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История экономики

The Value of Banks' Political and Business Connections in the Russian Industrialization of the 1890s and the Crisis of 1899–1902

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Abstract

Do personal connections matter for the performance of commercial banks in the period of economic development and financial stress? In the 1890s, the Russian Empire, when undergoing rapid state-led industrialization, grew through foreign capital inflows into the national debt and through the state's procurement of industrial output. In 1899, the inflow of foreign capital fell sharply, initiating a financial crisis and a recession in heavy industry. In response to the crisis, authorities introduced a law which removed bankers from the boards of companies. Using newly collected historical data, this paper finds that the banks which experienced greater distress during the crisis had more personal connections to heavy industrial companies, those that had been most stimulated by state policies to expand production in the 1890s. These banks also had more personal ties to top government officials, those who were closest to the epicenter of policymaking. In contrast, during the industrial development of the 1890s, banks' personal connections to heavy industrial companies and top officials were positively related to bank performance. These findings suggest that well-connected bankers might fail to provide the valuable expertise and foresight that is expected from them in a time of crisis when decisive action is required to adapt to a rapidly changing economic environment.

Keywords: interlocking directorates, financial crises, development policies, bank failures.
JEL: G01, N23, N63, O25, P16.

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Introduction

In the mid- to late 1890s, industry in the Russian Empire showed exceptional growth. The value of manufactured output between 1893 and 1900 was rising by over 10 percent per year [Kafengauz, 1994. P. 353], making it the fourth largest manufacturing producer in the world [Bairoch, 1982. P. 296]. The state was acting as a catalyst for economic growth by procuring industrial products and stimulating heavy industry to expand operations to match the constantly rising demands from the state and the private sector [Gindin, 2007a]. In 1899, a sudden drop in the rate of inflow of European capital into Russian government bonds and the securities of industrial enterprises initiated a financial crisis. It was characterized by a rapid stock market decline, disastrous corporate performance and overwhelming bank losses [Brandt, 1904. P. 97–230]. Because banks supplied over half of the industrial sector's financing, banking distress threatened the successes of the whole decade.

The Ministry of Finance believed that one of the reasons for the crisis was the actions of bankers who had gained control over corporations and supported their own interests rather than the interests of their corporate clients [Shepelev, 1973. P. 207–208]. In one of the few corporate laws passed in response to the crisis, authorities forbade executive board members of banks to serve on corporations' boards[1]. In this paper, I test whether the bankers on the boards of corporations acted as rent seekers who abused their influence and misallocated firm resources, or they acted as delegated monitors who minimized information asymmetries, in effect improving clients' access to capital.

To test whether banks' personal ties affected bank performance during the crisis, I record personal connections, or, more formally, interlocks, between members of banking boards, government officials, and company board members[2]. Specifically, I record a well-connected political interlock when a bank board member, or his sibling, was part of a group of top government officials who were close to Finance Minister Sergei Witte. As the architect of the industrialization policies and the final decision maker on state procurement contracts. Witte was at the epicenter of policymaking [Solovyov, 2003].

Since the state targeted the development of heavy industrial companies, bankers' connections with such firms could affect banks' performance differently than ties with light industrial and non-industrial companies. For that, I record a heavy industry interlock when a bank's

[1] Polnoe sobranie zakonov Rossiyskoy Imperii [The Complete Collection of Laws of the Russian Empire]. St. Petersburg, 1903. Collection 3, vol. 21, law 20874.

[2] For lucidity, I refer to the members of a board of directors or a management committee as simply "board members," unless otherwise specified.

board member was also a board member in a heavy industrial firm, or when that banker's sibling served this function. Two additional types of interlock are also specified: to capture bankers' connections with a wider range of government officials and with non-financial companies.

The above is followed by an assessment of how the presence of government and industrial connections in each bank affected bank performance before and during the crisis. Bank distress is measured in the form of losses sustained by banks on investment portfolios in the years leading up to the crisis and over the crisis period. I find that the banks which experienced greater distress during the crisis had more connections to the government officials who were close to the Finance Minister. I also find that the banks which experienced greater distress had more personal ties to heavy industrial companies, those that had been most stimulated by state policies to expand production. In contrast, during the industrial development of the 1890s, banks' connections to top government officials and heavy industrial companies were positively related to bank performance. Taken together, these findings suggest that well-connected bankers might harm bank performance in a critical time of economic distress.

My findings should be interpreted as correlations between personal connections and bank performance. They do not necessarily suggest causality. Indeed, the majority of academic papers document correlations between interlocks and firm outcomes (for example, see [Deloof, Vermoesen, 2016]). Only a small number of articles are able to address the issue of causality in a partially or fully convincing way (for instance, see [Frydman, Hilt, 2017]). To add additional weight to my correlation evidence, I use fixed effects analysis.

The findings of this paper add to two strands of existing literature. First, the paper augments our knowledge of the impact of bankers' personal connections on bank performance. Researchers have found that political interlocks can have both a negative [Grossman, Imai, 2016; Okazaki et al., 2005] and positive [Adams et al., 2010; Braun, Raddatz, 2010] impact on the financial outcomes of banks. This paper shows that a negative influence is indeed a possibility. When it comes to banks' interlocks with non-financial firms, my research supports the established view that in times of stress this type of connection typically has a negative effect on banks [Laeven, 2001; La Porta et al., 2003].

Second, this paper contributes to the historical literature on the role of bank-industry connections in the economic development of the nineteenth century. Although banks' interlocks with companies brought little tangible benefits during Germany's industrialization [Fohlin, 1999], they were essential for the economic development of New England [Lamoreaux, 1996], and improved firms' access to credit in South Yorkshire [Newton, 1996]. The paper's narrative evidence sug-

gests that bank-industry ties played a significant role in the development of Russia's heavy industry.

The arguments are built as follows. Section 1 provides the historical setting of the study and outlines the proximate causes of the crisis. Section 2 describes the state's role in the industrial expansion of the 1890s and quantifies the scale of state procurement before and during the crisis. Section 3 documents the effect that government policies had on industry. Section 4 describes how banks were influenced by and exerted influence on government and industry. Section 5 defines the empirical strategy and variables. Section 6 reports the empirical results. The final section concludes.

1. Industrialization in the 1890s and the Crisis of 1899–1902

In 1893, Finance Minister Sergei Witte introduced wide-scale economic policies targeted at rapid industrialization. The goal was to catch up with major industrialized nations. The push for rapid industrialization turned out to be highly successful. Throughout the 1890s, 745 public companies were established, as opposed to 216 firms in the 1880s[3]. Between 1893 and 1900, the value of output produced by heavy and light industries rose by 87 and 52 percent, accordingly [Kafengauz, 1994. P. 345–353]. By 1900, Russia was producing 8.8 percent of global manufacturing output, making it the fourth largest manufacturer in the world [Bairoch, 1982. P. 296].

Along with foreign investors, whose role is discussed below, 39 joint-stock commercial banks financed Russia's industrial growth. Banks supplied over half of industrial financing [Bovykin, 1967. P. 207]. Ten banks were headquartered in Saint Petersburg, the capital, where the government was located; five were based in Moscow, which was the center of light industry; while the rest operated in provincial centers, from present-day Poland to Siberia.

