The Future of Work in Russia:

Population Projections and the Labor Force

Dennis Donahue

Prepared for presentation to the

Population Association of America Annual Meetings

April 1-3, 2004, Boston, MA

Session 116: Demography of the Labor Force

Last Modified: March 1, 2004

Introduction

Demographic and economic trends in Russia are interesting not only because of the disproportionate influence Russia continues to have in world affairs, but because of the extreme nature of these trends both before and after the breakup of the Soviet Union. Trends affecting the working-age population, in particular, are often the focus of debate because changes for this group have a disproportionate influence on the overall economic and demographic welfare of society. As such, policymakers in Russia need to carefully consider not only the past, but the likely future trends for the working-age population, because Russia's recovering economy remains fragile and allows little margin for error. Furthermore, forecasts of the Russian Federation's working-age population are complicated by demographic, economic, and administrative factors. Foremost among these are Russia's somewhat erratic transition from a centrally-planned system to a market economy, inconsistencies in how labor statistics were reported during the transition, the disproportionate size and dynamic legal status of the informal economy, and the unique, and in many aspects peculiar, age distribution of the Russian population. As such, the focus of this paper is on the less abstruse demographic trends that bear directly on the labor market itself.

This paper begins with a brief overview of the rapid demographic and economic changes shaping Russia's labor force since the population census in 1989. The review leads into a focus on the changes that are projected to take place in the size and composition of the labor force between now and the year 2050. I conclude with a discussion of the impact these trends will have on Russia's economic, social, and political sphere. In many respects, Russia provides an extreme example of the demographic

problems most nations will be faced with as this century unfolds, particularly for those countries with a rapidly aging labor force or those facing a decline in the absolute size of their working-age population. The possible solutions and coping mechanisms attempted here will be a useful test case for other populations soon to be facing similar problems. Just as Russia was the setting for a grand social experiment in planned economies at the beginning, and served as a playground for free market theorists at the close of the 20th century, Russia is once again (albeit reluctantly) in the forefront of the momentous population changes facing the world as this century opens.

The demographic situation in Russia also continues to be a hot topic in the political arena. In his 2003 Presidential Address to the Russian Federation, two of the topics Vladimir Putin stressed were 1) dealing with Russia's "demographic degradation" problem and 2) a new economic plan focused on doubling Russia's gross domestic product (GDP) by the year 2010. While these two topics are often addressed separately, one of the goals of this paper is to show how strongly they are linked. Auspiciously, the age structure of the Russian population is such that the number of people in their working ages is expected to be the same in 2010 as it was in the year 2000, even while the absolute size of the total population is shrinking (see Summary Table 1 in the Appendix). This fortuitous set of demographic circumstances means that Putin's goals for economic growth over the next decade are unlikely to be actively hindered by the size of the labor force itself. However, demographic trends will catch up quickly as Russia's Baby Boom population approaches retirement age, and the reality of a rapidly shrinking working-age population will seriously impair Russia's ability to maintain positive economic growth as the century progresses.

The Transition Period, 1989 to 2002

The year 1989 serves as a convenient starting point for demographic analyses of the former Soviet Union because that was the year of the last All-Soviet Population Census. Technically, until the formal dissolution of the Soviet Union on December 31, 1991, labor resources in Russia were allocated via central planning, not markets (see Satre Ahlander, 2001). Effectively, however, the landslide election of Boris Yeltsin in March of 1989, the growing influence of *Perestroika* (economic restructuring), the fall of the Berlin Wall, and all the other tumultuous political and economic events of 1989 make that year the effective beginning of independent Russia. Unfortunately, the administrative reality of the transition meant that many key labor force statistics were not collected and reported until 1992.

Pension and Retirement Provisions

One of the biggest problems facing policymakers in Russia today is the legacy of the Soviet labor system and the social guarantees made to workers that Russia is obligated to honor. The retirement system provides a relatively clear example of a disjoint between policy and reality. The official working ages during the Soviet period were 16 to 60 for men and 16 to 55 for women. When pension policies were first being formulated in the 1920s, mostly out of concern for those injured or disabled during the recently concluded World War and the Revolution, retirement at those ages was both reasonable and fiscally feasible (Buckley and Donahue, 2000).

Much like Social Security in the United States, retirement pensions are seen as a near-sacred social contract that even Soviet politicians were wary of breaking, much less

post-Soviet politicians facing democratic elections. Two major factors further limit the likelihood that a substantial increase in the retirement age will be forthcoming. First, life expectancy has continued to worsen, particularly for men in their prime working years. In fact, when the Minister of Labor and Social Development, Aleksandr Pochinok, was asked in an interview about potential changes to the pension system, he replied, "This threshold cannot be raised while a man in Russia lives an average of 59.7 years," (Sukhova, 2002). This is a somewhat spurious argument, given that women in Russia have life expectancies more than 13 years greater than men, but are allowed to retire five years earlier. The other major factor limiting the ability of policymakers to increase the retirement age is unemployment. In the short run, an increase in the retirement age would reduce job openings for new entrants to the labor force and lead to an increase in the unemployment rate.

Unemployment

The collection of unemployment statistics provides a prime example of the administrative difficulties of data collection during the transition period. Unemployment was an ideological impossibility during the Soviet period, and the agency responsible for employment figures, *sluzhba zanyatosti,* was slow to recognize even the existence of unemployment (Fullsack, 2001; Standing, 1999). Most labor experts predicted that unemployment would skyrocket in the early 1990s as tens of millions of factory workers would be laid off and millions more would become unemployed due to the friction of restructuring (Samodorov, 1992). Instead, unemployment remained surprisingly low through the mid 1990s and never *officially* approached the rates many had predicted

(Standing, 1999). Although some of this difference can be attributed to underreporting of unemployment, much of the surprisingly low rate is due to the organizational structure of the Soviet labor system.

The Soviet goal of full employment persists, through a peculiar patriarchal attitude among managers toward their workers (Samorodov, 1992). Managers under the Soviet system often wielded power far beyond the realm of the workplace. Given that managers were usually highly placed within the political hierarchy, or at least had influence through friends and relatives in such positions, their position was also one of civil authority. Political influence could be used to requisition housing, automobiles, and other state-controlled goods for valuable employees (Burawoy and Lukacs, 1992). While workers were promised employment and a minimal standard of living, they often had little choice about their place of employment, and life without a supportive manager could be very difficult because, even shortly prior to the fall of the Soviet Union, money was not necessarily the primary unit of exchange (Rose and McAllister, 1996). Thane Gustafson (1999, p.23) writes, "In effect, three currencies circulated in the Soviet economy – money, power, and connections. The price of any given object was a blend of the three." Despite the power differentials, the relationship between management and workers was usually friendly and cooperative, and the workplace often took on a familial or communal character (see Burawoy and Lukacs, 1992; Conner, 1988).

In essence, the family, workplace, and civil society became so integrated (and this integration was a conscious goal of the communist regime) that enterprise managers, and others in positions of power, began to feel a natural sense of responsibility for the workers under them. So, when hyperinflation, major disruptions in supply chains, and

widespread bankruptcy swept across Russia in 1992 and 1993, very few factories closed their doors or laid off their employees (Connor, 2000). Instead, employers, much like many regional and local governments, began maintaining very large arrears in wages and sometimes resorted to paying their employees with the goods produced by the factory (for example, an employee could receive several months wages in the form of tractor parts). Employees stayed despite the hardship, partly because of the communal nature of the work environment, partly because they hoped their employers would eventually make good on their promises, but mostly because they knew there was nothing better available.

It is not too surprising, then, that unemployment has not followed the *rational* course predicted by most experts, particularly those who were early proponents of shock therapy. Unemployment holds a unique position as one of the only characteristics of the Russian economy that did not get *as bad* as predicted (most other socioeconomic indicators, such as poverty, got worse). Table 1 presents official unemployment statistics for males and females from the year 1992 through the year 2002. Unemployment did not begin climbing until the mid-1990s and peaked for both men and women in 1998, during the height of Russia's fiscal crisis. It has since declined steadily to 9.0 percent for men and 8.1 percent for women in 2002. Preliminary figures for 2003 suggest that unemployment may have risen slightly in the last year, but official numbers will not be available for several months. The official unemployment rate for females is consistently lower than that for males. It should be noted that most experts, as well as senior officials from Goskomstat, concur that unemployment is higher than these numbers indicate because one of the conditions to be considered "looking for work" is to be registered with the state employment exchange, which is often inconvenient and time-consuming

(Standing, 1999). As such, a large segment of the population that is defined as "not in the labor force" both seek and engage in economic activity outside the bounds of the formal economy (often referred to as the *black market* or the *informal economy*; see Fullsack, 2001; Connor, 2000).

