Federation GDP was estimated at $1.21 trillion in 1994 and $1.26 trillion in 2000. Calculating GDP on the basis of official exchange rates in constant 2000 US dollars, the figures would be $250 billion in 1994 and $259 billion in 2000. Using the World Bank's "Atlas method," on the other hand, Russia's exchange-rate based GNI, in current US dollars, would have been $393 billion in 1994 but just $250 in 2000, a drop that reflects the collapse in the international value of the ruble after the financial crisis of 1998. Source: World Bank, *World Development Indicators 2009*.

FIGURE 5.8: Estimated Remittance Inflows, Outflows, and Remittances as a % of GNI: Russia 1994–2008



SOURCE: 1994-2004 data comes from World Development Indicators CD-ROM, World Bank; 2005-2008 data comes from Central Bank of Russia, http://www.cbr.ru/eng/statistics/; Remittances data comes from "Cross-border Transactions of Resident Individuals in Breakdown by Purposes"; GNI data from World Development Indicators CD-ROM, World Bank (2008 GNI calculated from 2008 Russia GDP in nominal rubles, calculated as 24.8529 rubles per dollar); and Goskomstat, http://www.gks.ru/bgd/free/b00_25/IssWWW.exe/Stg/dvvp/i000170r.htm.

NOTE: Remittance inflows and outflows are calculated as the sum of the following categories: "remittances without quid pro quo" and "other."

of the ruble,[32] over the period between the dawn of the new century and the advent of the global economic crisis in late 2008, the annual volume of Russia's dollar-denominated remittances soared. By 2006, measured in current U.S. dollars, estimated remittance inflows into Russia were more than two and a half times their 2000 level, and remittances from Russia were up five-fold. This explosive growth in remittances, according to the Central Bank of Russia, continued through 2008. Between 2006 and 2008, according to the central bank, remittances from Russia jumped by more than 100%, while remittance transfers to Russia surged an additional 33%. By 2008 Russia's overall volume of remittance commerce was placed at over $17 billion, with outflows almost three times as high as inflows.

The exponential upswing in estimated Russian remittances abroad may seem to suggest an equally momentous influx of migrant laborers has been absorbed by Russia in recent years. We should go slowly before drawing such inferences, though. Estimates of remittances, while informative, offer a highly imperfect mirror for overall patterns of immigration. Even if these flows could be estimated without error, they would be affected by a number of important un-observables. These include the depth and durability of the immigrants' attachment to communities overseas, changes in the immigrants' propensities to save, and of course changing wage and income patterns among the immigrants themselves. Remittances patterns are further affected (and distorted) by

[32] Between 2000 and 2008, Russia's real effective exchange rate rose from 100 to 183 (indexing the benchmark year 2000 at 100) according to calculations by the International Monetary Fund. IMF, *International Financial Statistics Yearbook April 2009* (Washington DC: IMF, 2009): 1038.

the convention of measuring these flows in U.S. dollars, even though immigrant laborers and entrepreneurs in Russia are presumably accumulating ruble-denominated assets.

A dollars-to-dollars comparison makes the point. In the year 2004, the World Bank's dollar-denominated ratio of remittances abroad to gross national income (GNI), using current prices and current exchange rates almost reached its 1994 levels: 0.90% versus 0.94% (that ratio had dropped with the economic crisis in the late 1990s, but then recovered after 2000). In and of itself, this data does not offer obvious support for the proposition of a long-term increase in the size of Russia's population of temporary laboring migrants, or, by extension, in the size of the country's pool of undocumented or illegal workers.

It is true that the dollar-denominated ratio of Russia's remittances abroad (as estimated by Russia's central bank) to Russia's worldwide value-added (i.e. GNI) seemed to increase from 2005 through 2008. Such numbers could be taken as evidence of an appreciable increase in international migrant labor within Russia—an increase, given what we have seen of other Russian demographic data, that would have gone largely uncounted. The data series in Figure 5.8 is discontinuous—we cannot be sure that the ratio of remittances to GNI in 2008 was in fact higher than it was almost a decade and half earlier in Russia. In any case, for reasons already mentioned, we should be cautious about interpreting the actual import of the relationship of these estimated remittance flows to underlying migration flows.

We can be less guarded, however, about our interpretation of the general economic implications of the activities that produced these remittance outflows. These remittances abroad were generated by Russia's domestic demand for labor, and local returns to entrepreneurship. They reflect services that increased Russian productivity and living standards above the levels that would have been obtained in the absence of these immigrants. The remittances, in addition, may have played an important role in promoting development and enhancing living standards in other countries, especially in recent years. According to the Russian Central Bank, for example, cross-border remittances in 2008 (by post offices and money transfers alone) totaled $1.16 billion for Kyrgyzstan, and exceeded $2.5 billion for Tajikistan (see **Figure 5.9** for more details). By such a reckoning, remittances from Russia would have accounted for nearly a fifth of Kyrgyzstan's total GNI that year, and for over a third of Tajikistan's.[33]

According to estimates by the Central Bank, the Russian Federation was already one of the world's top ten remitter countries as early as the year 2003 (when such outflows, measured in current dollars, stood at just an eighth the level they would reach in 2008).[34] Less attention has been devoted to the fact that Russia is also a major recipient of remittances from overseas, but this important fact should not go overlooked. According to the Russian Central Bank estimates, by 2003 Russia was also one of the world's top twenty "remittee" countries, receiving about $1.5 billion in such cross-border transfers that year. As we have seen, remittances into Russia increased dramatically over the following years.

To appreciate the economic role of remittances into Russia, we might compare the estimated magnitude of these international financial flows to the Russian Federation's exports of commercial services (the category of international economic transactions to which earnings from labor and entrepreneurship abroad might most closely be likened). Russia's revenues from commercial services

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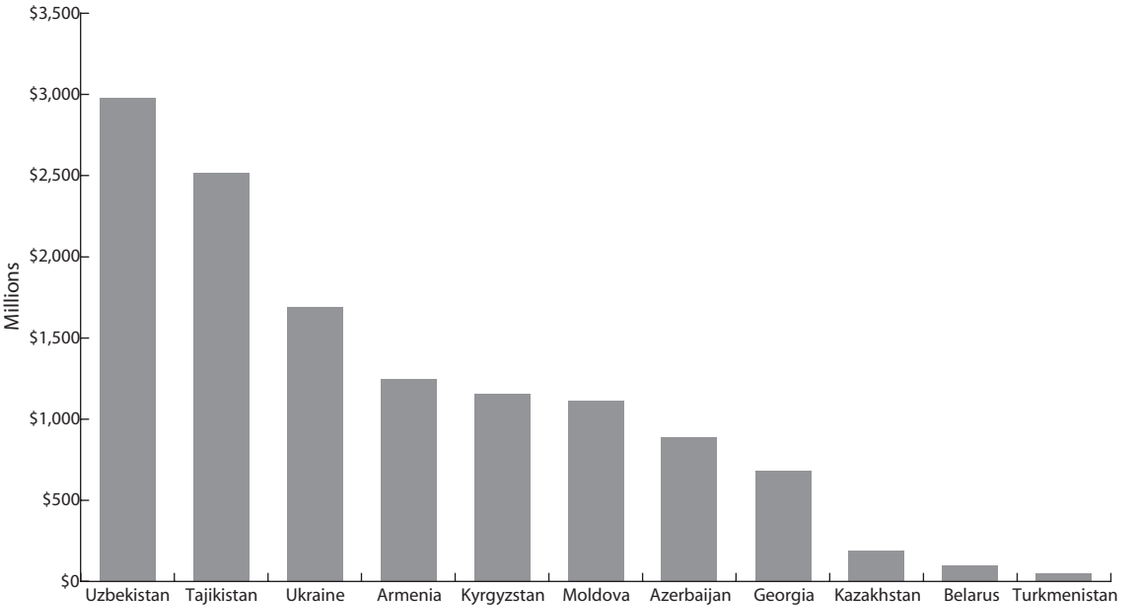
[33] Estimates from UN Statistical Office National Accounts Main Aggregates Database, "GNI in current dollars at current exchange rates," http://unstats.un.org/unsd/snaama/Introduction.asp.

[34] Central Bank of the Russian Federation, "Cross Border Remittances: Russian Experience," 2005, http://www.adb.org/documents/events/2005/adb-iadb-mif-undp/cbr-the-russian-experience.pdf.

FIGURE 5.9: Reported Cross-border Remittances via Money Transfer Systems and Post Offices, from Russia to CIS Countries in 2008 (Million Current U.S. Dollars)



SOURCE: Central Bank of Russia, "Cross-border Remittances via Money Transfer Systems and Post Offices in Breakdown by Countries in 2008," http://www.cbr.ru/eng/statistics/CrossBorder/print.asp?file=Rem_countries_08_e.htm.

remain surprisingly limited, and far below those of such small Western countries as Switzerland or Ireland. They are more comparable to those of Turkey (a middle-income economy with only about half Russia's population).[35] Measured against earnings from international commercial service exports, Russia's earnings from remittances are by no means negligible. Though this ratio has tended to decline with the growth and development of the Russian economy, the country's remittances nonetheless amounted to about one-ninth of its total commercial service exports even in the boom year of 2008 (see **Figure 5.10**). By comparison with Turkey, incidentally, inward remittances are decidedly more important for the Russian economy. By World Bank estimates for the year 2005, remittances were not only greater in absolute terms but also on a per capita basis. They were larger in relation to the country's aggregate service exports, and they accounted for a higher fraction of overall GNI—this despite Turkey's sizeable overseas population of Gastarbeiter in Germany and foreign workers elsewhere.[36]

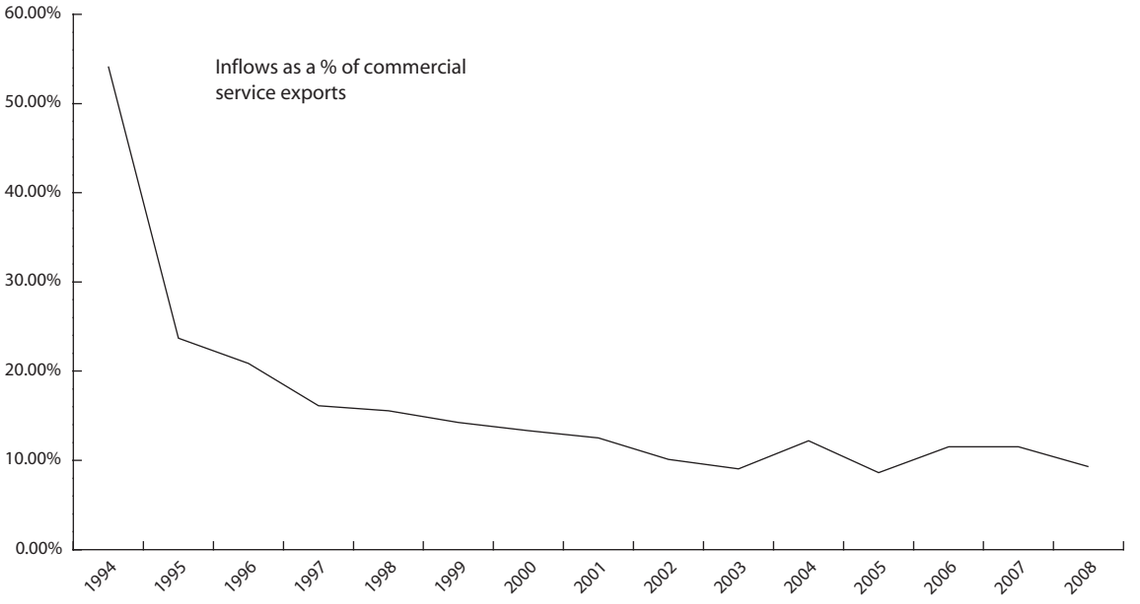
Replacement Migration for the Russian Federation?

Cross-border population movements, in sum, have played an appreciable, and appreciably positive, role in Russia's post-Communist development. They may in fact be regarded as one of the brightest spots in the country's generally gloomy overall demographic tableau. The migration picture for Russia, however, is not without complications. Possibly the most central of these concerns is the matter of ethnicity and assimilation in this multi-ethnic European state. Russia is

[35] World Bank, *World Development Indicators (WDI) Online 2008*, http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=6.

[36] World Bank, *Migration and Remittance Factbook 2008,* http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html; and WDI 2008.

FIGURE 5.10: Remittance Inflows as a % of Service Exports: Russian Federation, 1994–2008



SOURCE: 1994-2004 data comes from World Development Indicators CD-ROM, World Bank; 2005-2008 data comes from the Central Bank of Russia, http://www.cbr.ru/eng/statistics/; Remittances data comes from "Cross-border Transactions of Resident Individuals in Breakdown by Purposes."

NOTE: Remittance inflows and outflows calculated as sum of categories: "remittances without quid pro quo" and "other."

by no means the only European state to face such questions, of course, but it is certainly one of the places where this issue is most acute.

Given Russia's long-term demographic outlook, the simple arithmetic fact is that the country would require major and continuing inflows of outsiders to stabilize national population totals and to prevent the decline of working-age manpower. The numbers involved are indicated by a still-relevant study prepared by the UNPD almost a decade ago on the implications of what it termed replacement migration for more developed countries with sub-replacement fertility patterns.[37] The study estimated, for Russia, the EU region, Japan, and other more developed locales the consequences of a zero-net migration scenario from 1995 through 2050 (see **Table 5.6**). The study also assessed the sorts of long-term flows of net immigration that would be required to (1) keep population totals at the 1995 level, (2) maintain working age population numbers over time, and (3) keep the ratio of people 65 and older to working-age population at the same level as in 1995.[38]

In a zero-migration scenario, Russia's population was projected to fall by about 10% between 2000 and 2025, a sharper fall-off than for either the EU (down 5%) or Japan (4%). By point of comparison, the U.S. population would continue to grow between 2000 and 2025 in these projections, even with no net immigration.

To prevent population decline over the first half of the 21st century, the Russian Federation was estimated to require cumulative net immigration between 2000 and 2050 of roughly 25 million

[37] UNPD, "Replacement Migration: Is It a Solution to Declining and Ageing Populations?" (New York: United Nations, March 2000), http://www.un.org/esa/population/publications/migration/migration.htm.

[38] Although these projections are nearly a decade old, they do not as yet appear outdated, or overly pessimistic. Their projections for Russia, for example, anticipated a higher level of overall life expectancy at birth and a slightly higher fertility level for 2005/10 than the ones that currently obtain. It also presumes further albeit modest fertility improvements and progressive increases in life expectancy in the years ahead.

TABLE 5.6: UNPD Estimates for Replacement Migration: Required Average Annual Net Number of Migrants Between 2000 and 2050 (per Million Inhabitants in 2000, by Scenario and Country)

Scenario =	I Estimated Actual Net Immigration 1990–1995	II Estimated Requirements for Total Constant Population , 2000–2050	III Estimated Requirements for Constant population of 15–64 age group, 2000–2050
France	110	500	1854
Germany	2519	4244	6009
Italy	109	4414	6531
Russia	752	3435	3435
United Kingdom	341	899	2132
United States	2770	465	1310
European Union	724	2548	4262

SOURCE: United Nations, "Replacement Migration: Is It a Solution to Declining and Ageing Populations?," Table 10, http://www.un.org/esa/population/publications/ReplMigED/chap4-Results.pdf.

persons—a flow averaging about 500,000 per year, or about 3.4 per thousand residents of the country. In proportional terms, Russia's requisite inflow of newcomers would thus look to be a third higher than Western Europe's (the old EU countries). At the time of the study, however, Russia's estimated tempo of net immigration was less than a fourth of what would be needed to forestall population decline, an even more dramatic deficit than the one facing Western Europe. To ward off a decline of its population of working ages (15-64), Russia would need even bigger immigration flows: a total of over 32 million between 2000 and 2050, or 650,000 a year. That would work out to a steady net influx of about 5.0 per thousand per annum—higher than the labor-scarce EU area's requirement of about 4.3 per thousand. In the late 1990s, by UNPD's estimates, net migration flows into Russia were less than a sixth the level needed to accomplish the objective of long-term working age population totals. Maintaining Russia's 1995 ratio of older to working-age populations would require a net immigration of over a quarter billion persons between 1995 and 2050, a notion manifestly fanciful. Maintaining today's population support ratios in the decades ahead simply does not look like a feasible proposition under any circumstances.

The corollary to replacement migration, of course, is that the newcomers and their descendants account for a growing share of a country's future population. The implications for Russia are dramatic. If population stabilization was to be achieved through replacement migration, by UNPD calculations, at least 22.9% of the country's population in 2050 would have to consist of post-1995 immigrants and their descendants. If the focus was stabilizing the 15–64 population, at least 27.6% of Russia's population would have to be comprised of post-1995 newcomers and their progeny.[39] By these UNPD projections, a somewhat higher share of the 2050 population would be comprised of new immigrants and their descendants for Russia than for Western Europe if full replacement migration were in fact actually achieved (see **Table 5.7**).

[39] Note that these computed totals would represent the minimum proportion of replacement population to total 2050 population in these scenarios, as they posit a zero rate out-migration over the intervening decades, and any streams of emigrants would require additional compensating immigration.

TABLE 5.7 UNPD Estimates of "Replacement Migration": Percent of Post–1995 Migrants and Their Descendants in Total Population in 2050, by Scenario and Country

Scenario =	I Medium Variant	II Constant Total Population	III Constant age group 15–64
France	0.9	2.9	11.6
Germany	19.8	28.0	36.1
Italy	1.2	29.0	38.7
Russia	5.8	22.9	27.6
United Kingdom	1.9	5.5	13.6
United States	16.8	2.5	7.9
European Union	6.2	16.5	25.7

SOURCE: United Nations, "Replacement Migration: Is It a Solution to Declining and Ageing Populations?" Table 10, http://www.un.org/esa/population/publications/ReplMigED/chap4-Results.pdf.

The UNPD exercise underscores quantitatively what we already know intuitively: immigration changes the composition of the receiving society. Where, then, are Russia's immigrants coming from today, and where are they likely to come from in the decades ahead?

Dilemmas of "Replacement Migration" for a Depopulating Multiethnic State

The Russian Federation's Constitution guarantees its citizens "fundamental rights and freedoms according to the universally recognized norms and principles of international law," and further specifies that,

> the equality of rights and freedoms […shall be guaranteed regardless of…] race, nationality, language, origin,…religion…and also of other circumstances. All forms of limitations of human rights on social, racial, national, linguistic or religious grounds shall be banned.[40]

Of course the Russian Federation is also in essence a Russian multiethnic state. Its political tradition is decisively Russian. The country's culture is profoundly (albeit not exclusively) Russian. The *lingua franca* is most assuredly Russian. The Russian Constitution, in fact, establishes Russian as "the state language of the Russian Federation across its territory" (Article 68). According to respondents to the 2002 census, furthermore, over 98% of the federation's population report they "freely command" the Russian language, with over 92% of the country's non-Russian population affirming the same.[41] Compare these proportion to the United States, where, according to the 2000 census, over 8% of the population five years of age and older spoke English less than "very well,"

[40] The Constitution of the Russian Federation (1993), Articles 17-1 and 19-2, http://www.constitution.ru/en/10003000-01.htm.

[41] Cf. Valery V. Syepanov, "The 2002 Census: Approaches to Measuring Identity," (paper presented at the Association for the Study of Nationalities Convention, Columbia University, New York, April 13, 2002), http://www.iea.ras.ru/topic/census/discuss/stepanov_paper2002.doc. Figures from the Russian Federation's 2002 Census derived from Tables 4-1 and 4-3 of Goskmostat 2002 Russian Federation Census website, http://www.perepis2002.ru/index.html?id=87.

FIGURE 5.11: Self-Identified "Russian" Population in CIS and Baltic States, 1989 and 2000

SOURCE: 1989 data comes from Timothy Heleniak, "Migration of the Russian Diaspora After the Breakup of the Soviet Union," *Journal of International Affairs* 57, no. 2 (Spring 2004): 109, Table 2. 2000 data comes from Alexandr A. Grebenyuk and Elena E. Pismennaya, "Immigration of Compatriots to Russia: Potential and State Policy" (paper presented at European Population Conference 2008, July 9-12, 2008, Barcelona, Spain), http://epc2008.princeton.edu/download.aspx?submissionId=80209.

NOTE: Some data for 2000 is from census closest to year 2000.

and over 4% spoke English "not well" or "not at all."[42] The overwhelming majority of its people, or just under 80% as of the 2002 census, identify themselves as Russian in nationality. Might continuing immigration change the Russian Federation's ethnic composition or change Russia's social fabric in other potentially far-reaching ways?

For Russian migration to comport with the country's current ethnic proportions on into the future, continuing inflows of Russian population from the other post-Soviet states—"the near abroad"—would look to be a prerequisite. Just how large are these potential reserves of prospective Russians? Figure 5.10 above is indicative. As of the 1989 Soviet census, about 25 million ethnic Russian were enumerated within the USSR but beyond the borders of the Russian Federation. That number has taken on an almost talismanic aura in certain circles within Russia, and the figure is often invoked in domestic political discourse, even at the highest levels.[43] Yet this number is already overtaken by events.

As of the dawn of the new century, the total number of ethnic Russians enumerated in the near abroad was not 25 million, but instead fewer than 18 million (for details, see **Figure 5.11**). The steep decline in the size of the Russian diaspora—roughly 30% in more or less a decade—can be explained by a number of factors. Approximately 3 million Russians or more, for example, may have

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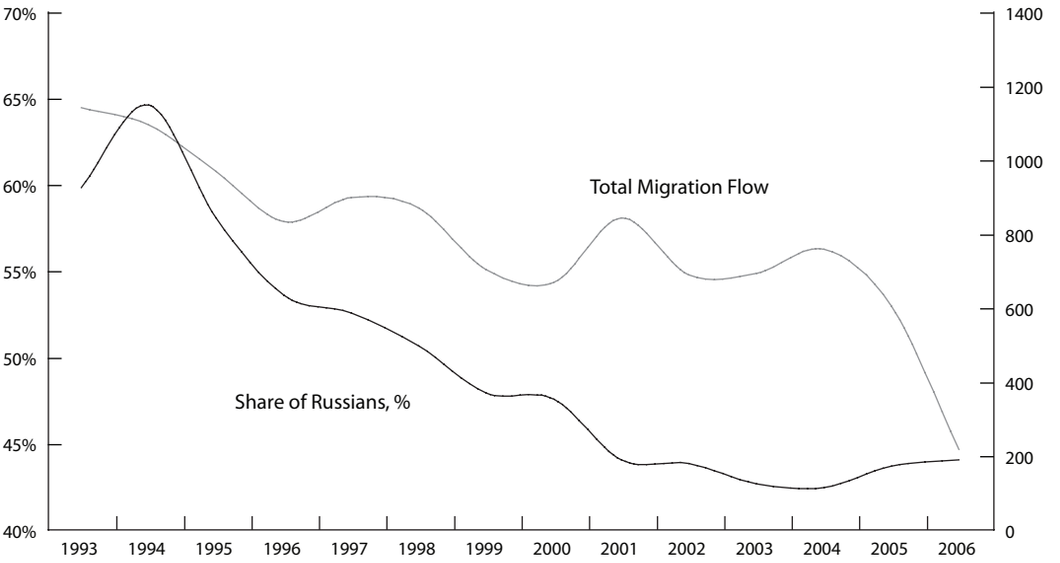
[42] Hyon B. Shin and Rosalind Bruno, "Language Use and English-Speaking Ability: 2000," *Census 2000 Brief C2KBR-29*, (Washington, DC: U.S. Bureau of the Census, October 2003), http://www.census.gov/prod/2003pubs/c2kbr-29.pdf.

[43] Thus Russian Communist Party chieftain Gennady Zuganov in September 2006: "Russia cannot go on subordinating…the interests of 25 million Russians who…have found themselves outside their Motherland." "Time to Change Course," Communist Party of the Russian Federation, September 4, 2006, http://www.solidnet.org/cgi-bin/lpr?parties/0640=russia,_communist_party_of_russian_federation/943kkro5sep06.doc.

FIGURE 5.12: Reported Volume and Ethnic Composition of Immigration from CIS and Baltic States to Russia, 1993–2006



SOURCE: Alexandr A. Grebenyuk and Elena E. Pismennaya, "Immigration of Compatriots to Russia: Potential and State Policy" (paper presented at European Population Conference 2008, July 9-12, 2008, Barcelona, Spain), http://epc2008.princeton.edu/download.aspx?submissionId=80209.

already moved from the near abroad to the Russian Federation. Some proportion of these overseas Russians may have changed their own ethnic self-identification, given new post-Soviet realities. In addition, the Russian population in the rest of the newly independent states is likely beset by the same sorts of demographic trends that characterize Russians within the federation, including sub-replacement fertility, serious excess mortality, and population decline due to negative natural increase. We should expect the Russian diaspora to continue to shrink in the years ahead.

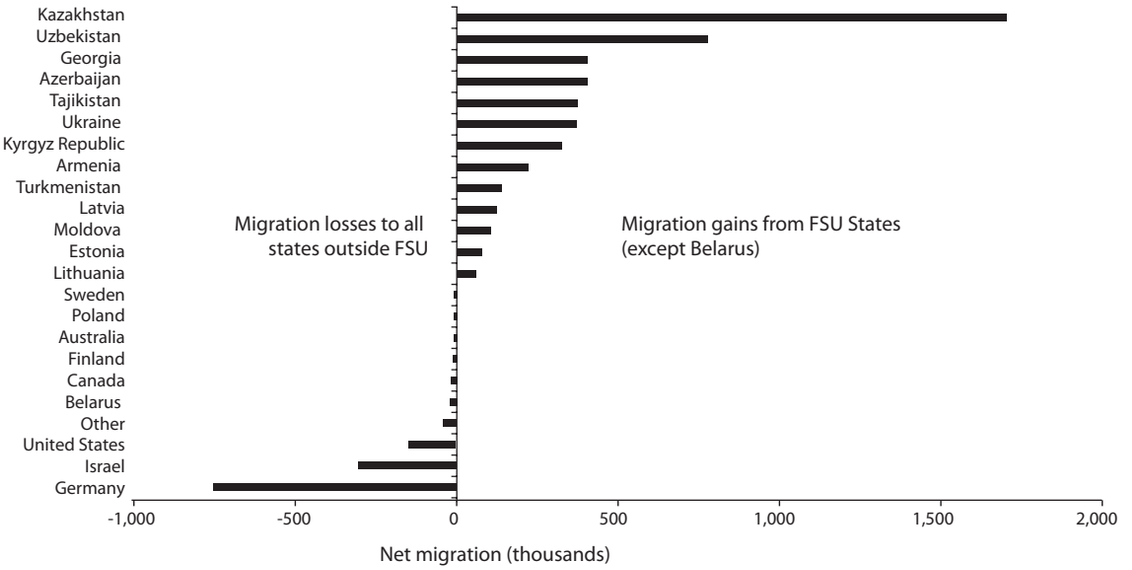
Even if that diaspora were today somehow to resettle in the Russian Federation, this influx would not, under the aforementioned UNPD replacement migration scenarios, be sufficient to keep either Russia's total population or her working age population groups from sinking below their 1995 levels by the year 2050. There is no reason, in any case, to expect renewed Russian in-migration to the Russian Federation. For the most part, the Russian populations in the near abroad appear to be tolerably well situated, generally enjoying, as the University of Maryland's Timothy Heleniak has observed, "superior social and economic status vis-à-vis the titular groups in the non-Russian [CIS] states."[44] Most of the Russian diaspora has reason to regard these states as their home. Heleniak notes, "a majority of the Russians in non-Russian states were born in the republic they resided in...[with] 43.5 percent…liv[ing] there uninterruptedly since birth, and …22.8 percent [of the rest living] there 20 years or more."[45]

Under the circumstances, it should not surprise that the migration of self-identified Russians into the Russian Federation has reportedly attenuated over the past decade, the country's concomitant economic upsurge notwithstanding. According to official migration statistics, in

[44] Timothy Heleniak, "Migration of the Russian Diaspora After the Breakup of the Soviet Union," *Journal of International Affairs* 57, no. 2 (Spring 2004): 107.

[45] Heleniak, "Migration of the Russian Diaspora," 106.

FIGURE 5.13: Estimated Net Migration to Russia by Country, 1989–2003



SOURCE: Ali Mansoor and Bryce Quillin, "Migration and Remittances: Eastern Europe and the Former Soviet Union," World Bank, 2006.

comparison with the 1990s the absolute inflow of Russian ethnic migrants fell sharply during the boom years of 2000–06, averaging just under 100,000 a year as against a reported 433,000 per annum for the previous seven years. By the same token, the share of Russians within the overall Russian Federation immigration stream has been on the decline. Whereas Russian ethnics reportedly comprised 61% of the country's documented immigrant in the 1993–99 period, this was down to 58% for 2000–06, and to just 45% for 2006 (the most recent year easily obtainable).

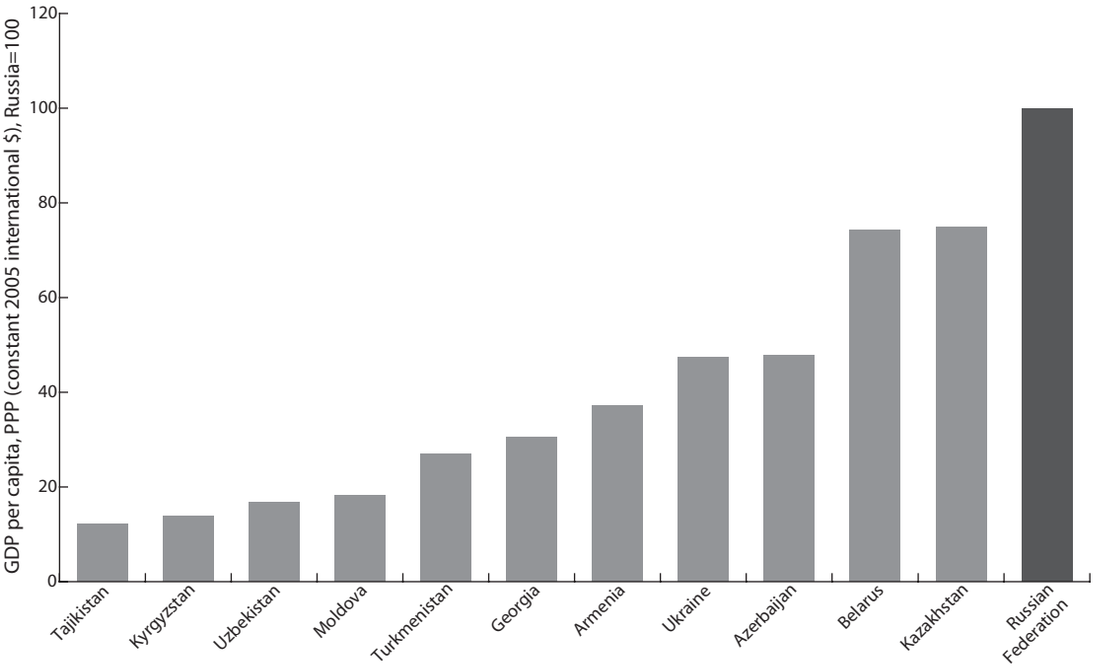
Migration and the Muslim Population of Russia

Even by official statistics, Russia's migration flows look to be altering the country's ethnic complexion. If we had truly accurate information on cross-border movements of population, the changes in trends for the Russian Federation would surely appear all the more pronounced. By definition, undocumented immigrants to the Russian Federation (whether temporary workers or permanent residents) go uncounted in these official tallies. Obviously, there is reason to expect such newcomers to be overwhelmingly non-Russian and to emanate from the poorest reaches of the former Soviet Union.

There is nothing mysterious, or sinister, about this observation. To the contrary, it only points to obvious realities affirmed by the broader economic logic of global migration pathways. Simply stated, economic migrants tend to be attracted by the pull of higher wages—*ceteris paribus*, meaning that workers from countries with lower income levels tend to find countries with higher income levels more desirable destinations for employment. These income gaps are factored into their decisions about whether or not to take the risk of moving to another country in search of work.

Problematic as Russia's migration data may be, the patterns they reveal are unmistakable. Quite clearly, Russian citizens have tended to emigrate to countries with higher income levels than Russia's own (e.g., the United States, Germany, and Israel) while Russia has absorbed influxes from poorer

FIGURE 5.14: Scaled GDP per capita, PPP, 2006 (Russia = 100)



SOURCE: World Bank, World Development Indicators 2008, CD-ROM. Note: Turkmenistan GDP from Angus Maddison, "Statistics on World Population, GDP and Per Capita GDP, 1-2006 AD," (Mar 2009, vertical file), http://www.ggdc.net/maddison/Historical_Statistics/vertical-file_03-2009.xls.

countries on its own periphery. The Baltic States, for instance, are more affluent than Russia,[46] and there has been relatively little migration from them to Russia, even by ethnic Russians. Moreover, within the former Soviet Union remittances account for a steadily decreasing share of national income as per capita income levels rise. To put it the other way around, the poorer the country, the higher the share of remittances in its gross national income (see **Figures 5.13** and **5.14**). Most of the poorest people in the former Soviet space live in Central Asia, where estimated per capita income levels range from a high of about 68% of Russia's per capita income in Kazakhstan, down to 21% in Kyrgyzstan and Uzbekistan, and to a mere 12% in Tajikistan.[47] Culturally and historically, these are societies of Muslim heritage. For reasons historic and political as well as economic, the Russian Federation is the most likely destination for would-be guest workers from these countries. Thus for Russia, the migration question ineluctably bears on the Muslim question.

How large actually is the federation's Muslim population? Within Russia and overseas, a wide range of numbers is currently used by seemingly authoritative sources to answer this question. At this writing, for example, the Russian Embassy in Washington reports that the Russian Federation's Muslim population is 19 million.[48] Former president Vladimir Putin spoke in 2003 of

[46] By the World Bank's reckoning, PPP-adjusted GDP per capita in 2007 was 17% higher than in Latvia than in Russia, 22% higher in Lithuania, and 39% higher in Estonia. Source: WDI Online.

[47] Ali Mansoor and Bryce Quillin, eds., *Migration and Remittances: Eastern Europe and The Former Soviet Union* (Washington: World Bank, 2007): 121, Table 1.1.5, http://siteresources.worldbank.org/INTECA/Resources/257896-1167856389505/Migration_FullReport.pdf Estimates are PPP-adjusted, for the period 2000/02.

[48] "Religion in Russia," Russian Embassy (USA) Website, http://www.russianembassy.org/RUSSIA/religion.htm.

TABLE 5.8: Traditionally Muslim Ethnicities in Russia as Enumerated in 1989 Census and 2002 Census

	Population 1989	Population 2002	Change, 1989–2002
Tatars	5543371	5554601	11230
Bashkirs	1345273	1673389	328116
Chechens	898999	1360253	461254
Kazakhs	635865	653962	18097
Avars	544016	814473	270457
Kabards	386055	519958	133903
Dargins	353348	510156	156808
Azeri	335889	621840	285951
Kumyks	277163	422409	145246
Lezghins	257270	411535	154265
Ingush	215068	413016	197948
Karachay	150332	192182	41850
Uzbeks	126899	122916	-3983
Adygey	122908	128528	5620
Laks	106245	156545	50300
Balkars	78341	108426	30085
Circassians	50764	60517	9753
Kyrgyz	41734	31808	-9926
Turkmen	39739	33053	-6686
Tajiks	38208	120136	81928
Abaza	32983	37942	4959
Turks	9890	92415	82525
Kurds	4724	19607	14883
Arabs	2704	10630	7926
Afghans	858	na	n.a.
Other known ethnic Muslim Group	0	669128	669128
Other known ethnic Muslim Group	1926649	42980	-1883669
			0
Total ethnic muslim population	11598646	14739425	3140779

SOURCE: Timothy Heleniak, "Regional Distribution of the Muslim Population of Russia," *Eurasian Geography and Economics*, 2006, 47, No. 4, pp. 426-448, reproduced from Table 3.

the "almost 20 million Muslims" living in Russia.[49] In 2005, the chairman of the Council of Muftis in Russia stated the population included 23 million Muslims who were "indigenous residents of our

[49] Russian Federation Ministry of Foreign Affairs, "Speech by Russian President Vladimir Putin at Meeting with Spiritual Leaders of the Chechen Republic, the Kremlin, Moscow, March 17, 2003," March 18, 2003, http://www.ln.mid.ru/bl.nsf/900b2c3ac917346343256 98f002d9dcf/d3ddcba4868ac61d43256ced005b0d50?OpenDocument .

country, not migrants or immigrants, …living here from time immemorial."[50] Henry Kissinger, for his part, wrote in 2008 of "Russia's 25 million Muslims."[51] Taking such numbers even further, and extrapolating on what are said to be the rapid growth rates of Russia's Muslim population, a number of commentators both in Russia and abroad today prophesize that the Russian Federation will be a Muslim majority country by 2050.[52]

Despite their diversity, there is a striking commonality to all these assessments. None of them seem to rely upon available empirical evidence. Russia's Muslim population does indeed number in the millions, but the notion of 20 million, much less 25 million, adherents to Islam in Russia today is by all indications fanciful.

In fact, Goskomstat/Rosstat does not actually collect information on the religious affiliation of the country's population.[53] Thus any data-based estimate of Russia's Muslim population must be limited to examination of population totals for Russia's ethnic groups ("nationalities") with a Muslim cultural heritage or historical background.

The University of Maryland's Timothy Heleniak provides just such an analysis of the Russian Federation's censuses for 2002 and 1989. Heleniak identified 56 historically Muslim ethnic groups in the official Russian census tabulations and tracked their population totals (see **Table 5.8** for details on some of these groups). He concluded that Russia's nationalities of Muslim heritage accounted for 14.7 million people in Russia in 2002, just over 10% of the country's total population that year.

Heleniak urged caution in interpreting the data in Table 5.7, however. For one, he warned, not all of the members of these "historically Muslim" ethnic groups still regard themselves as Muslim or actually practice Islam.[54] Thus, the numbers on Russia's tradtionally Muslim populations probably offer a maximum upward boundary on the absolute and relative size of Russia's true Muslim population as of the time of the 2002 Russian census. Second, the data from the 1989 and 2002 censuses ostensibly suggest a rise in Russia's ethnically Muslim population of about 26% over just thirteen years. This is an implied rate of growth of about 1.8% a year in a country experiencing depopulation. A considerable portion of this increase, though, may well have been artifactual rather than real. At issue here are differences between the Soviet-era population count of 1989 and the enumeration in 2002. In the post-Soviet environment, the phenomenon of "ethnic re-identification" was likely occurring. It may have been especially pronounced among some of the historically Muslim nationalities in Russia who had judged it disadvantageous under the old

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[50] Comment by Ravil Gaynutdin, quoted in Jeremy Page, "The rise of Russian Muslims worries Orthodox Church," *The Times of London*, August 5, 2005, http://www.timesonline.co.uk/tol/news/world/article551693.ece.

[51] Henry A. Kissinger, "Finding Common Ground with Russia," *Washington Post*, July 8, 2008, http://www.washingtonpost.com/wp-dyn/content/article/2008/07/07/AR2008070702218.html.

[52] See, for example, Paul Goble, "Window on Eurasia: What Kind of Muslim Country Will Russia Become?" Window On Eurasia Website, March 26, 2007, http://windowoneurasia.blogspot.com/2007/03/window-on-eurasia-what-kind-of-muslim.html; and Daniel Pipes, "Predicting a Majority-Muslim Russia," Daniel Pipes Blog, August 5 2005, updated February 7, 2009, http://www.danielpipes.org/blog/2005/08/predicting-a-majority-muslim-russia.html. Please note that Goble and Pipes are reporting analyses by others, rather than offering such predictions themselves.

[53] There is nothing unusual about this. Data on religious adherence is not collected by the US government, or many Western European governments, either.

[54] Thus Mikhail Alexseev of San Diego State University: "According to surveys I conducted in Russia in 2005–2007, most Muslims do not regularly attend mosque, but the level of attendance varies by ethnic group. Almost 66% of Tatar Muslims in Tatarstan, 80% of Adyghes in Adyghea, 74% of Kazakhs in the Volgograd region, and 74% of Azerbaijanis in Dagestan said they did not attend mosque at all in the previous six months. Of the remainder, the majority attended a mosque or house of prayer fewer than three times in that same half-year period. Respondents were asked not to count attendance of predominantly ethnic ceremonies such as weddings, funerals, or baptisms." Mikhail Alexseev, "Overcounting Russia's Muslims: Implications for Security and Society," *PONARS Eurasia Policy Memo No. 27*, Georgetown University, August 2008, https://gushare.georgetown.edu/eurasianstrategy/Memos/2008/pepm_027.pdf.

TABLE 5.9: Estimated Muslim Populations of Selected European Countries (Early to Mid-2000s) and Russia (2002), in thousands

Country	Estimated Muslim Population	Total Population	Percent Muslim
Albania	2,200	3,100	71.0%
Kosovo	1,800	2,700	66.7%
Bosnia and Herzegovina	1,500	3,800	39.5%
Macedonia	630	2,100	30.0%
Bulgaria	942	7,719	12.2%
Serbia & Montenegro	405	8,100	5.0%
Subtotal Southeastern Europe	***7,477***	***27,519***	***27.2%***
France	4,000	60,000	6.7%
Netherlands	945	16,407	5.8%
Denmark	270	5,451	5.0%
Germany	3,500	82,500	4.2%
Switzerland	318	7,489	4.2%
Austria	339	8,185	4.1%
Belgium	400	10,364	3.9%
UK	1,600	58,800	2.7%
Sweden	206	9,017	2.3%
Norway	93	4,593	2.0%
Italy	825	58,103	1.4%
Greece	138	10,668	1.3%
Spain	500	40,341	1.2%
Finland	18	5,223	0.3%
Subtotal Western Europe	***13,152***	***377,143***	***3.5%***
Total Western and Southeastern Europe	***20,629***	***404,661***	***5.1%***
Russia	14,739	145,649	10.1%

SOURCES: Ceri Peach, "Muslim Population of Europe: A Brief Overview of Demographic Trends and Socioeconomic Integration, with Particular Reference to Britain," in Steffen Angenendt, et al, "Muslim Integration: Challenging Conventional Wisdom in Europe and the United States," Center for Strategic and International Studies, September 2007, 9, Table 1; Russia from Timothy Heleniak, "Regional Distribution of the Muslim Population of Russia," *Eurasian Geography and Economics* 47, no. 4 (2006): 426-448, Table 3; and Russian Demographic Yearbook (2007), Goskomstat, Table 1.3.

regime to represent their ethnicity accurately. Unfortunately, though, the actual scale of such changes in reported ethnic affiliation over Russia's inter-censal period is impossible to determine.

With these caveats, we can attempt to place Russia's Muslim population situation in a European perspective (see **Table 5.9**). For most of the rest of Europe, estimates of local Muslim populations

are no less problematic than Russia's own. That being said, available information would seem to suggest that, at the dawn of the 21st century, Russia's fraction of Muslim population was distinctly higher than for any country in Western Europe (higher than even in France, which is the Western European society with the highest concentration of people from Muslim cultural backgrounds). Indeed, to go by these numbers, more Muslims would be living in Russia than in all of Western Europe combined.[55]

Even without the exaggerations that sometimes color discussions of the issue, it is apparent that Muslims account for a significantly greater fraction of the total population for Russia than for the European countries with which Russian elites would prefer to be compared. Given the low levels of fertility now prevailing among Russians and other European nationalities, we can expect an increase in the fraction of Muslims in the Russian Federation, immigration entirely notwithstanding. On the basis of the 2002 Russian census, Judyth Twigg of Virginia Commonwealth University has shown that Muslim ethnic groups accounted for just 9.5% of the country's total male population, but for 13.2% of the boys five to nine years of age.[56] Embracing and integrating people from Muslim cultural backgrounds has proven to be a challenge for many contemporary Western societies. By these numbers, the scale of the integration challenge facing Russia looks to be even more daunting than the one facing Western Europe today.

Illegal and Undocumented Migration into Russia

There is an important additional proviso to these estimates concerning Russia's Muslim population. To the extent that Russia's undocumented or illegal migrant workers go uncounted, the country's total numbers of residents of Muslim heritage will also go underestimated. It is widely recognized, furthermore, that entering the Russian Federation without official authorization is not that difficult in the post-Soviet era.[57] The Russian media and independent international have reported unauthorized immigration and deportations of streams of entrants spanning Moldova and Belarus in the West to China and Vietnam in the East.[58] Yet the overwhelming majority of Russia's illegal entrants are thought to come from countries of Muslim heritage, most especially from Azerbaijan and the Central Asian republics of the former Soviet Union.

According to many, furthermore, the number of illegal or unauthorized immigrants in Russia these days is enormous. In 2008, for example, the head of the Russian Interior Ministry's Federal Migration Service estimated the number of "illegal aliens" in Russia at 5–7 million. That same year, the chief of the FSB Border Service declared that "there are more than 10 million illegal

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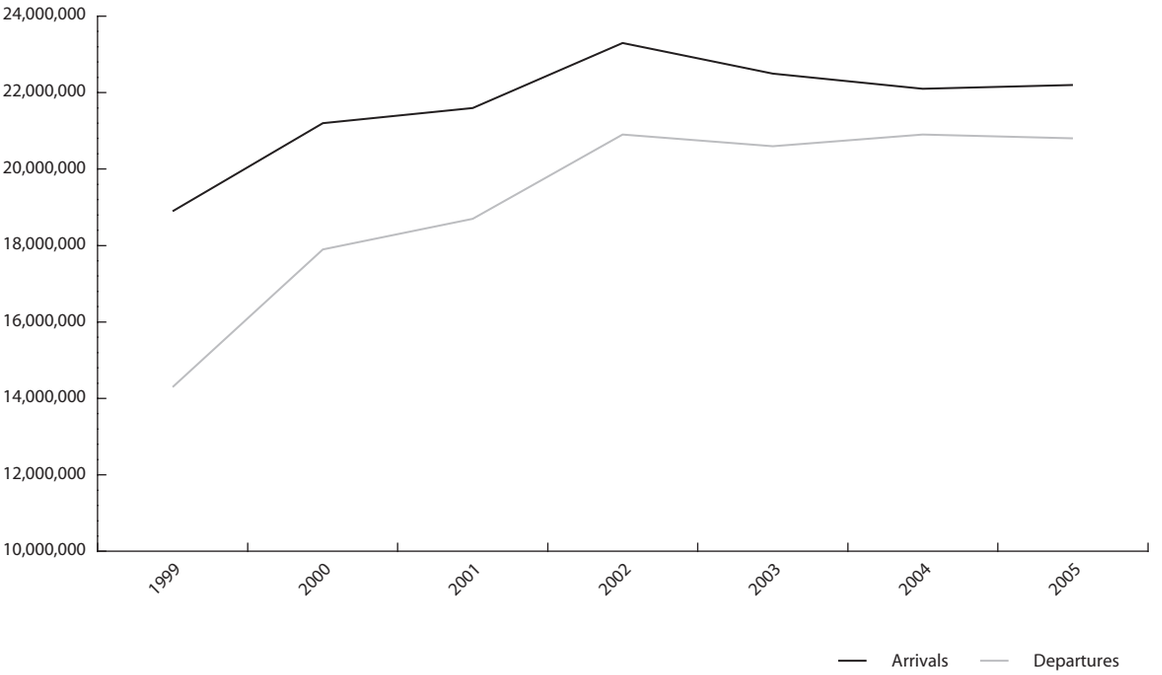
55 We should note here that a number of countries of Southeastern Europe do have larger proportional Muslim minorities than Russia or even Muslim majorities. Such characteristics can be largely understood as a legacy of the region's long Ottoman interlude. So it is well to remember that the historical genesis of the Muslim populations in the different regions of Europe are themselves likewise distinctive, with Western Europe's patterns emerging in the wake of the World War II (with decolonization and a demand for guest workers in "labor scarce" economies) and Russia's rooted in the earlier historical expansion of the Russian state over territories of Muslim cultural heritage.

56 Judyth Twigg, "Differential Demographics: Russia's Muslim and Slavic Populations," PONARS *Policy Memo* No. 388, Georgetown University, December 2005, https://gushare.georgetown.edu/eurasianstrategy/Memos/2005/pm_0388.pdf.

57 For a colorful journalistic account of just one such journey into Russia, see Mansur Mirovalev, "'Ghost bus' takes migrants on trip to Russia," *Newsday*, August 16, 2009, http://www.newsday.com/ghost-bus-takes-migrants-on-trip-to-russia-1.1372533.

58 "About 10 million migrants live in Russia, half of them stay illegally," TASS, February 27, 2008, World News Connection website, http://wnc.fedworld.gov/.

FIGURE 5.15: Officially Registered Arrivals to and Departures from Russia: 1999–2005



SOURCE: Olga Chudinovskikh "Statistics of International Migration"; and Olga Chudinovskikh, "Migration Statistics in Russian Federation," UN Statistics, http://unstats.un.org/unsd/demographic/meetings/egm/migrationegm06/119DOCLIST.htm.

immigrants in the country now,"[59] and as a contemporaneous news report in *Tass* observed, "various assessments put the number of migrants staying in Russia illegally at 15 million today."[60]

The method behind such estimates has never been fully explained. Yet it appears that some of these computations are based upon patently unsound premises, specifically on the discrepancy between the cross-border visitor entry and exit numbers tabulated by the Federal Migration Service. According to those figures, Russia regularly receives more visitors than are recorded departing. For 1999–2005 (the years for which such numbers are currently available) a surfeit of 17.7 million net entrants was recorded (see **Figure 5.15**).

While such numbers might seem to support the proposition that Russia is absorbing an astonishing inflow of invisible and unauthorized migrants, such computations are faulty on their face. They are based upon the records of an immigration service that is strictly attentive to the comings of visitors, but much less diligent in tracking returnees (much like the U.S. immigration service). If used as an indicator of illegal immigration, these statistics will dramatically inflate Russia's true numbers of unauthorized residents from abroad.

It is indeed possible that Russia was accommodating several million unauthorized migrants (mainly temporary laborers) in recent years. As remittance data seems to suggest, those totals may have risen in the boom years of 2005–08. It would further be reasonable to surmise that the majority of all these immigrants were men and woman of Muslim cultural heritage. To the extent that they went

[59] "Number Of Illegal Immigrants In Russia Surpasses 10 Million" *Agentstvo Voyennykh Novostey, Wednesday,* September 10, 2008, World News Connection website, http://wnc.fedworld.gov/.

[60] "State Duma to ban reentry of Russia to illegal migrants for 5 years," *TASS*, April 23, 2008, World News Connection website, http://wnc.fedworld.gov/.

uncounted, Russia's total population, and the share of Muslims within Russia's overall population, would be underestimated. Presumably we will have a much better picture of the dimensions and dynamics of unauthorized immigration after the results of the next census—originally slated for the year 2010, but now apparently postponed to 2013—are made publicly available.

Illegal Immigrants and Social Integration

Even as we await this information, it is not premature to ask the following: how well are these unauthorized newcomers being integrated into Russian society? Is assimilation (or what Western Europeans increasingly tend to term "social inclusion") working in this new Russian context for the undocumented immigrants and other culturally distinct foreign residents?

These are questions which often touch upon deep emotions or evoke strongly held political and ideological responses, and not just in Russia. The question of immigrant assimilation can shift from dialogue to diatribe all too easily in all modern European societies. A cool-headed assessment of the situation in Russia today will eschew both the alarmist and the rosy idealist views of immigration and social integration. We may observe that in Russia, as in the rest of Europe, the preponderance of the immigrant experience is probably comprised of what might be described as little success stories. Russia does face some genuine problems in this realm, and by all indications, those problems are getting bigger, not smaller.

Three general problem areas may be highlighted. The first relates intrinsically to the nature of unauthorized cross-border migration for temporary work, and not just in Russia. Such employment prospects tend to attract would-be workers with less education and relatively limited skills—people who might have more difficulty integrating into a new society under the best of circumstances. By dint of being illegal residents, and facing the risk of arrest or deportation, social interactions with the "native" population are perforce further constrained. These tendencies seem to have been further accentuated by practices and policies in present-day Russia, where segregation and isolation of migrant workers have commonly been encouraged inadvertently, and sometimes explicitly designed. In Russia's recent boom period, for example, much of Russia's migrant labor—authorized or illegal—has been engaged in construction. Some surveys suggest the percentage employed by construction projects may have been as high as 40%.[61] Workers in such construction projects commonly live together, apart from the society in which they are ostensibly emplaced. The phenomenon is not limited to construction work. In a recent survey of migrant laborers in Russia, some 60% reported they worked together "mainly with other migrants;" only 8% reported working "mainly with local people."[62] The structure of the contemporary Russia labor market, therefore, appears conducive to isolation rather than integration of foreign migrants. Some policy decisions today positively reinforce that isolation. In Moscow, for example, with the backing of the city authorities, local developers are beginning to build, as longtime Russia watcher Paul Goble has noted, "apartment blocks and even entire city districts for migrants." This sits in contradistinction to previous urban planning norms, whereby typically there were "not any ethnically or religiously homogeneous neighborhoods in most Russian cities."[63] In effect, Moscow may now be en route to copying the "Paris model" of residential segregation of migrant workers and immigrants, an

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61 United Nations in Russia, *Demographic Policy in Russia: From Reflection to Action,* (Moscow: UNICEF, 2008), 45, http://www.unicef.org/russia/demografiya.pdf.

62 United Nations, *Demographic Policy in Russia,* 47.

63 Paul Goble, "Window on Eurasia: Moscow Builds Ghetto for Gastarbeiter as Russians Debate Whether They Can Be Integrated," Window On Eurasia Website, September 10, 2008, http://windowoneurasia.blogspot.com/2008/09/window-on-eurasia-moscow-builds-ghetto.html.

experiment whose social results, to judge by episodic headlines from the *banlieues*, have not been entirely successful.

The second of these problems is the apparently growing question of fluency of migrant workers in the Russian language. In Soviet times, Russian language instruction was required in all Soviet republics, and competence in Russian was expected (albeit perhaps not always achieved) of all graduates of the system's eleven years of mandatory schooling. Things have changed, however, in the post-Soviet era. Perhaps most importantly, the politics of language in the Central Asian republics have conduced to more of a focus on promoting the indigenous tongues, and attending to whether local Russians learn the local language, than to maintaining standards of Russian language competence for rising generations.[64]

The 2010 round of censuses will, one hopes, provide much more information on the Russian-language abilities of young workers from the Central Asian region. At the moment, though, the prevailing perception is that non-Russian men and women in their 20s throughout the area do not speak as much Russian as did their parents.[65] If this is actually the case, the implications for social integration in a country where over 98% of the population could, at least until recently, converse in Russian would be self evident. Russian language fluency, of course, is likely to be most limited among the migrant laborers with the lowest educational attainment—a tendency that would only stand to complicate assimilation for the group most likely to be separated from mainstream Russian life in the first place.

The third problem is that there seems to have been a gradual hardening of Russian public sentiment against non-Russian immigrants and migrant workers in recent years. This turn presages a less welcoming attitude in the receiving society for newcomers from abroad in general, but especially for migrant laborers and illegal aliens.

Russia's increasingly unwelcoming public disposition toward foreigners is reflected in public opinion surveys. Polling results must be treated with care—the answers solicited can be quite sensitive to the precise questions posed, and manner in which these are framed—but the long term trends in attitudes toward immigrants in Russia seem fairly clear. One prominent Russian specialist on public opinion surveys, Lev Gudkov of the Levada Center in Moscow, succinctly summarized the situation in late 2006 this way:

> the general level of ethnic hatred in Russia is two to three times higher than in the majority of other European countries…But this has not always been so.[66]

The data supports his assessment. In a poll from the summer of 1992, for example, just 13% of respondents supported the slogan "Russia for the Russians", while 67% deemed it "incorrect and unfair."[67] In 2001, according to a report in *Izvestiya*, public support for that slogan was approaching 30% in both Moscow and St. Petersburg. For Russia as a whole, support was markedly lower, running

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64 See, for example, Dominique Arel, "Demography and Politics in the First Post-Soviet Censuses: Mistrusted State, Contested Identities," Population 57, no. 6 (2002): 801–27; and Marc Leprêtre, "Language Policies in the Soviet Successor States: A Brief Assessment on Language, Linguistic Rights and National Identity," *Papeles del Este—Transiciones postcomunistas* [Papers of the East–Post Communist Transitions], no. 3 (2002), http://www.ucm.es/BUCM/cee/papeles/03/03.doc.

65 According to some accounts, the situation has already changed drastically: in a 2008 Duma session on foreign language training, it was asserted that as many as half of the country's migrant workers could not speak Russian. Paul Goble, "Window on Eurasia: Most Immigrants to Russia from CIS Countries Don't Speak Russian," April 25, 2008, http://windowoneurasia.blogspot.com/2008/04/window-on-eurasia-most-immigrants-to.html.

66 Lev Gudkov, "Xenophobia: Past and Present," *Russia in Global Affairs* 14, no. 1 (January–March 2006), http://eng.globalaffairs.ru/numbers/14/998.html.

