University of Pennsylvania
Joint meeting of the Penn Economic History Forum
and the East European History and Culture Seminar
April 26, 2024

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Commercial Banking in the Russian Empire
in the Period 1860–1913: Development and Market Integration

Sofya A. Salomatina*

This study considers the influence of the national banking system on the economic development of the Russian Empire from 1860–1813. Previous academic consensus has denied the influence of the Russian financial system on economic growth before the early 1890s and has associated development after this time with the efforts of joint-stock commercial banks. In the first part of this paper, a new data set is used to assess the effect of the total banking assets of various commercial and savings banks as well as of broad money (i.e., the historical version of the money supply measure M2) on per capita national income growth. The results prove that the Russian financial system was one of the growth factors throughout the period from 1860–1913 but the growth of the Russian financial system lagged behind total economic growth from 1877–1900. An explanation for this phenomenon can be derived from government policies (banking and monetary regulation) and the severity of the long depression of 1875–1893, which for small institutions (e.g., mutual credit societies and municipal public banks) lasted until the 1900s. In the second part of the paper, this financial lag is traced at the level of populated localities using data on average annual lending rates in credit institutions in 1874, 1897, and 1913. Reductions in the level and variation of rates occurred in the branches of joint-stock commercial banks but not in small institutions; that is, there were always areas where there was a shortage of credit even at high rates with minimal government regulation and in favorable economic conditions.

Key words: commercial banking, savings banks, banking assets, money supply, lending rate analysis, economic growth, national income, banking statistics, historical statistics, Russian Empire.

The financial system was one of the factors for economic growth in many countries in the second half of the 19th century and the beginning of the 20th century, as Sylla and Rousseau proved[1]. However, the Russian empire is not among these countries. A significant reason for this situation is the lack of sufficient time series data for the Russian banking system; because of this lack of data, Russian finances have been assessed on a spectrum. On one side of this spectrum, there are different versions of the discourse of backwardness, rooted in 19th-century narratives[2], while the other side emphasizes the rapid development of joint-stock commercial banks since the 1890s until the World War I[3].

This study presents a complete collection of data on the total assets and deposits of commercial banks of various types and proves that the finances of the Russian Empire were most likely a growth factor throughout the period from 1860–1913. However, from 1877 to 1900, financial growth lagged behind the growth of national income. This was due to government policy; the severity of the long depression of 1875–1893, which continued in small institutions until the 1900s; and the vastness and depth of the economic space of a huge country, where there was a constant lack of funds.

To assess the impact of the financial system on economic growth, indicators related to commercial banks are usually used,[4] which provide credit and payment services to entrepreneurs, firms, and companies, as well as deposit and transfer facilities to the wider public. Commercial banks have typically been at the core of the modern banking system,[5] which was established in the Russian Empire following the Great Reforms of the 1860s. Commercial banks were formally introduced with the creation of the State Bank of the Russian Empire in 1860 as a government commercial bank that provided lending to customers from the non-financial sector and it was allowed an issuing function in 1897.

Savings banks also constitute commercial banks because their deposit operations are essentially the same. By the 1890s, state savings banks, which were subordinated to the State Bank, became a significant part the Russian banking system and held "people's savings" (i.e., funds from small depositors). State savings banks did not engage in lending; instead, their funds were placed in government securities.

Outside the public sector, the largest part of the commercial banking system belonged to joint-stock banks, of which there were few, with numbers alternating between 35–50 at different times. These institutions served various sectors of the economy, from agricultural exports to heavy industry, as well as investment banking. Networks of regional branches began to grow in the 1890s, and in the 1910s approximately 75% of these networks belonged to 5–6 large metropolitan

[1] Peter L. Rousseau and Richard Sylla, "Financial Systems, Economic Growth and Globalization," in *Globalization in Historical Perspective*, ed. M. D. Bordo et al. (Chicago, 2003), 373–415.

[2] Iosif Gindin, *Russkie kommercheskie banki: Iz istorii finansovogo kapitala v Rossii* (Moscow, 1948); Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays* (Cambridge, MA, 1962); Sofya Salomatina, "Business Culture, Bank Credit, and Corporations in the Russian Empire: Deconstruction of a Russian Banking History Discourse," in *The Russian Review* 81 (2022): 440-461.

[3] Gindin, *Russkie kommercheskie banki*; Olga Crisp, "Russia, 1860-1914," in *Banking in the early stages of industrialization; a study in comparative economic history*, ed. R. Cameron (New York, 1967), 183–238; Valery I. Bovykin and Boris V. Anan'ich, "The role of international factors in the formation of the banking system in Russia," in *International banking, 1870–1914*, ed. R. Cameron and V. I. Bovykin. (New York, 1991), 130–158.

[4] Rousseau and Sylla, "Financial Systems"; Richard S. Grossman, *Unsettled Account: The Evolution of Banking in the Industrialized World since 1800* (Princeton, 2010), 1–27.

[5] Rousseau and Sylla, "Financial Systems," 374–377.

universal banks (big banks).[6] The rest of 10%–15% of the commercial banking system in various years was composed of small institutions, primarily mutual credit societies and municipal public banks. Furthermore, there was also a small additional list of commercial banking institutions, which are detailed in the next section.

Among commercial banking institutions, private bankers and banking houses remained unaccounted for because they were not obliged to publish reports, and there are therefore virtually no statistics for them. Mortgage banks are also not included in calculations even though, despite being smaller than commercial banks, they comprised a large proportion of the Russian financial system. Pawnshops (loan-secured movable property) and credit cooperatives are also omitted from calculations, but the volume of their operations was insignificant compared to commercial and mortgage banks; nevertheless, they managed a large number of small customers and cooperative members.

This study consists of two parts. The first section presents new time series data for commercial bank assets and deposits from 1860–1913 and assesses the impact of financial system growth on overall Russian economic growth during this period. In the second section, the growth of the banking system is traced at the municipal level through another dataset on the average annual lending rates at joint-stock banks, municipal public banks, and mutual credit societies in 1874, 1897, and 1913. The lending rate analysis is supplemented with visualization of average rates on geographic maps.

Financial system and economic growth

Two general banking indicators are usually used for assessment of the impact of banking on economic growth. The first is total assets, or the total balance of all commercial banks, which is the broadest possible estimate and includes all operations.[7] The second indicator is "broad money," which is used as a historical analogue of the M2 money supply and calculated as the sum of banknotes in circulation, current accounts, and time deposits for all commercial and savings banks;[8] this is a conservative estimate of the size of the banking system, including only the cash money and their nearest substitutes held by the population. Total assets exceed broad money because the former also includes owners' funds (equities and reserve capitals) as well as interbank operations (correspondent accounts). The influx of foreign capital, which is often discussed in connection with the Russian Empire, flowed primarily through these two channels, and therefore foreign capital is better accounted for in total assets than in broad money. Both assets and broad money are calculated in this study based on the annual balance sheets of commercial banking institutions from January 1, 1861–January 1, 1914.[9]

Our calculations include data for all institutions that fully or partially operated as commercial banks. Importantly, joint-stock commercial banks, the State Bank, and state savings banks were the three main components of the Russian commercial banking system, which together accounted for 85%–90% of the assets.

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[6] Youssef Cassis, *Capitals of Capital: A History of International Financial Centres, 1780–2005* (Cambridge, England, 2006), 102–104.

[7] Grossman, *Unsettled Account*, 1–27.

[8] Rousseau and Sylla, "Financial Systems."

[9] All banking indicators are dated to January 1. When compared with national income, foreign trade, and government expenditure, banking data for January 1 refers to the previous year: e.g., "January 1, 1914" means data for 1913.

Time series for joint-stock banks since 1865 were taken from the 1915 consolidated balance sheets[10]; we recalculated total assets for 1865–1873, which are missing in this publication, using Kaufman's collection of early banking statistics.[11] The number of units in these series includes only head offices and full-fledged departments, but not agencies and commission agents, which numbered several dozen from 1900 into the 1910s. Data on the large Russo-Chinese Bank (1896–1910) was added to these series.[12] This Russian governmental project for Far Eastern expansion, partially funded with French capital, was estimated to represent 276.2 million rubles of assets in 56 units in Russia and around the world (mainly in the Far East) by 1910. Capital from different branches was subtracted from the Russo-Chinese Bank's annual balance sheets because of double counting to ensure comparability with data for other banks.[13] The bank issued banknotes in Shanghai, albeit in insignificant numbers compared to the domestic issuance of the State Bank in Russia.

