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1867-2002**

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## **Long-Term Population Statistics for Russia, 1867-2002\***

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### **Abstract**

The aims of this study are (1) to overview the statistical systems and methods of maintaining population statistics in the Russian Empire, the Soviet Union and the Russian Federation, (2) to provide population statistics in territorial units comparable to the Russian Federation based on primary materials, and (3) to take a general view of long-term population dynamics from the late Imperial era to the new Russian Federation. The gap between previous research dealing with population during the imperial period and that which examines the period after the October revolution is very large, and few studies utilized primary data in investigating population figures of the imperial era.

First, this study focuses on the institutional background of maintenance of population statistics in the Russia Empire, and then examines the population statistics systems after the establishment of the Soviet government. In estimating population and collecting archive data, this paper devoted efforts to utilizing primary materials consistently, and to adjusting all the territories in accordance with those of the Russian Federation. Thus, this study provides fundamentally necessary information for investigating historical development processes in Russia.

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## 1. Introduction

The purpose of this study was to gain an overview of the statistical systems and methods of compiling population statistics used in imperial Russia, the Soviet Union, and modern Russia, compile population statistics on the territory covered by modern Russia since the collapse of the Soviet Union from primary sources, and identify long-term population dynamics spanning the period from the mid-19th century, including the last days of imperial Russia, to modern Russia.

Most population studies that have covered both imperial Russia and Soviet Russia have focused on one period or the other, with the other period handled by reviewing other research (Lorimer, 1946; Heer, 1968; Simchera, 2006; Vishnevskii, 2006). In addition, in most cases, the imperial era is treated as a single period, while the period after the revolution is treated as another one (Vodarskii, 1973; Kabuzan, 1963; Rashin, 1956; Zhiromskaia, 2000). Of course, there are good reasons why previous research has dealt with imperial Russia and the post-revolution Soviet Union separately. Given that they used different systems for gathering and compiling statistics, and that they covered different territory, it is only natural to approach them differently, and this paper is immune to such limitations, either.

However, previous research shows that this situation has clearly been a major obstacle to tracing the economic development of Russia throughout its entire history. It may actually be impossible to examine the modern development of Russia without looking at the imperial era<sup>1</sup>. After all, the imperial era paved the way for the industrialization that occurred in the Soviet Union, which suggests that any investigation into the long-term dynamics of Russia needs to begin with the compilation of statistics from primary sources.

This paper represents an attempt, the first of its kind, to compile population statistics on the territory covered by modern Russia that date back as far as the 19<sup>th</sup> century, using as many primary sources from imperial Russia as could be collected. A study like this is probably only possible now that Russia has emerged from the collapse of the Soviet Union in its present form. The authors will take into account given the differences in the territory covered by imperial, Soviet, and post-Soviet Russia as they make their own estimates. The authors will also survey population statistics on the

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<sup>1</sup> As an example of the modernization that occurred during the imperial era, the volume of domestically produced steel for railways overtook the volume of imports of such steel during the late 1800s. See Falkus (1972).

territory covered by the present Russian Federation in the early Soviet era, which were extremely difficult to gather.

This paper is organized as follows. After using various previous literatures to survey the enormity of the gap between previous research that covers the imperial Russian period and that which covers the Soviet and post-Soviet eras, and the paucity of previous research based on original materials, the authors will first turn their attention to the process through which system for gathering and compiling population statistics in the Russian Empire was established. Although the first, and last, population census of imperial Russia was conducted in 1897, more than 20 years before Japan performed its first such census, population surveys of various kinds were performed before that. While the precision of such surveys is not generally thought to be high (MVD RI, 1858; Rashin, 1957)<sup>2</sup>, they are at least useful for gauging population dynamics.

This study will then look at population statistics from post-revolution Soviet Russia and modern Russia. It would be impossible to list here all the problems involved in compiling statistics from the Soviet era, but chief among them would be the fact that the country was a battlefield during World War I; the civil war and incursions by foreign powers (1918–1922) that followed the Russian revolution of 1917; the frequent changes in administrative regions and the numerous famines between 1920 and 1930; the Great Purge of the Stalin era (1936–1940) and the suppression of statistics that accompanied it; and World War II and its aftermath, during which invasion forces temporarily captured the whole of the Ukraine, advanced as far as the suburbs of Moscow, and surrounded Leningrad (now St. Petersburg). The numerous problems with Soviet statistics are well documented, and these problems also affect the most basic statistics of all: population statistics.

The authors' first challenge was to link population statistics from imperial Russia with those from Soviet Russia, and then adjust these statistics to make them correspond to the territory covered by modern Russia. Because the borders of administrative divisions in imperial Russia were not the same as those during or after the Soviet era, the authors needed to start by solving this problem. In particular, the authors needed to take account of differences in the volume of statistics compiled during the imperial era for European Russia, Siberia and the Far East, and the Caucasus.

With these problems in mind, this paper set about compiling basic population

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<sup>2</sup> However, some say that five percent or less of the total population was missed (Valentei, 1985), and given that they provide an otherwise unavailable insight into the period between from the early 18<sup>th</sup> century to the end of the 19<sup>th</sup> century, they are well worth looking at.

statistics. The primary aims of this study were to (1) rely on primary historical materials to gather as many statistics as possible for a 100-year period, and (2) attempt to harmonize them with the territory covered by modern Russia to the greatest extent possible. The purpose was to gather the most basic information required to track the development of Russia throughout its history.

## **2. Previous Research on Long-Term Russian Population Dynamics and Statistics**

### **2.1. Population Research on the Imperial and Soviet Eras**

Surprisingly little research has been conducted on the compilation of long-term population statistics in Russia. Obviously, a major factor behind this paucity of research is the fact that the Russian Federation only became an independent nation, with its current territory, less than 20 years ago. Even so, it is striking that many studies, even those supposedly attempting to explore the imperial and Soviet eras in an integrated fashion, have ignored the fact that the territory covered by Russia has changed, and that so few studies have been based on primary historical materials.

Here this section will give a summary of previous studies one by one. Various studies were made of population dynamics in the imperial era using various population surveys and official statistics. Notable among them are those of Koeppen (1847), Den (1902), and Troimitskii (1861), which were based on household censuses (*reviziia*), which will be discussed later in this paper. Although population surveys were conducted several times, each of these studies relied on data from only one survey, so they do not provide any clues to population dynamics<sup>3</sup>. In addition, they only cover the population and social structure for males.

In recent years too, a lot of research on population history has been conducted. Studies by Rashin (1956), Kabuzan (1963, 1971), and Vodarskii (1973) provide broad coverage of the imperial era. The study by Vodarskii (1973) covers 400 years from the 16<sup>th</sup> century to the early 20<sup>th</sup> century, but basically represents a compilation of secondary sources and previous research. Kabuzan (1963, 1971) bases his research on primary sources such as household censuses, and explores the dynamics and social organization of the male population from the beginning of the 18<sup>th</sup> century to the middle of the 19<sup>th</sup> century. One useful thing he does is put together tables of data from all the

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<sup>3</sup> Koeppen (1847) studied only the 1830s, Den (1902) only the end of the 18<sup>th</sup> century and beginning of the 19<sup>th</sup> century, and Troinitskii (1861) only the mid-19<sup>th</sup> century.

household censuses. However, most worthy of note is the study by Rashin (1956), in which he uses data that was published by the Ministry of the Interior's Central Statistical Committee (described later) almost without a break from the mid-19<sup>th</sup> century to compile population statistics on the period from then up until the end of imperial era. Of all the myriad research on population in Russia, Rashin's 1956 study is frequently referred to for its description of the imperial era<sup>4</sup>.

Turning the authors' attention to studies of population dynamics in the Soviet era, it is hardly surprising that the scope of inquiry of the majority of such studies is not the Russian Soviet Socialist Republic, but the Soviet Union as a whole (Podiachikh, 1961; Gozulov and Grigoriants, 1969, etc.). However, during the Soviet era it was extremely difficult to conduct research on the most vexing periods of Soviet population history, i.e. the chaos just after the revolution, the Great Purge, and World War II, because of the lack of opportunities to examine historical materials.

Among historical research conducted in Europe and North America, there is, as might be expected, a huge volume of literature on specific regions in Russia. If our discussion is limited to research covering the late imperial era to the period after the socialist revolution, the studies of Lorimer (1946) and Heer (1968) need to be mentioned. Lorimer's (1946) work represents the fruition of a painstaking attempt to trace economic development and population dynamics in the Soviet Union as a whole from the end of the imperial era to World War II. Because the study was not made with the aim of compiling statistics, it does not take adequate account of territorial adjustments or extract enough data from primary sources. Meanwhile, Heer (1968) uses secondhand references from various previous studies to compile dynamic statistics on the period from 1861 to 1965. Coale, Anderson and Harm (1979) compare only the dynamic statistics in 1897, 1926, and 1959, years in which a population census was carried out, and base their study on the use of primary statistics. However, they do not attempt to maintain identity between the territory covered by the country in the imperial and Soviet eras. Clem (1986) makes a general discussion of all the censuses conducted between 1897 and 1979, and provides a useful list of almost all official publications relating to population censuses.

For the current study, Leasure and Lewis's (1966) study proved extremely

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<sup>4</sup> The same can be said of studies by Vodarskii (1973), Vishnevski (2006), and other researchers. Many studies rely completely on Rashin (1956) for their descriptions of population from the late 1800s to the early 1900s. In authors' view, none of the research on population dynamics in this period has surpassed Rashin's (1956) approach of constructing almost all of his data from publications from the Imperial Central Statistical Committee.

useful. Focusing on the population censuses carried out in 1897 and 1926, they estimated population statistics for each region, using for regions the Soviet administrative divisions as of 1961. They present for comparison a map showing the administrative divisions in 1897 with one of the same scale for 1961, and calculate what percentage of each province in the imperial era is included in each of the 1961 administrative divisions<sup>5-6</sup>. Although the use of this method casts doubts over the accuracy of the study's findings, it is worth mentioning that the difference between the areas of each region estimated using the method and the official areas as of 1961 are within two percent of the areas of each region<sup>7</sup>.

## 2.2. Recent Research Trends

A lot of new research has been conducted since the end of the Soviet era and the birth of the new Russia. This subsection will mention some studies that, like this study, have been aimed at grasping long-term dynamics. Since 2000, voluminous works on long-term dynamics have been published. Simchera (2006) provides a comprehensive treatment of not just demographics, but the Russian economy as a whole over the last 100 years. However, while Simchera's book features numerous tables of statistics, the views expressed and the data itself basically constitute a review of previous research. In addition, its descriptions of its data sources are extremely vague, which casts significant doubt over the verifiability of the data, and makes it extremely difficult to assess or critique it. Vishnevskii (2006) uses dynamic statistics to focus on population changes over a 100-year period. For the imperial era he uses statistics for the whole of European imperial Russia, while for the Soviet era and beyond he adjusts statistics to match the territory covered by modern Russia. Like Simchera (2006), Vishnevskii (2006) relies entirely on previous research for statistics on the World War II

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<sup>5</sup> The areas of provinces in the imperial era were calculated using maps produced by organizations such as the Imperial Geographic Society. See MVD RI (1858, 1863). For this study, the authors attempted, for the early imperial era, to use changes in regional areas to estimate changes in administrative divisions, and then use these estimates to investigate the changes in administrative divisions. However, the authors abandoned this approach because it could be predicted that the numbers would change due to differences in the precision of the maps.

<sup>6</sup> These "administrative divisions" refer to economic regions (*ekonomicheskie raioni*).

<sup>7</sup> The biggest differences were with the vast yet sparsely populated West Siberia economic region (4.13%, 1897), and the Southern economic region (3.22%, 1926), which centres on modern Ukraine. The effect of the former difference is likely to be small, and the latter region is not part of the modern Russian Federation.

period, and for the imperial era he uses data from Rashin (1956) to compare demographic shifts in Russia with those in various other countries. Although these studies do not constitute a systematic survey of population statistics, the insights they afford are valuable. However, the fact that neither study makes use of primary historical materials raises questions. Vishnevskii's (2006) decision not to be consistent with the territory he uses also needs to be mentioned.

Goskomstat Rossii (1998) is a publication that focuses on re-compiling population statistics from the Russian Federation State Statistics Committee (now the Federal State Statistics Service) for the 100-year period from 1897 to 1997 to match the territory covered by modern Russia. Some of its content may therefore overlap with this study. However, a close examination of the details reveals that explanations of matters such as the methods of calculation employed and the assumptions upon which the calculations were based are decisively lacking<sup>8</sup>.