67 Nugzar Betaneli, *Izvestiya*, August 17, 1992, translated as "55% are disappointed," *Current Digest of the Post-Soviet Press,* vol. 44, no. 33 (September 16, 1992): 30, http://dlib.eastview.com/sources/article.jsp?id=13612119.

at just 21%.[68] By 2008, 57% of respondents nationwide said they were in favor of "Russia for the Russians," and anti-immigrant attitudes were higher in Moscow and St. Petersburg than across the country as a whole.[69] Hostility to foreign migrants, and especially illegal migrants, ran surprisingly deep by 2006, when a survey canvassed opinions from young Russians (15 to 29 years of age). In this group of young men and women, 22% said that "irregular migrants" should be "liquidated [i.e. killed]," while another 21% replied that they should merely be "isolated from society."[70]

By the middle of the first decade of the new century, Russian public opinion had also tilted predominantly in favor of restricting immigration from abroad.[71] Sentiment for a restrictive immigration policy appears to have strengthened, sometimes haltingly but also unmistakably, over the post-Communist period, and may currently be described as the expressed preference of a strong majority of Russian adults (with young adults seemingly the most supportive of proposed restrictions).[72] Advocacy of restrictive immigration policies, to be sure, need not imply ethnocentrism or hostility toward immigrants, but in modern Russia, as it happens, both tendencies have evidently gained widespread public support.

To complicate integration prospects further, anti-immigration (and anti-immigrant) attitudes in Russia have given rise to what might be described as "nativist" political mobilization—organized activities that have not stopped short of vigilantism. Perhaps the most prominent group dedicated to such activities today is DPNI ("The Movement Against Illegal Immigration"), which came into existence in 2002 in the wake of ethnic violence in Moscow's suburbs, and whose activists conjointly promote "Russian pride" and agitate against purported wrongdoing by foreigners in Russia. DPNI is hardly alone. Among the organized political forces poised against illegal immigration in Russia today is the youth wing of the ruling party, United Russia. These "Young Guards" not only demonstrate against illegal aliens,[73] but also, according to recent reports, are getting ready to target them directly. According to one report, Youth Guards are "offering to patrol construction sites and identify illegal migrants working there;"[74] according to another, they have announced "street patrols to look for guest workers."[75]

To make matters still worse, rising anti-foreign sentiment in Russia has not simply been channeled into peaceful and legal socio-political action. The Russian Federation has also witnessed

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68 Gennadiy Charodeyev, Izvestiya, September 1, 2001, translated as "Campaigners to raise racism in Russia at South African conference," *BBC Monitoring Former Soviet Union /BBC Worldwide Monitoring*, September 5, 2001.

69 Center for Ethnopolitical and Regional Studies "Immigration to Russia: the social dimension; 2. Integration potential of the recipient environment," http://www.indem.ru/Ceprs/Migration/2IntPotEn.htm.

70 Center for Ethnopolitical and Regional Studies, "Immigration to Russia."

71 Vladimir Shlapentokh, "Russia's Demographic Decline and the Public Reaction," *Europe-Asia Studies* 57, no. 7 (Nov. 2005): 951–68; and D.V. Polikanov, "Russian Public Opinion on Terrorism," *Russian Politics and Law* 44, no. 4 (July–August 2006): 62–72. In a 2008 public opinion survey conducted before the current global economic crisis, 68% of Russian respondents said a great number of people coming from other countries is a negative thing. This opinion is particularly widespread in Moscow and St. Petersburg (75%). Over the two years the number of Russians who believe this to be a positive thing reduced from 21% to 15%, while the number of those who could not answer has increased (from 10% to 17%). "Russians more tolerant, but still disapproving of mass immigration—poll," *Russia & CIS General Newswire,* June 17, 2008.

72 See, for example, *Ekho Moskvy Radio*, July 17, 2007, translated as "Russian sociologist sees worrying trend in youth extremism," *BBC Monitoring Former Soviet Union—Political*, July 18, 2007. Some analysts, however, caution that the evidence about disproportionate xenophobic sentiment on the part of Russia's youth is less than clear-cut. See Mikhail A. Alexseev, "Xenophobia in Russia: Are the Young Driving It?" *PONARS Policy Memo No. 367*, Georgetown University (December 2005), http://csis.org/files/media/csis/pubs/pm_0367.pdf.

73 Owen Matthews and Anna Nemtsova, "The Kremlin Vigilantes," *Newsweek*, February 23, 2009, http://www.newsweek.com/id/184777.

74 "Kremlin's Youth Group Holds Racist Demonstrations In Moscow," *FSU Monitor*, November 3, 2008, http://www.fsumonitor.com/stories/110308Russ2.shtml.

75 "Youth Wing of Russia's Governing Party Demonizes Migrants, Vows Vigilante Patrols," UCSJ: Union of Councils of Jews in the Former Soviet Union, October 31, 2008, http://www.ucsj.org/news/youth-wing-of-russias-governing-party-demonizes-migrants-vows-vigilante-patrols.

an eruption in episodes of xenophobic violence and brutality in recent years.[76] The worst of these instances end in killing or murder, and reports by human rights groups operating in Russia today paint a grimly consistent picture:

- "Sova, a Moscow NGO that monitors hate crimes, reports that 96 foreigners were killed and 410 wounded as a result of racist attacks in 2008—an increase of nearly a third over the year before."[77]
- "Through the first 10 months of the [year 2008], Rykova's group [Moscow Bureau for Human Rights] recorded 269 hate crimes in Russia involving the deaths of 114 people, more than twice as many as last year. Most of the victims were migrant laborers from the impoverished former Soviet republics of Central Asia…"[78]
- "The antirasizm.ru website published a roundup of reports on racially motivated attacks across Russia…. [It] recorded a total of least 254 attacks "based on xenophobia" in the period January through October 2008, resulting in 113 deaths and 340 injured victims…The largest number of attacks was recorded in Moscow and Moscow Oblast (48 dead, 162 injured), followed by St Petersburg and Leningrad Oblast (19 dead, 36 injured), Sverdlovsk Oblast (6 dead, 8 injured), and Yaroslavl (4 dead), while individual incidents were recorded across the country from Nalchik to North Ossetia and from Bryansk to Vladivostok. The most frequent victims of attack were Central Asians -- 17 Uzbeks, 10 Kirghiz, and nine Tajiks were killed -- and people from the Caucasus -- Azerbaijanis, Armenians, Dagestanis, Chechens, and Kalmyks…"[79]

To recapitulate this awful record is not to insinuate that Russia has become a modern-day bastion of neo-Nazism. The country clearly has not; most Russians are appalled or disgusted by such crimes. That being said, it is also apparent that violence against foreigners and ethnic minorities is occurring on a scale that would be inconceivable in the modern-day United States or Western Europe. The mistreatment of undocumented immigrants, moreover, extends far beyond their exposure to unpredictable violent injury at the hands of Russia's native population. As has been documented elsewhere, illegal workers in Russia are routinely extorted, abused, and exploited by employers and government officials, including police, and lack any reliable legal recourse for protection against such depredations.[80] Unless and until Russia itself enjoys firm protections for individual rights under the law and has secure institutional roots for democratic accountability, any protections for foreigners against victimization will necessarily remain tenuous. As a practical matter, absence of such assured protections can only impede integration and assimilation of foreigners into the mainstream of Russian life.

The Current Economic Crisis and Its Impact on Migration

With the sudden worldwide economic crisis that commenced in late 2008, and the subsequent sharp economic downturn that would envelop Russia, the demand for foreign labor fell quickly and steeply in Russia's domestic economy. The quick and inevitable consequence of this shock was a jolting and disproportionate reduction in employment opportunities for foreign workers, whether legal or unauthorized. The dislocation for lower-skilled foreign workers was especially

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76 For a comprehensive analysis of the rise of xenophobia in contemporary Russia and some of the factors contributing to the phenomenon, see Gabriel Rubin and Christopher Wendt, "Explaining Increases in Xenophobia in post-Communist Russia," (paper prepared for the 2009 Meeting of the American Political Science Association, Toronto, Canada, September 3-6, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1450285.

77 The Kremlin Vigilantes, op cit.

78 Philip P. Pan, "In Russia, a Grisly Message Marks Rise in Hate Crimes," *Washington Post*, December 14, 2008, A31.

79 "Russia: Racist Attacks on the Increase; Unemployment Blamed," *World News Connection*: *Russia – OSC Summary*, November 27, 2008.

80 Cf. Human Rights Watch, *"Are You Happy to Cheat Us?" Exploitation of Migrant Construction Workers in Russia*, (New York: Human Rights Watch, 2009), http://www.hrw.org/sites/default/files/reports/russia0209web_0.pdf.

pronounced, given their concentration in Russia's construction and retail sectors, which were especially hard hit in 2008. With the sudden severe contraction of earnings opportunities in Russia, very large numbers of the country's temporary foreign workers found themselves suddenly and critically without means of support—an especially desperate situation for those whose families overseas depended upon their remittances. Data on the dimensions of the reverberations of the current economic crisis for Russia's immigrant population is still lacking, but the general nature of the consequences is clear enough. Three of these consequences in particular merit comment.

First, with the slashing of formal work permits for foreign migrants, and the apparently precipitous drop-off in informal employment opportunities,[81] Russia has become a more unwelcoming venue for would-be foreign workers, especially less-educated, low-skilled non-Slavic migrants. During Russia's recent economic boom, as we have mentioned, public attitudes toward such workers gradually hardened. Public attitudes toward these foreigners may become even more unfriendly over the course of the current recession, as locals regard themselves in a zero-sum competition for jobs against foreigners who will be willing to take lower wages for the same work in an economic downturn of uncertain duration.[82] Many foreign workers in Russia apparently recognize this change in climate—as one Kyrgyz migrant confided to a reporter in December 2008, "I move through Moscow (now) like a hunted beast."[83]

Second, the impact on remittances from Russia to nearby low-income countries will be direct, and very possibly quite harsh, given the significant share of national income that such flows have come to comprise in certain former Soviet states. A recent macroeconomic simulation gives a sense of what is at stake for some of the CIS countries with high proportions of their labor force working abroad. In this contrafactual simulation exercise, the researchers estimated that private consumption in Ukraine would decline by 18% in the absence of all remittance income from migrants overseas, and that consumption levels in Moldova would drop by 32%.[84] To be sure, no one today seriously imagines that all remittance income streams are about to dry up for CIS countries. Just as clearly, though, calculations such as these indicate that even moderate reductions in migrant labor earnings abroad could have big macroeconomic repercussions in sending countries from the former Soviet space.

Third, the drop in remittances will be accompanied by an exodus from Russia of out-of-work former migrants returning to their homelands in search of work in their native countries. When available, of course, such labor will tend to offer much lower wages than these returnees were earning in Russia. Given the economic shocks these CIS countries are currently experiencing, and the sudden influx of returning migrants they are absorbing, mass unemployment is a likely prospect in many of these places for some indefinite time to come.

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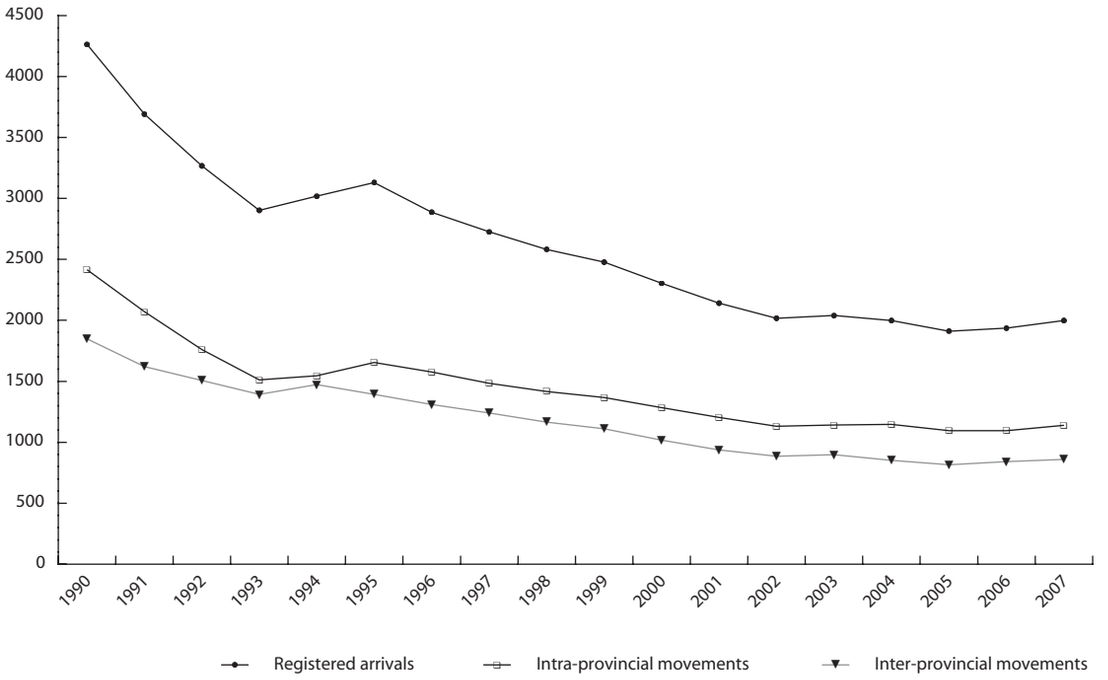
[81] Even for those migrants who manage to stay in Russia, earnings appear to be sharply off. Cf. Paul Goble, "Window on Eurasia: Gastarbeiters in Russia Sending a Third Less Money Home This Year than Last," Window on Eurasia, http://windowoneurasia.blogspot.com/2009/09/window-on-eurasia-gastarbeiters-in.html.

[82] Some official actions during the current downturn, such as the Moscow administration's June 2009 closing of the city's enormous Cherkizovo market, which suddenly left tens of thousands of migrant traders without a source of income, seem to signal that circles within the Russian government are intent upon making Russia a still more unwelcoming venue for prospective informal sector workers from other countries. For details, see the reportage assembled under the heading "Closing of Major Moscow Market Creates Turmoil," *Current Digest of the Post-Soviet Press* 61, no. 7 (July 6, 2009): 9–11.

[83] Mansur Mirovalev, "Russia's migrants face attacks in economic slump", *Associated Press,* December 19, 2008, available electronically at http://www.newsvine.com/_news/2008/12/19/2229963-russias-migrants-face-attacks-in-economic-slump.

[84] Aziz Atamonov, et al., "Income and Distribution Effects of Migration and Remittances: an Analysis Based on CGE Models for Selected CIS Countries," *CASE Network Reports #86/2009* (Warsaw: Center for Social and Economic Research, 2009).

FIGURE 5.16: Internal Migration in Russia, 1990–2007, thousands



SOURCE: Irina Ivakhnyuk, "The Russian Migration Policy and its Impact on Human Development: The Historical Perspective," Human Development Research Paper 2009/14, United Nations Development Programme, 23–24, Table 3, http://hdr.undp.org.

An upsurge in poverty and material hardship in much of the near abroad is already underway. Indicative of the critical humanitarian problems evolving in some areas are the new emergency food relief programs that are being authorized by the World Food Program for Tajikistan and Kyrgyzstan, where hundreds of thousands of families are currently said to lack the source of income needed for minimal sustenance. The frightening new economic situation in many of these locales may also be a source of social or even political tensions along parts of Russia's periphery. This certainly is the expectation of many observers in Central Asia itself. Paul Goble cites a commentator in a Kazakh newspaper who warned at the start of 2009 that the erstwhile labor exporting societies "can expect a rise in crime and radical political activism among those who see no other way to defend themselves."

That trend, the Kazakhstan commentator argues, is likely to make the Fergana valley again a focal point of tensions and possibly a source of conflict not only within these three countries but among them. Indeed, according to Goble, various commentators have recently suggested that border conflicts there are likely to intensify with the economic crises of 2009.[85]

The unfolding of the economic, and perhaps socio-political, crises in Russia's near abroad that are being precipitated by the unexpected and severe disruption in Russian domestic demand for foreign labor may prove to be another unintended but adverse consequence of post-Communist migration patterns in the Russian Federation, and possibly, an important one.

[85] Paul Goble, "Window on Eurasia: Migrant Laborers' Exit from Russia Creates Problems for their Homelands," *Window on Eurasia* website, http://windowoneurasia.blogspot.com/2009/01/window-on-eurasia-migrant-workers-exit.html.

Patterns of Geographic Resettlement in Post-Communist Russia: The Magnification of Moscow And the Emptying of the Russian Far East

We have devoted most of this chapter to analyzing Russia's patterns of international migration. This final section examines the country's patterns of internal population movement since the end of the Communist era. According to official Goskomsat/Rosstat figures, domestic migration has been on a continuous downslide within Russia since the collapse of the Communist system in 1991. According to this official data, in fact, fewer than half as many Russians moved to a new town or city in the year 2007 as in 1990.

If we were to believe these numbers, we would conclude that the geographic mobility of the Russian population is drastically lower today than it was back in Soviet years. However, the modern Russian data on domestic migration is fundamentally flawed. These statistics are based upon the bygone notion that newcomers to a Russian city or town would all register their arrival with local authorities. In the old days, that presumption comported with political reality. Under Communist rule, city dwellers in Russia could not change residence without state approval. Every urban inhabitant over 16 years of age was obliged to carry an internal passport containing their sole state-authorized address (or *propiska*), and "a[n internal] passport without a propiska was considered invalid."[86] Any legal geographic movement within the USSR was thus a statistically tabulated event. For the first half century of the USSR's existence, incidentally, villagers and *kolkhozniks* (residents of agricultural collectives) were not even issued internal passports "and therefore had no right to move even within the borders of the [province] where they lived."[87] They were effectively bound to the soil they tilled as socialist serfs.

With the end of Soviet control, the propiska system was delegitimized and overturned. In 1993, Russian Federation law replaced the compulsory propiska with a voluntary registration of local residence.[88] As domestic migration became increasingly voluntary, spontaneous, and unofficial, the statistical apparatus for tracking domestic migration, a holdover from the Soviet era, became an ever less faithful reporter of true national trends. For at least the past decade, these Russian migration numbers are patently implausible. Note, for example, that reported gross domestic migration in the Russian Federation declined markedly over the 1999–2007 period. Yet these were boom years when economic growth officially averaged almost 7% per annum.[89] Rapid and sustained economic growth can always be expected to elicit more mobility, not less of it.

The weakness of Russia's data on regional population movements perforce obscures the emerging similarities to patterns evident elsewhere in the world, as well as enduring or newly-increasing differences. Independent Russia's domestic migration dynamics may well still differ from those characteristic in established market economies, as a growing body of research drawing

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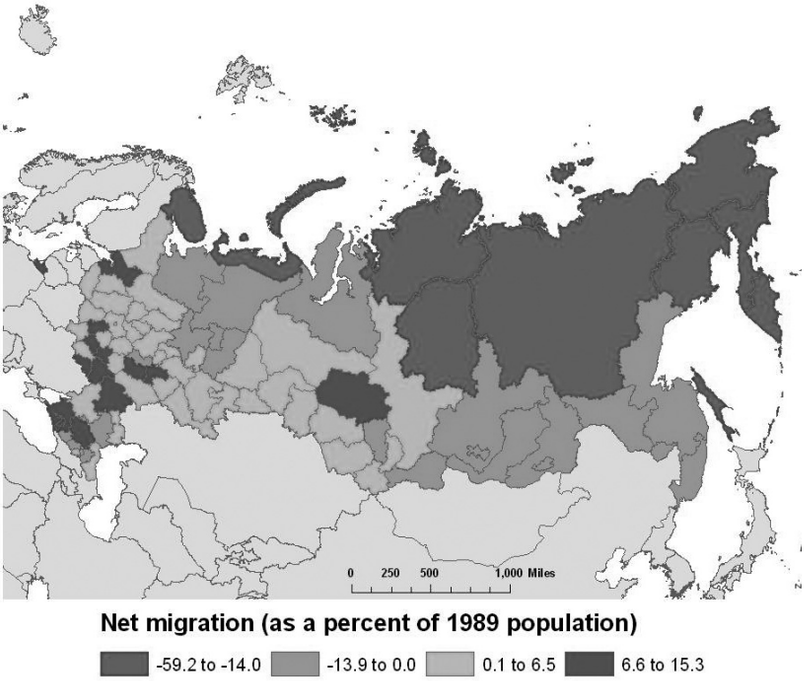
86 Irina Ivakhnyuk, "The Russian Migration Policy and Its Impact on Human Development: The Historical Perspective," *UNDP Human Development Reports Research Paper 2009/14* (April 2009), 5, http://hdr.undp.org/en/reports/global/hdr2009/papers/HDRP_2009_14.pdf.

87 Ivakhnyuk, "The Russian Migration Policy," 6.

88 Some localities, including most notably Moscow, still strictly insist upon the authority of their own local officials to approve or deny permission for newcomers to reside within their administrative jurisdiction. These locally assumed prerogatives appear to be in contravention of Russia's current federal law.

89 Russian Federation GDP growth as measured in rubles (constant 1990 domestic prices). See UN National Accounts Main Aggregates Database, http://unstats.un.org/unsd/snaama/selCountry.asp.

FIGURE 5.17: Net Migration in Russia, 1989–2002



SOURCE: Timothy Heleniak, "Growth Poles and Ghost Towns in the Russian Far North," (paper presented at "Russia and the North" conference at Centre for Russia Studies Annual Conference, November 28-29, 2007, Norwegian Institute for International Affairs, Oslo, Norway), Figure 1.

upon a variety of available Russian data is beginning to suggest.[90] Russia's housing and financial markets are underdeveloped, and such factors could constrain would-be migrants' responses to existing labor market opportunities away from home. There is some evidence, furthermore, that sheer lack of resources matters as well in domestic migration decisions in Russia today. Some fraction of the Russian populace may currently be caught in a poverty trap that hinders or prevents domestic relocation in search of a better life. There is no doubt that current Russian proclivities for moving from one region to another are very significantly lower than in, say, Canada and the United States, all uncertainties attendant to that comparison notwithstanding.

Our understanding of Russia's domestic migration dynamics today is palpably limited by the quality and availability of information on that phenomenon. The plain fact is that Russia's official data on domestic migration is so problematic and unreliable that it cannot as yet even be used to reconstruct the country's internal migration trends and levels for the many years since the collapse of the Soviet system. The overall level of domestic migration is a gross flow measure. While Russia's data on these gross domestic migration flows are of exceedingly poor quality, official Russian data on net migration (a stock measure) is of much greater reliability. This is because episodic census counts provide detailed information on current residence for the country's population. Using these

[90] See, for example, Yuri Andrienko and Sergei Guriev, "Determinants of interregional mobility in Russia: Evidence from panel data," *Economics of Transition* 12, no. 1 (March 2004): 1–27; Ira N. Gang and Robert C. Stuart, "Russian Cities in Transition: The Impact of Market Forces in the 1990s," *William Davidson Institute Working Paper no. 697* (University of Michigan Business School, May 2004); Ted Gerber, "Internal Migration Dynamics in Russia, 1985–2001: Determinants, Motivations and Consequences," (Washington, DC: National Council for Eurasian and East European Research, November 2005), http://www.ucis.pitt.edu/nceeer/2005_819_07g_Gerber.pdf ; and Anne White, "Internal Migration Trends in Soviet and Post-Soviet European Russia," *Europe-Asia Studies* 59, no. 6 (September 2007), 887–911.

TABLE 5.10: Net Migration Flows in Russia (thousands), 1989–2008

Region	Total Population, 1989	Total Population, 2008	Absolute Population Change, 1989-2008	Natural Increase, 1989-2008	Net Implicit Migration	Net Implicit Migration as a % of Total 1989 Population
Russian Federation	147,022	142,009	-5,013	-11,323	6,310	4.3%
Central Federal District	37,920	37,151	-769	-5,374	4,605	12.1%
Far East Federal District	7,950	6,486	-1,464	-91	-1,373	-17.3%
Northwest Federal District	15,237	13,501	-1,736	-1,671	-65	-0.4%
Siberian Federal District	21,068	19,553	-1,515	-879	-635	-3.0%
Southern Federal District	20,536	22,835	2,299	-352	2,651	12.9%
Urals Federal District	12,526	12,240	-286	-568	282	2.3%
Volga Federal District	31,785	30,242	-1,543	-2,205	662	2.1%
Moscow City	8,876	10,470	1,594	-946	2,540	28.6%
Moscow Oblast	6,646	6,673	27	-974	1,001	15.1%

SOURCE: Timothy Heleniak, Department of Geography, University of Maryland on the basis of Goskomstat/Rosstat data.

census data in conjunction with vital statistics (birth and death numbers), it is possible to arrive at a reasonably accurate residual approximation of net migration within any given region in Russia for the intercensal 1989–2002 period.[91] On the basis of such official Russian data Timothy Heleniak of the University of Maryland has estimated the aggregate regional net migration in the Russian Federation over the 1989–2002 period, mapping of the proportional impact on local population numbers by oblast across the country (see **Figure 5.17**).

It is also possible—in theory—to estimate trends in net regional migration for the Russian Federation for more recent years since Goskomstat/Rosstat has provided annually updated estimates of the country's regional population distribution as of New Year's Day for each successive year since the 2002 census. Over time these intercensal regional population estimates tend to lose their accuracy.[92] With this proviso, we can examine official Goskomstat/Rosstat data on

[91] Note, however, that this measure of net migration includes both international and domestic net migration.

[92] An extreme example of this effect was seen in the case of Moscow on the eve of the 2002 population count, roughly thirteen years after the final Soviet census. As it happened the Goskomstat/Rosstat intercensal estimate of the capital's population for 2002 proved to be 1.8 million persons too low—an underestimate of almost 18%. See Timothy Heleniak, "The 2002 Census in Russia: Preliminary Results," *Eurasian Geography and Economics* 44, no. 6 (September 20003): 436, table 2.

net migration flows within Russia for the 1989–2008 period, as compiled by Heleniak. These are presented in **Table 5.10**.[93]

Figure 5.17 and Table 5.10 underscore many interesting aspects of the ongoing population movements within post-Communist Russia. In general, this data seem to support the "new Russian heartland" hypothesis proposed by geographer Michael Bradshaw of the University of Leicester. He argued that a Russia gradually shaped by forces of the market economy would see its domestic population moving westward and to the south to "archipelagos" of vibrant economic activity surrounded by vast "empty spaces".[94] Perhaps the two most important points revealed by these charts are the dramatic roles of net migration in bolstering the population of Moscow and its environs on the one hand, and in accelerating the depopulation of the Russian Far East on the other.

By official Russian figures, the country's total net interprovincial movement of population amounted to just over 9 million over the period between the 1989 census and the start of 2008.[95] Of this total, over 2.5 million in net migration accrued to Moscow, the capital. For Moscow oblast, the region immediately surrounding the capital, a net inflow of an additional million persons was indicated for this same period. Thus Moscow—with just 6% of the Russian Federation's population in 1989—accounted for over a quarter of the country's net regional immigration over the following two decades. Taken together Moscow and Moscow oblast, with little more than a tenth of Russia's total population in 1989, were the venue for nearly two-fifth's of the entire country's net provincial immigration in the 1990s and the first decade of the new century.

With the collapse of Communism, Moscow has become a sort of human magnet within Russia. The attractive pull of the capital and its environs, indeed, have been sufficiently powerful to overcome the powerful incipient forces of depopulation at work in the area. Between 1989 and the start of 2008, Moscow's deaths exceed births by almost one million (946,000, according to Goskomstat/Rosstat), but the city grew by 1.6 million (nearly 18%) over those years nonetheless. In Moscow oblast, deaths likewise outnumbered births by almost one million over these years (974,000), but because net immigration was even greater, the province's population rose slightly. In contemporary France one often hears talk of "Paris and the French desert."[96] The contrast between the capital and the hinterlands may be even more acute in post-Communist Russia, where the population of Moscow has been steadily growing even as the rest of the country experiences continuing depopulation.

With Moscow swelling as Russia shrinks, the relative size of the capital has appreciably increased over the past two decades (from 6% of the country's population in 1989 to 7.5% at the beginning of 2008). From the standpoint of economic geography, this appears to be accentuating a regional distortion that was already pronounced back in Soviet times—a peculiar mismatch between the actual and the expected size of the country's urban centers.

Clifford Gaddy and Fiona Hill of the Brookings Institution commented on this distortion in their path-breaking study, *The Siberian Curse*:

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93 From the standpoint of accuracy, it would be preferable to use two censuses as the endpoints for updated net domestic migration estimates. However, since the results of the next Russian population census will not be available for years to come, the best may be the enemy of the good here.

94 Cf. Professor Michael Bradshaw, "A New Russian Heartland?" Department of Geography, University of Leicester, October 27, 2006, http://www.geog.le.ac.uk/russianheartland/index.html.

95 This number, remember, must by definition be far lower than the true total for geographic movement within the country over this period. For one thing, it ignores any and all migration within Russia's provinces or administrative regions. For another, it estimates a region's net residual of newcomers or emigrants for the period as a whole, rather than the volume of intra-provincial movement over the interim.

96 A discussion dating back to Jean-François Gravier's 1947 treatise, *Paris et le désert francais; décentralisation, équipement, population* [Paris and the French Desert: Decentralization, Infrastructure, Population].

> One of the most interesting regularities in economic development is a phenomenon called "Zipf's law" for cities. Zipf's law says that across all countries and across time, cities generally seem to obey a curious mathematical law with respect to their relative sizes: a country's largest city is approximately twice as large as the second largest city, three times as large as the third city, four times as large as the fourth, and so on….[T]he Russian city size distribution is a very poor fit along the Zipf line….Russia is not the only case of a country that has failed to follow the regular pattern. But the Russian cities deviate from Zipf's law in a way not seen in any other country.[97]

The unique deviations to which Gaddy and Hill refer may be seen by contrasting the Zipf line for Russia and the United States today (see **Figures 5.18** and **5.19**). Whereas there is a regular and fairly steady correspondence between the absolute size and relative ranking of the largest U.S. urban concentrations, Russian urban centers veer far off their Zipf line. The population of Moscow is far larger than would be predicted. The population of the former capital, St. Petersburg, also looks somewhat larger than would be predicted. However, the next half dozen or more cities are all distinctly smaller than would be predicted. These distortions owe much to Russia's Soviet legacy. As Gaddy and Hill observe:

> Russia's situation in regard to the creation and growth of cities is not just different. It is *radically* different. Never before in history has there been an urban structure shielded so thoroughly from market forces and thus allowed to misdevelop as much as Russia's in the twentieth century.[98]

The Soviet era ended almost two decades ago, and to judge by the continuing rise of Moscow and the ongoing decline in size of the Russia's second-tier cities (a phenomenon we noted in chapter one), Russia's urban geography paradoxically appears to have become more distorted, not less, during this post-Communist period of greater market forces and much freer population movement.

While Moscow is pulling in ever more migrants from at home and abroad, migration is behind an unpeopling of a vast region on the other side of the country: the Russian Far East (RFE). This huge area encompasses the country's ten easternmost provinces, stretching from the Manchurian border almost to Alaska and rimmed by the Arctic and Pacific oceans. In sum, the RFE covers over one third of Russia's total territory. In 1989, the population of the Russian Far East was just under 8 million—not so different from Moscow's total that same year. By 2008, however, it was below 6.5 million—a decline of over 18% over the very years in which Moscow had grown by a roughly similar proportion. According to official figures, net out-migration was responsible for almost all of the Russian Far East's population loss.

It is possible, moreover, that official estimates understate the net outflow to date of residents from the Russian Far East. This is possible because population estimates for these regions today are intercensal estimates, extrapolations off the last population census. At the time of Russia's last population count, in 2002, Goskomstat/Rosstat intercensal estimates turned out to be roughly 350,000 too high for the Russian Far East, and net out-migration had been underestimated for each and every one of its provinces.

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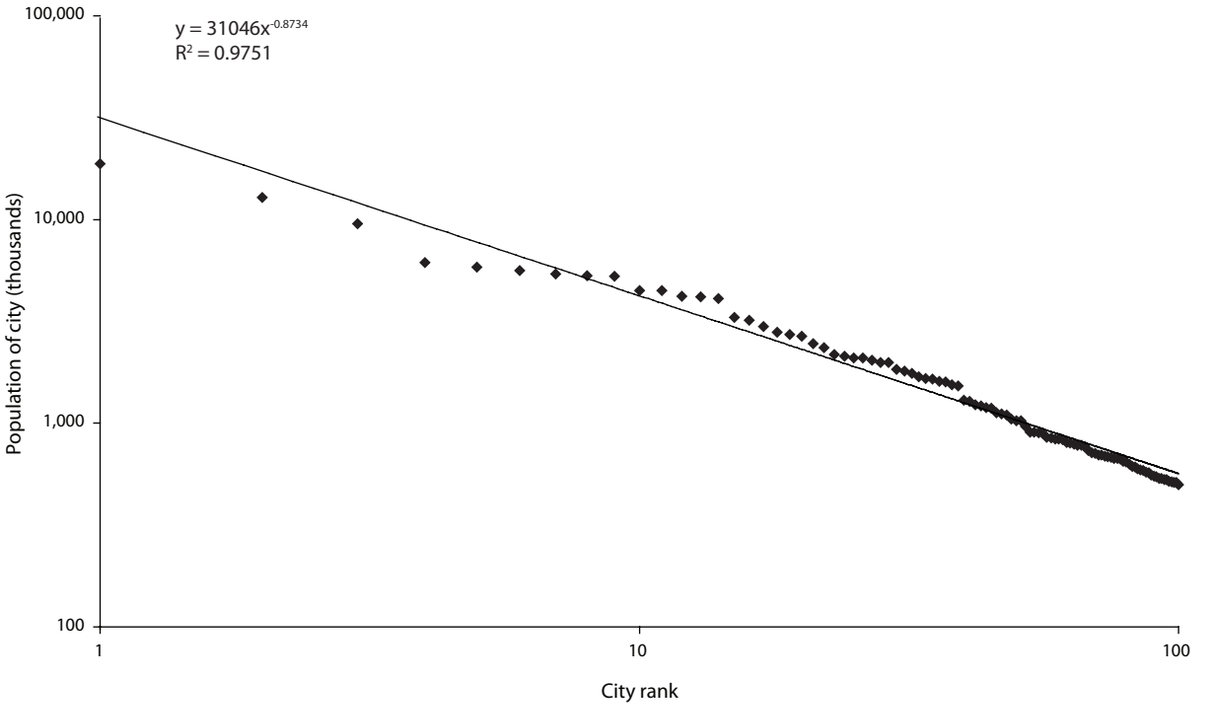
97 Clifford G. Gaddy and Fiona Hill, *The Siberian Curse: How Communist Planners Left Russia Out In The Cold* (Washington, DC: Brookings Institution, 2003): 19.

98 Gaddy and Hill, *The Siberian Curse*, 23.

FIGURE 5.18: Zipf Chart for USA, Top 100 Most Populated Cities, 2007 (Updated from Gaddy and Hill, 2003)



SOURCE: U.S. Census Bureau, Population Division, "Table 1: Annual Estimates of the Population of Metropolitan and Metropolitan Statistical Areas: April 1, 2000 to July 1, 2007 (CBSA-EST2007-01)," http://www.census.gov/population/www/estimates/CBSA-est2007-annual.html.

With an area of 6.2 million square kilometers (sq km) and a population density of just over 1 person per sq km, the Russian Far East is—excepting only Antarctica and the Sahara Desert—possibly the least inhabited large space on the world map today. No country on earth has such a low population density: not Australia (2.8 persons per sq. km.), not Mongolia (2.0 per sq. km.), not even the disputed desert territory of Western Sahara (1.8 per sq. km.).[99] Yet there is reason to expect that the region's population will decline further in the years ahead, and perhaps quite substantially.

As Gaddy and Hill persuasively demonstrate, Soviet-era settlement patterns in the Russian Far East were manifestly irrational from an economic standpoint.[100] Without massive subsidies to keep them in operation, and a police state to keep their populations in place, many of the villages, towns, and cities in the harsh and inhospitable reaches of the then Soviet Far East simply were not viable, and may not yet be. Goskomstat/Rosstat numbers indicate that the exodus from the RFE has not yet stopped. According to these numbers, the Russian Far East has experienced net out-migration every year since the end of Communism.[101]

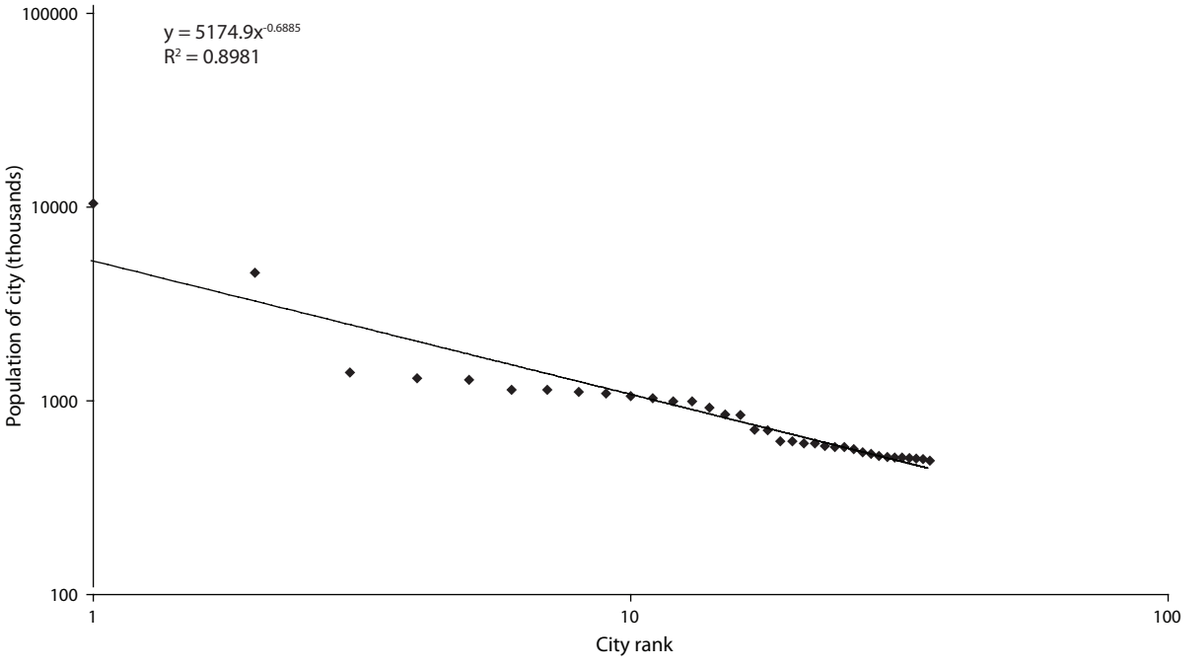
It is true that the RFE is rich in natural resources, including oil and gas. As the University of Leicester's Michael Bradshaw has noted, the manpower requirements of the Russian Far East's

[99] Mid-year 2009 population density projections from the U.S. Census Bureau International Data Base, http://www.census.gov/ipc/www/idb/index.php.

[100] Gaddy and Hill, *The Siberian Curse*, 23.

[101] For the years 2003–2008, the pace of net out-migration from the RFE, as reported in official data, appears to be abating. As already noted, these intercensal estimates of net migration from the RFE have understated the territory's true levels of outmigration in the past.

FIGURE 5.19: Zipf Chart for Russia, Top 36 Most Populated Cities, 2006 (Updated from Gaddy and Hill, 2003)



SOURCE: Naselenyie Rossi, 2006, 238–39.

existing and prospective facilities for resource exploitation number in the tens of thousands, or perhaps the hundreds of thousands, but not in the millions.[102] Like Gaddy and Hill, Vladimir Kontorovich of Haverford College argues that a significantly smaller population for the Russian Far East is not only likely but desirable. It is a precondition for a needed restructuring that would conduce to prosperity for the local populace and sustainable development for the territory.[103]

As may be seen from Figure 5.17, the Russian Far East is not the only place in Russia to experience big out-movements of local population. All of Russia's northernmost provinces experienced substantial population losses through migration between 1989 and 2002. In all but two of these provinces, net out-migration amounted to at least 14% of total population. Other parts of Russia, including much of Siberia and some portions of European Russia, were also subject to net outmigration during those same years. If the Russian Far East were located somewhere else in the world, its ongoing depopulation through emigration might be little more than a fascinating bit of trivia—much akin to the corresponding and continuing resettlement of Canada's population into that country's warmer regions.

Geography matters, though, and as fate would have it, the RFE shares borders with both China and North Korea (the Democratic People's Republic of Korea, DPRK). These fateful boundaries raise inescapable security questions for an ever more sparsely settled Russian Far East. In the

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[102] Michael Bradshaw, oral comments at "Russia in Asia-Asia in Russia: Energy, Economics and Regional Relations," Conference co-sponsored by the Kennan Institute and the Asia Program, Woodrow Wilson International Center for Scholars, Washington, D.C., July 22–23, 2004. For conference proceedings, see Joseph F. Dresen, ed., *Russia in Asia—Asia in Russia: Energy, Economics, and Regional Relations*, Kennan Institute Occasional Paper #292 (2005).

[103] Vladimir Kontorovich, "Can Russia Resettle the Far East?" *Post-Communist Economies and Transformation* 12, no. 3 (September 2000): 365–84; Vladimir Kontorovich, "The Russian Far East and the Social Sciences," paper presented to the 34th National Convention of the AAASS, Pittsburgh, PA, November 24, 2002, http://www.haverford.edu/economics/oldsiteOct2008/Faculty/Kontorovich/documents/AAASS.pdf .

shorter term, potential instability in North Korea could conceivably lead to mass movement of refugees into China and Russia as well. Over the longer term, those boundaries beg the question of Chinese aims and interests in the neighboring Russian territories.

Since 1988 the Sino-Russian border has been open to trade and travel. Over those decades, there has been some immigration into the Russian Far East by Chinese traders and laborers. Because most of this movement is undocumented, estimates of the size of this newcomer population vary wildly. On the one hand, Russia's 2002 population census counts just 30,000 nationwide. On the other, Russian officials at a 2008 CIS conference reportedly offered an unofficial estimate of 2.5 million illegal Chinese immigrants in the Russian Federation. A few years earlier, academic Alexei Yablokov (a former science adviser to President Yeltsin and a well-known environmentalist) reportedly asserted there were ten times as many Chinese as Russians in the Russian Far East.[104]

For a variety of easily identifiable, if not terribly august, reasons (lack of direct personal contact or familiarity with these newcomers, narrow nationalist sentiment, and Russia's "yellow peril" mythology), Russian audiences often seem to be prepared to believe that there are vastly more Chinese in Russia today than could possibly be the case.[105] The reality, as best can be determined, is that the actual current number of Chinese working or living in the Russian Far East (mostly on a temporary basis) is probably on the order of a few hundred thousand.[106]

Today's patterns of unauthorized Chinese migration into the Russian Far East, furthermore, most likely reflect labor market conditions in the region itself. As Andrei Zaibanko of Amur State University has argued, "The number of Chinese in any given place within the Russian Federation corresponds to the number that makes economic sense to the Chinese themselves. No more and no less."[107] Restricting that inflow—as Russian public opinion increasingly urges authorities to do—would not only entail costs and losses for the would-be immigrants, but for the economically depressed RFE as well.

Viewed in the context of the globalization underway in the rest of Asia, it is well to bear in mind, the economic and migratory linkages that have developed between northeast China and the RFE over the past two decades look distinctive, but only because they are so modest and tentative. Maria Repnikova of Oxford University and Georgetown University's Harley Balzer are more pointed. They describe the "Chinese-Russian border as Asia's least successful example of trans-border integration;" in their estimate, "the limited scale of Chinese labor migration to Russia has the appearance of a missed opportunity rather than a threat."[108]

From an economic standpoint, Repnikova and Balzer's assessment appears persuasive. That judgment, however, will not necessarily answer the sorts of questions that strategists and security specialists might raise about the future of the Russian Far East. Can this far-flung, fragile and increasingly empty Russian expanse maintain its national identity and territorial integrity in the

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104 Maria Repnikova and Harlay Balzer, *Chinese Migration to Russia: Missed Opportunities* (Washington, D.C.: Woodrow Wilson International Center for Scholars; Kennan Institute and Comparative Urban Studies Eurasian Migration Paper #3, 2009): 9–10.

105 For an analysis of Russian attitudes toward China, see Vladimir Shlapentokh, "China in the Russian Mind Today: Ambivalence and Defeatism," *Europe-Asia Studies* 59, no. 1 (January 2007): 1–21. For public opinion survey data on Russian popular impressions about the size of the Chinese population in the Russian Far East, see Mikhail A. Alexseev and C. Richard Hofstetter, "Russia, China and The Immigration Security Dilemma," *Political Science Quarterly* 121, no. 1 (Spring 2006): 1–32.

106 For an informed discussion of the range of estimates and their provenance, see Repnikova and Balzer, *Chinese Migration to Russia*, 13–15.

107 Repnikova and Balzer, *Chinese Migration to Russia*, 13–15.

108 Repnikova and Balzer, *Chinese Migration to Russia*, 34–35. As in the rest of Russia, current events are less than auspicious for immigration. Repnikova and Balzer point out that the current economic crisis, in conjunction with a rise of popular anti-immigrant sentiment and local administrative measures, is inhibiting demand for Chinese manpower and entrepreneurship in the Russian Far East and likely driving down the number of Chinese immigrants in the region.

face of the impending geopolitical changes (including perhaps the great-power rivalries) that may lie in store for Northeast Asia in the century ahead?

Relations between Beijing and Moscow are fairly warm today, and seem to have been growing warmer in recent years. All the same, China is a rapidly rising power. Its polity is authoritarian, not democratic. Its long-term disposition toward Russia in general and the resource-rich Russian Far East in particular cannot be predicted with certainty today.

It is possible to imagine alternative futures for what is now the Russian Far East—some of them quite different from the social and political arrangements of today. One of these alternative futures was envisioned by Putin himself. In July 2000, then president Putin famously warned, "If we do not take practical steps to advance the Far East soon, in several decades the local population—originally Russian—will be speaking mainly Japanese, Chinese, and Korean."[109] From the other side of the border, a strikingly similar vision was conjured in the 2009 Chinese bestseller, *China Gets Angry*. As described by Paul Goble, the book talks about [Russia] as "a living space" for the still growing Chinese people. It pointedly suggests that "sober-thinking Chinese need to get rid of any doubt on this point: sooner or later we will be" in Siberia and the Russian Far East developing the vast areas that Moscow has not.[110]

These parallel visions, of course, depict only one of many possible alternative futures for the Russian Far East—and by no means the most likely one, at least from the current vantage point. Any future scenario that posits a continuing long-term out-migration of Russians from the Russian Far East, however, cannot help but raise questions about exactly how Moscow will maintain its interests in this vast and increasingly vacant territory (Alaska, remember, was once a part of the Russian Far East). The answers to those questions are not entirely self-evident today, especially given the uncertainties attendant to the rise of China. They could become much less clear with a progressive depopulation of the Russian Far East.

The phenomenon of voluntary migration—all but alien to Russian soil for centuries—now has suddenly come to characterize most population movement within and across the country's borders. Voluntary migration has opened new vistas for Russian society, and is already beginning to transform it. Because of voluntary migration, both the population of the Russian Federation and the size of the Russian workforce are millions larger today than they would otherwise have been. International migration has materially mitigated the country's population decline. Because of voluntary migration, both Russia and neighboring states (and populations) are richer today than they otherwise would have been. National income and living standards are both demonstrably higher, and the incidence of poverty is demonstrably lower than it would have been otherwise. More broadly, the advent of voluntary migration for the Russian Federation has marked a signal extension of personal choice and a correlative improvement in individual well-being, the benefits of which extend well beyond the readily tangible.

From an economic standpoint, the implications of Russia's new freedoms of movement are overwhelmingly positive. Yet man is not just an economic animal. Population movement also raises political questions, and sometimes security issues, with which societies must also contend.

For all the economic benefits, voluntary immigration from abroad also inescapably raises the critical question of assimilation and social integration for the newcomers. In the Russian case,

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109 "Putin speaks for urgent steps to advance Far East," *Interfax News Agency*, July 21, 2000.

110 Paul Goble, "Window on Eurasia: Chinese Bestseller Has Russian Far East Falling under Beijing's Influence" June 20, 2009, http://windowoneurasia.blogspot.com/2009/06/window-on-eurasia-chinese-bestseller.html.

a question that is most pointed in the case of immigrants from the historically Muslim regions of the near abroad. With respect to international security, the sudden, steep and continuing depopulation of the Russian Far East begs potentially profound questions about future of this distant and formerly contested outpost of Russian sovereignty. To the extent that population matters in the determination of this future, the new political fact of voluntary migration has made for new complexities as well—complexities that did not trouble the masters of the erstwhile Soviet system. Voluntary migration has brought tremendous recent gains to Russia and its people. As other modern societies that enjoy this freedom can attest, such migration, however, is not without its accompanying challenges.

PART II

RUSSIA'S HUMAN RESOURCES IN DISARRAY: THE DEMOGRAPHIC CRISIS BEYOND THE POPULATION COUNT

"Demography is destiny." This marvelous aphorism is commonly attributed to Auguste Comte, the nineteenth century French polymath and pioneer in modern social sciences. It is a wonderful and evocative formulation, rich in its suggestive imagery. Yet at the same time, it offers little in the way of guidance for any practical analysis of the impact of the population factor on human affairs. For such mundane purposes, in fact, the aphorism may be positively misleading. Depending on the time horizon (and, of course, our own preferred metaphysical first premises), this familiar dictum could actually prove dangerously wrong in practice. In short, demography is destiny—except when it isn't.

There is another way of describing the scope and sweep of demography that is considerably less contestable, though scarcely less far-reaching. We might say instead that demography is the saga of human resources. In our era, and perhaps not ours alone, a nation's fortunes often turn on just such vital resources.

In describing contemporary Russia's ongoing patterns of population change as revealed by trends in births, deaths, and migration, the first part of our study has chronicled the tale of the country's human resources. The tale we have thus far recounted is one of crisis. Human resources in Russia are, manifestly, in a state of crisis. This crisis has few obvious historical precedents and only limited modern parallels to developments in other societies at peace. This crisis has immediate and unmistakably adverse implications for individual wellbeing, social welfare, and economic potential in Russia—not only today but in the years and, even the decades ahead.

Even so, this exposition has not yet fully covered the scope and sweep of modern Russia's human resource crisis. A country's population profile, comprehensively considered, amounts to an aggregation of the manifold demographic characteristics of individual human beings. This tableau extends well beyond an account of just population totals, births, death, and geographic movements. In the second part of this study, we therefore focus more closely on some of the particularities and attributes that characterize who together comprise the population of the Russian Federation.

Further examination only documents additional dimensions of the far-reaching and formidable human resource crisis besetting Russia today. Some of these particulars presage major and enduring (or even mounting) constraints in the struggle to improve human wellbeing and promote prosperity in Russia for years to come. The following chapters will highlight what may be three of the most pressing and intractable aspects of the more general human resource problems that will confront Russia today and tomorrow.

Chapter 6 addresses the question of population aging in Russia. Over the next generation, Russia is set on a course that will entail a very significant "graying" of the population profile. The aging of the Russian population in the coming decades is all but inescapable—only a catastrophic upsurge in level of deaths for older Russians, on a scale not even imaginable under the country's current mortality crisis, could prevent this. The dimensions of Russia's pending "gray wave" are roughly similar to those gathering in Europe, North America, and other developed regions. Like the graying of the Western world, Russia's momentum for population aging is being generated primarily by low (or sub-replacement) fertility trends. Yet Russia's outlook differs from that of Western countries in two critical respects: the country's income level is much lower, and the older population looks to be decidedly more brittle and infirm. Thus Russia faces a much more serious old-age burden in the years ahead, but has far more limited resources for addressing these looming social needs.

Chapter 7 looks at Russia's education and labor productivity situation. Education should be a bright spot on Russia's otherwise largely bleak human resource horizon. After all, measured in terms of years of school attendance, the educational attainment of the working-age population is comparable in Russia to levels reported by the world's most affluent societies. By the metric of awarded degrees alone, in fact, the educational profile for Russian adults may appear superior to those for most advanced Asian or European societies today. We might expect this immense investment in human capital to augur well for the economic potential of the country's workforce, but it does not. By a variety of measures, labor productivity in Russia is shockingly low. Only in the enclave exploiting the country's natural resources (a sector that employs a tiny percentage of the Russian workforce) does value added per worker match or exceed ordinary Western levels today. Why is productivity so low in a country where the level of official educational attainment is so high? Evidently, Russia's educational system has not actually contributed much "human capital" to its graduates. Russia has about 6% of the world's college graduates, but it generates fewer than 0.2% of the world's international patent applications. Although Russia boasts one of the world's highest ratios of doctors to population, it suffers from remarkably poor levels of public health. Abnormal as it may appear, this Russian paradox—high levels of educational attainment coinciding with low levels of human capital—may prove surprisingly resistant to redress in the decades immediately ahead.

Finally, Chapter 8 addresses what social scientists are now calling "social capital" and its bearing on Russia. The new research underway today on social capital focuses largely on social networks and their capabilities for facilitating human action. In some societies, these networks seem robust and supportive of human well-being; in others, they appear markedly less so.

By almost all of the yardsticks with which social capital is measured today, Russia's population would appear to be impoverished—we might even say stricken. The average Russian citizen's ambit of participation in civil society, for example, appears to be one of the very most constricted and limited in the world. Russians, furthermore, appear to be more distrustful of public institutions than almost any other population in the post–Cold War era. By their own self-assessments, Russians appear to be among the world's most unhappy people. In perceived control over life, Russians rate their personal circumstances more subject to forces beyond their own control than do respondents in all but a handful of countries.

Here again, modern Russia is seen to stand apart from its presumptive world peers, this time as an outlier with popular attitudes about issues central to daily life that are radically different from those in all Western societies and most post-Communist societies as well. Certainly, some of these Russian attitudes—such as lack of trust in public institutions—may be entirely rational, even well-grounded. Yet such attitudes have consequences. Inchoate though such qualities may sometimes seem, the dispositions and outlooks exposed by the Russian public's survey responses to questions about social participation, trust, happiness, and perceived control over life may themselves have a tangible and direct bearing human on well-being in Russia—both today and tomorrow. These attitudes and dispositions may plausibly be expected to exert an influence, and not an auspicious one, on both human resource development and political development. Unfortunately for Russia, the popular attitudes and attendant patterns of behavior examined in chapter eight tend to change only slowly in societies. If Russia, in addition to all its other afflictions, is plagued by low levels of social capital today, the adverse effects of this situation may continue to be felt by Russia's rising and future generations.

CHAPTER 6

Population Aging: Toward a Russia That Is Gray, Sick, and Poor

Russia: A Rapidly Graying Society

Paradoxical though it may sound given modern Russia's horrendous mortality record, the Russian Federation is a society characterized by pronounced population aging, with much more graying still in prospect. The reason is simple: a population's age profile is largely determined by fertility patterns (which, so to speak, set the width of the base for society's population pyramid). With low or sub-replacement fertility levels, the overall composition of society shifts toward the older age groups, even when mortality rates for those same adults are fearfully high. **Table 6.1** presents some basic data on Russia's population aging situation, thereby placing the phenomenon in a global perspective.

As of the year 2005, Russia's median age—the age marker that would bisect the entire population into two equally sized groups—was just over 37 years. By way of comparison, that was nearly a decade higher than the median age for the world as a whole and almost 12 years higher than the median age prevailing in less developed regions. Russia's median age was slightly lower than the average for the more developed regions as a whole (37.3 years vs. 38.6 years) but well within the range that characterized the affluent graying societies in Europe, North America, and elsewhere.

By the benchmark of median age, Russia has been aging fairly rapidly in recent decades. Between 1980 and 2005, median age in the Russian Federation rose by 6 years, or by almost 3 months each and every calendar year. In absolute terms, Russia's rise in median age over the past generation exceeded the global average (roughly 5 years), falling just below the overall average for the more developed regions (6.0 years vs. 6.6 years). By this criterion, though, Russia's trajectory of population aging is not appreciably different from that of other Western societies today.

TABLE 6.1: Russian Federation Population Aging in Global Perspective: 1980 vs. 2005

Median Age (years)	1980	2005	Change (years)
Russia	31.3	37.3	6.0
World	23.0	27.9	4.9
Less Developed Regions	20.1	25.4	5.3
More Developed Regions	32.0	38.6	6.6
Percentage of Population 65+	**1980**	**2005 Change (percentage points)**	
Russia	10.2	13.8	3.6
World	5.9	7.3	1.4
Less Developed Regions	4.0	5.4	1.4
More Developed Regions	11.7	15.3	3.6

SOURCE: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2008 Revision*, http://esa.un.org/unpp.

Another aperture on the aging phenomenon is afforded by examining the proportion of the total population comprised of people 65 years of age and older. In 2005, just under 14% of Russia's total population was 65 or older—roughly speaking, every seventh citizen. As recently as 1980, the corresponding fraction would have been every eleventh citizen.