The sound industrial growth of the 1890s was interrupted by the financial crisis, which began with foreign investors reducing their purchases of Russian government bonds and the securities of industrial enterprises. The decline in foreign capital inflows was due to the shortage of capital in Europe, itself attributable to various economic and political factors[4].

Beginning from 1899, the Russian government had a particularly hard time finding buyers on the Parisian market, which had been Russia's primary source of external funding, with foreigners owning as much as 60 percent of government debt [Gregory, 2003. P. 42]. Between 1899 and

[3] Ukazatel' deystvuyushchikh v imperii aktsionernykh predpriyatiy i torgovykh domov [The Directory of Corporations and Trading Houses in the Russian Empire]. St. Petersburg, 1903. P. 7.

[4] Vsepoddanneyshiy doklad ministra finansov o gosudarstvennoy rospisi dokhodov i raskhodov na 1901 g. [The Most Loyal Report by the Minister of Finance to the Czar on State Revenues and Expenditures for the Year 1901]. St. Petersburg, 1900. P. 16–22.

1902, foreigners invested only 341 million rubles worth of Russian bonds [Siegel, 2015. P. 41, 48]—that is about 114 million rubles per year. This differs substantially from the interest expressed by foreign investors in the 1890s. Between 1893 and 1900, they bought a net amount of 1,180 million rubles worth Russian government bonds and state-backed railroad bonds, or about 169 million rubles per year [Bovykin, 1984. P. 166–167]. Beginning from 1900, the rate of capital inflows to corporate equity and debt securities also began to decelerate. As shown in Figure 1, the inflow of capital dropped from a 20 percent increase in 1900 to just 1 percent in 1902, totaling 220 million rubles over these years [Ol', 1925. P. 12–13]. Contrast this to the period between 1893 and 1899, when joint-stock companies received 526 million rubles from foreigners [Ol', 1925. P. 12–13].

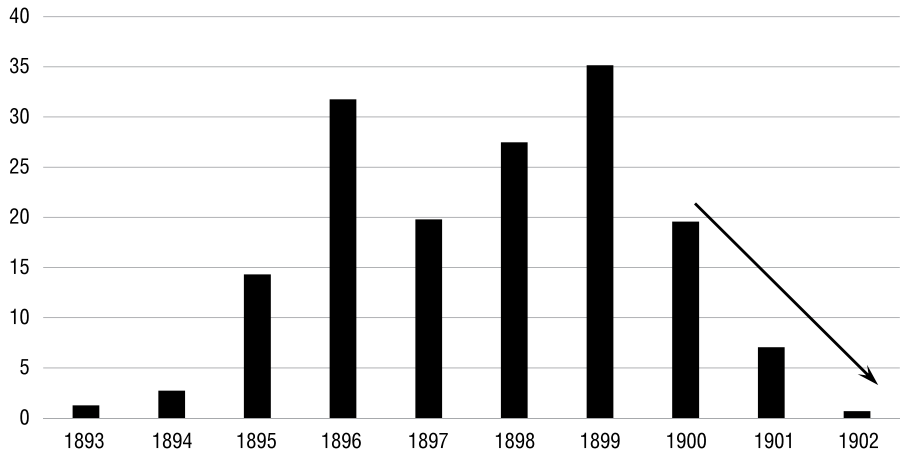

Figure 1. **Net Foreign Capital Flow into Russian Corporate Equity and Debt Capital** (Y-Axis, %), **1893–1902**

Consequently, the St. Petersburg stock exchange index began a three-year decline from February 1899 to the end of 1901, in aggregate falling by 45.4 percent[5]. Three banks failed during the crisis and two more shortly after it, while 35 other banks survived because of the massive bailouts carried out by the State Bank, Russia's quasi-central bank [Gindin, 1960].

Apart from the withdrawal of foreign investors, other proximate causes of the crisis were thought by contemporaries to be the decline in government procurement of industrial products [Gindin, 1996. P. 136–137], the lack of consumer demand for industrial products that could have mitigated the decline in state orders[6], and weak corporate and stock exchange regulation [Owen, 2002. P. 150–154].

[5] Goetzmann W., Cabolis C., Radchenko P. St. Petersburg Stock Exchange Index. SPSE and NYSE Comparison. http://som.yale.edu/sites/default/files/files/SPSENYSE18651917ind.xls.

[6] Vsepoddanneyshiy otchet gosudarstvennogo kontrolera za 1901 god [The Report of the State Comptroller for the Year 1901]. St. Petersburg, 1902.

2. Government Policy

This section describes the role of industrialization policies and provides some estimates of the scale of state procurement before and during the crisis.

In 1893, Witte introduced rapid industrialization policies which encouraged firms to expand their operations. The stimulus included the state procurement of industrial products, which intensified after 1893; protective tariffs on industrial imports; subsidies to key industries, including targeted loans from the state; the introduction of the gold standard in 1897 to attract foreign capital to domestic enterprises; and official encouragement to establish joint-stock companies, by both domestic and foreign entrepreneurs [Gindin, 2007a]. Indeed, foreign direct investment became a unique feature that distinguished Russian industrialization [McKay, 1970. P. 378]. Out of the 1,173 joint-stock firms operating in 1900, 205 were set up by foreigners[7].

The increase in state procurement from 1893 can be seen in the massive railroad construction initiated by the state and in the nationalization of private railroad companies. Between 1893 and 1899, the total length of railroad tracks, not counting construction in Finland, increased by over 50 percent[8]. Over the same period, the state's operation of total railroad tracks in the country increased from 58 to 66 percent, of locomotives from 58 to 70 percent, and of passenger railroad cars from 56 to 70 percent[9]. The push for rapid industrialization also coincided with a notable increase in the number of joint-stock companies since 1893.

Under this policy of stimulus, state procurement was foremost. Constantly rising demand from both state and private sectors throughout the 1890s motivated industrialists to expand operations. In fact, the general press attributed the crisis primarily to industrial overexpansion [Migulin, 1902. P. 246–247]. Perhaps no other evidence speaks stronger in support of this than the one that comes directly from the Finance Minister. In a report at a special meeting on April 10, 1903, looking back at the crisis, Witte acknowledged that the true cause of the calamities to manufacturing industry had been the rapid railroad construction and industrial development initiated by government [Gindin, 1996. P. 136–137]. For twelve consecutive years between 1887 and 1899, strong demand for manufacturing products was outrunning supply, encouraging

[7] Ukazatel' deystvuyushchikh v imperii aktsionernykh predpriyatiy i torgovykh domov [The Directory of Corporations and Trading Houses in the Russian Empire]. St. Petersburg, 1903. P. 7.

[8] Statisticheskiy sbornik Ministerstva Putey Soobshcheniya. Svedeniya o zheleznykh dorogakh za 1893 g. [The Statistical Yearbook of the Ministry of Railways. Information on Railways for the Year 1893]. St. Petersburg, 1895; Statisticheskiy sbornik Ministerstva Putey Soobshcheniya. Svedeniya o zheleznykh dorogakh za 1899 g. [The Statistical Yearbook of the Ministry of Railways. Information on Railways for the Year 1899]. St. Petersburg, 1901.

[9] Ibid.

industrialists to constantly expand production capacity. In 1900, "the law of <continual> growth in consumption" [Gindin, 1996. P. 137] was broken and supply shifted out faster than demand for the first time. The overstretched financial position of factories, Witte added, put them at risk of immediate failure [Gindin, 1996. P. 137].