The time series for the State Bank since 1861, including its liability for banknotes in circulation, is the result of a complete reworking of the State Bank's reports made in the 1910s.[14] We use the latest version of these balance sheets published in 1916. While it undercounts temporary branches, there were no more than 10 of these. Published time series for state savings banks are available only for the first 30 years (1863–1893). The rest of the data is collected from annual reports. The total series was aligned with the more correct balance sheets of 1910s.[15]

The remaining small commercial banking institutions are usually excluded from cross-country comparisons because they are difficult to compare. However, if our aim is to systematize Russian banking statistics, then these small institutions are worth taking into account. These small commercial banking institutions were largely mutual credit societies (with members holding mutual responsibility for their debts), of which there were no more than 100 throughout the second half of the 19th century. However, this number suddenly rose to 1,110 (11 times more) by 1913. Another type of small commercial bank was municipal public banks, which were subordinate to town councils (dumas); their number (no more than 300) was therefore limited by the number of municipal governments. Their profits replenished the budgets of medium and small towns. The bulk of their operations related to commercial banking, but a small portion was invested in local mortgages and pawnshop operations. Eight public and separately regulated rural banks were added to this group due to similar operations.

Mutual credit societies and municipal public banks published pre-revolutionary consolidated balance sheets of varying quality for many years, but from 1860–1868 and 1882–1894 balance sheets had to be documented for each institution in the Russian State Library (Moscow), the Russian National Library (St. Petersburg), or the Russian State Historical Archive (St. Petersburg) in the collection (fund) of the Special Office for Crediting of the Ministry of Finance of the Russian

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[10] Consolidated balance sheet of joint stock commercial banks. 1865–1917. URL: https://hist.msu.ru/Dynamics/data/12_016.xls (These and the mentioned below consolidated balance sheets have been compiled by the author).

[11] Illarion Kaufman, Statistika russkikh bankov, 2 (St.Petersburg, 1875).

[12] Balance sheet of the Russo-Chinese Bank. 1897–1910. URL: https://hist.msu.ru/Dynamics/data/12_017.xls.

[13] Kazuhiko Yago, "The Russo-Chinese Bank (1896–1910): An international bank in Russia and Asia." in *The origins of international banking in Asia: the nineteenth and twentieth centuries* ed S. Nishimura, T. Suzuki, R. C. Michie (Oxford, 2012), 153.

[14] Balance sheet of the State Bank of the Russian Empire. 1861–1917. URL: https://hist.msu.ru/Dynamics/data/12_014.xls.

[15] Consolidated balance sheet of state savings banks. 1863–1917. URL: https://hist.msu.ru/Dynamics/data/12_015.xls.

Empire. In addition, several institutions were added to the data set using materials from the same libraries and archive:

1) The Bank of Poland for 1860–1885, a governmental institution with a head office in Warsaw and 10 branches in Polish provinces that issued banknotes until 1875; only short-term operations are included, and the maximum of these operations was 40.4 million rubles in 1879.

2) The Discount and Loan Bank for Persia for 1894–1914, another governmental institution, with maximal assets of 62.8 million rubles across 22 units in Russia and mostly Persia in 1914.

3) In the Baltic region (Riga, Libau, Mitau, Dorpat [Yuryev], Windau), there were four non-joint-stock unit commercial banks and five municipal savings banks with maximal assets of 83.9 million rubles in 1913[16].

4) Mutual banks ("*ssudnye kassy*") of Polish industrialists, similar to mutual credit societies; there were 10 of these by the end of the 1890s, but five were then transformed into mutual credit societies. The remaining five had total assets of 23.3 million rubles by 1914.

**Figure 1. Number of commercial and savings banks of various types,
January 1, 1861–1914**
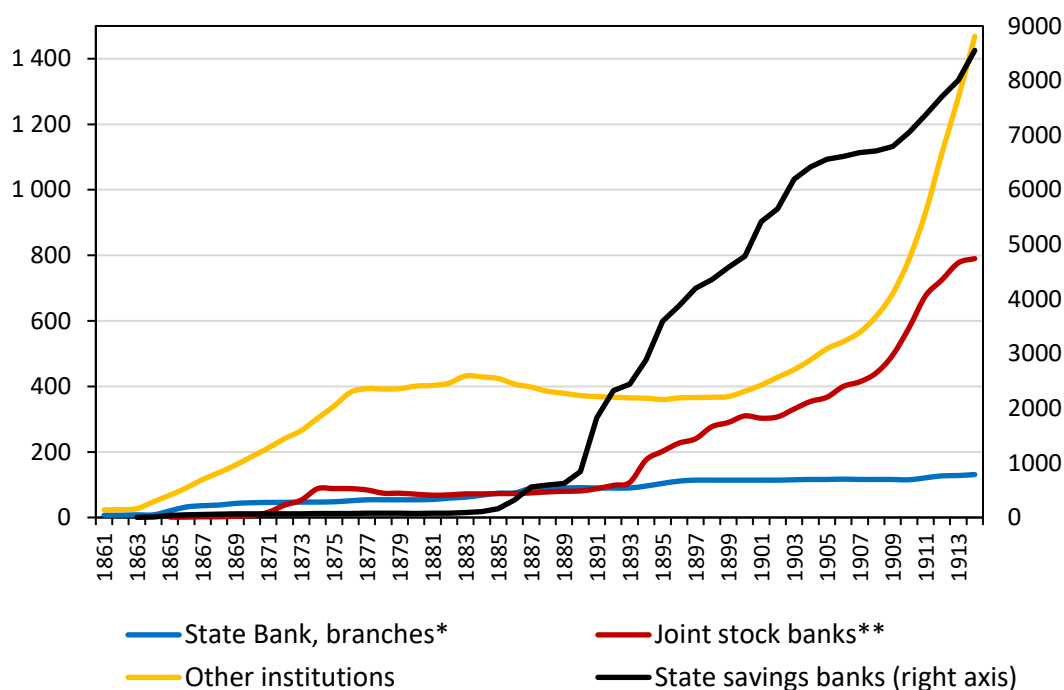
* Excluding temporary branches.
** Head offices and full-fledged branches, excluding agencies and commission agents.

The new time series is presented in Figures 1–3 for the State Bank, savings banks, joint-stock commercial banks (head offices and branches), and other credit institutions. Figure 1 reports the number of institutions. The system of non-state institutions was formed by 1875, but the global long depression then reached the Russian Empire. The collapse of the Commercial and Loan Bank

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[16] Portion of these time series for four banks only from 1895 is uploaded here: Balance sheet of the Riga Exchange Bank. 1895–1917. URL: https://hist.msu.ru/Dynamics/data/12_019.xls; Balance sheet of the Riga Municipal Discount Bank. 1895–1917. URL: https://hist.msu.ru/Dynamics/data/12_020.xls; Balance sheet of the Yuriev (Dorpat) Bank. 1906–1913. URL: https://hist.msu.ru/Dynamics/data/12_021.xls.

in Moscow in October 1875 caused panic among depositors of joint-stock banks throughout the country, which was mitigated by the State Bank. Nevertheless, the slow contraction of the joint-stock banks continued until 1881, and about 20% of head offices and branches were closed from 1875–1881. After 1881, joint-stock banks grew, albeit slowly. In 1882, a worldwide wave of falling agricultural prices hit the Russian Empire, and at the end of the year a new wave of the banking crisis hit municipal public banks and mutual credit societies, as a result of which their number also decreased by 20% by 1889.[17] The growth of joint stock banks accelerated sharply from 1893, but small institutions failed to revive until the 1900s. By the 1910s the expansion of the non-state banking system was intensifying.

State banking institutions grew in the 1880s at the height of the depression because the government had more resources than the private sector. The permanent branches of the State Bank, of which there were 131 by 1914, can be considered local points of government policy. Starting in the 1880s, state savings banks became the target of government attention, and their number grew to several thousand (state savings banks are reported on the right axis in Figure 1).

Figure 2 presents the total commercial banking assets in 1913 prices. The treasury debt in the assets of the State Bank is visualized separately. The debt included two main governmental operations of the Great Reforms—the liquidation of pre-reform state banks and redemption operations in connection with the abolition of serfdom, as well as other budget deficits such as clearly visible reserves against money issuing during the Russo-Turkish War of 1877–1878. The short-term surge in State Bank assets in 1893–1898 was also associated with the cash reserves in the money reform of 1897–1899. Beginning in the 1900s the assets of the State Bank and savings banks grew slightly slower than those of non-state banks. Joint-stock commercial banks followed the same process as observed in Figure 1: decline in 1875–1881, then slow growth and acceleration first in the 1890s and then in the 1910s. The same is true for other private institutions: decline from 1882 to 1900, and new acceleration in the 1910s.

