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The Social and Economic Development of Russia from a Regional and Comparative Perspective.

The Electronic Repository of Russian Historical Statistics, 18th - 21st centuries [1]

http://ristat.org/

World history, or global history, is a dynamically expanding field of knowledge. Global diversity, cross-cultural interaction and the exchange and circulation of goods and ideas are among the central themes of this emerging discipline.[2] Comparative perspectives are key to the research agenda of global history, which focuses on the similarities and dissimilarities between developments in different parts of the world, rather than on the idiosyncrasies of national histories.

Global history perspectives on the past tend to be framed in broader questions and debates than the ones specific to the region concerned, and are close to the approaches used in the social sciences. This proximity has greatly shaped the development of global history as a discipline; 'global historians' tend to explore the past for the historical roots of the social phenomena observed in the modern world. Global social and economic inequality, and in particular the origins of the 'Great Divergence' in living standards and productivity between Europe and Asia, the origins of the Industrial Revolution, global labour history and the history of labour relations are among the topics into which 'global historians' have gained great insights over the last twenty years.[3]

Comparative perspectives and the adoption of social science methods have greatly increased the reliance on and demand for historical data-sets. In particular the use of 'long series' of quantitative data has allowed for the testing of models and hypotheses with the potential of greatly enhancing our understanding of the past. This demand for data has resulted in a sharp increase of the number of data-sets made

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[1] The creation of the Electronic Repository of Russian Historical Statistics was an initiative of Andrei Markevich and Gijs Kessler, the joint authors of this paper. The project was carried out under their supervision by two teams of researchers in Moscow and St. Petersburg in 2010-2014. Cf. Appendix 3. The project was financed by the Dynasty Foundation (Moscow), the International Institute of Social History (Amsterdam), the New Economic School (Moscow), and the Wilhelmina E. Jansen foundation.

[2] Manning, Patrick, *Navigating world history : historians create a global past* (New York N.Y., 2003)

[3] Pomeranz, Kenneth, *The great divergence : China, Europe, and the making of the modern world economy*, The Princeton economic history of the Western world (Princeton, N.J, 2000); Clark, Gregory, *A farewell to alms : a brief economic history of the world*, The Princeton economic history of the western world (Princeton, 2007); Zanden, J. L. van, *The long road to the Industrial Revolution : the European economy in a global perspective, 1000-1800* (Leiden ; Boston, 2009); Van der Linden, Marcel, *Workers of the world: essays toward a global labor history* (Leiden; Boston, 2008); Manning, Patrick, *Migration in world history*, Themes in world history (New York, 2005); Osterhammel, Jürgen and Niels P. Petersson, *Globalization : a short history* (Princeton N.J., 2005)

publicly available to the scholarly community, mostly on-line. Among the better-known examples are the Angus Maddison project-database with country-level estimates of GDP per capita for the last two-thousand years (http://www.ggdc.net/maddison/) at the University of Groningen in the Netherlands, the reconstruction of Historical National Accounts (http://www.rug.nl/research/ggdc/data/historical-national-accounts), Historical Prices and Wages (http://www.iisg.nl/hpw/), the Integrated Public Use Microdata Series (IPUMS, University of Minnesota, https://www.ipums.org), CLIO-INFRA (https://www.clio-infra.eu), the Historical Sample of the Netherlands (https://socialhistory.org/en/hsn/index) at the International Institute of Social History, and others.

Unfortunately, Russian history has so far played a rather modest role in global history debates, something which is due in the very first place to the absence of good and readily accessible data. Data on Russia are usually absent or very limited in the data-hubs and large data-sets which have been instrumental in the discipline of global history over the last decades. This absence is in spite of the richness of Russian historical statistics. The scope and quality of Russian statistics of the nineteenth and twentieth centuries is of exceptionally high standards compared to many other countries at a comparable stage of development. This is explained not only by the development of the statistical sciences in Russia, but also by its long bureaucratic tradition and highly centralised system of political control, intent on and capable of registering any social phenomenon deemed to be of importance. These statistics are available at the national level, but also at the level of Russia's regions. Regional data offer further prospects for comparative research agendas, allowing for cross-country as well as cross-regional perspectives in the study of Russian history.