The Economically Active Population

As a general rule, the terms *labor force* and the *economically active population* are used interchangeably in most venues. Technically, however, there are some minor differences. The International Labor Organization (ILO) defines the economically active population as "all persons of either sex who furnish the supply of labour for the production of economic goods and services as defined by the United Nations sytems of national accounts and balances during a specified time-reference period" (Farooq, 1992). The labor force, by contrast, includes those people in the official working ages that are economically active (16-54 for women and 16-59 for men), which excludes people younger or older than the accepted age limits for the formal workforce. Russia's statistical agency compromises by collecting statistics in compliance with ILO standards, but also collects data on the *potential labor force*, including all people between the ages of 15 and 72.

An examination of labor force participation rates for men and women provides some explanation for the surprisingly low unemployment rates overall, but not for the difference between males and females. As Figure 1 indicates, labor force participation rates for men in 1992 were very high, with rates above 90 percent in the prime working ages (ages 25 through 50), with a pattern and level similar to that seen in the United

States and Western Europe. It is often surprising to non-Russian scholars that female labor force participation in 1992 was nearly as high as that for males, with rates again surpassing 90 percent for women in their thirties and forties. By comparison, the labor force participation rates for females in the United States for the same ages ranged around 70 to 75 percent throughout the 1990s (U.S. Census Bureau, 2002). Overall, there was a great deal of equality between the genders, at least in terms of labor, during the Soviet period. In fact, many policies originally intended to promote population growth, such as day care and maternity leave programs had the unexpected benefit of encouraging female labor force participation (Satre Ahlander, 2001).

By 1998, the year that official unemployment peaked, the labor force participation rates for all groups dropped drastically. What is not clear from these statistics is why by 1998 a number of people left the active labor force. Was it because they were discouraged, went back to school, or found employment in the informal economy? Then again, reported labor force participation rates for 2002 (not shown) indicate a return to nearly the same levels as 1992, even with unemployment still at 8 to 9 percent (Goskomstat, 2003b). For the projection period, it seems safe to assume that participation rates will remain reasonably stable at the 2002 levels. One unlikely possibility is an increase in participation among the older population, if policymakers somehow manage to raise the retirement age. Even so, poor male health and low life expectancy will minimize whatever effect such a policy change might make. Similarly, pro-natalist policies and other programs that might influence women's work have not substantially reduced female labor force participation, either during the Soviet period or since the breakup.

Trends In Education

The educational structure in Russia is similar to the standard for most industrialized nations, with a few important distinctions. Russian children begin school at the age of seven and the typical primary education lasts eight years. Prior to the 1970s, this often marked the completion of their formal education. Some students then attend a low-level vocational school (PTU or FZU) while others (often the well-connected or highly promising students) would go on to a two-year, academic track secondary education. It was not until the middle to late 1970s that a two-year secondary education became the norm. However, most of the growth in secondary education was in technical schools rather than academic institutions (Gerber and Hout, 1995). These students are likely to go directly into the labor market rather than into higher education. Thus, although the number of college graduates in Russia continued to grow, the rate of growth was slower than in other industrial states.

In Figure 2, the educational categories are listed in the rank order of relative attainment. As this figure shows, women tend to have greater educational attainment than men, with a higher proportion completing both the general secondary education and higher education. The largest category for men is the secondary technical education, with over 35 percent of men holding that educational attainment level. By 1998, both men and women with a higher education (college degree) made up larger percentages of the economically active population than they had in 1992. The proportion of both men and women with only a primary education declined by nearly 5 percent. Enrollment and graduation rates at institutions of higher education show that the trend toward increasing

levels of educational attainment continued at least through 2002 (see Goskomstat, 2003a).

Migration — The Myth of the Brain Drain

One of the commonly accepted explanations for why unemployment did not rise as high as some predicted was because people who could not find work shortly migrated out of Russia. However, as many researchers have pointed out in recent years, the phenomenon popularly known as "The Brain Drain" was largely a myth (for example, see Heleniak, 2001). That is, although it is true that many would be workers (and their families) emigrated from Russia during the early to mid 1990s, at the same time there was an even larger wave of immigrants to Russia, consisting predominately of ethnic Russians repatriating from other states of the former Soviet Union.

Between 1989 and 2002 Russia had a net gain of over five and a half million migrants (Goskomstat, 2004), which made up for a significant fraction of the seven and a half million people lost through natural population loss (i.e., births minus deaths). While it is true that the eight million estimated emigrants from Russia during this time period took with them valuable skills and education, the more than thirteen million immigrants arriving in Russia during the same time period also tended to have relatively high levels of human capital. Yergin and Gustafson (1999) point out that Russia has been going through a triple transition, though only the political and economic transitions get much attention. The transition that is relevant to this discussion is the move from an empire to a nation state.

Many of the member states of the former Soviet Union had been part of the Russian Empire long before the Bolshevik Revolution. This relationship continued during the Soviet period, and native Russians held many of the top bureaucratic, technical, and managerial positions throughout the U.S.S.R., particularly in Central Asia and the Baltic states. Not surprisingly, the dissolution of the Soviet Union left many of them in positions that were no longer prestigious or well paid, and often facing an environment hostile to the perceived representatives of a former colonial power. Net migration to Russia is graphed in Figure 3a and 3b for 1992, 1995, 1998, and 2001, for men and women respectively. Not every year is shown in the graph for ease of presentation. The pattern for net female migration is similar to that for male, but the average age is slightly older. Overall, migration trends throughout the 1990s were beneficial to the Russian labor market as a whole. Preliminary results from the 2002 Russian Population Census suggest that migration trends within the federation were less beneficial, with large areas of the Russian Far East being virtually deserted by the able-bodied population. Meanwhile, popular migration destinations like Moscow have far more workers than are needed. For a full discussion of internal migration in Russia and its potential regional impact see the article by Heleniak in *Demokratizatsiya* (2001) – the focus of this paper is on national level trends.

Working-age Mortality and Declining Life Expectancy

One of the more widely discussed demographic trends in the Russian Federation is mortality, and it also bears directly on the size and composition of the labor force. Rising mortality rates are a major concern to demographers and policymakers,

particularly for men in their working ages who continue to drink and smoke extremely heavily despite recent public education efforts. To paraphrase the Russian Minister of Labor and Social Development quoted earlier, with a life expectancy at birth under 60 years, the average Russian male is not expected to survive to retirement age. Mortality worsened for women as well, especially during the mid-1990s, but not nearly to the degree that it has for men. Figure 4 graphs estimated mortality rates for the working-age population in the years 1989, 1994, 2002, and 2010 (projected). I chose to graph only the working-age mortality pattern both to clarify the trends relevant to this paper, and to highlight that area where most of the change in mortality has taken place. The Y-axis is in log scale, so the change between 1989 and 1994 may not appear to be substantial, but the mortality rate for males more than doubled for some age groups. Mortality rates have declined through 2002, but had not yet returned to 1989 levels. Surprisingly, the relative change in mortality rates was almost as great for women over the same time period, but the absolute level of female mortality started at such a lower level that the change was not as consequential as it was for men. We have already seen some improvements in the mortality rates since the peak and it is expected that this gradual improvement will continue.

Population Projections and the Labor Force

Population projections for the total population of Russia were constructed using cohort component methods and RUP software developed by the International Programs Center of the U.S. Census Bureau (Arriaga, 1994). The projections in this paper utilize single-year age data from the 1989 census and age-specific mortality, fertility, and

migration statistics published by Russia's national statistical agencies. The mathematics of population projection are not overly complex, but the sheer number and interconnectedness of the computations involved in these projections, particularly when each of the demographic components is further detailed by age groups, make it impossible to review all of the stages here. A much-simplified outline of the process is as follows: starting with the baseline year, current fertility, mortality, and migration rates are applied to the present population (separately for sex and by each age category). These calculations provide us with a projected population for the following year, baseline *plus 1*. Then the process starts over again, with *baseline plus 1* rate applied to the *baseline plus 1* population. These calculations are repeated iteratively through the last year of the projection period, the year 2050 in this case. For projection years (i.e., future years for which we do not yet have empirical data on demographic trends) we fit trend lines interpolating between available data and an assumed future pattern of fertility, mortality, or migration.

The working-age population used in this paper is a subset of the total population data generated in the projections. Officially, the working-age population in Russia is defined as all males between the ages of 16 and 59, and all females between the ages of 16 and 54. Due to high rates of participation in the labor force among the older population, statistical agencies in Russia adopt an operational definition of the working-age population as everyone between the ages of 15 and 72 (references to the potential labor force usually mean this age range). The labor force itself is defined as any individual engaged in productive work for pay, or seeking such work, regardless of their age.

The easiest way to view the demographic changes that have taken place in Russia since 1992, and are projected to take place through the year 2050, is through population pyramids. The population pyramids in Figure 5 are for the following years: 1989, the date of the last Soviet Census and the baseline year for these projections; 2002, the year of the most recent population census in Russia; 2010, the year Russian politicians often state as the time by which they expect to achieve social or economic goals (e.g., Putin's plan to double the GDP by 2010); and 2050, the last year of the projection period. In each of the pyramids in Figure 5, males are on the left and colored red, while women are on the right and colored blue. The working-age population is shaded green to highlight the often-rapid pace of population movement into and out of the labor force, due to the unusual age distribution in Russia.