Because it has become much easier to get access to archived historical materials since the collapse of the Soviet Union, a lot of research has been being carried

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<sup>8</sup> It gives the total population at the time of the 1917 revolution as 91,000,000. Even ignoring the fact that this figure is too simplistic in comparison with those of other years, it is difficult to believe that it is possible to obtain reliable population statistics for that year. The Tsentralnii statisticheskii komitet MVD (1918) describes the 1917 population figure as a "preliminary" figure. In February 2007, when one of the authors of this paper (Shida) checked the 1917 population statistics using archived historical materials from the Russian State Economic Archive *RGAE*, he found that this population figure was described as the "possible population in 1917" (*veroiatnaia chislennost naseleniia*) (*RGAE*, F.1562, O.20, D.1a). Then on July 31, 2007, when another author (Kumo) interviewed four population statisticians on this matter at the headquarters of Russia's Federal State Statistics Service (Rosstat), they said that the 1917 figure published in Goskomstat Rossii (1998) was an estimate. However, Goskomstat Rossii (1998) makes no mention of this. There is also no mention of the fact that populations for each region based on the 1937 population census were affected by personnel such as border guards and soldiers being treated differently in the statistics. In addition, the figures for the total populations of the republics in 1937 differ from those disclosed elsewhere. Although it claims that the number of soldiers etc., which were only recorded for the federation as a whole, were not just added to the estimate of the population of the Russian Republic, it does not mention that the estimation method was, obviously, based on estimates. Moreover, it presents figures representing the results of the 1897 population census of imperial Russia that have been converted to match the present territory of Russia. According to these figures, the population of the territory of the present Russian Federation (excluding Kaliningrad, the Kurile Islands, and southern Sakhalin) in 1897 was 67,473,000. Among the historical materials that one of the authors (Morinaga) examined at the Russian State Economic Archive was the TsSU SSSR (1941), which calculates the 1897 populations of the administrative divisions as they were in 1941 using detailed area proportions. Using these figures to calculate the total population of the territory of modern Russia gives a figure of 66,314,000, which casts doubt over the accuracy of the figure presented in Goskomstat Rossii (1998), for which the methods of calculation used are not explained at all clearly.



out on population dynamics during hitherto inaccessible periods such as the Great Purge and World War II. With focused studies like this, relatively careful attention is paid to making adjustments for differences in territory and investigating the basis for calculations. Studies of this type worth mentioning include that of Zhiromskaia (2001), which deals with early Soviet Russia, and that of Poliakov and Zhiromskaia (2000, 2001), which is based on sources such as documents in the national archives. The former, however, limits itself to examining the results of the 1926, 1937, and 1939 population censuses<sup>9</sup>. Because of limitations on the historical materials used and the years to which they relate, much of the research it contains covers the whole of the Soviet Union. The latter was not conducted for the purposes of obtaining a macroscopic view of population dynamics. Rather, it constitutes a collection of essays on specific topics that could not be studied during the Soviet era because information on them was not made publicly available. The topics covered include the results of the secret census conducted during the Stalin era, the make-up of the labour-camp prisoner population, and population dynamics during World War II. Andreev, Darskii and Kharkova (1993) studied the Soviet Union as a whole from the period before the war right through to the collapse of the Soviet Union. Their estimates relating to population dynamics in the 1920s, which are based on archive materials, are of particular interest. In addition, in a later study (Andreev, Darskii and Kharkova, 1998), they used archived historical materials to unearth dynamic statistics for the periods 1927–1939 and 1946–1949, when hardly any official statistics were published, and made presented their estimates using multiple time series. They attempted to make territorial adjustments and gave relatively detailed information on their data sources, so their figures cannot be said to be completely unverifiable. The population dynamics during 1920s and 1930s were discussed by Rosefielde (1983), Wheatcroft (1984, 1990), Anderson and Silver (1985), and by many others. However, all in all, Andreev, Darskii and Kharkova (1998) is the most important of all studies exploring the periods of collectivization, the Great Purge, and the lead-up and aftermath of World War II<sup>10</sup>.

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<sup>9</sup> The results of the 1937 population census have not been officially made public by the statistical authorities. Zhiromskaia (2001) conducted her study using archived historical materials. TsSU SSSR (1937) tells one that not only was a figure for total population calculated, but that tables of data showing things like occupations by educational attainment and domicile (i.e. urban or rural) were also produced.

<sup>10</sup> Ispov (2001) deals with the 1941-1945 (i.e. the World War II) period, but does not adjust the territories (or mention this lack of adjustment) of the Crimean Autonomous Republic (then part of Russia, now part of Ukraine), the Karelo-Finnish Republic (then a Soviet republic separate from

This section has mentioned only a very limited number of studies on the demographics of imperial and Soviet Russia, and there are numerous other studies from Europe and North America on Russian demographics. However, accessing original historical materials during the Soviet era presents major problems, and this has probably hindered the compilation of long-term data. In addition, the modern “Russian Federation” has only existed as a single, completely independent nation since the collapse of the Soviet Union at the end of 1991, so it cannot really be helped that no systematic study has been made of population in this “Russian Federation”. Nevertheless, as this section has seen, previous research has failed to make territorial adjustments, even though this would not have been impossible even in the Soviet era, and has not sought to base itself on primary historical materials from the imperial era to the end of the Soviet era.

### **3. Russian Population Statistics**

#### **3.1. Household Censuses (*Reviziia*) in Imperial Russia**

Population surveys have a long history in Russia. It is widely known that household censuses, called *reviziia* (revisions), of people liable for taxes began with an order (*ukaz*) issued by Tsar Peter I on November 26, 1718<sup>11</sup> (Herman, 1982; MVD RI 1858). *Reviziia* were conducted on a total of 10 occasions, once every 10–15 years, until 1857–1858. However, it is also well documented that they were beset with a wide range of problems, such that their accuracy is strongly doubted (MVD RI, 1858; Rashin, 1956). Many of these problems lie in the fact that any census that targets people liable for taxes will obviously be prone to inaccuracy.

The main objectives of these population surveys were to identify people who should pay taxes and secure personnel for the army. The backdrop to this was the fact that household-based taxation had been replaced with personal taxation (a poll tax), which made it necessary to identify the entire population (Herman, 1982; MVD RI 1858, 1863)<sup>12</sup>. In the beginning, the surveys were conducted under the leadership of the tax authorities (*kammer-kollegiia*). Anyone identified during the surveys would

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Russia, now part of Russia).

<sup>11</sup> From here onwards all dates until 1917 use the Russian calendar.

<sup>12</sup> It has been posited that household-based taxation encouraged households to band together to form new households, so as to reduce the tax burden of the individuals they comprised (Kluchevsky, 1918).

immediately assume an obligation to pay taxes, which meant that huge numbers of people tried to avoid being registered. Such behaviour was subject to penalties such as penal servitude and fines, but this just encouraged people who had avoided registration to continue to do so. In 1721 an imperial edict was issued whereby people who had hitherto avoided registration would not be subject to punishment if they now agreed to register, and at the same time the poll tax was reduced. After that, the censuses began to better reflect actual populations (MVD RI 1858, 1863).

Only men were liable for taxes, and the surveys only covered individual farmers, merchants, and traders designated as taxpayers. However, there was a plan to include women, who were not liable for taxes, in the statistics, and actually the figures from the household censuses did not only include taxpayers. They also included non-taxpayers such as members of the clergy, stagecoach drivers, and retired soldiers. However, a shortage of personnel to conduct the surveys, financial limitations, and the vastness of the land needing to be covered made it difficult to make the surveys comprehensive. No surveys of Poland, Finland, or the Caucasus were made, and there are hardly any records for members of the aristocracy (*dvoriane*) or government officials. Women were not recorded in the 1<sup>st</sup>, 2<sup>nd</sup>, and 6<sup>th</sup> censuses. Only with the 9<sup>th</sup> household census of 1850–1851 were nontaxpayers such as aristocrats and government officials finally included (MVD RI, 1858, 1863; Valentei, 1985).

### **3.2. Compilation of Population Statistics by the Central Statistical Committee of the Ministry of the Interior**

Imperial Russia began putting together a system for gathering and compiling statistics in the first half of the 19<sup>th</sup> century. In 1834 a Statistical Section (*statisticheskoe otdelenie*) was established within the Council of the Ministry of the Interior (*soviet ministerstva vnutrennikh del*)<sup>13</sup>, and surveys and statistics at the city or provincial (province = *guberniia*) level began to be published. In 1853 the Statistical Section at the Council of the Ministry of the Interior was merged with the tax office's Interim Lustration Committee to form the Statistical Committee of the Ministry of the Interior (*statisticheskii komitet ministerstva vnutrennikh del*). Then on March 4, 1858 the Statistical Committee of the Ministry of the Interior was reorganized as the Central Statistical Committee (*tsentralnii statisticheskii komitet*) to build a systematic

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<sup>13</sup> *Polnoe sobranie zakonov Rossiiskoi Imperii, sobranie 2, tom 9, otdelenie 2, 7684.*

foundation for the compilation of statistics<sup>14</sup>. Because the gathering of information by the statistical committees established for each province was inadequate, the Central Statistical Committee established two divisions, the Statistical Division and the Regional Division (*zemskii otдел*). From then on, a system, centering on the Central Statistical Committee, was put in place for the compilation of statistical data at the national level<sup>15</sup> (MVD RI, 1858, 1863; Goskomstat Rossii, 1996).

The Central Statistical Committee of the Ministry of the Interior did not only use data from the household censuses (*revizii*) described in the previous subsection to compile its population statistics. It also had to refer to parish registers to compile statistics on births and deaths, as well as documents from police surveys, which were essential for obtaining figures for followers of each religion.

The parish registers (*metrichekii knigi*) were based on documents recording “confessions<sup>16</sup>” (*ispovedanie*) to the Russian Orthodox Church. These documents include records of each year’s births, deaths, and marriages. Once a year, on February 1, the provincial governor would collect these figures based on the order of the religious affairs division, and include them in the population schedule that was attached to a report that was sent to the tsar (MVD RI, 1858, 1863)<sup>17</sup>.

In addition, the number of births, deaths, and marriages among followers of other religions or sects, such as Roman Catholics, Protestants, Jews, and Muslims, were supposed to be reported to the local authorities by the heads of each parish (MVD RI,

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<sup>14</sup> *Polnoe sobranie zakonov Rossiiskoi Imperii, sobranie 2, tom 33, otdelenie 1, 32826.*

<sup>15</sup> Nevertheless, some writers have pointed out that a fully-functioning, centralized statistical system did not really exist (Goskomstat Rossii, 1998; Yamaguchi, 2003). The predominant view is that the activities that the *zemstvo* statistical bureaus conducted independently were extremely useful in gathering regional statistics. However, while the *zemstvo* statistical bureaus achieved a lot of success in compiling statistics on agriculture, its compilation of population statistics probably did not surpass that of the regional statistical bureaus that were under the supervision of the Central Statistical Committee. This is partly because *zemstvo* statistical bureaus were only established in a limited number of provinces. They were originally only established in 34 provinces, and even at the outbreak of World War I they only existed in 43 provinces, which covered only around half of the territory of the empire (Goskomstat Rossii, 1998).

<sup>16</sup> “Confessions” normally refers to admitting and repenting for sins. In this context, however, “confessions” (*ispovedanie*) appears to have a broader meaning, which includes the act of believers reporting births, deaths, etc. to the church. It is rendered as “confessions” because the term used in Russian is “*ispovedanie*”.

<sup>17</sup> The reports that were sent to the tsar were handwritten. They contained from several dozen to several hundred pages, and schedules of statistics were included at the back of them. These schedules listed the number of births, deaths (for each sex), and marriages in each of the province’s *uezds* (districts). See, for example, *Otchet o sostoianii Iaroslavskoi gubernii za 1864 g.*

1863)<sup>18</sup>. However, this does not allow one to grasp the numbers and demographics of worshippers who were not tied to any specific church, or separatists from the Orthodox Church (the Old Believers)<sup>19</sup>. The ethnic and religious diversity in Imperial Russia, and the presence of a distinctive Russian separatist sect had a major impact, one that was impossible to ignore, on the accuracy of population statistics. Therefore, to supplement this kind of information, things called administrative-police surveys (*administrativno-politseyskii perepis*) were also referred to. Administrative-police surveys were conducted by the police or administrative offices in each district using the list of dwellings from the household census<sup>20</sup>. This allowed newly-born babies, recently deceased persons, and people who had moved in or out of the area to be added to or deleted from the census records. Because these surveys were not based on religion, it was possible to view figures that could not be obtained from the parish registers.