Figure 3 depicts broad money. Its trends are similar to the total assets in Figure 2. In addition, the Russo-Japanese War (1904–1905) and the First Russian Revolution (1905–1907) are more visible in trend of the money issue, when the gold standard nearly collapsed at the end of 1905. However, the most important trend in the dynamics of broad money is a gradual decline in the ratio of banknotes to deposits. This ratio reached 0.9 in the 1860s, but dropped to 0.22 by 1914, when bank deposits provided more resources than money in circulation. The ratio decreased most sharply in 1897–1899, the period of the monetary reform and the gold standard transition. Deposit growth was not enough to offset this decline in means of payment during the period of the fastest economic growth for the Russian Empire.

Banking indicators are usually used for relationship analysis with indicators of national income. For 1885–1913 we used the national income figures calculated by P. Gregory, with prices adjusted for 1913 using the wholesale price index of M.E. Podtyagin.[18] For 1860–1884, we used the national income in 1913 prices as calculated by B.N. Mironov based on R.W. Goldsmith's estimations.[19] In addition to banking indicators, our regression includes the volume of foreign trade

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[17] About banking crises of 1875-1881 and 1882-1889: Sofya Salomatina, "Bankovskii krizis 1880-kh gg. v Rossiiskoi imperii: novye kolichestvennye dannye i otsenki," in *Istoricheskii zhurnal: nauchnye issledovaniia* 1 (2023), 85–108.

[18] Paul R. Gregory, *Russian National Income, 1885–1913* (Cambridge; New York, 1982), 56–57.

[19] Boris N. Mironov, "Ekonomicheskii rost i obrazovanie v Rossii i SSSR v XIX — XX vekakh," in *Otechestvennaia istoriia* 4–5 (1994): 124–125; Raymond W. Goldsmith, "The Economic Growth of Tsarist Russia 1860-1913", in *Economic Development and Cultural Change* 9:3 (1961), 441–475.
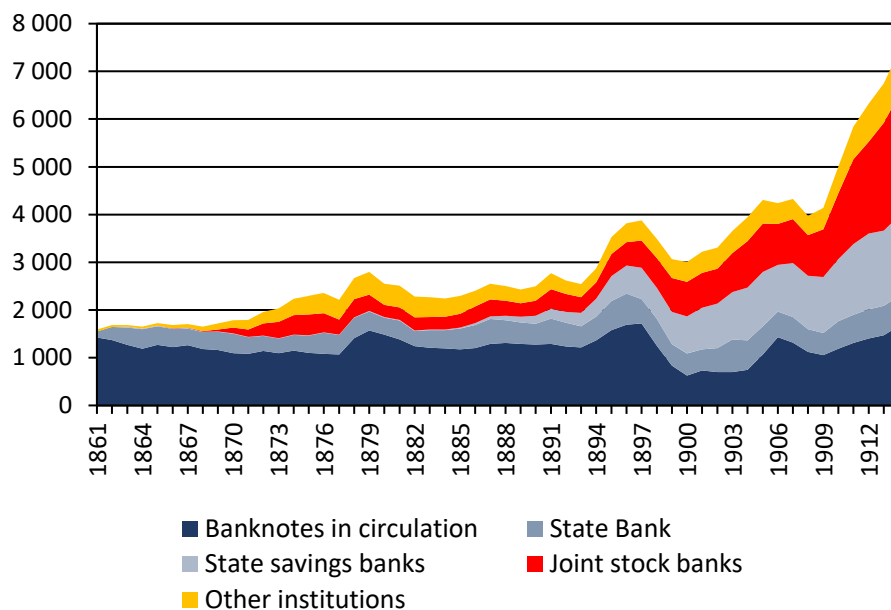
(the sum of exports and imports)[20] and government expenditures,[21] per R. Sylla and P. Rousseau.

Figure 2. Assets of commercial and savings banks of various types, January 1, 1861–1914, in rubles (adjusted for 1913)
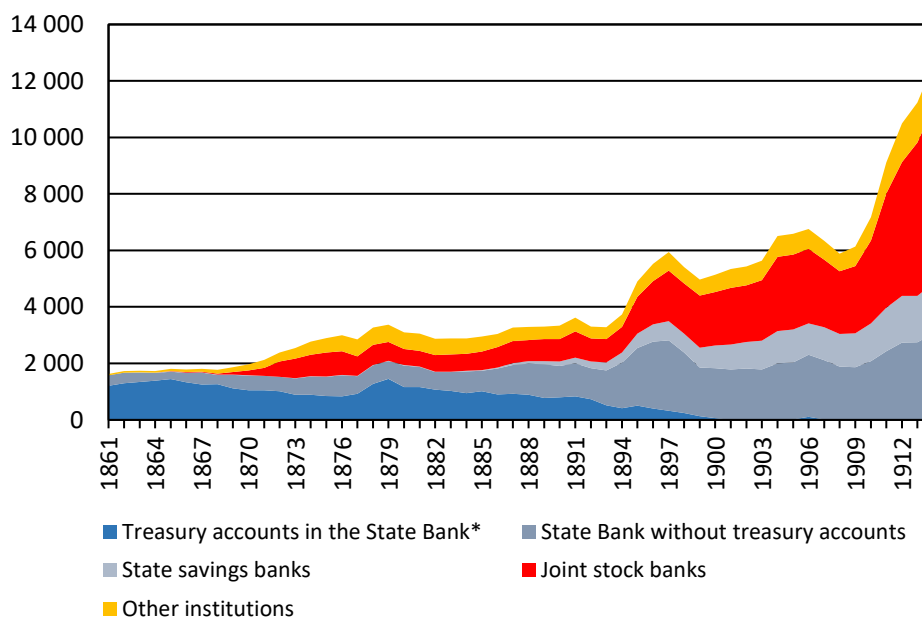
* Asset (debit) accounts.

Figure 3. Banknotes and deposits, January 1, 1861–1914, in rubles (adjusted for 1913)

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[20] Data was compiled by Timur Valetov, URL: https://hist.msu.ru/Dynamics/data/10_001en.xls; https://hist.msu.ru/Dynamics/data/10_002en.xls.

[21] Data was compiled by Leonid Borodkin, URL: https://hist.msu.ru/Dynamics/13_stt.htm; Data for 1913: Ministerstvo finansov. 1904–1913 (St. Petersburg, 1914), 14.

The problems of the Russian price indices for 1860–1913 require comment. The above-mentioned Podtyagin index was used to deflate all indicators since 1885 into 1913 ruble values.[22] Gregory also offers a version of national income based on the Moscow-Petersburg retail price index,[23] but this version does not provide any statistically significant results with banking data. Since the Podtyagin index has only been available since 1885, the problem arises of which index to use for 1860–1884. There is no similar wholesale price index that is best suited to banking data. Thus far, we use the budget index of S. G. Strumilin/Dolmatov for 1860–1884.[24] However, an attempt to use it for the total period from 1860–1913 does not yield any significant results.

Does this lack of an optimal price index for 1860–1884 affect the result? In some ways. The problem is illustrated by table 1, which presents pairwise linear regressions, separately evaluating dependence of growth of per capita national income from per capita growth in broad money, banking assets, foreign trade, and government expenditures. Such independent variables can only be used individually because they all are strongly correlated with each other, except for government expenditures, but the latter variable does not give a significant result even in combination with the others. The regressions are reported for 1885–1913 only, when the Podtyagin index is available. It turns out that per capita growth in broad money, banking assets and foreign trade do influence the growth in national income to some extent (R^2 in the range of 15 to 18%), while the growth in government expenditure does not. However, including of an earlier period does not produce any significant result in any combination. In other words, a significant result is obtained only on the Podtyagin index. However, it is possible to build a regression with significant coefficients for the entire period 1860–1913, as it reports below.

**Table 1. OLS growth regressions for the period
of Podtyagin's wholesale price index, 1885–1913**

	(1)	(2)	(3)	(4)
Constant	0.004 (0.02)	0.002 (0.02)	-0.005 (0.02)	0.01 (0.02)
% growth of broad money	0.46** (0.19)			
% growth of banking assets		0,38** (0.16)		
% growth of trade			0.30** (0.13)	
% growth of government expenditure				0.16 (0,15)
N	29	29	29	29
R^2	0.18	0.17	0.15	0.04

Note: All indicators are per capita, and the dependent variable is per capita income growth. The table reports the regression coefficients and their errors in parentheses.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

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[22] Data was compiled by Leonid Borodkin and Anna Dmitrieva, URL: https://hist.msu.ru/Dynamics/data/03_018.xls.

[23] Gregory, *Russian National Income,* 56–57.

[24] Data was compiled by Leonid Borodkin and Anna Dmitrieva, URL: https://hist.msu.ru/Dynamics/data/03_016.xls.