The 1989 population pyramid provides a clear historical record of the series of demographic catastrophes that hit the Russian population during the 20th century. The influence of World War I and the revolution of 1917 are evident in the small cohorts of men and women at about age 72. The next catastrophe was the dual punches of famine and Stalinist purges in the 1930s, when malnutrition and fear sharply curtailed birth rates. The smaller cohorts of childbearing-age adults born a generation earlier further reduced the total number of births in this time period. The largest demographic shock to the Russian population was World War II. Not only was fertility down sharply throughout the war, but also almost the entire population of males born during and after the first World War was conscripted into the army, where they suffered horrendous losses. There were no further demographic upheavals until the breakup of the Soviet Union, but the

ripples or aftershocks can still clearly be seen in the small cohort of men and women in their early twenties in 1989.

The next big demographic change was the abrupt drop in fertility following the dissolution of the Soviet Union, as can be seen in the pyramid for 2002. These estimates and projections were conducted prior to the release of official census results from the 2002 Russian Population Census. The IPC estimates for the total Russian population in 2002 is within 0.17 percent of the official census enumeration, or about 240,000 lower than the 145 million official tally. Analysis by sex and age groups show the estimates to be within a few percentage points for each group.

In 2002 it is also clear what the immediate future will bring for the labor force population. The small World War II cohort is at or near retirement, meaning there will be far fewer workers leaving the labor force than in the recent past. At the same time, larger cohorts of men and women born prior to the breakup will be entering the labor force. Summary Table 1 in the appendix shows that the absolute size of the working-age population is expected to climb to a peak of nearly 90.5 million people in the year 2006, then the number of potential workers will shrink at a rapid pace for the foreseeable future. So, while Putin's goal to double the GDP by 2010 is not likely to be hampered by labor shortages, whatever gains made in the economy will be very difficult to maintain, barring huge increases in worker productivity or a very large influx of labor migrants.

Large increases in productivity are unlikely for Russia, given the population's already high level of human capital (see Figure 2, educational attainment). There were a substantial number of people who chose to further their education during the early years of the transition, often at the post-secondary level, but also through individual

professionalization courses (computer courses and technical trades) and language schools (primarily for English). Nevertheless, Russia already had near-universal literacy and a general education was the norm by the time of the breakup, so the kinds of returns to education we see in many developing economies are unlikely to be replicated here. Some smaller returns to education are possible, but not likely at a rate to counteract the decline in the size of the working-age population.

The other option, labor force replacement through migration, continues to be a sensitive political topic – policymakers would like to see waves of Russians returning like they did throughout the 1990s, but the repatriation trend is over, and the people who do want to move to Russia are from ethnic groups that inflame deep-seated prejudices or intensify political and social tension (i.e., ethnic Muslims from Central Asia or Chinese migrants). Putin has recently made some conciliatory remarks about Chinese migration to the Far East, acknowledging that agricultural workers, at least, are badly needed. However, the political climate, racial intolerance, and the direct opposition of regional leaders in the Far East make it highly unlikely that *large* numbers of Asian migrants will be welcome.

Looking far into the future, at the population pyramid for the year 2050, it is clear that the pension system as it currently stands is unsustainable. The cohorts born around the time of the breakup will have retired, and our projections show there will be fewer and fewer working-age people to provide for them. Table 2 shows the youth, older population, and total dependency ratios for Russia at several points in time. The aging of the population in general is felt in the monotonically rising older population dependency ratio. The total dependency ratio, however, dropped between 1989 and 2002, and is

projected to decline further by 2010. After that, the total dependency ratio climbs rapidly, and by the year 2040 there will be nearly as many people outside as there are in the official working ages.

Conclusion

In this paper, historical trends and the legacy of Soviet economic and social policies were discussed as this review demonstrates that past population trends leave an indelible footprint on both the present composition of the population and on the likely course it will take in the future. The Russian labor force is currently balanced in a fortuitous set of demographic circumstances that serve to soften some of the impact of the transition to a free market and offer a short window of opportunity in the near future. Unfortunately, a rosy short-term future often leads policymakers to ignore problems that could be addressed most effectively while conditions are favorable. In this case, Russia, like most of the former Soviet states, desperately needs to reform its pension system and raise its retirement age to a level that is sustainable in the long term. Instead, the growing size of the labor force population may be deluding policymakers into believing that their policies are working and nothing further needs to be done. Monitoring the situation in the former Soviet Union closely can inform policymakers in other countries that are expecting population declines.

Bibliography:

Adams, Walter, and Brock, James W. 1993. *Adam Smith Goes to Moscow: A Dialogue on Radical Reform.* Princeton: Princeton University Press.

Arriaga, Eduardo. 1994. *Population Analysis with Microcomputers*. Washington D.C.: U.S. Census Bureau. See: http://www.census.gov/ipc/www/idbnew.html.

Buckley, Cynthia, and Donahue, Dennis. 2000. "Promises to Keep: Pension Provision in the Russian Federation." In *Russia's Torn Safety Nets: Health and Social Welfare during the Transition.* Mark Field and Judith Twigg, eds. New York: St. Martin's Press.

Burawoy, Michael, and Lukacs, Janos. 1992. *The Radiant Past.* Chicago: The University of Chicago Press.

Conner, Walter D. 2000. "New World of Work: Employment, Unemployment, and Adaptation." In *Russia's Torn Safety Nets: Health and Social Welfare during the Transition.* Mark Field and Judith Twigg, eds. New York: St. Martin's Press.

Farooq, Ghazi M., and Ofosu, Yaw. 1992. *Population, Labour Force and Employment: Concepts, Trends and Policy Issues*. Geneva: International Labour Office.

Fullsack, Manfred. 2001. "Official Figures and Unofficial Realities: Employment Rates and their Significance in Russia." *Europe-Asia Studies.* 53(4): 613-625.

Galitskii, Valerii. 2003. *Ekonomicheskaya aktivnost' naseleniya Rossii : po rezultatam vyborochnykh obsledovanii, 2002: statisticheskii sbornik*. Moscow: State Statistical Committee.

Gerber, Theodore P. 1999. "Educational Transitions in Post-War Russia: Effects of Demographics, Social Origins, and Politics" Annual Meetings of the Population Association of America. New York.

Gerber, Theodore P. and Michael Hout. 1995. "Educational Stratification in Russia During the Soviet Period." *American Journal of Sociology*. 101(3): 611-660.

Gokhberg, Leonid and Mindeli, Levan. 2000. *Qualified Manpower in Russia.* Moscow: Centre for Science Research and Statistics.

Goskomstat SSSR. 1990. *Demografisheskii Ezhegodnik SSSR, 1990* (Demographic Yearbook of the Soviet Union). Moscow: State Statistical Committee (Goskomstat).

_____. 1991. *Nekotorye pokazateli, kharakterizu´i`ushchie na´t`sional'nyi sostav naseleni´i`a Rossiiskoi Federa´t`sii: po dannym Vseso´i`uznoi perepisi*

naseleni´i`a 1989 goda (Some indices characterizing the national composition of the population in the Russian Federation: according to the Census 1989). Moscow: State Statistical Committee (Goskomstat).

Goskomstat Rossii. 1995. *Demograficheskiy yezhegodnik Rossii 1993* (The Demographic Yearbook of Russia 2002). Moscow: State Statistical Committee (Goskomstat).

_____. 1995. *Demograficheskiy yezhegodnik Rossii 1995* (The Demographic Yearbook of Russia 2002). Moscow: State Statistical Committee (Goskomstat).

_____. 1997. *Sotsialnoe Polozhenie i Uroven Zhizni Nasselenia Rossii, 1997*. Moscow: State Statistical Committee (Goskomstat).

_____. 1998. *Population of Russia: 1897 – 1997, Statistical Abstract*. Moscow: State Statistical Committee (Goskomstat).

_____. 1998. *Demograficheskiy yezhegodnik Rossii 1998* (The Demographic Yearbook of Russia 2002). Moscow: State Statistical Committee (Goskomstat).

_____. 1999. *Trud i Zanyatoct v Rossii*. Moscow: State Statistical Committee (Goskomstat).

_____. 2001. *Demograficheskiy yezhegodnik Rossii 2001* (The Demographic Yearbook of Russia 2002). Moscow: State Statistical Committee (Goskomstat).

_____. 2002a. *Demograficheskiy yezhegodnik Rossii 2002* (The Demographic Yearbook of Russia 2002). Moscow: State Statistical Committee (Goskomstat).

_____. 2002b. *Obsledovanie naseleniya po problemam zanyatosti, February 2003*. Moscow: State Statistical Committee (Goskomstat).

_____. 2002c. *Regiony Rossii* (Regions of Russia). Moscow: State Statistical Committee (Goskomstat).

_____. 2002d. *Sotsialnoe Polozhenie i Uroven Zhizni Nasselenia Rossii, 2002*. Moscow: State Statistical Committee (Goskomstat).