Population statistics were compiled by adjusting the figures from the last household census, which was conducted in 1858, for births, deaths, and movements, figures for which were obtained from the various records described above (MVD RI, 1858, 1863; Goskomstat Rossii, 1996). This was based on the fact that following the issuance of an imperial order<sup>21</sup> in 1865, the religious affairs division had, as mentioned earlier, provincial statistical committees draw up and submit lists of residents compiled using parish registers. This meant that while statistics on population dynamics were recorded from 1867 onwards, the statistics lacked details such as the age distribution of the registered population, and this quickly led to a realization that there was a need to obtain population data through the use of surveys (MVD RI, 1890). However, it was not until 1897 that the first national population survey since the household censuses ended in 1858 was carried out. This survey was imperial Russia's first and last population

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<sup>18</sup> Like those based on the parish registers of the Orthodox Church, statistics based on the parish registers of Protestant churches and the Roman Catholic Church are believed to be fairly accurate. However, it must be noted that it was the date of baptism, not the date of birth, that was recorded, such that infants who died before they were baptized were not recorded, and also that it was the date of burial, not the date of death, that was recorded (MVD RI, 1866). The reports sent to the tsar by provincial governors recorded the population of the region for the year to which they related. See, for example, *Otchet o sostoianii Sankt-peterburkskoi gubernii za 1864 g.*

<sup>19</sup> The separatists (Old Believers, *raskolniki*) left the Orthodox Church after opposing the changes in rites that were made by the Church in the 1650s. Some of their sects rejected all contact with other sects and lived in the interior of Russia, making it very difficult to gain information about them.

<sup>20</sup> Statistics were not compiled from the surveys. They were merely intended to supplement the household censuses by recording information on things like people who had moved house (MVD RI, 1866).

<sup>21</sup> *Sobranie ukazov*, 1866, st. 141.

census<sup>22</sup>.

### 3.3. Statistical Organization and Population Statistics in Soviet and post-Soviet Russia

After the 1917 revolution, the economic system was rapidly reorganized, and the system for compiling statistics was also reformed in various ways. Although the Supreme Council of People's Economy (*VSNKh: Visshii sovet narodnogo khoziaistva*), which was formed in December 1917, just after the revolution, had a statistics and population survey department, in July 1918 the Central Statistical Board (*TsSU: Tsentralnoe statisticheskoe upravlenie*) was established with the aim of centralizing the compilation of statistics<sup>23</sup>. This was followed by the establishment of regional branches in September of the same year<sup>24</sup>. In addition, companies and organizations were required to submit to the Statistical Board information it deemed necessary and comply with orders it issued. Right from the beginning, however, the priority was not to ensure independence in the process of compiling statistics, but rather to facilitate economic planning, and the Statistical Board was therefore put under the control of what was then the People's Council (Popov, 1988; Yamaguchi, 2003). Then, in 1923, just after the civil war, the Central Statistical Board was attached to the Soviet Union Council of People's Commissars<sup>25</sup>. However, despite this arrangement, the post-revolution civil war and incursions by foreign powers meant that in the early 1920s it was impossible to gather business or census statistics for the entire Soviet territory<sup>26</sup>.

The watershed year for the system for compiling statistics was 1930. In January of that year the Central Statistical Board became a department of the State Planning Commission (Gosplan) (Goskomstat Rossii, 1996). The department's role was clearly defined on the premise that the system for compiling statistics should contribute to economic planning. In 1931 the name of the Central Statistical Board was changed to the Central Administration of Economic Accounting of Gosplan (*TsUNKhU Gosplana: Tsentralnoe upravlenie narodnokhoziaistvennogo ucheta*), which from 1941 to 1948 was known as the Central Statistical Board of Gosplan (*TsSU*

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<sup>22</sup> Obviously, there may have been a large number of problems with the methods used when conducting the fieldwork for this, Russia's first, population census. Although labelled as a self-administered survey, Valentei (1985) has pointed out that because of the low level of literacy at the time, the persons conducting the surveys often filled in the forms themselves.

<sup>23</sup> Dekret soveta narodnikh komissarov o gosudarstvennoi statistike ot 25 iulia 1918.

<sup>24</sup> <Polozhenie ob organizatsii mestnikh statisticheskikh uchrezhdenii> ot 3-go sentiabria 1918 g.

<sup>25</sup> <Postanovleniia korregii TsSU> ot 17-go iulia 1923.

<sup>26</sup> For example, the population census carried out in 1920 only managed to cover the European parts of the Soviet Union. Other regions could not be surveyed.

*Gosplana*) following another name change (Goskomstat Rossii, 1996). Yamaguchi (2003) pointed out, probably correctly, that these reforms were carried out because during the rapid industrialisation that occurred before World War II, particularly during the five-year plan that started in 1928, the existence of an independent statistical organization would have resulted in the emergence of a gap between the producers and users of statistics, and that this would have hindered the successful implementation of the economic plans.

Later, in 1948, the Board was separated from Gosplan and became the Central Statistical Board under the Council of Ministries of the USSR, and then in 1978 achieved independence as the Central Statistical Board. The Board has continued to conduct activities ever since, and following several name changes is now, at the time of writing in 2007, known as the Russian Federal State Statistics Service. The methods used for collecting and producing statistics are basically the same in the modern Russian Federation as they were in the Soviet era. Statistics in the Soviet era were characterized by centralisation. Statistics were not produced by individual ministries and agencies. Rather, each ministry and agency provided statistical reports on corporations and organisations to the Central Statistical Board, which then compiled statistics from these reports (Goskomstat Rossii, 1996). However, because the country's transition to a market economy following the collapse of the Soviet Union has resulted in profound changes in the forms of corporations and the structure of industry, the old method of putting together production statistics and other statistics, which centred on reports produced by individual business units, has clearly become less effective (Yamaguchi, 2003). This has led to the introduction of something called the Unified State Directory of Enterprises and Organisations (*EGRPO: Edinii gosudarstvennii registr predpriatii i organizatsii*) (Goskomstat Rossii, 2001; Yamaguchi, 2003) as part of a series of systematic reforms aimed at enhancing statistical precision.

In 1920, less than three years after the revolution, the Soviet Union carried out its first population census. This census was conducted to provide basic data for the implementation of the State Plan for Electrification of Russia (*GOELRO: Gosudarstvennii plan elektrifikatsii Rossii*), which was a precursor to the five-year plans. However, with the post-revolution civil war still raging, the census had to be limited to the European parts of the Soviet Union. It was the 1926 census that became the first to cover the entire territory of the Soviet Union. Later, in 1937, the first population census since the launch of the five-year plans was conducted. However, because the results showed the impact of the 1930s collectivization of agriculture and the major famines this led to, and the Great Purge, which began around 1935, they were kept on file at the Central Statistical Board and never published. The 1939 census represents the last

truly usable census from before World War II<sup>27</sup>. The first population census after World War II was conducted in 1959. Censuses were then carried out in 1970, 1979, and 1989<sup>28</sup>, with the first population census of modern Russia after the collapse of the Soviet Union at the end of 1991 taking place in 2002.

Russian civil law contains provisions concerning the recording of population dynamics in each calendar year, such that citizens are required, and have been since the Soviet era, to notify the Division for Questions of Registration of Vital Statistics, which is known as ZAGS (*Otdel zapisi aktov grazhdanskogo sostoiianiia*), an organization that handles the registration of births, deaths, and marriages, of any such changes<sup>29</sup>. The system remained unchanged after the collapse of the Soviet Union, with families obliged to report to ZAGS births within one month, and deaths within three days, of the event<sup>30</sup>. Residency registration (*propiska*), including the registration of interregional migration, must be done at local branch offices of the Ministry of Internal Affairs<sup>31</sup>. Using the data gathered from this system, population statistics have been

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<sup>27</sup> However, only a single volume of tables of data from the 1939 population census was published. It included populations by region and sex, the number of workers by level of educational attainment (i.e., graduation from junior or senior high school) and sex, working populations by region and industry, working populations by sex and region, and population composition by region and ethnic group. See Poletaev and Polskii (1992).

<sup>28</sup> See Clem (1986) for more information on population censuses in the Soviet Union.

<sup>29</sup> ZAGS is an organization that registers matters such as births, deaths, marriages, and divorces. It retains the same name in modern Russia that it had during the Soviet era, and is under the supervision of the Ministry of Justice. See <Kodeks o brake i seme RSFSR ot iunia 1969 goda>. The decision to establish ZAGS was made between 1917 and 1918, with the organisation intended to replace the parish registers that had been used until then. Apparently, however, because of factors such as the turmoil of the civil war, it was not until the end of 1919 that the cities of European Russia introduced the new system, and even in 1923 the system still only covered urban areas, albeit throughout the entire nation (TsSU SSSR, 1928a). By 1926 the system seems to have been functioning throughout the whole of the Russian Soviet Socialist Republic, given that the number of infants under one year old recorded in the 1926 census nearly matched the number of births minus infant mortalities derived from the ZAGS records. However, it is posited that the ZAGS system remained inadequate in the following regions: the Yakutia Autonomous Republic, the Bashkortostan Autonomous Republic, the Dagestan Autonomous Republic, the Ingush and Chechen autonomous oblasts and other parts of the North Caucasus, Sakhalin and Kamchatka, and central Asia and the Caucasus (TsSU SSSR, 1928b, TsSU RSFSR, 1928).

<sup>30</sup> Obzor Federalnogo zakona No,143-FZ ot 15. 11. 97 <Ob aktakh grazhdanskogo sostoiianiia> (v redaktsii Federalnikh zakonov ot 25. 10. 2001; N138-F3 ot 29. 04. 2002 N44-F3 ot 22. 04. 2003; N46-F3 ot 07. 07. 2003 N120-F3).

<sup>31</sup> Residency registration (*propiska*) is under the purview of the Ministry of Internal Affairs. <Polozhenie o pasportnoi sisteme v SSSR> ust. postanovleniem SM SSSR ot 28 avgusta 1974 g. N677 (s izmeneniami ot 28 ianvaria 1983 g. , 15 avgusta 1990 g. ); Postanovlenie pravitelstva RF ot 17 iulia 1995 g. N713 (v redaktsii ot 16 marta 2000 g.). Residency of half a month or more in the Soviet era, and 10 days or more in modern Russia, needed to be reported within three days. In the



produced and published annually since 1956 in *The National Economy of the RSFSR (Narodnoe Khoziaistvo RSFSR)*, a collection of official statistics<sup>32</sup>. Of course, it was impossible for residency registration alone to fully capture interregional migration and accurately record regional populations. It also should be mentioned that in the Russian Soviet Socialist Republic during the Soviet era, 0.75 percent of the population was revised as being unregistered during the period between the 1959 population census and the 1970 census 11 years later (Kumo, 2003).

#### 4. Processing of Russian Population Statistics

##### 4.1. Population Statistics from Imperial Russia

As mentioned earlier, no household censuses, which were designed to calculate the population of people liable for taxes, were conducted after 1858. This meant that the task of producing statistics shifted away from agencies under the jurisdiction of the tax authorities, and it is fair to say that a foundation was laid for improving statistical accuracy. In 1858 and 1863 the Central Statistical Committee of the Ministry of the Interior experimented with producing various statistics based on data such as that from the household census. Then, from 1866, it began to compile and publish statistics, initially intermittently but later on a permanent basis.

So now let the authors survey population statistics from imperial Russia. The statistics this paper will look at are extracted from the series of official statistics published between 1866 and 1918.

Using various data presented in sections such as “Population Dynamics in European Russia in the Year \*\*\*\*” (*Dvizhenie naseleniia v evropeiskoi Rossii \*\* god*) from Central Statistical Committee publications entitled the *Statistical Bulletin of the Russian Empire (Statisticheskii vremennik Rossiiskoi Imperii)*, published intermittently between 1866 and 1897, and *Statistics of the Russian Empire (Statistika Rossiiskoi Imperii)*, which was published between 1887 and 1916, it is possible to obtain figures for the period to 1910 for the numbers of births, deaths, infant deaths, and rates of these per 1,000 people for 50 provinces in imperial

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Soviet era (from 1974 onwards), failure to register residency was punishable by a fine of between 10 and 50 roubles. However, the *propiska* system only became effective in 1932 (Andreev, Darskii and Kharkova, 1998).

<sup>32</sup> Although the registers of births, deaths, etc. and residency registers cannot record everything, people obviously have various incentives to report events and changes in their lives. See Matthews (1993).

European Russia<sup>33</sup>. Total population (by province) is presented in some years and not in others. Statistics on births and deaths exist, but they cannot be directly relied upon to paint a picture of dynamics since the middle of the 19<sup>th</sup> century. This is because the imperial notion of “European Russia” differs greatly from the territory covered by modern European Russia or Soviet-era’s European Russia.