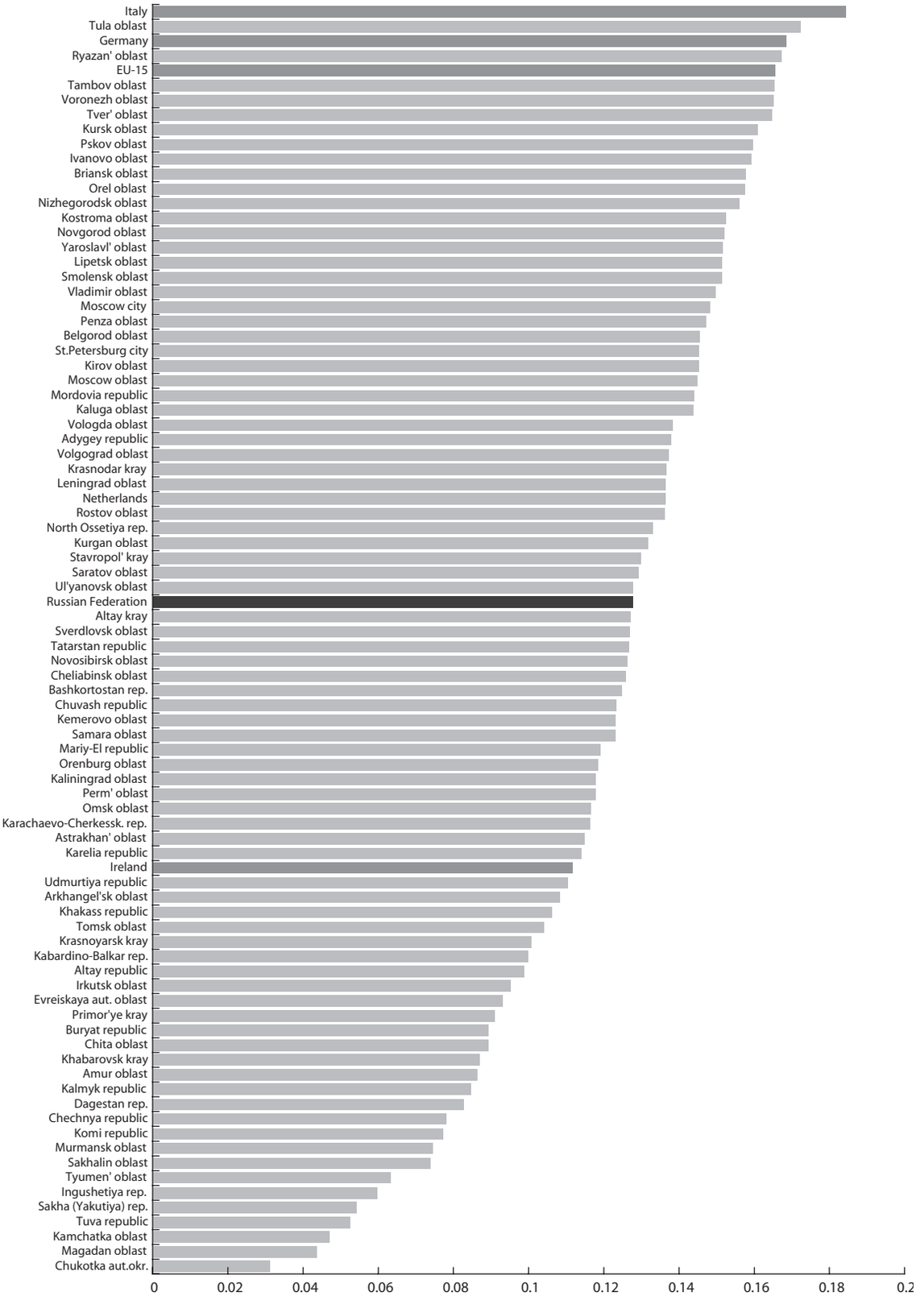
In 2005, Russia's share of men and women 65 years of age and older within its national population was nearly twice as high as the global average. It was, nonetheless, noticeably lower than the average for more developed regions overall (13.8% versus 15.3%). This discrepancy is largely explained by the unfavorable survival patterns for Russians above the country's median age. Nevertheless, Russian society has already experienced a significant measure of graying. In fact, Russia is now on the verge of becoming an "aged society"—a term commonly applied to populations where 14% or more have reached their 65th birthday.[1]

Within Russia itself, the degree of population aging today varies dramatically between regions. This may be seen in **Figure 6.1**, which contrasts the proportion of the population that is 65 or older among Russia's regions at the dawn of the new century (2001). Although older Russians that year accounted for a national average of 12.7% of the total population, at more local levels the corresponding figures ranged from a low of 3% (in the Chukotka Autonomous Okrug, across the Bering Strait from Alaska) to a high of over 18% in Tula oblast (which borders the Moscow region).

By 2001, at least 25 oblasts among the over 80 regions in Russia for which data was available had passed the notional aged society threshold of 14% of the population 65 years of age or older. These places included Moscow City, St. Petersburg, and much of the European (i.e., Western-most) territory of the country. Yet at the same time, three regions within the Russian Federation (all in the harsh Russian Far East) reported local percentages of older citizens that were below the contemporaneous

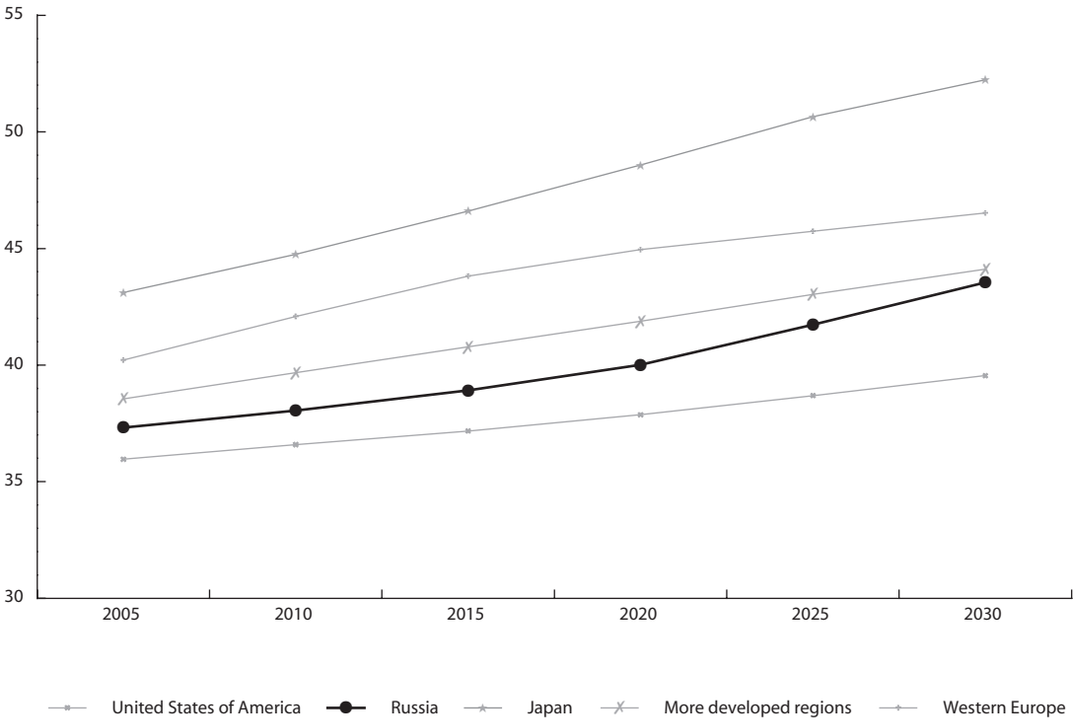
[1] Students of demography today are generally under the impression that the United Nations has defined an aging society as one where 7% or more of the citizens are 65 or older, with an aged society benchmarked at 14% or more over the age of 65. The documentation for these formal thresholds, as it turns out, is somewhat problematic. Nonetheless, the 7% and 14% notional thresholds for aging societies and aged societies are widely used by students of demography nowadays. From Personal correspondence with Dr. Hania Zlotnik, head of the UN Population Division, and Dr. Joseph Chamie, former head of UNPD, July 2009.

FIGURE 6.1: Percent of Population Aged 65+, 2001: Russia by Region, with Selected Other European Populations



SOURCE: WHO Health for All Database, http://www.euro.who.int/HFADB.

FIGURE 6.2: Projected Median Age, 2005–30: Russia in International Perspective (Median age in years)



SOURCE: Population Division, World Population Prospects, http://esa.un.org/unpp.

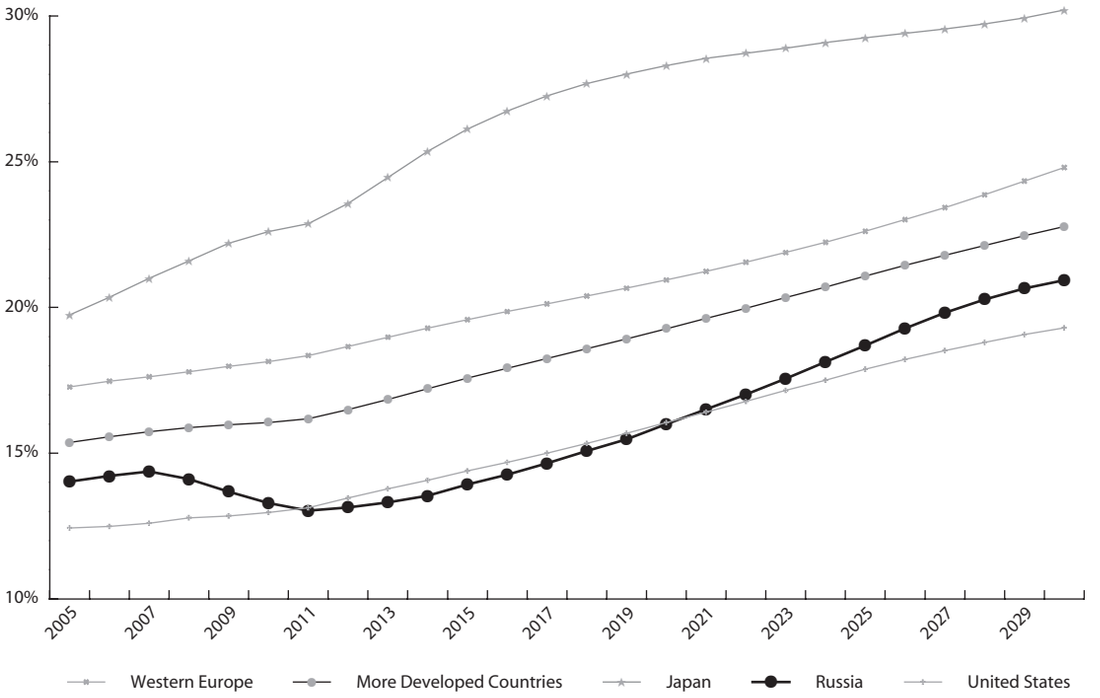
average for the Third World. Regional variations within Russia in the degree of population aging appear unusually pronounced for a country that has reached a high degree of graying.[2]

Russia's regional variations in population aging can also be considered against a Western European canvass. As of 2001, the fraction of the population 65 and older was about four percentage points higher for the EU-15 than for the Russian Federation (16.6% versus 12.7%). Indeed, the EU-15's average was higher than in all but two of Russia's oblasts. Not a single Russian oblast reported a level as high as the nation-wide average for Italy, which is currently Western Europe's grayest country. But variations in population aging are evident in Western Europe, too. For instance, Ireland's 2001 percentage of citizens 65 and older was distinctly lower than Russia's national average (11.1% versus 12.7%). This is lower, as it happens, than in about two-thirds of Russia's regions.

Over the coming generation, Russia stands to become a progressively more aged society. We can be fairly confident about this outlook, insofar as the country's future senior citizens are already in Russia here and now—they are the cohorts currently advancing into middle age. The prospect is illustrated by projections to the year 2030 produced by the U.S. Census Bureau's International Programs Center and the United Nations' World Population Division. Over the generation 2005–

[2] In the U.S., for example, the percentage of citizens 65 and older in 2001 was similar to that of Russia in 2001 (12.4% versus 12.7%). The ratio between the highest ranking state (Florida) and the lowest ranking state (Alaska) in 2000 for the proportion of population 65 and older was about 3.1:1, as against 5.5:1 in Russia in 2001. The absolute difference was also higher in Russia (14 percentage points versus 12 points). For data on the U.S., see U.S. Census Bureau, *Current Population Reports, P23-209, 65+ in the United States: 2005*, report prepared by Wan He, Manisha Sengupta, Victoria A. Velkoff , and Kimberly A. DeBarros, U.S. Government Printing Office (Washington, DC, 2005): 120, table 5-1, http://www.census.gov/prod/2006pubs/p23-209.pdf.

FIGURE 6.3: Projected Percentage of Population aged 65+, 2005–30: Russia in International Perspective



SOURCE: U.S. Census Bureau, International Data Base, http://www.census.gov/ipc/www/idb/, June 25, 2009.

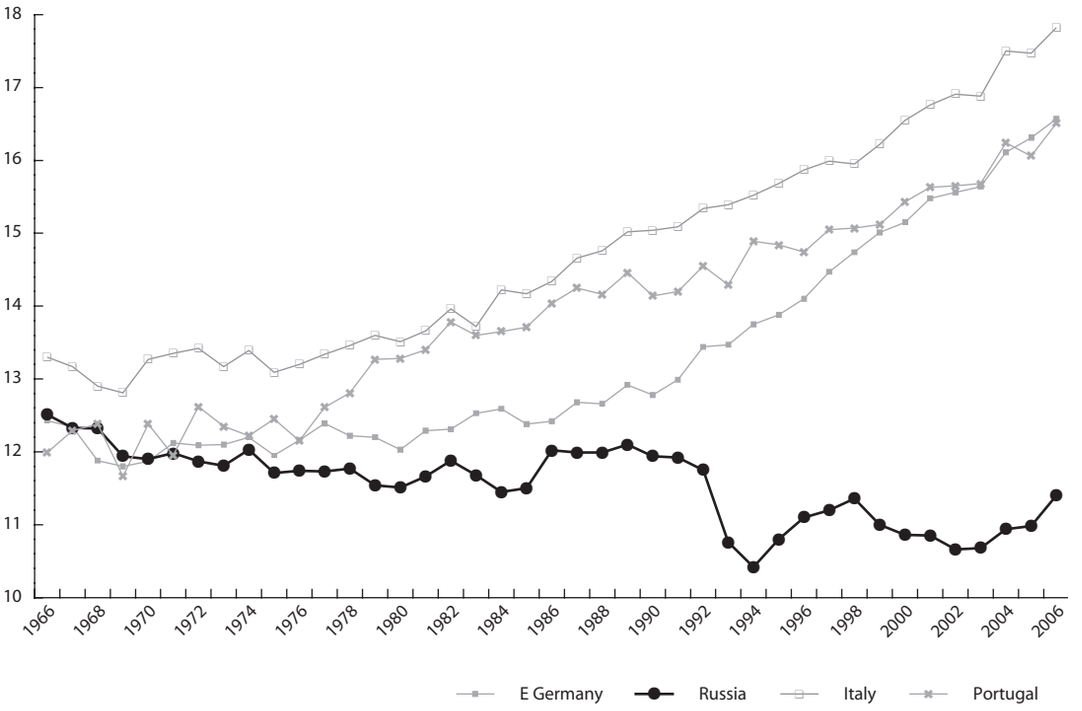
30, median age in Russia is projected to increase by another 6 years, to just under 44 years. The percentage of the population 65 and older, for its part, is projected to jump from today's 14% to about 21%—meaning over one Russian in every five—by 2030.

By these projections, Russia will certainly not be the most elderly society on earth—that accolade looks likely to rest securely with Japan's populace, at least for the next several decades. Russia, though, is not likely to be the most youthful of the developed region's steadily aging societies, either. Russia's median age is currently higher than corresponding levels in a number of Western societies—the most populous of these being the United States. That gap in median ages between Russia and the United States, in fact, is slated to widen in the years ahead from just over one year in 2005 to roughly four years in 2030. In 2030, Russia's 65-plus group is likewise projected to account for a somewhat greater share of total population than is the case in the United States (21% versus 19%). In terms of degree and pace of aging, then, Russia's trajectory is expected to remain slightly below the average for the more developed regions as a whole over the coming decades, but it is a trajectory that is unmistakably characteristic of Westernized societies.

Unhealthy Aging: A Russian Specialty

Viewed in the context of the more developed societies, in short, there is absolutely nothing exceptional about the magnitude of the graying that Russia is set to experience in the years immediately ahead. This is very bad news for Russia because the health of Russia's older men and

FIGURE 6.4: Male Life Expectancy at Age 65: Russia and Selected Countries, 1965–2006 (life expectancy in years)



SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

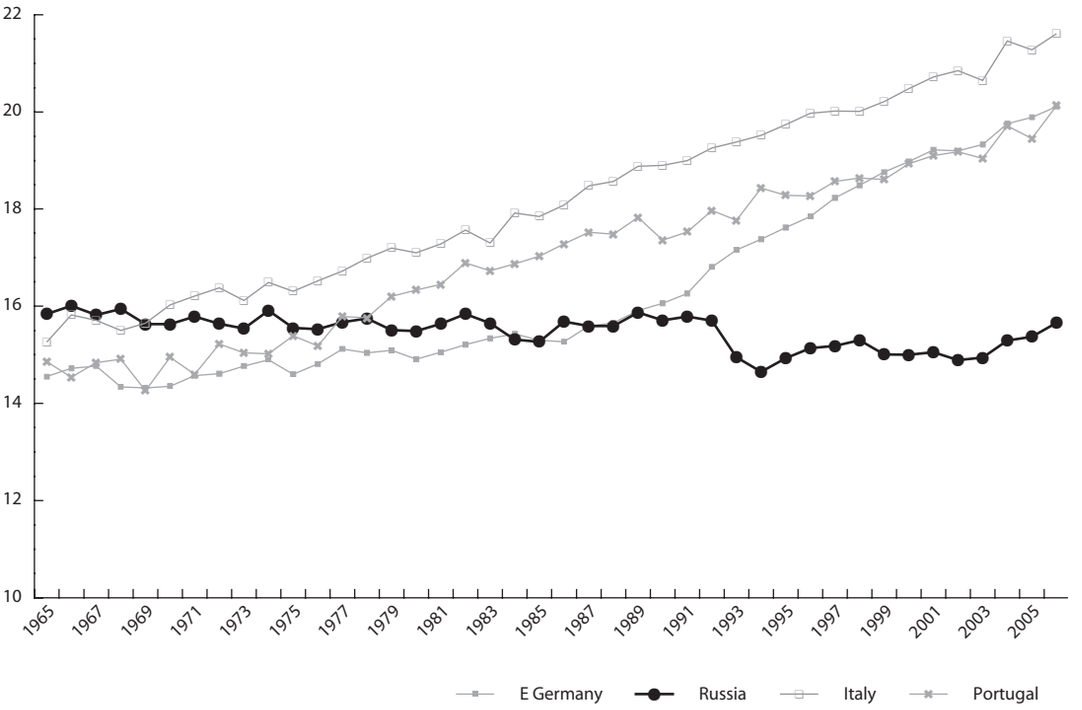
women is exceptionally poor. The elderly tend to be weaker and frailer than younger adults in every society, but Russia's elderly are unusually unhealthy and infirm. For Russia, the prospect of population aging on a major scale almost certainly portends a serious increase in debilitation and dependence, a looming reality with which Russian society and Russian policy will be forced to contend.

In Western Europe, North America, and the rest of the affluent West, the past several generations have been a period of progressive and appreciable improvement of health for older persons.[3] As best we can tell, in fact, continuing and meaningful improvements in elder health have been characteristic in most modern societies, both rich and poor, in recent decades. Russia, though, presents a striking exception to this general global rule. Russia's predicament is highlighted by long-term trends in life expectancy for people 65 years of age, as estimated by researchers in the Human Mortality Database project. Over the period 1965–2006, Russian life expectancy at age 65 fell for men and women alike. For older Russian males, the estimated decline (a drop of a little more than one year) amounted to a reduction of nearly one-tenth of their remaining life expectancy—a more than trivial compression at that stage of life. Older women in Russia also faced a reduction in life expectancy, although of less severe magnitude.

Meanwhile, elder life expectancies in most of the European countries with which Russia might be compared underwent tremendous improvement. The contrast with Italy, Portugal and East

[3] For some details and evidence concerning the correspondence of improved health status with declining mortality levels for older citizens in some of the OECD countries, see Nicholas Eberstadt and Hans Groth, *Europe's Coming Demographic Challenge: Unlocking the Value of Health* (Washington, DC: AEI Press, 2007).

FIGURE 6.5: Female Life Expectancy at age 65: Russia and Selected Countries, 1965–2006 (life expectancy in years)



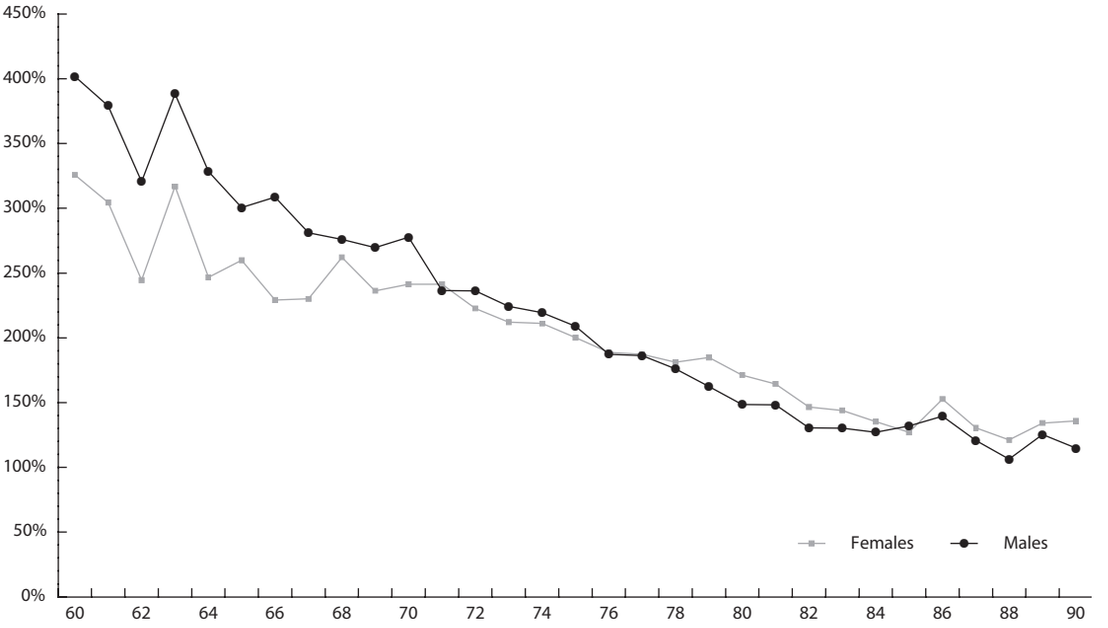
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

Germany seems particularly apposite. Italy and Portugal were still relatively poor Western societies as late as 1965. East Germany at the time was like Russia, under the command of a Marxist-Leninist state that was directing (or perhaps misdirecting) its planned socialist economy.

In the mid-1960s, furthermore, life expectancy for their older populations looked pretty similar in Russia, East Germany, Italy and Portugal. In 1965, female life expectancy was actually higher in Russia than in Italy, Portugal or East Germany. Male life expectancy was a bit higher in Italy than Russia, but was still slightly higher in Russia than in either Portugal or East Germany. By 2006, elder female life expectancy at age 65 was three and a half years lower in Russia than in East Germany or Portugal and four years lower than in Italy. Elder male life expectancy in Russia was a full five years lower than in East Germany or Portugal by 2006, and it was almost six and a half years lower than in Italy. Nowadays, older men in Italy can expect to live fully half again as long (1.5 times) as their counterparts in Russia, and Italian women can expect to live well over a third longer.

Elder life expectancy in Russia today, indeed, appears to be akin to levels witnessed in contemporary third world countries (settings, incidentally, where the 65-plus population accounts for a far smaller share of total population than is the case for the contemporary Russian Federation). According to life tables prepared by the WHO Statistical Information System (WHOSIS), for example, life expectancy at age 65 was lower in Russia than in Paraguay for men and women alike, as of 2006. Elder life expectancy in Russia was higher than in Bangladesh for females. For elder

FIGURE 6.6: Ratio of Age-standardized Death Rates in 2005: Russia vs. Portugal, ages 60–90 [Portugal = 100]



SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

males, though, life expectancy was actually estimated to be higher in Bangladesh than in Russia.[4] Of course, Paraguay and Bangladesh are far poorer than Russia. According to the reckoning of economic historian Angus Maddison, per capita GDP in Paraguay in 2006 was less than two-fifths the Russian level; Bangladesh's was not even one-seventh of Russia's.[5]

In Western Europe, and major parts of post-Communist Europe, mortality levels for older people today are much lower than they were 40 years ago, irrespective of age. This fact is even true at age 90. According to estimates from the Human Mortality Database, death rates for those nonagenarians were on average 25% lower in Portugal in 2005 than in 1965, 40% lower in Italy, and almost 45% lower in the former East Germany. On the other hand, death rates in the Russian Federation were higher—often dramatically higher—in 2005 than in 1965 for every calendar age from 60 through 90 for both men and women. Consequently, the risk of death for older people is now vastly higher in Russia than in the developed West. This may be seen by contrasting age-specific death rates at older ages in Russia and Portugal, as in **Figure 6.6**. The contraposition is especially meaningful, as Portugal currently seems to have the poorest health and the lowest life expectancy of any state in Western Europe.

As of 2005, the risk of death at age 60 in Russia was over three times higher than in Portugal for women and over four times higher for men. Those differentials diminish with age but stay very high, nonetheless, over the remainder of the life cycle. At age 75, for example, death rates for men and women are over twice as high in Russia as in Portugal. By age 90, death rates are only 35% higher for women and 15% higher for men in Russia than in Portugal. Then again people in this

[4] WHO Statistical Information System, "Life Tables for WHO Member States," http://apps.who.int/whosis/database/life_tables/life_tables.cfm.

[5] Angus Maddison, "Statistics on World Population, GDP and Per Capita GDP, 1-2006 AD," http://www.ggdc.net/maddison/.

age group tend to be hardy survivors, especially in Russia. On current schedules, less than 10% of Russian women and less than 3% of Russian men would make it to their 90th birthday.

Today's Russia-Portugal mortality differentials mean that a Portuguese man will not face the same risk of death as a 65-year-old Russian until he is around 75 years of age (and for Portuguese women, not until they are 73).[6] These disadvantageous disparities in death rates for older Russians may suggest that the health status of Russia's senior citizens is correspondingly compromised. Drawing such inferences, of course, requires some presumption of homogeneity and representativeness, specifically presumptions that the recorded death rates actually mirror underlying health risks among the population of survivors rather than reflecting the problems of some specific high-risk sub-population with Russia's growing pool of elderly men and women. As we will see in the pages ahead, there is plenty of evidence to indicate that Russia is a country with tremendous heterogeneity in socioeconomic health patterns. There is also compelling evidence that the overall health status of Russia's older cohorts of men and women is far more unfavorable today than their counterparts in other countries undergoing big surges in population aging.

For example, a 2004 study led by Martin Bobak of the University College of London found that Swedes and Russians assessed their own overall health status and difficulties with physical disabilities very differently. The results implied that men and women who managed to survive to older ages were far more brittle in Russia than in Sweden. In Sweden, for instance, just over one-fourth of men and just under one-third of women in their early 70s rated their own health as poor. In contrast, over half of Russian men and over two-thirds of Russian women in their early 70s rated their own health as poor. The survey also showed that Russians, whether male or female, reported a much higher prevalence of impairment with physical functioning between ages 65–74 than did people from Sweden.[7]

By the same token, a 2009 study by Vladimir Shkolnikov of the Max Planck Institute for Demography in Germany and his colleagues investigated differences in grip strength between older (ages 55–89) populations in Moscow, Denmark, and England. They found that older Muscovites, male and female alike, demonstrated less physical strength by this measure than counterpart populations of the same age in Western Europe.[8] These results appear especially meaningful not only because grip strength is a fair predictor of cardiovascular risk but also because Moscow is one of Russia's most prosperous, best educated, and healthiest regions.

Not least important, survey data on lifestyle patterns and behavioral health risks seems to corroborate this picture of exceptional health risks at older ages in Russia. As T. Paul Schultz of Yale University showed, risky health behaviors among Russian adults are pronounced even among senior citizens. Schultz's analysis of the 2004 round of the Russia Longitudinal Monitoring Survey (RLMS) found that older people in Russia were reporting remarkably high alcohol consumption and remarkably low consumption of health and medical services.[9] In his analysis of the 2004 RLMS survey, shown in **Table 6.2**, Russian men 65–74 years of age reported an average alcohol intake equivalent to a liter of vodka per week—the equivalent of over 22 liters of pure alcohol per year.

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[6] See Human Mortality Database, http://www.mortality.org.

[7] Martin Bobak, Margareta Kristenson, Hynek Pikhart, and Michael Marmot, "Life Span and Disability: A Cross Sectional Comparison of Russian and Swedish Community Based Data," *British Medical Journal*, 329 (September 17, 2004): 767–71.

[8] V.M. Shkolnikov, E.M. Andreev, P. Demakakos, A. Oksuzian, K. Christensen, M.A. Shkolnikova, and J.W.Vaupel, "Patterns of Grip Strength in Moscow as Compared to Denmark and England" (21st REVES Conference, "Reducing gaps in health expectancy"), May 26–29, 2009, Copenhagen, http://www.ined.fr/fichier/t_telechargement/21097/telechargement_fichier_en_conference.book.11.05.09.pdf#49.

[9] T. Paul Schultz, "Health Disabilities and Labor Productivity in Russia in 2004," in *Economic Implications of Chronic Illness and Disability in Eastern Europe and the Former Soviet Union*, ed. Cem Mete, (Washington, DC: World Bank, 2008), 85–109.

TABLE 6.2: Selected Health-Related Characteristics and Behaviors of Older Russians, by Sex and Age: 2004

	Years of schooling	Cigarettes per day	Alcohol intake (grams per day)	Medical checkup in last 3 months (per 1000)
Males				
65–74	9.46	6.48	62.20	123.00
75+	9.52	2.67	36.20	171.00
Females				
65–74	9.44	0.24	12.00	105.00
75+	7.34	0.12	5.00	70.00

SOURCES: Russia Longitudinal Monitoring Survey 2004, derived in T. Paul Schultz, "Health Disabilities and Labor Productivity in Russia in 2004: Consequences Beyond Premature Death," in *Economic implications of chronic illness and disability in Eastern Europe and the former Soviet Union*, ed. Cem Mete (Washington, D.C.: World Bank Publications, 2008), 94, table 3.

Further, only 10% of Russian men 65–74 and 12% of Russian woman of those same ages said they had undergone any sort of medical check-up or treatment in the three months before they were surveyed in 2004. Extrapolating on the assumption that such medical treatment patterns were probabilistic with respect to time, these results would imply that nearly 60% of Russian men 65–74 and over half of Russian women of those same ages would have no medical contact over the course of that given year. By way of comparison, for the calendar year 2005, only 6% of American men and women aged 65–74 said they had no medical check-ups or treatment by health professionals.[10]

Russia's Dilemma: Pervasive Population Aging in the Face of Low Incomes and Poor Health

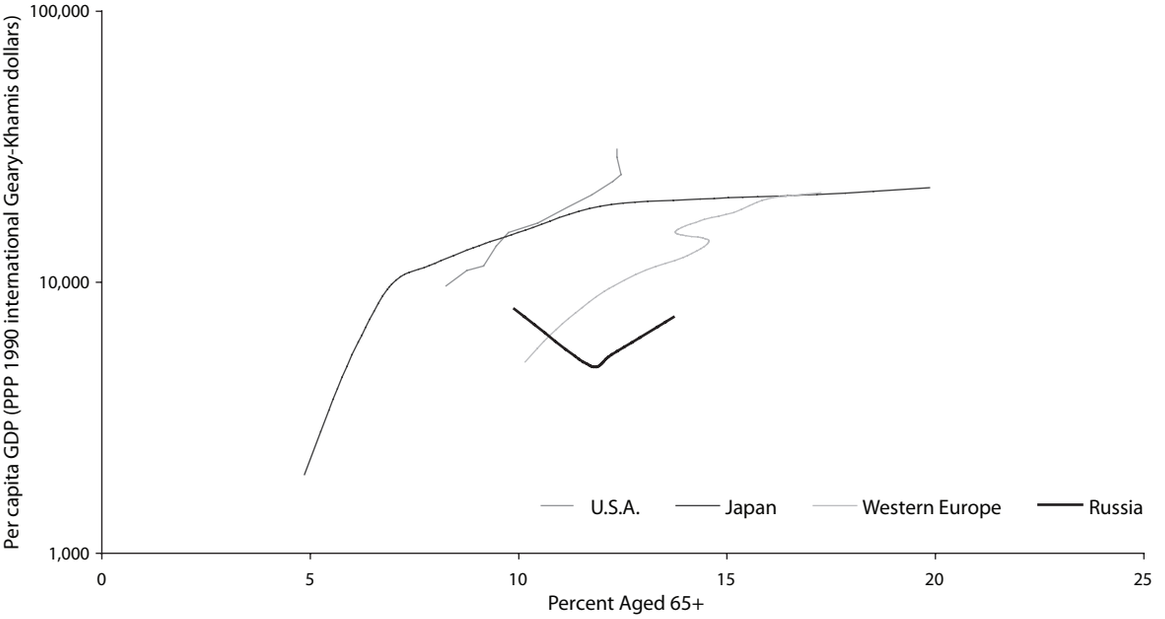
The lack of contact between Russia's sick and aged citizens and the Russian health care system may partly be a matter of ill-advised custom and habit, but it also speaks to the severe resource constraints that press elderly men and women in Russia today. Older men and women in Russia are not only much less healthy than their Western counterparts—they are also much poorer. In fact, Russia may virtually be the world's poorest aged society, at least to date. Certainly none of the now-affluent Western societies ever entered into the grey terrain that Russia is now traversing on such low levels of per capita income.

Figures 6.7 and **6.8** make this point. They trace the aging-to-income trajectories of Russia and affluent Western societies over the postwar era, utilizing UNPD estimates for median age and percent of population 65+ and estimates of long-term international trends in PPP-adjusted GDP per capita.[11]

[10] Centers for Disease Control and Prevention, *Health United States 2008* (Hyattsville: U.S. National Centers for Health Statistics, 2009): 336, table 83, http://www.cdc.gov/nchs/hus/hus08.pdf.

[11] Estimates of long-term international trends in PPP-adjusted GDP per capita come from the economic historian Angus Maddison's. We exclude Maddison's estimates of output trends in the Russian Federation for the Soviet era, owing to the problems of comparability between market-oriented and centrally-planned economic systems.

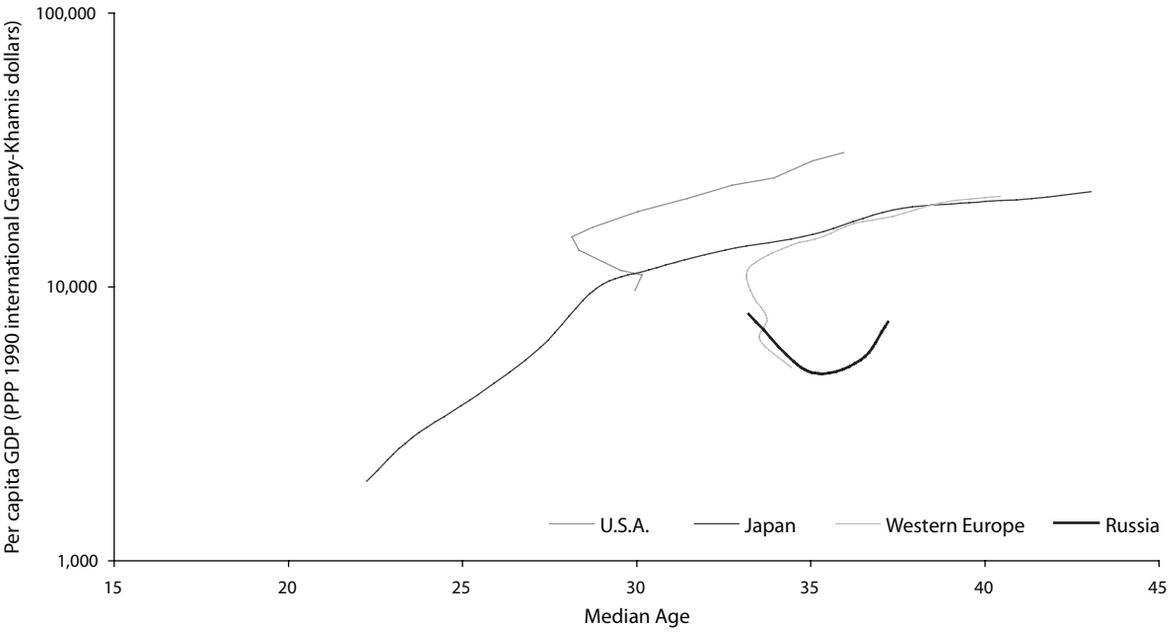
FIGURE 6.7: Percent Aged 65+ vs. Per Capita GDP PPP, 1950–2005: The Russian Federation in Western Perspective



SOURCE: Angus Maddison, "Per Capita GDP PPP (in 1990 International Geary-Khamis dollars)," Historical Statistics for the World Economy: 1-2006 AD, table 3, http://www.ggdc.net/maddison/; and Population Division, *World Population Prospects: The 2008 Revision*, http://esa.un.org/unpp.

NOTE: Data for Russia only covers post-Communist years 1995–2005.

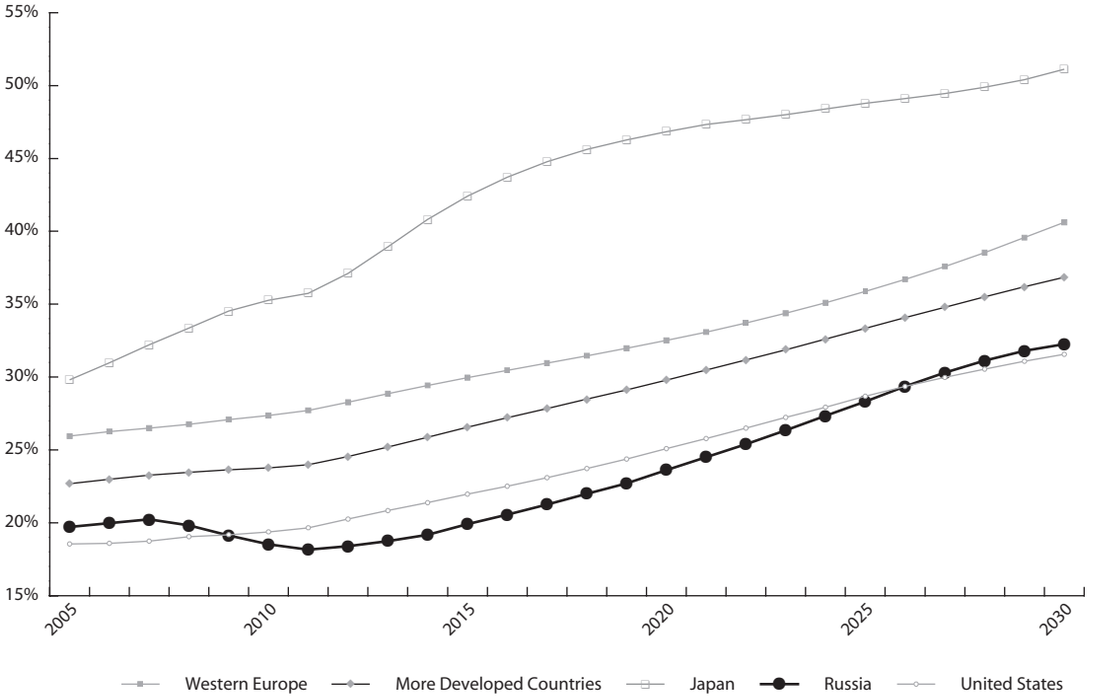
FIGURE 6.8: Median Age vs. Per Capita GDP PPP, 1950¬–2005: The Russian Federation in Western Perspective



SOURCE: Angus Maddison, "Per Capita GDP PPP (in 1990 international Geary-Khamis dollars)," Historical Statistics for the World Economy: 1-2006 AD, table 3, http://www.ggdc.net/maddison/; and Population Division, *World Population Prospects: The 2008 Revision*, http://esa.un.org/unpp.

NOTE: Data for Russia only covers post-Communist years 1995–2005.

FIGURE 6.9: Projected Old Age Dependency Ratios, 2005–2030: Russian Federation vs. Selected More Developed Regions [Persons 65+/Persons 15–64 years of age]



SOURCE: U.S. Census Bureau, International Data Base, http://www.census.gov/ipc/www/idb/.

In 2005, Russia's median age was a little over 37 years. When Western Europe's median age reached that same level, however, per capita GDP was on average nearly two and a half times as high as Russia's today. The same was true for Japan. The United States' median age is still a little lower than Russia's, but the U.S. per capita income level, by Maddison's reckoning, is about four times higher than Russia's. This is also the case with the proportion of the population 65 and older. When Western Europe first attained Russia's current levels, its average per capita GDP was over 75% higher than Russia's today. Japan was twice as rich in terms of GDP per capita. The U.S. still has a lower percentage of 65+ population than contemporary Russia, but when Russia's share was the same as the United States' today, her per capita income level was barely one-fifth of that of the U.S. level.

Pervasive population aging by a sick and fragile citizenry on what qualifies historically as an usually low trajectory for general income levels begs the question of how Russia's rapidly growing proportion of senior citizens will be supported in the decades ahead. An initial glimpse at the outlook, illustrated in **Figure 6.9**, is afforded by Census Bureau projections of "old age dependency ratios," the ratio of the 65+ population to people of conventionally defined working ages (15–64). By these projections, Russia's old-age dependency ratio is slated to rise in the years ahead from about 20% in 2005 to something like 32% in 2030. Put another way, there are about 5 people of notional working age for every notional retirement age Russian now, but the ratio could be down to about 3 to 1 in a little over two decades.

On its face, Russia's coming old-age dependency burden looks to be much milder than those facing most other developed societies. Russia's projected ratio for 2030 is about the same as that of

the United States (32%), but it is lower than the average for the more developed regions (37%). It is considerably lower than the projected average for Western Europe (41%) and also far lower than the prospective ratio for Japan (51%), where there may be fewer than two persons in the notional working age group for each notional retiree.

These numbers might seem to suggest that Russia will be more favorably positioned to weather the coming graying wave that is set to sweep all developed societies. Any such inference, though, would be badly mistaken. Figure 6.9 does not offer an "apples to apples" comparison. Russia's senior citizens are far more frail and unhealthy than their counterparts in the affluent West. Moreover, their health trends have been heading in the wrong direction for almost two generations. In the affluent West, "healthy aging" is transforming the demographic profile of older men and women. These salutary changes, in tandem with ongoing changes in the nature of work in Western societies (inter alia, the decline of manual labor and the expansion of employment in a less physically taxing service sector), are opening new possibilities for continuing labor force participation for a robust and active, albeit graying, population.[12] In Russia, on the other hand, "unhealthy aging" is not only limiting the possibilities for older Russians to engage in economically productive activity. It is also restricting the scope for younger adults to support Russia's steadily growing older generations.

Poor health may help to explain contemporary Russia's distinctive labor force participation patterns. From age 55 onwards, workforce participation in Russia drops off very sharply—more sharply, indeed, than in most Western societies. According to Russia's 2002 census, only about half of Russians in their late 50s were still in the country's workforce. Less than 30% of those in their early 60s were economically active, among those 65 and older, the labor force participation rate was under 5%. According to those same statistics, essentially no Russians over the age of 73 were economically active.[13] For the more developed regions as a whole, labor force participation rates today at older ages are consistently higher than in Russia. In 2002, by ILO estimates, the corresponding rates were 62% for persons in their late 50s, 35% for persons in their early 60s, and about 10% for persons 65 and older.

Even this comparison, however, is confounded by income effects—by the preference for leisure of more affluent populations. In recent decades, there has been a retreat from the workforce at older ages across Western Europe (a general reduction in labor force participation rates for persons 50–54 and older), but this shift is explained in some measure by rising affluence and a broad preference for enjoying leisure during a healthy old age. Russia's exceedingly low workforce participation patterns at older age, by contrast, may be conditioned much more by sheer exigency, the plain inability of frail seniors to meet the demands that the Russian workplace imposes.

That latter distinction emerges more sharply when one compares labor force participation rates for older men and women in Russia today to the rates that prevailed in Western Europe when these societies reported per capita income levels similar to Russia's nowadays.[14] Consider France and Italy—two paragons of early retirement in Western Europe today. By the reckoning of Angus Maddison, France's per capita GDP roughly matched the 2002 level of Russia in 1954 and Italy's per capita GDP in 1960. In 1961, the Italian Census put labor force participation rates in Italy for the 65+ group at over two and a half times that of Russia's four decades later. As for France, its 1962

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[12] These possibilities are described and examined in Nicholas Eberstadt and Hans Groth, *Europe's Coming Demographic Challenge: Unlocking the Value of Health* (Washington, DC: AEI Press, 2007).

[13] ILO LABORSTA database, http://laborsta.ilo.org.

[14] Maddison, "Statistics," http://www.ggdc.net/maddison/Historical_Statistics/bertical-file_03-2009.xls.

census recorded labor force participation rates over three times the 2002 level in Russia for persons 65 and older and nearly twice as high per persons in their early 60s. Note also that combined male and female life expectancy at age 55 was higher in both Italy and France in the early 1960s than it was in Russia in 2002.[15] Why, then, did older Western Europeans do more work in the early postwar era than Russians today? Perhaps part of the answer is because they could.

In Russia today, the retirement age is set at 60 for men and 55 for women. Correspondingly, official Russian statistics regard the working ages as 16–59 for men, 16–54 for women. To be sure, some pension-aged men and women in Russia today are still actively engaged in remunerative labor, but the proportion is very low indeed. According to estimates by the Russian Federation Pension Fund, in fact, fully three quarters of Russia's pensionable population did not work at all in the year 2006[16]—this despite the meager benefits guaranteed by official Russian social security programs.[17]

Under real existing Russian conditions, these current official Russian retirement ages may be more realistic thresholds for calculating Russia's true "old age dependency ratios" than the conventional international formulas used in Figure 6.9. When we employ this Russian conception for calculating the old-age dependency level, however, we find that the implied demographic burden is already much higher than may be commonly appreciated (see **Figure 6.10**).

According to Goskomstat estimates, Russia had just three persons at working age for every person over working age at the start of 2008. Naturally, the ratio varies across Russia by region. In relatively fecund Chechnya, of course, the ratio was much higher—over 7:1. Yet in many of Russia's regions, including much of Western-most Russia, the ratios were already well under 3 to 1. In the city of St. Petersburg, for example, the ratio was already down to 2.4 to 1. In dying Tula oblast, today's ratio was just over 2.2 to 1. But Russia's overall effective old age dependency ratio stands to be lower than contemporary Tula's in just a matter of years. By Goskomstat's own projections, Russia's ratio of working age to over working age population will be down below 2.1 to 1 by 2026. Of course, in 2026—as now—not all of Russia's population of working age will actually be employed. Projections by the Russian Ministry of Education and the Institute of Demography at Moscow State University suggest that, on the current trajectory, Russia's pension-age population will nearly equal the country's workers by the mid-2020s, and that there could be more pensioners than workers in Russia as early as the year 2029.[18]

It is no secret that population aging represents a major prospective social and economic challenge for affluent Western societies in the decades ahead. What is less generally recognized is that population aging poses more acute challenges to Russia than to today's Western societies. In fact, far more than in today's affluent Western societies, population aging and the consequent aging burden in Russia may prove to be both a social problem and a constraint on economic development in the decades ahead.

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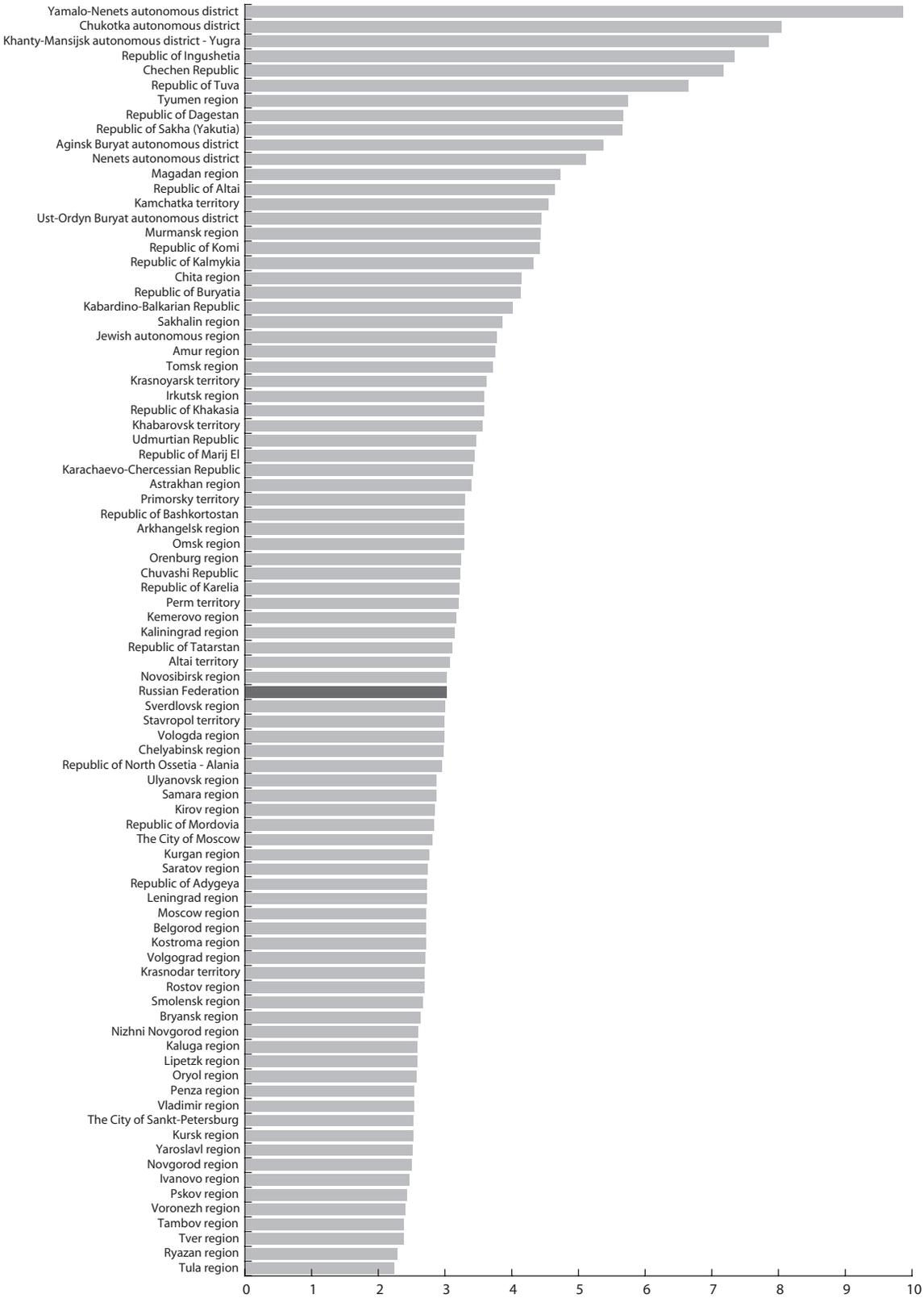
15 Human Mortality Database.

16 Cf. UNDP Russia, *National Human Development Report: Russia 2008—Russia Facing Demographic Challenges* (Moscow: UNDP Russia, 2009), 117, Figure 6.8.

17 According to calculations by UNDP Russia, what the report terms the "substitution rate" for the Russian pension system—pension income as a proportion of immediate pre-retirement income (elsewhere referred to as the "income replacement ratio")—was just 25% in 2007. This is a far lower rate than in any Western country today. See UNDP, *National Human Development Report: Russia 2008,* 135, Figure 7.2. Moreover, according to that same report, Russia's "substitution rate" was projected to decline sharply over the years ahead—to a projected 16%-18% by 2020, absent major changes in official Russian pension policies. UNDP, *National Human Development Report,* 135.

18 UNDP, *National Human Development Report,* 138, Figure 7.4.

FIGURE 6.10: Estimated Ratio of Working Age Population to Pensioner Population: Russia by Region Jan. 1, 2008



SOURCE: State Committee of the Russian Federation on Statistics (Goskomstat). "Statistical Yearbook of Russia (2008)," Table 1.16, http://www.gks.ru/bgd/regl/b08_16/Main.htm.

CHAPTER 7

Education and Labor Productivity in Russia: High Levels of Schooling, Low Levels of Human Capital

Russia: An Education Mirage?

The workforce is the backbone of all modern economies, and long-term improvements in workforce productivity are the hallmark of sustained economic development. Education plays a critical role in improving labor productivity in the modern era by imparting knowledge, training, and skills, and by facilitating invention, innovation, and adjustment. The contribution of education to development, indeed, may be increasing as globalization opens up opportunities for higher rates of return for highly skilled labor, and as structural transformations position societies to capitalize off the transition to what is sometimes called the knowledge-based economy.[1]

Based on external statistical indications, the Russian workforce should be exceptionally well-placed for achieving education-generated improvements in labor productivity. In terms of educational attainment (as measured by years of schooling completed and diplomas conferred), Russia's adult population would appear to have a unusually favorable educational profile. Every national educational system, of course, has its own particularities. Thus educational attainment profiles from one country are not necessarily directly comparable with profiles from other countries. A number of international studies, however, have attempted to standardize these inter-country comparisons.

[1] This telegraphic and stylized synopsis of the relationship between education and international economic development broadly conforms with the record of modern economic development, and is further informed by the insights from what is currently known as the new growth economics. For some of the milestones in that literature, see Paul Romer, "Increasing Returns and Long Run Growth," *Journal of Political Economy*, 94, no. 5 (October 1986): 1002–1037; Robert E. Lucas, "On the Mechanics of Development," *Journal of Monetary Economics* 22, no. 1 (July 1988): 3–42; Robert J. Barro, "Economic Growth in a Cross Section of Countries," *Quarterly Journal of Economics* 106, no. 2 (May 1991): 407–443; and N. Gregory Mania, David Romer and David N. Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics* 107, no. 2 (May 1992): 407–437.

TABLE 7.1: Percentage Share of People Aged 25-64 with Tertiary Educational Attainment in OECD Countries (2001) and Russia (2002)

Indices	Tertiary education total (ISCED Levels 5 and 6)	ISCED Level 5B	ISCED Levels 5A-6
Russia	54.0	33.5	20.6
Maximum OECD	41.6 (Canada)	21.6 (Ireland)	28.3 (USA)
Median OECD	24.1	9.0	14.8
Minimum OECD	8.9 (Turkey)	0.6 (Slovakia)	6.6 (Portugal)

SOURCE: UNDP Russia, "Human Development Report–Russian Federation, 2004: Towards a Knowledge-Based Society" (Moscow: UNDP Russia, 2004), Chapter 5, Table 5.1; http://78.136.31.142/en/reports/nationalreports/europethecis/russia/Russia_Federation_2004_en.pdf.

NOTE: Calculated from *Education at a Glance*. (Paris: OECD, 2003), tab. A3.la; Goskomstat, "Results of the 2002 National Census in Russia" (http://www.gks.ru/perepis/osn_itog.htm).

According to one such assessment by the Organisation for Economic Co-operation and Development (OECD), as of 2002 (the date of the most recent Russian Federation population census), 96% of Russian adults between the ages of 25 and 65 had completed at least lower secondary education. A further 88% had completed upper secondary education, and over half, or 54%, had completed post-secondary or tertiary education. When it comes to higher education (university schooling, higher vocational training, and the like), graduates constitute a distinctly higher proportion of the 25–64 year-old population in the Russian Federation than in the typical, or median, OECD country. In several categories of higher education, adult trainees account for a higher fraction of the overall Russian workforce than in any corresponding OECD society, as may be seen in **Tables 7.1** and **7.2**. Furthermore, levels of educational attainment for Russia's adult population appear to have improved appreciably in the post-Communist era. These continuing improvements are reflected, among other places, in the returns from the 1989 and the 2002 Russian Federation censuses. These censuses recorded progress for both men and women, in both urban and rural regions, and for the country's 15+ population.[2]

In the curious case of the Russian Federation, the presumptive economic and social advantages ordinarily conferred by greater education have proved in practice to be very largely illusory.

Poor and Declining Health: A Hallmark of Russia's Graduates

No society is fully homogeneous. Socio-economic differences are always apparent, although some differences tend to matter much more than others. The Russian Federation is a society in which educational differentials are fraught with significance. Indeed, educational attainment today provides a marker that reveals a truly frightening degree of heterogeneity in life chances for Russian men and women. In other modern societies, education commonly serves as a predictor for such attributes as an individual's occupation, social status, and income level. In Russia, educational differences are also associated with huge disparities in the risk of premature death.

The relationship between education and mortality in Russia has been quantified over the past decade in a series of groundbreaking studies by a handful of scholars in Russia and the West. In

[2] See Table 2-3, "Population by Level of Education and Sex for Regions of the Russian Federation," Russian Federation 2002 Census, Table 2–3, http://www.perepis2002.ru/ct/doc/English/2-4.xls.

TABLE 7.2: Educational Attainment by Adult Age Group: Russia vs. OECD Average, 2002/3

Age Group	25-64	15-19	20-24	25-34	35-44	45-54	55-64
Russia - Completed Secondary	88%	N/A	88%	91%	94%	89%	71%
OECD Average - Completed Secondary	66%	N/A	N/A	75%	70%	62%	51%
Russia - Completed Tertiary	54%	N/A	N/A	55%	58%	54%	44%
OECD Average - Completed Tertiary	24%	N/A	N/A	29%	26%	22%	17%

SOURCE: UNESCO/OECD, *World Education Indicators. Education trends in perspective* (Paris: OECD Publishing, 2005), Annex Table 1.2, http://www.uis.unesco.org/TEMPLATE/pdf/wei/WEI2005.pdf.