Moreover, the prospect of obtaining state orders often led firms to make overoptimistic decisions, especially concerning the management of costs. Firms too small to tackle state contracts sought to extend their operations solely to attract state orders. This strategy often absorbed all the firms' profits and drove them into debt [Gindin, 2007c. P. 63]. A typical case was the growth and bankruptcy of a major mining enterprise, which led to two of the three bank failures during the crisis. Specifically, in the summer of 1899, Witte refused to provide government procurement to the Donetsk–Yuryev Metallurgical Society [Snegirev, 1903. P. 3]. According to a government audit, in 1901, this led to the failure of the Kharkov Trade Commercial Bank, which had delegated much of its financing to this one enterprise [Gertsenshtein, 1903. P. 47–48].

State procurement played a particularly important role because the state was a large buyer, especially for the purpose of railroad construction. Unfortunately, there is almost no evidence on the aggregate size of state procurement. The only estimate comes from Vasiliy Varzar, one of the leading economists of the time, who was employed by the Ministry of Finance to collect statistics on industrial performance. According to Varzar's estimates, pig iron, iron, steel and the products manufactured from these materials (the metalworking industry) were, in 1900, consumed in the following proportion: 48 percent of the total by government, 22 percent by private enterprises, 14 percent by the general population, and 16 percent by unidentified parties [Ozerov, 1905. P. 118]. The metalworking industry was the centerpiece of Russia's industrialization; in 1899, it accounted for 54.4 percent of the total heavy industry monetary output [Kafengauz, 1994. P. 345–348].

While state procurement had a stimulating effect on industry in the 1890s, it had the opposite effect during the crisis. In 1898–1999, the total length of railroad tracks expanded annually by 1,700 miles on average, whereas in 1900–1902 only 1,000 miles were added per year, suggesting a decline in procurement[10]. Certain industrial areas were hit with especial severity. In 1899, Southern industry was a leading producer of railway tracks, accounting for 79.5 percent of the national rail production [Gindin, 2007b. P. 67]. According to the Ministry of Railways, Southern

[10] Statisticheskiy sbornik Ministerstva Putey Soobshcheniya. Svedeniya o zheleznykh dorogakh za 1901 g. [The Statistical Yearbook of the Ministry of Railways. Information on Railways for the Year 1901]. St. Petersburg, 1903. P. 76; Statisticheskiy sbornik Ministerstva Putey Soobshheniya. Svedeniya o zheleznykh dorogakh za 1906 g. [The Statistical Yearbook of the Ministry of Railways. Information on Railways for the Year 1906]. St. Petersburg, 1909. P. 92.

industry in 1901 received orders for 361 million pounds by weight of railways tracks, including 62.8 percent contracted by government, 11,000 freight cars and 500 passenger cars. This was not quite half of what the industry had received in 1899 and again in 1900 [Gindin, 2007c. P. 62].

3. Industry Performance and Bank Financing

As a result of government policies, certain industrial companies presented low-risk, high-return opportunities for investors, including banks. Certain industrial firms became low-risk because the government often signed multiyear procurement contracts [Gindin, 2007a, 2007b], which likely convinced banks that state procurement would continue indefinitely and at a constant level. Indeed, on the eve of the crisis, the bond risk premium of new technology heavy industry companies (extractive and manufacturing) was as low as that of long-established light industrial companies, with credible histories as borrowers, represented here by the textile industry[11]. Furthermore, the risk premium of corporate securities was just one percent above that of the safest government bonds, suggesting that market participants viewed heavy industry as only a little more risky than government debt.

In addition to being low-risk, certain industrial companies presented high-return opportunities for banks because the government procured at above-market prices [Gindin, 2007c]. Indeed, data between 1893 and 1898 reveal that the heavy industries (extractive and manufacturing) were highly profitable, averaging 11.7 percent in returns on equity, the ratio of net income to capital stock[12]. Industry recipients of government orders must have made even more profit than the industry's average, for the above reasons. This suggests that the policies intended to develop heavy industry were inadvertently encouraging investors, including banks, to devote their assets to financing attractive opportunities in newly established companies. Unintentionally, the government created an environment where heavy industrial companies were perceived by investors to be safer than they probably were.

Furthermore, Witte's reports on state revenues and expenditures over time emphasized the need for unabated industrialization. In one such report from 1897, Witte states that, since the government "has followed the protectionist system with an unwavering rigor and consistency" for some time, the premature loosening of these policies would

[11] Calculated based on price and coupon data from: Ezhegodnik Ministerstva Finansov [The Yearbook of the Ministry of Finance]. St. Petersburg, 1900–1906; and bonds outstanding from: Ukazatel' deystvuyushchikh v imperii aktsionernykh predpriyatiy i torgovykh domov [The Directory of Corporations and Trading Houses in the Russian Empire]. St. Petersburg, 1903.

[12] These industries accounted for about 90 percent of all heavy industries' capital stock. Calculated from data in: Ezhegodnik Ministerstva Finansov [The Yearbook of the Ministry of Finance]. St. Petersburg, 1901. P. 602–606, 610–625.

be "a great political mistake and a source of major shocks to the economic organism."[13] Even at the beginning of the crisis, in the official industrialization program presented to the Czar, dated February 1899, Witte continued to stress the need for uninterrupted industrialization [Von Laue, 1954. P. 64–74].

Witte's continued emphasis on adhering as closely as possible to the existing course of action may also explain why banks with well-informed connections did not envisage a crisis in industry. Politicians and corporate board members may have simply not realized how Witte's promises might fail to materialize, and thus did not advise their banking interlocks to disengage immediately from financing industry.

4. Government and Corporate Interlocks

This section describes bankers' personal ties to government officials and corporate board members.

Government Interlocks

The current literature suggests that banks set up interlocks with government officials in order to benefit from their industry-specific or managerial expertise; to enhance a firm's prestige through having a notable politician on their team; to gain access to preferential treatment, such as protection from competitors; to influence government decisions, as in the distribution of government contracts; and to obtain preferential information on future government actions, such as state procurement plans or regulatory changes [Grossman, Imai, 2016. P. 75–76]. The last three motives represent a form of rent seeking that can distort market competition to favor connected firms and their clients.

The Russian government affected banks' decisions via the personal connections that bankers maintained with government officials. Of the myriad of Russian government officials, some carried more weight and were better informed than others. The central figure to the country's development was Witte, the architect of the industrialization policies of the 1890s and the final decision maker on procurement contracts, corporate subsidies and other forms of economic support [Solovyov, 2003].

Moreover, Witte had the power to influence individual banks' financing decisions. For instance, in April 1897, he personally approved the details of a proposal by the St. Petersburg International Commercial Bank to offer bond underwriting services to some railroad companies [Bovykin, 1996. P. 106]. Another example of Witte's central position was his drive to

[13] Vsepoddanneyshiy doklad ministra finansov o gosudarstvennoy rospisi dokhodov i raskhodov na 1897 g. [The Most Loyal Report by the Minister of Finance to the Czar on State Revenues and Expenditures for the Year 1897]. St. Petersburg, 1896.

consolidate power over the economic affairs of the nation under his own enlightened stewardship. Witte believed that this would ensure the successful orchestration of industrialization. His power grew steadily as the Ministry of Finance became a "super ministry" [Solovyov, 2003], whose reach expanded well beyond its remit, for example, when it acquired absolute control over the Ministry of Railways [Solovyov, 2003].