From 1904, statistical yearbooks entitled *Yearbook of Russia (Ezhegodnik Rossii)* (published between 1904 and 1910) and *Statistical Yearbook of Russia (Statisticheskii ezhegodnik Rossii)* (published between 1912 and 1918) were published at regular intervals. Because the dynamic statistics on the population of European Russia they presented were probably preliminary, for the period 1904-1910 the authors used the numbers of births, deaths, and infant deaths carried in sources such as the “Population Dynamics ... in the Year \*\*\*\*” section of *Statistics of the Russian Empire*, which was published a little after the years to which the data it contains relates. However, the *Yearbook of Russia* and the *Statistical Yearbook of Russia* are useful in that they record the populations of regions (provinces) and the districts within them not just for European Russia, but for the entire territory of imperial Russia. However, the question of how accurate these statistics are obviously arises. When the total population of European Russia according the 1897 population census is compared with the total populations extrapolated from the sections on population dynamics in the 1893, 1895, 1896, and 1897 editions of *Statistics of the Russian Empire*, it is possible to confirm that the disparity is less than 1.5 percent<sup>34</sup>. Judging that it would be possible to rely on these statistics, the authors decided for this paper to use the following procedure for processing statistics from the imperial era<sup>35</sup>.

(1) To begin with, for imperial European Russia for the period 1904-1916, the authors sorted by region (*gubernias, oblasts, and krajs*) all the figures for population and numbers of births, deaths, and infant deaths that the authors could obtain for all the years that they had data for by

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<sup>33</sup> Infant mortality rates can be calculated from tables showing the number of deaths by age in months (There are no tables showing the number of deaths of infants up to one year old.) Rates for the other events (births, deaths, etc.) can be calculated as long as a figure for total population, i.e., the denominator, can be obtained. Unfortunately, however, figures for total population were only provided in a limited number of years.

<sup>34</sup> When calculated by extrapolating from crude death rate and crude birth rate statistics, the total registered population in European Russia in 1897 was around 94,800,000. The census, meanwhile, gives a figure of just over 93,400,000 for European Russia.

<sup>35</sup> As described, the method used here is an extremely simple one, involving the application of dynamic statistics on the whole of imperial European Russia to the modern Russian Federation. The Appendix contains alternative estimates of total population made using the ratio between the European and non-European parts of the present Russian Federation for years for which actual data could be obtained.

region.

(2) Because the national borders of the Russian Federation since the collapse of the Soviet Union do not match the borders of the *gubernias*, *oblasts*, etc. of imperial Russia, this study used the proportion of the land area of each of the administrative divisions of imperial Russia that was included in the territory of the Russian Soviet Federated Socialist Republic (RSFSR), i.e., the territory of the present Russian Federation, as produced by Leasure and Lewis (1996), to calculate populations and numbers of births, deaths, etc. for each region. The authors then added up the totals to estimate figures for the European part of the present Russian Federation<sup>36</sup>.

(3) The problem was how to handle the Caucasus, Siberia, and the Far East, because no dynamic statistics were published on these regions during the imperial era. The same is true for the portion of imperial Russian Finland that is included in the present Russian Federation, though the total population of this region could be obtained for 1885 and 1904–1916. Looking at the regional distribution of the total population of imperial Russia using the method described in (2), one can see that the total population of the Caucasus, Siberia, the Far East, and the portion of Finland described above as a percentage of the total population of the territory of the present Russian Federation was no more than 21.3 percent in any of the years between 1885 and 1916 for which figures could be obtained, and about four fifths of the total population of these regions resided in European Russia<sup>37</sup>. Given this situation, to grasp the overall trend the authors applied the figures for crude birth rate, crude death rate, and infant mortality rate obtained in (2) for the European part of the present Russian Federation to these territories outside European Russia. This paper applied the crude birth rate, crude death rate, and infant mortality rate for European Russia to the 1916 population of the Caucasus, Siberia, and the Far East (plus part of Finland) calculated using the method described in (2), and used them to go back and calculate populations for previous years.

(4) For the years 1901 to 1903, using the method described in (3) above, this study used the crude birth rate, crude death rate, and infant mortality rate for European Russia to go back and extrapolate populations for these years.

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<sup>36</sup> Leasure and Lewis (1966) also calculated the proportions of the land areas of imperial Russian *gubernias* outside European Russia (the Caucasus, Siberia, the Far East, etc.) that were included in the territory of the RSFSR. They used these proportions to calculate the 1916 total population of regions outside European Russia.

<sup>37</sup> Although the Far East covers a vast area, development there began in earnest not at the end of the 19<sup>th</sup> century, but after the 20<sup>th</sup> century had begun. Until then its population was extremely small. Even in 1904, the entire population east of Lake Baikal was less than 1.2 million (Tsentralnii statisticheskii komitet M. V. D., 1905).

(5) In addition, modern Kaliningrad<sup>38</sup> is not included for the entire imperial era.

(6) For reference purposes, the authors also calculated dynamics for the years 1891 to 1900 for the regions of imperial European Russia that lie within the European part of the present Russian Federation. The authors then applied the rates of natural increase obtained to the entire territory, and produced a time series for total population. In addition, this paper used crude birth rates and crude death rates for imperial European Russia (not the European portion of the present Russian Federation) to go back and extrapolate populations for the years 1867–1890<sup>39</sup>.

#### **4.2. Population Statistics in Soviet and post-Soviet Russia and Problems Relating to Them**

The biggest problem with studying population statistics on post-revolution Soviet Russia is that it is not always easy to get hold of reliable data. Although population censuses were carried out in the early years of the Soviet Union, in 1926, 1937, and 1939, and the first census after World War II was conducted in 1959, it is often impossible to obtain from official statistics information to fill in the gaps between these years. This is especially difficult to know what to do with the period from 1917 to 1921, when the revolution, civil war, and incursions by foreign powers turned the country into a battleground. The same obviously goes for 1941–1945, when the nation was in the grip of World War II. It is also extremely difficult to obtain population statistics on the 1930s, a period marked by the collectivisation of agriculture and the confusion and major famines it led to, as well as the Great Purge. In short, hardly any population statistics were published from the end of the 1920s to the beginning of the 1950s. Because of this, the only pre-1950 figures that could provide a reliable benchmark were often not official statistics, but historical materials from the statistical authorities that can be viewed by examining official archive materials.

Because of this situation, for this paper the authors abandoned the idea of placing priority on obtaining primary historical materials like these and using them to make independent estimates of Soviet-era population statistics, and decided to focus instead on presenting as many figures as the authors could obtain that could serve as a basis for such statistics. This paper used officially published statistics and historical materials from the archives (Russian State Economic

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<sup>38</sup> Part of the Königsberg region that was broken up and combined by Poland and the Soviet Union after World War II. It was renamed Kaliningrad in 1946, and currently exists as a Russian enclave sandwiched between Poland and Lithuania.

<sup>39</sup> Because the authors could only obtain by-region birth and death statistics for some of the years between 1867 and 1890, they abandoned efforts to harmonize the old and new territory. Crude birth rates and crude death rates for imperial European Russia were always included in the preamble to the official statistics described earlier.

Archive, *RGAE*)<sup>40</sup>. From 1956 onwards, statistics were published without intermission, and it was relatively easy to obtain data dating back to 1950.

Next one had to take into account the changes in administrative divisions. Various changes in administrative divisions and their territories occurred after the revolution and around the time the Soviet Union was established, in the 1930s, and because of World War II. Even if one ignore the changes that resulted from the war, a major systemic shift occurred with the establishment of the republics that were to make up the Soviet Union, which were created for each of the nation's different ethnic groups. Although it would be impractical to list all the changes one by one, a few points, given below, need to be kept in mind. Most of the changes of the 1920s and 1930s were made in accordance with the Soviet Union's famed "national delimitation" policy of redrawing the boundaries of imperial Russian administrative divisions on ethnic lines, which led to the establishment of republics named after the predominant ethnic group they contained<sup>41</sup>.

- From the establishment of the RSFSR in 1917 until 1936, modern Kazakhstan and Kyrgyzstan were included in the RSFSR as the Kazakh Autonomous Republic and the Kyrgyz Autonomous Oblast (later the Kyrgyz Autonomous Republic).

- Modern Uzbekistan, Tajikistan, Turkmenistan, and part of Kazakhstan were included in the RSFSR as the Turkmenistan Autonomous Republic from the revolution until 1924.

- Until 1924, the Orenburg Oblast of modern Russia was included in the Kazakh Autonomous Republic described above. Therefore, for this period until 1924 it must be included in the RSFSR.

- In 1924 the Vitsebsk Oblast, now part of Belarus, was transferred from the RSFSR to the Byelorussian Republic. The same thing happened to the Gomel Oblast, also now part of Belarus, between 1924 and 1926.

The above factors need to be taken into account when using statistics from the 1920s and 1930s to derive population statistics for the territory covered by the modern Russian Federation. Care also needs to be taken with factors such as (1) the treatment of the area around the Karelian Isthmus and the Republic of Karelia of the modern Russian Federation, which were acquired from Finland following the Winter War of 1939-1940 and the Continuation War

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<sup>40</sup> However, the authors obtained the total population for 1937 not from official statistics or archived historical materials, but from Poliakov, Zhiromskaia, Tiurina and Vodarskii's (2007) collection of archived historical materials relating to the 1937 population census. This is because throughout the period from beginning our study to writing this paper, the tables of results of the 1937 census were out on loan to some officials of the RGAE, and the authors were therefore unable to examine them. Obviously, however, the authors examined all the other historical materials personally.

<sup>41</sup> Sukevich (1941) provides a short summary of this.

(1941-1944), (2) the incorporation into the present Ukraine (where it remains) of the Crimean Autonomous Republic (later the Crimean Oblast), which was under the control of the RSFSR until 1954, and (3) the inclusion of the Tyva autonomous republic into the RSFSR, which occurred after 1944.

## 5. Results

Figures 1 to 3 and Table 1 show the results of compiling population statistics on imperial Russia, Soviet Russia, and modern Russia using the methods described in the previous section. Let the authors now provide a short summary of these results.

As can be seen from the figures for total population shown in Figure 1, the impact of the Russian Revolution and the turmoil that followed it, and that of World War II, was enormous. Following the revolution in 1917, it took until around 1930 for the population to recover to its pre-revolution level. In addition, it was not until 1956 that the population surpassed the level it was on January 1, 1941, just before the outbreak of the war with Germany. If one compare the population of the territory covered by the present Russian Federation at the end of the imperial era with that in 1946, one see that nearly 30 years of population growth had been wiped out. Although this is a widely-known fact among those that study the demographic history of the Soviet Union (see Poliakov and Zhiromskaia, 2009, and Vishnevskii 2006), this study is the first attempt to produce a population time series for the period until the 1860s in the late imperial era for the territory covered by the present Russian Federation.

As mentioned earlier, it is possible, based on the limited data available, to use the total population and number of births, deaths, and infant deaths at the end of the 19<sup>th</sup> century to go back and extrapolate data on the European part of the present Russian Federation during the imperial era. In addition, as described in sections 3 and 4, because figures can actually be obtained for each of the regions (called *gubernias* in the imperial era) from 1891 to the early 20<sup>th</sup> century, the data for these regions can be considered to be reasonably accurate. However, the method used in this paper cannot ensure the accuracy of the figures for the non-European territory of the present Russian Federation.

What is noticeable when looking at Figure 2 is the high crude birth rate in the late imperial era and the slight decline in the crude death rate at the end of that era<sup>42</sup>. These observations have already been made by researchers such as Rashin (1956) and Vishnevskii (2006), but apart from the study by Rashin (1956), no other research has made use of primary

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<sup>42</sup> The decline in the crude death rate from 1891 is statistically significant, while the crude birth rate shows no clear upward or downward trend.

historical materials. In fact, most other studies have simply quoted Rashin's (1956) study. The current study, however, proves that Rashin's (1956) findings were correct<sup>43</sup>. No clear upward or downward trend in the infant mortality rate can be discerned.

If one now link together the imperial and Soviet eras, one see from Figure 2 that there was a marked decline in the crude birth rate and death rate before and after the two world wars. This was also pointed out by Vishnevskii (2006). In producing for this paper a time series of population during the imperial era, the authors simply invoked the data on crude birth and death rates for the European part of the present Russian Federation (for 1891-1903) and the entire European part of imperial Russia (for the period up to and including 1890). This means that the findings this study have obtained by using rates as the basis for the authors' findings more or less match the findings of previous research.

For the early Soviet era, this paper attempted a survey of archived historical materials, but were unable to find all the figures the authors needed. In addition, the notes to Table 1 mention that depending on the year, there were large differences in the accuracy of the data, in terms of the regions covered, for example. There was almost no data at all for 1916-1923, which includes the period from the end of the revolution to the conclusion of the civil war, while for 1928-1945 there were numerous regions for which data was lacking. There will obviously be large gyrations in the figures for these two periods. Of course, they were Russia's most tumultuous periods, so even if data could be obtained<sup>44</sup> it would probably not be particularly reliable. However, if it is admissible to overlook gyrations caused by external factors, the results of the study presented in this paper should be of some help in identifying population trends.

