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journal homepage: [www.elsevier.com/locate/devec](http://www.elsevier.com/locate/devec)Bank privatization, finance, and growth Daniel Berkowitz <sup>a</sup>, Mark Hoekstra <sup>b,c</sup>, Koen Schoors <sup>d</sup><sup>a</sup> University of Pittsburgh, Department of Economics, WPPH 4711, Pittsburgh, PA 15260, United States<sup>b</sup> Texas A&M University, Department of Economics, 3087 Allen Building, 4228 TAMU, College Station, TX 77843, United States<sup>c</sup> NBER, United States<sup>d</sup> Ghent University, Economics Department, Belgium

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## ABSTRACT

This paper examines whether privatizing state-owned banks improves finance and economic growth. To do so, we exploit regional banking variations in Russia induced by the idiosyncratic creation of “specialized banks” in the last years of the Soviet Union (1988–91) that were subsequently privatized. Starting in 1999 private banks including surviving spetsbanks emerged as an important source of external finance for private firms and households. We document that the regional concentration of spetsbanks in the early years of the Russian federation is orthogonal to economic fundamentals that are related to growth after the emergence of bank finance. Results indicate that while privatized banking increased lending significantly, it did not increase economic growth. However, privatization did increase growth when banks retained fewer political connections and when regional property rights were better protected, highlighting the importance of both factors.

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## 1. Introduction

A large literature documents that government-owned banks are inefficient compared to private banks (e.g., Cole, 2009; Khwaja and Mian, 2005; La Porta et al., 2002; Sapienza, 2004). These studies thus raise the question of whether countries should privatize their government-owned banks. On that issue, significant attention has been paid to the impact of privatization on banking behavior, with a focus on outcomes like operating efficiency and profitability (see Clarke et al. (2005) and Megginson (2005) for excellent overviews.) However, as Megginson (2005) points out, the data on financial performance for banks tend to be “more opaque than usual for an industry that under the best of circumstances suffers from the lack of transparency in financial reporting.” In addition, the critical question is whether bank privatization improves economic growth by improving overall finance. Thus, while there is

considerable evidence that banking is important for economic growth (e.g., Guiso et al., 2004; Jayartne and Strahan, 1996; King and Levine, 1993), little is known about whether privatized banks are similarly effective.<sup>1</sup>

This paper directly examines the impact of privatized banking on finance and economic growth in Russia. We ask whether privatizing state-owned banks and allowing them to compete against other private banks is sufficient to transform them into growth-creating financial intermediaries. To distinguish the effects of bank privatization from confounding factors, we exploit the creation of specialized banks (“spetsbanks”) in the Russian regions in the final years of the Soviet Union (1987–1991). The intention of the spetsbank reform was to improve the workings of the Soviet economy. Moreover, the new spetsbanks were made from Soviet socialist banks; the reform did not create physically new banks or branches. Thus, the regional concentration of spetsbanks after 1987 is based on bank branch location patterns established in the Soviet economy long before 1987, which were arguably unrelated to economic fundamentals and long term growth. The spetsbanks and most all other commercial banks in Russia were privatized in the first half of the 1990s. Bank finance emerges in Russia circa 1999, and by 2006 the surviving spetsbanks supply roughly one-fifth of the loans to private firms and households.

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<sup>1</sup> One notable study related to the privatization of banking is Cole (2009), who cleverly identifies the impact of bank nationalization in India in 1980 using bank deposit rules. An open question is whether the impact of privatization is the mirror opposite of the impact of nationalization.

The identifying assumption of our approach is that Russian regions with a high concentration of spetsbanks in the early years of the Russian federation would have grown at the same rate as other regions in the absence of the additional spetsbanks. We expect this to be the case because of the idiosyncratic way that spetsbanks emerged from the traditional Soviet banking system. Using rich regional data, we validate our identifying assumption. First, we show that the regional concentration of spetsbanks that survived till 1995 was uncorrelated with economic growth from 1993 to 1996, as well as with per capita income levels in 1996. That is, regions that would subsequently receive more privatized banking had previously grown at the same rate as other regions. And second, we show that our estimates of the impact of spetsbank concentration on finance and growth are unaffected by the inclusion of twenty controls measuring pre-banking determinants of finance and growth. These controls include per capita income levels in 1996 as well as measures of government involvement in markets, the political environment, institutional quality, urbanization, and demographics from the Russian and Soviet eras. Thus, it is clear that the regional concentration of spetsbanks was not correlated with either income levels or growth rates prior to the rise of modern banking in Russia, or with a host of determinants of finance and economic growth: and, these findings support our identification strategy.

Results indicate that bank privatization was good for financial development. Specifically, we find that regions that have one more spetsbank per million population in 1995—approximately a one half standard deviation increase—registered an 11 to 22% increase in lending to private firms and individuals during the period 2002–2006. However, bank privatization did not increase investment or real per capita income growth from 1996 to 2007. This is true despite the fact that there was robust growth in real income in Russia during this time period (Berkowitz and DeJong, 2011). In contrast, some evidence suggests the primary consequence of the increased banking via privatization was to reduce unemployment.