From this, it may be inferred that the top government officials who were in close contact with Witte were best connected politically in the fields of business and economy. In addition to these men, top officials at the Ministries of Railways, Agriculture, Defense and Maritime Affairs were well-connected politically, because they each were responsible for procuring goods from private sector companies for their ministries. Another reason why these officials were well-connected was that they were responsible for petitioning the Ministry of Finance, and ultimately Witte, for fiscal resources [Makhlay, 2011. P. 28].

Influence occurred in the reverse direction too—from banks to government. Bovykin documented that some banks leveraged their government connections by directly petitioning ministries for preferential treatment and for the procurement of goods from their industrial clients, as in the following example. In November 1899, Rothstein, a board member of the St. Petersburg International Commercial Bank, wrote directly to Witte asking him to provide procurement orders to the Alexandrovsky Steel Factory, in which the bank had a sizeable ownership stake [Bovykin, 1967. P. 227][14]. As Rothstein proudly declared to Witte's wife in a letter dated 1897, "We have the most wonderful relationship with government, we are patronized by ministers and nearly by the emperor himself" [Lebedev, 2003. P. 402].

It could also be asserted that bank losses were simply the result of banks' speculation with industrial securities. There was indeed a fair amount of speculative activity among banks and the general public, especially on the eve of the crisis [Brandt, 1904. P. 101–102]. However, as discussed in detail in section 6.1, banks' losses were to a large extent due to the massive reintermediation, or movement, of collateral in the form of industrial securities onto their balance sheets because industrial clients had become unprofitable and unable to service their loans. This suggests that banks' ruinous performance was not due to securities speculation, but rather due to industry's real economic downturn.

Corporate Interlocks

Previous studies suggest that banks establish interlocks with companies to reduce information asymmetries and to influence clients' corpo-

[14] For a petition by the Ministry of Maritime Affairs, see [Bovykin, 1967. P. 237].

rate strategies [La Porta et al., 2003. P. 232]. In particular, to maximize their revenues, Russian banks could encourage their corporate clients to issue excessive amounts of equity and debt, or to borrow excessively from banks in order to finance inefficient investment projects. Moreover, corporate connections do not come without risk. Corporate interlocks may develop a strong influence on a bank and persuade it to finance dubious projects.

When providing underwriting services for their industrial clients, Russian banks were often compensated by the securities that they underwrote, content to retain the securities on their books [Bovykin, 1967. P. 220, 266]. This suggests that banks generally did not engage in underwriting-to-distribute. It was also common for banks to accept clients' industrial securities as collateral when making a loan [Bovykin, 1967. P. 240, 272]. Banks then kept such securities on the books while the loan lasted. This practice resulted in the large reintermediation of industrial securities onto their balance sheets during the crisis. Moreover, individual bank board members and directors were compensated with corporate securities [Bovykin, 1967. P. 211, 220–221]. This suggests that at least some bankers had personal skin in the game and genuinely believed in the soundness of their clients.

In their choice of companies to finance, banks preferred firms with approved or ongoing government contracts. For example, in 1895, the St. Petersburg Private Commercial Bank agreed to serve as a lead underwriter for the Russian Locomotive and Mechanical Company once it learned that the firm had signed a contract with the Ministry of Railways for the production of 480 locomotives [Bovykin, 1967. P. 262; Bovykin, 1996. P. 83, 89–90].

After providing significant financing services, it was common for banks to place their board members on corporate boards. Bovykin documented a few dozen of such cases involving four different banks [Bovykin, 1967. P. 264, 270]. While serving their five-year terms on corporate boards [Rudyuk, 2005], bankers paid very close attention to the firm's performance and made every effort to find buyers for the firm's products [Bovykin, 1967]. In sum, having an equity stake and personal presence in a firm would give a bank significant power over the firm's strategy and operations.

5. Empirical Strategy and Variables

This section analyses the impact of interlocks on bank performance during the crisis of 1899–1902 and the period of rapid economic growth of 1894–1898. [Salomatina, 2004, 2012] also studies banks' in-

vestment performance during this period. I estimate OLS regression models, such that:

(1) $Investment\ losses_i = \alpha_1 + \beta_{1k}\ (Interlock\ variable_i) + \theta_1\ (Bank\text{-}specific\ variables_i) + \varepsilon_i$[15],

(2) $Investment\ profits_i = \alpha_2 + \beta_{2r}\ (Interlock\ variable_i) + \theta_2\ (Bank\text{-}specific\ variables_i) + \mu_i$,

(3) $Investment\ performance_{it} = \alpha_3 + \beta_{3s}\ (Interlock\ variable_{it}) + \theta_3\ (Bank\text{-}specific\ variables_{it}) + \nu_i + \nu_t + \kappa_{it}$.

In equation (1), for bank *i*, $Investment\ losses_i$ is the losses that a bank sustained on its investment portfolio over the whole span of the stock market decline. It is calculated as the ratio of total investment portfolio losses between January 1899 and December 1901 to the average value of the investment portfolio owned by the bank over the same period[16]. Note that, if a bank went bankrupt before the end of 1901, the denominator is calculated only for the years when the bank was in operation. The analysis includes 39 banks and 39 observations. $Interlock\ variable_i$ measures banks' personal connections to government officials and companies in 1898 and 1901, respectively. I use four types of interlock variables that are different in each specification. $Bank\text{-}specific\ variables_i$ represents various bank-specific controls, pertaining to December 1898. More details on interlock and bank-specific variables are provided in Sections 6.1 and 6.2 below.

In equation (2), for bank *i*, $Investment\ profits_i$ is the profits that a bank earned on its investment portfolio over the rapid industrialization period preceding the financial crisis. It is calculated as the ratio of total investment portfolio profits between January 1894 and December 1898 to the average value of the investment portfolio owned by the bank over the same period[17]. Note that for the three banks that opened their doors after 1894, I calculate their investment profits only for the years when they were in operation[18]. The analysis includes 38 banks and 38 observations. $Interlock\ variable_i$ measures banks' personal connections to government officials and companies in 1896. Four types of interlock variables are used, different in each specification. $Bank\text{-}specific\ variables_i$ represents various bank-specific controls, pertaining to December 1895.

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[15] To account for potential nonlinear effects, I try logarithmic and square root transformations with independent variables, but they do not substantially improve the fit of the models.

[16] It is also possible to calculate the denominator as the value of the investment portfolio owned by the bank on the eve of the crisis. However, this approach is less appropriate because some banks' investment portfolios increased substantially during the first, and in some cases the second, year of the crisis, as discussed below.

[17] No bank incurred any investment losses over this period.

[18] The Russo-Chinese Bank opened its doors in 1896; the Lodz Merchant Bank and the Commercial Bank in Bialystok both opened their doors in 1897.