Now let the authors discuss the data for the Soviet era. Apart from the figures for infant deaths between 1927 and 1938, the dynamic statistics presented here are from exactly the same historical materials used by Andreev, Darskii and Kharkova (1998). As for the infant deaths figures, Andreev, Darskii and Kharkova (1998) give the source as the Goskomstat SSSR archives, but this cannot be verified because they did not identify the registered number of the materials. The authors therefore conducted their own investigation at other public archives in order to determine the authenticity of the data. Although the historical materials this study used to extract total populations for 1941-1945 partially match those used by Ispov (2001), the figures this paper presents are different. This is because Ispov (2001) did not make adjustments for places like the Crimean Autonomous Republic (later Oblast), and the authors would like to

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<sup>43</sup> Rashin (1956) produced and discussed processed statistics for periods five years apart.

<sup>44</sup> Although the authors were able to obtain dynamic statistics for 1927-1938 and dynamic and population statistics for 1942-1945 from the Russian State Economic Archive, data was lacking for some regions for every one of the years. (See the notes to Table 1.)

stress that the figures presented in this paper are correct as population figures for the territory of the present Russian Federation excluding regions that were under occupation.

This study identified the numbers of births, deaths, and infant deaths for the World War II (1941–1945) period. While Ispov (2001) produced only two- to three-year time series, for this paper the authors were able to provide figures for every year. However, because data is lacking for many regions for this period, it is impossible to use the statistics as is. In addition, the crude death rate for regions for which data could be obtained would undoubtedly have been lower than it was for regions for which data is lacking (e.g. regions that were under occupation). So the key problem is the unusually high death rate that one would expect to see in these regions for which data was lacking. In fact, unless the natural rate of increase is a negative figure whose absolute value is larger than the figure obtained here, it is impossible to explain the decline in total population during World War II. The infant mortality rate jumps in 1943, and archived historical materials support this (Figure 3a). Whether or not this reflects reality cannot be determined from the historical materials obtained. If the infant mortality rates for World War II are eliminated, it is possible to discern a major trend (Figure 3b).

The numbers of births, deaths, and infant deaths for 1946–1949 and the number of infant deaths for 1951–1952, 1955–1957, and 1959 differ from those in the historical materials used by Andreev, Darskii and Kharkova (1998). Unfortunately, however, there is no way of ascertaining the causes of these not insignificant differences because the historical materials for 1946–1955 used by Andreev, Darskii and Kharkova (1998) remain classified<sup>45</sup>. The authors did manage to find, however, dynamic statistics for 1946–1955 by examining declassified historical materials. With regard to this period, it is worth mentioning that the authors obtained the population at the beginning of 1946 and the population on February 1, 1947 from archived historical materials, but experienced huge difficulties when trying to compare them with the 1950 population as presented in official statistics<sup>46</sup>. This paper therefore used the number of

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<sup>45</sup> At the time of writing in October 2007, the historical materials they used are archived as “RGAE, Fond 1562, Opis 33s, Delo 2638”. The “s” following the Opis series number stands for *sekretno*, which means “classified”, and it is unclear how they were able to access them. The authors were refused such access.

<sup>46</sup> According to RGAE, F. 1562, O. 20, D. 626, L. 2-3 (1946) and RGAE, F. 1562, O. 20, D. 684 (1947), the population was 90,295,000 at the beginning of 1946 and 94,661,000 on February 1, 1947. However, compared with the 1950 population of 101,438,000, these figures are too small. Moreover, the difference between the figures for 1946 and 1947 is too large. Between 1946 and 1949, increases/decreases due to inter-Union republican and international migration were tiny, so the authors decided that one could not rely on the total population figures for these years. Note also that the authors were unable to find out the total population in 1948-1949 using archived historical materials. (The Delo list in the Soviet Union’s Central Statistical Board’s Opisi 20 series of population statistics did not contain any population statistics.)



births and deaths to go back and extrapolate populations for 1946–1949 from the population in 1950.

Finally, the dynamics of modern Russia are well known (Shimchera, 2006; Vishnevskii, 2006). The rise in the crude death rate since 1991 is particularly striking. In imperial Russia the crude death rate climbed most noticeably in 1891, during which there was a large-scale famine, while the periods in which the crude death rate jumped during the Soviet-era periods for which the authors were able to obtain data were 1933–1934, also a time of severe famine, and the World War II period. That the population dynamics seen in the present Russian Federation since 1991 are unusual is clear for all to see.

## **6. Challenges Remaining**

In this paper the authors began with a review of the systems that have been used to compile population statistics in Russia from the imperial era, through the Soviet era, and into the modern Russian era. Next, using primary sources, the authors went on to estimate and present a time series of the imperial Russian population of the territory covered by the present Russian Federation by adjusting population statistics for imperial Russia to match this territory. This paper then did the same for the Soviet and post-Soviet era, basing its figures on as many primary sources as the authors could obtain. The aim was to build a foundation for viewing in an integrated way the populations of imperial, Soviet, and post-Soviet Russia. However, many of the problems one faced could not be solved, and the authors have had to set them aside as requiring further investigation.

### **(1) Reliability of Imperial-Era Data and Estimates for Non-European Regions of Russia**

It is probably inevitable that the accuracy of data from the imperial era will be doubted. Nevertheless, a time series for European Russia that meets certain standards can still be put together, and it is sometimes possible to compare estimates based on dynamic statistics with the figures for total population included in official statistics. A major problem one faces is obtaining, and judging the reliability of, data on regions outside European Russia such as the Caucasus, Siberia, and the Far East.

As mentioned earlier, it is almost impossible to get dynamic statistics or total populations for regions outside European Russia in the 19<sup>th</sup> century. From the historical materials examined the authors were able to obtain total populations and dynamics for 1856,

total populations for 1858<sup>47</sup>, and total populations for 1885, but their accuracy is open to question. The methods used to prepare population statistics in imperial Russia described in section 3 of this paper were also applied to non-European Russia. However, no information, except for some data for 1856, on dynamics in the regions outside European Russia was published. Therefore, to produce the long-term time series of population for this paper, the authors accepted the statistics for the European part of imperial Russia at face value, though they do need to be re-examined. It will also be necessary to try to find other usable statistics.

## **(2) Scrutiny of Historical Materials for 1910s–1930s in the Official Archives and Re-Examination of Statistics**

Given the tragedies of the revolution, civil war, incursions by foreign powers, war communism, and famine, it would not be odd to observe a marked decline in population from the end of the 1910s to the early 1920s. This is indeed the case. In the last years of the imperial era and at the beginning of the Soviet era, the population dropped sharply, probably because of factors such as the large number of people who fled the country during the revolution and ensuing civil war. As far as the authors can tell from the investigations made for this paper, there is no data at all for the period from the revolution to the first half of the 1920s.

The same can be said for the 1930s. Between 1930 and 1933, the collectivisation of agriculture led to a decline in crop yields, and this resulted in famine. Yet it is widely known that crops continued to be exported from regions such as the Ukraine despite the fact that people at home were starving (Rosefielde, 1983). In addition, it has been pointed out that the Great Purge, which reached its peak in 1936–1938, claimed several million victims (Rosefielde, 1983; wheatcroft, 1984)<sup>48</sup>. This presents the problem of whether to trust dynamic statistics that do not show anything unusual other than the marked increase in the crude death rate between 1933 and 1934, even if these statistics have been stored in the official archives yet not made public. Andreev, Darskii, and Kharkova (1998) raised clear objections to this and made their own estimates. Any large change in dynamics can easily be seen years later in the distorted population pyramids it leads to, so the authors recognize the need for a re-examination.

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<sup>47</sup> In this paper the authors did not use the statistics for 1856 and 1858. This was because population statistics for these two years relied entirely on data from the household census, and the Ministry of the Interior's Central Statistical Committee noted that they were incomplete (MVD RI, 1858, 1963).

<sup>48</sup> According to documents discovered by Zemskov (2000) in the Russian State Historical Archive, between 700,000 and 1,300,000 people were sent to labour camps each year between 1935 and 1940. (Note, however, that the authors have not examined these documents themselves.)

### **(3) Surveys of Statistics for during and Immediately after World War II**

World War I and World War II turned Russia into a battlefield, and it is hardly surprising that statistics are lacking for regions that were under occupation. The archived historical materials the authors found enabled one to identify the regions for which data is lacking. However, even the figures for regions for which data can be obtained are severely lacking in credibility<sup>49</sup>. Statistics for just the regions for which data for 1942–1944 can be obtained show a negative rate of natural increase was indeed negative, but the annual rate of decline is less than one percent. These statistics therefore do not reflect the true population dynamics of the World War II period, which show up clearly in the distorted age distribution derived from the 1959 census. Further investigations and estimates are therefore required.

It would obviously be unrealistic to expect a high level of accuracy from statistics for post-revolutionary period, World War II, and the period just after World War II, times when the country was in turmoil. However, one also need to be careful not to immediately deny the usefulness of such statistics and reject them out of hand. This is because if one demands precision, usable statistics for the early years of the Soviet Union are extremely scarce. The authors think that it is therefore better to obtain whatever statistics are available, and use them to get an idea of overall trends.

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<sup>49</sup> During World War II, the eastern front shifted frequently, and TsSU SSSR (1942), which presents population statistics for the first day of every month in 1942, shows that the regions for which data was lacking, that is, the occupied regions, changed from month to month.