_____. 2002e. *Women and Men in Russia*. Moscow: State Statistical Committee (Goskomstat).

_____. 2003a. *Rossiya v tsifrakh: kratkiy statisticheskiy sbornik* (Russia in Figures: Short Statistical Handbook). Moscow: State Statistical Committee (Goskomstat).

_____. 2003b. *Statistical Bulletin No. 2 (95).* Moscow: State Statistical Committee (Goskomstat).

_____. 2004. “O predvaritel’nykh itogakh Vserossiyskoy perepisi naseleniya 2002 goda” (Preliminary Results of the 2002 Russian Population Census), <http://www.gks.ru/PEREPIS/itog.htm> (last accessed January 14, 2004).

Gustafson, Than. 1999. *Capitalism Russian-Style*. Cambridge: University Press.

Heleniak, Timothy. 2001a. "Migration and Restructuring in Post-Soviet Russia," *Demokratizatsiya*, Fall, pp. 531-549.

_____. 2001b. “Demographic Change in the Russian Far East”, Chapter 7 in *The Russian Far East: Prospects for the New Millennium*, edited by Michael Bradshaw. Richmond: Curzon Press, pp. 127-153.

Klugman, Jeni. 1997. *Poverty in Russia: Public Policy and Private Responses.* Washington D.C.: The World Bank.

Rose, Richard and McAllister, Ian. 1996. "Is Money the Measure of Welfare in Russia?" *Review of Income and Wealth* 42(1): 75-90.

Rosefielde, Steven, and Kuboniwa, Masaaki. 2003. “Russian Growth Retardation Then and Now.” *Eurasian Geography and Economics.* 44(2): 87-101.

Samorodov, Alexander T. 1992. "Transition, Poverty and Inequality in Russia." *International Labor Review*. 131(3): 335-353.

Satre Ahlander, Ann-Mari. 2001. “Women’s and Men’s Work in Transitional Russia: Legacies of the Soviet System” *Post-Soviet Affairs.* 17(1): 55-80.

Standing, Guy. 1999. *Russian Unemployment and Enterprise Restructuring: Reviving Dead Souls*. Geneva: ILO.

Smirnova, Natalia. 2003. *Job Search Behavior of Unemployed in Russia.* BOFIT Discussion Papers, no. 13. Helsinki: Bank of Finland.

Sukhova, Svetlana. 2002. “Population: Prospects,” an interview published in *Moscow Itogi*, August 13, 2002. Translation in Foreign Broadcast Information Service Document CEP20020815000329.

United Nations. 1997. *Demographic Yearbook 1995*, New York: United Nations.

_____. 1999. *Demographic Yearbook 1997*, New York: United Nations.

_____. 2000. *Demographic Yearbook 1998*, New York: United Nations.

_____. 2001. *Demographic Yearbook 1999*, New York: United Nations.

U.S. Census Bureau. 2002. *Statistical Abstract of the United States: 2001*. Washington D.C.: U.S. Government Printing Office.

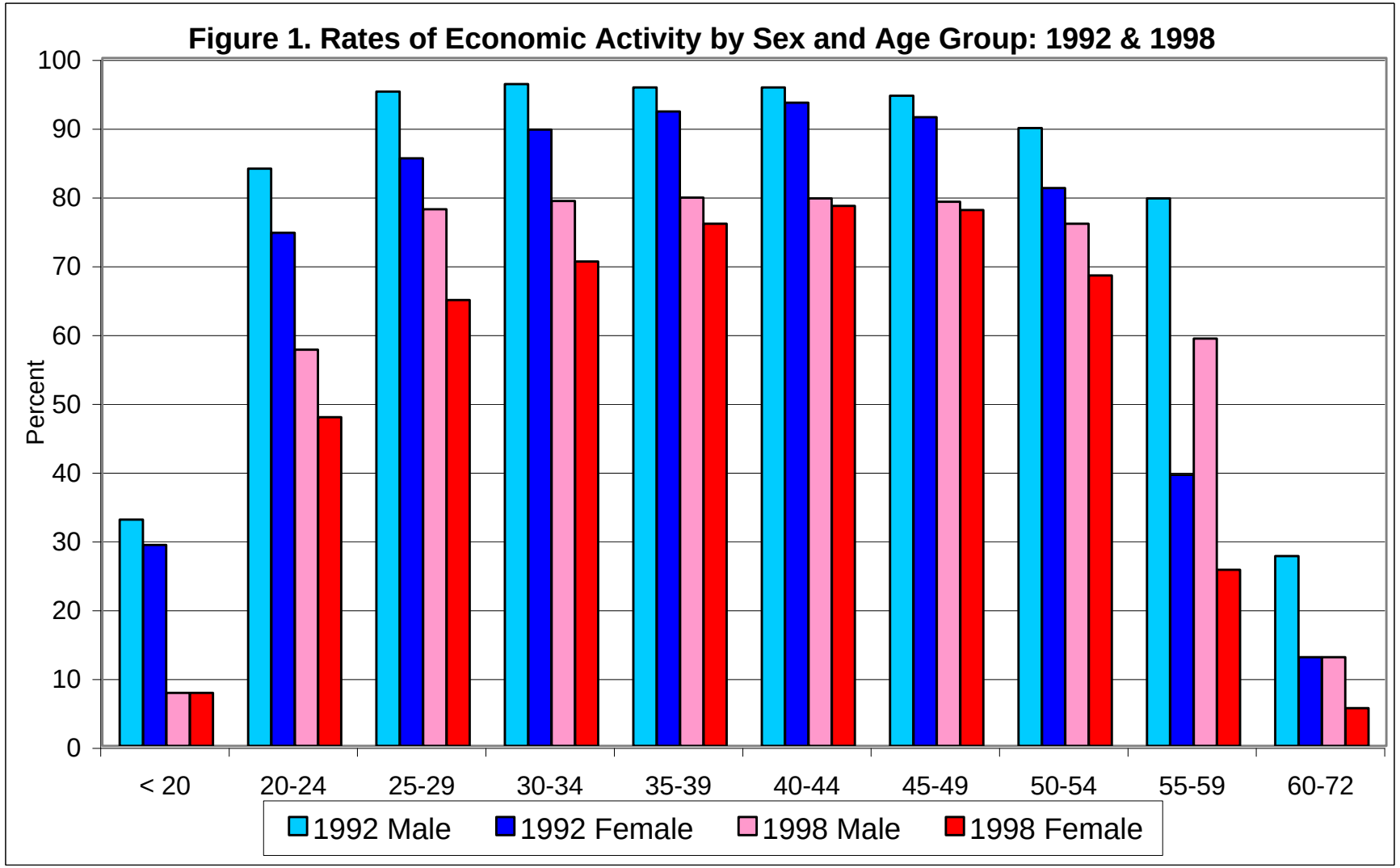
U.S. Census Bureau, International Programs Center. 2004. *Rural/Urban Projection (RUP) Program*. <http://www.census.gov/ipc/www/rup.html> (accessed January 21, 2004).

Yergin, Daniel, and Gustafson, Thane. 1995. *Russia 2010: and What it Means for the World*. New York: Vintage Books.