1998, Vladimir Shkolnikov, in collaboration with colleagues from Moscow, Paris, and London, demonstrated that Russia suffered tremendous education-associated disparities in adult mortality in the late Soviet era. By their reckoning, as of 1989, Russia's age standardized death rates for adults 20–69 were 45% greater for women and over 70% greater for men who held secondary degrees or less when compared to those who had higher training. Death levels from all causes were uniformly higher for the less educated Russian adults, with disparities in mortality from violence, injury, alcohol poisoning, respiratory diseases, and infectious or communicable diseases being especially severe. No less strikingly, Shkolnikov found that adult life expectancy for late Soviet era Russians with university education was comparable to life expectancy for the overall adult population in such affluent Western countries as France and the United States. Life expectancy for the rest of Russia's populace, however, fell sharply and in correspondence with the highest educational degree completed. Russians without high school diplomas were much less likely to make it from their 20th birthday to their 70th birthday than those who had spent time at university or in other forms of higher education.[3]

Subsequent work amplified and extended these striking findings. In a 2004 paper, Shkolnikov, together with Russian and Scandinavian colleagues, assessed the mortality patterns of adult men from Moscow, Saint Petersburg, Oslo, and Helsinki through long-term epidemiological surveys. Once again, they found shockingly high mortality differences by educational status in Russia. For men 45–74 years of age, age-standardized death rates were well over twice as high for Muscovites and St. Petersburgers with 9 years of schooling or less as for those with some higher education (13+ years) These results are especially striking insofar as Moscow and St. Petersburg count as two of Russia's most prosperous and healthy localities. Survey data for Oslo and Helsinki also revealed mortality differentials by education, but the gradients for Russia's leading cities appeared to be somewhat steeper than for those Nordic cities.[4]

To make matters worse, Russia has apparently undergone a major splaying of health disparities between educational strata in its adult population since the end of the Communist era. These trends were documented in a study in 2006 by Shkolnikov and a team of Russian, Swedish, and British

[3] Vladimir M. Shkolnikov, David A. Leon, Sergey Adamants, Eugenie Andreev, and Alexander Dee, "Educational Level and Adult Mortality in Russia: An Analysis of Routine Data 1979 to 1994," *Social Science and Medicine* 47, no. 3 (August 1998): 357–69.

[4] Vladimir M. Shkolnikov, Alexander D. Dee, Osteen Pravda, and Trapani Valona, "Educational Differentials in Male Mortality in Russia and Northern Europe: A Comparison of an Epidemiological Cohort from Moscow and St. Petersburg with the Male Populations of Helsinki and Oslo," *Demographic Research* 10, article 1 (January 9, 2004): 1–26, http://www.demographic-research.org/volumes/vol10/1/10-1.pdf.

researchers.[5] Generating life tables by educational status for the late 1980s and late 1990s for the Czech Republic, Estonia, Finland, and Russia, they observed a common pattern across countries. That pattern was that men and women with higher educations enjoyed a longer life expectancy at age 30 and age 40 than their less educated compatriots. In itself, this was not surprising. It was the dissimilarities, however, that were stunning. In Finland and the Czech Republic, the life expectancy for men and women in all educational groups increased over the course of the decade under consideration. In Russia, by contrast, life expectancy for more educated men and women (those with at least some university schooling) improved, whereas it declined sharply among less educated adults. The reduction in life expectancies for Russian adults in the lowest educational grouping (those without high-school degrees) was especially severe. Over the course of the decade under consideration, less educated men experienced a fall-off in life expectancy at age 30 of more than 4 years. The drop-off for less educated Russian women, however, was almost as dramatic. For them, life expectancy at age 30 fell by 3.5 years.

Even before the end of the Soviet era, the disparity in life chances by educational status was more pronounced in Russia than in Finland, the Czech Republic, or Estonia. With the continuing rise in health prospects for the Russian intelligentsia and the concomitant deterioration of survival chances for the rest of Russian society, a truly extraordinary inequality in life expectancy by educational background emerged in the Russian Federation by the late 1990s. For Russian men, the gap in life expectancy at age 30 between those with post-secondary education and those without high school degrees amounted to ten years for women and thirteen years for men. By way of comparison, the corresponding differences in Finland were four years and seven years, respectively.

Russia's patterns of growing education-related inequalities in mortality were further probed by a British team led by Michael Murphy of the London School of Economics.[6] In 2006, these researchers released a study that used indirect estimation techniques to calculate trends in adult life expectancy (at age 20) by educational attainment for the period 1980–2001. They utilized a sample survey of 7000 respondents conducted in 2002 to complete their calculations in this retrospective analysis. Their findings are shown in **Figure 7.1**. Here again, their study pointed to long-term improvement in life expectancy for Russia's tertiary-trained population, both male and female. Interestingly enough, however, their calculations suggested that life expectancy for Russia's intelligentsia stagnated throughout the 1980s and did not begin a steady ascent until after the end of Communism. Here again, the trends for the rest of Russia were dismal. For men and women without high school degrees, the collapse in life expectancy was relentless and little short of catastrophic. Between 1980 and 2001, by these estimates, 20-year-old female high school dropouts lost about three years of their remaining life expectancy, and their male counterparts lost almost five years. By 2001, the life expectancy gap between less educated and more educated Russian women at age twenty amounted to nearly a decade of life. For men, it was closer to a dozen years. These conclusions reaffirm the Shkolnikov team's findings for Russia in the late 1990s with the small differences in calculated results being most likely attributable to the wider confidence intervals on the Murphy team's results, owing to differences in methodology and sample size.

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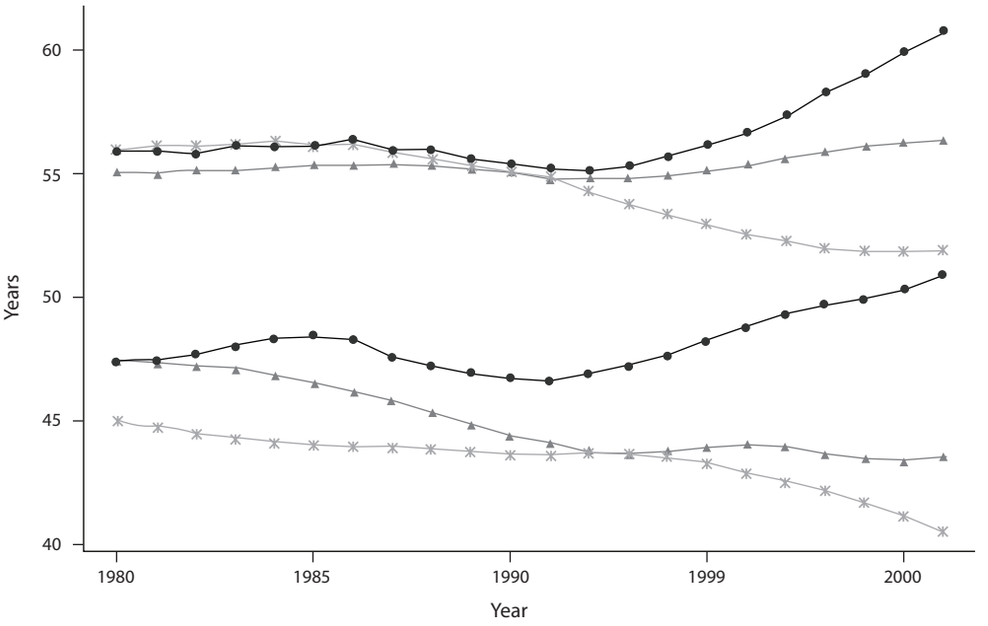
[5] Vladimir M Shkolnikov, Eugenie M Andreev, Do mantas Gazillions, Mall Lineal, Olga I Antonova, and Martin McKee, "The Changing Relation between Education and Life Expectancy in Central and Eastern Europe in the 1990s," *Journal of Epidemiology and Community Health* 80, no. 10 (October 2006): 875–81, http://www.demogr.mpg.de/publications/files/2408_1160402489_1_JECH%2060.2006.pdf.

[6] Michael Murphy, Martin Bobak, Amanda Nicholson, Richard Rose, and Michael Marmot, "The Widening Gap in Mortality by Educational Level in the Russian Federation, 1980–2001," *American Journal of Public Health* 96, no. 7 (July 2006): 1293–99.

FIGURE 7.1: Smoothed trends in life expectancy at age 20 by educational level among Russian men and women: 1980-2001 (In years; estimates by Murphy et. al.)



SOURCE: Michael Murphy, Martin Bobak, Amanda Nicholson, Richard Rose, and Michael Marmot, "The Widening Gap in Mortality by Educational Level in the Russian Federation, 1980–2001," *American Journal of Public Health* 96, no. 7 (July 2006): 1293–1299, Figure 2.

What accounts for the divergence in mortality prospects by educational background in Russia over the past decades? The answer to this critically important question is as yet not entirely clear. As Shkolnikov and his colleagues have noted more than once, income differences by educational attainment do not seem to explain the phenomenon. There has, in fact, been no indication of serious long-term deterioration in real wage levels for Russia's less educated workforce during the transition process. There is certainly no evidence that any deteriorations in income that may have occurred within Russia should have been sufficient to endanger the health of broad segments of the population through compromising food security, housing availability, and the like.[7]

Education-related differences in lifestyle or behavioral risks would, similarly, seem to be obvious causal candidates for this divergence in mortality patterns. We might guess that differences in patterns in heavy drinking, for instance, play an especially deadly role here. Once again, though, available evidence does not provide clear-cut support for this proposition. In a 2004 study, for example, Sofia Malyutina of the Russian Academy of Medical Sciences, in conjunction with British and Russian colleagues, examined epidemiological survey data collected in Russia for the

[7] The point is made indirectly, and in great detail, in a 2005 World Bank study on poverty in the Russian Federation. Utilizing both official and experimental measures for tracking the prevalence of absolute deprivation in Russia, the study found that the prevalence of poverty tracked with the overall trends in performance in the Russian macroeconomy for the 1997–2002 period. No radical upsurge in poverty rates was evident in Russia over those years. In fact, while the prevalence of material deprivation rose between 1997 and 2000, it fell substantially between 2000 and 2002. By the World Bank's "two dollars a day" benchmark for delineating poverty internationally, about 10% of Russians were poor in 2002. Real per capita incomes and real per capita expenditures were much higher for Russia's bottom quintile than, say, in Vietnam (where, incidentally, the mortality picture was decidedly more favorable). See World Bank, "Russian Federation: Reducing Poverty through Growth and Social Policy Reform", Poverty Reduction and Economic Management Unit, Europe and Central Asia Region, Report no. 28923-RU, February 8, 2005, http://go.worldbank.org/VJPHYMRC00.

World Health Organization's (WHO) MONICA project on cardiovascular risk.[8] While Russian men reported much higher levels of alcohol intake than women in 1994/95 and much greater disposition to engage in binge drinking, the association between drinking and educational status appeared more tentative. In contradistinction to the major mortality differences, the reported differences in drinking patterns separating university educated women from women with just primary education were rather small and not statistically significant. Among men, the university trained seemed to drink less than others in 1994/95, but again, the differences were not statistically significant. Differences by educational status as of 1994/95 in the proclivity of Russian males for binge drinking did turn out to be statistically significant. On the other hand, men with higher secondary training seemed both to consume more alcohol and to indulge in more drinking binges than men with just primary schooling, even though the latter faced much worse survival prospects than the former.[9]

The situation, in short, remains a terrible puzzle. There is very little in the way of Western public health research that can help us understand how a steady and marked deterioration of survival chances might occur among adults with a constant level of educational attainment in an urbanized society during a time of peace.

We may hope that research now underway[10] will provide more clues about the dynamics and determinants behind the collapse of health among less educated adults in Russia, and the increasing heterogeneity of mortality within the Russian Federation. Meanwhile, we can attempt to understand what these ominous trends portend with respect to well-being, labor productivity, and development. **Figures 7.2** and **7.3** place the Russian differentials in adult life expectancy by educational status in international perspective. These figures use education-specific life expectancy estimates from the year 2000 to show life tables for Russian adults at age 20 for the year 2000 and the corresponding estimates for life expectancy at age 20 from the WHO-generated "life tables" for 191 countries for the year 1999.[11] Since there are non-trivial confidence intervals on the calculations from both of these studies, the data should probably be used for general illustrative

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[8] Sofia Malyutina, Martin Bobak, Svetlana Kurilovitch, Yuri Nikitin, and Michael Marmot, "Trends in Alcohol Intake by Education and Marital Status in Urban Population in Russia between the Mid 1980s and the Mid 1990s," *Alcohol and Alcoholism* 39, no. 1 (Jan–Feb 2004): 64–69.

[9] Further compounding the mystery is the important fact that Russian émigrés do not appear to have appreciably worse health than the Western countries into which they are received. Contrary to the expectations of Israeli public health researchers at the start of the post-Soviet exodus, immigrants from Russia and the former Soviet Union turned out to have survival prospects quite similar to the rest of Israeli society—schedules far more favorable than Russia's own. By the same token, Russian immigrants in Germany apparently face mortality risks comparable to Germany's, not Russia's. Population heterogeneity was doubtless a factor in these somewhat surprising results. Moscow's Jewish population, for example, enjoyed much higher levels of life expectancy than those prevailing throughout Russia as a whole in the early post-Soviet era. The Volga Germans may also possibly have been healthier on average than ordinary Russian citizens. The self-selective nature of the immigration process, likewise, may have differentiated the émigré stream from the rest of Russia with respect to educational status and personal or lifestyle habits bearing on health. But much remains to be understood here. For background, see Gad Rennert, "Implications of Russian Immigration on Mortality Patterns in Israel," *International Journal of Epidemiology* 23, no. 4 (August 1994): 751–56; Jördis Jennifer Ott, Ari M. Paltiel, and Heiko Becher, "Noncommunicable Disease Mortality and Life Expectancy in Immigrants to Israel from the Former Soviet Union: Country of Origin Compared with Host Country," *Bulletin of the World Health Organization* 87, no. 1 (January 2009): 20–29; Catherine Kyobutungi, Ulrich Ronellenfitsch, Oliver Razum, and Heiko Becher, "Mortality from External Causes among Ethnic German Immigrants from Former Soviet Union Countries, in Germany," *European Journal of Public Health* 16, no. 4 (August 2006): 376–82; Ulrich Ronellenfitsch, Catherine Kyobutungi, Heiko Becher, and Oliver Razum, "All-cause and Cardiovascular Mortality among Ethnic German Immigrants from the Former Soviet Union: a Cohort Study," *BMC Public Health* 2006, no. 6 (January 26, 2006): 1–16; and Vladimir M. Shkolnikov, Evgueni M. Andreev, Jon Anson, and France Meslé, "The Peculiar Pattern of Mortality of Jews in Moscow, 1993–1995," *Population Studies* 58, no. 3 (November 2004): 311–29.

[10] Examples of such research include the survey on Health, Alcohol, and Psychosocial factors In Eastern Europe (HAPIEE), as cited in Anne Peasey, Martin Bobak, Ruzena Kubinova, Sofia Malyutina, Andrzej Pajak, Abdonas Tamosiunas, Hynek Pikhart, Amanda Nicholson and Michael Marmot, "Determinants of cardiovascular disease and other non-communicable diseases in Central and Eastern Europe: Rationale and design of the HAPIEE study," *BMC Public Health* 6, no. 255 (October 18, 2006): 1–10; and the Survey on Stress and Health in Moscow, "Survey on Stress and Health in Moscow" Max Planck Institute for Demographic Research, http://www.demogr.mpg.de/?http://www.demogr.mpg.de/general/structure/division2/datalab/63.htm. .

[11] Murphy et al., "The Widening Gap in Mortality," 1293–99.

purposes rather than exacting rankings. The general story that emerges from these comparisons, in any case, is clear enough.

In Chapter 3 we looked at adult life expectancy in Russia in an international perspective. The conclusion we noted was how poorly modern Russia fared by such comparisons. Our criterion was life expectancy in the society as a whole, not disaggregating between educational strata. Differentiating in this way qualifies the picture in some important respects.

The health situation for Russia's university educated women, for example, now looks fairly good, even by comparison with the rest of the world. If we went only by their estimated life expectancy at age 20, Russia's college-educated women would appear to have been drawn from an affluent Western society. As of circa 2000, their life expectancy would have corresponded roughly with levels seen in Austria and Singapore and might even have been a bit above the levels in the United States and the United Kingdom. However, the situation looks more grim for Russian women with below-average educational attainment. If these estimates are roughly correct, life expectancy at age 20 for those Russian women would have been below the national level in Indonesia, on par with national averages for countries like Pakistan or the Philippines.

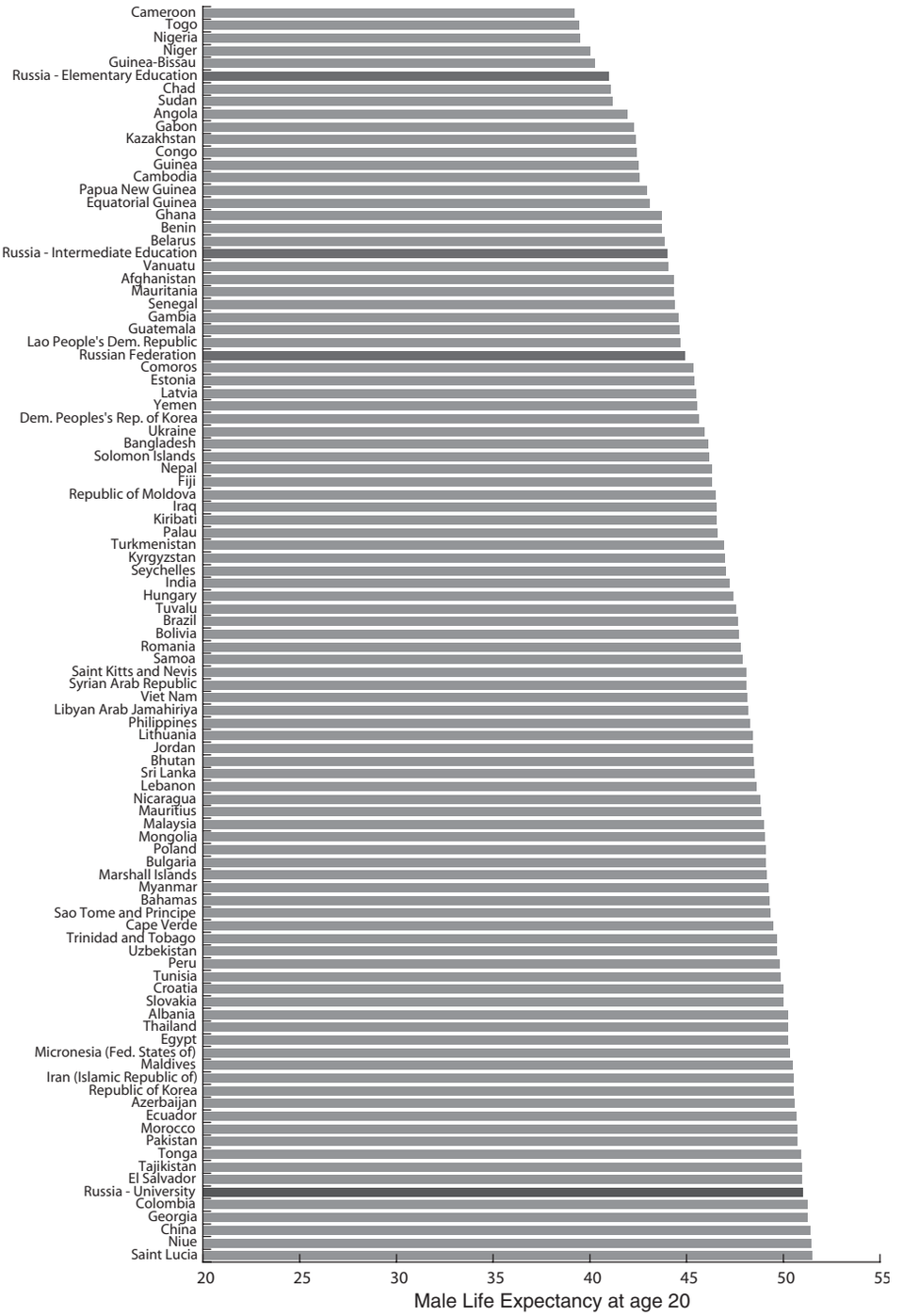
The story is, as usual, not nearly as happy for Russian men. Not even Russia's best educated stratum of males would have qualified for developed country health status. Around the year 2000, the adult life expectancy of this relatively privileged group would still have fallen years below the lowest levels seen in the affluent West. With respect to adult life expectancy, if these figures are correct, the peers for Russia's university-educated male population would be on par with Tajikistan and Honduras. For their part, less educated men in Russia appear to face a truly dire survival prospect. Adult life expectancy for this stratum of Russian society appears in fact to be sub-Saharan and possibly not as favorable as for a number of countries in the region. Ghana, Equatorial Guinea, and Chad are examples of sub-Saharan countries whose male adult life expectancy appears, as shown in Figure 7.3, to be higher than for Russia's less educated male stratum.

The disparities in life expectancies by gender and educational attainment within the Russian Federation are nothing short of breathtaking. They speak, first and foremost, to a degree of social inequality that is unknown in practically any modern society, be it affluent or low-income. The gap in life expectancy at age 20 between Russia's university trained women and the least educated stratum of Russia's men amounts to fully 20 years. Furthermore, these outlying groups do not constitute negligible components of Russia's overall working age population. Each of them accounts for about a tenth of Russia's 15–64 year-old citizenry. To find health gaps of roughly comparable dimension within a postwar country for major social groups, one must go back to South Africa in the 1980s, where decades of apartheid had left a legacy of racial differences in life expectancy on a roughly similar scale.[12]

These education-associated health disparities in Russia's adult population are rife with implications for economic performance. Put simply, health potential and economic potential are positively associated in the modern world economy, and the association is both robust and steep. We can see this even in a basic scatter-plot. **Figure 7.4** juxtaposes international life expectancy at age 20 with GDP per person aged 15–64, using WHO life expectancy estimates for 1999 and World Bank estimates for working age population and PPP-adjusted GDP in the year 2000. In this simple correlation, differences in estimated adult life expectancy correspond with over half of the

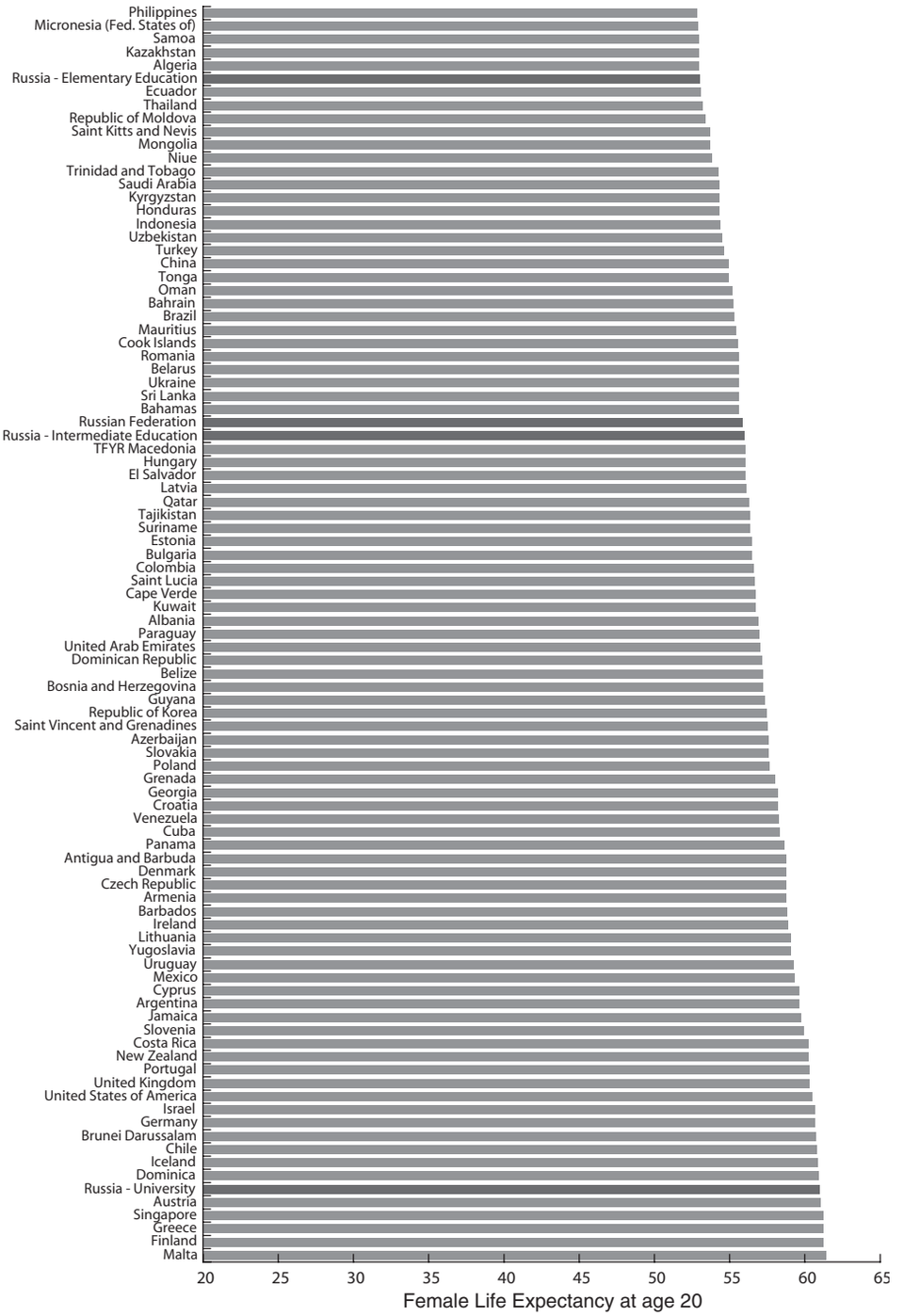
[12] See "Poverty in South Africa," in Nicholas Eberstadt, *The Tyranny of Numbers: Measurement and Misrule* (Washington, D.C.: AEI Press, 1995), 150–69.

FIGURE 7.2: Estimated Male Life Expectancy at age 20 years in Russia (2000 by educational level) and the World (1999)



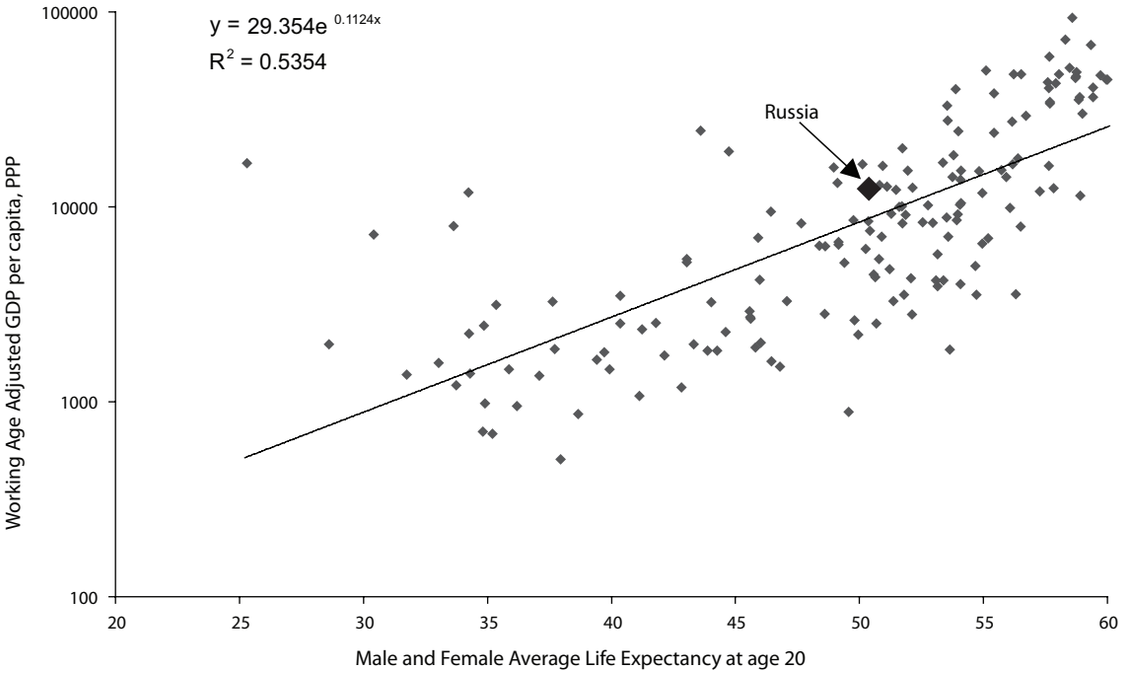
SOURCE: Alan D. Lopez, Joshua Salomon, Omar Ahmad, Christopher JL. Murray, and Doris Mafat, "Life Tables for 191 Countries: Data, Methods and Results," GPE Discussion Paper Series: No. 9. World Health Organization, 1999; LEs by education in Russia from: Michael Murphy, Martin Bobak, Amanda Nicholson, Richard Rose, and Michael Marmot, "The Widening Gap in Mortality by Educational Level in the Russian Federation, 1980–2001," *American Journal of Public Health* 96, no. 7 (July 2006): 1293–1299, Figure 2.

FIGURE 7.3: Estimated Female Life Expectancy at age 20 years in Russia (2000 by educational level) and the World (1999)



SOURCE: Alan D. Lopez, Joshua Salomon, Omar Ahmad, Christopher JL. Murray, and Doris Mafat, "Life Tables for 191 Countries: Data, Methods and Results," GPE Discussion Paper Series: No. 9. World Health Organization, 1999; LEs by education in Russia from: Michael Murphy, Martin Bobak, Amanda Nicholson, Richard Rose, and Michael Marmot, "The Widening Gap in Mortality by Educational Level in the Russian Federation, 1980–2001," *American Journal of Public Health* 96, no. 7 (July 2006): 1293–1299, Figure 2.

FIGURE 7.4: Male and Female Average Life Expectancy at age 20 vs. Working-age adjusted GDP per capita PPP, Russia (2000) and World (1999)



SOURCE: Alan D. Lopez, Joshua Salomon, Omar Ahmad, Christopher JL. Murray, and Doris Mafat, "Life Tables for 191 Countries: Data, Methods and Results," GPE Discussion Paper Series: No. 9. World Health Organization, 1999; LEs by education in Russia from: Michael Murphy, Martin Bobak, Amanda Nicholson, Richard Rose, and Michael Marmot, "The Widening Gap in Mortality by Educational Level in the Russian Federation, 1980–2001," *American Journal of Public Health* 96, no. 7 (July 2006): 1293–1299, Figure 2; and GDP data from: World Development Indicators 2008, World Bank CD-ROM.

variation between countries in GDP per person of working age. The association suggests very high international economic returns are associated with improved health. In the relationship in this graphic, each year of increased life expectancy at age 20 corresponds with an increase of 11% in GDP per person of working age.[13]

Adult health levels turn out to be fairly good predictors of economic productivity levels and productivity differences among countries. But do they help us to explain overall productivity levels for a country, such as Russia, with highly heterogeneous domestic health patterns?

Quick, back-of-the-envelope calculations suggest these international patterns may indeed be surprisingly serviceable for this very purpose. Using the international regression equation charted in Figure 7.4 to predict the productivity levels for Russia's various educational strata on the basis of their health, and summing the totals in accordance with their approximate composition in the Russian Federation's 15–64 population as of the turn of the century, we arrive at a predicted output of about $11,600 (2005 PPP-adjusted) per Russian of conventionally defined working age.

[13] The reader should be aware that this highly simplified "single variable explanation" for global differences in income levels would be an econometrician's *bête noir*. The OLS regression presented in Figure 14 commits a number of statistical sins. The most flagrant of these being "mis-specification," since we know many other factors, past and present, contribute to current levels of per capita productivity around the world. One particularly glaring bias comes from the omission of any measure of education, since we know that health and education tend to be strongly and positively correlated. For our own particular purposes here, however, it is not such a bad thing to have some of the education effect captured by and represented in our health variable. It means, in effect, that the health variable performs more like a more broadly constructed human capital variable.

For the year 2000, the World Bank's actual figures for Russia worked out to $12,400 per working-age person. This difference, only about 6%, is well within the margin of error for such an exercise.

The same back-of-the-envelope approach might also be used to provide some very crude approximations of productivity differences within Russia by gender and educational background. These calculations, for all their obvious limitations, nevertheless make an instructive point. They speak to huge differences in productive potential among different strata and segments of Russian society. In the international cross-section from Figure 7.4, a twenty-year difference in young adult life expectancy between two different countries would *ceteris paribus* be associated with nearly a ten-fold disparity in output per working-age person.

It is widely known that Russia's distribution of income has grown more uneven during the post-Communist transition. The dispersion of income is now considerably more skewed in the Russian Federation than in a number of other post-Communist societies.[14] The Russian Federation's anomalous trends in adult life expectancy by educational strata may help explain these tendencies and outcomes.

Health-based predictions of productivity levels by educational stratum, of course, cannot provide any direct evidence on the contribution in Russia of education to productivity per se. Nevertheless, the Russian enigma must force us to wonder if educational certification in Russia does not confer even the most basic elemental guarantees of stable survival prospects. If the country's population of high-school graduates suffers long-term and meaningful deterioration in its survival prospects, what other surprises correspond between education and socio-economic performance in this troubled country? Cursory examination of even basic data reveals other unexpected and peculiar facets of the Russian educational tableau.

The Accomplishment Gap for Russian Graduates

Despite the vaunted emphasis traditionally placed on learning and schooling in Russia, post-Soviet Russia's pupils seem to test rather poorly from an international perspective. Results from the Program for International Student Assessment (PISA) study in 2000 indicate as much. The OECD, which administers PISA, arranged for an exacting examination of the academic competencies of some 180,000 15-year-olds from 32 countries (28 OECD members and 4 additional countries) in 2000. The PISA study is widely regarded as "the most comprehensive international assessment of educational outcomes to date."[15] Results from PISA 2000 are in **Table 7.3**. Russian students' test scores ranked significantly below the OECD average.[16] In fact, they were near the very bottom of the rankings in all subject areas. Only Brazil, Mexico, Latvia, and (improbably) Luxembourg had lower ratings than Russia in all three areas of general performance: reading literacy, scientific literacy, and mathematical literacy. These results, we should emphasize, are for the possibly decreasing percentage of Russian pupils who are enrolled in primary and secondary school (a point that we examine in depth in chapter 2).

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[14] See, *inter alia*, Michael Förster, David Jesuit, and Timothy Smeeding, "Regional Inequality and Income Inequality in Central and Eastern Europe: Evidence from the Luxembourg Income Survey," in *Spatial Inequality and Economic Development*, ed. Ravi Kanbar and Anthony J. Venable (New York: Oxford University Press, 2004): 311–47.

[15] P. Stanat et al., *PISA 2000: Overview of the Study* (Berlin: Max Planck Institute for Human Development, 2002): 1, http://www.mpib-berlin.mpg.de/pisa/PISA-2000_Overview.pdf. This sort of formulation is widely repeated in the current literature on educational outcomes.

[16] Significant in both senses of the word—the differences were substantial, and statistically meaningful.

TABLE 7.3: Means and distributions of student performance in the three competency domains across OECD Countries and Russia, 2000

Reading Literacy			Mathematical Literacy			Scientific Literacy		
Country	Means (standard errors in parentheses)	Distribution*	Country	Means (standard errors in parentheses)	Distribution*	Country	Means (standard errors in parentheses)	Distribution*
Finland	546 (2.6)	291	Japan	557 (5.5)	286	Korea	552 (2.7)	263
Canada	534 (1.6)	310	Korea	547 (2.8)	276	Japan	550 (5.5)	297
New Zealand	529 (2.8)	355	New Zealand	537 (3.1)	325	Finland	538 (2.5)	283
Australia	528 (3.5)	331	Finland	536 (2.2)	264	United Kingdom	532 (2.7)	321
Ireland	527 (3.2)	309	Australia	533 (3.5)	299	Canada	529 (1.6)	290
Korea	525 (2.4)	227	Canada	533 (1.4)	278	New Zealand	528 (2.4)	326
United Kingdom	523 (2.6)	330	Switzerland	529 (4.4)	329	Australia	528 (3.5)	307
Japan	522 (5.2)	284	United Kingdom	529 (2.5)	302	Austria	519 (2.6)	296
Sweden	516 (2.2)	304	Belgium	520 (3.9)	350	Ireland	513 (3.2)	300
Austria	507 (2.4)	307	France	517 (2.7)	292	Sweden	512 (2.5)	303
Belgium	507 (3.6)	351	Austria	515 (2.5)	306	Czech Republic	511 (2.4)	308
Iceland	507(1.5)	302	Denmark	514 (2.4)	283	France	500 (3.2)	334
Norway	505 (2.8)	340	Iceland	514 (2.3)	277	Norway	500 (2.8)	311
France	505 (2.7)	301	Liechtenstein	514 (7.0)	322	OECD average	500 (0.7)	325
United States	504 (7.0)	349	Sweden	510 (2.5)	309	United States	499 (7.3)	328
OECD average	500 (0.6)	328	Ireland	503 (2.7)	273	Hungary	496 (4.2)	331
Denmark	497 (2.4)	319	OECD average	500 (0.7)	329	Iceland	496 (2.2)	284
Switzerland	494 (4.2)	335	Norway	499 (2.8)	303	Belgium	496 (4.3)	364
Spain	493 (2.7)	276	Czech Republic	498 (2.8)	320	Switzerland	496 (4.4)	324
Czech Republic	492 (2.4)	318	United States	493 (7.6)	325	Spain	491 (3.0)	310
Italy	487 (2.9)	296	Germany	490 (2.5)	338	Germany	487 (2.4)	335
Germany	484 (2.5)	366	Hungary	488 (4.0)	321	Poland	483 (5.1)	313
Liechtenstein	483 (4.1)	316	**Russia**	**478 (5.5)**	**343**	Denmark	481 (2.8)	335
Hungary	480 (4.0)	306	Spain	476 (3.1)	298	Italy	478 (3.1)	318
Poland	479 (4.5)	326	Poland	470 (5.5)	336	Liechtenstein	476 (7.1)	315
Greece	474 (5.0)	320	Latvia	463 (4.5)	337	Greece	461 (4.9)	316
Portugal	470 (4.5)	320	Italy	457 (2.9)	299	**Russia**	**460 (4.7)**	**327**
Russia	**462 (4.2)**	**303**	Portugal	454 (4.1)	299	Latvia	460 (5.6)	321
Latvia	458 (5.3)	334	Greece	447 (5.6)	357	Portugal	459 (4.0)	287
Luxembourg	441 (1.6)	325	Luxembourg	446 (2.0)	307	Luxembourg	443 (2.3)	315
Mexico	422 (3.3)	281	Mexico	387 (3.4)	273	Mexico	422 (3.2)	251
Brazil	396 (3.1)	284	Brazil	334 (3.7)	320	Brazil	375 (3.3)	301

SOURCE: "PISA 2000: Overview of the Study Design, Method and Results," Table 1, http://www.mpib-berlin.mpg.de/pisa/PISA-2000_Overview.pdf.

* Gap between the scores of the 5% lowest performing students and the 5% highest performing students.

Russian students fared best in mathematical literacy—a finding perhaps in keeping with the Russian educational system's reputation. Yet even in that section, Russia ranked 22nd out of the 32 countries considered. Russian students fared worse in every subject area than their American counterparts, even though the poor overall performance of the U.S. secondary school system is a matter of widespread international commentary and continuing domestic policy concern in the United States itself. Russia's poor average ratings were not matters of quirky dispersions in scores. In each of these areas, the percentage of Russian students testing at the highest levels was very small, whereas the proportion earning low or very low rankings was unusually great. Subsequent rounds of the PISA study (in 2003 and 2006) indicated some improvement in Russian performance. Even so, Russian high school students still lagged well below the OECD average.

Russian higher education, for its part, has a fabled history. Its graduates are renowned for their path-breaking accomplishments in mathematics and physics, among other realms of science and theory. In the Soviet era, Russian scientific acumen was also regularly displayed, albeit typically through military applications and developments from the country's technical research base. Russia was at the world forefront in such areas as rocketry, high-precision avionics, and nuclear weaponry. Yet in higher education, too, there are signs of trouble in Russia today.

One evident difficulty is structural and systemic. As Georgetown University's Harley Balzer noted, Russian institutions of higher learning still generally refuse to accredit scholars with PhDs from the United States and the West as members of their faculty. This practice isolates Russian Federation university trainees from cutting-edge research in the now-global scientific and technical system in which Western universities currently play a central role.[17] Such academic ethnocentrism and intellectual insularity would seem to augur ill for keeping abreast with a rapidly changing and expanding international corpus of theoretical and applied knowledge.

Another set of problems is indicated by measures of performance. One such measure is offered by trends in newly-issued patents for inventions, as illuminated in this instance by an examination of the patents granted by the U.S. Patent and Trademark Office (USPTO). The USPTO awards patents[18] internationally, and tabulates country results on the basis of the residence of the lead inventor named on the application. Although the Russian Federation has legions of scientists, technicians, and engineers, Russian nationals are awarded remarkably few patents for new products or production techniques (see **Figure 7.5**).

Between 1995 and 2008, the U.S. Patent Office registered a total of 2.3 million patents worldwide. Of these, fewer than 2500 were awarded to the Russian Federation—barely 0.1% of the global total. When one considers that Russia accounts for a bit over 2% of the world's total population, this

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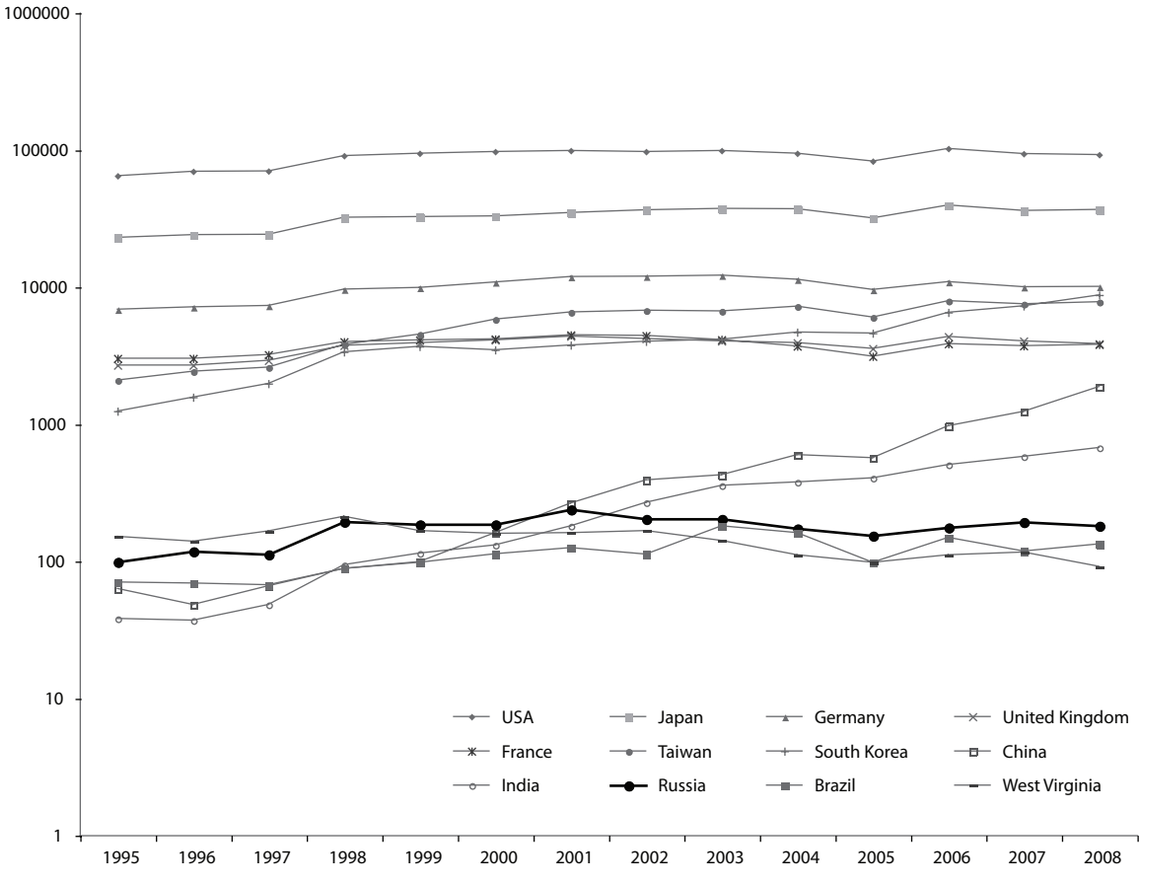
[17] Balzer underscores the fundamental, and perhaps fateful differences between China's and Russia's current strategies for developing higher educational institutions:

> In contrast to Russia, where foreign degrees and time spent on professional exchanges abroad can hinder professionals' career advancement, Chinese with foreign doctorates (*yangboshi*) frequently are given preferential treatment compared with those with Chinese degrees (*tuboshi*)…Four of China's top universities now hire almost exclusively from among Chinese with foreign PhDs; Russian universities refuse to recognize foreign credentials.
>
> In contrast to China's increasing integration, many Russians continue to insist on following a "unique" path in science and education. At a time when internationalization and globalization are major items on the agendas of most national education systems, vested interests and path dependence constrain Russian leaders. The leadership of the Academy of Sciences remains intent on restoring its Soviet-era position and reversing the limited progress made in shifting to competitive peer-reviewed funding during the 1990s.

Harley Balzer, "Russia and China in the Global Economy," *Demokratizatsiya* 16, no. 1 (Winter 2008): 43.

[18] These include utility patents, design patents, plant patents, reissue patents, statutory invention patents, and defensive publications. See the U.S. Patent and Trademark Office, "Patents by Country, State and Year—All Patent Types (December 2008)," http://www.uspto.gov/go/stats/cst_all.htm.

FIGURE 7.5: Number of U.S. Patents Granted, 1995–2008: Russian Federation vs. Selected Other Countries and Places



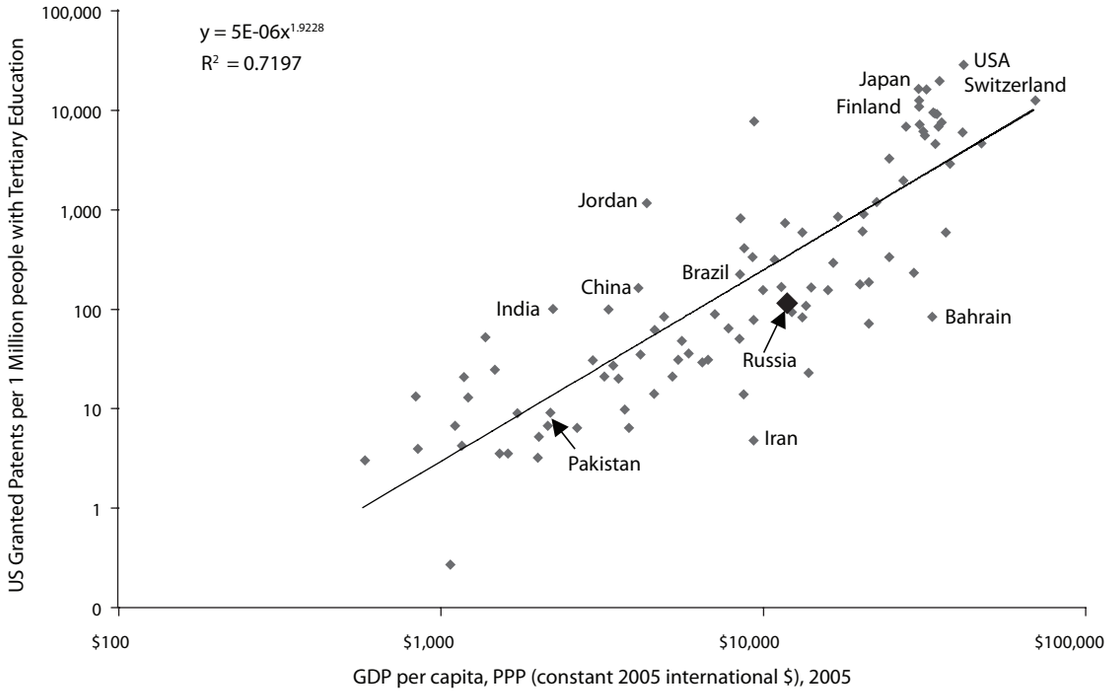
SOURCE: Patents By Country, State, and Year - All Patent Types (December 2008), http://www.uspto.gov/go/stats/cst_all.htm.

means Russia has produced only a twentieth as many patents as we would have expected just on a global per capita basis, even before any weightings or adjustments for educational attainment (see **Figure 7.6**).

Russia's patent performance can be compared against other presumptive peers in research and technology. Those presumptive peers, however, are clearly not Russia's sister states in the now-annual G-8 summits. Inventors in the United States were awarded roughly 500 times as many patents between 1995 and 2008 as in Russia. In Japan, nearly 200 times as many patents were awarded, while in Germany, roughly 60 times as many. Britain, France, and Canada each had over 20 times as many. Even Italy, not normally acclaimed for the strength of its scientific/research establishment, earned over 10 times as many USPTO patents as Russia during those years.

Nor does Russia find its peers in patented discoveries among the newly industrializing societies of East Asia. Over the past decade, Russia was awarded far fewer patents than industrializing East Asian societies, such as Taiwan and South Korea. Tiny Singapore, likewise, regularly accrued more new patents than Russia over the years 1995–2008. Russia also earned fewer USPTO patents than either India or China, and while the annual number of patents for India and China trended sharply upward, Russia's annual totals were stagnant. In fact, if one had to pick a spot on the map whose patent performance, in terms of annual USPTO totals and trends, appeared most comparable

FIGURE 7.6: Number of U.S. Patents Granted Worldwide, 1995–2008 per Million People with Tertiary Education, vs. GDP per Capita PPP, 2005



SOURCE: Patents By Country, State, and Year - All Patent Types (December 2008), http://www.uspto.gov/go/stats/cst_all.htm; World Development Indicators 2008 CD-ROM, World Bank.; W. Lutz, A. Goujon, S.K.C., and W. Sanderson, "Reconstruction of population by age, sex and level of educational attainment of 120 countries for 2000-2030," *Vienna Yearbook of Population Research 2007*.

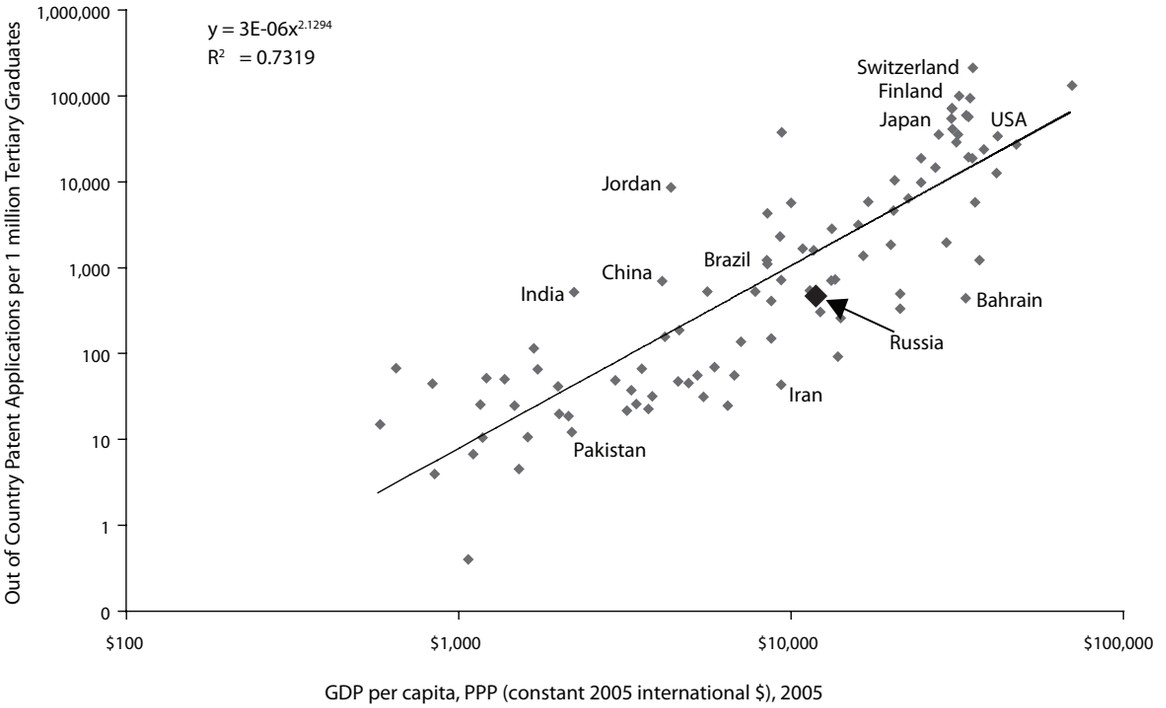
to Russia's, it would be the U.S. state of West Virginia. However, West Virginia is regarded as a slightly benighted Appalachian backwater, and has a current population of about 1.8 million, roughly one-eightieth the size of the Russian Federation.

Russia's performance in developing patentable discoveries, inventions, and techniques appears even more shocking when we consider the absolute size of its adult population with tertiary education. Although it is the world's ninth most populous country, Russia is estimated to have the fifth largest pool of adults with higher education (post-secondary training) today, behind only the United States, China, India, and Japan.[19] Of the approximately 350 million persons worldwide with tertiary training in 2005, just over 20 million resided in Russia. With 2% of the world's population, Russia thus accounts for 6% of the world's tertiary trainees and university graduates but for only 0.1% of the global patents awarded by USPTO.

The ratio of patents to population with university training or equivalent may be seen as a measure of performance in knowledge generation by a country's technical and scientific cadres. Of the 101 countries in Figure 7.6, Russia ranks 48th in its ratio of USPTO patents to population with higher education, not only behind all affluent Western societies but also behind such countries as Costa Rica, Mexico, Jordan, and Mauritius.

[19] Wolfgang Lutz, Anne Goujon, K.C. Samir, and Warren Sanderson, "Reconstruction of Population by Age, Sex, and Level of Educational Attainment of 120 Countries for 2000-2030," *Vienna Yearbook of Population Research 2007*.

FIGURE 7.7: Number of Out of Country Patent Applications, 1995–2007 per Million Tertiary Graduates vs. GDP per Capita PPP, 2005



SOURCE: World Intellectual Property Organization, World Intellectual Property Indicators 2009, September 2009, http://www.wipo.int/ipstats/en/statistics/patents/; World Development Indicators 2008 CD-ROM, World Bank.; and W. Lutz, A. Goujon, S.K.C., and W. Sanderson, "Reconstruction of population by age, sex and level of educational attainment of 120 countries for 2000-2030," *Vienna Yearbook of Population Research 2007*.

Russia's mediocre global ranking in USPTO patents is still striking when we consider the strong positive global association between USPTO patents per university trainee and per capita income. The richer a country is, the higher its ratio of patents per university trainee. In fact, every doubling of per capita income makes for a quadrupling of this ratio.[20] Because Russia's per capita income today is far below levels prevailing in Western industrial democracies, we would expect the country's ratio of patents to university graduates to be commensurately lower than in OECD countries. Even so, given Russia's per capita income and its large numbers of university trainees, the country would have been expected to earn three times as many USPTO patents as it was in fact awarded between 1995 and 2008. Conversely, a country with Russia's ratio of USPTO patents to university trainees would have been expected to have reported a per capita GDP of barely half Russia's actual level.

One might reasonably object that measuring worldwide patent productivity on the basis of awards by a single national entity, the U.S. Patent and Trade Office, would bias our international comparison in favor of the U.S. and other countries with close ties to the United States. In fact, we can offer an alternative global snapshot of patent productivity which would not be subject to this criticism. The World Intellectual Property Organization (WIPO, a UN agency based in Geneva) regularly compiles information on patent applications in national patent offices around the entire

[20] Evidently, this would be another instance of the phenomenon of increasing returns highlighted in the new growth economics literature.

planet. Based on this data, we can estimate the number of worldwide applications for patents for the period 1995–2007, excluding applications filed in a country's home patent office (excluding those home office applications would, among other things, correct for any bias introduced in Figure 7.6 by possible advantages accruing to U.S. interests from USPTO awards). We can then estimate the number of international patent applications for a country in relation to its population stock of tertiary graduates and its per capita income level. Results for this alternative approach are shown in **Figure 7.7**.