In equation (3), for bank *i* and time period *t*, *Investment performance*$_{it}$ is a bank's investment portfolio performance over two time periods, namely, between 1894 and 1898 and between 1899 and 1901. The analysis includes 38 banks and 76 observations. This is a balanced panel regression with bank and time fixed effects[19]. *Interlock variable*$_{it}$ and *Bank-specific variables*$_{it}$ are the same as in equations (1) and (2). The term V_i represents individual bank fixed effects to control for unobserved bank characteristics, such as bank reputation, that do not change, or change very little, between the pre-crisis and crisis periods. The term V_t represents period fixed effects to control for the bank-invariant time trend, such as for any macroeconomic or industry-wide effects that are constant over time.

Dependent Variables

Investment losses for 1899–1901 were hand-collected from *The Bulletin of Finance, Industry and Trade*[20], from the category commonly titled as "The loss from the difference in price." This publication was initially compiled from individual banks' annual reports. I obtained end-of-year investment portfolio holdings for 1899–1901 from *Statistics on Short-Term Credit*[21]. I also collected investment profits for 1894–1898 from *The Bulletin of Finance, Industry and Trade*[22]. End-of-year investment portfolio holdings for 1894–1898 were obtained from *Statistics on Short-Term Credit*[23].

I have chosen investment losses as my distress measure for two reasons. First, given that this measure was determined by stock market participants, it was least affected by banks' fraudulently understating their losses on income statements [Gindin, 1948. P. 112]. For example, a government audit revealed that, in 1901, the St. Petersburg International Commercial Bank incurred a loss of 4.5 million rubles from the

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[19] I realize that the coefficients on fixed effects regressions are unbiased only when there are a large number of observations. The theoretical results concerning the statistical properties of fixed effects regressions are asymptotic, as can be seen from the number of observations and additional tests. My data do not fit these criteria, and I acknowledge their limitations. However, because my results do not contradict my hypotheses, they are presented for illustrative purposes.

[20] Vestnik finansov, promyshlennosti i torgovli. Otchety kreditnykh uchrezhdeniy, torgovykh i promyshlennykh predpriyatiy [The Bulletin of Finance, Industry and Trade. Financial Statements of Credit, Trade, and Industrial Enterprises]. St. Petersburg, 1900–1902.

[21] Statistika kratkosrochnogo kredita. Operatsii aktsionernykh bankov kommercheskogo kredida v 1894–1900 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1894 and 1900]. St. Petersburg, 1905, vol. 1; Statistika kratkosrochnogo kredita. Operatsii aktsionernykh bankov kommercheskogo kredida v 1901–1908 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1901 and 1908]. St. Petersburg, 1910, vol. 2.

[22] Vestnik finansov, promyshlennosti i torgovli. Otchety kreditnykh uchrezhdeniy, torgovykh i promyshlennykh predpriyatiy [The Bulletin of Finance, Industry and Trade. Financial Statements of Credit, Trade, and Industrial Enterprises]. St. Petersburg, 1895–1899.

[23] Statistika kratkosrochnogo kredita. Operatsii aktsionernykh bankov kommercheskogo kredida v 1894–1900 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1894 and 1900]. St. Petersburg, 1905, vol. 1.

loans to a single client alone [Lebedev, 2003. P. 65]. Yet, the bank's financial statements showed a loss of only 32.5 thousand rubles on their loan and discounting operations and a net profit of nearly 1.7 million rubles[24]. Another example of fraudulent financial reporting is the case of the Kharkov Trade Bank, which failed in 1901, shortly after a government audit revealed its true financial position [Anan'ich, 1991. P. 114].

The government's massive assistance also concealed banks' actual losses. The State Bank's financial reports show that the assistance to commercial banks more than doubled between the pre-crisis year of 1898 and the crisis period[25]. For example, in 1901, the State Bank provided emergency funding to four commercial banks, which were financially interconnected with the banking house L. S. Polyakov, which itself was effectively bankrupt [Petrov, 1998. P. 86–89][26]. A government audit exposed that all four banks were on the brink of collapse. Yet, three of the four banks reported a net profit in 1901. Because of fraudulent reporting and the State Bank's assistance, banks incurred relatively minor losses on their loan and discounting operations, and the majority of banks reported net profits throughout the crisis. Naturally, I found no statistically significant relationship between interlocks and these measures of bank performance.

Although banks also tended to overestimate the value of their investment portfolios in the initial months of the crisis [Lebedev, 2003. P. 395], there was a mandatory requirement to mark investment portfolios to market every year[27]. This mark-to-market requirement forced banks, sooner or later, to document investment losses during the three years of the stock market downturn. The investment portfolio of the St. Petersburg International Commercial Bank is examined to see whether the losses that it reported in its income statements were understated. For that, I collect the names, the number of shares, and the price of the securities owned by the bank in December 1899, 1900, and 1901 from its annual reports[28]. By comparing the bank's portfolio composition between 1899 and 1900 and between 1900 and 1901, I am able to calculate the actual loss incurred. Because the exact price at which the bank sold and bought shares is not observed, it is assumed that all transactions

[24] Otchet S.-Peterburgskogo mezhdunarodnogo kommercheskogo banka, rassmotrennyy i utverzhdennyy Sovetom Banka [The Report of the St. Petersburg International Commercial Bank, Reviewed and Approved by Its Board]. St. Petersburg, 1902.

[25] Otchet gosudarstvennogo banka za 1898 god [The Report of the State Bank for the Year 1898]. St. Petersburg, State Bank, 1899; Otchet gosudarstvennogo banka za 1901 god [The Report of the State Bank for the Year 1901]. St. Petersburg, 1901.

[26] The banks names were the Moscow International Trade, the St. Petersburg Moscow Commercial, the Orlovsky Commercial, and the Southern-Russian Industrial.

[27] The statute of each individual bank specified the annual mark-to-market requirement.

[28] Otchet S.-Peterburgskogo mezhdunarodnogo kommercheskogo banka, rassmotrennyy i utverzhdennyy Sovetom Banka [The Report of the St. Petersburg International Commercial Bank, Reviewed and Approved by Its Board]. St. Petersburg, 1900–1902.

were made at the end of the year at the price reported in the annual report. Calculations reveal that the bank incurred a loss of 1.46 million rubles in 1900. This is close to the loss of 1.52 million rubles reported in the income statement. I also derive that the bank incurred a loss of 1.06 million in 1901, which is close to the officially reported loss of 1.14 million rubles. This suggests that the bank's reporting of investment losses was close to the truth.

Second, investment losses capture the reintermediation of collateral onto banks' balance sheets throughout the crisis. This happened because heavy industrial companies defaulted on their loans and banks had to contractually accept the securities that had collateralized their loans. As a result of this reintermediation, banks' portfolio holdings increased by an estimated 55 percent between January and December 1899 alone[29]. Indeed, an annual report of the St. Petersburg International Commercial Bank documented the occurrence of this takeover of collateral[30]. In 1901, for example, the bank received 5,363 shares of the Russian Gold Mining Company that were traded at a 95.0 percent discount from their price at the end of 1900[31]. This massive reintermediation was one of the primary reasons why banks sustained heavy losses. Thus, using this variable, I can capture banks' involvement in heavy industry financing and the extent of their actual losses on corporate loans and discounting.