A regression similar to the one in R. Sylla and P. Rousseau's paper on 17 countries[25] gives the best result for the Russian data. Comparison of the Russian Empire with other countries is possible for two periods from this paper: 1850–1889 and 1890–1929 (Table 2). Growth in per capita national income is also used as a dependent variable. Compared to other countries, average growth in the Russian Empire was very low from 1860–1889 (0.84%) and high from 1890–1913 (2.31%).

The independent variables—broad money, foreign trade, and government expenditure—were used as ratios for national income. Table 2 contains the ratio of broad money for the Russian Empire. In the first period, this ratio was at an average level of 30.8%, but in the second period it became slightly lower (29.5%), and it was much less than in other countries. However, growth in broad money during the 1920s is included in calculations of the ratio for other countries but not for Russia. The dynamics of Russian broad money as a ratio to national income is presented in Figure 4: its trend was negative from 1877 to 1900. Banking assets fell relative to national income in 1877–1882 in the crisis of joint-stock banks, and these fell again in 1897–1900 when the government reformed the money system (Figure 4). Thus, Russian history has witnessed periods when financial growth lagged behind general economic growth, resulting in negative regression coefficients.

**Table 2. Average increase in per capita national income
and the ratio of broad money to GDP/national income**

	Growth real per capita income (%)		Ratio of broad money to GDP (%)	
	1860–1889	1890–1913	1860–1889	1890–1913
Russian Empire	0.84	2.31	30.8	29.5
	1850–1889	1890–1929	1850–1889	1890–1929
Argentina	5.79	1.08	49.2	32.0
Australia	1.65	0.42	38.1	45.0
Brazil	0.52	2.58	42.2	30.1
Canada	1.50	2.25	20.7	40.0
Denmark	1.90	1.74	34.8	76.8
Finland	1.37	1.83	41.3	96.9
France	1.20	3.37	28.8	43.3
Germany	1.63	1.57	18.2	47.6
Great Britain	1.04	0.51	48.7	56.2
Italy	–0.22	1.34	34.3	50.1
Japan	6.11	1.75	30.1	60.7
Netherlands	1.39	2.02	30.7	62.3
Norway	1.12	1.88	35.1	82.4
Portugal	3.05	0.99	21.6	19.6
Spain	0.83	0.76	8.7	26.5
Sweden	1.82	2.57	62.6	77.8
USA	1.91	1.82	30.1	60.3

Note on numbers: for the Russian Empire: per capita income – P. Gregory, 1982, 56–57; broad money – author's calculation. Other countries: Sylla, Rousseau, 2003, p. 391.

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[25] Rousseau and Sylla, "Financial Systems".

Figure 4. Ratios of broad money and banking assets to national income, 1860–1913*
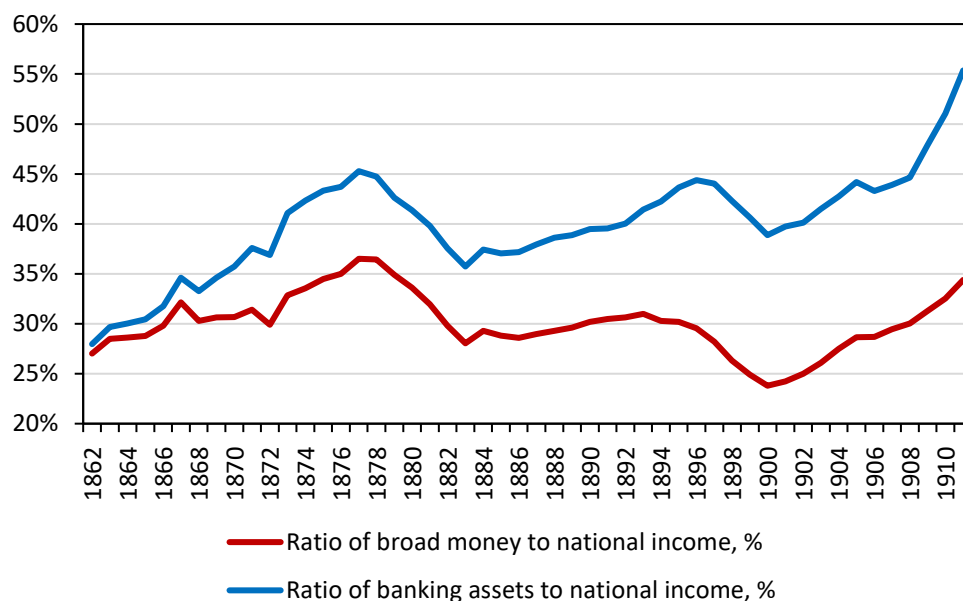
* — Moving averages with 5 steps.

Tables 4 and 5 report the results of OLS regressions, ready at this stage of the study. All indicators were taken from a period covering 54 years (1860–1913). Table 4 represents the banking system through broad money, as in R. Sylla and P. Rousseau's paper, and the regressions in Table 5 were done with banking total assets to compare the difference with the regressions with broad money. Broad money in three out of four regressions reveals a statistically significant impact on the growth of per capita national income, with the R^2 increasing from 25% to 31%, and the regression coefficients are negative. The coefficients in the regressions for banking assets are significant in all cases and yield a higher R^2 (from 34% to 37%), and they are also negative. The impact of foreign trade on the growth of national income is not confirmed in any way. Government expenditures are significant only in combination with broad money, but not with banking assets, which can be explained by the large share of banknotes in circulation inside broad money that was a consequence of government policy.

Regression analysis is in progress in this project. The preliminary findings suggest that the financial system was most likely a factor influencing economic growth from 1860 to 1913, although not the only nor the most decisive one. The problem with the Russian financial system was that it lagged behind in terms of economic growth from 1877–1900. The reasons for this phenomenon require further clarification, but the most likely answer must be sought in government policies in a broad sense, from banking regulation to monetary policy, as well as in the burdens of a long depression. This decline manifested to a greater extent in the money held by the population compared to money held in the total banking system because this system attracted resources from the capital market (equities and reserve capitals) and from abroad (interbank transactions through correspondent accounts).

Table 4. OLS growth regressions with broad money, 1860–1913

	(1)	(2)	(3)	(4)
Constant	-0.33	-0.22	-0.43	-0.35*
	(0.52)	(0.54)	(0.50)	(0.53)
Log of initial real per capita national income	0.38	0.33	0.51**	0.47*
	(0.24)	(0.25)	(0.24)	(0.25)
Ratio of broad money to national income	-1.3***	-1.06*	-0.96**	-0.83
	(0.4)	(0.53)	(0.44)	(0.53)
Ratio of trade to national income		-0.49		-0.34
		(0.75)		(0.73)
Ratio of government expenditure to national income			-1.56**	-1.52*
			(0.77)	(0.78)
N	54	54	54	54
R^2	0.25	0.26	0.31	0.31

Note: All indicators are per capita, and the dependent variable is per capita income growth. The table reports the regression coefficients and their errors in parentheses.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Table 4. OLS Growth regressions with banking assets, 1860–1913

	(1)	(2)	(3)	(4)
Constant	-1.46***	-1.68***	-1.35***	-1.54**
	(0.40)	(0.61)	(0.41)	(0.61)
Log of initial real per capita national income	0.95***	1.054***	0.95***	1.04***
	(0.23)	(0.31)	(0.22)	(0.31)
Ratio of banking assets to national income	-0.88***	-0.97***	-0.74***	-0.82**
	(0.21)	(0.29)	(0.24)	(0.31)
Ratio of trade to national income		0.36		0.33
		(0.77)		(0.76)
Ratio of government expenditure to national income			-1.06	-1.05
			(0.77)	(0.78)
N	54	54	54	54
R^2	0.34	0.35	0.37	0.37

Note: All indicators are per capita, and the dependent variable is per capita income growth. The table reports the regression coefficients and their errors in parentheses.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Lagging growth of the financial system
from a lending rates analysis perspective

Is it possible to trace the expansion of the financial system's lagging growth compared with general economic growth, as discussed in the previous section, across various financial centers? This approach should reveal steps of financial expansion at a micro level. For this purpose, we conduct a lending rate analysis of banking units' levels to assess credit availability under the condition of a general lack of capital in the country.

It is impossible to calculate the average lending rate at a particular institution based on rates announced in the press. However, there is a substitute—namely the ratio of annual interest income on all discounted bills and loans to the average balance of discounting and lending at the beginning and end of the year. We compile such a data set from annual banking reports, periodicals of the Ministry of Finance, and joint-stock commercial banks from collections in the Russian State Historical Archive (St. Petersburg) and the Central State Archive of Moscow.