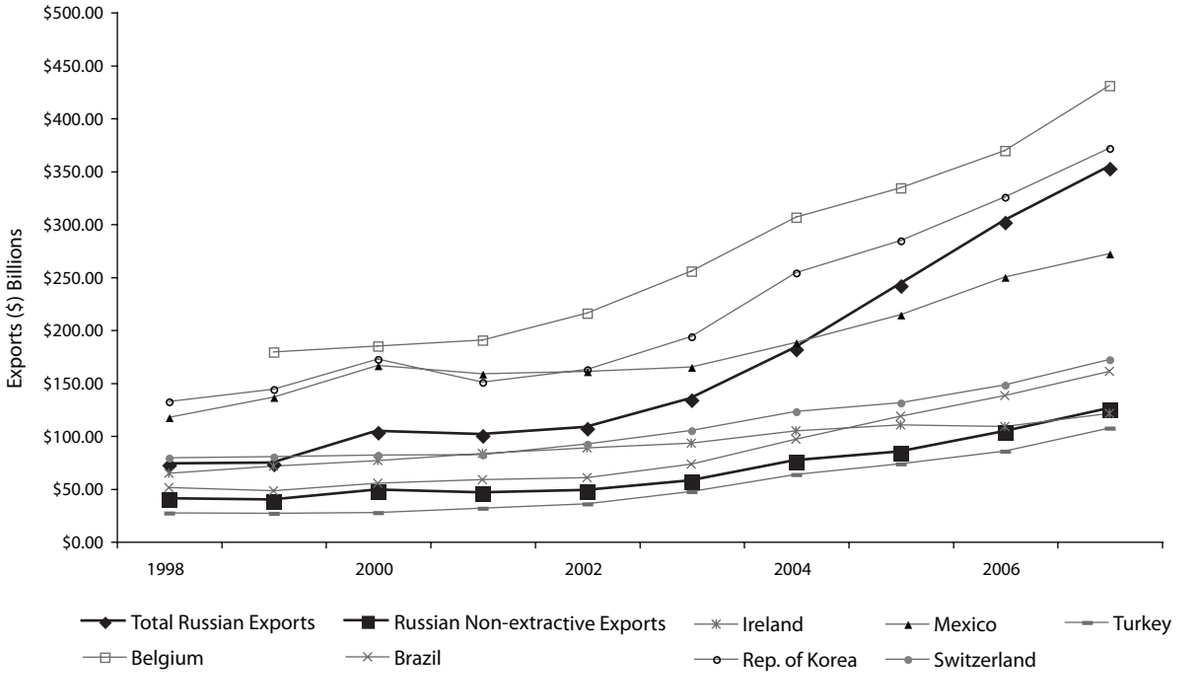
Perhaps surprisingly, using this broader measure of international patent productivity makes almost no difference in Russia's global standing. In terms of absolute international patent applications, Russia ranks 24th worldwide, just as in the USPTO rankings. In terms of international applications per million tertiary graduates, Russia now ranks 54th, even lower than its 48th place showing in the USPTO rankings. On the basis of global patent applications per million residents with higher education, Russia's WIPO-based ranking is not only lower than every OECD country, but also than that of any other BRIC country. It is even lower than the rankings garnered by such countries as South Africa, Panama, and Cuba. On the basis of WIPO patent activity, Russia still punches far below its weight, even after making adjustments for the country's income level. Between 1995 and 2007, according to the WIPO data, Russia tendered only a third as many international patent applications as would have been predicted given the size of Russia's post-secondary graduate population and the country's per capita income level.

There are, to be sure, a number of possible mitigating factors that might help explain Russia's remarkably poor performance in developing patentable inventions in the post-Communist era. For one thing, Russian researchers and administrators raised under the Soviet system stood at an obvious disadvantage in traversing the complexities of the USPTO (capitalist) patent law after the collapse of Communism.[21] That sort of explanation, however, is becoming less persuasive with each passing year. At this writing, after all, Russia is approaching its nineteenth anniversary as a post-Communist society. In any case, China, which is still governed by the Chinese Communist Party, manages nowadays to outperform non-Communist Russia in patent generation per million higher education graduates. Further, the Russian Federation incontestably experienced a scientific "brain drain" after the demise of Communism. Consequently, some proportion of Russia's inventions and discoveries in the period 1995–2008 were tallied as patents for the United States, Germany, Israel, and other receiving countries. Yet Russia is hardly alone in this regard, as a large numbers of scientists and technicians from China and India now live and work in Western countries. Yet India and China still manage to generate considerably more patents, as well as more patent applications, than would be predicted on the basis of their per capita incomes and the size of their tertiary graduate populations. In fact, Russia is the only one of the four BRIC countries that produces fewer patents and fewer patent applications than would be predicted on the basis of its pool of highly-educated adults and its income level.

At the end of the day, we are still left trying to explain underperformance on an astonishing scale by Russia's university-trained population. The strikingly poor performance of Russia's sizeable cadre of technicians and scientists by this international criterion, we may note, tracks with another indication of severe underperformance by ostensibly skilled specialists in Russia: namely,

[21] In this regard it would be interesting to compare global patent performance with the global distribution of articles accepted in leading technical and scientific publications. Substantial differences in country rankings metrics might help illuminate the extent to which such structural or institutional factors came into play in affecting a country's success in the application of the knowledge it was generating.

FIGURE 7.8: Russian Merchandise Exports in International Perspective, 1998–2007 (Billion US Dollars)



SOURCE: United Nations COMTRADE Database, "Total Commodity Exports," http://comtrade.un.org/.

the country's physicians and doctors. As we saw in chapter 4, Russia boasts one of the world's very highest ratios of physicians to total population. Yet the abundance of Russia-certified medical practitioners has not prevented the country's life expectancy from regressing to third world levels.

Pondering the trend-lines in Figures 7.5, 7.6, and 7.7, one is tempted to paraphrase the question posed by Harvard's Lant Pritchett in his study of postwar development performance in sub-Saharan Africa and other economically troubled venues: "Where did all the education go?"[22]

Low Labor Productivity of the "Highly Educated" Russian Workforce as Reflected Through the Mirror of Export Performance

In terms of sheer years of schooling, Russia would appear to be one of the world's more educated societies, in terms of higher degrees conferred and average years of schooling completed. The curious paradox of Russian education, however, is that relatively high levels of average educational attainment coexist with strikingly low levels of human capital in the Russian adult population. This mismatch bodes poorly for the productive potential of the contemporary Russian labor force. Sure enough, productivity levels for much of Russia's economy appear surprisingly low, especially considering the ostensible educational status of the men and women at work. Some basic indicators of macroeconomic performance for Russia, in fact, present results far more compatible with a

[22] Lant Pritchett, "Where Has All The Education Gone?" *World Bank Economic Review* 15, no. 3 (March 2001): 367–91.

highly dualistic low-education society from the third world than a country with Russia's ostensible general levels of training and education.

Export performance data can be used to tell this story. Over the decade before the global financial crisis struck in late 2008, Russia's export revenues soared, as may be seen in **Figure 7.8**. Between 1998 and 2007, according to the United Nations Commodity Trade Database, Russia's export revenues from merchandise exports nearly quintupled from $72 billion to $352 billion. In aggregate, according to the World Trade Organization, Russia ranked as one of the world's dozen top merchandise exporters by the year 2007.[23] Even so, this achievement should be placed in perspective. Russian merchandise exports, for example, have never yet exceeded the annual levels tallied by Belgium.[24]

Russia's export boom, moreover, was powered principally by earnings from international sales of the country's natural resources. In 2007, revenues from extractive exports—energy products (oil, gas, coal), and to a lesser extent other mineral exports (gold, diamonds, etc.), —plus exports of basically unprocessed primary products such as lumber — accounted for nearly two-thirds (65%) of Russia's total intake from its merchandise trade and for approximately 70% of Russia's surge in commodity export revenues over that decade.

Non-extractive exports, which constitute the remainder of the economy's processing endeavors and tend to depend more directly on human resources, provided aggregated revenues of $124 billion in 2007. To put that figure in perspective, it amounted to about one-third of the 2007 merchandise export revenues of South Korea, a resource-poor oil-importing economy with less than one-third Russia's population. Revenue from non-extractive exports was just 15% higher than total merchandise export revenues by Turkey, another resource-poor oil importer with about half of Russia's population. It would have roughly equaled total merchandise exports in 2007 by Ireland, an affluent OECD economy with no natural resource exports to speak of and a population barely one-thirtieth the size of Russia's.

A country's export volume may be affected by extrinsic factors, such as population size. All other things being equal, a larger domestic market might reduce measured international ratios of trade to output. Investigations of the relationship between size and export performance, while intriguing, have uncovered little in the way of strong underlying correspondences.[25] In fact, the relationship between per capita exports (valued in current dollars at current exchange rates) and per capita GDP (PPP adjusted) for countries without appreciable natural resource revenues seems to be remarkably robust, even without adjustments for population size.

Figure 7.9 compares World Bank WDI estimates for the year 2005 between PPP-adjusted per capita GDP and merchandise export revenues per worker (in current dollars at current exchange rates) for countries that earned less than 10% of those revenues from energy exports and less than 10% from mineral exports. These countries, in other words, did not rely appreciably on natural resource exports for their commodity and merchandise trade revenues. For an economic comparison between diverse countries at a given point in time, the correspondence appears to be

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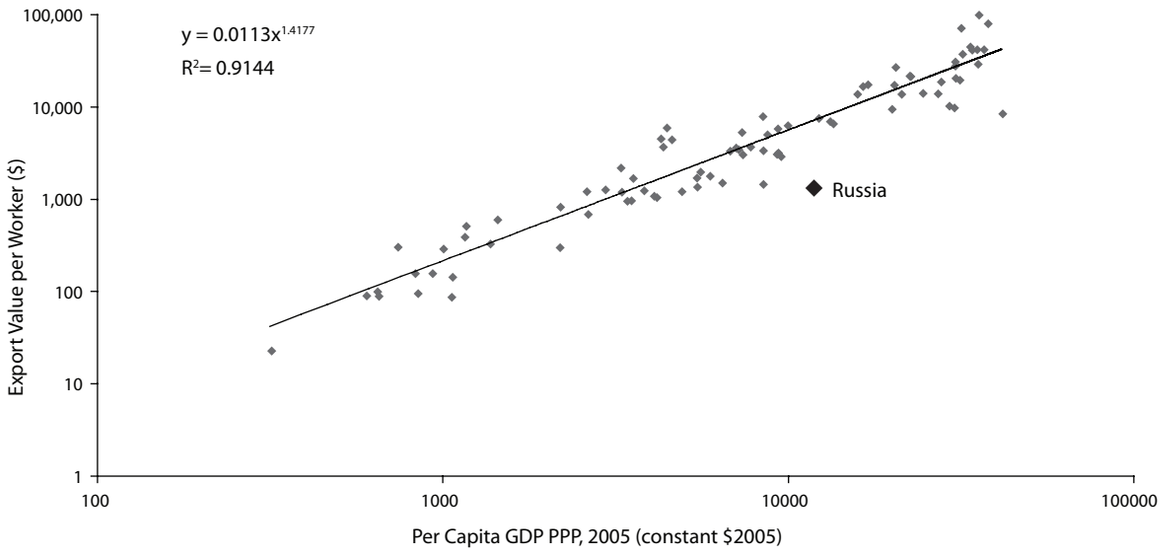
[23] World Trade Organization (WTO), *International Trade Statistics 2008* (Geneva: WTO, 2008), 12, Table I.8, http://www.wto.org/english/res_e/statis_e/its2008_e/its2008_e.pdf.

[24] In 2008, according to WTO data, Russia earned $471 billion in merchandise export revenues, whereas Belgium earned $477 billion. WTO "Statistics Database," http://stat.wto.org/Home/WSDBHome.aspx?Language=E.

[25] See Dwight H. Perkins and Moishe Syrquin, "Large Countries: The Influence of Size," in *Handbook of Development Economics*, ed. Hollis B. Chenery and T.N. Srinivasan (Amsterdam: North-Holland, 1989): vol. II, 1691–753.

FIGURE 7.9: Per Capita GDP PPP vs. Merchandise Export Value per Worker, 2005: Countries with Fuel Exports and Mineral Exports accounting for less than 10% of Total Exports, versus Russia's non-extractive merchandise exports per worker



SOURCE: World Development Indicators 2008, World Bank CD-ROM.

remarkably tight. In Figure 7.9, differences in income levels correspond with over 90% of these differences in per capita exports.

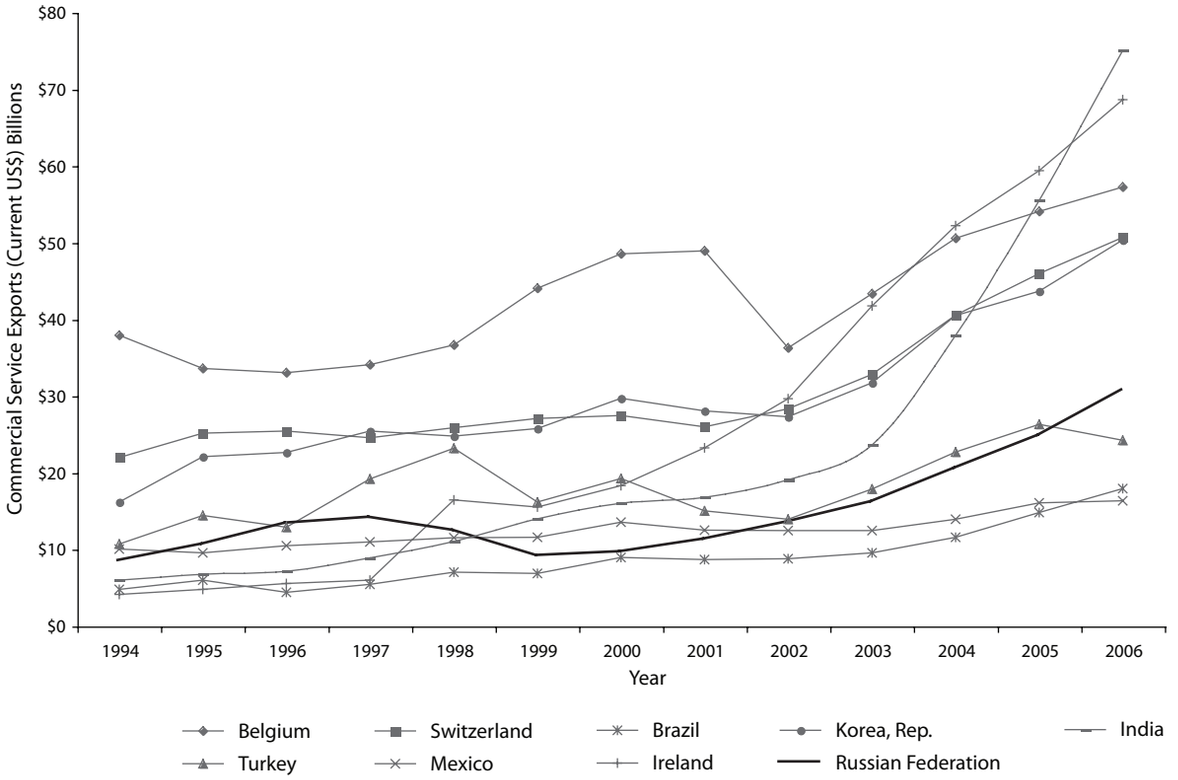
What would happen if we were to put Russia on this same graphic but exclude its extractive export revenues and count only non-extractive revenues? In this scenario, Russia would be an extreme outlier and an extreme underperformer. To meet the trend-line established by the other countries in the data-series, Russia's workers would have to be generating fully five times as much in the way of human-resource-related (i.e., non-extractive) merchandise exports as they actually achieved in the year 2005. Conversely, a country with Russia's level of per worker exports from non-extractive exports would be predicted to have a per capita GDP only about a third as high as Russia's actual estimated level. By such relationships, Russia's predicted labor productivity level in 2005, given its meager earnings from non-extractive exports, would be in the same league as countries such as Morocco, Paraguay, and Fiji.[26]

Further indications of the underdevelopment of Russia's human resource–based economy are provided by World Bank estimates of export revenues from services in the Russian Federation and other countries in **Figure 7.10**. While such earnings increased by 150% between 1998 and 2006, these were by no means stellar results by comparison with other emerging economies.[27] In 2006, for example, Russia's aggregate service exports were almost twice as high as Brazil's and over twice as high as Mexico's. However, they were not much higher those of Turkey, a country with only about half Russia's population. They were also just two-fifths the level of India's. Ireland's service exports, for its part, were over twice as high as all of Russia's in 2006. While the contrast between

[26] Note that Russia's export performance per worker would still fall short of the predicted international trend-line for non-extractive exports even if we were to include all the country's revenues from extractive exports as well!

[27] By the WTO's estimate, Russia ranked 25th globally in service exports for the year 2007. This was just above Taiwan, Thailand, and Poland, and just below Greece, Norway, and Australia. *International Trade Statistics 2008, loc. Cit.,* Table I.10.

FIGURE 7.10: Russian Commercial Service Exports in an International Perspective, 1994–2006 (Billion US Dollars)



SOURCE: World Development Indicators 2008, World Bank CD-ROM.

Ireland and Russia may attest to the importance of contributions of institutional development to export performance, it would also at the very least seem to beg questions about Russia's human resource base as a platform for supporting service exports. The most generous interpretation here might be that Russia would have considerable unexploited potential for improving its performance in this realm of the world economy.

The Russian Federation as a Third World Enclave Economy

The generally low level of export performance by Russia's working age population is masked by the huge contribution by the country's extractive industries to overall export revenues. However, the energy, mining, and other natural resource –dependent sectors, which add so much to Russia's commodity and merchandise earnings today, engage a tiny fraction of the Russian Federation's active workforce. According to the International Labor Organization's LABORSTA database, extractive industries account for less than 2% of total employment in the Russian Federation. The other 98% are engaged in activities where perforce human resources play a more central role in the production process. This bifurcation traces out a de facto productivity fault-line within the Russian economy. On one side of this fault line is a group of workers who generate extremely high levels of export revenue per capita. On the other side lie the overwhelming majority of Russian

TABLE 7.4 Total Exports and Extractive Exports Summary in the BRIC Countries

	Russia 2006	United Kingdom 2006	Norway 2006	Canada 2006	Russia 2002	Brazil 2000	China 2000	India 2001
Extractive Exports (billions $)	$193.2	$48.5	$83.7	$105.0	$57.1	$4.4	$7.4	$2.8
Total Merchandise and Service Exports (billions $)	$332.2	$670.3	$154.9	$445.9	$120.1	$64.1	$279.3	$61.1
Extractive as a % of total	58.2%	7.2%	54.1%	23.5%	47.5%	6.9%	2.6%	4.6%
% Extractive Workers	1.7%	0.4%	1.5%	1.4%	1.8%	0.4%	0.8%	0.6%
Extractive exports per extractive worker	$161,544	$442,281	$2,392,734	$418,847	$47,204	$18,922	$1,236	$1,623
Total Non-extractive Exports per Non-extractive worker	$2,056	$21,577	$30,591	$19,659	$964	$912	$380	$187
Export productivity per worker (extractive vs. non-extractive exports)	78.6	20.5	78.2	21.3	49.0	20.7	3.2	8.7
Non-extractive export productivity (Russia=100)	100	1050	1488	956	100	95	39	19

SOURCES: Brazil: Census 2000, http://www.sidra.ibge.gov.br/bda/tabela/protabl.asp?c=2958&z=cd&o=11&i=P; India: Census of India, http://censusindia.gov.in/Tables_Published/B-Series/B-Series_Link/B18-0000.pdf; China: China Statistical Yearbook 2008, http://www.stats.gov.cn/tjsj/ndsj/2008/indexeh.htm; Russia, Norway, Canada, and UK: ILO Laborsta Database, UN Comtrade Database; Service export data from World Development Indicators 2008, World Bank CD-ROM.

workers, whose per capita export productivity levels appear essentially third world. Export revenue per worker is an unconventional measure of labor productivity, and it can only afford a limited aperture on overall labor productivity. But it is a highly meaningful aperture nonetheless, as states rely upon export revenues for both international finance and public finance, and export transactions are cleared in international exchange rates that permit precise comparisons of export productivity around the world (unlike the inexactitudes that inevitably attend PPP-adjusted per capita output estimates).

The dualism at the heart of contemporary Russia's labor economy is illuminated in **Table 7.4**. Here, using export data from the UN COMTRADE database, the World Bank's World Development Indicators, and employment data from the ILO's LABORSTA and national censuses, we estimate per capita worker export revenues for the extractive sectors on the one hand, and on the other, per worker export revenues for all the remaining, non-extractive sectors of the economy, including services.

Russia's dimensions of economic dualism, and the export revenue productivity of Russian workers in the country's non-extractive sectors, can be placed in international perspective in at least two ways. One is to compare Russia's performance against natural resource exporting countries from the affluent, developed West. Another is to compare Russian performance against the other BRIC economies to see how Russia's patterns look against other emerging market economies.

In 2006, workers in Russia's extractive sectors generated an average of over $160,000 per capita in export revenues. On the other hand, workers in all non-extractive sectors generated about $2000 per capita. The disparity in export earnings per worker between these two major areas of the Russian economy amounted to almost 80 to 1. This was a much higher degree of dualism in export revenues per worker than was recorded that same year in, for example, the UK (a developed country that earns substantial oil and gas export revenues thanks to its North Sea reserves). The UK's ratio of extractive to non-extractive export revenues per worker in 2006 was about 20:1—a high degree of dualism, to be sure, but only about one-fourth of Russia's disparity. Britain's per worker level of export earnings outside its extractive enclaves, moreover, was a full order of magnitude higher than Russia's ($21,000 vs. $2000). Canada—a developed economy that is also a natural resource exporter—likewise differs from Russia in being characterized by less export dualism. There, the ratio per worker in extractive and non-extractive sectors in 2006 was about 21 to 1. Canada's non-extractive sectors also generates almost ten times as much export revenue per worker as Russia in its non-extractive sectors ($20,000 vs. $2,000). In our measure of structural dualism, Russia looks much more similar to Norway than Britain, as both countries were characterized by an 80 to 1 difference in export revenue per workers between their extractive and non-extractive sectors. In Norway, however, the level of export revenue productivity for the country's non-extractive workforce in 2006 was about fifteen times as high as in Russia ($31,000 vs. $2000 per worker).

Comparing the export productivity of labor in Russia and other BRIC states is somewhat more problematic, the main difficulty here being the accuracy of employment data. In India, China, and Brazil, annual labor surveys do not always capture economic activity in the country's less modernized, more informal sectors. For these countries, the most reliable data on labor force participation probably comes from national population censuses. Brazil's most recent census was in 2000, India's was in 2001, and China's last full country count was in 2000 (a limited sample count having been conducted in 2005). Since Russia's last national population enumeration was in

2002, we can compare the degree of duality and the export performance of labor on the basis of census data for the very beginning of the current century.

Around the dawn of the new century, Russia's degree of export productivity dualism was less pronounced than in subsequent years. In 2002, the per worker ratio of exports for extractive and non-extractive sectors was 49 to 1 (the difference in ratios for 2002 and 2006 can mainly be explained by world price trends for natural resources, and energy products, in particular). Even so, the proportion is far greater than in the other BRIC countries with which modern-day Russia is so often associated. In China, the comparable gap in export earnings per worker amounted to roughly 3 to 1 in 2000. In Brazil the degree of dualism was far higher, but even in notoriously inegalitarian Brazil the ratio was around 20 to 1 in the year 2000. This was less than half the disparity seen in Russia in 2002!

As regards productivity per se, Russia's absolute level of export revenues per extractive sector worker was higher than in other BRIC countries. It was close to 40 times higher than China's, almost 30 times higher than India's, and, though much closer to Brazil's, was nonetheless about two and a half times higher than the Brazilian level. These differences may speak to differences in capital intensity in the BRIC's extractive sectors, among other things. On the other hand, while capita export generation in Russia's non-extractive sectors was likewise greater than in the other BRICs, the differentials between Russia and the rest of the BRICs were much lower.

In China, for example, each non-extractive sector worker in 2000 generated roughly two-fifths as much export revenue as his or her Russian counterpart in 2002. The levels of per capita export revenues in the non-extractive sectors of the Brazilian and the Russian economies in 2000/02 appear to have been very roughly equal at just under $1000 per worker in each country.[28] This seeming parity in reality offers a devastating read on Russia when we recall how much higher Russia's educational attainment appears to be. According to estimates from UNESCO's Institute of Statistics, about 10% of Brazil's adults fifteen and older were illiterate as of 2006. In Russia, by contrast, adult literacy was said to be virtually universal, with an illiteracy rate of under 0.5%.[29] Whereas something like 11% of Russia's adults had failed to complete primary school as of 2000, the corresponding proportion in Brazil was just shy of 50%.[30]

In the year 2000, according to estimates by Harvard's Robert Barro and Jong-Wha Lee of Korea University in their widely used database on international educational attainment, the average number of years of schooling for adults fifteen and older was under five years in Brazil but just over ten years for Russia. There is a strong international correspondence between educational attainment of the workforce and per capita productivity. Even after controlling for such factors as differences in health, institutions, and policies, each additional year of schooling is associated with an additional 20% of per capita GDP output.[31] All other things being equal, then, we would have expected Russia's per capita output levels, and its per capita levels of non-extractive exports, to have been about two and a half times higher than Brazil's at the dawn of the new century.

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28 Note, incidentally, that since Brazil and Russia are of similar size demographically, population scale is not a factor influencing this outcome.

29 UNESCO Institute of Statistics, "National Literacy Rates for Youth (15–24) and Adults (15+)," http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx?ReportId=210.

30 These datasets are electronically available on a dedicated website maintained by the World Bank, "Education Attainment in the Adult Population (Barro-Lee Data Set),"http://go.worldbank.org/8BQASOPK40.

31 See Nicholas Eberstadt and Apoorva Shah, "Education and Development: Implications of the Lack of Schooling for India, Today and Tomorrow," (forthcoming).

Despite its vast geographic size, the Russian Federation today should be regarded as an enclave economy, dependent for most of its international revenues and economic growth on the tiny pockets of its workforce that make use of the country's underground natural resources. Economic dualism, to be sure, is not unique to Russia, although it is difficult to think of another populous country in which the degree of dualism is so pronounced. What seems rather more distinctive is the curious, and disturbingly low, level of labor productivity (as reflected in per capita export generation) for the Russian workforce that is not engaged in exploiting the country's natural resources. For Russia's working age manpower, educational profiles appear comparable, or superior to those of contemporary Western European societies. Yet output per capita in this same workforce, as reflected by the proxy of export revenues per worker, reaches only Latin American levels.

By modern patterns of development, this qualifies as a glaring structural distortion. Institutional factors, including the legacy of Communism, and current economic policies surely help explain the distortion, but just as surely they do not explain all of it. By all indications, Russia's seemingly educated adult population suffers from an unexpected but very real human capital deficit. This deficit is distinguished by catastrophically high levels of adult mortality but apparently extends well beyond that particular and especially tragic limitation.

Prospects for Labor Productivity in Russia

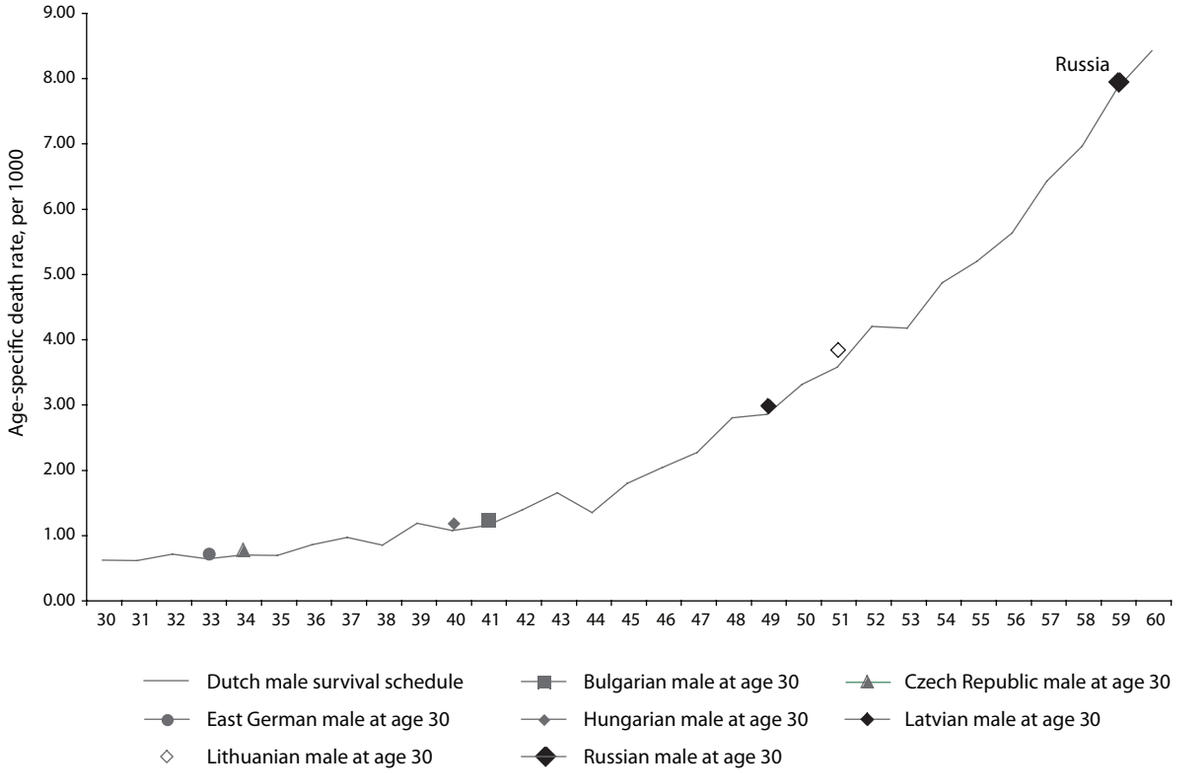
Can the productivity of Russia's labor force improve appreciably in the years and decades ahead? There are at least three important reasons to expect (or hope) that this will be the case. First, Russia today has considerable opportunity for strengthening the economic institutions and improving the economic policies that conduce to higher labor productivity, even in the absence of appreciable changes in human capital endowment per worker. Second, current projections by international demographic researchers anticipate a continuing increase in the educational attainment of Russia's working age population, with attainment defined in terms of years of schooling completed. Recent work by Anne Goujon, Wolfgang Lutz, and their colleagues from the International Institute for Applied Systems Analysis (IIASA) and the Vienna Institute of Demography (VID) in Austria, suggests that the proportion of Russia's 15–64 population with higher education will rise steadily over the quarter century between 2005 and 2030, given existing and anticipated educational profiles of the rising generations in question.[32] Third, and by no means least important, progressively rising labor productivity has been a defining fact, and indeed all but a general rule, in our age of modern economic development. It has touched and transformed economic circumstances the world over during the past century. Given the sweep and scale of this trend, we might look to appreciable increases in labor productivity across the planet in the years ahead, and no less so in Russia.

Yet as we know, *ceteris paribus* presumptions are an irresolute guide for prognostications about Russia. For in Russia, all other things too often turn out not to be equal. Weighing against these potentially positive factors is a number of risks and trends that could serve to constrain or depress the economic potential of the Russian workforce. Six of these trends deserve special mention.

First, as we know all too well by now, labor productivity in Russia is already affected by the problems of severe excess death and premature mortality. This alters the productivity outlook not only for today but also for tomorrow. Some of the dimensions are illustrated in **Figures 7.11** and

[32] See IIASA, "Education Forward Program: The Demography of Human Capital Formation—Projections of Populations by Level of Educational Attainment, Age and Sex for 120 Countries 2005-2050," http://www.iiasa.ac.at/Research/POP/Edu07FP/index.html?sb=12.

FIGURE 7.11: Adult Male Mortality Schedules: Netherlands vs. Selected post-Communist Countries, 2006



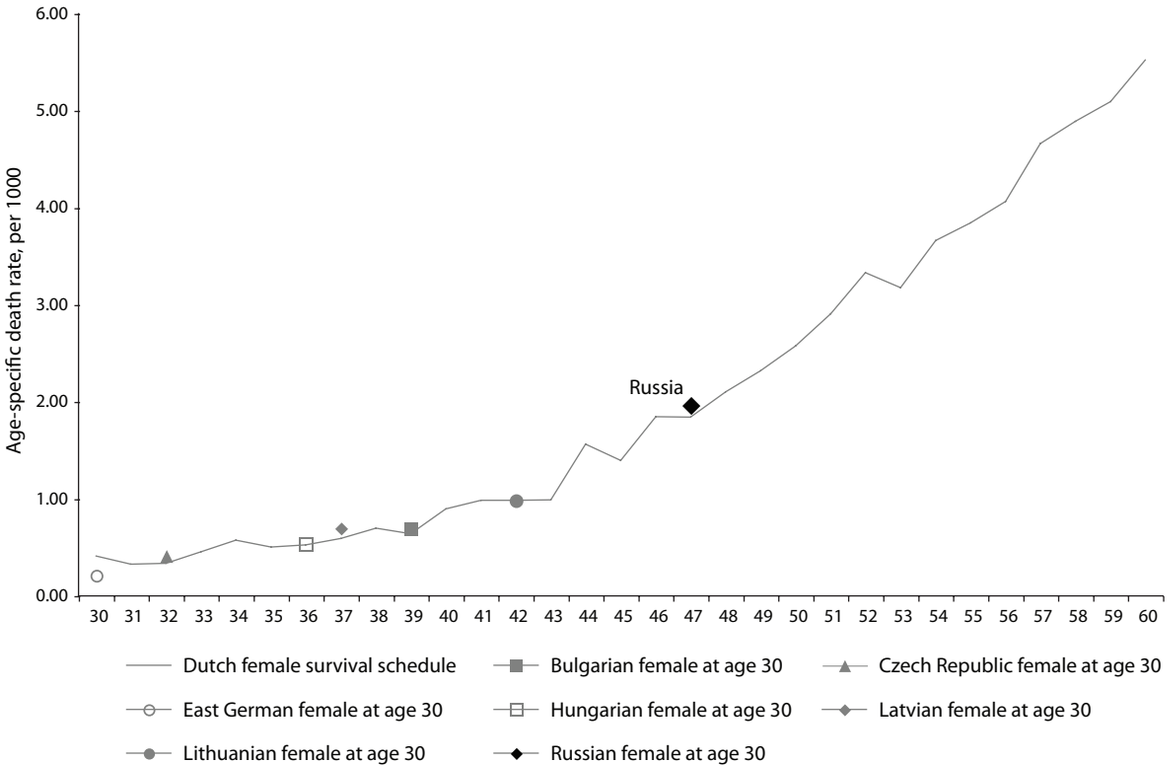
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

7.12, which place the 2005 death rates for 30-year old men and women from post-Communist European societies on the mortality curve traced out by Dutch men and women between the ages of 30 and 60.[33] Whereas 30-year-old men and women from Eastern Germany face the same mortality risks as Dutch men and women only a few years older, the situation is totally different in Russia. There, young Russians contend with death rates that Dutch adults do not see until they are well into middle age. For Russian women, 30 year-olds suffer the same death rates as Dutch women in their mid-40s. Russian men aged 30 have higher death rates than Dutch men at age 57. By this most fundamental of biometric measures, young adults in Russia who should be near the peak of fitness and vigor look to be effectively 15 to nearly 30 years more elderly than their counterparts in a randomly selected developed country. They are for all intents and purposes far grayer, in terms of mortality risk, than their calendar age would indicate. By extension, we may also suspect they tend to be more frail and restricted in their capabilities. Education-related health heterogeneity notwithstanding, such high rates of peacetime mortality clearly augur ill for productive potential in Russia's working ages.

Second, Russia's terrifying levels of working-age mortality have long-range as well as immediate implications for labor productivity. We can see this by comparing survival schedules from age 20 to

[33] Note that there is nothing especially significant, incidentally, about our selection of adult mortality schedules from Holland. We could have used any other developed society to make this same point.

FIGURE 7.12: Adult Female Mortality Schedules: Netherlands vs. Select Countries, 2006



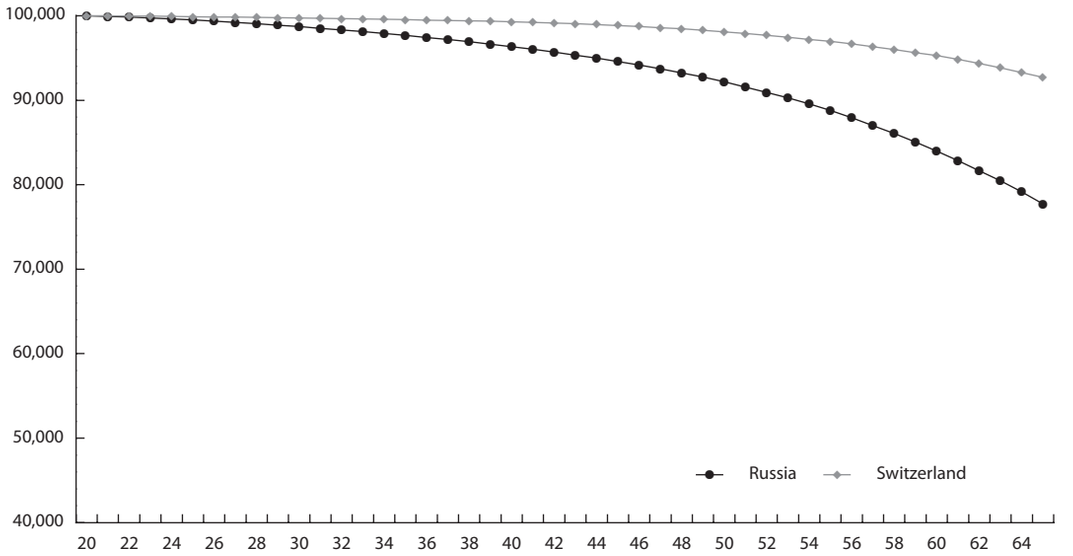
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

(say) 65 for Russia and Switzerland in 2006, the most recent year for which such data is available.[34] On current survival schedules, roughly seven out of eight Swiss men and twelve out of thirteen Swiss women could expect to make it from their twentieth birthday to a notional retirement at age 65. Russians face very different odds. Nearly 22% of Russian women would perish over the course of these years—three times as many as their Swiss counterparts (see **Figure 7.13**). As for Russian men, they stand less than an even chance (only 45% probability) of surviving from 20 to 65 on current mortality schedules (see **Figure 7.14**). These punitive survival schedules do more than constrain current labor potential. They affect decisions about higher education and additional technical training for the future. Contemplating such severely foreshortened prospects for working life, the Russian cost-benefit calculus for such investments in human capital can hardly help but be affected. Russia's patterns of premature mortality can only be expected to depress such critical investments in workforce skills and knowledge.

Population heterogeneity, incidentally, cannot be invoked to minimize or vitiate this looming problem. Even if we presume early self-selection (and health differentiation) by chosen educational trajectory, the mortality outlook for Russia's university-trained population would still be grim. To go by the work referenced earlier in this chapter, for example, Russian men with some higher

[34] Please note that Switzerland has one of the OECD group's healthiest adult populations and is used here to make a point.

FIGURE 7.13: Female Survival Schedules, Ages 20-65: Russian Federation vs. Switzerland, 2006

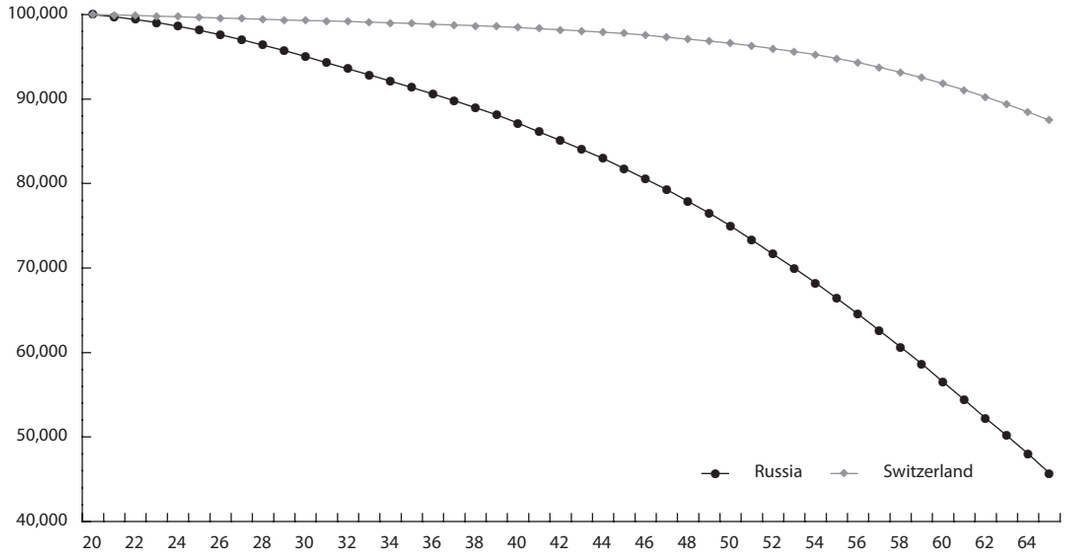


SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

education enjoyed the comparatively high (for Russia) life expectancy of 51 years at age 20. In Switzerland, however, the typical 20-year-old man can expect to live another 60 years, or almost a decade longer. The likelihood of not surviving from 20 to 65 for these educational elites in Russia would be about 28%—well over twice the risk for the ordinary Swiss man. On the basis of simple actuarial probabilities, investment in higher learning would thus appear to be more risky in Russia than in Switzerland, even for the country's more privileged strata. At the other end of the social spectrum, working-age survival probabilities for men and women alike are even more dismal than the Russian national averages. Here, health heterogeneity would mean further pressure against high school completion, setting the stage for a downward spiral in average educational attainment and further stratification of the Russian educational profile.

Third, while we may hope for gradual health improvements on the part of Russia's working age population, there seems in fact to be considerable negative health momentum in the current Russian population structure. Contraposition of adult mortality schedules for men and women from Japan and Russia make the point (see **Figures 7.15–7.18**). Japan currently records the planet's highest life expectancies for both males and females, and the country has apparently achieved the greatest postwar health progress of any contemporary society. That progress is evident when we compare death rates at any given calendar age for successive birth cohorts. With each passing decade, death rates tend to be lower—often appreciably lower. Broadly speaking, death rates are more favorable for younger sisters than older sisters, and more favorable for older sisters than their mothers, and likewise for males. Just the opposite seems to be true for Russia. In fact, Russia's current crop of men and women alike in their 30s, 40s, and 50s have decidedly less favorable mortality rates than prevailed in Russia during their parents' time. As a practical matter, this will make health improvements for the Russian working age population in the decades ahead an especially daunting task. Under such conditions, indeed, simply preventing further health deterioration could prove to be a feat in and of itself.

FIGURE 7.14: Male Survival Schedules, Ages 20-65: Russian Federation vs. Switzerland, 2006



SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

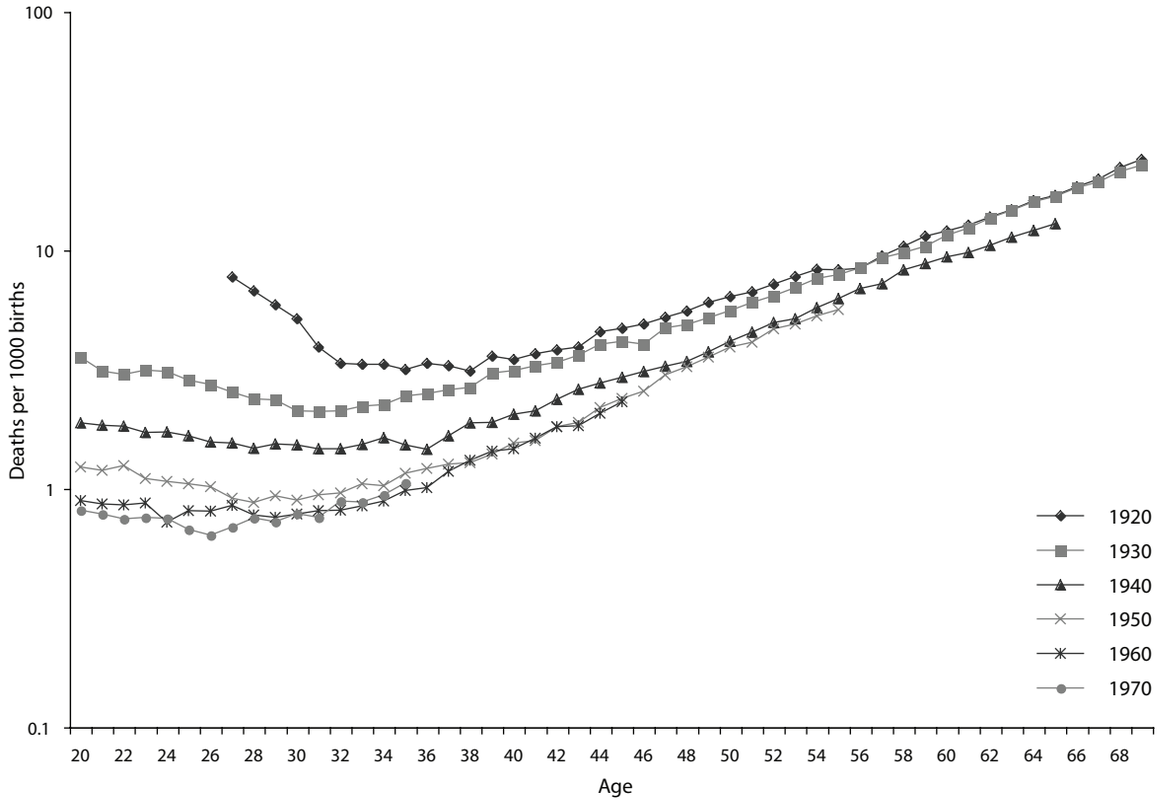
Fourth, the overall tendency of population aging in the coming decades will be affecting the working age groups in Russian society, too. In 2005, to go by the estimates of the Census Bureau's International Data Base (IDB), the median age of the Russian Federation's 15–64 cohort was 40.2 years. In 2030, according to IDB projections, it would be 46.5 years, a sharp increase of over 6 years in a single generation. When we consider Russia's steep age-specific mortality curves for its population of working age, we can see that the prospective aging of the Russian Federation's labor force could exert downward pressure on both average levels of health and by extension average levels of productivity in the workplace. We can get a sense of the prospective mortality pressures facing Russia's working age population over the coming generation from the country's 2005 age-specific mortality schedules.[35] Holding mortality by age and sex constant but adjusting for projected changes in the composition of the country's 15–64 population, average mortality levels for Russia's working age population would rise by over 18% between 2005 and 2030.[36]

Fifth, in addition to the overall graying of Russia's population of working ages, other demographic changes are also transforming Russia's manpower availability in an inauspicious fashion, at least from the standpoint of maintaining economic growth. We can see this by comparing the Census Bureau's numbers on projected demographic changes for the years 2005–30 in Russia and Western Europe for the 15–64 population. In 2005, Western Europe's conventionally defined population of working ages was over two and a half times larger than Russia's (265 million vs. 101 million). Both areas are expected to see their working age populations shrink between 2005 and 2030. Yet the Russian Federation's working age population is anticipated to decline more than Western Europe's in absolute terms (18 million for Western Europe vs. 21 million for Russia). While Russia's 15–64 group is projected to shrivel by over 20% during the course of this quarter century, the fall-off in

[35] Mortality schedules derived from the Human Mortality Database.

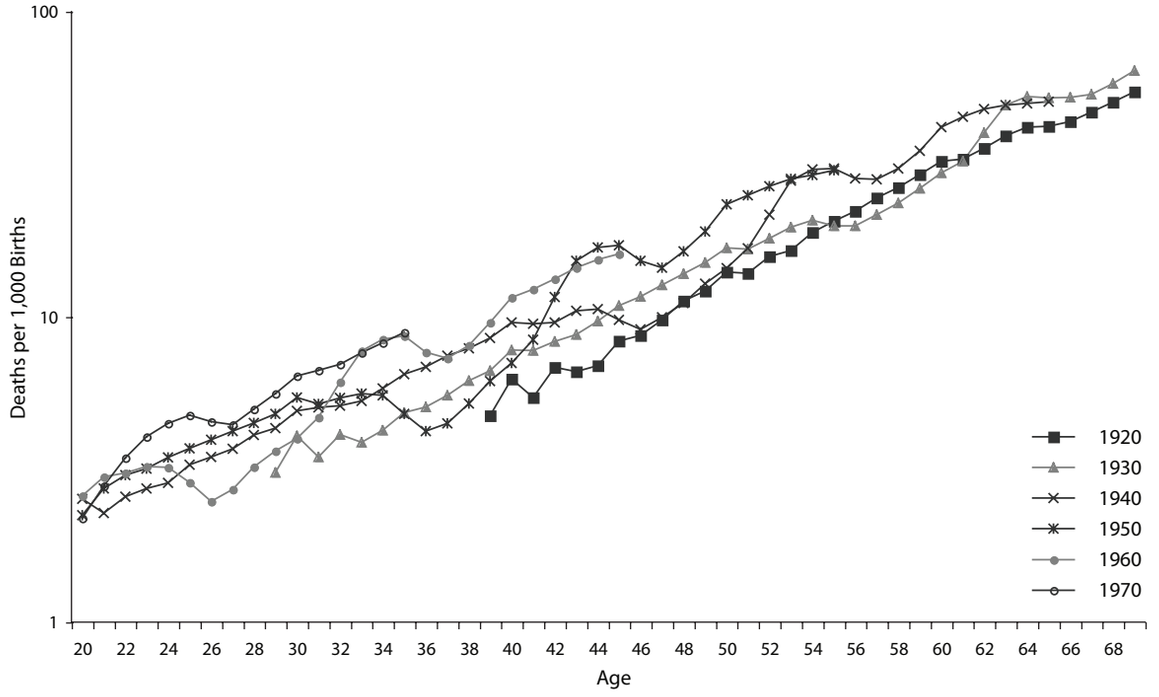
[36] Calculations derived on data from http://www.census.gov/ipc/www/idb and http://www.mortality.org .

FIGURE 7.15: Male Mortality in Adulthood in Japan by Birth Cohort, 1920–1970



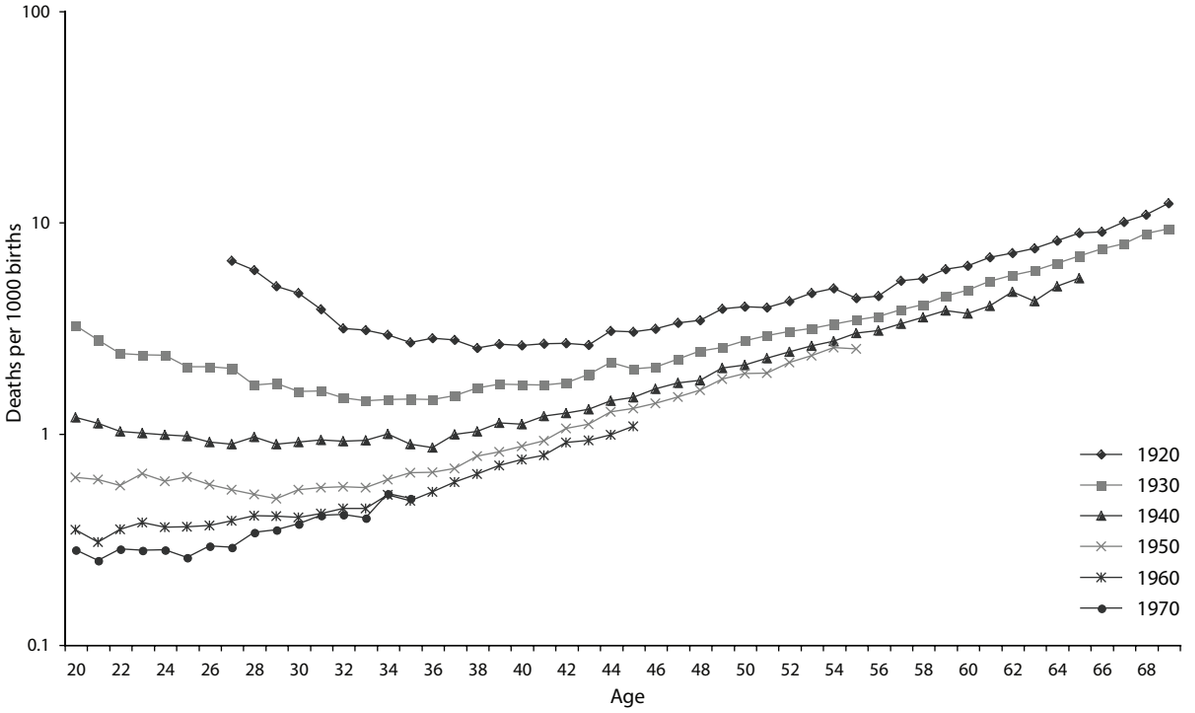
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

FIGURE 7.16: Male Mortality in Adulthood in Russia by Birth Cohort, 1920–1970



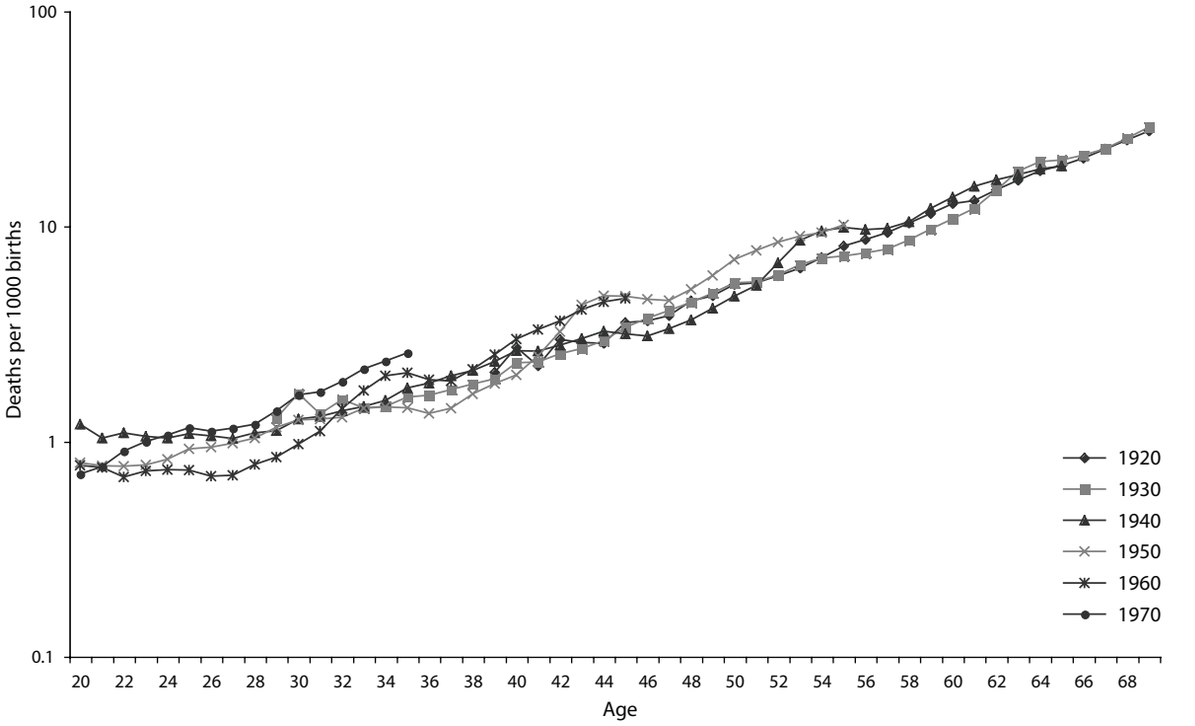
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

FIGURE 7.17: Female Mortality in Adulthood in Japan by Birth Cohort, 1920–1970



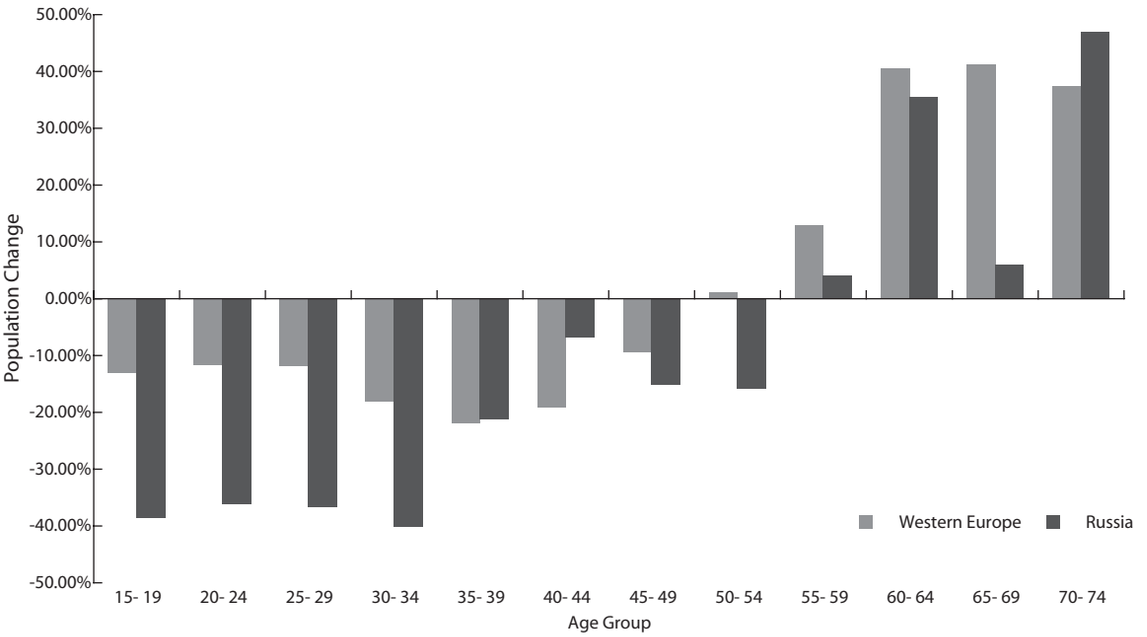
SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

FIGURE 7.18: Female Mortality in Adulthood in Russia by Birth Cohort, 1920–1970



SOURCE: Human Mortality Database, University of California, Berkeley and Max Planck Institute for Demographic Research, http://www.mortality.org.

FIGURE 7.19: Projected Population Change For Adult Age Groups, 2005-2030: Western Europe vs. Russia (percentage change)



SOURCE: U.S. Census Bureau, International Data Base, http://www.census.gov/ipc/www/idb/.

NOTE: Definition of "Western Europe" from U.S. Census Bureau.