Independent Variables

This section describes the sources and methods used in the creation of interlock variables. Four different types of interlock are established: two government ones and two corporate ones. I consider an interlock with government when a bank board member himself (direct interlock), or his sibling (indirect interlock), is employed by a government entity—that is, a state department, organization, or agency[32]. I gather the names of officials employed by the state in 1896 and 1898 from *Adres-Kalendar'*[33], and the names of board members employed by banks in 1896

[29] Own estimation, calculated as the increase in corporate securities on banks' balance sheets, in a rapidly and constantly declining securities market.

[30] Otchet S.-Peterburgskogo mezhdunarodnogo kommercheskogo banka, rassmotrennyy i utverzhdennyy Sovetom Banka [The Report of the St. Petersburg International Commercial Bank, Reviewed and Approved by Its Board]. St. Petersburg, 1902.

[31] Ibid.

[32] Another way an interlock could be established was via a father-son connection, but I found no such linkages. Women did not hold board positions at that time.

[33] Adres-Kalendar': obshchaya rospis' nachal'stvuyushchikh i prochikh dolzhnostnykh lits po vsem upravleniyam v Rossiyskoy Imperii na 1896 god [Address-Calendar: A General List of Governing and Other Functionaries in All Offices in the Russian Empire for the Year 1896]. St. Petersburg, 1896; Adres-Kalendar': obshchaya rospis' nachal'stvuyushchikh i prochikh dolzhnostnykh lits po vsem upravleniyam v Rossiyskoy Imperii na 1898 god [Address-Calendar: A General List of Governing and Other Functionaries in All Offices in the Russian Empire for the Year 1898]. St. Petersburg, 1898.

from *Data on Joint-Stock Businesses*[34] and in 1899 from *Russian Banks*[35]. Note that all government officials are treated as equal, not differentiating higher from lower ranks. Instead, a separate type of a government interlock is created, as follows.

Access to top officials close to the epicenter of industrial policymaking should be more beneficial to bankers than ties to officials who are remote from it. With this in mind, I record an interlock with the Finance Minister's circle of well-connected officials when there is a direct or indirect interlock between a bank board member and the highest-ranked officials who were likely to be in close contact with Finance Minister Witte. Namely, I include top officials at the Ministry of Finance, the Ministry of Railways, the Ministries of Agriculture, Defense and Maritime Affairs, the State Bank, the State Nobles' Land Bank, the State Treasury, the Government Senate, and the Council of the State. Consequently, only the most influential government institutions are included. The limited number of top officials in them should ensure that my interlock variables reflect only the officials who were well-connected politically.

Because banks sustained losses related to industry, I also track bank ties with the corporate world. I consider the occurrence of an interlock with light industrial and non-industrial firms when a bank board member is also a board member of such firms, or when the banker's sibling is. The names of corporate board members active at the end of 1896 are sourced from *Data on Joint-Stock Businesses*, and those active at the end of 1901 are sourced from the 1901 volume of an identical publication[36]. Note that I consider different types of corporate board members as equivalent: chairmen, vice-chairmen and regular members are treated as identical.

Since the state targeted the development of heavy industrial companies, bankers' connections with such firms could affect banks' performance differently than ties with light industrial and non-industrial companies. Thus, I record an interlock with heavy industrial firms. In all, I end up with four types of interlock variables: bank board members connected to government officials, to the Finance Minister's circle, to

[34] Statistika aktsionernogo dela v Rossii. Sostav direktorov pravleniy na 1897 g. [The Data on Joint-Stock Businesses in Russia. The Composition of the Boards of Directors for the Year 1897]. St. Petersburg, 1897, vol. 1.

[35] Russkie banki. Spravochnye i statisticheskie svedeniya o vsekh deystvuyushchikh v Rossii gosudarstvennykh, chastnykh i obshchestvennykh kreditnykh uchrezhdeniyakh [Russian Banks. A Reference and Statistical Information About All Active Government, Private, and Public Credit Institutions in Russia]. St. Petersburg, 1899.

[36] Statistika aktsionernogo dela v Rossii. Sostav direktorov pravleniy na 1897 g. [The Data on Joint-Stock Businesses in Russia. The Composition of the Boards of Directors for the Year 1897]. St. Petersburg, 1897, vol. 1; Statistika aktsionernogo dela v Rossii. Ezhegodnik na 1901–1902 g. [Data on Joint-Stock Businesses in Russia. Yearbook for the Years 1901–1902]. St. Petersburg, 1901, vol. 4.

light industrial and non-industrial firms, and to heavy industrial companies.

To identify actual interlocks, I cross-reference the names of bankers with those of government officials and, in turn, with the names of corporate board members. The matching process of 416 bankers in 1899, 3,492 corporate board members in 1901 and 7,596 officials in 1898 reveals that there were 68 bankers with personal links to officials and 147 bankers with personal ties to corporate board members.

As the final step, I sum the number of bank board members with connections of either type and use the total amounts in regression analysis. Note that, if a particular banker is connected to multiple government officials or corporate board members, I count this as a single banker. In other words, for me to record ten bank board members, all ten members must have one or more political or corporate ties.

I also add bank-specific variables to my regressions to control for the heterogeneity among banks. These variables are based on data from December 1898, when bankers hardly expected the imminent crisis, yet only two months before the beginning of the stock market downturn. They are also based on data from December 1895. My choice of these variables is as follows: bank age, number of bank locations, leverage, liquidity, asset growth in the prior year, and board size. These variables are collected from *Statistics on Short-Term Credit*[37], with the exception of bank age, which comes from *Russian Banks*[38].

6. Empirical Results

To preview my results, I examine the few available investment holdings of individual banks. They reveal that banks owned the equity securities of joint-stock companies as well as government, railroad, municipal, and corporate bonds. In 1899, banks owned 74.7 million rubles worth of government securities and 38.7 million rubles of corporate equities and bonds, together equating to 7.7 percent of banks' total assets[39]. Next, I determine that banks' investment losses were predominantly due to the investment in corporate equities, and their heaviest

[37] Statistika kratkosrochnogo kredita. Operatsii aktsionernykh bankov kommercheskogo kredida v 1894–1900 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1894 and 1900]. St. Petersburg, 1905, vol. 1; Statistika kratkosrochnogo kredita. Operatsii aktsionernyh bankov kommercheskogo kredida v 1901–1908 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1901 and 1908]. St. Petersburg, 1910, vol. 2.

[38] Russkie banki. Spravochnye i statisticheskie svedeniya o vsekh deystvuyushchikh v Rossii gosudarstvennykh, chastnykh i obshchestvennykh kreditnykh uchrezhdeniyakh [Russian Banks. A Reference and Statistical Information About All Active Government, Private, and Public Credit Institutions in Russia]. St. Petersburg, 1899.

[39] Statistika kratkosrochnogo kredita. Operatsii aktsionernykh bankov kommercheskogo kredida v 1894–1900 gg. [Statistics on Short-Term Credit. Operations of Joint-Stock Commercial Banks Between 1894 and 1900]. St. Petersburg, 1905, vol. 1.

losses were due to heavy industry holdings[40]. On average, banks lost 6.1 percent of the average value of investment portfolios that they owned between 1899 and 1901. However, the banks based in Saint Petersburg lost, on average, 18.2 percent of their corporate portfolios, and the most severe loss was 44.8 percent.