On the one hand, average lending rates were not abnormally high in the Russian Empire. According to data from various sources and the calculations in this section, they ranged from 6% to 11%, with an average of 7.7–8.7%. We find no reports of exorbitant rates, such as 20–30%, nor any ceiling on the rates. The level of rates was essentially regulated by the market.

On the other hand, we find much evidence that credit was insufficient or unavailable. The Russian Empire was characterized by credit rationing, which refers to economic agents being cut off from bank credit in various ways. For example, if a person wanted to obtain a loan and even agreed to pay an increased interest rate, the bank might have refused the individual's request because it considered them insufficiently solvent or because the resources had already been distributed among other customers.

According to the level of lending rates, there were two types of banks in the Russian Empire. The first type was banks with rather low rates by Russian standards, which can be explained by economies of scale—where a large bank in a large market served predominantly large customers. The latter can be considered an option for credit rationing. Such banks generally aimed to maintain preferential lending rates for the largest nonfinancial firms in the region. Thus, in 1897, the old, large, and respectable Moscow Merchant Bank had average annual lending rates of 5.7% at the Moscow head office and 5.9% at the St. Petersburg branch.

The second type of banks was those that were forced to extend to areas not occupied by the first type. As a rule, these were younger banks; their rates were generally higher because they served fewer solid customers or expanded operations to new regions. Thus, in 1897, the new, large, and multi-branched Russian Trade and Industrial Bank had average rates of 7.5% at the St. Petersburg head office and 6.9% at the large Moscow branch. The bank developed a network of branches along the Ryazan-Ural railway, focusing on the export of agricultural products (mainly from the Saratov, Tambov, and Ryazan provinces). The average rate for this branch network was 9.4%. This is a case of how higher rates were observed at expansion points of the banking system.

We attempt to collect the maximum number of average annual lending rates for joint-stock commercial banks, municipal public banks, and mutual credit societies at three years. First, in 1874, just before the long depression, the initial expansion of the new banking system since the reforms of the 1860s can be summarized. Second, in 1897, it is possible to assess the results of the renewed growth since the 1890s. There is no strict boundary because the number of commercial banks was constantly growing; however, the data for 1897 have the highest potential for comparison with the first general census of the population of the Russian Empire in 1897. Third,

in 1913, we observe the results of the accelerating banking growth in the run-up to the First World War.

The greatest difficulties are encountered with the data on joint-stock commercial banks. As a result, there are two types of rates in our data set. First, these are the _real rates_ calculated for a particular head office or branch if sufficient data exists. For example, the aforementioned rates for the Moscow and St. Petersburg units of the Moscow Merchant Bank and the Russian Trade and Industrial Bank are the real rates. Second, such a calculation is impossible in many cases because data only exist for a group of units, or because it is necessary to use the rate as in a superior unit; these are the _summarized rates_. The lending rates for regional branches of the Russian Trade and Industrial Bank are of precisely this type. In addition, the bank had a branch in St. Petersburg at the Kalashnikovskaya pier, the center of grain trade, where joint-stock banks provided loans against agricultural products. We find no separate data for the Kalashnikovskaya branch. As its operations were likely added to the head office's report, we assign it the head office rate of 7.5%, which is the summarized rate and additionally marked 'as in a superior unit'.

The real rates of joint-stock commercial banks apply mainly to older banks, their head offices, and large branches in leading financial centers, while the summarized rates apply to regional branches. As we find many summarized rates, we separate them into individual categories in the calculations.

As for mutual credit societies (unit cooperative banks), little data appear to exist for 1874, where only 18 reports are found from 75 operating societies (24%). Thus, we mainly consider the rates of large societies in leading financial centers in 1874.

For municipal public banks, small and regional unit institutions subordinate to municipal councils, data for 1874 are taken from the Yearbook of the Ministry of Finance, where interest on commercial and mortgage loans is not separated.[26] However, the share of mortgages in the total loan portfolio of these banks is found to only be 17.3% on January 1, 1875.

The rates of the State Bank's branches are included in the data set in a special way. A problem exists in that the average annual lending rates are calculated correctly if a bank separated interest incomes on loans between the current and following years in its annual report. The current year's incomes are necessary to average the annual rate. Most nonstate banking institutions properly performed this separation of incomes in their reports. The State Bank, however, did not adhere to this practice; therefore, irrelevant results are produced from its data. Ultimately, the State Bank's branches are assigned average rates calculated from its official rates for 12 months. For 1874, this is the average discount rate of any term—5.7%. For 1897 and 1913, the average discount rates of six-month bills are calculated as 5.7% and 6%, respectively. Six-month bills are chosen because the State Bank encouraged this term in 1897, when the rate on nine-month bills was 1.5 percentage points higher. In 1913, the difference between the bills of these two terms became less significant at 0.5 percentage points[27]. Certainly, the low lending rates of the State Bank, especially in regional branches (in not only provincial but also some county centers), are cases of credit rationing.

For our lending rate analysis, it is important to understand how these rates relate to the growth periods of banking institutions of various types. Table 6 reports the number of institutions in our data set. For 1874, all of the data represent the results of initial growth. In 1897, the regional branches of joint-stock banks were in a new period of growth (i.e., summarized rates). The number

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[26] _Ezhegodnik Ministerstva finansov_ 7 (St. Petersburg, 1876), 135–204.

[27] Calculated by: M. L., "Gosudarstvennyi bank. Ego sovremennoe ustroistvo i kommercheskie operatsii," in _Bankovaia entsiklopediia_, ed. N. Iasnopol'skii, 1: (Kiev, 1914), 368–370.

of municipal public banks was limited by the number of municipal councils. There were only 99 mutual credit societies by the end of the 19th century and 1,110 by 1913. This explosive regional growth—more than 11-fold—warrants attention.

Table 6. Banking institutions in the data set

	1874	1897	1913
State Bank, branches, official rates	52	122	138
Joint-stock banks*, real rates**	64	67	242
Joint-stock banks*, summarized rates**	34	205	582
Municipal public banks	222	200	248
Mutual credit societies	18	90	800
No data***	91	54	396
All banking institutions	481	738	2 406

* Joint-stock banks: head offices, branches, agencies, and commission agents.
** Explanation in the text.
*** No data for rate calculation, or this was the first year of the bank's operations, where the calculated rates are irrelevant.

Table 7. Average annual lending rates and coefficients of variation, %

|	1874	1897	1913
Average annual lending rates ± standard deviations			
State Bank, branches, official rates	5.7	5.7	6.0
Joint-stock banks*, real rates**	8.8 ± 2.2	7.0 ± 1.2	7.5 ± 1.2
Joint-stock banks*, summarized rates**	10.2 ± 2.4	7.9 ± 1.2	7.7 ± 0.6
Municipal public banks	9.1 ± 1.8	8.5 ± 1.3	8.8 ± 1.3
Mutual credit societies	8.5 ± 1.9	8.4 ± 1.3	10.0 ± 1.6
All banking institutions	8.7 ± 2.2	7.7 ± 1.5	8.6 ± 1.8
Coefficients of variation			
Joint-stock banks*, real rates**	24.7	16.5	15.8
Municipal public banks	19.9	15.1	14.8
Mutual credit societies	22.7	16.1	16.0
All banking institutions	24.7	21.6	21.7

Note: See Table 6.

Table 7 presents the average annual rates for groups of institutions. However, they are not particularly indicative in themselves because Russian realities correlate with the global trend: rates in the late 1890s were minimal over a long historical period, and rates were generally higher in the 1910s than in the 1890s.[28] The rates were 6.5%, 5.7%, and 6.1% in 1874, 1897, and 1913, respectively, at the head office of the Moscow Merchant Bank.

Here, the following question arises: how was the growth of the banking system combined with the variation of rates? To answer this, Table 7 also provides coefficients of variation. For the various types of banks, the coefficients decreased noticeably from 1874 to 1897, but the integration

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[28] Sidney Homer and Richard E. Sylla, *A history of interest rates*, 4th ed. (Hoboken, 2005), 230–269.

process stopped by 1913. However, judging by the variation across all banking institutions, the convergence of rates was always weak. This may be explained by the fact that each time the banking system entered a new, previously untouched market segment, where credit was more expensive than in old and well-developed segments. We examine this process further below.