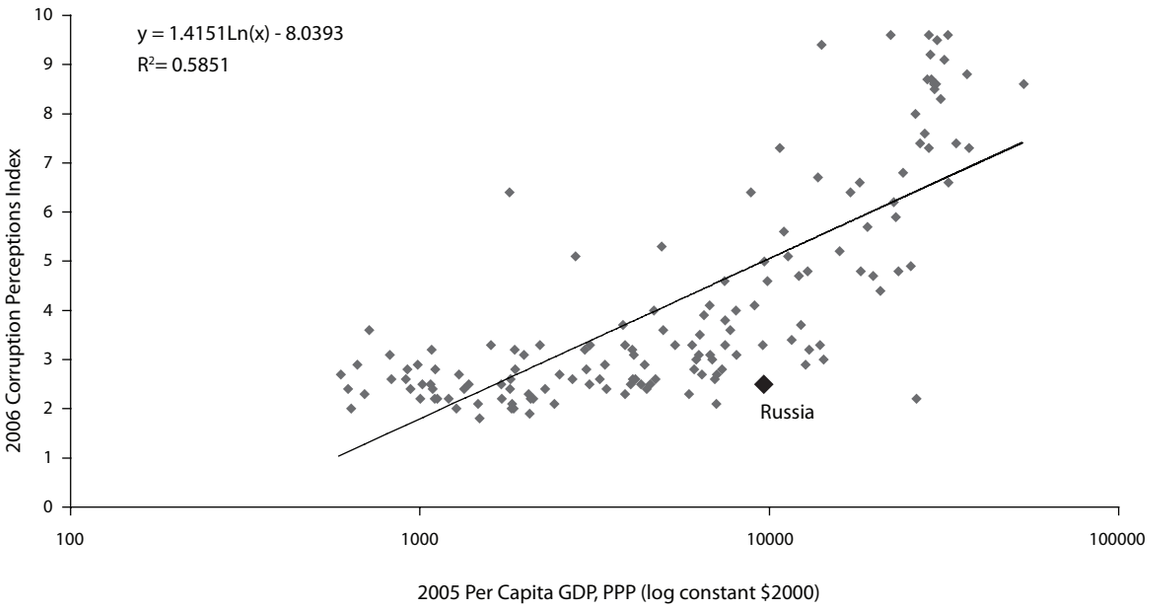
younger manpower is expected to be especially drastic. For every five-year age grouping in the 15–34 range, population totals are seen as falling by over 35% between 2005 and 2030. For people in the early thirties, totals are projected to plummet by fully 40%. By contrast, the comparable declines in young manpower in Western Europe are set to range between 12% and 18% in those same age groups. Between now and 2030, Russia may only experience population growth within the conventionally defined working ages of 55–64. For reasons we have already discussed, though, these men and women tend to be far less suited for sustained labor force participation than their counterparts in Western Europe and the West.

Sixth, Russia's institutional weaknesses and policy problems today may be impairing the accumulation of human capital for tomorrow's workforce. A striking feature of the real existing Russian economy is that its economic openness, commercial transparency and credibility of policy and institutions are all far lower than would be predicted for a country of its income level.[37] In all these respects, Russia exhibits features that would be predicted for a far poorer society.

Consider corruption. **Figure 7.20** presents the international correspondence between PPP adjusted per capita GDP (for 2005) as estimated by the World Bank and Transparency International's Corruption Perceptions Index (2006). The index, first published in 1995, compiles

[37] Note that aside from the extreme dualism and prominence of its enclave economy, Russia may also be subject to what theorists today describe as the "resource curse". The resource curse theory hypothesizes that political economy effects are responsible for the negative correlation observed in low-income countries in the postwar era between large endowments of exploitable non-renewable resources, on the one hand, and economic growth and political openness on the other. See Richard Auty's original exposition on this now familiar concept. Richard M. Auty, *Sustaining Development in Mineral Economies: The Resource Curse Thesis* (London: Routledge, 1993). There is considerable controversy in the literature on whether or not Russia today suffers from a so-called resource curse. We would note here that it is not necessary to invoke the theory of the resource curse to outline the peculiarities in the current Russian human resource economy and macro-economy that demonstrate empirically in this chapter.

FIGURE 7.20: 2005 GDP per capita, PPP vs. 2006 Corruption Perceptions Index



SOURCE: World Bank, World Development Indicators 2008; Transparency International, Corruption Perceptions Index 2006.

third-party data from governmental and non-governmental agencies, local citizen surveys, and private risk agencies to assess the extent of corruption among public officials and politicians in a particular country. Most often, corruption in this index is measured by the frequency and size of bribes exchanged in public and political sectors. There is a strong positive relationship between this measure and income, as the higher the level of per capita output, the higher a country's ratings on this index tends to be (a high score means a good reputation with respect to corruption).

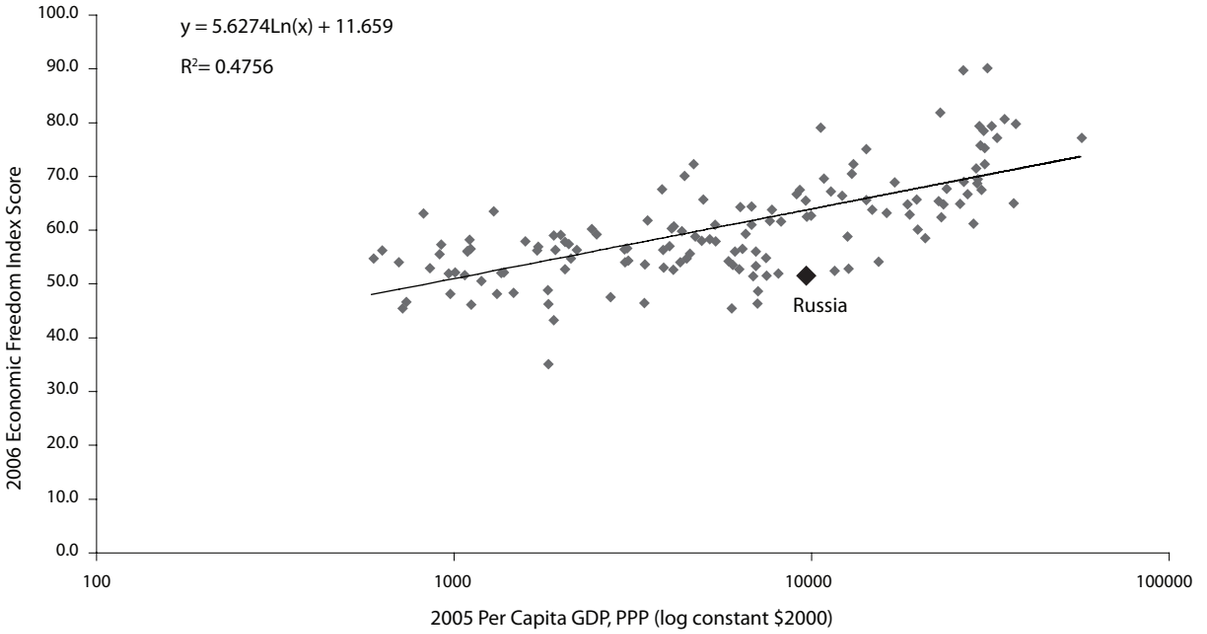
Russia's ranking on the corruption perceptions scale, however, is remarkably low. In the 2006 Corruption Perception Index, the Russian Federation was rated 126 out of 163 countries surveyed. Russia ranked far below such countries as Ukraine and Mongolia. It was distinctly lower than Bolivia and Iran, and lower even than such places as Malawi and Zambia. Russia's extremely poor ranking on the corruption perceptions scale is all the more striking when considering the country's relatively high level of per capita GDP. Russia is far richer than the typical African country, but its ranking on the Corruption Perceptions Index is exactly average for a sub-Saharan state.[38] In fact, the predicted income level for a country with Russia's corruption score would be about a sixth of Russia's own level.[39]

Now consider economic openness, institutional credibility, and business climate. **Figures 7.21** and **7.22** present the correspondence between PPP adjusted per capita GDP in 2005 and two

[38] In the 2006 Corruption Perceptions Index, of the 45 sub-Saharan countries covered, 23 were awarded better scores than Russia (i.e., less perceived corruption), while 18 were given poorer scores (i.e., more perceived corruption). The four remaining states (Benin, Gambia, Rwanda, and Swaziland) were tied with Russia. See Transparency International, "CPI 2006 Regional Results," http://www.transparency.org/policy_research/surveys_indices/cpi/2006/regional_highlights_factsheets.

[39] 2006, incidentally, was not an aberrant year for Russia in Corruption Perception Index rankings. In the latest (2008) CPI report, the Russian Federation was rated 147 out of 180 countries. 31 of the 47 sub-Saharan countries surveyed were given better scores (i.e., less perceived corruption) than was Russia. Transparency International, "TI Corruption Perceptions Index 2008", http://www.transparency.org/policy_research/surveys_indices/cpi.

FIGURE 7.21: 2005 GDP per capita, PPP vs. Heritage Foundation/Wall Street Journal Index of Economic Freedom, 2006

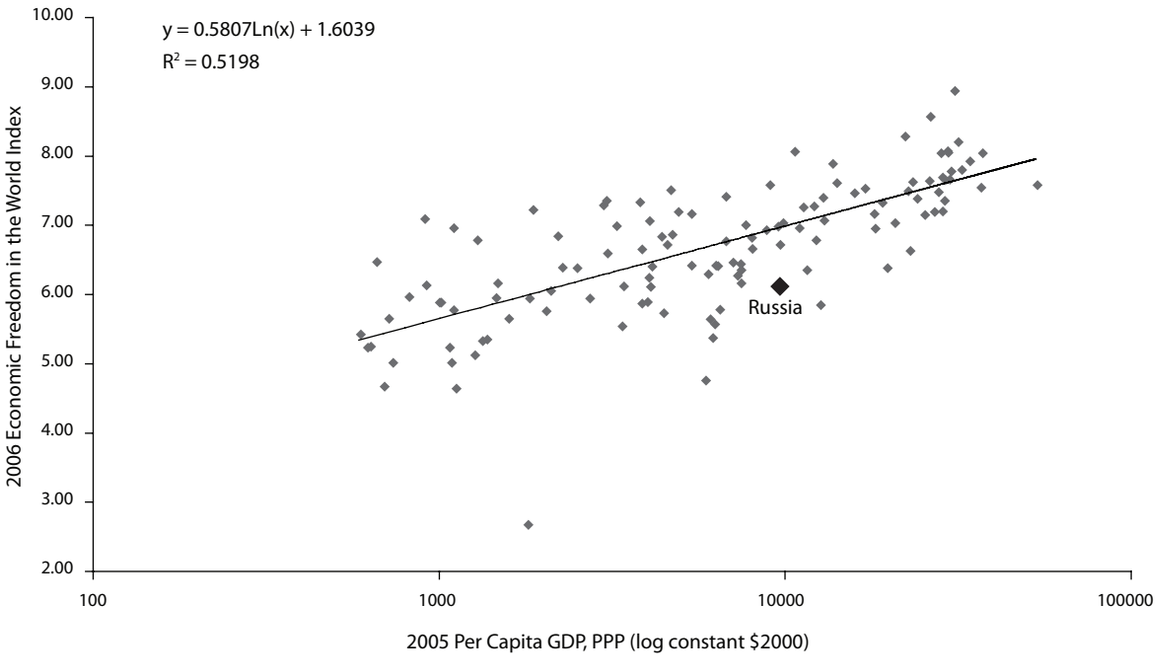


SOURCE: World Bank, World Development Indicators 2008; Heritage Foundation/Wall Street Journal, Index of Economic Freedom, 2006.

separate global indices which measure these and other components of economic freedom for that same year: the Fraser Institute's "Economic Freedom on the World" Index and the Heritage Foundation/*Wall Street Journal* "Index of Economic Freedom." The Fraser Institute's index compiles 42 different measures of government size, legal structure, access to finance, international trade, and regulation to measure the level of economic freedom in 141 countries. The Heritage Foundation/*Wall Street Journal* index measures ten freedoms in areas such as business, trade, and finance using sources like the World Bank Doing Business reports and the Economist Intelligence Unit. This index is calculated independently from the Fraser Institute's index, but the rankings correspond fairly well to each other. Here again, we see a clear positive relationship. The higher a country's income level, the higher its rating with respect to economic freedom tends to be. Just as with its ratings on the Corruption Perceptions Index, Russia's scores turn out to be far lower than would be expected for a country of its economic level. Judging solely by its ratings with respect to economic freedom, we would probably guess that Russia was an impoverished third world society. The predicted per capita GDP level in 2005 for a country with Russia's economic freedom rating would be less than one-seventh of Russia's actual level, according to the 2006 Heritage Foundation/*Wall Street Journal* index. With the Fraser Institute scale (2006), Russia fares somewhat better in its economic freedom ranking. Even so, Russia's predicted output level, given its economic freedom scores on this index, would still be less than one-fourth of Russia's true level in 2005, as estimated by the World Bank.

There is, to be sure, an element of subjectivity in the country rankings for each of the three scales under consideration here (as much is indicated by the very title of Transparency International's "Corruption Perceptions Index"). Russia's rankings in these studies, though, are remarkably

FIGURE 7.22: 2005 GDP per capita, PPP vs. Fraser Institute Economic Freedom in the World Index, 2006



SOURCE: World Bank, World Development Indicators 2008; Economic Freedom of the World Network, Economic Freedom in the World Index Report 2008.

consistent. The Russian Federation today is a conspicuous and serious underperformer in each of them. Rampant corruption, weak foundations for institutions such as the rule of law, and inconstant or unsound economic policy all tend to depress per capita output (or, if one prefers, worker productivity). Russia happens to rate very poorly on all these accounts in relation to its existing level of overall output per capita. For ordinary economic agents in the Russian Federation, this means that the economic climate is surprisingly inauspicious, and far less favorable than would ordinarily be expected for a society at Russia's stage of development.

One practical consequence of this disjuncture is lower rates of return on human capital. Allocating personal resources (including time) to augmenting education, skills, and other potentially productive human capital assets appears more risky and less attractive. Reduced investment in human capital, in turn, can be expected to translate to lower labor productivity and economic potential for current and future workers. Corruption, official lawlessness, and unsound economic policy today, in short, can be expected to have a deleterious impact on human resources, and labor productivity, in the Russian Federation in the years to come.

CHAPTER 8

"Social Capital" in Russia: An Attitude Problem, on a National Scale

What is Social Capital?

The concept of social capital has come to life in the social science literature over the past generation, in the wake of seminal studies by such leading sociologist as Pierre Bourdieu and James S. Coleman.[1] The term has also gained currency in everyday discourse thanks to best-sellers by such thinkers as Harvard's Robert D. Putnam and Francis Fukuyama of Johns Hopkins University. Researchers are still in the early stages of understanding the phenomenon of social capital, but a phenomenon can still have powerful social consequences even when we do not fully understand it.

In general, social capital refers to the informal networks of social relations that envelop individuals and permit transactions and accomplishments that could not have been accomplished, individually or in aggregate, in a purely atomized social universe. Definitions of social capital, and emphases regarding its key characteristics, vary among students of the phenomenon. Perhaps these differences should not be surprising, for as Coleman observed,

> If physical capital is wholly tangible, being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the relations among persons.[2]

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[1] Pierre Bourdieu, "The forms of capital" in *Handbook of Theory and Research for the Sociology of Education*, ed. John G. Richardson (New York: Greenwood Press 1986): 241–258; and James. S. Coleman, "Social capital in the creation of human capital," *American Journal of Sociology* 94, supplement (1988): 95–120.

[2] Coleman, "Social capital," S100–S101.

Coleman describes social capital as "a peculiar type of resource available to an actor…defined by its function…making possible the achievement of certain ends [both economic and non-economic] that would not be possible in its absence."[3] He identifies three forms that social capital assumes: "obligations and expectations, which depend upon trustworthiness of the social environment, information-flow capability of the social structure, and norms accompanied by sanctions."[4] Fukuyama, for his part, focuses more on just one of the aspects Coleman mentioned, defining social capital as "a capability that arises from the prevalence of trust in a society or certain parts of it."[5] Putnam chooses instead to think of social capital with an eye trained on the denseness and reach of the voluntary networks in which people participate. These civic associations are prized by Putnam as the lifeblood of a healthy participatory democracy.[6] Further distinctions in usage and nuance could also be adduced from the current social capital literature.

Social Capital and Its Discontents

Not all social scientists are convinced of the merit and utility of the new literature on social capital. Judicious skeptics such as Princeton University sociologist Alejandro Portes, for example, see social capital as in large measure a repackaging of existing sociological concepts:

> [T]he set of processes encompassed by the concept are not new and have been studied under other labels in the past. Calling them social capital is, to a large extent, just a means of presenting them in a more appealing conceptual garb…[7]

Some economists, for their part, have posed basic methodological questions about the concept of social capital and its formulation.[8] Nobel Economics Laureate Robert M. Solow, for example, has objected that social capital is not actually capital at all. He argues that it lacks the defining characteristics of all other forms of capital, namely an augmentable inventory of depreciable assets from which a rate of productive return can be generated. [9]

Even proponents of social capital recognize that the concept as it now stands still remains some distance from the standards ordinarily expected of most other theoretical constructs employed in the empirical social sciences. Fukuyama, one of the concept's leading proponents, provides a lucid summary of the present limitations to the notion of social capital:

> A frank review of the social capital literature… reveals a number of weaknesses in the concept. The first is methodological. [T]here is no broadly accepted definition of social capital, and therefore no commonly accepted standard for measuring or incorporating it into conventional economic models…Even if there

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[3] Coleman, "Social capital," S98.

[4] Coleman, "Social capital," 98.

[5] Francis Fukuyama, *Trust: The Social Virtues and the Creation of Prosperity* (New York: Free Press, 1995): 26.

[6] Cf. *inter alia,* Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon and Schuster, 2000). Perhaps what is surprising here is the congruence of usages, as Putnam writes that the concept of human capital was discovered or invented on at least six separate occasions over the course of the Twentieth Century.

[7] Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology* 24 (1998): 1–24. Portes further warns that today's work on social capital is too heavily freighted by an advocacy agenda entertained by many of its enthusiasts. Social ties can bring about greater control over wayward behavior and provide privileged access to resources. They can also restrict individual freedoms and bar outsiders from gaining access to the same resources through particularistic preferences. For this reason, it seems preferable to approach these manifold processes as social facts to be studied in all their complexity, rather than as examples of a value. A more dispassionate stance will allow analysts to consider all facets of the event in question and prevent turning the ensuing literature into an unmitigated celebration of community. Communitarian advocacy is a legitimate political stance, however it is not good social science.

[8] Cf. for example, Steven N. Durlauf, "On the empirics of social capital," *Economic Journal* 112, no. 483 (November 2002): F459-F479; and Joel Sobel, "Can We Trust Social Capital?" *Journal of Economic Literature* 40, no. 1 (Mar., 2002): 139–154

[9] Robert M. Solow, "Notes on Social Capital and Economic Performance," in *Social Capital: A Multifaceted Perspective*, ed. Partha Dasgupta and Ismail Serageldin (Washington, DC: World Bank, 2000): 6–10.

> were agreement on the definition of social capital, there would still be severe problems in measuring and using it as physical and human capital are now used, as an input in economic models...
>
> Given the heterogeneous nature of social capital, the qualitative dimensions of social relationships, and the pervasiveness of positive and negative externalities, it should not be surprising that it has proven difficult to come up with a single accepted metric of social capital, or an agreed-upon means of incorporating it into formal models. This applies even to the most ambitious study of social capital to date, Robert Putnam's *Bowling Alone*; despite an impressive effort at data collection, he has still not convincingly demonstrated the coefficient of the rate of change in U.S. social capital over the past 40 years, or even whether its sign should be positive or negative. If these kinds of uncertainties exist about the most data-rich country in the world, the problems of analyzing poorer, developing societies with scarcer information are likely to be severe.[10]

Duke University sociologist Nan Lin, a leading social capital theorist and researcher, puts it more diplomatically and succinctly. "The immediate future" of social capital theory, he writes, "depends upon both a continuing refinement of the theory itself and measurements of the concepts involved."[11] None of these questions or difficulties should be minimized. It will suffice here simply to observe that the concept itself seems to be taken increasingly seriously by serious researchers in the social sciences.

Elinor Ostrom, Nobel Laureate in Economics for 2009, is a proponent of the concept, on which she has already published extensively.[12] Joseph Stiglitz, Nobel Laureate in Economics for 2001, concludes that "social capital is a very useful concept, but a very complex one."[13] Other Nobel Laureates in Economics commending the concept of social capital and endorsing additional research on it include Kenneth Arrow (1972), Amartya Sen (1998), James Heckman (2000) and Daniel Kahneman (2002), who together with Stiglitz served on the Commission on the Measurement of Economic Performance and Social Progress (the 2009 "Sarkozy Commission" on alternative indicators to GDP). Their report offers this evaluation:

> Like political voice and the rule of law, social connections and the attendant norms of trust and trustworthiness are important for people's [quality of life]. These social connections are sometimes subsumed under the heading of "social capital". Definitions of social capital (as were other forms of "capital" at an equivalent stage in their conceptual development) have been much debated, but there is now convergence towards a "lean and mean" definition: social networks and the associated norms of reciprocity and trustworthiness...The core insight of the concept of social capital is that, like tools (physical capital) and training (human capital), social connections have *value* for [quality of life].

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10 Francis Fukuyama, "Social Capital and Development," *SAIS Review* 22, no. 1 (Spring 2002): 29–31.

11 Nan Lin, *Social Capital: A Theory of Social Structure and Action* (New York: Cambridge University Press, 2001): 243.

12 For example, see Elinor Ostrom, "Constituting Social Capital and Collective Action," Journal of Theoretical Politics 6 no. 4, (October 1994): 527–562; Elinor Ostrom, "Self-organization and Social Capital," Industrial and Corporate Change 4 no. 1 (January 1995), pp. 131–159; Elinor Ostrom, "Social capital: fad or fundamental concept?" in Social Capital: A Multifaceted Perspective, ed. Partha Dasgupta and Ismail Serageldin (Washington, DC: World Bank, 2000): 174–214; Thomas Dietz, Elinor Ostrom and Paul C. Stern , "The Struggle to Govern the Commons," Science 302, no. 5652 (Dec. 12, 2003): 1907–1912; and Elinor Ostrom and T.K. Ahn, eds. Foundations of Social Capital (Northampton MA: Edward Elgar, 2003).

13 Joseph E. Stiglitz, "Formal and informal institutions" in *Social Capital: A Multifaceted Perspective*, ed. Partha Dasgupta and Ismail Serageldin (Washington, DC: World Bank, 2000): 67.

> Social connections have value, first, to the people who are in the networks… Evidence also suggests that social connections are powerful predictors of (and probably causes of) subjective well-being.… The performance of democratic government and even the pace of economic growth may also depend on the quality of social connections within a jurisdiction….
>
> In short, a rich literature from several disciplines shows that social connections benefit people in the networks, with effects on non-participants that depend on both the nature of the group and the effects being considered. ..Many of these "causal" claims are yet to be tested with an experimental or quasi-experimental design, but even on this score progress is slowly being made. A high priority for research in this field is more work on causal linkages using natural or randomized experiments.[14]

Though much work remains to be done in refining our understanding of social capital, this fact need not preclude inquiry into the possible influence on the human resource situation in Russia today of social capital, or more specifically, the influence on Russia's human resource situation that may be attributed to specific, identifiable and quantifiable proxies and correlates.

Social Networks, Trust, Happiness: What the World Values Survey Reveals About Russia

Given current existing differences among theorists and researchers about the exact nature of social capital, it should not surprise that there still is no overarching consensus about just how to measure the phenomenon[15] (or whether we should be focusing upon quantification of its elements, its structures, its processes, or its outcomes). For the purposes at hand, however, none of this need concern us. For survey data from the Russian Federation provides a wealth of responses that may bear upon various facets or dimensions of the social capital situation in Russia today.

We shall rely here principally on responses to the World Values Survey (WVS), a detailed battery of questions being posed in regular waves to sample populations in over one hundred countries around the world. The WVS responses from Russia are not only interesting in and of themselves, but the reach of WVS permits us to place Russian attitudes and reactions in an international, or more properly a global perspective.

Most students of social capital could agree that extensive voluntary participation in non-governmental associations is a hallmark of a society rich in social capital. By this particular criterion, Russia looks positively impoverished. According to respondents in the WVS, the "social radius" for voluntary association in non-government activities is extraordinarily limited in post-

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[14] Joseph E. Stiglitz, Chair, *Report by the Commission on the Measurement of Economic Performance and Social Progress* (Paris: CMEPSP, 2009): 182–183, http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf.

[15] For a review of some of the theoretical issues at play from the perspective of a sociologist, see Nan Lin, *Social Capital* (New York: Cambridge University Press, 2001). For an assessment by some leading economists, see Stiglitz, *Report by the Commission*, 182–187. Practical implications of these theoretical differences for research on Russia have been trenchantly outlined by Richard Rose. See in particular Richard Rose, "How much does social capital add to individual health? A survey study of Russians," *Social Science and Medicine* 57, no. 9 (September 2000): 1421–1435, and Richard Rose, *Understanding Post-Communist Transformation: A Bottom-Up Approach* (New York: Routledge, 2009).

Communist Russia—even for a people who had been conditioned to survival under decades of Communist rule.[16]

Figures 8.1A through **8.1H** tell the story. In the year 2000 wave of the WVS, 60 countries reported on the proportion of their adult populations participating in a wide range of non-governmental associations. The areas included everything from religion to sports to professional activities to human rights, women's rights and environmental groups. Russia consistently ranked near very bottom of the league in each of these areas. Russia's best ranking was in sports and recreation, where the country rose as far as 9th from the very bottom. In this category, nearly 4% of the adults surveyed said they were involved in a sports club or some other athletic voluntary association.

In other area, Russia's ranking and its rates of popular participation in voluntary associations were even lower. As earlier chapters already demonstrated, there is no shortage of work that could be done by the charitably-minded in Russia today in ministering to the elderly, the poor and the disadvantaged. Yet Russian adults do almost none of this voluntarily. Only 1.5% of adult Russians say they are involved in non-governmental activities to help the elderly, or to provide other sorts of social welfare services. By way of comparison, nearly 22% of Dutch adults say they are so engaged—14 times as many as Russia. Communist or post-Communist societies generally appear to have a lower disposition toward voluntary participation in mass organizations, and for entirely understandable historical reasons. Be that as it may, in the WVS only Belarus, of all Communist or post-Communist societies surveyed, garners rankings for voluntary association that look to be consistently lower than Russia's.

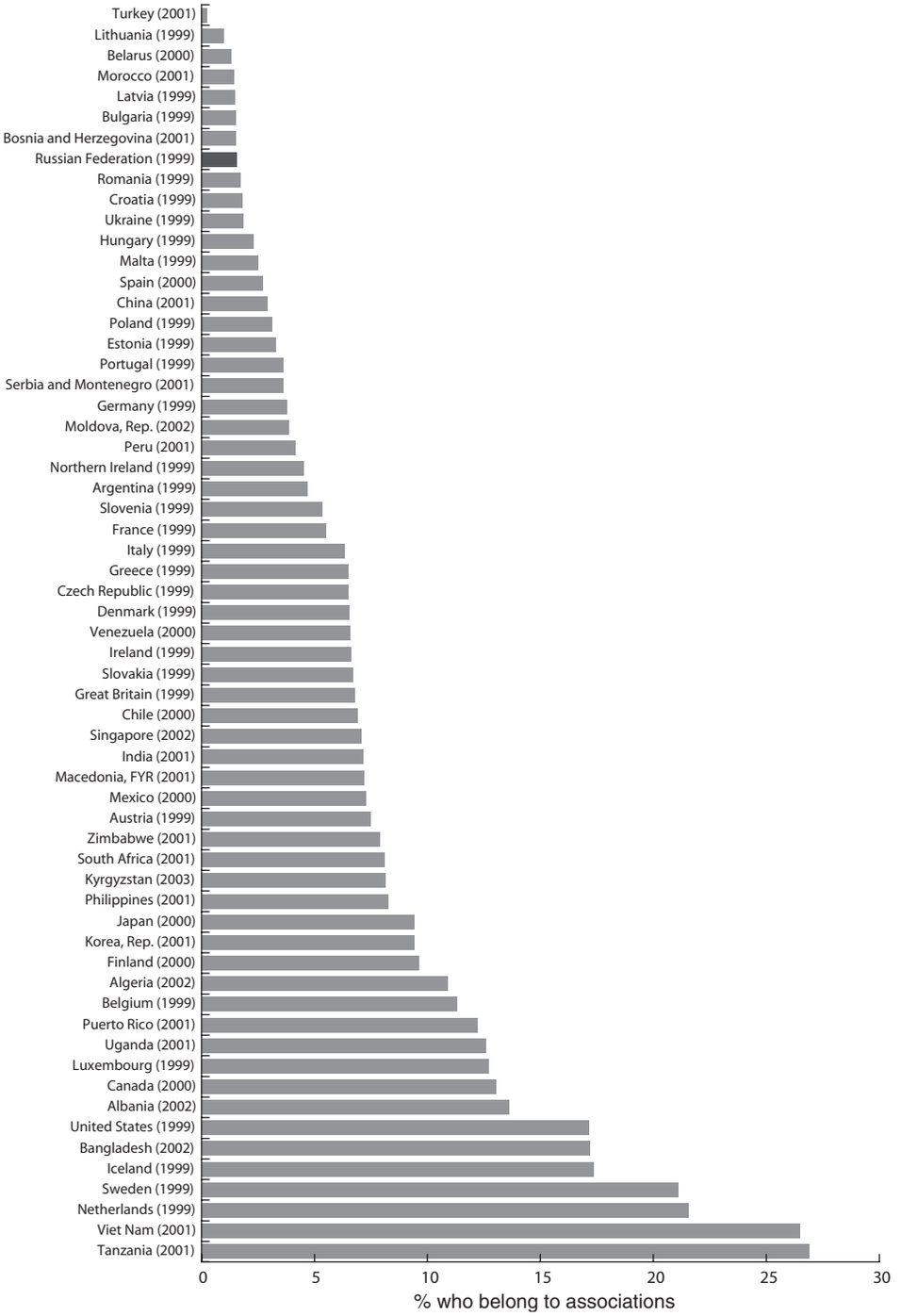
The extraordinarily limited scope of voluntary participation in civic activities in Russia may perhaps best be highlighted by a comparison with the United States, a country noted since the days of Tocqueville for its relatively vibrant civil society. Eight areas of voluntary participation in non-governmental activities are assayed in the charts immediately above. Self-reported levels of participation in these eight civic areas are literally orders of magnitude higher in America than Russia. In America, participation is roughly ten times higher in sports and social welfare organizations; roughly twenty times higher in environmental, religious, and professional organizations; roughly thirty times higher in cultural/educational and women's organizations, and roughly fifty times higher in human rights organizations (although this last particular comparison may also reflect the chilling effect of current political realities on voluntary participation in human rights work in Russia).

Another variable that social science researchers today generally regard as a marker for social capital is trust. More specifically, this refers to trust of others in society beyond one's own family unit, and confidence in the institutions of governance and society. While the WVS offers a detailed battery of questions on trust and confidence, most of these are in optional modules rather than the core survey questionnaire. Unfortunately the Russian team in the WVS has not elected to include these in RF surveys to date. Still, Russians participating in the WVS were however able to answer to several core questions about their perceptions of social trust and confidence in political institutions which may provide additional insights into the country's social capital situation.

The degree of trust or confidence elicited from Russian respondents seems to depend critically on the sort of question posed. For example, less than a quarter of the adults surveyed agreed with

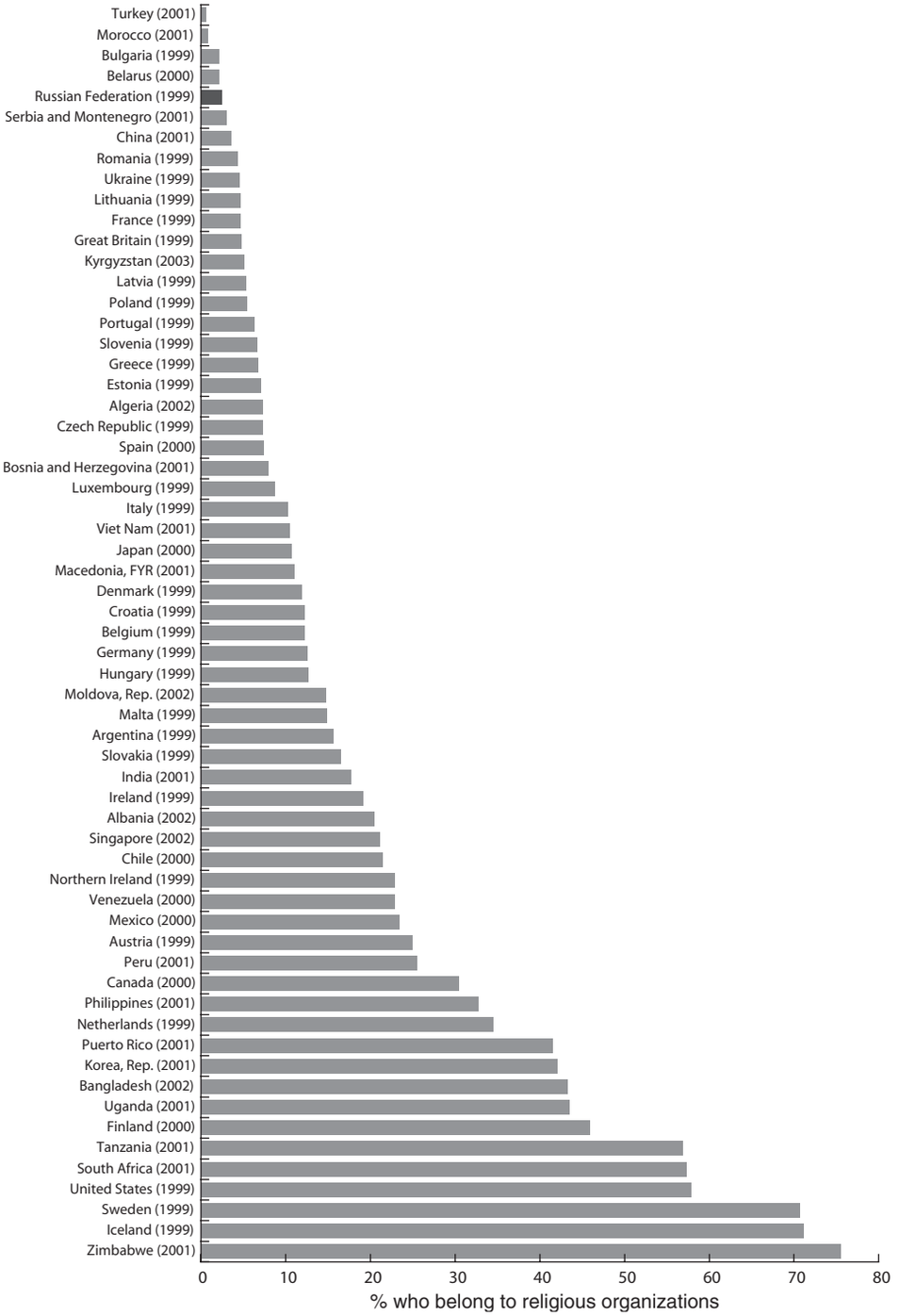
[16] Adopting coping tactics and survival stratagems that University of Aberdeen sociologist Richard Rose has termed "anti-modern behavior". See Richard Rose, "Uses of Social Capital in Russia: Modern, Pre-Modern, and Anti-Modern," *Post-Soviet Affairs* 16, no. 1 (2000): 33–57.

FIGURE 8.1A: Participation in Associations that Provide Social Welfare Services for the Elderly



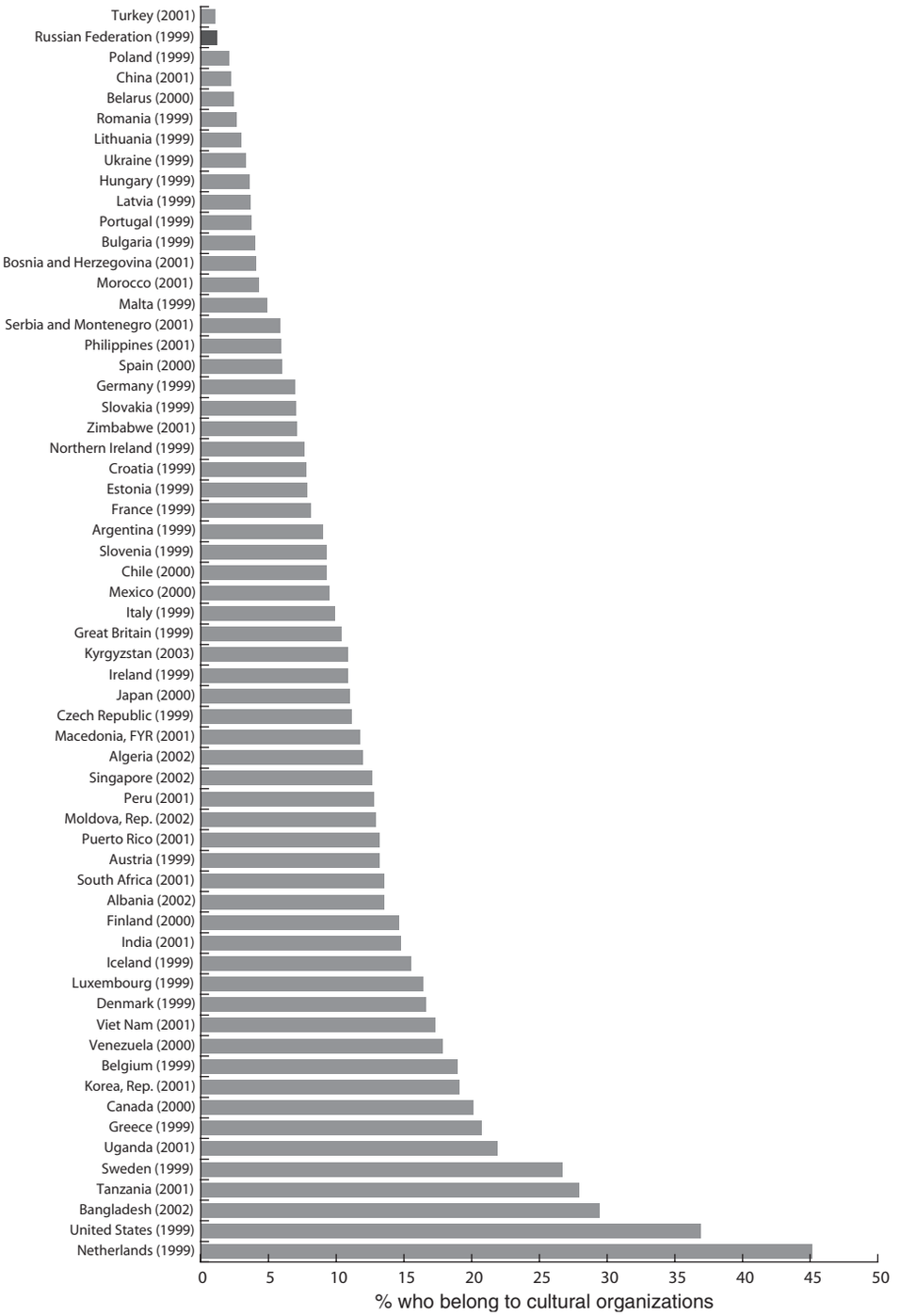
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1B: Participation in Religious Organizations



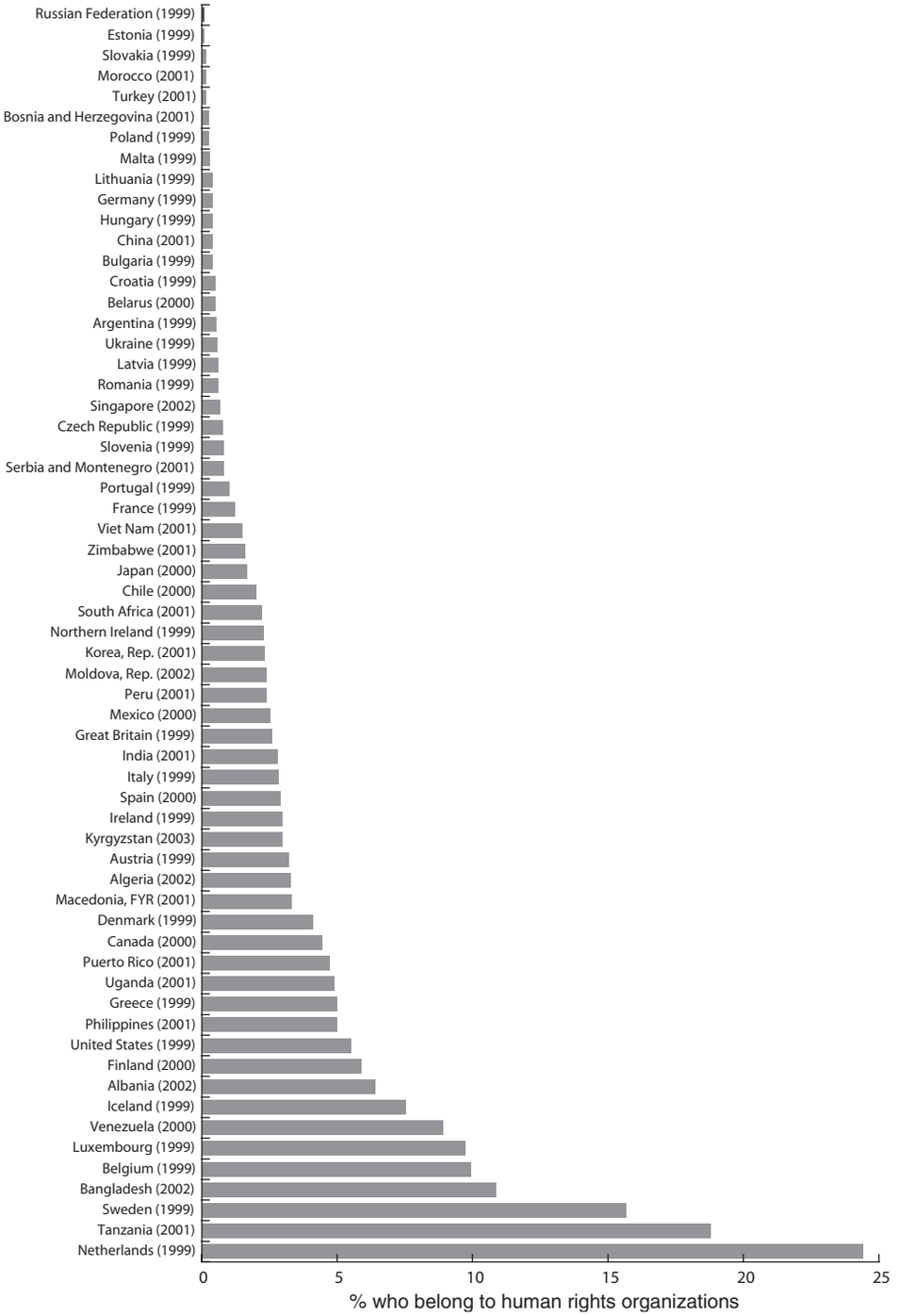
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1C: Participation in Education, Arts, Music, or Cultural Activities



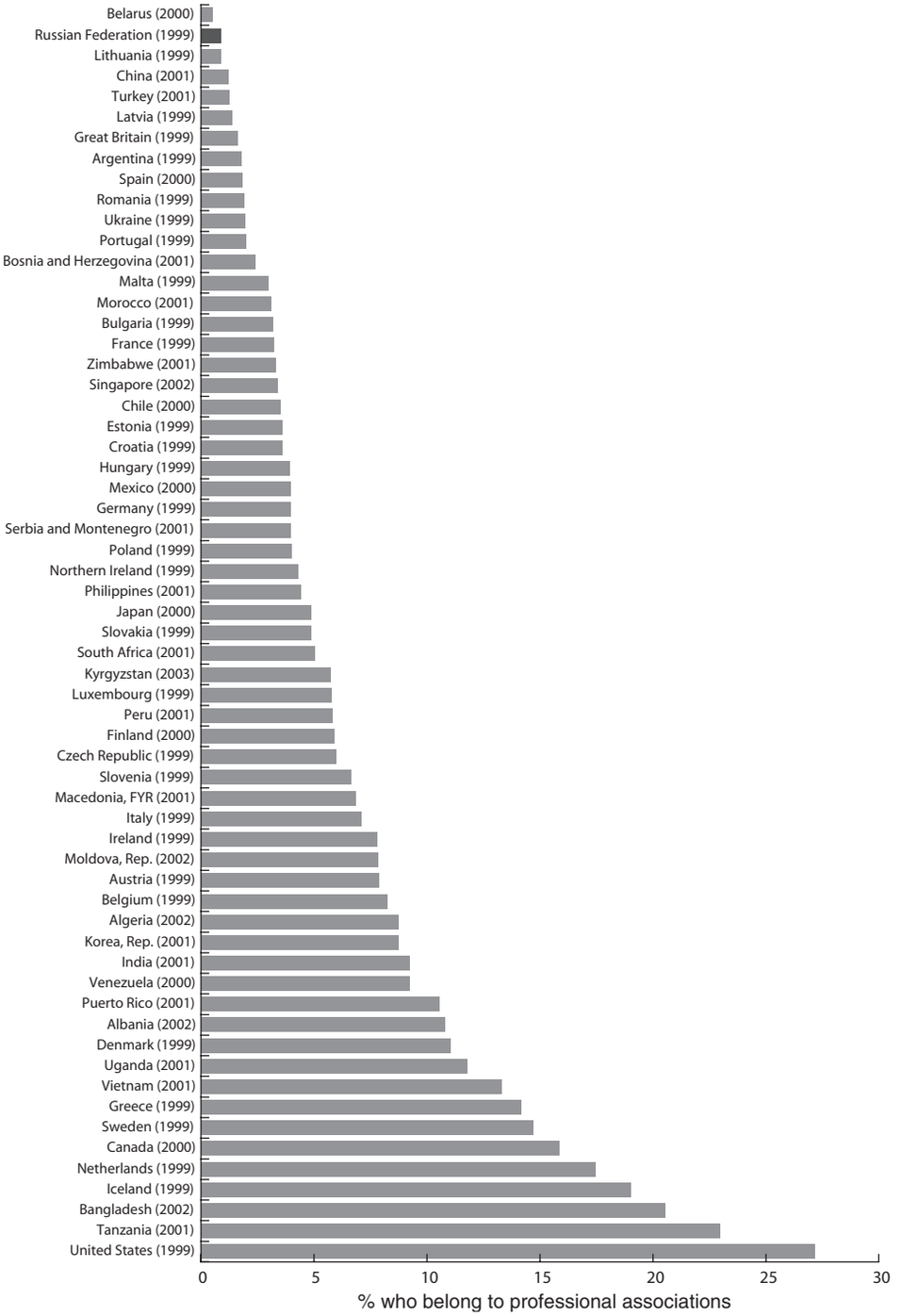
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1D: Participation in Human Rights Organizations



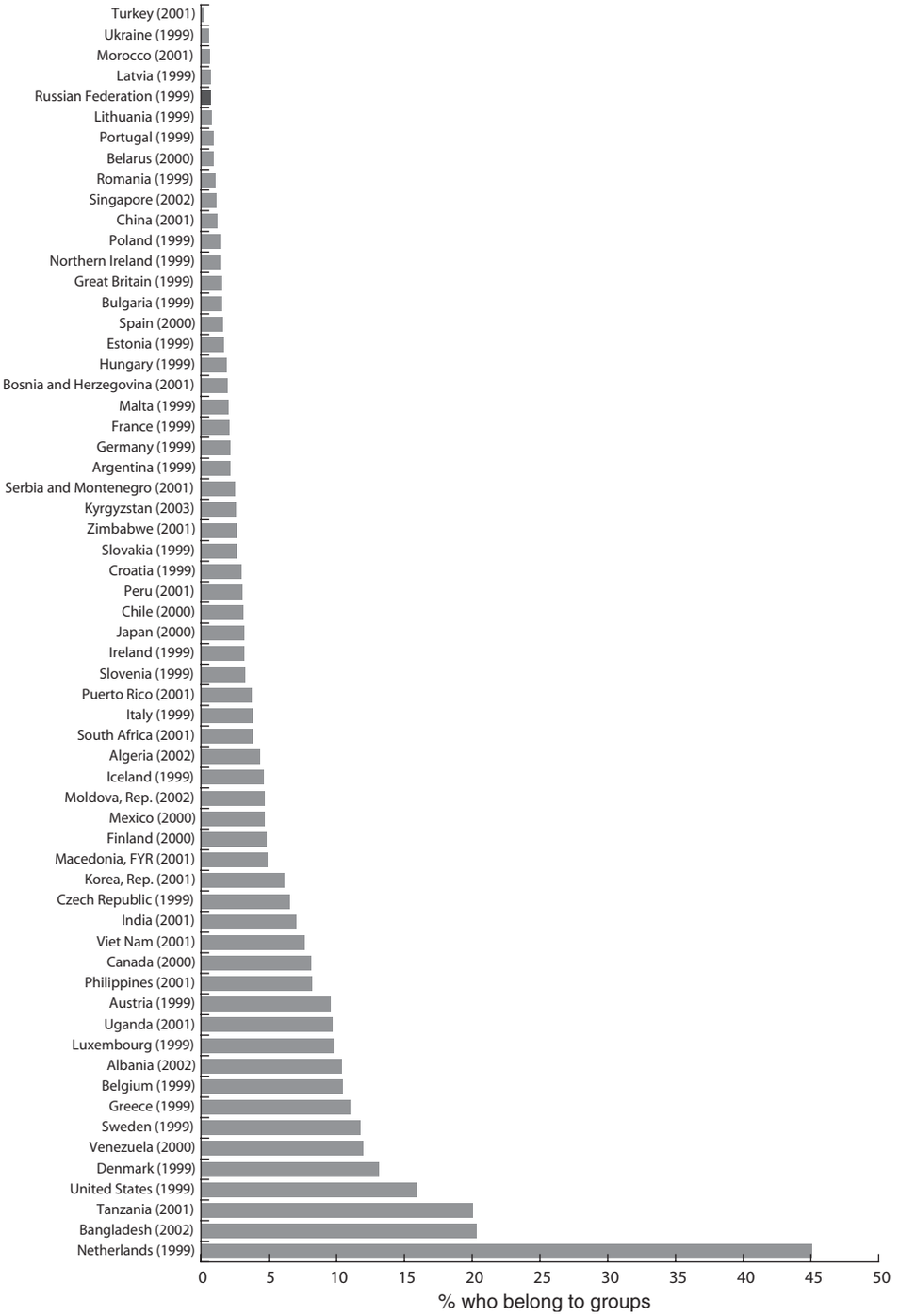
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1E: Participation in Professional Associations



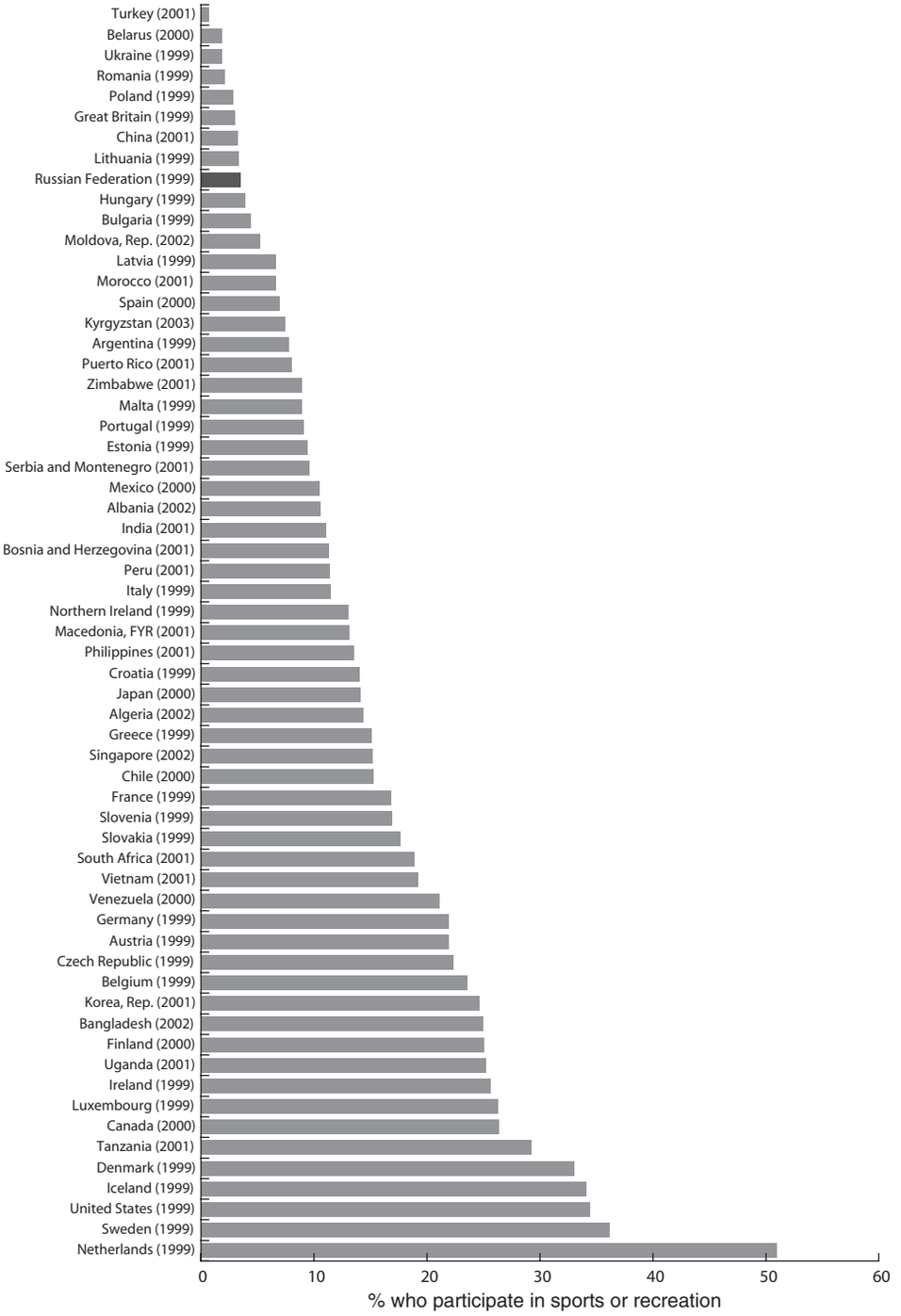
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1F: Participation in Conservation, Environmental, Ecological, or Animal Rights Groups



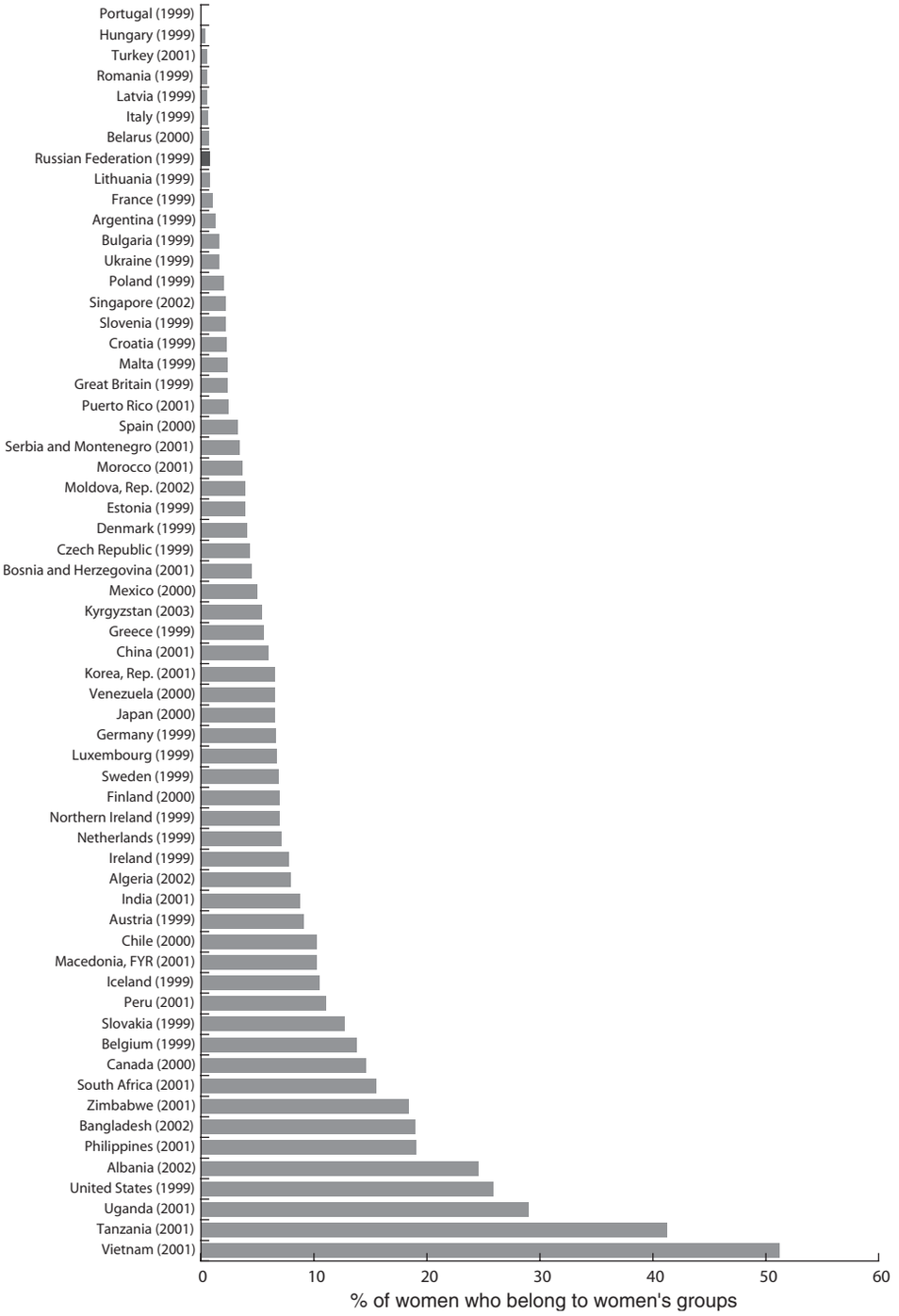
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1G: Participation in Sports or Recreation



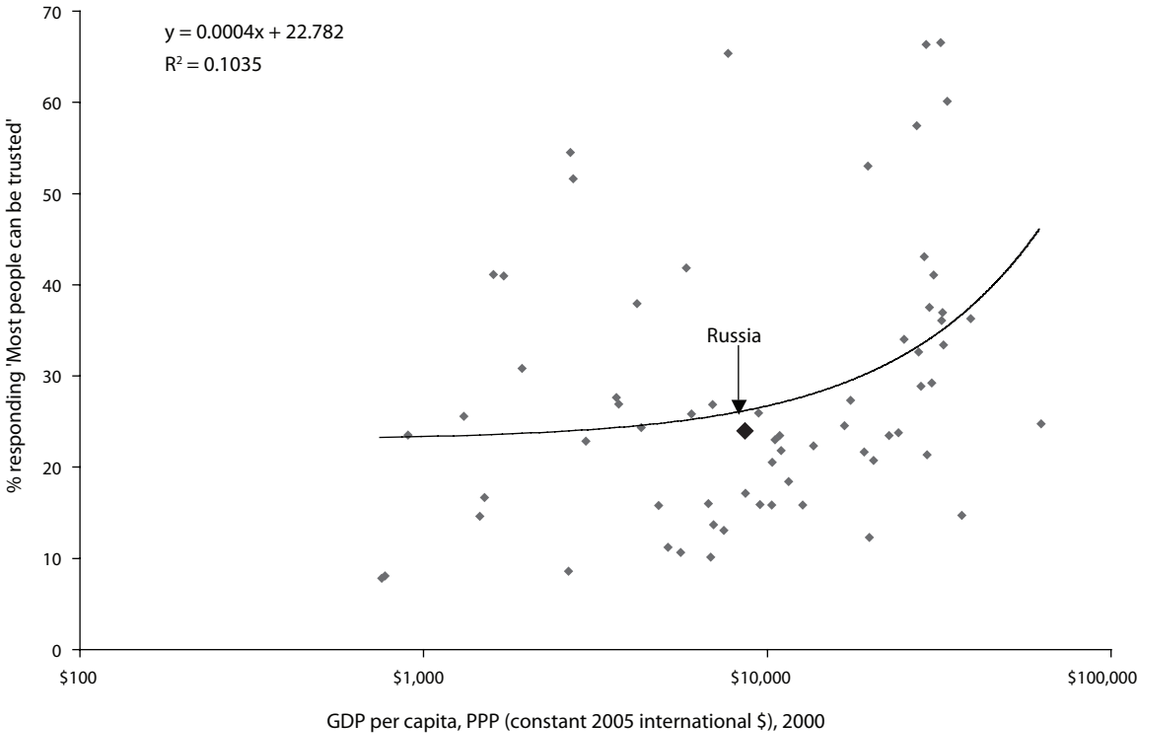
SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.1H: Participation in Women's Groups



SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

FIGURE 8.2: Percent responding "most people can be trusted" vs. Per capita income PPP, 2000



SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org); World Development Indicators 2008, World Bank CD-ROM.

the statement that "Most people can be trusted." By this measure of trust, Russia ranked in the bottom half of the 70 countries in the 2000 wave with responses for that question.