Table 1. Percent Unemployed by Sex: 1992-2002

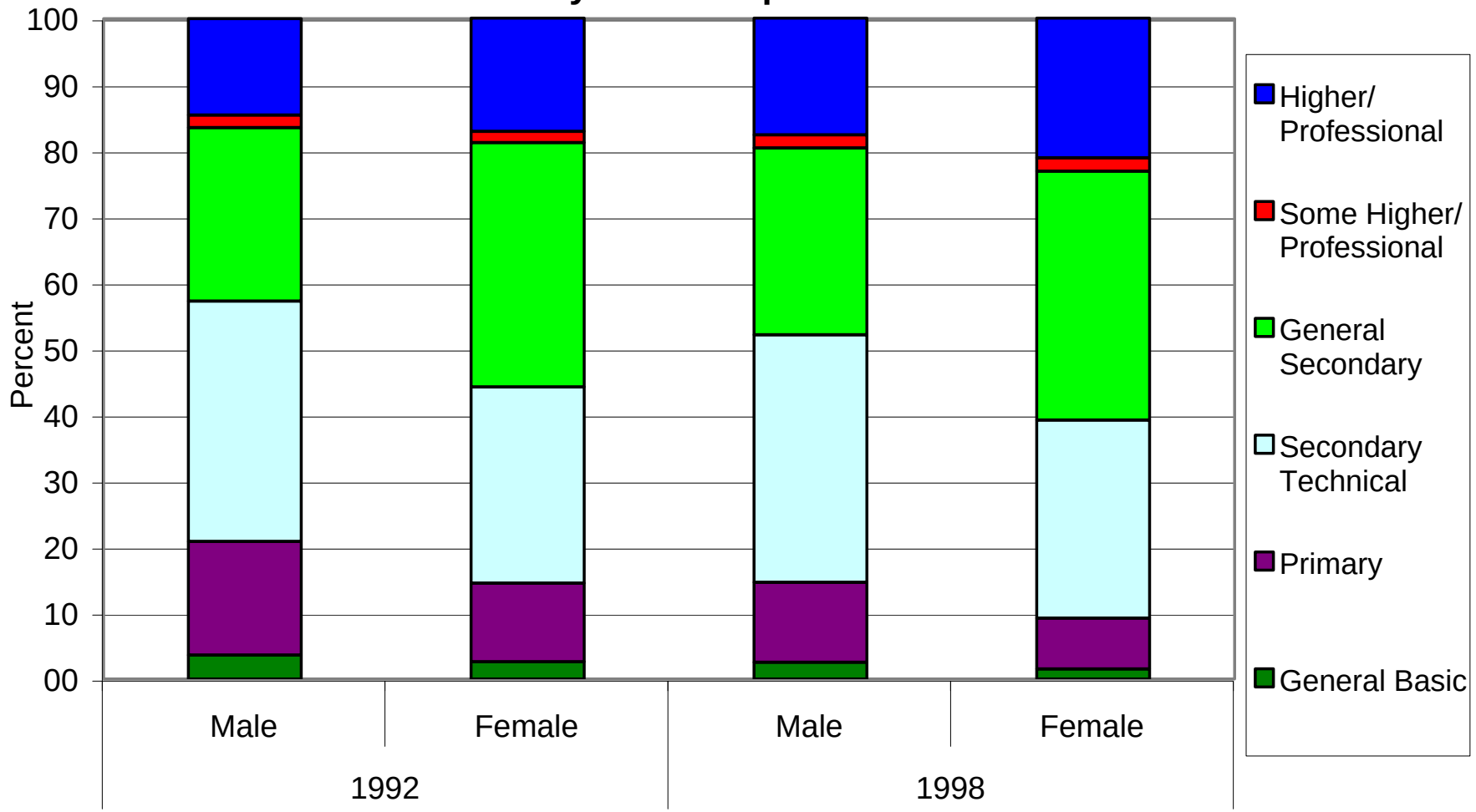
Year	Males	Females
1992	5.2	5.2
1993	5.6	5.5
1994	7.5	7.3
1995	9.0	8.7
1996	9.6	9.0
1997	12.2	11.5
1998	13.5	12.9
1999	12.8	12.4
2000	10.2	9.4
2001	9.3	8.5
2002	9.0	8.1

Sources: Sotsialnoe Polozhenie i Uroven Zhizni Nasselenia Rossii 1997. Goskomstat
Sotsialnoe Polozhenie i Uroven Zhizni Nasselenia Rossii 2002. Goskomstat
Russia in Figures 2003. Goskomstat.

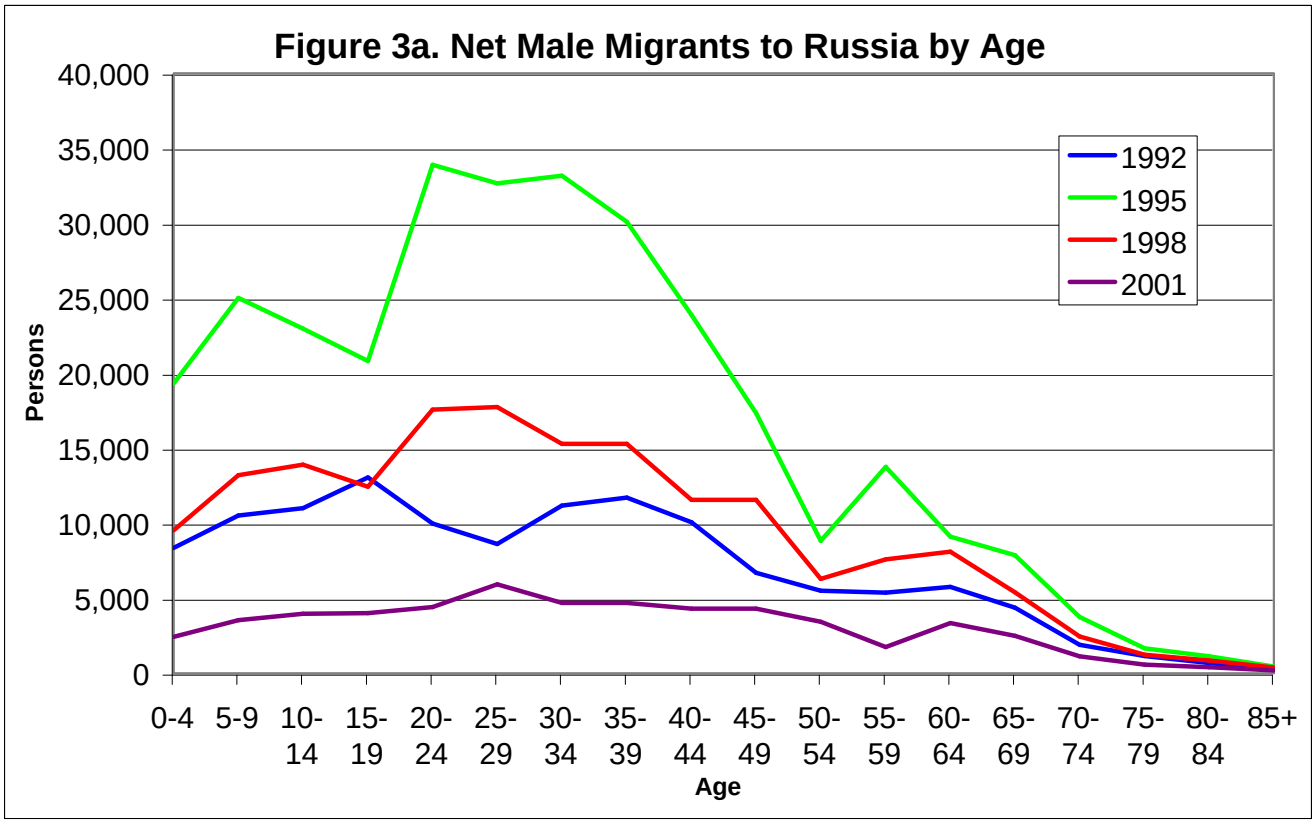


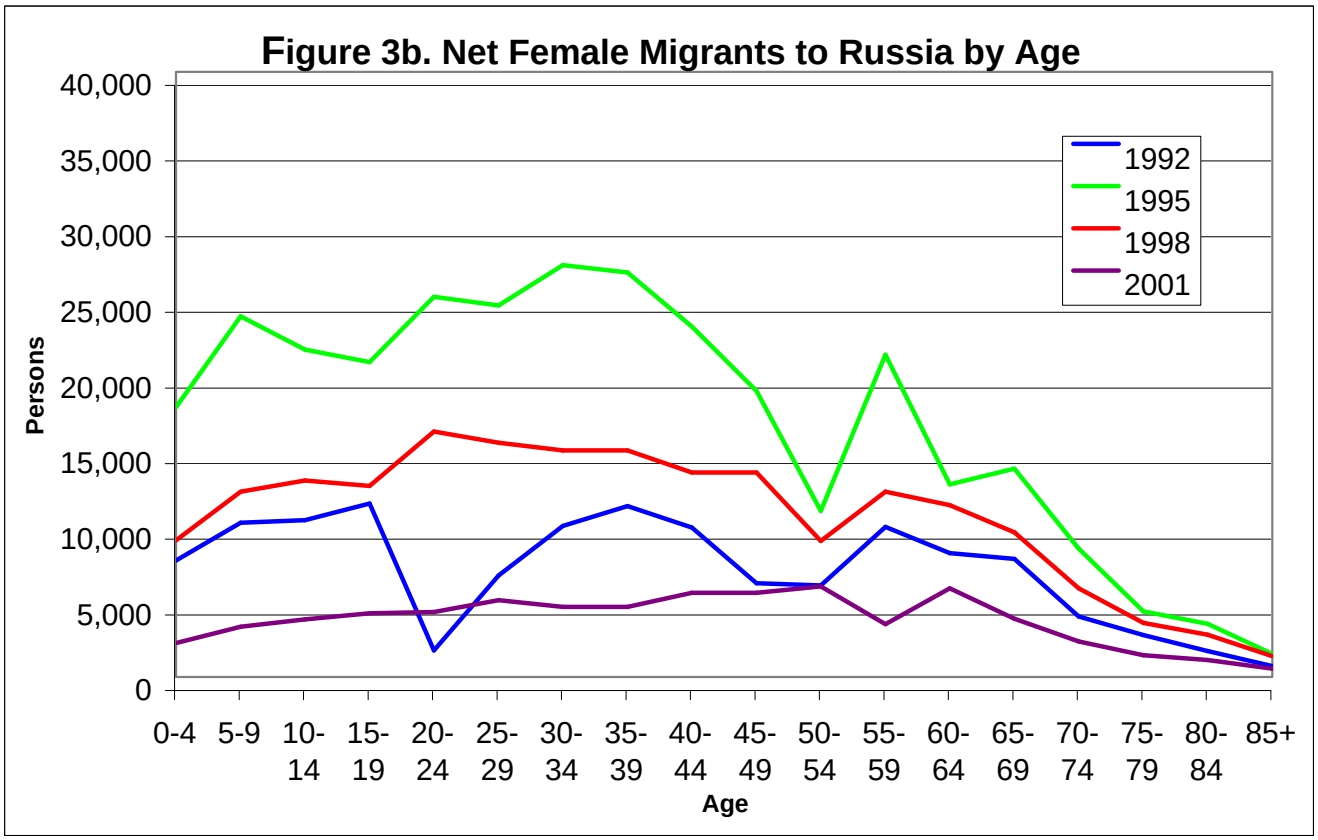
Source: Trud I Zanyatnost B Rossii. 1999. Goskomstat.