Figure 5. Differences in average lending rates for all banking institutions
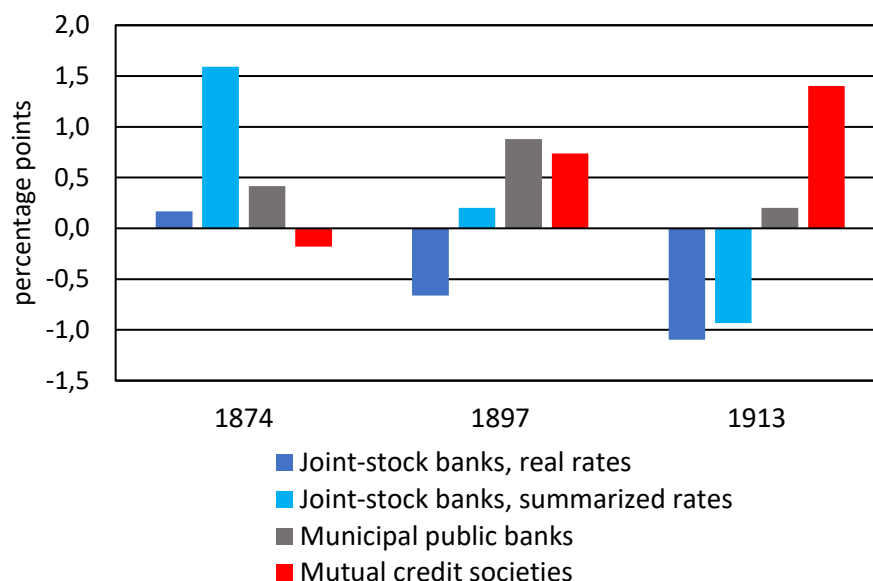
For the rates of banking institutions of various types, their differences compared with the total average rates are informative (Figure 5). In addition, the rates above and below the average are visualized in geographic maps for the European and Asian parts of the Russian Empire in the Appendix (Figures A1–A4). The rates for populated localities are calculated as ordinary averages. The maps also visualize lending balances by localities in nominal rubles.

In 1874, at the end of the initial period of banking growth, the rates were average in large banks in the leading markets—in joint-stock banks (real rates) and the few mutual credit societies for which data are available. In municipal banks, the rates were slightly higher than average because, on the one hand, these were mostly small regional institutions, while on the other hand, the control of municipal councils (dumas), although not always effective, could limit the growth of rates (a type of municipal rationing) in some cases. In the few regional joint-stock banks, the rates were much higher than the average; therefore, this was the main area for expanding the banking system into new segments.

In the 1874 maps (Figures A1 and A4), the density of the banking system appears to still be minimal. Large empty spaces are noticeable in the west because there were no municipal councils there—and therefore no municipal banks; moreover, other banking institutions did not reach these areas. The rates were lower in the largest financial centers of various sizes, namely St. Petersburg, Moscow, Odessa, Warsaw, Kiev, Kharkov, Rostov-on-Don, Taganrog, Nizhny Novgorod, and Kazan. Quite a few smaller regional centers had low rates (the green dots), which were the State Bank's branches and municipal banks with municipal rationing. However, high rates prevailed in the regions, and these were the markers of the expansion points.

In 1897, the rates of the old joint-stock banks in large cities (large markets) were noticeably below average (real rates). However, in the 1890s, these banks' branch networks began to expand (summarized rates) and the regional rates were noticeably higher (recall the summarized rate of 9.4% for branches of the Russian Trade and Industrial Bank).

The rates of municipal banks in 1897 require a special explanation. Nominally, their average rate had decreased from 9.1% to 8.5% by 1897. However, the total average rates fell more strongly—from 8.7% to 7.7%—due to the growth of the State Bank's branches and the units of joint-stock banks, in which rates were often lower than the average. Thus, rates in the stagnating system of municipal banks in 1897 were relatively higher than those in 1874. This is indicative of the lag of small regional banks. In 1897, data for almost all mutual credit societies were considered, and they were found to have approximately the same high rates as municipal banks and not to grow in number.

In the 1897 maps (Figures A2 and A4), the growth areas (regional units of joint-stock banks) marked with red dots had high rates. Almost no red dots are found in Asia, although the number of units was increasing there in the 1890s. This is most likely explained by the low (rationing) rates of large joint-stock and municipal banks. Thus, Asia did not reach the stage of expansion with high rates, and bank credit was actually less available there than in the European part of the Russian Empire.

In 1913, the rates of joint-stock banks were below average in any configuration. At that time, 75% of joint-stock banks' units belonged to five or six metropolitan banks, which played an integrating role in domestic markets. The rates of municipal banks dropped to an average level (i.e., they became involved in the integration process), even though they could not seriously grow in number institutionally. The sharp increase in the number of mutual credit societies was accompanied by a strong increase in their lending rates. Thus, the banking system again found an untapped niche and spread to new localities and groups of customers who were willing to pay such high rates for access to credit.

In the 1913 map (Figures A3 and A4), this process appears to fill the empty spaces in the west and south of the European part of the Russian Empire, with the red dots denoting high rates. Among them, there were many settlements with a lower status than county centers (i.e., villages, railway stations, *mestechki*, and *stanitsy*). The rest of the European part is dominated by green dots, where the integration process led to lower rates. In the Asian part, the growth of the banking system was still combined with below-average rates (i.e., growth of the rationing type). Compared with the European part, there were still few institutions and a few centers in which an economy of the modern type, which required appropriate banks, was concentrated.

Thus, the Russian financial system, which lagged behind the general growth rate, exhibited at least two peculiarities from a spatial perspective. First, banking institutions of various types developed unevenly, and some simply stagnated for many years, especially small credit institutions for common regional customers (municipal public banks and mutual credit societies). While large banks (the State Bank and joint-stock banks) had enough resources primarily for large customers in the leading financial centers, their resources were not sufficient to saturate broader circles of potential customers with credit. Second, there were still many spaces outside of the banking system in the economic environment of the Russian Empire, and banking expansion revealed a new untapped area each time, entering which initially meant higher rates. In the 1910s, in the European part of the Russian Empire, this process was unlikely to have been completed, while it had most likely not yet begun in the Asian part. Nevertheless, by 1914, the scale and depth of the banking system's development indicate that it was one of the factors in overall economic development.

Conclusion

The banking system of the Russian Empire produced numerous public reports from 1860 to 1913 because the government, always concerned with control, spent much effort establishing and developing this practice. However, prior to our study, there was no complete summary of the main indicators of commercial banking development, primarily their total assets and deposits. Because of this, Russian banking was always "visible" in parts only. Once the data problem had been resolved, further analysis revealed that the Russian financial system was one of the factors in economic growth during 1860–1913; however, during 1877–1900, its size was decreasing relative to national income. The reasons for this phenomenon have yet to be identified and tested, but we will most likely have to move in two directions.

First, it is impossible to ignore the government's role. Traditionally, this discourse has focused on the shortcomings of government regulation: In Russia, there was a permitting procedure for joint-stock companies, which negatively affected their number.[29] For example, it is known that the government held banks' establishment bank from 1873 onward.[30] This argument remains valid, although it is crucial to add that the establishment of joint-stock banks became easier in 1872 compared with that of nonfinancial companies, since banks received a standard charter and an approval procedure from the Minister of Finance, as opposed to from the emperor. A new direction for thinking might be found in the idea of C. Calomiris and S. Haber regarding a coalition of a small number of large banks and a government concerned about catching up with development.[31] The authors illustrate this concept using Bismarck's Germany and Meiji Japan, to which the Russian Empire is likely to be close.

However, the present study offers one more line of analysis of the government's role in banking development. In the 19th and early 20th centuries, banknotes in circulation accounted for a much greater share of the total money supply compared with today. The average share of banknotes of the money supply M2 (broad money) was approximately 60% in the Russian Empire during 1860–1890; that is, the financial system was greatly dependent on cash in circulation. Therefore, government monetary policy deserves attention as it provides the financial system with resources. Thus, in the 1880s, when private deposits were in decline, there were more banknotes in circulation than during the economic boom in the first half of the 1870s; accordingly, broad money did not decline in the 1880s and even exhibited a slight upward trend. The opposite is true for 1897–1899, when a sharp reduction occurred in circulated banknotes because of the gold standard reform, and banking institutions could not compensate for this financial contraction by expanding deposits.

Another aspect of government involvement in the Russian financial system that must be considered is the large public banking sector. During the depression of the 1880s, this section grew faster than the private sector. In a country with a capital shortage, the network of the State Bank's branches and savings banks was an important source of resources.

Second, the Russian banking system had poorly studied stability problems that were most likely unrelated to government policy. Thus, out of 45 commercial banks whose charters were

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[29] Thomas Owen, *The corporation under Russian law, 1800-1917: A study in tsarist economic policy* (Cambridge, 1991).

[30] Isaak Levin, *Aktsionernye kommercheskie banki v Rossii* [First published in 1917], (Moscow, 2010), 232–256.