This is not as exceptional as it may sound. For one thing, on this particular question, most respondents in most countries said they didn't think other people could be trusted. For another, Russia actually ranks nearer the middle than the bottom—it comes in 34th out of 70. Its score on this trust variable is also not appreciably different from what would have been expected for a country at its level of per capita income. If trust in other people is a measure of social capital, Russia's rating would, by these results, be relatively low—but hardly exceptional.

Trust in political institutions is another matter altogether. In the 2000 wave of the WVS, interviewees from 50 countries were asked to rate the political system for governing their country on a ten point scale from very good to very bad. In the average estimate of its surveyed citizens, the Russian Federation came in dead last. That average, moreover, reflected the overall distribution of responses faithfully. Only 0.1% of Russian respondents rated their political system "very good" (the lowest of any country covered) and nearly 27% rated it "very bad" (the highest of any country covered). Russia's exceptionally low levels of public confidence in its political system were matched by the public's evident lack of satisfaction with the state of democracy in their country. Here again, out of 65 countries surveyed, Russia came in dead last in the proportion of respondents expressing "satisfaction with the way democracy develops." Only 7% of the Russian sample said they were

"satisfied" or "very satisfied" with democratic development in their nation, while fully 50% said they were "not at all satisfied" (the highest such negative for any WVS country in that wave). Satisfaction, to be sure, is not quite the same thing as trust or confidence. Given the context, however, the resounding dissatisfaction expressed with the status of and outlook for democracy can perhaps be taken as a sounding on popular confidence in Russia's political institutions as well.

These WVS readings, incidentally, are by no means the only source of information on popular trust in public and political institutions in Russia today. A wealth of information has also been gathered from the public opinion polls that are regularly conducted within the Russian Federation by a multiplicity of survey organization. Reviewing these data, Vladimir Shlapentokh of Michigan State University—the respected émigré sociologist who helped pioneer opinion analysis in the USSR during Soviet times—has pronounced contemporary Russia's trust in public institutions to be "the lowest in the world."[17] Thus Shlapentokh:

> A climate of mutual distrust dominates Russian life at all strata…. It would be wrong to depict contemporary Russia, with its high level of mistrust, as the only country where the level of trust in society is a growing concern…. However, when considering the level of mistrust of the various agents and structures of society—the president, the ruling elite, the bureaucracy, big business, the police and army, and political parties—Russia is not only radically different from the United States and other Western countries, but it can indeed be regarded as unique in the world…. Indeed, in terms of their lack of confidence in social institutions, the Russians are behind not only the most advanced countries in the world, but even countries known for their flimsy, unstable political systems, such as Colombia or Nigeria.[18]

Shlapentokh, incidentally, does not regard the pervasive distrust of public institutions so evident in Russian Federation survey data today as a cultural hallmark or some peculiarity of what was once called national character. To the contrary, for the average Russian, he argues, such distrust is "mostly rational." In concurrence are the University of Arizona's William Mishler and Aberdeen's Richard Rose, also keen analysts of Russian public opinion survey data on trust. In their words:

> …The lack of institutional trust and the limited support for the new [Russian Federation] regime are both products of a common underlying dynamic—citizen assessments of the failure of political institutions to curb corruption and provide reasonable economic stability and growth...[T]he transition in Russia is not doomed by the legacy of an authoritarian past. Nor must Russia wait generations for its culture to change before sufficient trust can exist for democracy to flourish. Russians will begin to trust political institutions and to support the new regime when the regime begins to prove itself worthy of trust by honestly and effectively addressing the political and economic issues of greatest concern to its citizens. ….V. O.Key (1966) observe[d], with respect to American voters years ago—that "citizens are not fools." …Rather, citizens appear to evaluate a new regime largely on the basis of its political and economic performance.[19]

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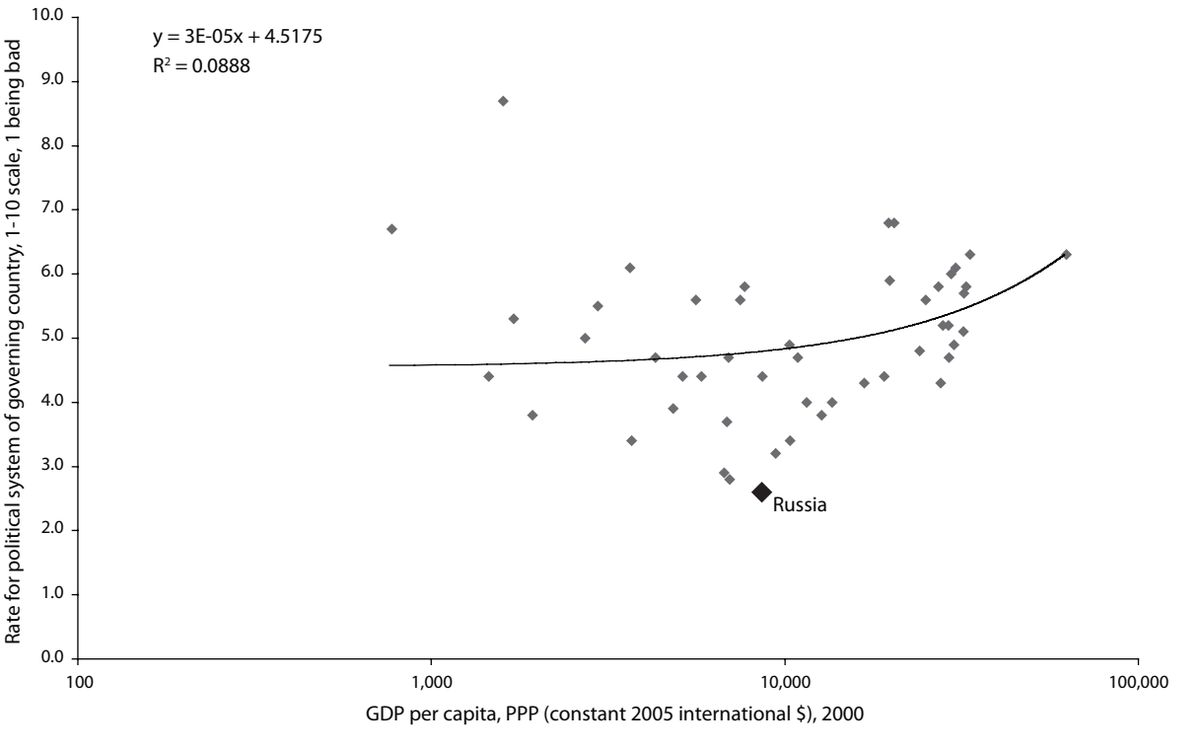
17 Vladimir Shlapentokh, "Trust in Public Institutions in Russia: The Lowest in the World," *Communist and Post-Communist Societies* 39, no. 2 (June 2006): 153–174.

18 Vladimir Shlapentokh, "Trust," 154–155.

19 William Mishler and Richard Rose, "What Are the Political Consequences of Trust? A Test of Cultural and Institutional Theories in Russia," *Comparative Political Studies* 38, no. 9 (November 2005): 1070.

FIGURE 8.3: Rating of Political System vs. Per capita income PPP, 2000



SOURCES: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org); World Development Indicators 2008, World Bank CD-ROM.

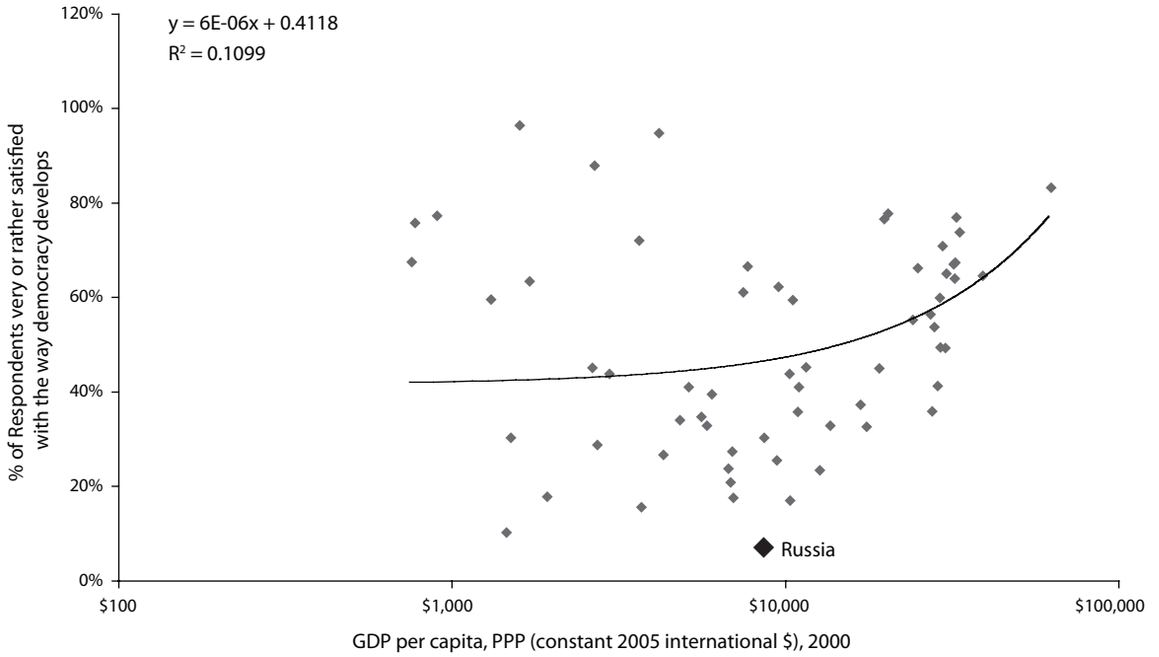
Yet another variable that may tell us something about social capital in Russia and other countries is happiness, or as social science research sometimes terms it, "subjective well-being." Strictly speaking, measures of happiness may or may not have a formal theoretical connection with the idea of social capital (in Coleman's words, "entities…that consist of some aspects of social structures and…facilitate certain actions…within the structure"). Happiness and social capital, however, do in practice seem to be associated. Research by Putnam and others[20] suggests the association is fairly strong.[21] Levels of subjective wellbeing, in other words, may afford a predictive marker for levels of social capital, or a serviceable proxy for an underlying variable (without specifying precise mechanisms or causal linkages accounting for the association). Since the WVS offers responses on self-assessed happiness, we may wish to examine them with this understanding.

In the 2000 wave of the WVS, 65 countries from across the globe offered information on their citizen's self-assessed happiness. Here again, Russia rated very near the bottom. Over half of Russia's surveyed population stated that they were "not happy" or "not happy at all." In this set of international

[20] See, among other studies, Robert D. Putnam, "Social Capital and Happiness," *Canadian Journal of Policy Research* 2, no. 1 (2001); John F. Helliwell and Robert D. Putnam, "The Social Context of Well-Being," *Philosophical Transactions: Biological Sciences* 359, no. 1449 (September 29, 2004): 1435–1446; Peter Gundelach and Svend Kreiner, "Happiness and Life Satisfaction in Advanced European Countries," *Cross-Cultural Research* 38, no. 4 (November 2002): 359–386; Stefano Bartolini, Ennio Bilancini, and Maurizio Pugno, "Did the Decline in Social Capital Depress Americans' Happiness?" (unpublished paper, August 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1210118; and Arthur C. Brooks, *Gross National Happiness* (New York: Basic Books, 2008).

[21] Perhaps this should not surprise, as one may well imagine that higher levels of social capital could conduce to higher levels of subjective wellbeing through causal linkages.

FIGURE 8.4: Percent "very or rather satisfied with the way democracy develops" vs. Per capita income PPP, 2000



SOURCES: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org); World Development Indicators 2008, World Bank CD-ROM.

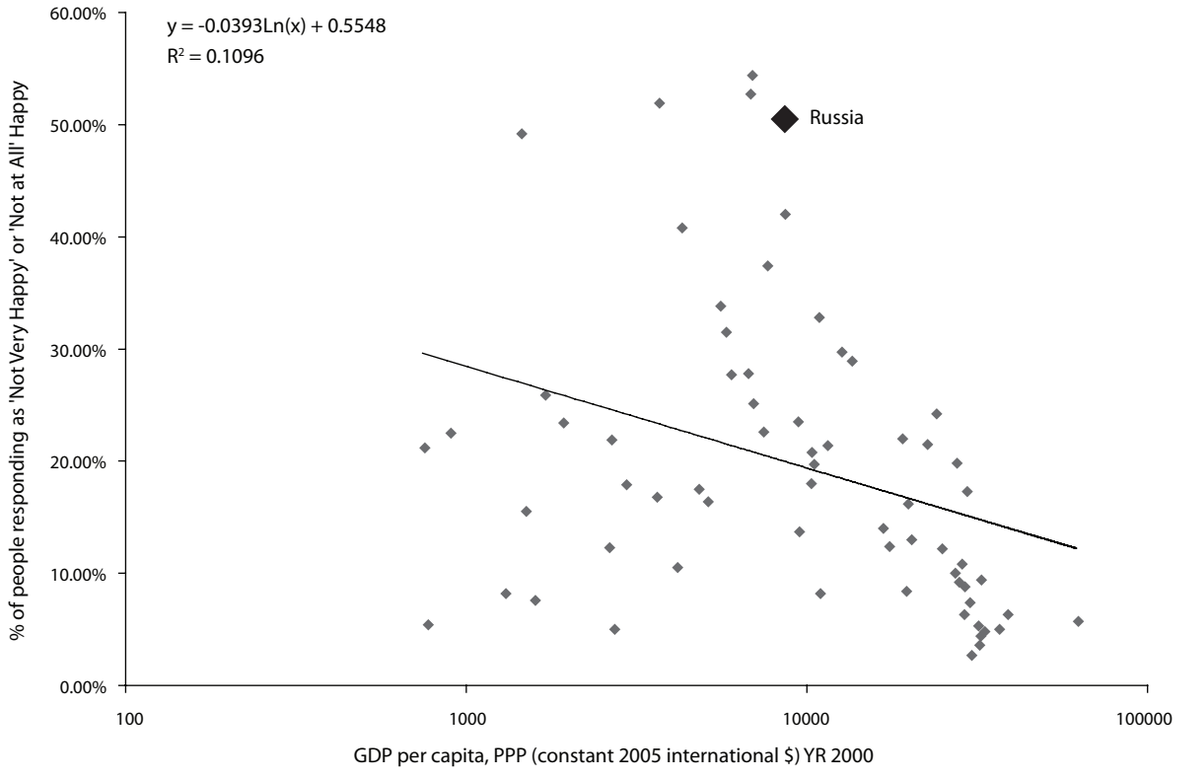
surveys, only three countries reported a greater general prevalence of unhappiness than Russia—Bulgaria, Romania and Ukraine. All of these, we may note, are post-Communist societies.

By any international measure, all these post-Communist levels of self-assessed happiness are extraordinarily low. In fact, the sort of readings that have been registered by post-Communist societies since 1990 were previously unprecedented. As the director of the WVS, Ronald F. Inglehart of the University of Michigan has noted that they are the "lowest levels of subjective wellbeing that had ever been recorded in research up to that time."[22] Yet Russia was more affluent that any of the other "outlier" states in **Figure 8.5**. No country at or above Russia's level of GDP per capita exhibited nearly as high a prevalence of popular unhappiness as did citizens in Russia.

Within Russia, interestingly enough, subjective wellbeing tracked closely with educational status. Adults with some university schooling reported being happiest, and those with primary schooling were least happy. Among Russian adults, less than half as many of those with some university training said they were unhappy as compared to those with only primary schooling. The unhappiness gradient revealed in **Figure 8.6** is pronounced, and will be discussed later in this chapter. For now, it should be noted that even Russia's most educated (and least unhappy) strata self-reported a prevalence of dissatisfaction and unhappiness far higher than was registered by all but a handful of other national population surveyed at that same juncture.

[22] Ronald Inglehart, "Trust, wellbeing and democracy," in *Democracy and Trust*, ed. Mark E. Warren (New York: Cambridge University Press, 1999): 108.

FIGURE 8.5: Percent "Not very happy" or "Not at all happy" vs. Per capita income PPP, 2000



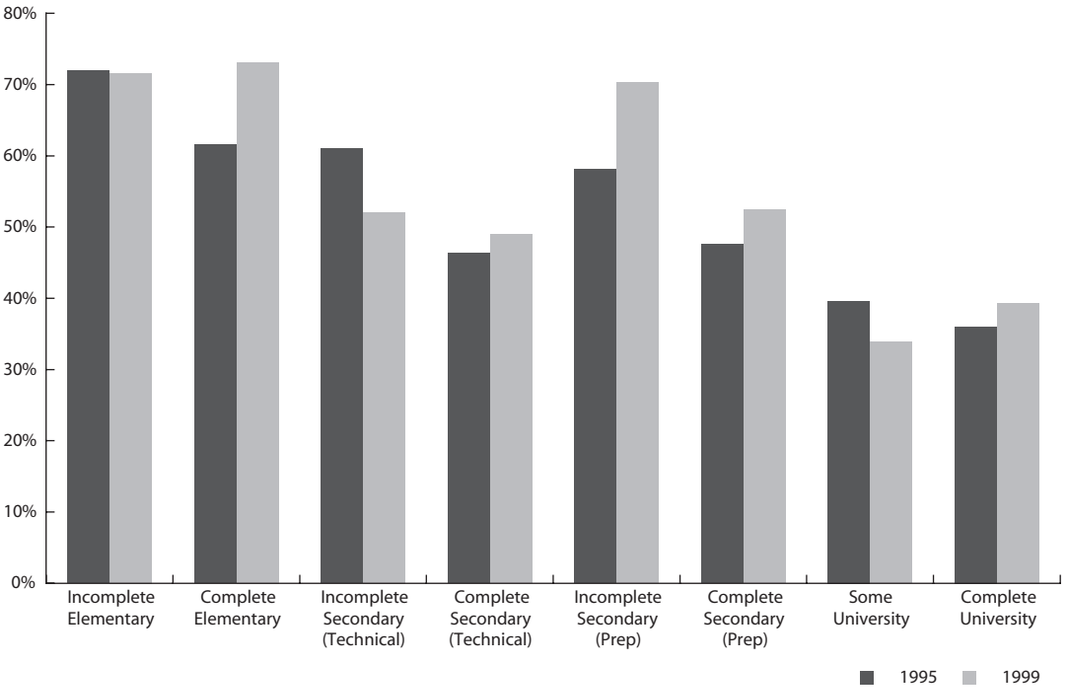
SOURCES: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org); World Development Indicators 2008, World Bank CD-ROM.

One final intriguing WVS finding that is potentially, though not necessarily, related to social capital concerns the respondents' perception of personal control over their lives. Russians rank among the very lowest of the 69 countries for which such data was compiled in 2000. Furthermore, only four countries in the international survey—Egypt, Pakistan, Turkey and Ukraine—reported lower self-assessed degrees of personal control over one's own life. Notably, all of these countries had lower income levels than Russia's. Here again, Russia looks like an outlier on the international spectrum.[23]

Once again, our present-day competence in measuring anything like social capital should probably be regarded as rather limited, and our capabilities for reading variations in social capital are correspondingly imprecise. This being said, the data we have assembled here on the whole seems to point to a decidedly low level of social capital for Russia today. If we can rely on such indices as the radius of voluntary associations, trust in the existing political structure, self-assessed happiness, and self-assessed control over one's personal life as benchmarks for social capital, the Russian Federation would appear to be a country with extremely low levels of social capital.

[23] It is worth noting that Russia's international ranking on this personal control variable appears to have improved appreciably in the most recent WVS wave. Whether this improvement is artifactual or instead represents a significant and sustained change in public perception, of course, remains to be seen. For the argument that systemic and sustained improvements in self-assessed subjective wellbeing can be expected in the years ahead (as a consequence of improvements in income, etc), see Sergei Guriev and Ekaterina Zhuravskaya, "(Un) Happiness In Transition", *Journal of Economic Perspectives* 23, no. 2 (Spring 2009): 143–168.

FIGURE 8.6: Percent 'Not Very Happy' or 'Not At All Happy' in Russia by Educational Attainment



SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

Russia's social capital levels are so low that they could even count as an anomalously low outlier, considering the country's income level.

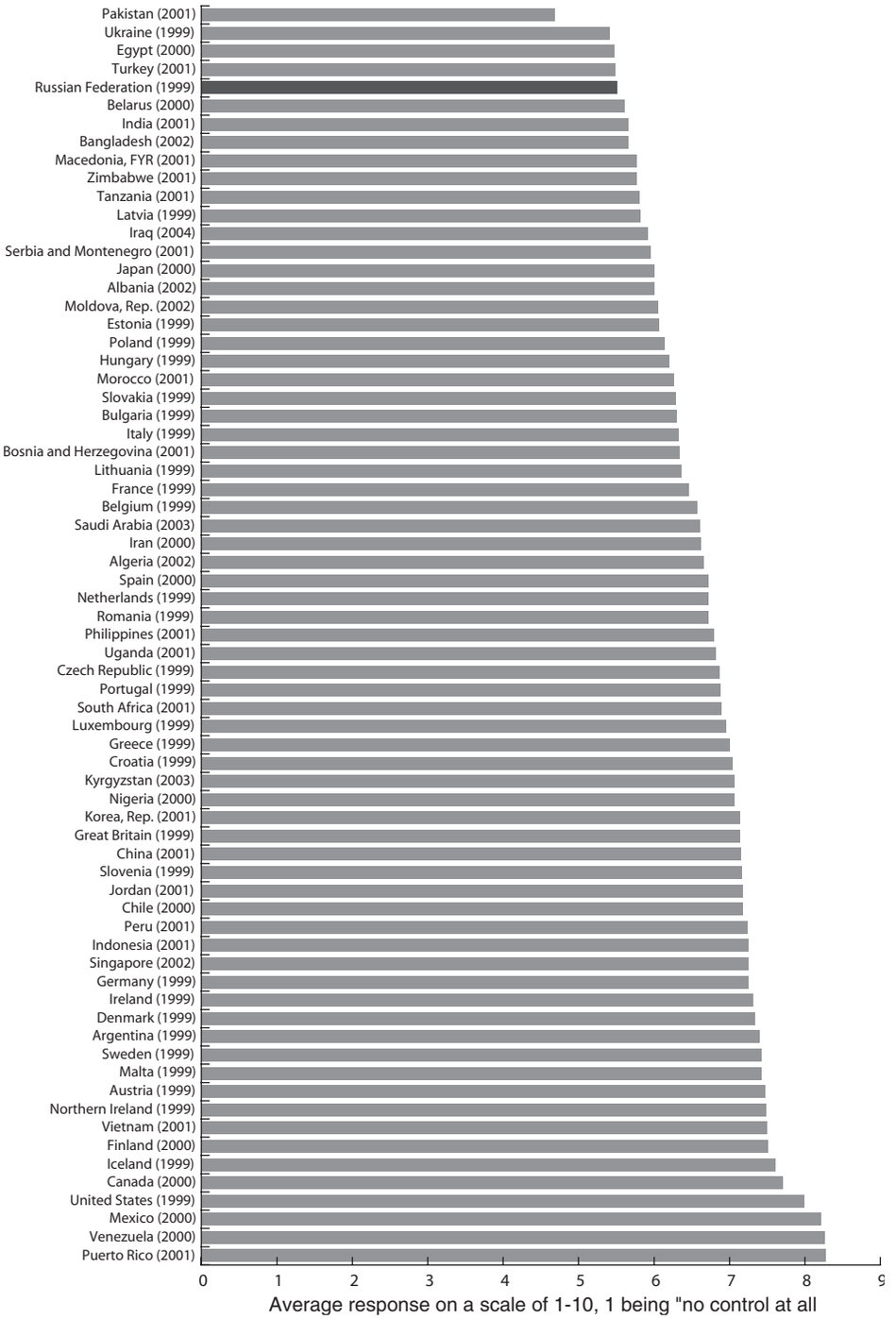
Social Capital and Health in Russia

Low levels of social capital would, of course, appear to be *prima facie* undesirable. If there were a choice to be had, higher levels of social capital would always seem preferable. More than aesthetic tastes and general civic sympathies are at stake here. Social capital, for example, may actually be a determinant to the health outcomes in modern societies. If so, Russia's apparently poor showing in various indicators could be regarded as reflecting upon social capital, which might also help explain the poor health status of the country's adult population.

We should wish to be careful here not to overstate the case. For one thing, not all public health experts today subscribe to the proposition that social capital directly affects health outcomes on either an individual basis or a community-wide level.[24] For another, even strong proponents of the social capital-health status connection have acknowledged in the past that their theory was still in its early and exploratory phase of development. As Ichiro Kawachi of the Harvard School

[24] One strand of thinking in public health research today—so-called "neo-materialists"—in fact directly contests the proposition, maintaining that any seeming correspondence here is artefactual. Instead they propose that it is driven by underlying socioeconomic inequalities responsible at one and the same time for both disparities in social capital and in health outcomes. See for example John W. Lynch and George Davy-Smith, "Social Capital—Is It a Good Investment Strategy for Public Health?" *Journal of Epidemiology and Community Health* 54, no. 6 (June 2000): 404–408;and John W. Lynch et al., "Income Inequality, The Psycho-Social Environment and Health Comparisons of Wealthy Nations," *The Lancet* 358, no. 9277 (July 21, 2001): 194–200. See also Andrew Clarkwest, "Neo-materialist theory and the temporal relationship between income inequality and longevity change," *Social Science and Medicine* 66, no. 9 (May 2008): 1871–1881.

FIGURE 8.7: Average Opinion of Freedom and Control in Lives (Scale of 1-10)



SOURCE: European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, (www.worldvaluessurvey.org).

of Public Health wrote in 2000, "the mechanisms linking social capital to health have not been fully elucidated."[25] Along the same lines, Catherine Campbell of the London School of Economics warned that same year of what she called the "a dearth of empirical research linking social capital to health." She suggested that one reason for this situation may be that, "at [this] early stage of conceptual development, the task of developing instruments to measure social capital in the context of health is still in its infancy."[26]

On the other hand, the broad avenues through which social capital might affect health not only seem clear enough, but are also intuitively plausible.[27] A tremendous amount of work on social capital and health has been pursued since Kawachi and Campbell's cautious assessments about the state of research in this area were offered almost a decade ago. *PubMed*—the electronic biomedical reference database maintained by the U.S. National Institute of Health's National Library of Medicine—attests to the rapid expansion of research in this area in recent years. Cross-referencing by keywords "social capital" and "health", *PubMed* cites fewer than 50 studies published before the year 2000. By contrast, between the beginning and 2000 and late 2009, over 620 such studies were published.[28]

While a growing corpus of studies has attempted to identify the mechanisms through which social capital (or variables associated with social capital) might contribute to or reduce health risks for individuals and entire communities,[29] an emerging body of empirical research has also attempted to test the relationship between social capital and health status in a variety of international settings. On the whole, this literature has generated increasing evidence to the effect that higher levels of social capital are associated with better health, after controlling for other factors, at the individual, community, and even national level.[30]

This new literature on social capital and health has been probing into more particular aspects of this relationship. These aspects include the influence of social capital on personal health behavior and the connection between social capital and mental health. With respect to the Russian

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25 Ichiro Kawachi, "Social Capital," John D. and Catherine T. MacArthur Research Network on Socioeconomic Status and Health, (October 2000), http://www.macses.ucsf.edu/Research/Social%20Environment/notebook/capital.html.

26 Catherine Campbell, "Social Capital and Health: Contextualizing Health Promotion within Local Community Networks," in *Social Capital: Critical Perspectives*, eds. Stephen Baron, John Field and Tom Schuller (New York: Oxford University Press, 2000): 188.

27 Thus, for example, Ichiro Kawachi, "Social Capital," which states:

> At the community level, social capital is believed to promote health via stress-buffering and the provision of social support through extrafamilial networks, as well as informal social control over deviant health behaviors such as underage smoking and alcohol abuse. At higher levels of social organization, e.g., states and nations, social capital may enhance health through indirect pathways, such as encouraging more egalitarian patterns of political participation that in turn ensure provision of adequate health care, income support for the poor, and other social services.

28 *PubMed* electronic database, http://www.ncbi.nlm.nih.gov/pubmed.

29 A short and by no means exhaustive list of studies exemplifying the progress in this area would include the following: James Macinko & Barbara Starfield, "The Utility of Social Capital in Research on Health Determinants," Milbank Quarterly 79, no. 3 (September 2001): 387–427; Simon Szreter and Michael Woolcock, "Health by association? Social capital, social theory, and the political economy of public health," International Journal of Epidemiology 33, no. 4 (August 2004): 650–667; Sara Ferlander, "The Importance of Different Forms of Social Capital for Health," Acta Sociologica 50, no. 2 (Jun 2007): 115–128;and Stephen Abbott and Della Freeth, " Social Capital and Health: Starting to Make Sense of the Role of Generalized Trust and Reciprocity," Journal of Health Psychology 13, no. 7 (October 2008): 874–883.

30 Perhaps the single most comprehensive source to date for such work would be Ichiro Kawachi, S.V. Subramanian, and Daniel Kim, eds., *Social capital and health* (New York : Springer, 2008). For a sense of the current state of research in this area, the following studies are both representative and informative: Trudy Harpham, Emma Grant and Elizabeth Thomas, "Measuring social capital within health surveys: key issues," *Health Policy and Planning* 17, no. 1 (March 2002): 106–111; Jan Sundquist, Sven-Erik Johansson, Min Yang, and Kristina Sundquist , "Low linking social capital as a predictor of coronary heart disease in Sweden: A cohort study of 2.8 million people," *Social Science & Medicine* 62, no. 4 (February 2006): 954–963; Mary J. De Silva, Trudy Harpham, Tran Tuan, Rosario Bartolini, Mary E Penny, and Sharon R Huttly, "Vietnam," *Social Science & Medicine* 62, no. 4 (February 2006): 941–953; Mary J. De Silva, Sharon R. Huttly, Trudy Harpham, and Michael G. Kenward, "Social capital and mental health: A comparative analysis of four low income countries," *Social Science & Medicine* 64, no. 1 (January 2007): 5–20; Karen M. Olsen and Svenn-Åge Dahl, "Health differences between European countries," *Social Science & Medicine* 64, no. 8 (April 2007): 1665–1678; Florence Jusot, Michel Grignon, and Paul Dourgnon, "Psychosocial resources and social health inequalities in France: Exploratory findings from a general population survey," I*nstitut de recherche et documentation en économie de la santé*, Working paper series no. 6 (September 2007), http://www.irdes.fr/EspaceAnglais/Publications/WorkingPapers/DT6PsychosocialSocialHealthFrance.pdf; and Takeo Fujiwara and Ichiro Kawachi, "Social capital and health. A study of adult twins in the U.S.," *American Journal of Preventive Medicine* 35, no. 2 (August 2008): 139–44.

Federation, research by Richard Rose and others has shown that social capital, as best it can be measured, appears to make an independent and positive contribution to the health status of adult men and women.[31]

Without attempting to establish the case conclusively, we can suggest a number of ways in which Russia's very low readings, as reported through the World Values Survey, for attitudes and activities that theorists now associate with social capital may also bear directly and adversely on the population's health status.

First, it is possible that Russia's remarkably limited patterns of voluntary association may point more broadly to an unusually constricted pattern of social networks in Russian daily life. In other words, there are distinct constraints upon the sorts of non-governmental social supports that might reduce the risk of falling ill (via preventive behavior) and raise the odds of recovery if ill (via attention to treatment). Second, on a less speculative note, Russia's perhaps surprisingly poor ratings with respect to voluntary association, happiness, public trust, and perceived control over life all serve as predictors for negative health- related behaviors, or personal practices that tend to increase the risks of morbidity and mortality. Third, we may be fairly confident that Russia's very low levels of self-rated happiness, perception of control over life, and public trust both reflect and further conduce to problems in the realm broadly construed as mental health. Specifically, it could promote problems such as psychosocial stress, depression, and a range of emotional patterns and dispositions that psychologists and physicians term positive affect ("emotions such as excitement, enthusiasm, and joy,"[32]) and negative affect ("aversive emotions such as anger, sadness, and contempt"[33]).

In the Russian context, these linkages to mental health issues and adverse health-related behaviors could not only prove to be important, but hugely consequential. In the public health literature, the link between mental health and physical health is no longer a matter of abstract surmise.[34] Rather, it is increasingly argued that there is "no health without mental health"

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31 Rose, "How much does social capital"; Yerko Rojas and Per Carlson, "The stratification of social capital and its consequences for self-rated health in Taganrog, Russia," *Social Science & Medicine* 62, no. 11 (June 2006): 2732–274; Anthony Glendinning and Paul West, "Young people's mental health in context: Comparing life in the city and small communities in Siberia," *Social Science & Medicine* 65, no. 6 (September 2007): 1180–1191; Sara Ferlander and Ilkka Henrik Mäkinen, "Social Capital, Gender and Self-rated Health. Evidence from the Moscow Health Survey 2004," *Social Science and Medicine* 69, no. 9 (November 2009): 1323–1332.

32 Dustin K Jundt and Verlin B Hinsz, "Influences of positive and negative affect on decisions involving judgmental biases," *Social Behavior and Personality* 30, no. 1 (2002): 45.

33 Jundt and Hinsz, "Influences of positive and negative affect," 45.

34 For just a few of the many studies detailing this link, see the following: H. Koivumaa-Honkanen, R. Honkanen, H. Viinamäki, K. Heikkilä, J. Kaprio, and M. Koskenvuo, "Self-reported Life Satisfaction and 20-Year Mortality in Healthy Finnish Adults," American. Journal of Epidemiology 152, no. 10 (November 15, 2000): 983-991; Matti Joukamaa, Markku Heliovaara, Paul Knekt, Arpo Aromaa, Raimo Raitsalo, and Ville Lehtinen, "Mental disorders and cause-specific mortality," *The British Journal of Psychiatry* 179, no. 6 (November 2001): 498–502; Joe Parks Dale Svendsen, Patricia Singer, and Mary Ellen Foti, *Morbidity and Mortality in People with Serious Mental Illness* (Alexandria, VA: National Association of State Mental Health Program Directors Medical Directors Council, October 2006); and Amy Love Collins, Dana A. Glei, and Noreen Goldman, "The role of life satisfaction and depressive symptoms in all-cause mortality," *Psychology and Aging* 24, no. 3 (September 2009): 696–702.

(as a recent study memorably put it).[35] Depression[36], stress[37], positive affect[38] (or its absence), psychological factors related to perceived hopelessness[39] and perceived lack of control over life[40] have all been linked to risk of illness and mortality in the international public health literature. More specifically, both psychosocial stress and depression are now taken to be established risk factors for cardiovascular disease and mortality. Both depression and stress, furthermore, are known to be associated with alcohol and substance abuse.

As starkly illustrated in earlier chapters, the two primary proximate causes of contemporary Russia's severe excess mortality problem are cardiovascular disease and injury/poisoning. We know that extreme alcohol consumption is clearly associated with Russia's high levels of mortality from injuries and poisoning.[41] As we noted earlier, Russia's patterns of binge drinking also appear to contribute to the country's frighteningly high levels of cardiovascular mortality.[42] For their part, depression, psychosocial stress, and lack of positive affect without doubt all contribute additionally

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35 Martin Prince, Vikram Patel, Shekhar Saxena, Mario Maj, Joanna Maselko, Michael R Phillips, and Atif Rahman, "No health without mental health," *The Lancet* 370, no. 9590 (September 8, 2007): 859–877.

36 Daniel E. Ford, Lucy A. Mead, Patricia P. Chang, Lisa Cooper-Patrick, Nae-Yuh Wang, Michael J. Klag, "Depression Is a Risk Factor for Coronary Artery Disease in Men :The Precursors Study," *Archives of Internal Medicine* 158 (1998):1422–1426; Lawson R. Wulsin, George E. Vaillant, and Victoria E. Wells, "A Systematic Review of the Mortality of Depression," *Psychosomatic Medicine* 61 no. 1 (January/February 1999): 6–17; Richard Schulz, Scott R. Beach, Diane G. Ives, Lynn M. Martire, Abraham A. Ariyo, and Willem J. Kop, "Association Between Depression and Mortality in Older Adults: The Cardiovascular Health Study," *Archives of Internal Medicine* 160, no.12 (June 26, 2000): 1761–1768; and Corey L.M. Keyes, "The Nexus of Cardiovascular Disease and Depression Revisited: The Complete Mental Health Perspective and the Moderating Role of Age and Gender," *Aging & Mental Health* 8, no. 3 (May 2004): 266–274.

37 The *locus classicus* here may be Stephen Stansfield and Michael Marmot, eds. *Stress and the heart: psychosocial pathways to coronary heart disease* (London: BMJ Press, 2002). However, see as well B Öhlin, P.M Nilsson, J-Å Nilsson and G Berglund," Chronic psychosocial stress predicts long-term cardiovascular morbidity and mortality in middle-aged men," *European Heart Journal* 25, no. 10 (May 2004): 867–873; Joel E. Dimsdale, "Psychological Stress and Cardiovascular Disease," *Journal of the American College of Cardiology* 51 no. 13 (April 1, 2008): 1237–1246; Sheldon Cohen, Denise Janicki-Deverts, and Gregory E. Miller, "Psychological Stress and Disease," *JAMA* 298, no. 14 (October 10, 2007): 1685–1687; and Katarina Jood, Petra Redfors, Annika Rosengren, Christian Blomstrand and Christina Jern, "Self-perceived psychological stress and ischemic stroke: a case-control study," *BMC Medicine* 7, no. 53 (October 1, 2009).

38 Sarah D. Pressman and Sheldon Cohen, "Does Positive Affect Influence Health," *Psychological Bulletin* 131, no. 6 (November 2005): 925–971; Andrew Steptoe, Katie O'Donnell, Michael Marmot, and Jane Wardle, "Positive affect and psychosocial processes related to health," *British Journal of Psychology* 99, no. 2 (May 2008): 211–227; Yoichi Chida and Andrew Steptoe, "Positive Psychological Well-Being and Mortality: A Quantitative Review of Prospective Observational Studies," *Psychosomatic Medicine* 70, no. 7 (September 2008):741–756; and Ryan T Howell, "Review: positive psychological well-being reduces the risk of mortality in both ill and healthy populations," *Evidence-Based Mental Health* 12, no. 2 (May 2009): 41.

39 Robert Anda, David Williamson, Diane Jones, Carol Macera, Elaine Eaker, Alexander Glassman, and James Marks, "Depressed affect, hopelessness, and the risk of ischemic heart disease in a cohort of U.S. adults," *Epidemiology* 4, no. 4 (July 1993): 285–294; Susan A. Everson et al., "Hopelessness and risk of mortality and incidence of myocardial infarction and cancer," *Psychosomatic Medicine* 58 no. 2 (March/April 1996): 113–121; Stephen L. Stern, Rahul Dhanda and Helen P. Hazuda "Hopelessness Predicts Mortality in Older Mexican and European Americans," *Psychosomatic Medicine* 63, no.3 (May/June 2001): 344–351.

40 Hans Bosma,, Carola Schrijvers, Johan P Mackenbach, "Socioeconomic inequalities in mortality and importance of perceived control: cohort study." British Medical Journal, vol. 319 no. 7223 (December 4, 1999), pp. 1469-1470; Verena H. Menec, Judith G. Chipperfield and Raymond P. Perry " Self-perceptions of health: a prospective analysis of mortality, control, and health", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, vol. 54, no. 2 (March 1999), pp. 85-P93; Johanna Lundberg, Martin Bobak, Sofia Malyutina, Margareta Kristenson, and Hynek Pikhart, "Adverse health effects of low levels of perceived control in Swedish and Russian community samples" BMC Public Health vol. 7, no. 314 (November 2 2007), available electronically at http://www.biomedcentral.com/1471-2458/7/314.

41 See, for example, David A. Leon, Lyudmila Saburova, Susannah Tomkins, Evgueny Andreev, Nikolay Kiryanov, Martin McKee, and Vladimir M Shkolnikov, "Hazardous alcohol drinking and premature mortality in Russia: a population based case-control study," The Lancet 369, no. 9578 (June 16 2007): 2001–09.

42 See, for example, Evgueni Andreev, William Alex Pridemore, Vladimir M. Shkolnikov and Olga I. Antonova, "An investigation of the growing number of deaths of unidentified people in Russia," *The European Journal of Public Health* 18, no. 3 (June 2004): 252–257; Vladimir Shkolnikov, Valeriy V Chervyakov , Martin McKee, and David A. Leon , "Russian mortality beyond vital statistics: Effects of social status and behaviours on deaths from circulatory disease and external causes - a case-control study of men aged 20-55 years in Udmurtia, 1998-99," *Demographic Research*, Special Collection 2, Article 4 (April 16, 2004), http://demographic-research.org/special/2/4/s2-4.pdf.

to Russia's CVD epidemic.[43] Though their precise impact cannot at present be approximated, it could be major.

Recall, further, contemporary Russia's appalling CVD epidemic, with mortality today at levels virtually unprecedented in human history and roughly four times those being registered in Western Europe. The classic risk factor paradigms derived from epidemiological studies of Western societies and populations have been conspicuously unsuccessful in explaining the terrible toll CVD continues to exact in modern Russia.

There is no gainsaying the fact that much more work remains to be done in detailing and quantifying the impact of psychological and attitudinal factors in Russia's ongoing public health crisis. Still, even today it should be apparent that a relationship does exist, and that the contribution to Russia's premature mortality problem of what might be framed in the current medical literature as mental health issues may in fact be consequential. For now we may simply observe that health-impairing psychological dispositions, personal outlooks, and subjective attitudes or values could perhaps offer an important partial explanation for Russia's anomalous, and in a deeper sense, seemingly mysterious, public health situation. Suffice it to say we would never expect to find premature mortality on the Russian scale in a society with Russia's present income and educational profiles and typically Western readings on trust, happiness, radius of voluntary association, and other factors adduced to represent social capital.

Social Capital and Political Development in Russia

Another potentially adverse impact on Russia's human resource situation could derive from the relationship between social capital and political development. We can outline the particulars of this hypothesis briefly, almost telegraphically. As we have already seen, part of Russia's current, and prospective, human resource crisis appears to relate to the country's political economy, or more specifically to low returns on human capital. These low returns come in an economy characterized by a high degree of economic dualism, pronounced governmental dependence on an enclave economy for public finance, weak legal-institutional development in the non-extractive sectors of the economy, and an unusually high perception of corruption for a society of its income level. Some would even describe contemporary Russia's as a political economy bewitched by the "resource curse," but that specific stipulation is not at all necessary for making this particular argument.[44] Low existing levels of social capital may impede the political development of an alternative political economy—one characterized by stronger institutions, more predictable and limited governance, greater political liberalism, openness, and accountability. This alternative

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[43] Martin Bobak and Michael Marmot, "East-West mortality divide and its potential explanations: proposed research agenda," *British Medical Journal* 312, no. 7028 (February 17, 1996): 421–425 ; Martin Bobak, Hynek Pikhart ,Clyde Hertzman, Richard Rose and Michael Marmot, " Socioeconomic factors, perceived control and self-reported health in Russia. A cross-sectional survey," *Social Science and Medicine* 47, no. 2 (July 1998): 269–279; Larry Willmore, "Health, Hopelessness, and Social Norms" in *Policy Pathways to Health in the Russian Federation*, eds. Landis MacKellar, Elena Andriouchina, and David Horlacher (Laxenburg, Austria: IIASA, Report IR-04-021, June 2004): 136–144; and Johanna Lundberg, Martin Bobak, Sofia Malyutina, Margareta Kristenson, and Hynek Pikhart, "Adverse health effects of low levels of perceived control in Swedish and Russian community samples," *BMC Public Health* 7, no. 314 (November 2 2007), http://www.biomedcentral.com/1471-2458/7/314.

[44] Which is all to the good, insofar as some observers of the Russian scene are not at all convinced that the resource curse hypothesis adds much to our understanding of politics in Russia today. The OECD's William Tompson, for example, has persuasively argued that it is not necessary to posit a resource curse to explain troubling aspects of contemporary Russian political performance that are sometimes attributed to resource curse. William Tompson, "The political implications of Russia's resource-based economy," (unpublished paper from the Seventh International Council for Central and East European Studies Congress, 26–30 July 2005, Berlin); and William Tompson, "A Frozen Venezuela? The 'Resource Curse' and Russian Politics", in *Russia's oil and natural gas: bonanza or curse?*, ed. Michael Ellman (London: Anthem, 2006): 189–212.

political economy might be expected to be more supportive of higher rates of returns to human capital, and thus to accumulation of human capital.

If high levels of social capital are indeed supportive for the development of democratic governance, while low levels of social capital complicate the task of developing democratic governance (as social capital theorists have argued [45]), and Russia is indeed characterized by an unusually low endowment of social capital (as the WVS data adduced in the previous pages would certainly seem to suggest), Russia's apparent social capital problems today could have an enduring impact on the prospect for the country's human resources.

Russia's social capital situation, furthermore, may take a long time to change. Cultural characteristics of given societies, observes Ronald Inglehart, "can and do change," but they "tend to change slowly."[46] Indeed, in Inglehart's assessment, such factors as a society's levels of trust and levels of happiness (subjective wellbeing) tend to be marked by an impressive stability over time. This finding, he argues, "supports the claim that cultural variables have an autonomy and momentum of their own."[47]

Interpersonal trust is a relatively enduring characteristic of given societies. It reflects the entire historical heritage of a given people, including economic, political religious and other factors. A society's level of subjective well-being reflects its entire historical heritage, including economic, political, social and religious factors. [48] Francis Fukuyama concurs with Inglehart's judgment, but goes even further in spelling out its implications. Fukuyama cautions that "the accumulation of social capital" is

> a complicated and in many ways mysterious cultural process. While governments can enact policies that have the effect of depleting social capital, they have great difficulties understanding how to build it up again...A strong and stable family structure and durable social institutions cannot be legislated into existence in the way a government can create a central bank or an army. A thriving civil society depends on a people's habits, customs and ethics—attributes that can only be shaped indirectly through conscious political action and must otherwise be nourished through an increased awareness and respect for culture.[49]

If Fukuyama is correct, domestic leaders and international policymakers can do little today to accelerate the process of inculcating social capital in Russia, although their preferred policies and chosen practices could well end up obstructing or delaying that inculcation. If there is an adverse portent for the augmentation of Russia's human resources in the country's remarkably limited extent of civic participation, low levels of public trust, and pervasive patterns of self-reported unhappiness, such influences may be felt for some time to come.

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45 See, *inter alia* Mark E. Warren, ed., *Democracy and Trust* (New York: Cambridge University Press, 1999); Martin Paldam and Gert Tinggaard Svendsen, "Missing social capital and the transition in Eastern Europe," *Journal for Institutional Innovation, Development and Transition* 5, no. 1 (2001): 21–34; Pamela Paxton, "Social Capital and Democracy: An Interdependent Relationship," *American Sociological Review* 67, no. 2 (April 2002): 254–277; Dimitrina Mihaylova, *Social Capital in Central and Eastern Europe. A Critical Assessment and Literature Review* (Budapest: Central European University Center for Policy Studies, 2004), http://cps.ceu.hu/polstud_soccap.php; and Jacob Dearmon and Kevin Grier, "Trust and development," *Journal of Economic Behavior & Organization* 71, Issue 2 (August 2009): 210–220.

46 Inglehart, "Trust, wellbeing and democracy," 103.

47 Inglehart, "Trust, wellbeing and democracy," 117.

48 Inglehart, "Trust, wellbeing and democracy," 118–119.

49 Inglehart, "Trust, wellbeing and democracy," 4–5.

Conclusion

A Demographic Reckoning for Russia

The previous chapters have detailed the dimensions of Russia's peacetime population crisis and examined some of the factors that have helped to account for the country's anomalous and disturbing demographic trends. It is now time to offer an assessment of some of the implications of the Russian Federation's strange new population patterns and trends—not only for the country itself but also for the world. The reverberations from Russia's demographic travails, after all, are likely to be felt not only in neighboring countries but also in lands far removed from Russian soil, and indeed across the entire globe.

Russia's Current Demographic Woes

To recapitulate our findings: Russia today is in the grip of an eerie, far-reaching and in some respects historically unprecedented population crisis. Since the end of the Soviet era, the population of the Russian Federation has fallen by nearly seven million. Apart from China's paroxysm in the wake of Mao's catastrophic Great Leap Forward, this is the largest single episode of depopulation yet registered in the postwar era.

Russia is hardly the only country on the map to be registering population decline these days. Rather, population decline is becoming an increasingly common characteristic of contemporary societies, including affluent democratic societies. Three of the world's group of seven (G-7) economies—Germany, Japan, and Italy—are at the cusp of sustained population decline, or have already entered into it. Yet there is a profound and fundamental difference between the depopulation underway in Russia today and the depopulation facing those affluent Western nations. Germany, Japan, and Italy commonly confront the

prospect of population decline in the context of robust and steadily improving levels of public health. The Russian Federation, by contrast, has been seized by an extended mortality crisis—an affliction of historic and truly tragic dimensions.

For males and females together, life expectancy at birth in the Russian Federation looks to be somewhat lower today than it was four decades ago. By the critical measure of life expectancy, in fact, Russia looks to have suffered almost half a century of health stagnation or decline—this in a world where overall health levels have been constantly improving.

To be sure, a number of other contemporary societies have also experienced setbacks in life expectancy since the end of the Cold War, including more than a handful of spots from the former Soviet Bloc. Ukraine and Belarus, for example, both register lower overall life expectancies (males and females together) today than they did toward the end of the Soviet epoch.[1] Moreover, a few countries have suffered even more acute downturns in life expectancy than has Russia. In the case of Botswana in southern Africa, overall life expectancy at birth is now estimated to have plunged by roughly fifteen years between the late 1980s and the first half of the present decade, compared to a "mere" four year life expectancy decline for the Russian Federation during that same period.[2] However no country in the modern era—not even the AIDS-ravaged states of sub-Saharan Africa—has sustained health setbacks as severe as Russia's for such a very long stretch of time.

Despite the country's comparative prosperity and its high levels of educational attainment, Russia's health standing today, by some measures, is not even third world. Instead Russia's health performance at times appears closer to levels prevailing in the fourth world, i.e., the planet's poorest and most desperately pressed societies. According to the most recent estimates of the World Health Organization (WHO), for example, the life expectancy for a fifteen-year-old male in 2006 was lower in the Russian Federation than in such places as Cambodia, Haiti, Rwanda, or Somalia.[3]

For an urbanized and literate society during peacetime, Russia's health performance in the post-Soviet era has been nothing short of catastrophic. Against the hardly exacting standard of survival patterns during the early Gorbachev years, post-Soviet Russia has suffered aggregate "excess mortality" of about seven million deaths. This is well over three times the death toll for Imperial Russia from World War I. This avalanche of premature deaths, indeed, was large enough to account for the entirety of Russia's population decline between the end of the USSR and today. Arresting as it is, however, Russia's ongoing health disaster frames just one scene in a much broader landscape of human resource crises.

Despite the country's seemingly favorable education profile—with levels of school attainment equal to or higher than many affluent Western countries—Russia's labor productivity is still stuck at a level typical of developing societies that have far lower levels of adult education. Russia's performance today in knowledge production (as measured by international patent applications and awards) is woefully poor, considering the country's huge numbers of technicians and university graduates. Russia thus offers a new paradox to the modern world: a society characterized by high levels of education but low levels of human capital.

The Russian Federation likewise appears to be impoverished with respect to social capital, or at least the indicators researchers use to describe it. According to international survey responses,

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[1] Life expectancy estimates taken from the Human Mortality Databases (HMD), http://www.mortality.org.

[2] Estimates for combined male and female life expectancy for 1985/90 vs. 2000/05 taken from United Nations Population Division (UNPD), *World Population Prospects: The 2008 Revision Population Databases*, http://esa.un.org/unpp/index.asp.

[3] World Health Organization (WHO), "Life Tables for WHO Member States," http://apps.who.int/whosis/database/life_tables/life_tables.cfm.

Russians in the post-Communist era have been among the world's most unhappy populations, and among the least trustful of their public institutions. They are also among the least confident of their control over their own lives, and they have had among the lowest levels of voluntary participation in civil life.

Russia's patterns of childbearing and family formation have undergone a number of troubling changes over the past two decades—changes that raise serious questions about investments in human capital for the country's rising generation. Marital unions in today's Russia, for example, appear to be decidedly less stable than in the past, Soviet Russia's notoriously high divorce rate notwithstanding. Increasing family instability, of course, is a pervasive modern trend. It encompasses all the rest of Europe, as well as many affluent Western societies outside Europe. Russia's divorced single parents, however, must raise their children on far lower income levels than their counterparts in Western Europe or North America. Unlike Western Europeans or Americans, they can count on precious little in the way of support from their government's social welfare apparatus. Modern economic theory might seem to suggest there will be greater investment in each child, all other things being equal, when fertility levels decline. Yet despite the country's steep drop-off in births over the past two decades, there has evidently been nothing like a general increase in investment in children in post-Communist Russia. Instead, the Russian Federation's smaller new birth cohorts have seen ominous decreases in primary school enrollment ratios, along with alarming increases in child abandonment (a phenomenon that appears to have become shockingly common).

The Demographic Outlook for the Russian Federation

Because the Russian Federation's present demographic deformities appear so anomalous—indeed, so positively abnormal—it might seem reasonable to assume that Russia's adverse demographic patterns will tend to correct themselves automatically, or if not automatically, then with the aid of public policy interventions. Russian policymakers certainly subscribe to such a view. Over the past several years the Kremlin has outlined, and begun to implement, ambitious programs that are supposed to halt and reverse Russia's downward demographic spiral.