Figure 2. Educational Attainment of the Economically Active Population: 1992 & 1998



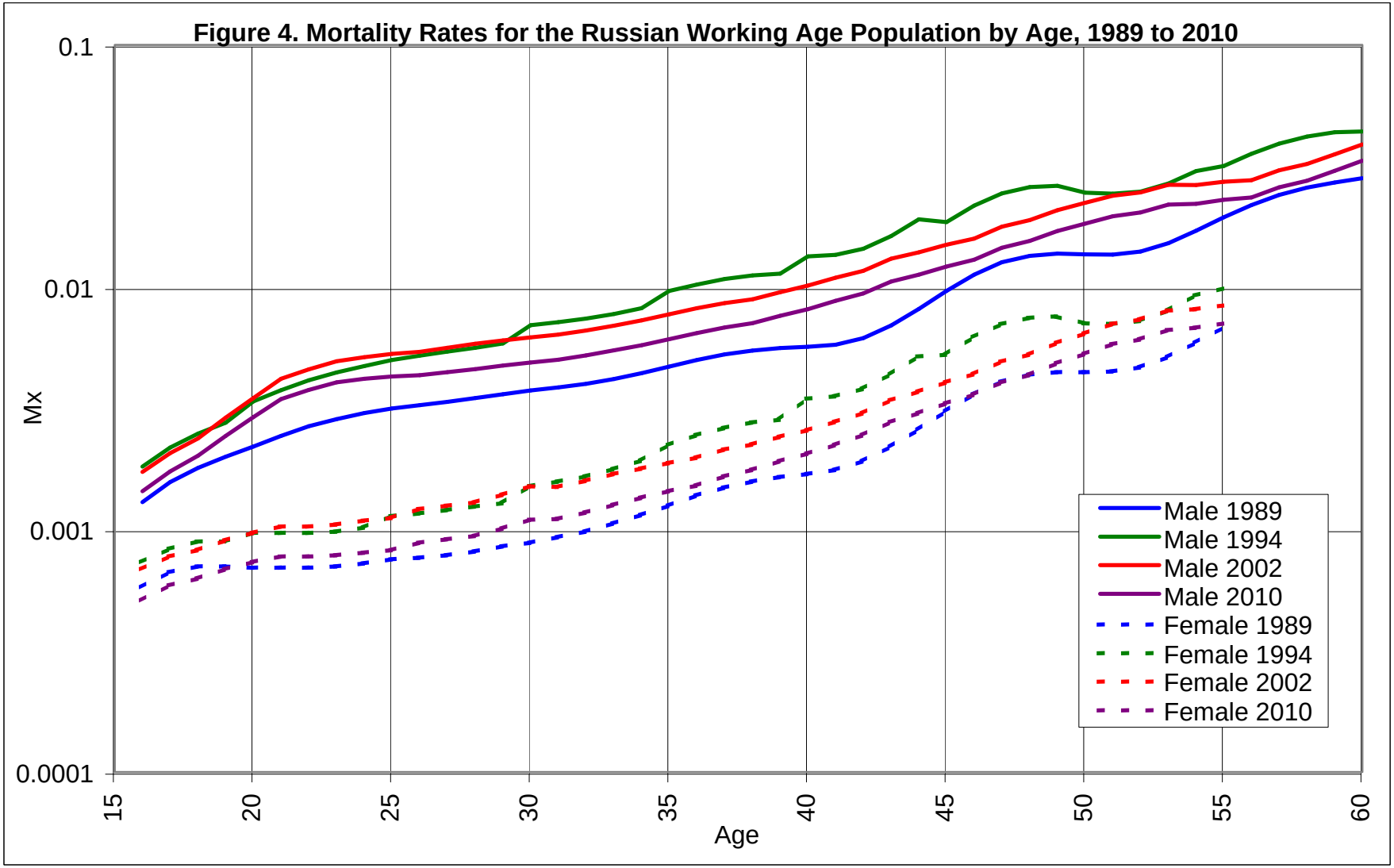
Source: Trud I Zanyatnost B Rossii. 1999. Goskomstat.





Sources: Demographic Yearbook of Russia, various years. Goskomstat
Estimates performed at International Programs Center, U.S. Census Bureau.

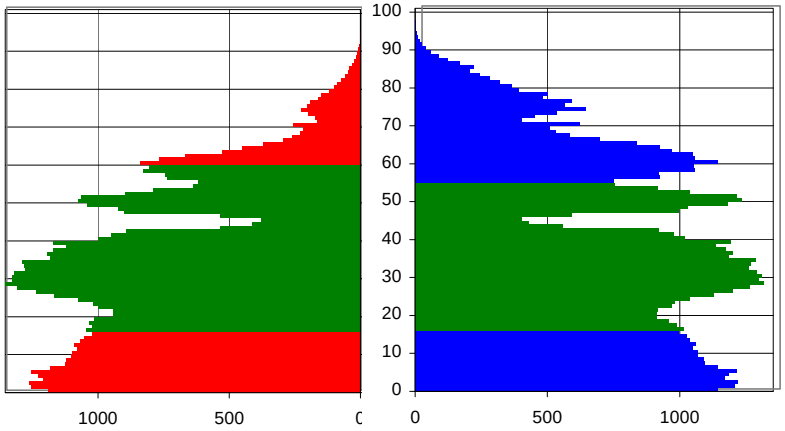
Figure 4. Mortality Rates for the Russian Working Age Population by Age, 1989 to 2010



Source: Estimates and Projections performed at International Programs Center, U.S. Census Bureau.

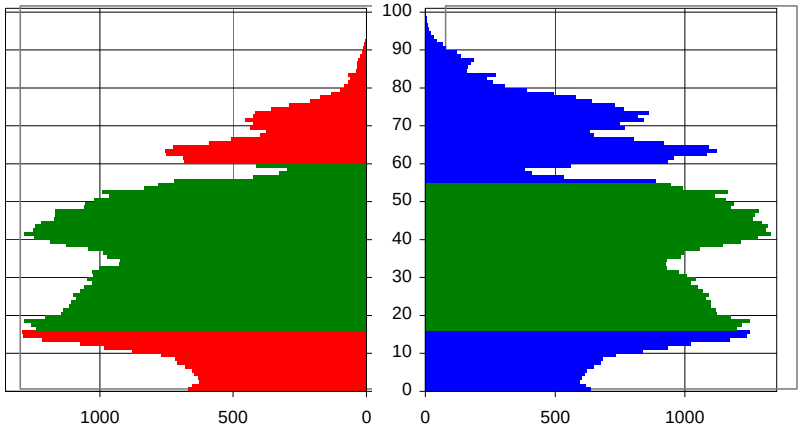
Figure 5. Russian Population Pyramids for 1989, 2002, 2010 and 2050
population in thousands, ▬ indicates working age population

1989



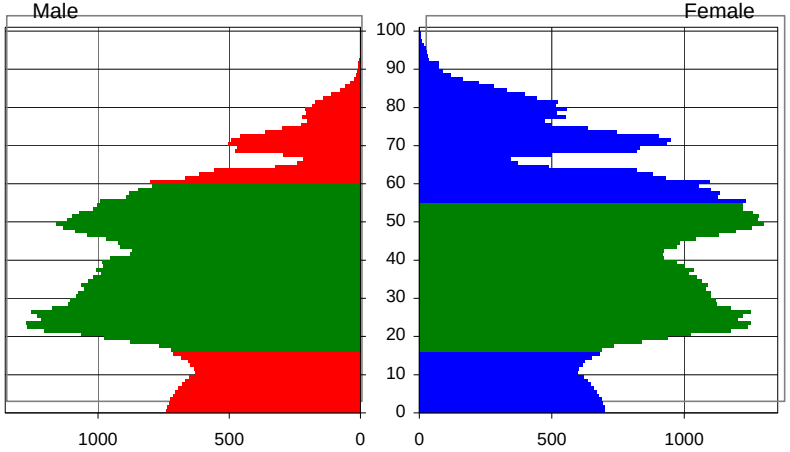
Total Working-Age Population 1989: 83,982,651
Total Males Ages 16-59: 43,562,390
Total Females Ages 16-54: 40,420,261