Tapping this wealth of statistics is important not only for our understanding of Russia's past, but also has great potential for global history. Cross-country comparisons are increasingly seen as wanting for the study of global diversity, and in need of additional transnational perspectives involving cross-regional comparisons between and within countries, particularly the larger ones like China and India. Kenneth Pomeranz' seminal study of the roots of the 'Great Divergence' between Europe and Asia, significantly, was based on such a cross-regional comparison between the Lower Yangze and the more industrially advanced areas of Western Europe. But more than often, the data necessary for such transnational comparisons, let alone for systematic cross-regional comparisons, are lacking. The study of the social and economic development of Russia's regions could therefore make a significant contribution to the development of the field of global history and its research agenda.

1. The Social and Economic Development of Russia's Regions from a Comparative Perspective. Research Agenda.

How different are Russia's regions? Today, statistics are readily available to answer this question, distinguishing Russia's regions in terms of demographic structure, religion, levels of education, occupational structure, productivity, richness in natural resources, capital endowment and other crucial variables. But what are the trends over time? Resorting to historical statistics can tell us what the differences were between Russia's regions in the past, where the roots of modern-day inequality lie, and what the development paths of the different regions have been.

Comparing Russia's regions now and in the past offers the opportunity to study patterns of convergence and divergence in economic development, a crucial issue in economic history and development economics. Economic growth theory predicts

convergence over time between regions of one and the same country, provided there were no barriers to the free circulation of goods, technologies, labour and capital between them. This is indeed a pattern that has been found by economic historians for the United States.[4] But in relation to Russia, where competitive factor markets were absent for most of the period of its existence as a country, it could very well be that such predictions are void.

For a large part of Russia's history of the last two centuries legal impediments existed to the free circulation of people within the country, and therewith to the formation of a single labour market. In pre-revolutionary Russia first serfdom imposed severe checks on mobility, and after its abolition the land commune which replaced it. Internal passports and urban settlement restrictions limited the possibilities for migration in the Soviet period. What is more, in the Soviet period capital and investment allocation were not subject to market forces, but administratively directed through economic planning. Although reducing inequality between regions was one of the formally pronounced aims of state policy, the application of this policy was not always equally consistent.[5] Studying the impact of such restrictive institutions and policies on economic development is of primary interest, both from a perspective of Russia's economic history, as well as from the point of view of economic growth theory.

In terms of social history a regional approach can offer new perspectives on «old» historical debates concerning the spread of wage labour, working class formation, which were hotly debated for decades, but have receded to the background during the post-soviet period.[6] Regional data offer us greater insight into the mechanisms of labour market formation and allow us to map regional variation in the spread of non-agricultural employment, including crafts and trades, as well as entrepreneurial activity and self-employment in services. Of equal interest are data on regional variation in (female) labour force participation.

Thanks to the efforts of historians and historical demographers the basic demographic variables for Russia's population over the last three hundred years are relatively well-known.[7] But much less is known about their regional variation. Many regional demographic data remain untapped or have never been systematically analysed yet.[8] Further promising avenues of investigation concern the correlation between regional demographic structure and other indicators of social and economic development. How were economic growth, occupational change and the spread of wage labour related to religious diversity, literacy rates, educational attainment ans social structure? These, and other related questions are crucial for a proper understanding of Russia's social and economic development over the last three centuries.

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[4] Barro R.J. and X. Sala-i-Martin, 1992. 'Convergence', *Journal of Political economy* 100(2).

[5] Markevich A. and T. Mikhailova, 2013. "Economic Geography of Russia". In The Oxford Handbook of the Russian Economy. Ed. by M. Alekseev and S. Weber, Oxford: Oxford University Press.