Additional results provide some lessons about the conditions under which bank privatization can promote investment and growth. We find that privatized banking did increase growth in regions in which spetsbanks were less connected to government and where the regions had better protections of property rights. Thus, our results indicate that bank privatization is likely to be most effective when it is part of a package of reforms that strengthen property rights and weaken connections between banks and politicians.

## 2. Banking in the former Soviet Union and in Russia

In the former Soviet Union, the mono-bank Gosbank issued credits to state owned enterprises (SOEs) so that they could fulfill administered plan targets. SOEs typically had “soft” budget constraints, which meant they could get credits from Gosbank for fulfilling plan targets even if their projects were unprofitable and served no particular need.<sup>2</sup> State owned banks were part of the Gosbank system and collected taxes from state owned enterprises (SOEs) and monitored the extent to which the SOEs were fulfilling centrally administered plan targets.<sup>3</sup>

In the last years of the Soviet Union, 1987–1991, several reforms of the state-owned banks were proposed. A landmark reform was the 1987 law on state-owned enterprises which included measures designed to improve the workings of the Soviet planned economy such as hardening the SOEs’ “soft budget constraint” borrowing from the state-owned banks. At about the same time, a working group with representatives from Gosbank and Stroibank (the Construction Bank that was a subsidiary of Gosbank) divided the Soviet banking system into a central bank and five kinds of commercial banks. This division went into effect January of 1988. Two of these commercial banks—the

old Soviet foreign trade bank and the old Soviet savings bank—were renamed, but otherwise stayed the same and remained under the control of the Gosbank. The remaining banks from Gosbank and its subsidiary Stroikbank (the Soviet bank for construction) became specialized banks (spetsbanks) and operated in general under the regulation of one of the following supra-spetsbanks: the Agroprombank (the agricultural–industrial bank), Zhilsotsbank (the banks for housing and social development) and the Promstroibank (the banks for industrial–construction).<sup>4</sup> For the rest of this paper the banks operating under Agroprombank, Zhilsotsbank and Promstroibank and their successors are denoted “spetsbanks.”

Spetsbanks were not given the administrative tools necessary to function as financial intermediaries in a market system. While Gosbank transferred assets and cash reserves, control over the interbank clearing system, and control over personnel policy to the spetsbanks, Gosbank did not initially give the spetsbanks control over their credit and interest rate policies.<sup>5</sup> While the spetsbanks had been created in early 1988, even by 1990 the Vice President of the planning department of the newly formed supra-bank Agroprombank complained that the spetsbanks in the Agroprombank division were still operating like traditional socialist banks. This is because they took money from the Soviet Central (GOSbank) and passively allocated these funds to the SOEs:

“Currently the main source of funds of Agroprombank (80% share) are centralised credit resources supplied to Agroprombank by the GOSbank of the USSR at a rate that has been determined at 1.5%” [Danilets, banks start to work on a commercial basis, *Dengi i Kredit*, 11, 1990, p. 53–57]

At about the same time that the Soviet leaders were creating the spetsbank system and the Soviet Union Central Bank, the leaders of the Russian Republic were creating the Central Bank of Russia (CBR). The CBR worked to transfer all of the assets and liabilities of the supra-spetsbanks (the Agroprombank, Zhilsotsbank and the Promstroibank) to their local branches, and then gave the bank managers in the local branches the power to form a small bank or join with other branches in a larger bank, thus creating hundreds of spetsbanks (Abanrbanell and Meyendorff, 1997, p.70).<sup>6</sup> This informal and spontaneous privatization of the supra-spetsbanks and the emergence of spetsbanks in the Russian regions deprived the Soviet Union Central Bank of control over Russian bank branch managers.

As of 1990 the spetsbanks still lacked the necessary tools to function as financial intermediaries, even though there were policies in place for commercializing them. In 1990 members of the editorial board of the leading Soviet finance journal “*Dengi i Kredit*” (Money and Credit) argued that the commercialized spetsbanks were still operating like traditional Soviet socialist banks.

“...the commercialisation of the spetsbanks by turning them into joint stock banks... leaves no doubt that these new institutions **will in practice remain state institutions...** These banks, being pocket banks put together by ministries and industrial groups, will not get their funds on the market (i.e. not on commercial terms), but from within the limits ... of their founding organizations (among which the state budget) and will accordingly **function as a channel for disbursing financial resources to loss-making and inefficient**

<sup>4</sup> We find only a small number of cases in which spetsbanks operated under more than one of these supra-banks.

<sup>5</sup> There are several explanations for why the Gosbank system was transformed in this way. One is spetsbanks were created in order to increase the number of privileged management positions within the old Soviet command system. Another explanation is the spetsbanks were established as part of a turf war between powerful administrators in the former Soviet Union and the former Russian Socialist Republic (which subsequently became Russia).