2002



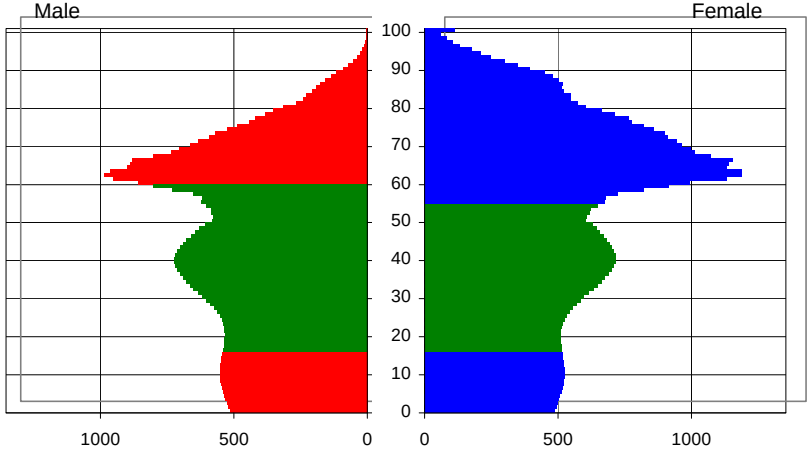
Total Working-Age Population 2002: 88,585,537
Total Males Ages 16-59: 44,724,664
Total Females Ages 16-54: 43,860,873

2010



Total Working-Age Population 2010: 87,550,889
Total Males Ages 16-59: 45,176,001
Total Females Ages 16-54: 42,374,888

2050



Total Working-Age Population 2050: 51,595,532
Total Males Ages 16-59: 27,651,360
Total Females Ages 16-54: 23,944,172

Source: Estimates and Projections performed at International Programs Center, U.S. Census Bureau.

Table 2. Russian Working-Age Population and Dependency Ratios: 1989 - 2050

Year	Working Age Population	Youth Dependency Ratio	Older Population Dependency Ratio	Total Dependency Ratio
1989	83,982,651	43.0	32.5	75.5
2002	88,585,537	29.7	34.1	63.9
2010	87,550,889	24.5	36.1	60.6
2020	76,071,588	28.7	49.6	78.3
2030	70,295,695	26.4	57.4	83.8
2040	61,532,578	27.4	71.5	98.9
2050	51,595,532	32.7	90.4	123.1

Note: Retirement ages in Russia are 55 for women and 60 for men.
Working Age: 16-54 for women and 16-59 for men
Youth Dependency Ratio: population 0 to 15 per 100 working age population
Older Population: Population over retirement age per 100 working age population

Source: Projections performed at International Programs Center, U.S. Census Bureau.

Appendix: Summary Table 1 **Prepared 08/12/2003, 10:45**

Estimated and Projected Demographic Statistics for the Russian Federation

			Calendar year data							Total
Year	Midyear population	Exponential Growth Rate (%)	Growth rate (%)	Total Births	Crude Birth Rate	Total Deaths	Crude Death Rate	Net international Migrants	Net international Rate	Working Age Population
1989	147,351,694	#N/A	0.428	2,175,231	14.76	1,681,879	11.41	137,387	0.93	83,982,651
1990	147,931,059	0.392	0.357	1,998,226	13.51	1,665,361	11.26	195,124	1.32	84,100,269
1991	148,257,054	0.220	0.084	1,804,156	12.17	1,700,188	11.47	20,033	0.14	84,071,592
1992	148,359,855	0.069	0.055	1,594,374	10.75	1,814,171	12.23	301,399	2.03	84,072,258
1993	148,355,595	-0.003	-0.061	1,387,065	9.35	2,137,422	14.41	660,235	4.45	84,084,528
1994	148,409,753	0.036	0.134	1,412,279	9.52	2,305,485	15.53	1,091,643	7.36	84,348,290
1995	148,454,696	0.030	-0.073	1,371,525	9.24	2,211,531	14.90	731,456	4.93	84,719,771
1996	148,274,462	-0.121	-0.170	1,310,275	8.84	2,087,885	14.08	525,692	3.55	85,009,375
1997	148,029,725	-0.165	-0.160	1,265,276	8.55	2,021,113	13.65	518,282	3.50	85,305,477
1998	147,774,662	-0.172	-0.184	1,288,201	8.72	1,993,654	13.49	432,881	2.93	85,886,785
1999	147,315,391	-0.311	-0.438	1,219,513	8.28	2,149,140	14.59	283,656	1.93	86,678,103
2000	146,672,908	-0.437	-0.436	1,271,290	8.67	2,229,821	15.20	319,536	2.18	87,549,449
2001	145,955,840	-0.490	-0.545	1,316,049	9.02	2,259,303	15.48	148,111	1.01	88,274,502
2002	145,183,238	-0.531	-0.517	1,334,883	9.19	2,232,418	15.38	147,473	1.02	88,585,537
2003	144,457,596	-0.501	-0.485	1,357,900	9.40	2,206,171	15.27	147,049	1.02	89,251,302
2004	143,782,338	-0.469	-0.452	1,385,102	9.63	2,181,278	15.17	146,881	1.02	89,982,780
2005	143,155,362	-0.437	-0.422	1,406,390	9.82	2,157,865	15.07	146,818	1.03	90,394,045
2006	142,571,243	-0.409	-0.395	1,422,738	9.98	2,133,029	14.96	146,711	1.03	90,486,523
2007	142,027,183	-0.382	-0.369	1,438,789	10.13	2,109,929	14.86	146,601	1.03	90,121,660
2008	141,519,159	-0.358	-0.347	1,451,440	10.26	2,089,354	14.76	146,405	1.03	89,506,169
2009	141,040,356	-0.339	-0.330	1,458,840	10.34	2,071,169	14.68	146,233	1.04	88,676,508
2010	140,581,269	-0.326	-0.322	1,457,153	10.37	2,055,243	14.62	146,012	1.04	87,550,889
2011	140,131,746	-0.320	-0.319	1,448,825	10.34	2,041,655	14.57	145,861	1.04	86,477,785
2012	139,683,397	-0.320	-0.322	1,433,097	10.26	2,028,497	14.52	145,671	1.04	85,341,731
2013	139,228,633	-0.326	-0.330	1,410,477	10.13	2,015,983	14.48	145,706	1.05	84,122,921
2014	138,761,806	-0.336	-0.341	1,383,419	9.97	2,002,951	14.43	145,679	1.05	82,894,025
2015	138,282,004	-0.346	-0.351	1,357,375	9.82	1,988,633	14.38	145,508	1.05	81,592,400
2016	137,790,287	-0.356	-0.361	1,329,943	9.65	1,972,810	14.32	145,184	1.05	80,287,450
2017	137,285,562	-0.367	-0.373	1,298,996	9.46	1,955,286	14.24	144,522	1.05	79,096,335
2018	136,765,592	-0.379	-0.386	1,265,660	9.25	1,937,563	14.17	143,730	1.05	77,984,893
2019	136,227,063	-0.395	-0.403	1,229,843	9.03	1,921,564	14.11	142,837	1.05	76,965,645
2020	135,668,776	-0.411	-0.418	1,198,324	8.83	1,907,836	14.06	141,821	1.05	76,071,588
2021	135,091,988	-0.426	-0.434	1,169,935	8.66	1,896,594	14.04	140,776	1.04	75,249,310
2022	134,495,787	-0.442	-0.451	1,141,776	8.49	1,887,984	14.04	139,691	1.04	74,501,566
2023	133,878,860	-0.460	-0.469	1,115,460	8.33	1,881,216	14.05	138,418	1.03	73,876,731
2024	133,241,149	-0.477	-0.486	1,091,057	8.19	1,876,266	14.08	137,126	1.03	73,324,847
2025	132,585,550	-0.493	-0.500	1,072,900	8.09	1,871,863	14.12	135,848	1.02	72,849,777
2026	131,916,767	-0.506	-0.511	1,059,026	8.03	1,868,183	14.16	134,708	1.02	72,376,076
2027	131,238,834	-0.515	-0.519	1,048,745	7.99	1,863,923	14.20	133,761	1.02	71,883,672
2028	130,556,119	-0.522	-0.524	1,042,592	7.99	1,859,530	14.24	132,926	1.02	71,390,541
2029	129,872,038	-0.525	-0.527	1,039,144	8.00	1,855,488	14.29	132,192	1.02	70,896,013
2030	129,188,709	-0.528	-0.528	1,038,785	8.04	1,852,862	14.34	131,572	1.02	70,295,695
2031	128,506,334	-0.530	-0.531	1,040,301	8.10	1,853,472	14.42	130,925	1.02	69,634,633
2032	127,824,343	-0.532	-0.533	1,043,517	8.16	1,855,534	14.52	130,281	1.02	68,932,537
2033	127,142,934	-0.535	-0.536	1,048,108	8.24	1,858,981	14.62	129,792	1.02	68,195,703
2034	126,462,420	-0.537	-0.538	1,053,485	8.33	1,862,824	14.73	129,392	1.02	67,426,774
2035	125,783,168	-0.539	-0.539	1,059,325	8.42	1,866,909	14.84	129,028	1.03	66,602,549
2036	125,103,993	-0.541	-0.543	1,064,215	8.51	1,872,666	14.97	128,658	1.03	65,716,030
2037	124,423,459	-0.545	-0.548	1,068,414	8.59	1,877,880	15.09	128,191	1.03	64,778,547
2038	123,741,298	-0.550	-0.552	1,071,773	8.66	1,882,549	15.21	127,730	1.03	63,771,984
2039	123,057,114	-0.554	-0.557	1,073,797	8.73	1,886,346	15.33	127,226	1.03	62,651,096
2040	122,370,281	-0.560	-0.563	1,074,198	8.78	1,889,093	15.44	126,553	1.03	61,532,578
2041	121,679,038	-0.566	-0.570	1,072,755	8.82	1,892,720	15.56	125,823	1.03	60,397,175
2042	120,981,621	-0.575	-0.579	1,069,756	8.84	1,895,450	15.67	125,002	1.03	59,193,589
2043	120,277,568	-0.584	-0.588	1,065,195	8.86	1,896,665	15.77	124,057	1.03	57,943,728
2044	119,566,343	-0.593	-0.598	1,059,097	8.86	1,897,197	15.87	123,065	1.03	56,693,577
2045	118,847,066	-0.603	-0.609	1,051,591	8.85	1,897,077	15.96	121,968	1.03	55,609,061
2046	118,118,320	-0.615	-0.621	1,042,855	8.83	1,897,643	16.07	120,814	1.02	54,625,710
2047	117,379,240	-0.628	-0.634	1,033,286	8.80	1,897,104	16.16	119,632	1.02	53,697,789
2048	116,630,812	-0.640	-0.645	1,023,220	8.77	1,894,336	16.24	118,446	1.02	52,881,962
2049	115,874,858	-0.650	-0.655	1,012,961	8.74	1,889,456	16.31	117,257	1.01	52,173,904
2050	115,113,154	-0.660	-0.664	1,002,759	8.71	1,883,041	16.36	116,113	1.01	51,595,532