[6] Filtzer, Donald *et al.* (eds), *A Dream Deferred: New Studies in Russian and Soviet Labour History*, International and Comparative Social History 11 (Bern, Switzerland ; New York, 2008)

[7] Kabuzan V.M. *Izmeneniia v razmeshchenii naseleniia Rossii v XVIII - pervoi polovine XIX v. (po materialam revizii)*, Moskva, 1971; Vishnevskii A. (ed.) *Demograficheskaia modernizatsiia Rossii, 1900-2000.* Moskva, 2006.

[8] This pertains above all to mortality, fertility and nuptiality, the regional variation of which is essentially unknown for most periods of Russian history, in spite of the relevance of particularly data on nuptiality for understanding patterns of household formation and household structure. Cf. Plakans, Andrejs, "Agrarian Reform and the Family in Eastern Europe", in David I. Kertzer and Marzio Barbagli (eds), *Family Life in the Nineteenth Century, 1789-1913*, The History of the European family (Family Life in Early Modern Times, 2002), Vol. 2, pp. 73-105.

**2. «Electronic Repository of Russian Historical Statistics, 18th-21st centuries».
A Research Tool.**

The comparative research agenda outlined above requires the availability of systematic regional data-sets, something which so far has been lacking.[9] The Electronic Repository of Russian Historical Statistics aims to eliminate this bottleneck. It provides researchers working from a comparative perspective with a basic grid of indicators on the economic and social development of Russia's regions for the last three centuries. The data can be used for interregional, transnational and cross-country comparisons, as well as for the study of individual regions. For purely pragmatic regions the Electronic Repository limits itself to those territories which were part of the Russian Federation in 2002.

Cross-sections

The Electronic Repository of Russian Historical Statistics makes available data for five cross-sections of Russian history. This cross-sectional approach is inspired primarily by pragmatic considerations. Considering the size of Russia's territory, and the number of administrative regions for which data have to be gathered, constructing full time-series for the last two centuries requires resources well in excess of the scope of this project. Instead, the project aims to erect a framework of data for five cross-sections which, together, make it possible to open up perspectives over a longer timeframe and can serve as a point of departure for the construction of time-series for individual regions or particular topics.

The five cross-sections coincide with crucial junctions in the development of modern Russia and divide the last two centuries into more or less equally long 50-year intervals:

- *Late 18th-Early 19th Centuries (1795): Regional Supremacy Achieved.*

Under Ekaterina II Russia consolidates its position as the main power in Eastern Eurasia and creates a modern bureaucracy and state apparatus.

- *1850-1860s (1858): The Eve of Reform.*

Last decade of the Ancien Régime, before the 1861 abolition of serfdom and industrialisation changed the face of the country.

- *Late 19th - Early 20th Centuries (1897): Capitalist Development and Modernisation.*

Snapshot of Russia's first wave of industrialisation and modernisation, before the outbreak of overt social and political conflict in the early decades of the twentieth century.

- *1950s (1959): World Power and Industrial Society.*

Presents the balance of Russia's second wave of industrialisation, carried out on an anti-capitalist and autarchic agenda.

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[9] Good time-series at the national level have recently become available as part of the resource «Dynamics of social and economic development of Russia in the 19th and early twentieth centuries», developed by the Centre for Economic History of the Historical Faculty of Moscow State University, http://www.hist.msu.ru/Dynamics/index.html

- *Early 21st century (2002): Russia in the Age of Globalisation and Post-Industrial Development.*

Having overcome the economic collapse associated with the disintegration of the Soviet Union and its social, political and economic system, Russia emerges as a global economic player from its previous self-imposed isolation and enters the post-industrial age.

For each cross-section data were gathered for the «benchmark-year» indicated in brackets. These are the years in which population censuses and proto-censuses were held: the fifth and tenth revision in 1795 and 1858 respectively, all-Russian population censuses in 1897, 1959 and 2002. If no data could be found exactly for these years, the option of second resort was to take data for the nearest available years.