As a further preview to my results, I examine the distribution of interlocks among banks. During the crisis banks located in Saint Petersburg, the capital, were more connected to heavy industry than banks located in Moscow and the provinces. Their 53 personal linkages resulted in the number of connections per board member being three times the number of those in Moscow or the provinces. Given that Saint Petersburg banks sustained the greatest financial losses of the three banking groups, their high interconnectedness with heavy industry implies that personal ties may have played a role in bank distress. Saint Petersburg's banks were also the group most connected with the Finance Minister's circle. Their 22 connections were three times the number of those in Moscow[41].

Taking one bank as an example, the Russian Bank for Foreign Trade incurred the largest investment loss during the crisis among all banks, equivalent to 44.8 percent of the value of its corporate securities. This bank employed five board members with connections to the Finance Minister's circle, more than any other bank; nine members connected to heavy industrial companies, falling behind only one bank on this measure; but only two members with ties to light and non-industrial firms. During the prosperous period of 1894–1898, the bank gained 44.4 percent on its corporate securities, which was the fourth largest gain among its peers.

My core evidence is presented in Table 1, which reports the results of nine regression models, the only difference between each specification being the type of the interlock variable used. Note that all models incorporate both direct and indirect interlocks, unless otherwise specified. Robust standard errors are used in all models. Model (1) shows that, with each additional bank board member connected to a variety of officials, both close to the Minister of Finance and not directly related to his circle, a bank experienced 2.2 percent of extra investment portfolio losses during the crisis, though the result is statistically insignificant at standard levels. Model (3) tests exclusively for bank board members connected to officials close to the Minister of Finance. The model reveals that a bank lost much more, or 5.2 percent. It may be concluded

[40] Goetzmann W., Cabolis C., Radchenko P. St. Petersburg Stock Exchange Index. Individual Securities Data. https://som.yale.edu/sites/default/files/files/St_%20Petersburg%20data.xlsx; Ezhegodnik Ministerstva Finansov [The Yearbook of the Ministry of Finance]. St. Petersburg, 1901, 1903.

[41] The share of banks with connections to the Finance Minister's circle was 28 percent. For comparison, [Grossman, Imai, 2016. P. 80] find that in 1900 the share of British banks connected to members of the Parliament was about 24 percent.

Table 1

Investment Losses 1899–1901, OLS Model

	1	2	3	4	5	6	7	8	9
Member connected to government	0.022 (0.014)								
Interlocks with government		0.012 (0.010)							
Member connected to the FM's circle			0.052* (0.029)						–0.022 (0.031)
Interlocks with the FM's circle				0.040** (0.015)					
Member connected to light and non-industrial firms					0.004 (0.007)				
Interlocks with light and non-industrial firms						0.010* (0.005)			
Member connected to heavy industrial firms							0.026** (0.010)		0.013* (0.007)
Interlocks with heavy industrial firms								0.010*** (0.003)	
Member FM's circle * heavy industrial firms									0.010** (0.004)
Bank age	0.001	0.001	0.001	0.000	0.000	0.000	–0.000	–0.001	–0.000
Number of locations	–0.000	–0.000	–0.003	–0.003	0.000	0.000	–0.002	–0.002	–0.004*
Leverage	–0.105	–0.090	–0.028	0.002	0.007	–0.007	0.069	0.096	0.098
Liquidity	0.686	0.623	0.107	–0.081	0.522	0.635	0.249	0.214	–0.393
Asset growth	0.095	0.093	0.081	0.076	0.100	0.101	0.109*	0.087	0.081*
Board size	–0.004	–0.003	–0.003	–0.004	0.003	0.001	–0.004	–0.002	–0.009**
Constant	0.062 (0.055)	0.048 (0.054)	0.062 (0.049)	0.071 (0.051)	–0.036 (0.057)	–0.035 (0.053)	–0.014 (0.050)	–0.021 (0.050)	0.074* (0.043)
Observations	39	39	39	39	39	39	39	39	39
Adjusted R^2	0.057	0.031	0.257	0.320	–0.070	0.039	0.288	0.312	0.536

Notes. 1. Interaction term is member connected to the Finance Minister's circle * member connected to heavy industrial firms: 2. Robust standard errors in parentheses: * — $p < 0.10$, ** — $p < 0.05$, *** — $p < 0.01$.

that the banks which sustained greater losses were the financiers of heavy industry, because the value of heavy industrial equities declined by substantially more than that of the light industrial or non-industrial equities, as discussed above.

Model (5) in Table 1 provides evidence of the presence of a bank board member connected to non-financial firms other than heavy industrial resulting in 0.4 percent of additional investment losses, though the result is statistically insignificant. Model (7) narrows the range of connections to bank board members connected specifically to heavy industrial companies. The model reveals that a bank lost much more, or 2.6 percent. This suggests the particularly unfortunate effect of personal ties to heavy industrial firms, those that were highly stimulated by government. Model (7) also shows that the banks that increased their assets by 10 percent in 1898 experienced an additional investment loss of 10.9 percent during the crisis.

Models (2), (4), (6) and (8) in Table 1 use another set of interlock variables, or the aggregate number of a bank's connections. Remember that one bank board member could have multiple personal connections to government or corporate entities. These models confirm the results of the core models discussed above.

Model (9) in Table 1 adds an interaction term between bank board members connected to the Finance Minister's circle and heavy industrial companies. First, the model shows that, for the bank with no connections to the Finance Minister's circle, the independent effect of a heavy industry interlock is an investment loss, just as expected. Second, the model reveals that, for the bank with no connections to heavy industry, the effect of an interlock with the Finance Minister's circle is statistically insignificant. This suggests that banks had to have heavy industry connections to sustain investment losses. Third, the positive and statistically significant interaction term in model (9) suggests that the effect of having a heavy industry interlock is strengthened by an interlock with the Finance Minister's circle.

The models in Table 1 capture observable official connections. However, banks also established unofficial ties that these models do not capture. For example, the St. Petersburg Discount and Loan Bank collaborated with Femistokl I. Petrokokino, who searched for profitable underwriting and lending opportunities for the bank [Bovykin, 1967. P. 216–219]. Because the models do not capture unofficial ties, the coefficients on interlock variables are likely biased upward.

To test whether bankers acted in the best interests of their clients or abused their positions to extract rents, my sample is restricted to companies that were established in or after 1893, the period when banks had many opportunities to offer excessive loans, equity and debt secu-

rities to newly established enterprises. If bankers acted as rent seekers, I would expect banks with all types of connections to sustain losses during the crisis. This is because it is unlikely that banks extracted rents only from new heavy industrial firms and did not extract any from new light and non-industrial firms. I find that banks did not incur statistically significant losses on their light industrial and non-industrial connections, but they did sustain losses on heavy industrial ties[42]. These results are consistent with the view that bankers acted as delegated monitors, rather than as rent seekers.

Models (10) to (13) in Table 2 include bank and time fixed effects to address the issue of omitted variable bias. There is enough within-subject variability in the interlock variables for fixed effects models to work. For example, in 1896 the average number of connections to the Finance Minister's circle was 0.87. Between 1896 and 1898 this number changed, on average, by 0.33.