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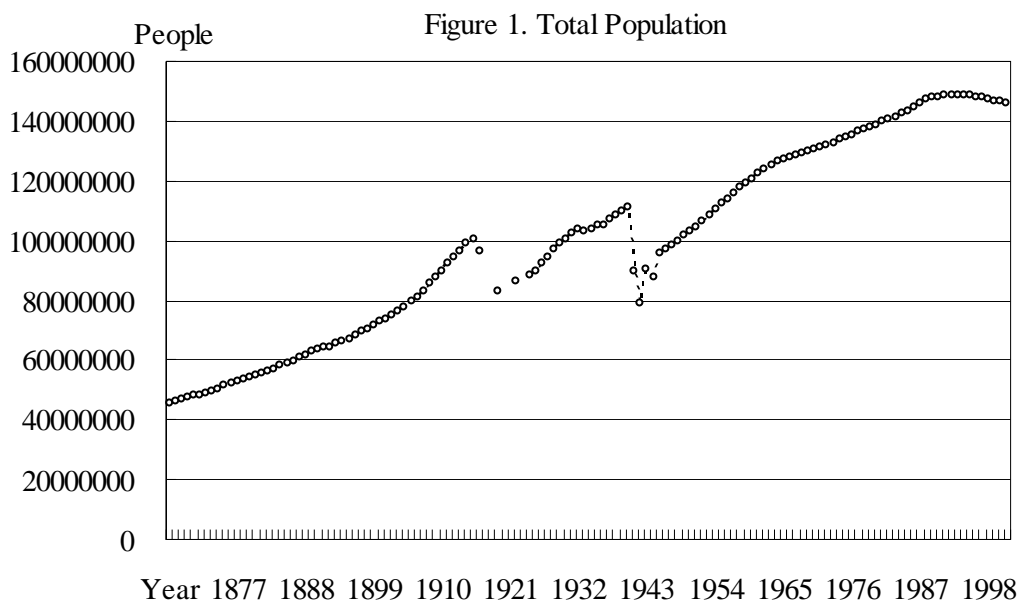
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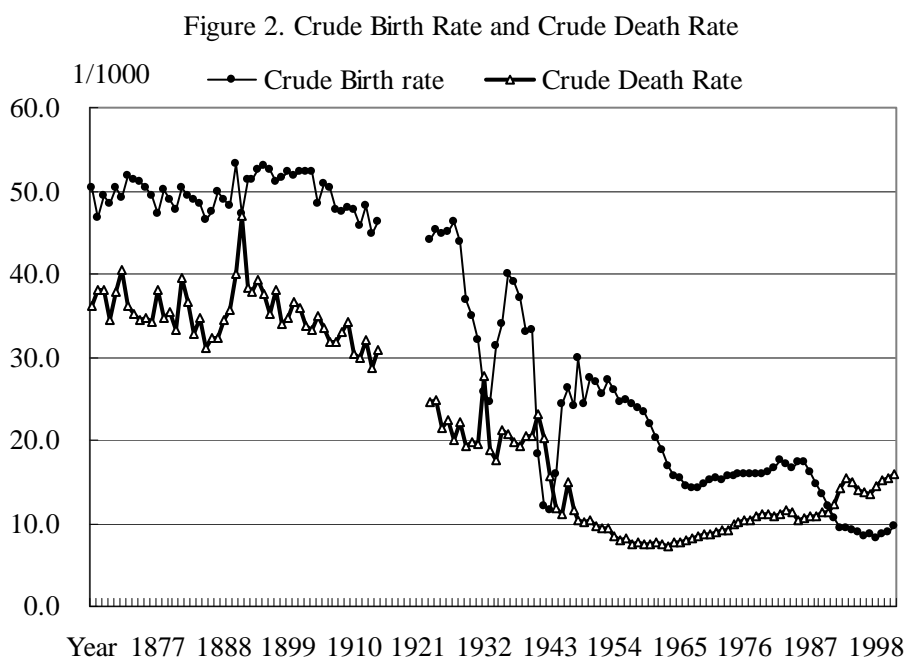
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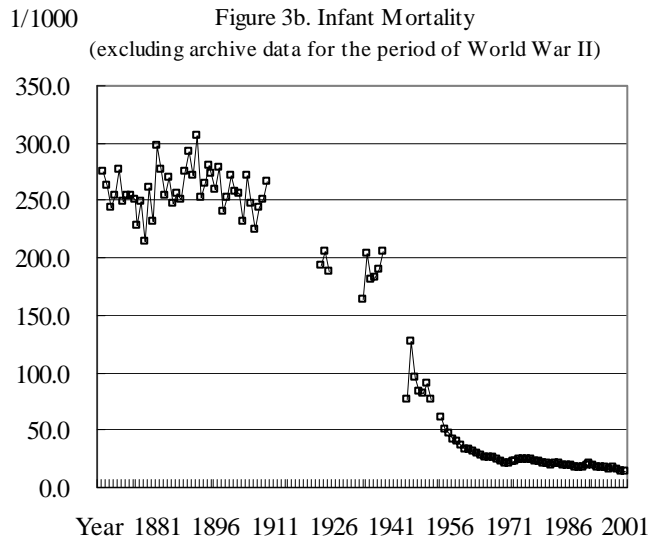
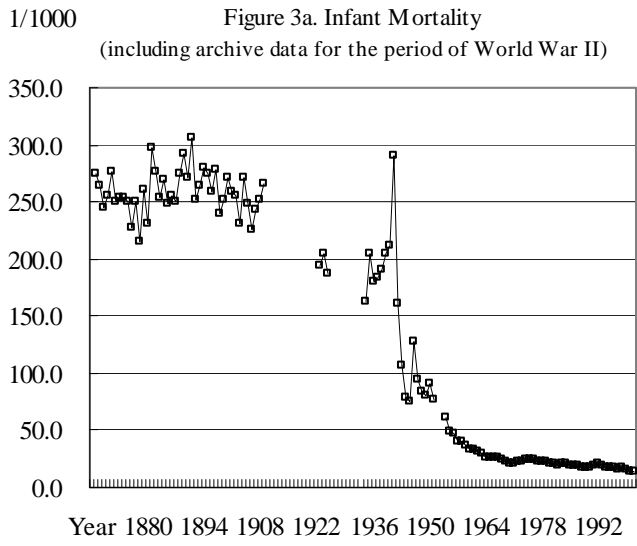


Notes: The figures for the period during World War II are just rough estimates, because data was lacking for numerous regions. In addition, the figures for 1928–1938 (extrapolated from the population in 1927) and 1945–1949 (extrapolated from the population in 1950) were calculated using the difference between the number of births and deaths, and therefore do not reflect changes caused by social factors such as migration.



Notes: Rates for 1867–1890 are for the European part of imperial Russia; rates for 1891–1917 are for the territory of European Russia within the present Russian Federation; rates for 1918–2002 are for the entire territory of the present Russian Federation. Rates for the 1927–1938 and 1942 periods are just rough estimates, because data was lacking for an extremely large number of regions. Figures for 1924–1925 were only calculated for European Russia.





Note: Notes are the same as those for Figure 2.

Table 1. Results

Year	Total Population	No. of Births	No. of Deaths	No. of Infant Deaths	Crude Birth rate	Crude Death Rate	Infant Mortality	Natural Increase	Source
1867	45606000	2293000	1647000		50.3	36.1		14.2	[38], [60], [64]
1868	46262000	2165000	1762000	593900	46.8	38.1	274.3	8.7	[38], [60]
1869	46668000	2301000	1773000	606500	49.3	38.0	263.6	11.3	[38], [60]
1870	47202000	2285000	1626000	558700	48.4	34.4	244.6	14.0	[38], [60], [63]
1871	47870000	2413000	1809000	614600	50.4	37.8	254.7	12.6	[38], [55], [59]
1872	48482000	2380000	1963000	658500	49.1	40.5	276.6	8.6	[38], [55], [58]
1873	48903000	2533000	1769000	631900	51.8	36.2	249.4	15.6	[38], [55], [57]
1874	49679000	2549000	1744000	647000	51.3	35.1	253.9	16.2	[38], [55], [56]
1875	50497000	2585000	1738000	658100	51.2	34.4	254.5	16.8	[38], [54], [55]
1876	51359000	2583000	1778000	647200	50.3	34.6	250.5	15.7	[38], [53], [54]
1877	52177000	2572000	1785000	586500	49.3	34.2	228.0	15.1	[38], [53]
1878	52976000	2506000	2023000	625900	47.3	38.2	249.8	9.1	[38], [51], [52]
1879	53463000	2673000	1855000	574800	50.0	34.7	215.0	15.3	[38], [49], [51]
1880	54294000	2650000	1921000	689900	48.8	35.4	260.4	13.4	[38], [47], [49]
1881	55033000	2631000	1830000	608100	47.8	33.3	231.2	14.5	[38], [46], [47]
1882	55844000	2815000	2205000	836300	50.4	39.5	297.1	10.9	[38], [45], [46]
1883	56461000	2791000	2070000	772900	49.4	36.7	276.9	12.8	[38], [45], [48]
1884	57191000	2802000	1873000	711800	49.0	32.7	254.0	16.3	[38], [39], [44]
1885	58136000	2815000	2015000	760600	48.4	34.7	270.2	13.8	[38], [39], [40], [41]
1886	58947000	2742000	1837000	680400	46.5	31.2	248.1	15.4	[37], [38], [40], [46]
1887	59866000	2844000	1930000	727400	47.5	32.2	255.8	15.3	[36], [37]
1888	60793000	3034000	1962000	758600	49.9	32.3	250.1	17.6	[36]
1889	61884000	3020000	2135000	830000	48.8	34.5	274.8	14.3	[34], [35]
1890	62782000	3026000	2241000	883000	48.2	35.7	291.8	12.5	[33], [34]
1891	63577000	3383000	2537000	920500	53.2	39.9	272.1	13.3	[12], [30], [31]
1892	64435000	3041000	3033000	932700	47.2	47.1	306.7	0.1	[12], [29], [30], [31], [32]
1893	64443000	3307000	2477000	833300	51.3	38.4	252.0	12.9	[2], [12], [31]
1894	65284000	3358000	2471000	889600	51.4	37.8	264.9	13.6	[12], [26], [27], [30]
1895	66184000	3477000	2597000	972900	52.5	39.2	279.8	13.3	[12], [26], [28], [29]
1896	67076000	3559000	2522000	975100	53.1	37.6	274.0	15.5	[12], [26], [27], [28]
1897	68128000	3576000	2391000	928000	52.5	35.1	259.5	17.4	[12], [26]
1898	69334000	3543000	2638000	987800	51.1	38.0	278.8	13.0	[12], [25]
1899	70251000	3622000	2382000	868200	51.6	33.9	239.7	17.7	[12], [24], [25]
1900	71514000	3732000	2488000	942200	52.2	34.8	252.4	17.4	[12], [23], [24]
1901	72780000	3771000	2674000	1024000	51.8	36.7	271.6	15.1	[12], [22], [23]
1902	73895000	3868000	2647000	998700	52.3	35.8	258.2	16.5	[21], [22]
1903	75136000	3924000	2533000	1006000	52.2	33.7	256.3	18.5	[13], [20], [21]
1904	76553000	3999000	2553000	926300	52.2	33.3	231.6	18.9	[12], [19], [20]
1905	77989000	3778000	2734000	1026000	48.4	35.1	271.5	13.4	[11], [18], [19]
1906	79365000	4028000	2660000	998700	50.7	33.5	248.0	17.2	[10], [17], [18]
1907	80874000	4079000	2571000	919700	50.4	31.8	225.4	18.7	[9], [16], [17], [18]
1908	82871000	3957000	2631000	965900	47.7	31.8	244.1	16.0	[8], [15], [16]
1909	85962000	4077000	2844000	1024000	47.4	33.1	251.3	14.3	[7], [14], [15]
1910	87960000	4227000	3003000	1125000	48.1	34.1	266.1	13.9	[6], [14]
1911	89832000	4287000	2731000		47.7	30.4		17.3	[4], [5], [6]
1912	92533000	4228000	2772000		45.7	30.0		15.7	[3], [4], [5]
1913	94260000	4553000	3026000		48.3	32.1		16.2	[2], [3], [4]
1914	96307000	4317000	2756000		44.8	28.6		16.2	[2], [3]
1915	98832000	4578000	3042000	1915-1917: World War I	46.3	30.8		15.5	[1], [2]
1916	100563000								[1]
1917	96585000								[1]
1918				1918-1922: Turmoil of the revolution, civil war, and incursions by foreign powers					
1919									
1920	83077000								
1921									
1922									
1923	86265000	***2362495	***1262658	***329968					
1924		***2983462	***1658396	***579232	***44.1	***24.5	***194.1	*19.6	
1925	88413000	***3486044	***1903550	***716349	***45.3	***24.8	***205.5	*20.5	
1926	89874000	4020000	1919000	756000	44.7	21.4	188.1	*23.4	
1927	92372000	*4166971	*2080600		*45.1	*22.5	***217	*22.6	
1928	*94458371	*4276332	*1840944		*46.3	*19.9		*26.4	See notes at the end for 1918-1945.
1929	*96893759	*4138975	*2099648		*43.8	*22.2		*21.6	
1930	*98933086	*3576495	*1875730		*36.9	*19.4		*17.6	
1931	*100633851	*3573238	*2020003		*35.0	*19.8		*15.2	
1932	*102187086	*3339568	*2038250		*32.2	*19.6		*12.5	
1933	*103488404	*2706729	*2920611		*25.7	*27.7		*-2.0	
1934	*103274522	*2627899	*1994229		*24.6	*18.7		*5.9	
1935	*103908192	*3339922	*1863532	*546042	*31.4	*17.5	*163.5	*13.9	
1936	*105384582	*3648268	*2261761	*744653	*34.1	*21.1	*204.1	*12.9	
1937	104929343	*4197595	*2179054	*760306	*40.0	*20.8	*181.1	*19.2	
1938	*106947884	*4140000	*2096000	*758968	*38.9	*19.7	*183.3	*19.2	
1939	108380000	*4017939	*2080643	*764149	*37.1	*19.2	*190.2	17.9	

Table 1 (Continued)