Standardisation

Apart from data-mining and data-distribution, an essential part of the work in creating the Electronic Repository of Russian Historical Statistics consists of data-standardisation. Historical statistics come in the categories and terms of the period - in 'historical classifications', specific to the period. Categories used can even differ within the same period, though, due to the existence of different spelling variants and synonyms, particularly for the earlier benchmark-years 1795 and 1858. Standardisation of the categories used, so as to maximise the comparability of the data, is one of the central aims of the Electronic Repository of Russian Historical Statistics.

Standardisation is of crucial importance for comparative quantitative research, as it ensures comparability. It is exactly this standardisation over time and across regions which distinguishes the Repository from a source publication and produces its added value for the academic community. The further one moves away from modern statistics the more important standardisation becomes, but modern data require standardisation as well if they want to be of any use in social and economic research with a historical perspective. Standardisation procedures of the Electronic Repository of Russian Historical Statistics consist of three principal elements:

(a) Unification of historical categories ('unified historical classifications')

Minimal level of standardisation to create a uniform grid of indicators for all regions within one historical cross-section. For modern statistics such a uniform grid of indicators is usually given in the source, but this might not be the case for earlier periods, where data for different regions are often obtained from different sources, with a possibly different set of categories. Where so required, we therefore adopted so-called 'unified historical classifications', which serve the purpose of making data comparable across regions within one and the same period.

Such 'unified historical classifications' do not, however, make the data comparable over time. To start with, the historical classifications in which the data come can be difficult to compare over time due different grouping principles. What is more, the meaning of terms and categories apparently similar, can in fact change over time. The use of modern classifications to tag the data aims to resolve these problems of comparability over time.

(b) Standardisation of analytical categories («Modern Classification», cf. separate documentation available at https://ristat.org/documentation/methodology)

The standardisation of analytical categories in the data-base has two aspects. At the most elementary level it recalculates data into single, modern units of measurement.

Secondly, where possible, it harmonises analytical categories over time to obtain a unified grid spanning all cross-sections. For this purpose the Electronic Repository of Russian Historical Statistics relies on the use of accepted, modern systems of classification, fostering cross-country comparisons by making the data accessible to the global scholarly community.

In choosing the modern classifications to use we have consistently set the aim of using the system of classification most widely accepted in the corresponding field of knowledge. Where such a standard was non-existent, we have instead relied on the use of common parlance categories (e.g. 'Male', 'Female', 'Number of births' etc.), or to a further extension and standardisation of the existing historical classifications.

Modern classifications are, as a rule, hierarchical, consisting of nested categories (e.g. branches and sub-branches of industry), which allow for the classification of each and every historical variable, even if at different levels of detail. For example, if a certain figure cannot be matched to a single sub-branch of industrial production, it might be well feasible to determine the more general branch of production that it relates to, one level up in the hierarchy.

However, such a procedure rarely allows one to reconstruct all categories of the modern classification, because the level of detail of the data necessary for this might simply not be available in the source. Only if each historical category matches to only one category in the modern classification (a relationship of many-to-one), and all necessary historical categories are available in the source ('functional completeness') can we speak of a full reconstruction of a category from the modern classification. This is usually the case only at the higher, as well as at the lower levels of aggregation, whereas at intermediate levels the mismatches are a more vexing problem.

This notwithstanding, we have categorised all data in the database by modern classification, either through full reconstructions, or by assigning historical categories to modern baskets.

It should be realised, though, that the imposition of a unified grid of analytical categories usually comes at the price of a loss of (historical) detail. Data in the Electronic Repository are therefore available in two formats - in their 'historical classification', i.e. expressed in the categories used at the time as found in the source, and in a 'modern classification', i.e. expressed and recalculated into categories from modern taxonomies and classifications. The two formats serve different purposes, and it is up to the user to choose which format best serves his/her needs.

(c) territorial standardisation: recalculation of the data into comparable territorial entities

The need to standardise the territorial entities for which the data are provided, follows from the regional focus of the project. Over the last three centuries provincial boundaries have changed a great deal, and in order to be able to trace the development of individual regions over time it is essential to recalculate the data in such a way as to achieve a comparable territorial coverage.