Table 2

Investment Performance 1894–1901, OLS Model with Bank and Time Fixed Effects

	10	11	12	13
Member connected to the FM's circle	0.205** (0.093)			
Interlocks with the FM's circle		0.171** (0.072)		
Member connected to heavy industrial firms			–0.031 (0.034)	
Interlocks with heavy industrial firms				–0.037** (0.014)
Number of locations	0.002	0.006	0.002	0.012*
Leverage	–0.938***	–0.949***	–0.916**	–0.855***
Liquidity	2.445	2.060	2.532	2.305
Asset growth	0.102	0.102	–0.001	0.018
Board size	–0.049	–0.043	–0.030	–0.002
Russian for Foreign Trade	–0.421**	–0.786*	–0.123	0.242
Russian for Trade and Industry	0.094	0.247	–0.207	0.250
St.Petersburg-Azovsky	0.335	0.437	–0.434**	–0.082
St.Petersburg International	0.533	0.445	0.186	0.560**
St.Petersburg Muscovy	0.347	0.470	–0.519**	0.028
St.Petersburg Discount and Loan	0.209	0.380	–0.224	0.331
St.Petersburg Private	0.187	0.296	–0.200	0.490
Credit Lyonnais	0.153	0.312	–0.730**	–0.184
Moscow Merchant	1.172**	1.069**	0.291	0.293
Moscow International Trade	–0.019	0.075	–0.515**	–0.326*
Moscow Trade	1.032*	1.100*	–0.093	0.074
Moscow Discount	1.053*	1.122**	–0.062	0.124

[42] I do not report these results to conserve space, but they are available upon request.

The end of table 2

	10	11	12	13
South-Russian Industrial	0.157	0.279	–0.720**	–0.229
Azovsko-Donskoy	0.533	0.557	–0.458**	–0.348**
Commercial in Bialystok	–0.001	0.124	–0.884***	–0.444
Commercial in Warsaw	0.622	0.687	–0.311*	–0.007
Warsaw Discount	0.492	0.607	–0.451**	–0.067
Vilnius Private	0.551	0.638	–0.399	–0.087
Voronezh Commercial	0.353	0.477	–0.584**	–0.180
Ekaterynoslavsky Commercial	0.386	0.523	–0.533*	–0.050
Kazan Merchant	0.595	0.693	–0.456**	–0.157
Kiev Private	0.806	0.893	–0.149	0.26
Commercial in Kostroma	0.543	0.640	–0.459***	–0.186
Lodz Merchant	0.040	0.155	–0.880***	–0.437
Trade in Lodz	0.597	0.673	–0.249	0.291
Minsk Commercial	0.350	0.453	–0.512*	–0.029
Nizhny Novgorod Merchant	0.824	0.917	–0.216	0.057
Odessa Discount	0.412	0.549	–0.516*	–0.075
Orlovsky Commercial	–0.043	0.045	–0.906***	0.536**
Pskov Commercial	0.446	0.563	–0.467*	–0.042
Riga Commercial	0.452	0.554	–0.431	–0.033
Rostov-on-Don Merchant	0.208	0.370	–0.765**	–0.312
Siberian Trade	0.512	0.510	–0.395*	–0.172
Central Asian Commercial	0.288	0.372	–0.717**	–0.375
Tiflis Commercial	0.828	0.917*	–0.145	0.154
Kharkov Trade	0.486	0.609	–0.456	–0.023
Russo-Asian	0.064	0.163	–0.574**	–0.083
Time fixed effects	–0.332***	–0.338***	–0.291***	–0.242***
Constant	0.638 (0.678)	1.423*** (0.487)	0.497 (0.677)	0.735* (0.431)
Observations	76	76	76	76
Adjusted R^2	0.425	0.211	0.435	0.471

Notes. 1. The omitted bank is Volzhsko-Kamsky. 2. Robust standard errors in parentheses: * — $p < 0.10$, ** — $p < 0.05$, *** — $p < 0.01$.

Model (10) in Table 2 shows that, with each additional bank board member connected to the Finance Minister's circle, a bank experienced an extra 20.5 percent in portfolio outperformance. Model (11), which uses the aggregate number of connections at a bank, confirms this result. These findings suggest that the benefits of being politically connected before the crisis overweighed the losses sustained during the crisis.

Model (13) in Table 2, which also uses the aggregate number of connections, shows that, with each additional connection to heavy industrial firms, a bank sustained an extra 3.7 percent loss. Model (12),

which tracks the number of bankers connected to heavy industry, is statistically insignificant. However, I am not concerned about this result. In those cases when a single banker maintained multiple industrial connections, the model could become statistically insignificant. Taken together, econometric findings suggest that political and heavy industry interlocks had a positive effect on bank performance during prosperous times and a negative effect during turbulent times.

My main results are robust to additional tests[43]. Specifically, the results are robust to excluding one and two banks that were most heavily connected to the Finance Minister's circle. The results are also robust to randomly excluding one top government institution and one heavy industry. The results hold to using the bank share price as the dependent variable. They also hold when two different sets of interlock variables are used: those capturing only direct interlocks and, separately, only indirect interlocks. Finally, the results are robust to using propensity matching analysis.

Lastly, models (14) to (17) in Table 3 test whether banks' connections in 1896 led to additional investment profits in the years leading up to the crisis (1894 to 1898). Model (14) shows that, with each additional bank board member connected to the Finance Minister's circle, a bank experienced an extra 10.5 percent in portfolio outperformance. Model (16) reveals that, with each additional bank board member with ties to heavy industrial firms, a bank's portfolio appreciated by an extra 4.4 percent. Models (15) and (17), which use the aggregate number of a bank's connections, confirm these results.

Table 3

Investment Profits 1894–1898, OLS Model

	14	15	16	17
Member connected to the FM's circle	0.105** (0.049)			
Interlocks with the FM's circle		0.071* (0.036)		
Member connected to heavy industrial firms			0.044** (0.017)	
Interlocks with heavy industrial firms				0.024** (0.010)
Baseline controls	✓	✓	✓	✓
Constant	0.285 (0.175)	0.313 (0.196)	0.306* (0.154)	0.320* (0.157)
Observations	38	38	38	38
Adjusted R^2	0.309	0.254	0.086	0.047

Notes. 1. Baseline controls are locations, leverage, liquidity, asset growth, and board size. 2. Robust standard errors in parentheses: * — $p < 0.10$, ** — $p < 0.05$, *** — $p < 0.01$

[43] I do not report these results, but they are available upon request.

Conclusions

Banks' personal connections played an important role in Russia's industrialization of the 1890s, when there were high information asymmetries between firms and their lenders and corporate regulation was weak.

The evidence presented in this paper suggests that the banks which experienced greater distress during the final financial crisis in the Russian Empire had more connections to those government officials who were closest to the epicenter of policymaking and to those companies which had been most stimulated by state policies to expand production in the lead-up to the crisis. During the prosperous times of the 1890s, the reverse was true. Banks' personal ties with the Finance Minister's circle and heavy industrial companies were positively related to bank performance.

These findings suggest that, in a crisis, well-connected bankers might fail to provide the valuable expertise and foresight that is expected from them. Instead, the presence of such bankers might harm bank performance when decisive action is required to adapt to rapidly changing economic circumstances.

A key remaining question is what caused the banks to excessively finance heavy industrial companies in the first place. Based on the narrative evidence presented in this paper, I would argue that it is the government policies targeted at the development of the real economy that enticed banks to expose themselves financially to new technology companies. These policy incentives culminated in disastrous bank performance when heavy industry experienced a slowdown.

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