Year	Total Population	No. of Births	No. of Deaths	No. of Infant Deaths	Crude Birth rate	Crude Death Rate	Infant Mortality	Natural Increase	Source
1940	*109813600	*3624000	*2262000	*743000	33.0	20.6	205.0	12.4	
1941	*111016200	*3682726	*2263056	*777885	*33.2	*20.4	*211.2	*12.8	
1942	* **89794900	* **1654086	* **2084172	* **480933	* **18.4	* **23.2	* **290.8	* ** -4.8	
1943	* **78708500	* **947612	* **1598199	* **152213	* **12.0	* **20.3	* **160.6	* ** -8.2	
1944	* **90688500	* **1049543	* **1413788	* **111723	* **11.6	* **15.6	* **106.4	* ** -4.0	
1945	* **87992300	* **1387556	* **1040687	* **108806	* **15.8	* **11.8	* **78.4	* **4.0	
1946	*95904000	*2325368	*1061793	*176157	*24.2	*11.1	*75.8	14.0	
1947	*97168000	*2563151	*1448482	*326986	*26.4	*14.9	*127.6	12.2	
1948	*98283000	*2358263	*1145486	*224249	*24.0	*11.7	*95.1	13.0	
1949	*99496000	*2977280	*1034963	*248156	*29.9	*10.4	*83.3	20.7	
1950	101438000	2476000	1031000	200600	24.4	10.2	81.0	14.2	
1951	102945000	2825000	1059000	*257404	27.4	10.3	*91.1	17.2	
1952	104587000	2819000	1009000	*216356	26.9	9.6	*76.7	17.3	
1953	106715000	2717000	998900		25.5	9.4		16.1	
1954	108430000	2949000	1014000		27.2	9.3		17.8	
1955	110537000	2866000	935200	*175572	25.9	8.5	*61.3	17.5	
1956	112266000	2769000	880700	*137604	24.7	7.8	*49.7	16.8	
1957	114017000	2832000	935900	*134108	24.8	8.2	*47.4	16.6	
1958	115665000	2819000	861600	115600	24.4	7.4	41.0	16.9	
1959	117534000	2796000	920200	*113110	23.8	7.8	*40.5	16.0	
1960	119046000	2782000	886100	102000	23.4	7.4	36.7	15.9	
1961	120766000	2662000	901600	88540	22.0	7.5	33.3	14.6	
1962	122407000	2483000	949600	81190	20.3	7.8	32.7	12.5	
1963	123848000	2332000	932100	73550	18.8	7.5	31.5	11.3	
1964	125179000	2122000	901800	62640	17.0	7.2	29.5	9.7	
1965	126309000	1991000	958800	53800	15.8	7.6	27.0	8.2	
1966	127189000	1958000	974300	50090	15.4	7.7	25.6	7.7	
1967	128026000	1851000	1017000	47450	14.5	7.9	25.6	6.5	
1968	128696000	1817000	1040000	46390	14.1	8.1	25.5	6.0	
1969	129379000	1848000	1107000	45150	14.3	8.6	24.4	5.7	
1970	129941000	1904000	1131000	43510	14.7	8.7	22.9	5.9	
1971	130563000	1975000	1143000	41520	15.1	8.8	21.0	6.4	
1972	131304000	2015000	1182000	43430	15.3	9.0	21.6	6.3	
1973	132069000	1995000	1214000	44340	15.1	9.2	22.2	5.9	
1974	132799000	2080000	1222000	46930	15.7	9.2	22.6	6.5	
1975	133634000	2106000	1310000	49810	15.8	9.8	23.6	6.0	
1976	134549000	2147000	1353000	53330	16.0	10.1	24.8	5.9	
1977	135504000	2157000	1388000	52210	15.9	10.2	24.2	5.7	
1978	136455000	2179000	1417000	51290	16.0	10.4	23.5	5.6	
1979	137410000	2179000	1490000	49150	15.9	10.8	22.6	5.0	
1980	138127000	2203000	1526000	48500	15.9	11.0	22.0	4.9	
1981	138839000	2237000	1524000	47990	16.1	11.0	21.5	5.1	
1982	139604000	2328000	1504000	46990	16.7	10.8	20.2	5.9	
1983	140530000	2478000	1564000	49190	17.6	11.1	19.8	6.5	
1984	141583000	2410000	1651000	50720	17.0	11.7	21.1	5.4	
1985	142539000	2375000	1625000	49380	16.7	11.4	20.8	5.3	
1986	143528000	2486000	1498000	47580	17.3	10.4	19.1	6.9	
1987	144784000	2500000	1532000	48510	17.3	10.6	19.4	6.7	
1988	145988000	2348000	1569000	44780	16.1	10.7	19.1	5.3	
1989	147022000	2161000	1584000	39030	14.7	10.8	18.1	3.9	
1990	147665000	1989000	1656000	35090	13.5	11.2	17.6	2.3	
1991	148274000	1795000	1691000	32490	12.1	11.4	18.1	0.7	
1992	148515000	1588000	1807000	29210	10.7	12.2	18.4	-1.5	
1993	148562000	1379000	2129000	27950	9.3	14.3	20.3	-5.1	
1994	148356000	1408000	2301000	26140	9.5	15.5	18.6	-6.0	
1995	148460000	1364000	2204000	24840	9.2	14.8	18.2	-5.7	
1996	148292000	1305000	2082000	22830	8.8	14.0	17.5	-5.2	
1997	148029000	1260000	2016000	21740	8.5	13.6	17.3	-5.1	
1998	147802000	1283000	1989000	21100	8.7	13.5	16.4	-4.8	
1999	147539000	1215000	2144000	20730	8.2	14.5	17.1	-6.3	
2000	146890000	1267000	2225000	19290	8.6	15.1	15.2	-6.5	
2001	146304000	1312000	2255000	19100	9.0	15.4	14.6	-6.4	
2002	145649000	1397000	2332000	18410	9.6	16.0	13.2	-6.4	

See notes at the end.

**Notes to the Data on Imperial Russia**

# The statistical books contained numerous miscalculations and typographical errors. Particularly conspicuous were instances where the populations of all the provinces did not add up to the figure for total population and instances where the populations of all the districts of a province did not add up to the population of the province. In cases like these, when the data was clearly incorrect, the authors presented more appropriate figures by making recalculations and checking that the figures matched each other, wherever this was possible.

# The accuracy of data for the imperial era differed from year to year and region to region.  
 # The number of births, deaths, and marriages for 1871 do not represent the total of such figures for each province.  
 # Because infant mortalities per 1,000 child deaths in 1867-1869 were not presented, the authors calculated them using data for each province. However, data on the number of deaths by age could not be obtained for some provinces from the tables of data for each province, so the authors did not include such provinces in the total number of deaths (denominator) and the number of deaths for each age (numerator).  
 # The authors calculated the numbers of infant deaths for the years up to and including 1883 by adding up the numbers of deaths of males and females under one month old, between one and three months old, between three and six months old, and between six months and one year old for all religious sects.

### Sources of Data for the Imperial Era

[1] *Statisticheskii ezhegodnik Rossii*, vip. 13 (1918); [2] to zhe, vip. 12 (1916); [3] to zhe, vip. 11 (1915); [4] to zhe, vip. 10 (1914); [5] to zhe, vip. 9 (1913); [6] to zhe, vip. 8 (1912); [7] *Ezhegodnik Rossii*, vip. 7 (1911); [8] to zhe, vip. 6 (1910); [9] to zhe, vip. 5 (1909); [10] to zhe, vip. 4 (1908); [11] to zhe, vip. 3 (1907); [12] to zhe, vip. 2 (1906); [13] to zhe, vip. 1 (1905). [14] *Statistika Rossiiskoi Imperii: dvizhenie naseleniia v evropeiskoi Rossii za 1910 god*, vip. 93 (1916); [15] to zhe, 1909 god, vip. 89 (1914); [16] to zhe, 1908 god, vip. 88 (1914); [17] to zhe, 1907 god, vip. 87 (1914); [18] to zhe, 1906 god, vip. 85 (1914); [19] to zhe, 1905 god, vip. 84 (1914); [20] to zhe, 1904 god, vip. 74 (1911); [21] to zhe, 1903 god, vip. 70 (1909); [22] to zhe, 1902 god, vip. 66 (1907); [23] to zhe, 1901 god, vip. 63 (1906); [24] to zhe, 1900 god, vip. 62 (1906); [25] to zhe, 1899 god, vip. 58 (1904); [26] to zhe, 1898 god, vip. 56 (1903); [27] to zhe, 1897 god, vip. 50 (1900); [28] to zhe, 1896 god, vip. 48 (1899); [29] to zhe, 1895 god, vip. 47 (1899); [30] to zhe, 1894 god, vip. 45 (1898); [31] to zhe, 1893 god, vip. 41 (1897); [32] to zhe, 1892 god, vip. 38 (1896); [33] to zhe, 1891 god, vip. 34 (1895); [34] to zhe, 1890 god, vip. 33 (1895); [35] to zhe, 1889 god, vip. 24 (1893); [36] to zhe, 1888 god, vip. 21 (1892); [37] to zhe, 1887 god, vip. 18 (1891); [38] to zhe, 1886 god, vip. 12 (1890); [39] to zhe, 1885 god, vip. 11 (1890). [40] *Statistika Rossiiskoi Imperii: Sbornik svedeniia po Rossii*, 1890, vip. 10 (1890); [41] to zhe, 1884-1885 godi, vip. 1 (1887); [42] *Statisticheskii vremennik Rossiiskoi Imperii: Sbornik svedeniia po Rossii*, vip. 40 (1897); [43] *Statisticheskii vremennik Rossiiskoi Imperii: dopolnitelnaiia svedeniia po divizheniiu naseleniia v evropeiskoi rossii za 1876, 1877 i 1878 godi (po ulzdaniia tablitsi)*, ser. 3, vip. 25 (1890). [44] *Statisticheskii vremennik Rossiiskoi Imperii: dvizhenie naseleniia v evropeiskoi rossii za 1884 god*, ser. 3, vip. 24 (1889); [45] to zhe, 1883 god, ser. 3, vip. 23 (1887); [46] to zhe, 1882 god, ser. 3, vip. 21 (1887); [47] to zhe, 1881 god, ser. 3, vip. 20 (1887); [48] ser. 3, vip. 8 (1886); [49] to zhe, 1880 god, ser. 3, vip. 7 (1887); [50] to zhe, 1876-1880 gg., ser. 3, vip. 6 (1885); [51] to zhe, 1879 god, ser. 3, vip. 3 (1884); [52] to zhe, 1878 god, ser. 2, vip. 25 (1884); [53] to zhe, 1877 god, ser. 2, vip. 24 (1883); [54] to zhe, 1876 god, ser. 2, vip. 23 (1883); [55] to zhe, 1875 god, ser. 2, vip. 22 (1883); [56] to zhe, 1874 god, ser. 2, vip. 21 (1882); [57] to zhe, 1873 god, ser. 2, vip. 20 (1882); [58] to zhe, 1872 god, ser. 2, vip. 18 (1882); [59] to zhe, 1871 god, ser. 2, vip. 17 (1881); [60] to zhe, 1870 god, ser. 2, vip. 14 (1879); [61] to zhe, 1869 god, ser. 2, vip. 13 (1877); [62] to zhe, 1868 god, ser. 2, vip. 12 (1877); [63] *Statisticheskii vremennik Rossiiskoi Imperii*, ser. 2, vip. 10 (1875); [64] to zhe, ser. 2, vip. 1 (1871); [65] to zhe, vip. 1 (1866); [66] *Statisticheskii tablitsi Rossiiskoi Imperii* (1863); [67] to zhe, (1858).

### Notes to the Data on Soviet and Post-Soviet Russia

\* Total populations for 1940–1945, numbers of births and deaths for 1927–1938 and 1941–1949, and numbers of infant deaths for 1935–1939, 1941–1949, 1951–1952, 1955–1957, and 1959 were extracted not from officially published statistics but directly from archive materials. The authors eliminated the data for Krimaskaia ASSR/ob from the data for the Russian Soviet Federated Socialist Republic (RSFSR) (it was not necessary to do this for 1957) and added to it the data for the Karelo-Finskaia SSR when it was possible and necessary to do so. The data does not include numbers of births and deaths for (1) the Iakutskaia ASSR for 1927 and 1933–37, (2) the Dagestanskaia ASSR, Sakhalin, and Kamchatka for 1927, (3) the Ingushskaia AO, Kabardino-Barkarskaia AO, and the Chechenskaia AO for 1929, (4) Sakhalin and Kamchatka for 1930, (5) two regions in the Gorkovskii Krai, three regions in the ASSR of Nemstev-Povolzhia, rural parts of the Chechenskaia AO, the Ingushskaia AO, Sakhalin, and Kamchatka for 1931, and (6) rural parts of the Ingushskaia AO and Chechenskaia AO, the Severo-Osetinskaia AO, Sakhalin, and Kamchatka for 1932. Note that these regions were late to be covered by the ZAGS system for registering births, deaths, etc. (see Footnote 32 to the main text). In addition, dynamic statistics for 1941 and total populations for 1944–1945 are lacking for the Karelo-Finskaia SSR and are therefore not

included. For 1948–1949 there is a note that around 100 ZAGS branches were not functioning properly. For reference, in December 1949 there were 42,704 ZAGS branches in the RSFSR (RGAE, F. 1562, O. 20, D. 841, L. 2). In rural regions in 1926, a single ZAGS branch would serve between 900 and 4,000 residents (TsSU SSSR, 1928a). Total populations for 1928–1936 and 1938 were calculated using the cumulative numbers of births and deaths for 1927–1935 and 1937, as given in archived historical materials. Total populations for 1946–1949 were extrapolated from the total population in 1950, as given in officially published statistics, and the numbers of births and deaths as given in archived historical materials. Crude birth and death rates for these years are no more than rough estimates derived from these extrapolated total populations. Infant mortality rates for 1951–1952, 1955–1957, and 1959 were calculated by dividing the numbers of infant deaths as given in archived historical materials by the numbers of births as given in officially published statistics.