Standardisation offers advantages to researchers operating on a comparative agenda, but potentially reduces the value of the data to researchers interested in a particular time and place. For this reason, the data of the Electronic Repository of Russian Historical Statistics are available both in their 'raw' form, i.e. in the analytical categories, units of measurement and provincial boundaries of the period, and in an aggregated and standardised form, comparable across time and space.

[June 2019: Standardisation procedures are implemented step by step - at the moment of this release the data are available in historical and modern classification, but as yet only in historical boundaries and units of measurement]

<u>*Topics*</u>
The Electronic Repository provides regional level data for each of the five cross-sections of Russian history (1795, 1858, 1897, 1959, 2002) on a standard programme along seven principal lines of inquiry:

1. Population
2. Labour
3. Industrial output
4. Agricultural output
5. Service sector output
6. Capital
7. Land

For a full list of topics and subtopics the reader is referred to appendix 1, and for an in-depth discussion of the availability of data to the documentation available on the website at: https://ristat.org/documentation/about-data. This documentation is also included in the download-package. The paragraphs below provide a brief overview:

1. Population
Provides a set of basic demographic data per region for use in further social and economic analysis. For the twentieth century these data are available from population censuses (1897, 1959, 2002) and from current statistics. For the earlier periods, population figures are available from the periodic revisions (*revizii*) of taxpayers as well as from church records on births, deaths and marriages.

Indicators gathered:
- Total population
- Age and gender distribution
- Rural / Urban Population
- Religion
- Estate/Social groups
- Fertility
- Mortality
- Nuptiality
- Literacy / Higher Education

2. Labour

Charts the ways in which the population provided for the means of existence, both in terms of the labour relations governing the production of goods and services and in terms of occupational structure.

For the twentieth century regional data on labour relations, employment and occupational structure are available from population censuses and current employment statistics. For earlier periods data are procured from a great variety of sources, including the periodic revisions (*revizii*) of taxpayers, governors' reports, inventories of plants and factories, and regional surveys.

Indicators gathered:
- By profession
- By labour relation
- By sector of employment
- By source of income

3-5. Industrial, Agricultural and Service output

The importance of information on economic performance speaks for itself. Data on regional economic output allow us to assess economic development across Russian regions, opening up a whole new subfield in Russian historical studies - comparative regional economic history. To this end the Repository brings together regional data on economic performance by sector.

The sources for these figures are inventories of plants and factories (late 18th century), governors' reports (late 18th and mid 19th centuries), and official published (1897, 2002) and unpublished (2002) production statistics.

Indicators for which data are gathered:
- Industrial output in roubles and in kind
- Agricultural output in roubles and in kind
- Service sector output in roubles and in kind

6. Capital

Capital, as one of the production factors, is a basic variable in economic history studies. The Electronic Repository gathers data on capital along two lines: capital stock (production funds, other capital assets) and capital utilisation (investments). Capital stocks reflect cumulative savings over preceding periods; investment statistics allow us, amongst others, to distinguish between extensive and intensive strategies of development.

Indicators, for which data are gathered:
- Capital assets, including production funds (buildings, inventory, stockpiles, etc.)[10].
- Investments

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[10] For an example of a reconstruction of historical capital stock at the national level, cf. A. L. Vainshtein, *Narodnoe bogatstvo i narodno-khoziaistvennoe nakoplenie predrevoliutsionnoi Rossii.* Moskva, 1960.

7. Land

Russia was a predominantly agricultural country well into the twentieth century. Patterns of land use, as well as its price, are a major variable in social and economic historical analysis. The Repository provides a basic set of data on patterns of land use and their regional differences. Sources include land surveys, governors' reports, as well as agricultural statistics.