In 2006, then president Putin unveiled a baby bonus program, which was subsequently approved by the Duma and set in motion at the start of 2007. The program awards Russian mothers the equivalent of up to $10,000 (including cash payments, housing subsidies or parental pension benefits) three years after the birth or adoption of a second or third child.[4] In 2007, President Putin issued a decree endorsing a "Concept of Demographic Policy to 2025" and ordering his government to produce a program of concrete measures to put it into effect.[5] This "Concept of Demographic Policy" was translated into a long-term plan of action in 2008, under supervision of then first deputy prime minister Dmitry Medvedev, now Russia's president.[6]

The Kremlin's 2008–25 demographic plan sets a number of targets for the country's population trends in the coming years. By 2015, it holds that the Russian Federation's total population should be stabilized at about 142–43 million, with overall life expectancy at birth raised to 70 years (from

[4] C.J. Chivers, "Russians, Busy Making Shrouds, Are Asked To Make Babies," *New York Times,* May 14, 2006; Brian Bonner, "Incentives impress few parents; Russian economy defies a baby boom," *Philadelphia Inquirer*, May 22, 2006, E10; and "Russian lawmakers pass maternity bill in first reading," *RIA-Novosti*, November 19, 2006.

[5] Valery Yelizarov et al., *Demographic Policy in Russia: From Reflection to Action* (Moscow: United Nations in Russia/Unicef, 2008): 10–11.

[6] "Russian Govt Approves Action Plan for Demographic Policy Concept." *TASS*, February 27, 2008; and Alexander Voronov and Dmitry Siginevich, "Russian Villagers Will Become Extinct," *Kommersant*, no. 32 (February 28, 2008): 2.

about 66 years in 2006) and total fertility rates up 30% from the pre-plan period (to about 1.7 births per woman per lifetime by 2015). After 2015, according to the plan, births are to exceed deaths in Russia. By 2025, Russia's total population is to have risen to 145 million. Overall life expectancy is supposed to be up to 75 years, and the country's total fertility rate is supposed to reach 1.95 (a level 50% higher than in the immediate pre-plan years).[7]

Russia's leadership today seems pleased with this population plan, and appears convinced that it is likely to attain its objectives. Both Putin and Medvedev have spoken with satisfaction of the successive increase in birth totals in the years 2007 and 2008, and just recently the government noted that births exceeded deaths in Russia in August 2009 for the first time in fifteen years. The "important fact that…natural population increase…was reported last August," President Medvedev declared in October 2009, "points to the fact that we are on the right way."[8] At year-end 2009, according to Russian news reports, the country's population failed to decline "for the first time in 18 [*sic*] years"—"a result," in the estimate of a leading Russian official, "of [the] purpose-oriented policy we carried out during the past few years."[9]

Unfortunately, there is a Canute-like air to these commands to reverse the country's demographic tides. The Kremlin's own optimistic prognosis for Russia's population prospects flies in the face of some obvious and irreversible demographic realities. Foremost among these is the brute fact that Russia's birth slump over the past two decades has left Russia with many fewer potential mothers for the years just ahead than the country has today. According to U.S. Census Bureau projections, as of mid-year 2009 the Russian Federation had about 11.7 million women in their twenties.[10] (Women 20–29 years of age bear nearly two-thirds of Russia's babies.)[11] By 2015, that same age group in Russia is projected to contain just 6.9 million women—41% fewer than today. By 2025, Russia is projected to have just 6.4 million women in their twenties—45% fewer than today. There is relatively little conjecture in these projections, insofar as all women who will be 20–29 years of age in the year 2025 are already alive today, and net migration is unlikely to alter those prospective totals dramatically.

Under such circumstances, simply maintaining current national birth totals would require heroic upsurges in maternity. At the same time that Russia's cohort of prospective mothers will be shrinking, the country's population profile will be graying. By the Census Bureau's reckoning, Russia's median age in 2009 was 38.4 years. By 2025, it is projected to be 42.4 years, fully 4 years higher.[12] All other things being equal, this portends higher crude death rates for Russia in the years ahead.

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7 For more details, see the United Nations Development Program (UNDP), *National Human Development Report, Russian Federation 2008: Russia Facing Demographic Challenges* (Moscow: UNDP, 2009), http://europeandcis.undp.org/home/show/F64CE386-F203-1EE9-BD6D78D5790CB695; and Anatoly Vishnevsky, "The Challenges of Russia's Demographic Crisis," *IFRI Russie.Nei.Visions* 41 (Paris: Institut Français des Relations Internationals, June 2009), http://www.ifri.org/downloads/ifridemographyvishnevskiengjune2009.pdf .

8 "Demographic Problems Need Consistent, Systemic Approach—Medvedev," TASS, October 19, 2009.

9 "Russia Not To Lose in Population in 2009 First Time Over 18 Years," *Itar-Tass*, January 3, 2010. According to the preliminary proclamations, the country's population increased by some slight but nonetheless positive figure (certain reports claimed the net increase to have been in the range of 20,000); while deaths in 2009 reportedly still outnumbered births by over 250,000 that gap would have been markedly smaller than in previous years. Whether or not Russia's population actually ceased declining in 2009, however, is still open to question, since the putative marginal increase would have been to net in-migration (this is a year of serious economic recession), and inconsistencies between official pronouncements on annual population change and Goskomstat/Rosstat estimates of population totals still remain to be resolved. As of this writing (March 2010), incidentally, the Goskomstat/Rosstat website has not officially released data confirming population increase for the Russian Federation for the year 2009.

10 U.S. Census Bureau International Data Base, http://www.census.gov/ipc/www/idb/informationGateway.php.

11 *Naseleniye Rossii 2005* [Population of Russia 2005] (Moscow: MAKS Press, 2007): 87–88.

12 *Naseleniye,* 87–88.

Russia thus faces mounting pressures to widen, not narrow, the country's gap between deaths and births. Independent demographic analysts within Russia have already recognized this fundamental fact. In the words of the Russian Federation's *National Human Development Report 2008*:

> Natural decrease of Russian population has been slowing down since 2001…but this is a temporary trend...On one hand, significant growth in the number of potential mothers contributed to increase of births and, on the other hand, decline in numbers of elderly people put a brake on growth in the number of deaths…
>
> Impact of these two factors is already tapering off…Natural decrease of population will accelerate once again. The rate of acceleration will depend on success in lowering mortality and raising fertility, but no forecasters are expecting that changes in mortality and fertility will be able to stop the acceleration completely.
>
> So natural decrease of population is not about to cease. On the contrary, following a temporary respite, it will return... [And in] contrast with the preceding period, natural decrease of population will be accompanied by worsening of structural proportions, with highly unfavorable economic, social and political consequences.[13]

Even Goskomstat/Rosstat's latest medium variant demographic projections anticipate a continuing, and indeed widening, gap separating deaths and births between now and the year 2025. Despite arguably optimistic assumptions about the scope for improvements in Russian life expectancy (mirroring those of the Kremlin's "Concept"), these computations nevertheless envision a surfeit of deaths over births for Russia of about 340,000 in 2009, rising to about 640,000 in 2025. For the entire 2009–25 period, these Goskomstat projections depict a Russia in which deaths outnumber births by a cumulative total of over 7 million. For the 2009–25 period as a whole, over five Russian deaths are projected for each four Russian live births. Despite official Kremlin plans to the contrary, Goskomstat's medium variant series consequently projects a steady decline in Russia's population over these coming years. This decline, albeit a more modest decline than those projected for Russia by other demographic agencies, entails a growing imbalance between deaths and births only partly offset by migration.[14]

Even in the view of Moscow's own statistical authorities, in other words, the Russian Federation looks likely to continue to be a shrinking nation over the decades immediately ahead, even though, as already noted, Goskomstat/Rosstat posits greater improvements in health conditions in the years immediately ahead than international demographic authorities currently consider likely or plausible.

Whereas Goskomstat's projected overall life expectancy at birth in 2025 for Russia is 75 years (about 9 years higher than in 2005), the United Nations Population Division (UNPD) and the U.S. Census Bureau both assume that life expectancy for the Russian Federation will be about 5 years lower around that time.[15] By the projections of the U.S. Census Bureau and the UNPD, life expectancy at birth in Russia in 2025 would still lag far behind the levels prevailing in the more

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[13] *National Human Development Report, Russian Federation 2008*, 20.

[14] Goskomstat, "Predpolozhitel'naya Chislennost' Naseleniya Rossiiskoi Federatsii do 2030 Goda" [Estimated Population of the Russian Federation to 2030], 2009, http://www.gks.ru/wps/PA_1_0_S5/Documents/jsp/Detail_default.jsp?category=1112178611292&elementId=1140095525812.

[15] The current UNPD projection for combined male and female life expectancy in the Russian Federation is 70.6 years for 2020/25; the U.S. Census Bureau projection is 70.0 for the year 2025.

developed regions of the West. Almost a decade would separate overall life expectancy in Russia and Western Europe, whereas the gap between Russia and Japan would be closer to 13 years. By these projections, Russia's future life expectancy overall would be only slightly higher than the overall average for the third world. Male life expectancy would remain below the levels prevailing in the less developed regions as a whole. In fact, by the U.S. Census Bureau's projections, combined male and female life expectancy in 2025 would be lower in Russia than in such places as Bolivia, East Timor, and India, and even slightly lower than in Pakistan. As we saw in Chapter 7, there are reasons to think that Russia's improvements in life expectancy over the years immediately ahead could be even more modest and halting than those conjectured by the UNPD and the U.S. Census Bureau.

In sum, the basic population profile envisioned for a future Russia in the Kremlin's "Concept for Demographic Policy" appears to be fundamentally unrealistic. One of Russia's leading demographers, Anatoly G. Vishnevsky of the State University's Higher School of Economics, has noted as much in his published work. In Vishnevsky's words, it is essential that we do the following:

> [We must] acknowledge that under the current demographic trends…the issue is one of typical and irreversible historical changes…Utopian goals have to be categorically rejected. We have to adapt to an irreversibly changed situation, shape our social institutions around it and rethink political approaches that were developed under totally different conditions.[16]

There is another way of putting this, and that is that, anomalous though they are, Russia's demographic trends should not be expected to return steadily to "normal", because in modern Russia the abnormal has become the new norm.

Thus far, we have touched on the outlook for Russia's main demographic aggregates: total population, births and deaths, and life expectancy. Prospects here are sobering enough. The prospect for Russia's future population profile, however, appears even more serious if we consider what the Russian Federation's *National Human Development Report* referred to as the country's "worsening of structural proportions." Given Russia's extended period of steep sub-replacement fertility, the country's population of working age is set to undergo disproportionate shrinkage, while the overall composition of the country becomes increasingly grey.

By Goskomstat's most recent medium variant projections, the Russian Federation's population of working ages (defined as 16–59 for men and 16–54 for women, in accordance with Russia's ages for public pension eligibility) would undergo uninterrupted decline between 2009 and 2025, falling by nearly 14% over those years.[17] Projecting Russia's working age population by the more conventional 15–64 age grouping, the Census Bureau envisions an even sharper drop in manpower availability between 2009 and 2025 of nearly 16%. Over those same years, Russia's total numbers of senior citizens and pensioners would be on the increase, and their share of total population would be rising even more rapidly. Between 2009 and 2025, the Census Bureau projects the fraction of Russia's population 65 years of age or older to jump from 13.7% to 18.7%. Using its own definitions, Goskomstat/Rosstat anticipates the percentage of the Russian Federation above the working ages to surge from 21.6% to 27.2% over the same period (that is to say, in just over a decade and a half).

In 2009, by Goskomstat's estimate, for every Russian of pensionable age there were 2.5 of working age (not all of whom, of course, were working). By 2025, that ratio is projected to fall to

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16 Vishnevsky, "The Challenges," 5–6.

17 Note that these projections assume a continuing net influx of workers to Russia over this period.

2 to 1. This means that in practice, barring any major changes in pension policies in the interim, there would be well under 2 actively employed workers to support each pensioner in Russia.

All in all, then, there seems to be scant promise that Russia's demographic crisis will be abated in the years immediately ahead. Quite the contrary, in at least some critical respects there is reason instead to fear that the country's demographic crisis will be even more acute in 2025 than it is today.

Implications for Individual Well-being and Human Security in Russia

The Russian Federation's peacetime demographic crisis has a multitude of implications for the country and its people. The most obvious of these implications concerns the personal welfare of Russia's citizens. In plain language, current demographic patterns have dreadful consequences for quality of life in Russia. They impose immense human costs today, and they threaten to compromise improvement of individual well-being for years to come.

The most serious demographic threat to individual well-being in Russia today is of course the country's mortality crisis. As documented already in this study, the Russian Federation suffers from truly catastrophic levels of excess mortality, and is enduring an agonizing, prolonged reversal in general health conditions. Russia's dire public health problem is self-evidently an immense and overarching quality-of-life problem.

The human cost of the ongoing public health crisis in Russia can be likened to the toll from a prolonged and cataclysmic war of total mobilization. Russia was victim to appalling casualties in both World Wars, but in sheer magnitude the cumulative cost in foreshortened human life from the present peacetime health disaster is hardly less than those earlier military conflagrations.

World War II—the Great Patriotic War, as it is known in Russia—may have been the most searing calamity in all of Russian history. Certainly it haunts the Russian national memory up to the present time. Within Russia it is commonly held that nothing in the modern era can compare with the tribulations and losses Russia's population was forced to bear in those terrible days.

When post-Communist Russia's toll of excess mortality is benchmarked against the survival schedules of the early *perestroika* years, the country's post-Soviet human losses from premature deaths amount to around 7 million. Awful as this would be, it is a tally of a completely different order from the charnel of World War II. Measuring Russian excess mortality against another standard—namely, contemporary survival patterns of European societies (a France, say, or an Italy, or a Greece)—suggests a vastly greater scale of human losses for today's peacetime Russia. If post-Communist Russia had only been able to enjoy the same expectations of life as its modern counterparts in Western Europe, something like 20 million fewer Russians would have perished between the demise of the Soviet system and today. By this standard, Russia's death toll from the country's continuing peacetime health disaster does not take second place to the traumatic paroxysms of the Great Patriotic War. In purely arithmetic terms, the Russian Federation's mortality losses from her ongoing peacetime catastrophe could well count as the worst the country has ever suffered in its long and too-often tormented history.

This seemingly unending drumbeat of premature deaths exposes the population of modern Russia to a human insecurity of horrendous proportions. Since the conclusion of the Cold War, some international researchers and policymakers have fastened on the concept of what they call human security to describe the perils that populations face at the individual level (in

contradistinction to national security, which is assessed at the level of state actors).[18] For all its other ramifications on individual wellbeing, Russia's mortality crisis can also be seen as an acute human security crisis. This point is brought home when we consider that the typical Russian man in 2006 faced a less than even chance of making it from age 20 to age 65. Furthermore, his odds of celebrating his 65th birthday were actually lower than for the typical 20-year-old man in Nigeria or Kenya.[19]

Individual well-being and human security are shaped not only by the risk of death but also by the nature of the particular mortality risks at issue. The threat of death attendant to military conflicts has a very different coloration from deaths due to natural causes. Here, however, it is well to remember that Russia's peacetime toll of excess mortality includes an extraordinarily large component directly attributable to violence. We refer here to Russia's deaths due to what are formally classified as external causes: injuries (homicide, suicide, deadly accidents), poisoning, and the like.

As demonstrated earlier in this study, Russia's current levels of mortality from these external causes are almost unparalleled in the world today. They are equaled or exceeded by a mere handful of countries, all of them conflict or post-conflict societies in sub-Saharan Africa. Men and women in today's peacetime Russia are dying in droves from violence, but not violence of a foreign hand.

Russia's mortality crisis is concentrated in the country's population of working age and weighs especially heavily on working age men. But the Russian Federation's demographic crisis impinges on individual well-being across the entire course of the life cycle. Infants and children are an intrinsically vulnerable element of every society. With unfolding new tendencies in family formation since the collapse of the Soviet system, the welfare of Russia's infants and children is now subject to new and heretofore largely unfamiliar risks.

Over the past two decades, Russia's patterns of family formation have moved markedly closer to current Western European norms. With that shift toward what has been termed the second demographic transition, the prevalence and stability of marital unions has declined. The proportion of children born out-of-wedlock has increased, and the share of children in single-parent homes has risen. All other things being equal, such trends attenuate the support—material and otherwise—that Russia's youngest can rely on. Russian children from broken homes or complex family situations, moreover, cannot count for wherewithal on the sorts of incomes that a lone parent can earn in Western European labor markets. Nor can they depend on the sorts of public largesse that the generous Western European welfare states routinely dispense to families in need.

At the other end of the life cycle, an entirely disproportionate share of elderly Russians can expect to be infirm or ill. Whereas developed Western societies have enjoyed the blessing of healthy aging in the postwar era, health conditions for Russia's senior citizens seems to have been stagnating or retrogressing for decades.

Workforce participation rates for Russia's older men and women are notoriously low, in part because so many of them cannot meet the simple physical demands of remunerative labor. For older Russians without outside earned income today, and these constitute the overwhelming majority of older men and women in Russia, life prospects are often nothing short of frightening.

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[18] The concept of human security was perhaps originally laid out in the United Nations Development Program's Human Development Report 1994 (New York: Oxford University Press, 1994). For a rigorous and constructive criticism of the concept, see Gary King and Christopher J. L. Murray, "Rethinking Human Security," *Political Science Quarterly* 116, No. 4 (Winter 2001–02): 585–610.

[19] As calculated from WHO, "Life Tables for Member States".

By comparison with their fellow Western Europeans, older men and women in Russia are much more likely to be frail or sick, so their needs are correspondingly that much greater. Yet Russia's public health care system provides only minimal service guarantees to those without influence or means. With national pension stipends averaging just one-fourth of the country's mean wage level as of 2007, Russian pensioners who must subsist on benefits accorded by the public pension system alone are all but consigned to a penurious existence. As of 2007, in fact, average state pension stipends were barely at the country's official and ungenerous average minimum subsistence poverty line (and had actually been below that poverty line for some years beforehand).[20] In a more traditional environment, children and other members of a more extended family might be a significant source of support and sustenance for such vulnerable seniors, but given Russia's current and prospective family trends, that hope is an ever less realistic option for the country's growing gray population.

To grow old in Russia today is thus to face an ominous future, marked by fundamental insecurities that in some qualitative sense may be more severe than those that press older men and women in other societies, including societies with much lower income levels. In the United States and many other countries around the world today, populations rate themselves as progressively happier over the life course from middle age through old age. In Russia, exactly the opposite is true According to surveys of self-assessed satisfaction with life, Russian men and women today grow steadily less happy over that same life course, and the unhappiest people in Russia are the ones who are oldest.[21]

That Russian paradox underscores a broader point for consideration, namely, that self-assessed ratings of personal happiness, subjective as such perceptions must necessarily be, provide highly meaningful and ultimately objective information about individual well-being. Indeed, every person's self-assessed appraisal of his or her own life circumstances and prospects is perforce integral to any overall evaluation of quality-of-life.

Many measures of subjective well-being would be used for assessing the impact of Russia's demographic crisis on the quality of life. One of the most telling of these is "expected years of happy life," or "happy life years."[22] Russia faces a health crisis today, but it is also beset by a happiness crisis. As detailed earlier in this study, the Russians are a very unhappy people today. To go by the results of some international surveys, they may actually be one of the unhappiest populations on the planet. These low levels of self-assessed happiness, in conjunction with the country's surprisingly poor life expectancy, mean that Russia's population today has an almost amazingly limited expectation of happy life years, as may be seen in **Figure 1**.

By these estimates, the typical Russian could expect fewer than 30 years of happy life today. That would be several decades less happy life than the resident of any developed Western society. The typical Russian, however, also enjoyed fewer years of happy life than the inhabitants of the overwhelming majority of developing countries as well. As of 2006, for example, a Russian could count on only half as many years of happy life as a person from Colombia. Russia's rating for

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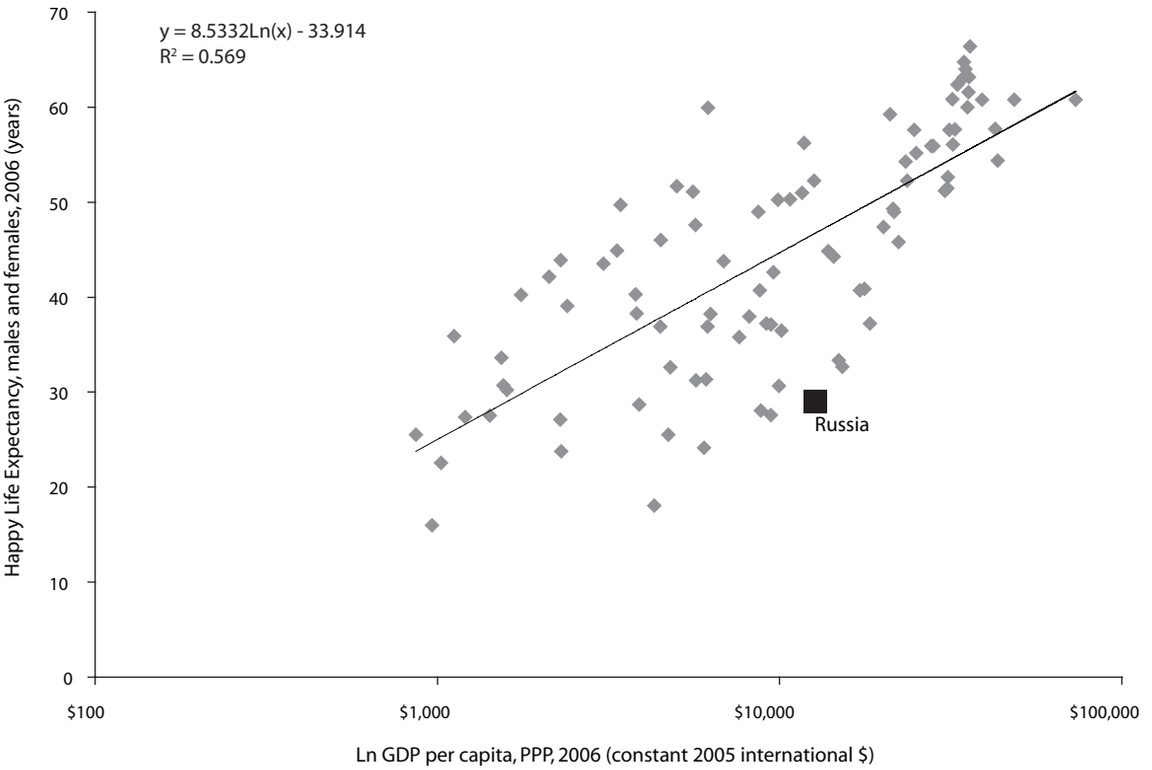
20 David Hauner, "Macroeconomic Effects of Pension Reform in Russia", *IMF Working Papers WP/08/201* (August 2008), 6.

21 European and World Values Surveys four-wave integrated data file, 1981-2004, v.20060423, 2006. Surveys designed and executed by the European Values Study Group and World Values Survey Association. File Producers: ASEP/JDS, Madrid, Spain and Tilburg University, Tilburg, the Netherlands. File Distributors: ASEP/JDS and GESIS, Cologne, Germany, www.worldvaluessurvey.org.

22 "Happy life years" or "happy life expectancy," a measure introduced by Ruut Veenhoven of Erasmus University, is the product of a surveyed population's life expectancy at birth and its mean self-assessed personal satisfaction or happiness on a scale from 0 to 1. See Ruut Veenhoven, "Happy Life-Expectancy: A comprehensive measure of quality-of-life in nations," *Social Science Research* 39, no. 1 (March 1996): 1–58.

FIGURE 1: GDP Per Capita, PPP, 2006 vs. Happy Life Expectancy (years), 2006



SOURCES: "Happy Life Expectancies," from R. Veenhoven, "Happy Life Years in 95 nations 1995–2005," World Database of Happiness, Rank Report 2006-2b, http://worlddatabaseofhappiness.eur.nl; and World Development Indicators 2008, World Bank, CD-ROM.

happy life years was slightly higher than Pakistan's, but it was well below those of both India and Bangladesh. Russians could also expect fewer years of happy life than the populations of a number of sub-Saharan countries, including Côte d'Ivoire and Senegal.

Russia's ranking in happy life years comes into an even more striking relief when income levels are taken into account. Generally speaking, there is a regular and positive correspondence between a society's happy life expectancy and its per capita GDP. Across the world as a whole, each doubling of a country's per capita output is associated with almost six additional years of happy life. However, the actual quotient of happy life years for Russia's population falls woefully below the level predicted by its per capita income. Russia is, quite literally, an unhappy outlier from the trends traced in the rest of the world. A country at Russia's income level would be predicted to experience about eighteen more years of happy life than Russia actually does—that is to say, well over half as many happy life years. A country that reported as few happy life years as Russia would have a predicted level of GDP per capita merely one-eighth of Russia's own.[23]

Russia's jarringly low expectation of happy life years offers grim testimony on the state of individual well-being across that society as a whole. This measure is influenced by a great many non-demographic factors. Nevertheless, this indicator can perhaps be taken as a final reflection of

[23] To go by happy life years alone, Russia should be a country with roughly Nigeria's income level, although ironically Nigeria's expectation of happy life in 2006 was actually estimated to be higher than Russia's.

the Russian demographic crisis when that crisis is construed most broadly. For happy life years are the arithmetic product of two gauges of a country's human resources: life expectancy at birth and the population's self-assessed happiness (a particular measure of subjective well-being that seems to track closely with a population's social capital, as we saw earlier in this study). Viewed from this vantage point, the human costs of Russia's demographic crisis today appear to be truly crushing.

Implications for Russian Economic Development

A demographic crisis of such portent for individual well-being can hardly but have grave consequences for economic performance. Blessed as the Russian Federation may be with its vast endowments of natural resources, in the final analysis it is human resources, not underground deposits of minerals and organic compounds, that account for national wealth in the modern world.

From the standpoint of economic productivity, which is the underlying guarantor of both current national consumption levels and future growth prospects, demographic trends in Russia today are self-evidently adverse. Even in their broadest outlines, Russian demographic trends bode ill for economic performance. The country's acute health crisis is of necessity a crisis for Russian manpower. Russia today has a dying and debilitated labor force. It has an overall risk of death for persons of prime working ages (the years 20–59), roughly three times as high as corresponding levels in today's societies,[24] and far less favorable health profiles for those who manage to survive from one year to the next.

The country's economic prospects are even more forbidding than this first cursory look might suggest, for Russia's unhealthy workforce will be shrinking in the years immediately ahead. This is an irrevocable outcome of modern Russia's unnaturally high adult mortality levels and the country's steep sub-replacement fertility patterns. Net immigration can partly mitigate the descent but is unlikely to reverse it. For the 2009–25 period, Goskomstat's latest medium variant projections of the country's working age population envision continuing shrinkage by nearly 1% per annum. For the conventionally defined working-age population (age 15–64), U.S. Census Bureau and UNPD projections point to an even swifter tempo of decline.

Moreover, Russia's workforce will be aging rapidly over the coming generation. To go by Census Bureau projections and Human Mortality Database (HMD) estimates of adult survival schedules for 2005, average mortality rates for the Russian population 15 to 64 years of age would be 18% higher in 2030 than they were in 2005 on the basis of aging effects alone. Thus, even if mortality prospects for the Russian workforce do improve over the coming decades, such gains may not be sufficient to offset the negative health impact of manpower aging.

No less significant is that Russia's smaller, potentially frailer labor force will be obliged to provide for a growing cohort of dependent senior citizens in the years ahead, thanks to trends in population aging. In 2005, by the estimates of the UNPD, there were 5 Russians between the ages of 15 and 64 for every Russian over the age of 65. By 2030, under medium variant UNPD projections, that ratio would be down to just 3 to 1. The actual old-age burden on Russia's potential workforce may be even heavier than these figures imply. Given official Russian retirement ages, Goskomstat projects the Russian Federation's ratio of working age to pensionable population will drop from

[24] Comparisons derived from life tables in the Human Mortality Database http://www.mortality.org; reference year is 2006.

about 3 to 1 in 2010 to just 1.9 to 1 by 2030. From the standpoint of savings, investment, and economic growth, this prospective rise in old-age dependency ratios can hardly be auspicious.[25]

Consider as well the curious fact that Russia's urban population has been falling over the past decade and a half, and that the Russian Federation's share of urban population in 2010, by UNPD projections, is anticipated to be somewhat lower than it had been twenty years earlier. From the early industrial era to the present day, modern economic growth has been closely associated with the rise of cities. Russia's depopulation through de-urbanization can hardly be expected to facilitate rapid economic growth.

Given these diverse but forbidding demographic trends, improving labor productivity via compensatory educational policies and scientific-technological innovation would seem altogether urgent if greater economic output is to be elicited from Russia's prospective manpower supply. The outlook here, however, is far from promising. On contemporary mortality schedules, as of 2006, fewer than five out of eight Russians, and fewer than half of Russia's men, can expect to survive from age 20 to age 65. Brutally high mortality rates for the population of working ages can only have an unforgiving impact on the cost-benefit calculus for investments in higher education. To make matters worse, Russia's tertiary education system itself appears to be in trouble. By some international measures, its performance looks little short of dismal. With about 6% of the world's college-trained population, the Russian Federation generates fewer than 0.2% of the world's new patents and patent applications. The picture hardly looks better if we examine the number of scientific papers published in peer-reviewed journals by authors' origin. Here, Russian intellectual output was no higher in 2008 than it had been in 1990, whereas output almost everywhere else in the world had been rising over those same years. By 2008, indeed, Russian authors were publishing far fewer scientific papers than their counterparts in China, but also fewer papers than their BRIC peers in both India and Brazil.[26] And given the chauvinistic preferences that now shape recruitment in Russian higher education—Western-earned PhDs are a positive liability for tenure or employment in many Russian universities and research institutes these days—the country's potential for generating cutting-edge knowledge and productivity-enhancing inventions may be set for further decline in the years just ahead.

Admittedly, any discussion that concentrates solely on demographic conditions risks ignoring Russia's tremendous potential in raw materials. However lacking the Russian Federation may be in human resources, it is just as clearly rich in natural resources. Does Russia's comparative advantage in natural resources offer opportunities for economic development that can counterbalance, or even outweigh, the shortcomings of its human resource endowment?

Russian leadership today seems to be confident that the answer to this question is yes. Indeed, it seems to imagine that the country under its commands can advance toward the very front ranks of modern economies on these two uneven legs. Yet alluring as this proposition may appear to some in the Kremlin today, it is at heart a fantasy. Natural windfalls can augment affluence in societies already relatively rich in human capital, as the examples of Canada, the Netherlands, and Norway attest. They are, however, no substitute for human capital. Of all the economies in modern times, there has yet to be a single example of a raw-materials superpower, nor is there likely to be

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[25] One might object here that this discussion makes no mention of child-dependency ratios (the 0–14 population in relation to the 15–64 population). In virtually every society, however, consumption by older persons tends to be higher than consumption by children. In any case, UNPD medium variant projections also envision an increase in child-dependency ratios for the Russian Federation between 2005 and 2030, albeit a much more modest rise than the one envisioned for old-age dependency.

[26] "Data data everywhere—A special report on managing information", *Economist* February 27, 2010, supplement p. 16.

one. For the plain fact of the matter is that primitive natural resource revenues pale by comparison with the potential earnings from human capital for a country of any appreciable size. Neglecting human resources in favor of natural resources may be a serviceable strategy for a leadership that aspires merely to occupy a small niche within the world economy. As a strategy for a government with greater aspirations, however, such an approach is all too likely to relegate Russia to the lower ranks of economic performance.

During the boom years of high energy and commodity prices just before the current world economic crisis, Russia's export earnings from natural resources may have seemed truly wondrous and abundant to some. Yet the limits of an economic policy that attempted to capitalize on natural resources without husbanding human resources were in fact demonstrated in these very years of greatest seeming success. Even at the apex of its oil and gas run in 2007 and 2008, the Russian Federation's aggregate non-service exports were lower than tiny Belgium's. Further, an economy that wagers on exploitation of natural resources for its fortunes will also have to count on the often extreme volatility of commodity prices, as the Russian Federation learned when energy and commodity prices collapsed at the end of 2008. In the first half of 2009, Russia's total earnings from non-service exports were barely half as high as they had been a year earlier. Human resource dependent Belgium's fell too, like almost every other country caught up in the current crisis, but Belgium's export revenue drop was only about one-fourth as steep as Russia's.[27]

As the Russian example may illustrate, underdevelopment of human resources in conjunction with heavy dependence on natural resources for public finance and external trade frames an economic foundation subject to pronounced intrinsic instability. This foundation is thus subject to macroeconomic fluctuations that tend to translate into worrisome oscillations in demand for labor, wage levels, and living standards. Such exaggerated economic swings, further, could conduce to an inconstant and unpredictable demand for foreign labor, significantly complicating the task of abetting the social integration of migrant workers from abroad.

Conversely, both prosperity and economic stability may be promoted by policies that enhance returns to human resources, but the Russian government, at least to date, has demonstrated remarkably little interest in exploring such possibilities. Given its seeming diffidence about uprooting domestic corruption, strengthening domestic property rights and legal institutions, or even meeting the membership requirements of such rule-based international institutions as the World Trade Organization (WTO), Kremlin policymakers today appear to be less concerned about creating incentives for human capital development than about state capture of rents that the country's natural resource base may offer.

For the time being, the Russian government seems to be in denial about the diverse real world constraints on the country's economic prospects. In 2008, just before the onset of the global economic crisis, the Kremlin unfurled an extraordinarily ambitious economic plan, known as Russia 2020.[28] Russia 2020 envisions the economic ascent of the Russian Federation into the ranks of the top five global GNPs by 2020 and posits an average annual rate of economic growth for the country of 6.6% per year for the overall period 2007–20. Even though Russia's per capita output

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[27] Data taken from Goskomstat, "Main Indicators of External Trade Turnover," http://www.gks.ru/bgd/regl/b09_06/IssWWW.exe/Stg/3/16-01.htm; and OECD, "Belgium," *Economic Outlook No. 86 [Preliminary Version]*, November 19, 2009, http://www.oecd.org/dataoecd/6/62/20209195.pdf. Estimates for Belgium's 2009 total exports are projections as of November 2009.

[28] F*ormally, the "Concept* of Long-Term *Socio-Economic* Development of Russian Federation for the Period until *2020."* For more details, see Andrew C. Kuchins, Amy Beavin, and Anna Bryndza, *Russia's 2020 Strategic Economic Goals and the Role of International Integration* (Washington, D.C.: CSIS, 2008).

was lower at the end of 2009 than it had been in 2007, the Kremlin still embraces the Concept 2020 targets as feasible and realistic. But attaining those goals would now require an average growth in labor productivity of over 9% per year between 2010 and 2020. Suffice it to say that such a tempo of long-term growth in labor productivity was not even reached by post-1978 China, which enjoyed the most rapid long-term economic growth of any country in history, at least to date.[29]

A more pertinent (and realistic) question than the requisites for Russia 2020 targets might be this: what would it take to prevent the Russian economy from shrinking as a share of total global output in the decades ahead?

Between 2005 and 2025, by U.S. Census Bureau projections Russia's share of the global population is projected to drop from 2.2% to 1.6%. Arithmetically, this would imply that Russia must maintain over those same decades a per capita growth rate of 1.5% per year higher than the world's average simply to keep the Russian share of world output stationary. Over those same years, Russia's share of the global population of prime working ages (15–59) is set to fall even more sharply. UNPD medium variant projections envision a drop from 2.4% in 2005 to 1.6% in 2025. Just to keep Russia's percentage of global GDP from declining, this would mean Russia's long-term improvements in labor productivity must average 2% more per year than the rest of the world.

Such prospective accomplishments can hardly be taken for granted in advance. Although Russia's torrid growth over the years 1999–2008 may still be very much in the mind of readers today, that upswing was preceded by a severe and prolonged transition slump. According to the United Nations Statistics Division's national account estimates, in fact, Russia's GDP (at constant 1990 prices) was a mere 5% higher in 2008 than it had been in 1990.[30] There are, to be sure, major uncertainties inherent in these UN calculations. However, they underscore the important point that Russia's long-term economic growth appears to have been quite modest over the period encompassing the country's present peacetime demographic crisis. Demographic factors may weigh no less heavily against sustained improvements in long-term output in Russia in the decades ahead.

Implications for Russia's Defense Potential

In 2007 Sergei Stepashin, formerly prime minister and currently comptroller general of the Russian Federation, warned that the "reduction in the size of the population and the reduction of population density…will create the danger of weakening of Russia' s political, economic, and military influence in the world."[31] As he explicitly recognized, Russia's demographic crisis places inescapable limits on the country's defense potential. Those demographic constraints on the country's military power are set to tighten significantly in the years immediately ahead.

The most obvious constraints imposed by the ongoing demographic crisis concern military manpower. Maintaining the country's current (2008) force structure—a military of 1.027 million, mainly comprised of young conscripts obliged to serve twelve-month term of service[32]—will not be feasible in the years immediately ahead.

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29 Cf. Angus Maddison, *Chinese Economic Performance in the Long Run* (Paris: OECD, 2007).

30 United Nations Statistics Department, "National Accounts Main Aggregates Database," http://unstats.un.org/unsd/snaama/resCountry.asp. GDP estimates for the Russian Federation (in 1990 constant Russian rubles and 1990 constant US dollars) cover the period 1990–2008.

31 "Russian chief auditor calls for urgent measures to halt population decline," *BBC Worldwide Monitoring*, March 10, 2007, cited in Murray Feshbach, "Russian Military: Population and Health Constraints," in *Russian Power Structures: Present and Future Roles in Russian Politics*, eds. Jan Leijonhielm and Fredrik Westerlund (Stockholm: Swedish Defense Research Agency, 2007), 155, http://www2.foi.se/rapp/foir2437.pdf.

32 International Institute of Strategic Studies, *The Military Balance 2008* (London, IISS, 2008), 212. This figure does not include an additional 418,000 personnel categorized by IISS as paramilitary, mainly special armed units of the Ministry of Internal Affairs (MVD) and the Federal Security Service (FSB).

The Russian military of 2008 was manned very largely by young men born 18 years earlier. In 1990, just over one million (1.021 million, to be exact) boys were born in Russia. In 1999, however, the corresponding total had slumped to 626,000, a drop of 39%.[33] Very roughly speaking, this means Russia's pool of prospective recruits, under the current staffing formula, is set to fall by almost two-fifths between 2008 and 2017. If Moscow is to prevent a drop-off of military manpower of this magnitude in the next few years, it has only two choices: induct less qualified conscripts or extend the term of service under the draft. Neither of these are palatable options.[34]

The military manpower problem extends beyond raw numbers alone. Russia's health crisis has not spared men as young as teenagers. According to estimates by the HMD, in fact, death rates for 18-year-old men in Russia in 2006 (the most recent year available) were over a sixth higher than in 1986—twenty years earlier. That rise in mortality reflects broader health difficulties encumbering this rising youth cohort. Moreover, in at least some branches of Russia's military, there appears to be a decline in the educational attainment of recruits. As Murray Feshbach has noted, "only 42.6% of new conscripts for the Russian Navy in 2004 had complete secondary education or higher. This is less than half of the 97% of Navy conscripts in 1986 with such education."[35] Because of the Russian Federation's ethnic differentials in fertility and socio-economic status, staffing the Russian defense forces with a requisite number of warm bodies may pose unexpected additional difficulties. In the fall 2008 cycle of the Russian draft, for example, as many as a third of prospective recruits reportedly were expected to be Chechens.[36] That particular draft cycle may well have been anomalous, as Russian analysts argued at the time. However, the relatively low fertility of Russia's ethnic Russians, in conjunction with the relatively high fertility of Russian's historically Muslim communities, suggests that the shifting demographic composition of Russia's armed forces may pose increasing cohesion issues for commanders and policymakers in the years to come.

Beyond the question of military manpower, Russia's defense potential today is compromised by the country's crisis in higher education and tertiary technical training. Evidently, the same poor performance in knowledge creation reflected in Russia's international patent awards and applications can also be seen in the defense sector's R&D efforts today.

In a modern world where military capabilities are being constantly altered by a rapidly changing technological frontier, post-Communist Russia's armaments industries have not been knowledge-driven innovators. Instead, Russia's defense sector today appears largely to be living off previously accumulated intellectual capital. A study prepared for Sweden's Ministry of Defense in 2008 described the scientific-technological problems of the Russian defense industries this way:

> The Products that are made and developed today are with few exceptions of Soviet design. In many areas…the products are often as good as, or better than, their Western counterparts, but this is only thanks to the technological heritage from the Soviet defense industry….Russian R&D is characterized by an aging body of researchers and a lack of access to modern equipment….The Russian military… is not likely by its own efforts to produce all the weapons and materials systems necessary to allow the Armed Forces to conduct modern warfare. If the capacity

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33 Birth totals in Russia have recovered appreciably since 1999. In 2008, about 888,000 baby boys were born. That total, however, is still 14% below the 1990 level, and for reasons already outlined in this study, there is good reason to expect birth totals to decline again in the years ahead.

34 Extending the duration of service under the draft would likely be unpopular politically and would also force a reduction in the numbers of young Russians in higher education. Reducing the quality of the inductee pool would be problematic for reasons that are self-evident.

35 Feshbach, "Russian Military," 132–33.

36 Paul Goble, "Ethnic Chechens Could Form One-Third of Russian Draftees This Fall," Window On Eurasia, August 1, 2008, http://windowoneurasia.blogspot.com/2008/08/window-on-eurasia-ethnic-chechens-could.html.

> for research, development and production is not considerably improved, the defense industrial complex will find it increasingly hard to support great power ambitions in the long run, possibly already in the next ten years.[37]

Russia's armaments face an international market test, since Russia remains one of the world's major arms exporters. There are signs that Russian products have been gradually losing their technological edge here. Of particular portent are developments in military commerce with China. As two well-informed Western specialists recently noted,

> After years of importing Russian military technology, the Chinese have replicated not only Russian automatic rifles and rocket launchers but also SU-27S fighters. China has, therefore, reduced its imports of Russian military technology and even exports its own versions to traditional Russian clients such as Angola, Ethiopia and Syria.[38]

Unlike China, whose national leadership seems committed to a military modernization which will place the country near the forefront of the global "revolution in military affairs" in the coming decades, Russia increasingly seems to be preparing to fight 21st century wars with 20th century technology.

Finally, a country's defense potential depends directly on its economic potential. From an international perspective, the Russian Federation appears to be a country facing a relative economic decline. This much may be seen from estimates of its PPP-adjusted GDP. By the reckoning of the World Bank, in 1992—Russia's first year of post-Communist independence—the Russian Federation accounted for about 4.1% of the globe's total economic output. In 2008—despite a decade of rapid resource-fueled growth—Russia's share of world output had fallen to 3.3%. In 1992, Russia's and China's GDPs were roughly equal in size. By 2008, China's GDP was over three times larger than Russia's. For all the talk (not least from the Kremlin) about U.S. economic decline, the Russian Federation's estimated GDP was actually smaller in relation to that of the United States in 2008 (16%) than it had been in 1992 (18%).[39] Given the demographic constraints on prospective economic performance that have already been detailed in this study, there is reason to imagine that Russia's relative economic decline could continue in the decades immediately ahead—not only in global terms but also by comparison with Moscow's most important designated competitors.

Russia's brief war with Georgia in August 2008 was taken by many, including some in the Kremlin, to be a sign that Russia was once again militarily resurgent after an initial period of post-Soviet weakness. That military contest against Georgia, a tiny neighbor with barely 20,000 men under arms,[40] hardly qualified as a test of great power capabilities, much less global reach. Russia's military dreams are on a collision course with demographic realities. In the years ahead (as the China-born Stepashin quoted above appears to understand very well), those realities may increasingly limit the Russian Federation's ability to exert international influence through military potential.

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37 Jan Leijonhielm et al., *Russian Military Capability in a Ten Year Perspective: Ambitions and Challenges in 2008* (Stockholm: Swedish Defense Research Agency, 2009), 24–25.

38 Anders Åslund and Andrew Kuchins, *The Russia Balance Sheet* (Washington: Peterson Institute for International Economics and the Center for Strategic and International Studies, 2009), 132.

39 Calculations are for PPP-adjusted GDP in 2005 constant international dollars, derived from the World Bank's World Development Indicators, available at http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers&userid=1&queryId=6.

40 IISS, *Military Balance 2008*, *loc*, 176.

Implications for International Security

In the Russian Imperial era, in the words of historian Vasily Kliuchevsky, "the state expand[ed], the people [grew] sickly."[41] In the modern era, however, Moscow's opportunities for extending its influence internationally will be constrained precisely because of the debilitation and decline of its population.

Throughout the Putin era, the potential security risks to Russia from the ongoing demographic crisis have been on the minds of the country's top leadership. In his first State of the Nation Address to the Federal Assembly (Duma) in July 2000, Putin declared that "year by year, we, the citizens of Russia, are getting fewer and fewer….We face the threat of becoming a senile nation."[42] In his 2006 address, Putin identified "the demographic problem" as "the most acute problem facing our country today."[43] In President Medvedev's May 2009 National Security Strategy to 2020, the country's demographic situation is explicitly specified as one of the "new security challenges" with which the country must deal in the years immediately ahead.[44] Plainly, the potential domestic repercussions of population decline, steep sub-replacement fertility, catastrophic mortality levels, pronounced population aging, and the emptying of the Russian Far East are by no means lost on the country's current directorate.

Yet there is another international security aspect to Russia's demographic crisis that has to date gone largely unexamined. Russia's looming population trends may make for problems not only for Russia but also from Russia. It is possible, in other words, that Russia's demographic decline could prompt the Russian Federation to become a more unpredictable, even menacing, state actor upon the world stage.

A foretaste of things to come has already been in plain sight for almost a decade, in the Russian Federation's "National Security Concept" of 2000.[45] In that document (the first significant policy directive of the Putin presidency), Moscow indicated that it might lower the threshold at which it might consider use of nuclear weapons in international crises, given the relative decline of the country's conventional military forces. By that thinking, Russia's relative decline economically and demographically has made the country's possession of nuclear options, and potential exercise of coercive nuclear diplomacy, all the more imperative.[46]

The Russian Federation is already in the practice of incorporating dark nuclear threats into its international diplomatic repertoire. In 2008, in response to the decisions by the Czech Republic to station tracking sites and by Poland to station interceptor missiles in a US-sponsored missile defense system trained against Iran, the deputy chief of staff of Russia's armed forces warned that "Poland by deploying [the system] is exposing itself to a strike—100%."[47] President Medvedev went

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41 Cited in Anders Åslund and Andrew Kuchins, *The Russia Balance Sheet* (Washington: Peterson Institute for International Economics and the Center for Strategic and International Studies, 2009), 12.

42 "Dire Demographic Trends Cast a Shadow on Russia's Future," RAND, Policy Brief, RB-5054, 2001, http://www.rand.org/pubs/research_briefs/RB5054/index1.html.

43 Vladimir V. Putin, "Annual Address to the Federal Assembly," May 10, 2006, http://eng.kremlin.ru/speeches/2006/05/10/1823_type70029type82912_105566.shtml.

44 For more details, see Tomislava Penkova, "Russia's New Security Doctrine: 'Security through Stable Development,'" ISPI Policy Briefs (Milan), no. 144, June 2009, http://www.ispionline.it/it/documents/PB_144_2009.pdf.

45 See Stephen J. Blank, *Threats To Russian Security: The View From Moscow* (Carlisle: Strategic Studies Institute, 2000), http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?PubID=135.

46 Such thinking, incidentally, can help to explain Moscow's current focus on an "arms control agenda" with the new Obama administration in Washington. Absent its nuclear arsenal, Russia today would be just another aspiring middle-rank developing country, with a population and GDP not so different from Mexico or Brazil.

47 Nico Hines, "Russian General Says Poland Open to Nuclear Strike," *Times Online*, August 15, 2008, http://www.timesonline.co.uk/tol/news/world/europe/article4541613.ece.

even further, announcing in his first state of the nation address that a Russian short-range nuclear missile battery would be deployed to Kaliningrad, on the Polish border. He stated that these missiles would be targeting both Poland and the Czech Republic "to neutralize, when necessary, the missile shield."[48] In the end, a showdown was averted when the Obama administration agreed to redraw its missile defense plan so that Poland and the Czech Republic were not involved. However this concession was seen in Moscow as a victory for the Kremlin's nuclear diplomacy, an outcome that can only encourage more of the same in the future.

Moscow's proclivity to use nuclear threats to achieve international security objectives should not be regarded as an aberration for Russian Federation external policy in the Putin era. It would be more accurate to see this as part of a continuum of coercive or unilateral measures that the Kremlin is prepared to use (or threaten to use) against foreign governments in pursuit of what Moscow regards as its own legitimate international security concerns. In recent years, in addition to its invasion of Georgia and seizure of contested Georgian territory, Moscow has unleashed a campaign of cyber-warfare against Estonia[49] and has brandished its "energy weapon" against Ukraine by shutting off gas supplies to that country in mid-winter during a bilateral controversy over Russia's gas pricing policies.[50] Russian leadership, in short, does not believe it must be routinely limited to consensual negotiations for the settlement of international disputes. Rather, it holds that it is within the state's purview to bring to bear all tools at its disposal to advance the national interest.

If Russia's leaders are disposed to rely on such unconventional (or, put another way, classically realpolitik) threats when they perceive their state as on an ascendant course, what can be expected if and when they perceive Russia as in decline and thus endangered by international developments?

Russia's foremost leaders are enthusiastic subscribers to the doctrine of multipolarity, which holds that the international system should move away from its current unipolar (that is, U.S.-dominated) format toward an arrangement where global power is held more equally (meaning more global say for Russia). The engine that will pull the world into this new era of multipolarity, in Moscow's view, is economic growth, which will favor some states and not others in the decades ahead. As President Putin explained in his 2007 *Wehrkunde* speech, "there is no reason to doubt that the new centers of global economic growth will inevitably be converted into political influence."[51]

Putin's argument, however, cuts both ways. If Russia's relative economic position declines in the coming decades, especially in relation to the countries Russia regards as would-be competitors, Russia's political influence would stand to be correspondingly diminished. In such a future, all other things being equal, Moscow would have less—not more—say than today over international issues and developments in its own traditional spheres of influence. To a national directorate that views the global stage as an essentially unfriendly arena for a merciless competition between mutually hostile states, such a future prospect could only seem threatening, if not positively alarming.

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48 Ellen Barry and Sonia Kishkovsky, "Russia May Deploy Missiles to Baltic, Medvedev Says," *New York Times,* November 5, 2008, http://www.nytimes.com/2008/11/05/world/europe/05iht-russia.2.17547621.html?scp=1&sq=medvedev%20kaliningrad&st=cse.

49 "Estonia Hit by 'Moscow Cyber War,'" *BBC News*, May 17, 2007, http://news.bbc.co.uk/2/hi/europe/6665145.stm.

50 "Russia Cuts Off Gas Supply to Ukraine," *International Herald Tribune*, January 1, 2006, http://www.nytimes.com/2006/01/01/world/europe/01iht-web.0101gas.html .

51 Åslund and Kutchins, *The Russia Balance Sheet*, 118.

Russia's demographic crisis, as this study has shown, places unforgiving limits on the country's economic prospects. It is weighing the country heavily toward a prolonged relative decline for the Russian Federation.[52] Yet for now, the Kremlin still evidently believes that its ambitious long-term socio-economic plans will not only remedy the country's demographic woes but also propel the Russian Federation into the select ranks of the world's economic superpowers. If Russia's demographic and relative economic decline do continue over the next few decades, Moscow's leaders will be in the unpleasant position of awakening from an illusion. They will suddenly realize that their long-term strategy is unworkable and that they face a much more unfavorable international situation than they had imagined.

What can we expect of Russia's external behavior when the Kremlin's lofty ambitions are eventually confronted by inescapable demographic facts, with their attendant consequences for Russian power? Will a suddenly disillusioned Russian leadership conclude that urgent new measures are needed to defend the country from foreign threats? Will the national directorate become more risk-averse in its international policies, or less so? Will it be tempted to embrace a more unfriendly, aggressive international posture? Not least of all, will Russian leaders become more prone to making international miscalculations?

None of these questions, of course, can be answered today. All of these questions, however, point toward a single conclusion, namely, that one of the most worrisome consequences of the Russian demographic crisis might turn out to be its impact on the foreign and security policies of the country's own leadership.

What Is to Be Done?

As we have by now seen, the Russian Federation's present peacetime demographic crisis is a problem monumental in scope and truly historic in nature. This is not the place or time to offer an action plan for its redress. Rather, by way of conclusion, we may emphasize that the manifold woes the crisis imposes on the Russian people today will not be remedied without a commensurately monumental and historical national-wide effort by the Russians themselves to move their society toward a different and much better future. In this sense, the task at hand is nothing less than a fundamental change of mentality.

Alexander Solzhenitsyn—modern Russia's greatest writer and most inspiring champion of the human spirit—once observed:

> Patriotism is an integral and persistent feeling of love for one's homeland, with a willingness to make sacrifices for her, but not to serve her unquestioningly, not to support her unjust claims, rather to frankly assess her faults, her transgressions, and to repent for these….A multinational country must rely in difficult moments of history upon the support of *all* of its citizens. Every one of its peoples must live with the conviction that it, too, desperately needs a singular defense of the interests of the [motherland].[53]

By this definition, the struggle to extricate Russia from its current demographic travails is nothing less than a patriotic task. Indeed, joining in this struggle may be the most pressing of the

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[52] This is not to say that the demographic crisis precludes economic growth in Russia. The Russian Federation may well enjoy a measure of economic growth in the decades ahead. Rather, it is to suggest that in relative terms Russian GDP may lag ever further behind the world's leading economic powers in the decades ahead, due in large part to the multifaceted crisis of human resources besetting the Russian Federation.

[53] Alexander Solzhenitsyn, "Russia in Collapse," in *The Solzhenitsyn Reader: New And Essential Writings, 1947–2008*, eds. Edward E. Ericson, Jr., and Daniel J. Mahoney (Wilmington: ISI Books, 2008): 473–74.

many challenges facing every Russian patriot today. Just as patriotism has a spiritual as well as a political element, any successful movement for a Russian demographic renaissance will likely be conducted beyond the narrow political sphere alone.

Foreign well-wishers can contribute far less than Russians themselves to the mitigation of this peacetime demographic crisis. That should hardly surprise. Nonetheless, the international community can most assuredly also be of assistance in this hour of need for the Russian people. The humanitarian imperative impels us to try to mitigate modern Russia's suffering, and there are diverse avenues through which international humanitarian assistance (and technical support) could be of help in Russia today.

The outside world's role in restoring Russia to health could and should extend much further than simply changing bandages on wounds. A healthy, robust Russia—one in which human resources are prized and augmented—is not just in the interest of the Russian people. It is in the interest of the world as a whole. Recognition of this critical fact should inform the international community's broader approach to Russia—not only today but in what we may hope will be better times to come.

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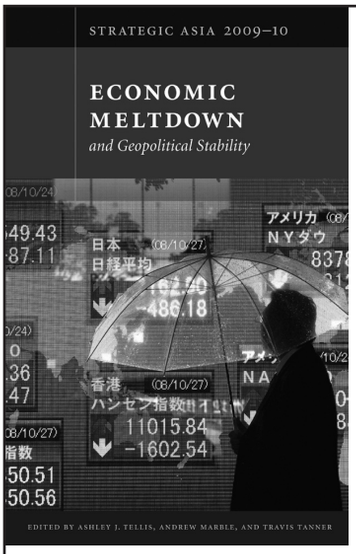

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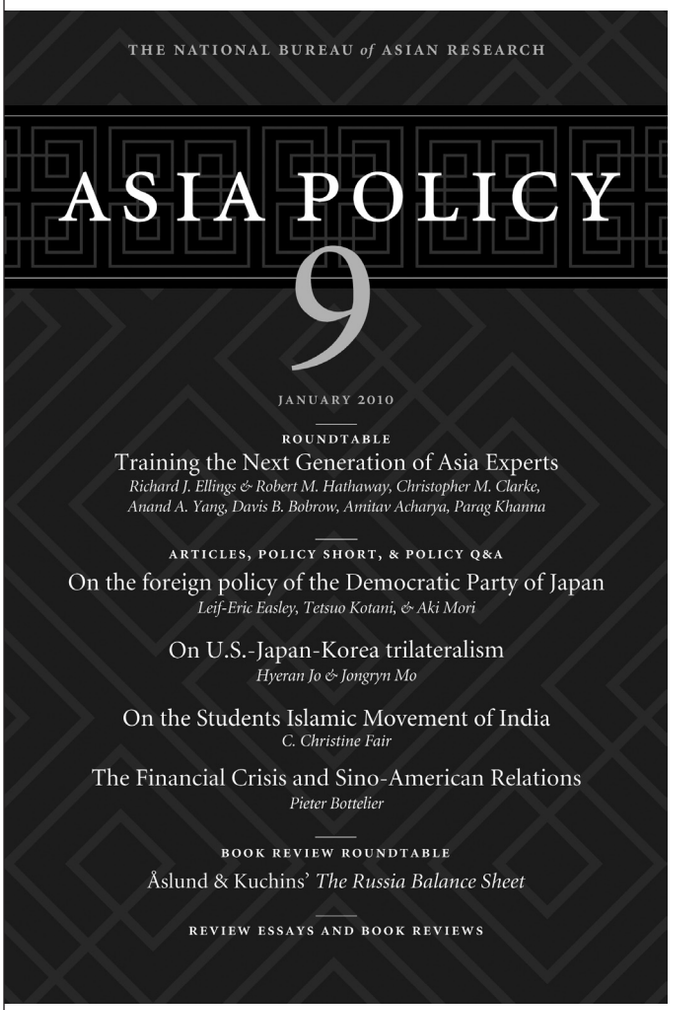

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