\*\* Statistics for 1942–1945 do not exist for a large number of regions. Both dynamic statistics and total populations are lacking, so the dynamic statistics and total population statistics for these regions do not match. The dynamic statistics do not include regions that were under occupation or regions where the ZAGS system was not functioning normally because of the turmoil of the war. The lack of data took many forms, with, for example, there being no data for January–May for some regions, only data for January and February for others, and no data at all for some regions. There was so much variation that it is impossible to describe here the individual situations of all the regions affected.

\*\*\* This note applies to all the dynamic statistics for 1923–1925. (1) The figures are only for European Russia. (2) The regions for which data was lacking changed year by year. (3) There were large differences in the accuracy of the data for different regions. (4) Because there are differences in the regions covered, as described in (2), changes in absolute figures are meaningless (For example, the figures for 1923 are all small because Uralskaia Ob., Orenburgskaia Gb., Mariiskaia Ob., Chbashskaia ASSR, and Votskaia Gb. were not covered during this year alone.). The numbers of births, deaths, and infant deaths are for the European parts of the RSFSR less those for Krimiskaia ASSR and Gomelskaia Gb. Crude birth, death, and infant mortality rates for 1924 and 1925 were calculated using only the total populations of regions for which the numbers of births, deaths, and infant deaths could be obtained. Note that although the Krimiskaia ASSR was excluded from the rates, this could not be done for the Gomelskaia Gb. because the source did not give the population, so the rates include the data for the Gomelskaia Gb. No rates are given for 1923, and it was impossible even to make rough estimates because one could not even obtain the total population for European Russia.

### Sources of and Notes on Total Populations

1990–2002: *Chislennost naseleniia rossiiskoi federatsii na nachalo 1990–2002*, Rosstat, Moskva, 2006; 1966–1969, 1971–1974, 1976–1979, 1981–1984, 1986–1989: *Demograficheskii ezhegodnik Rossii 2002*, Goskomstat, Moskva, 2003; 1960, 1965, 1970, 1975, 1980, 1985: *Demograficheskii ezhegodnik Rossii 2005*, Goskomstat, Moskva, 2006; 1961–1964: *Demograficheskii ezhegodnik Rossii 2001*, Goskomstat, Moskva, 2002; 1950–1959: *Naselenie SSSR 1987*, Goskomstat SSSR, Finansy i Statistika, Moskva, 1988; 1946–1949: see Note \* above; 1945: RGAE, F. 1562, O. 20, D. 564, L. 2; 1944: RGAE, F. 1562, O. 20, D. 479, L. 2-3; 1942–1943: RGAE, F. 1562, O. 329, D. 1452, L. 111–113; 1941: RGAE, F. 1562, O. 20, D. 242, L. 3-4; 1940: RGAE, F. 1562, O. 20, D. 241, L. 35–41; 1939: *Itogi vsesoyuznoi perepisi naseleniia 1959 goda*, TsSU, Moskva, 1962; 1937: Poliakov, Yu. A., Zhiromskaia, V.B., Tiurina, E.A. and Vodarskii, Ia.E. eds. (2007), *Vsesoiuznaia perepis naseleniia 1937 goda: obshie itogi, Sbornik dokumentov i materialov*, Moskva, ROSSPEN; 1928–1936, 1938, 1947–1949: see Note \* above; 1927, 1931: *NarKhoz SSSR statisticheskii spravochnik 1932*, TsNKhU SSSR, Moskva, 1932; 1926: *Estestvennoe dvizhenie naseleniia RSFSR za 1926 god*, TsSU RSFSR, Moskva 1928; 1923: *Sbornik statisticheskikh svedenii po soyuzu SSR 1918–1923*, TsSU SSSR, Moskva, 1924; 1920, 1925: *Statisticheskii Ezhegodnik 1924 g.*, TsSU SSSR, Moskva, 1925.

# All figures are for January 1, except for years in which a population census was conducted. The figure for 1989 is for January 12 (when a population census was conducted). The figure for 1979 is for January 17 (when population census was conducted). The figures for 1959 and 1970 are for January 15 (when population censuses were conducted). Figures for 1941 and after include the Karelian Isthmus and Ladoga Karelia, which were acquired from Finland. Figures for 1946 and after include Kaliningrad (acquired from Germany during World War II), the southern part of Sakhalin, and the Kurile Islands (both acquired from Japan during World War II). The figure for 1939 is for January 17 (when a population census was conducted) and is for the RSFSR less the population of the Krimiskaia ASSR. The figure for 1937 is for January 6 (when a population census was conducted) and is for the RSFSR less the population

of the Krimaskaia ASSR plus the number of persons serving in the Red Army and the Ministry of the Interior's Border Guard Service. The figure for 1927 is for the RSFSR less the populations of the Krimaskaia ASSR, the Kazakhaskaia ASSR, the Kara-Kalpakaskaia AO, and the Kirgizaskaia ASSR. The figure for 1926 is for December 17, when a population census was conducted, and is for the RSFSR less the populations of the Krimaskaia ASSR, the Kazakhaskaia ASSR, and the Kirgizaskaia ASSR. It is noted that the registered populations of regions such as the Caucasus are frequently incomplete, but there is so much variation that it is impossible to describe here the individual situations of all the regions affected. The figure for 1925 is for the RSFSR less the populations of the Krimaskaia ASSR, the Kazakhaskaia ASSR, the Gomelskaia Gb., and the Kirgizaskaia AO plus that of the Orenburgaskaia Gb., which was part of the Kazakhaskaia ASSR at that time. The figure for 1923 is for March 15, and is the total population of the RSFSR on that date less the populations of the Krimaskaia ASSR, the Gomelskaia Gb., the Kirgizaskaia ASSR, and the Turkestantaskaia AR plus that of the Orenburgaskaia Gb., which was part of the Kirgizaskaia ASSR at that time. Figures for rural residents in 1916 and urban residents in 1920 for the Turkestantaskaia AR are each based on census figures. The figure for 1920 is for August 28, when a census was conducted, and is based on the administrative divisions as of January 1, 1925. It is the population of the RSFSR less the populations of the Krimaskaia ASSR, the Gomelskaia Gb., the Kirgizaskaia ASSR, and the Turkestantaskaia AR plus that of the Orenburgaskaia Gb., which was part of the Kirgizaskaia ASSR at that time.

#### **Sources of Numbers of Births and Deaths and Birth and Death Rates**

1990–2002: Rosstat Website, <http://www.gks.ru/wps/portal> accessed on June 22, 2007; 1960, 1965, 1970, 1975, 1980–1989: *Demograficheskii ezhegodnik Rossii 2006*, Rosstat, Moskva, p. 66; 1961–1964, 1966–1969, 1971–1974, 1976–1979: *Demograficheskii ezhegodnik Rossii 2000*, Goskomstat, Moskva, 2001, p. 55; 1950–1959: *Naselenie SSSR 1973*, TsSU SSSR, 1975, Moskva, p. 70; 1949: RGAE F. 1562, O. 20, D. 841, L. 2, L. 14, L. 43; 1948: RGAE, F. 1562, O. 20, D. 758, L. 2, L. 14, L. 47; 1947: RGAE, F. 1562, O. 20, D. 696, L. 6, L. 51, L. 121; 1946: RGAE, F. 1562, O. 20, D. 636, L. 3, L. 48, L. 117; 1945: RGAE, F. 1562, O. 20, D. 577, L. 6, L. 51, L. 130; 1944: RGAE, F. 1562, O. 20, D. 501; 1943: RGAE, F. 1562, O. 20, D. 418; 1942: RGAE, F. 1562, O. 20, D. 341; 1941: RGAE, F. 1562, O. 329, D. 553, L. 4, L. 157; 1940: *NarKhoz RSFSR 1964*, TsSU RSFSR; 1939: RGAE F. 1562, O. 20, D. 152; 1927–1938: RGAE, F. 1562, O. 329, Ed. Khr. 256, L. 15–26; 1926: *Estestvennoe dvizhenie naseleniia RSFSR za 1926 god*, TsSU RSFSR, Moskva 1928; 1924–1925: *Estestvennoe dvizhenie naseleniia soiuza SSR 1923–1925*, TsSU SSSR, Moskva 1928.

#### **Sources of Numbers of Infant Deaths and Infant Mortality Rates**

1970, 1980, 1990, 1995, 2000–2005: Rosstat Website, <http://www.gks.ru/wps/portal> accessed on June 22, 2007; 1960, 1965, 1975, 1980–1989, 1991–1994, 1996–1999: *Demograficheskii ezhegodnik Rossii 2006*, Rosstat, Moskva, p. 66; 1959: RGAE, F. 1562, O. 27, D. 808, L. 4; 1957: RGAE, F. 1562, O. 27, D. 353, L. 3–11; 1956: RGAE, F. 1562, O. 27, D. 212, L. 15; 1955: RGAE, F. 1562, O. 27, D. 103, L. 4; 1952: RGAE, F. 1562, O. 20, D. 1011, L. 2, L. 23, L. 192; 1951: RGAE, F. 1562, O. 20, D. 962, L. 2, L. 17, L. 44; 1940, 1950, 1958: *NarKhoz RSFSR 1964*, TsSU RSFSR; 1939, 1941–1949, 1961–1964, 1966–1969, 1971–1974, 1976–1979: (same as numbers of births etc.); 1935–1938: F. 1562, O. 329, D. 256, L. 138. Figures for 1935 and 1937 do not include the Iakutaskaia ASSR. Figures for 1936 do not include the Dalnevostochnii Krai. In addition, because the data is at the macro level, they include the Krimaskaia ASSR (The total population used as the basis for calculating the rates does not include the population of the Krimaskaia ASSR, and this imbalance needs to be borne in mind.) The Karelo-Finskaia SSR was not included because of a lack of data; 1927: *Statisticheskii spravochnik SSSR za 1928*, TsSU, Moskva, 1929; 1924–1926: (same as for numbers of births, deaths, etc.).

#### **Appendix: Time Series of Alternative Estimates of the Total Population of the Territory Covered by the Present Russian Federation in the Imperial Era**

As the authors said in the main text, it possible to produce a time series for the population of European Russia that meets certain standards, with the problem being the populations of regions outside European Russia such as the Caucasus, Siberia, and the Far East. Here the authors make alternative

estimates based on the statistics for European Russia during the Imperial era.

(1) The populations of each province during the imperial era can be obtained as (a) actual data only for certain years, namely 1867, 1870, 1883, 1885, 1886 and 1891 and after. In addition, because data on births and deaths for each province exists for every year from 1867, it is possible to extrapolate (b) estimated populations for the other years by subtracting figures for natural increase from the populations in 1916. Furthermore, it is possible to adjust the actual data for the years mentioned above to the area of the European part of the present Russian Federation. The population of the present territory of European Russia was between 60 and 63.5 percent of the population of imperial European Russia, but the trend was for this percentage to decline. For the other years, meanwhile, only the total population (not the population of each province) of Imperial European Russia could be obtained. For these total populations, the authors adopted a (c) procedure whereby the authors focused on years for which it was possible to make adjustments for area and applied, with some leeway, the ratio of the total population of the present territory of European Russia and the total population of imperial European Russia, and calculated means for years for which both total and by-province populations were available. The authors used this procedure to calculate the total population of the territory covered by modern European Russia.

(2) The populations of the non-European territory of the present Russian Federation in the imperial era were obtained from (a') actual data for 1885 and 1904 and after. Although statistics do not exist for other years, it is possible to produce a (b') time series for cases where the rate of increase was exactly the same as that of imperial European Russia. The total population of this territory as a proportion of the total population of the territory of modern European Russia increased continuously from 1885, when it was 18.3 percent, to 1916, when it was 26.9 percent. Here, (c') for 1885 and earlier, the authors fixed the total population of this territory as a proportion of the territory of modern European Russia at 18 percent, steadily increased this percentage for the years that followed, and then applied actual percentages once again to 1904 and after, in order to calculate hypothetical populations for the non-European parts of the present Russian Federation. In doing this the authors calculated the base total populations of European Russia using both (b) and (c).

Next the authors put the above figures together to present a time series for the total population of the territory covered by the present Russian Federation. The results are shown in Figure A alongside the estimated (main) time series from the main text, and one can see that the two series are similar. This is because both series are based on dynamic statistics for imperial European Russia, and because during the imperial era the total population of the non-European part of the present Russian Federation as a proportion of the total population of the territory of the present Russian Federation was always less than 23 percent. However, neither method accurately takes into account the population dynamics of non-European part of the present Russian Federation. If it were possible to use time series for indicators such as grain yields, it would obviously be better to use such figures. Again, though, the problem is whether such data could be obtained.

Figure A  
 Comparison of Substitute Time Series of Estimates of the Total Population of the Territory Covered by Modern Russia