Indicators, for which data are gathered:
- Land by use (ploughland, hay-field, gardens, forest, non-arable)
- Land by ownership
- Land prices
- Land rents

<u>*Selection, estimation and approximation procedures*</u>

The selection of data for inclusion into the data-base along the programme laid out above met with two principal difficulties. In the first place, for many indicators there were several different sources available and, secondly, there were indicators for which no data appear to exist. In the paragraphs below we describe the general procedures followed in such cases. For a detailed discussion of the issues and choices involved we refer to the methodological papers per year and topic, which are an integral part of the Electronic Repository. The methodological papers enable users to judge the validity of the criteria and procedures used in constructing the data-sets. They are included automatically with the data-sets in the download-package, but can additionally be consulted directly on the web-site in the "Documentation" section.

Selection of competing data

Selecting data-sets for filling the slots in the grid more than often involves choices between two, or even more alternatives, sometimes relating to adjacent years. To make an informed decision in such cases we have consulted the literature to check for background information on the quality of the data and to establish possible biases the data may contain. Our considerations and arguments in making these decisions is laid out in the methodological papers. In cases where no such background information could be found and we had to make an arbitrary decision we have listed the alternative data-sources as well.

Estimation and approximation procedures for missing data

Filling each and every slot in the grid for all regions and all five benchmark-years has not been possible. Particularly for the earlier benchmark years, but by no means exclusively so, data simply do not exist for some of the indicators in the programme, or some of the indicators might simply not apply to the period concerned.

In some cases the absence of data could be remedied by resorting to data for adjacent years and neighbouring regions, or by breaking down aggregate data for the country as a whole by region. This was never a straightforward transfer of data between regions or years - in each case a special methodology was developed to estimate or calculate the missing data, which is set out in the methodological papers. In case no valid estimation or approximation procedure could be envisaged the relevant slots in the data grid have been left open.

2. "The Electronic Repository of Russian Historical Statistics, 18th to 21st centuries". Mission.

By making available regional-level data on the social and economic development of Russia over the past three centuries the Electronic Repository of Russian Historical Statistics aims:

- to lower the threshold to adopt regional perspectives in the study of Russian social and economic history;
- to stimulate the inclusion of the Russian case into global history debates by making the necessary data available to the global scholarly community and a non-specialist audience;
- to contribute to the further sophistication of research agendas in global history by promoting transnational and cross-regional comparisons;
- to facilitate the inclusion of a historical dimension into social science research by offering historical data-sets on Russia's social and economic development in categories and formats 'native' to the other disciplines.

Although each of the data-sets can serve as the basis for quantitative research in its own right, they have purposely been selected to be used in conjunction to serve research agendas focusing on issues of regional and/or national social and economic development.

They can also be used together with other data-sets on Russian history, specific to topics under investigation in particular research projects. Researchers can use the data from the repository to test assumptions in their own research, add temporal and geographical comparative dimensions to their research, and combine the data from the repository with their own data for further quantitative analysis.

October 2020

Appendix 1 - Topics and subtopics of the Electronic Repository of Russian Historical Statistics

1. POPULATION

1.01: Population by sex
1.02: Population by age
1.03: Population urban/rural
1.04: Population by confession
1.05: Population by estate
1.06: Number of births
1.07: Number of deaths
1.08: Number of marriages
1.09: Marital status
1.10: Education

2. LABOUR

2.01: By profession
2.02: By labour relation
2.03: By sector of employment
2.04: By source of income

3. OUTPUT INDUSTRY

3.01: Industrial output in rubles
3.02: Industrial output in kind

4. OUTPUT AGRICULTURE

4.01: Agricultural output in rubles
4.02: Agricultural output in kind

5. OUTPUT SERVICES

5.01: Services output in rubles
5.02: Services output in kind

6. CAPITAL

6.01: Capital assets
6.02: Investments
6.03: Interest

7. LAND

7.01: Land by type/use
7.02: Land by ownership
7.03: Land prices
7.04: Land rents

Appendix 2 - Database structure Electronic Repository of Russian Historical Statistics