[31] Charles W. Calomiris and Stephen Haber, *Fragile by design: the political origins of banking crises and scarce credit* (Princeton, 2014).

approved in 1864–1873, six were unable to raise capital and begin operations, 12 were forced to reduce their capital stock in the 1870s, and seven went bankrupt or closed between 1875 and 1880. Half of the established banks transpired to be problematic.

In general, little is known about the long depression in Russian banking, partly because the most labor-intensive gap in summary data dates back to the 1880s. While joint-stock banks accelerated from 1893 onward, small institutions stagnated until the 1900s. The reasons for the lag of small institutions have not been studied in detail. In the 1880s, the regulation of municipal public banks was significantly tightened, which could explain their depression. However, similar rules for joint-stock banks did not hinder their growth. Moreover, mutual credit societies, which were minimally regulated, did not grow at all in the 19th century; yet, the government considered this form of commercial banking a priority due to a well-known historical distrust of joint-stock ownership.

We traced this small institution's lag through a lending rate analysis at the regional level. In contrast to the branch networks of joint-stock banks, small institutions were least affected by the process of reducing and equalizing lending rates. More research is required to explain this difference. Perhaps there is a way to go beyond the traditional paradigm of general backwardness in combination with the rapid development of joint-stock banks and reveal the real details of how the process of catching up in banking development occurred.

APPENDIX

Figures A1–A4. Average annual lending rates in 1874, 1897, and 1913

Legend

Average annual lending rates

- 🔴 > average
- 🟢 < average
- ⚫ no data or the first year of bank's operations

Credits in nominal rubles

- 🟢 > 10 millions rubles
- 🟢 1–10 millions rubles
- 🟢 < 1 million rubles
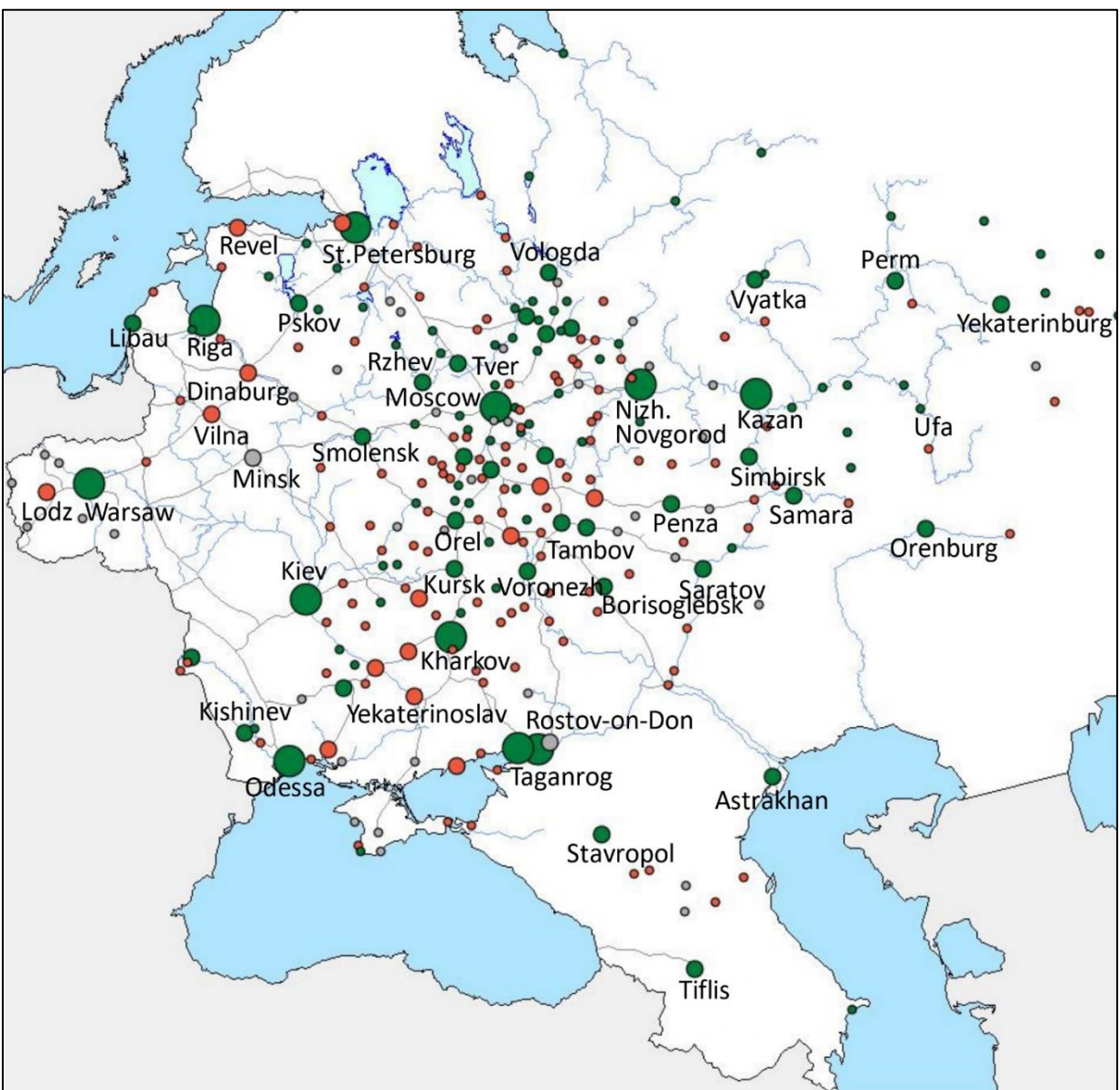
—— main waterways