Source: Estimates and Projections performed at International Programs Center, U.S. Census Bureau.

Appendix: Summary Table 2 **Prepared 08/12/2003, 10:45**

Estimated and Projected Demographic Indicators for the Russian Federation

Year	Expectation of life at birth (Eo)			Infant mortality rate			Total Fertilty Rate	Female - Male Eo	Male/ Female IMR
	Both Sexes	Male	Female	Both Sexes	Male	Female			
1989	68.31	63.40	73.51	25.09	28.79	21.17	2.000	10.11	1.36
1990	68.50	63.35	73.96	21.41	24.55	18.08	1.881	10.61	1.36
1991	68.22	62.94	73.83	22.16	25.37	18.75	1.729	10.89	1.35
1992	67.27	61.51	73.37	21.24	24.39	17.89	1.548	11.86	1.36
1993	64.82	58.44	71.59	24.26	27.44	20.90	1.353	13.15	1.31
1994	63.92	57.25	71.00	21.74	24.97	18.32	1.375	13.75	1.36
1995	64.43	57.84	71.41	23.49	26.68	20.11	1.326	13.57	1.33
1996	65.73	59.50	72.33	21.21	24.23	18.01	1.261	12.83	1.35
1997	66.52	60.65	72.74	20.99	23.91	17.90	1.212	12.09	1.34
1998	66.87	61.03	73.07	20.34	23.10	17.42	1.227	12.04	1.33
1999	65.89	59.76	72.39	20.36	22.95	17.62	1.152	12.63	1.30
2000	65.43	58.97	72.28	19.08	21.62	16.38	1.193	13.31	1.32
2001	65.46	58.89	72.42	18.20	20.87	15.37	1.228	13.53	1.36
2002	65.77	59.23	72.71	17.77	20.43	14.96	1.238	13.48	1.37
2003	66.08	59.57	72.99	17.36	20.00	14.56	1.247	13.42	1.37
2004	66.39	59.91	73.27	16.96	19.58	14.18	1.257	13.36	1.38
2005	66.70	60.24	73.54	16.56	19.17	13.80	1.267	13.30	1.39
2006	67.03	60.59	73.84	16.15	18.75	13.40	1.276	13.25	1.40
2007	67.35	60.94	74.14	15.75	18.34	13.01	1.286	13.20	1.41
2008	67.67	61.29	74.44	15.36	17.93	12.63	1.296	13.15	1.42
2009	67.99	61.63	74.73	14.98	17.54	12.26	1.305	13.10	1.43
2010	68.31	61.97	75.02	14.60	17.15	11.90	1.315	13.05	1.44
2011	68.62	62.31	75.30	14.24	16.77	11.56	1.324	12.99	1.45
2012	68.93	62.65	75.58	13.89	16.41	11.23	1.334	12.93	1.46
2013	69.23	62.98	75.86	13.55	16.04	10.91	1.344	12.88	1.47
2014	69.53	63.31	76.13	13.22	15.69	10.60	1.353	12.82	1.48
2015	69.83	63.64	76.40	12.90	15.35	10.30	1.363	12.76	1.49
2016	70.13	63.96	76.66	12.59	15.01	10.03	1.373	12.70	1.50
2017	70.42	64.29	76.91	12.29	14.67	9.76	1.382	12.62	1.50
2018	70.70	64.61	77.16	11.99	14.35	9.49	1.392	12.55	1.51
2019	70.99	64.92	77.41	11.71	14.03	9.24	1.401	12.49	1.52
2020	71.27	65.24	77.66	11.43	13.72	8.99	1.411	12.42	1.53
2021	71.54	65.55	77.90	11.16	13.42	8.76	1.421	12.35	1.53
2022	71.82	65.86	78.13	10.90	13.13	8.54	1.430	12.27	1.54
2023	72.09	66.17	78.36	10.64	12.84	8.32	1.440	12.19	1.54
2024	72.35	66.47	78.59	10.40	12.56	8.11	1.450	12.12	1.55
2025	72.62	66.77	78.82	10.15	12.28	7.90	1.459	12.05	1.55
2026	72.87	67.06	79.03	9.93	12.02	7.71	1.469	11.97	1.56
2027	73.12	67.35	79.25	9.71	11.76	7.53	1.479	11.90	1.56
2028	73.37	67.64	79.46	9.49	11.51	7.35	1.488	11.82	1.57
2029	73.62	67.92	79.66	9.28	11.26	7.17	1.498	11.74	1.57
2030	73.87	68.20	79.87	9.07	11.02	7.00	1.507	11.67	1.57
2031	74.10	68.47	80.06	8.88	10.79	6.85	1.517	11.59	1.58
2032	74.33	68.74	80.25	8.69	10.57	6.70	1.527	11.51	1.58
2033	74.56	69.01	80.44	8.51	10.35	6.55	1.536	11.43	1.58
2034	74.79	69.28	80.63	8.32	10.13	6.41	1.546	11.35	1.58
2035	75.02	69.54	80.82	8.15	9.92	6.27	1.556	11.28	1.58
2036	75.23	69.80	80.99	7.98	9.72	6.14	1.565	11.19	1.58
2037	75.45	70.05	81.17	7.82	9.52	6.02	1.575	11.12	1.58
2038	75.66	70.30	81.34	7.66	9.33	5.89	1.584	11.04	1.58
2039	75.87	70.55	81.51	7.50	9.14	5.78	1.594	10.96	1.58
2040	76.08	70.80	81.68	7.35	8.95	5.66	1.604	10.88	1.58
2041	76.28	71.04	81.84	7.21	8.77	5.55	1.613	10.80	1.58
2042	76.47	71.27	81.99	7.07	8.60	5.45	1.623	10.72	1.58
2043	76.67	71.50	82.14	6.94	8.44	5.35	1.633	10.64	1.58
2044	76.86	71.73	82.30	6.81	8.27	5.25	1.642	10.57	1.58
2045	77.05	71.96	82.45	6.68	8.11	5.16	1.652	10.49	1.57
2046	77.23	72.18	82.59	6.56	7.96	5.07	1.662	10.41	1.57
2047	77.41	72.39	82.73	6.44	7.81	4.99	1.671	10.34	1.57
2048	77.59	72.61	82.87	6.32	7.66	4.90	1.681	10.26	1.56
2049	77.76	72.82	83.00	6.21	7.52	4.82	1.690	10.18	1.56
2050	77.94	73.03	83.14	6.10	7.38	4.74	1.700	10.11	1.56

Source: Estimates and Projections performed at International Programs Center, U.S. Census Bureau.