Fieldname	ID	Territory	Terr_code	Town	District	Year	Month	Value	Value_unit	Value_label	DataType	HistClass1-10	Class1-10	Comment-source	Source	Volume	Page	Naborshik_ID	Comment_naborschik
Description	Record number	Province name	Province code	Town name	District name			VALUE ("." = no data 0 = zero numeri-cal value)	unit of measure-ment		Topic code - Cf. appendix 1	Data-categories as in source, up to ten levels of depth	Data-categories according to modern classification, up to ten levels of depth	Comment to value as stated in source	Source	Volume	Page	Names of the person(s) who resp. entered the data; classified the data; approved the final version of the dadata-set	Comments by record creator

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Appendix 3 - Authors of the Electronic Repository of Russian Historical Statistics

The data-sets of the Electronic Repository of Russian Historical Statistics were compiled in 2010-2014 by two teams of researchers under the general supervision of Gijs Kessler and Andrei Markevich. One team was based in Moscow, the other team in St. Petersburg.

The Moscow team consisted of Maksim Khatskevich, Elena Korchmina, Olga Pavlenko, Aleksandra Petukhova, and Timur Valetov.

The St. Petersburg team consisted of Maria Eitinguina, Albina Gasimova and Svetlana Prantzusova.

In addition, the following specialists in the field contributed to the project: Aleksandr Feofanov, Dmitrii Khitrov, Roman Konchakov, Steven Nafziger, Sofia Salomatina, Galina Ulianova.

Technical work on the project was carried out by Arsenii Dobrovolskii, Fons Laan, Mario Mieldijk, Arnab Sen, Aleksandr Sokolov, Gaele Strootman, Vyacheslav Tykhonov, Jerry de Vries, Lucien van Wouw.

Other contributors to the project: Vasilisa Baranova, Evgenii Kamaev, Eugenie Kchatschatrian, Alena Krasnoslobodtseva, Konstantin Kunavin, Evgenia Kuptsova, Natalia Menskaya, Elena Miloserdova, Daria Nosova, Irina Novichenko, Nikita Sidorenko, Elena Popova, Natalia Ryzhova, Olga Serebryakova, Daria Trusova, Mikhail Zemlyakov, Ruslan Zhitin.

Responsibilities and acknowledgments:

1795 data-sets: Maksim Khatskevich, Elena Korchmina

1858 data-sets: Maria Eitinguina, Albina Gasimova, Svetlana Prantzusova, Aleksandra Petukhova

1897 data-sets: Olga Pavlenko, Timur Valetov

1959 data-sets: Olav Hofland, Olga Pavlenko, Timur Valetov

National wealth 1897: Galina Ulianova

Banking 1897: Sofia Salomatina

Labour 1858: Gijs Kessler

Labour 1897 & 2002: Olav Hofland, Gijs Kessler, Timur Valetov

Web-design: Aleksandr Sokolov

Information analysis: Jerry de Vries

Front-end design & development: Pieter Crucq, Gijs Kessler, Gaele Strootman, Jerry de Vries

Back-end design & development: Fons Laan, Vyacheslav Tykhonov

Appendix 4 - User license and correct reference to the data from the Electronic Repository of Russian Historical Statistics

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Kessler, Gijs and Andrei Markevich, Electronic Repository of Russian Historical Statistics, 18th - 21st centuries, https://ristat.org/, Version I (2020): [Datatype number and name] [benchmark-year].

Example:
Kessler, Gijs and Andrei Markevich, Electronic Repository of Russian Historical Statistics, 18th - 21st centuries, https://ristat.org/, Version I (2020): Datatype 2.01 - Labour by profession, benchmark-year 1897.

or, for the documentation to a data-set:

Kessler, Gijs and Andrei Markevich, Electronic Repository of Russian Historical Statistics, 18th - 21st centuries, https://ristat.org/, Version I (2020): [Title] [page numbers] [filename: XXXXX]

Example:
Kessler, Gijs and Andrei Markevich, Electronic Repository of Russian Historical Statistics, 18th - 21st centuries, https://ristat.org/, Version I (2020): Documentation for datasets on labour - benchmark 1897, p. 1 [filename: ERRHS_2_00_info_1897_EN.pdf]