—— railways

Figure A1. European part of the Russian Empire in 1874
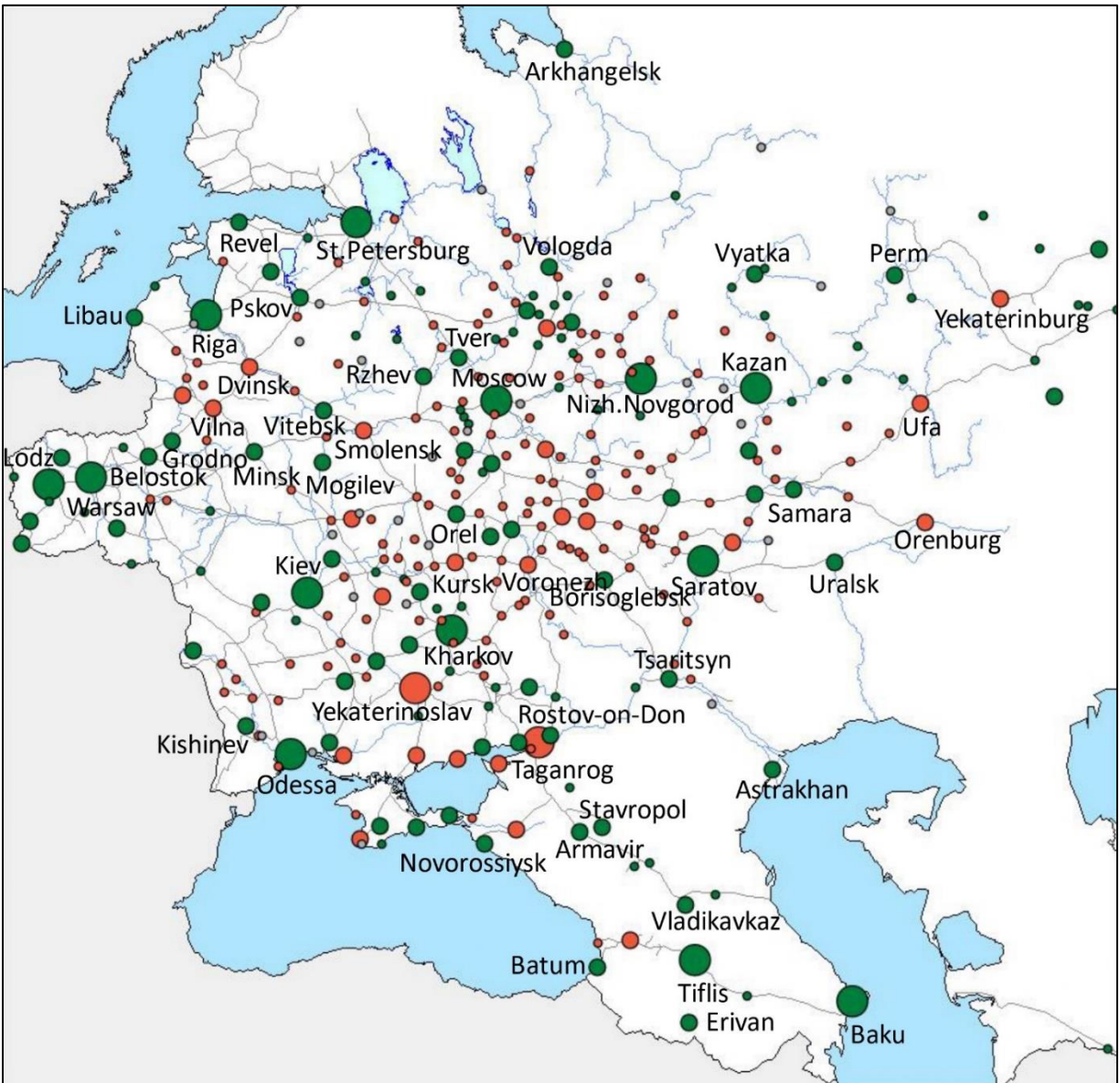
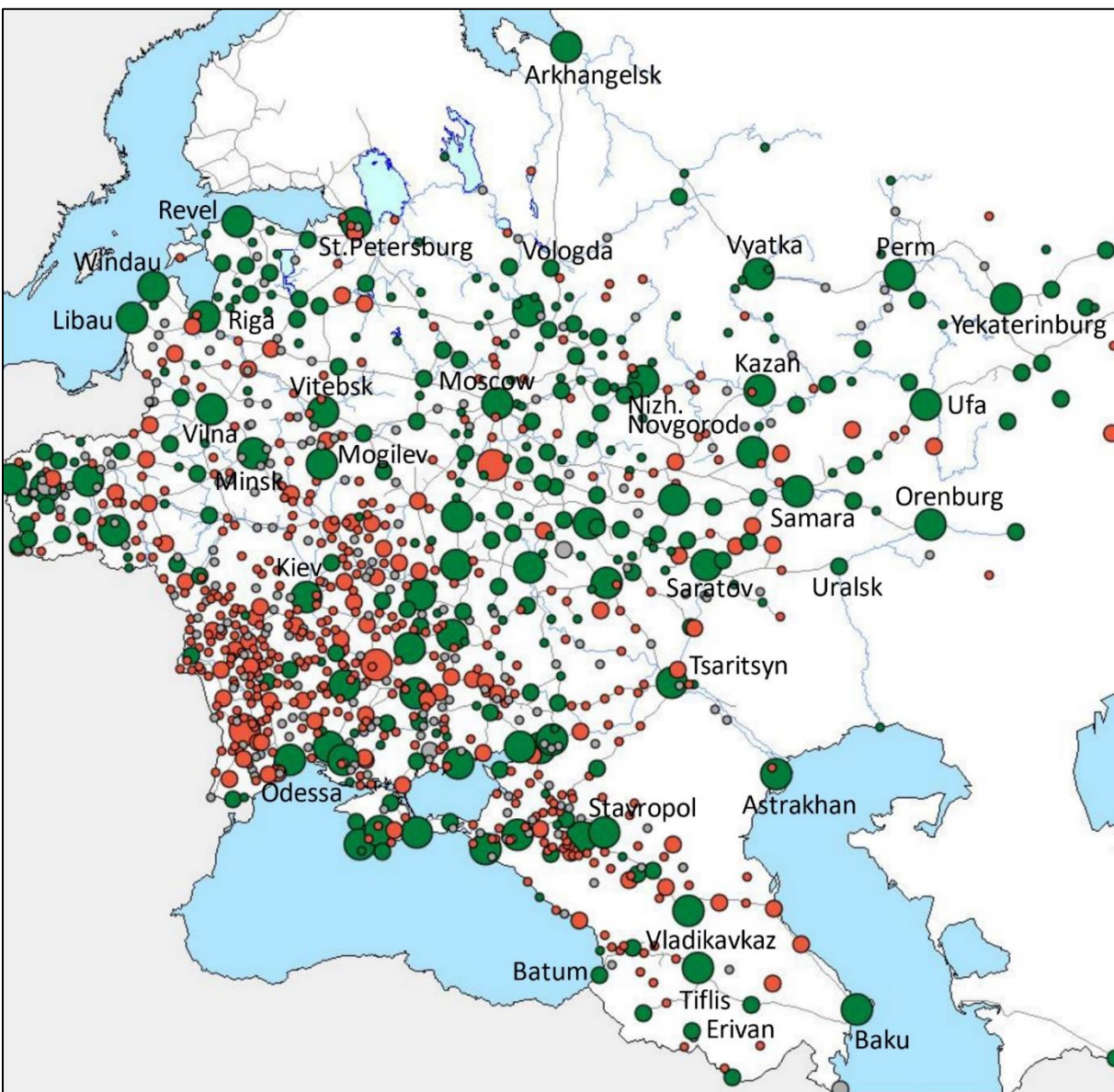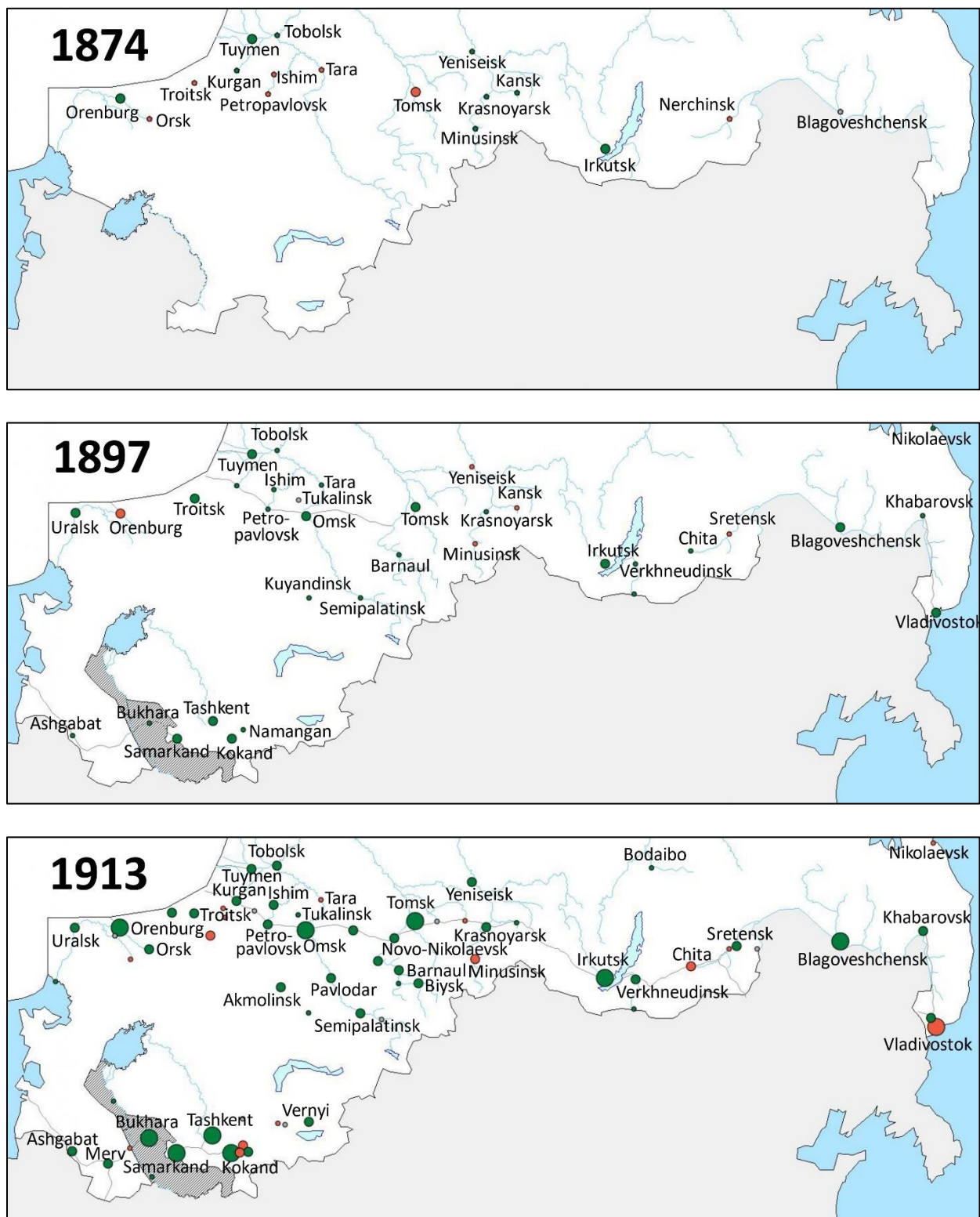**Figure A2. European part of the Russian Empire in 1897**

Figure A3. European part of the Russian Empire in 1913[32]

Figure A4. Asian part of the Russian Empire in 1874, 1897, and 1913[33]

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[33] The 1913 map is being prepared; the railroads are depicted as they were in 1901.