<sup>6</sup> Many regional branches did separate from these three banks and established new regional banks within the regional branches of the Central Bank of Russia (Schoors, 2003).

<sup>2</sup> See, e.g., Kornai et al. (2003).

<sup>3</sup> See Garvy (1977), Chapter 2); Hellman (1993, pp.83–92) for excellent overviews of the role of banks in the Soviet era.

**firms.**" [Usoskin, Gosbank and the banking system in the condition of the transition to the market (materials of a meeting of the editorial board of the *Dengi i Kredit*), *Dengi i Kredit*, 12, 1990, p.3–16: p. 15]

*Dengi i Kredit* was the journal of the Soviet Central Bank (Gosbank), and at the time the Russian federation was taking measures to break away from USSR. Thus, arguably, powerful Soviet bureaucrats may have used *Dengi i Kredit* to publish pro-Soviet Union/anti-Russian federation propaganda. Nevertheless, in her authoritative study of banking at the end of the Soviet Union and its evolution in the Russian Federation in the 1990s, Juliet Johnson documents that the spetsbanks "had few incentives to operate in a market-oriented way" (Johnson, 2000, p.30).

In sum, the reforms allowing for the emergence of spetsbanks essentially represented a marginal loosening of the historic relationship between the Gosbank and existing banks and bank branches.<sup>7</sup> Moreover, these reforms did not physically create new banks or bank branches. Thus, the location of the spetsbanks was based on the pre-existing location of Soviet banks. Importantly, in Section 5 we will provide evidence showing the location of this inherited Soviet financial infrastructure was unrelated to economic fundamentals predictive of long-term growth.

After the top-down creation of the spetsbanks, the Law on Cooperation in May 1988 gave individuals and SOEs the right to open "cooperative ventures." In general cooperatives bought and sold goods and services at free market prices and operated outside the state system of input and output quotas. This law set off a rapid and unexpected spontaneous bottom-up entry of banks that we denote "non-spetsbanks." While spetsbanks were created from existing Soviet socialist banks and branches, non-spetsbanks were located in newly formed cooperative enterprises. Unlike the spetsbanks, the non-spetsbanks immediately played the role of commercial banks and provided funding to cooperative and state owned enterprises.

The top-down creation of spetsbanks shaped the evolution and location decisions of non-spetsbanks for two reasons. First, while the reforms put SOEs under increasing pressure to operate profitably, the newly created spetsbanks did not have the administrative capacity to finance SOEs' projects. Thus, Gosbank, in an effort to develop new sources of finance for the SOEs, set low registration fees for the non-spetsbanks (Hellman, p.1993, p.139). Secondly, spetsbank managers could make money by transferring the resources that they received through the state system into these non-spetsbanks. This made it attractive for new non-spetsbanks to locate near existing spetsbanks. For example, cheap state-sector credits could be diverted to the non-spetsbanks, "which could in turn loan out the money at higher interest rates to enterprises in the credit-starved cooperative sector" (Johnson, 2000, p.35).

For example, the supra-spetsbanks Promstroibank helped manage the initial registration of commercial and cooperative banks, and quickly became a shareholder in 50 of these new banks.<sup>8</sup> This has important implications for our paper, since it suggests that not all of the lending induced by the initial regional concentration of the spetsbanks would come directly from them. Instead, one would expect that the initial presence of the spetsbanks would spur additional lending by other nearby banks that had strategically located nearby in the early 1990s. These other banks include the non-spetsbanks that entered when the Soviet Union was intact and the new banks that entered after the demise of the Soviet Union: all of these banks were private commercial banks.

The Russian Federation emerged on December 31, 1991 when the Soviet Union legally ceased to exist. From 1992 to 1998 the spetsbanks and the new banks performed many of the tasks that Soviet socialist

banks did, including providing credit to state firms, financing state-related programs, and financing government debt (see Tompson, 1997). In a study of the Russian banking sector, the World Bank (1993) reports:

"About half of all commercial bank loans in 1992 were in the form of directed credits funded by the central bank or the budget. These loans often serve as (i) subsidies to compensate distortions affecting the borrower, such as price controls, (ii) a means to compensate enterprises for the provision of social services, or (iii) a means to subsidize employment" [World Bank, 1993, p.4].

Spetsbanks, non-spetsbanks, and new banks formed after the dissolution of the USSR made substantial profits transferring central bank credits to state owned enterprises and exploiting negative real interest rates on bank deposits up till 1995. They also invested in foreign currencies and precious metals in a variety of ways throughout the 1990s. Similarly, all of these banks made a great deal of money issuing high-interest government bonds known as GKO's starting around 1995 (Shleifer and Treisman, 2001, Chapter 4). At the same time, because Russian banks made so few private sector loans, private firms had to finance projects with internal funds or funds raised from non-bank external sources, even though they could earn an unusually high return on their capital (see Johnson et al., 2002). In return for providing finance to the government, some commercial banks were able to buy up state assets at very low prices.<sup>9</sup>

Overall, from August of 1992 through 1998 Russian commercial banks were profitable without serving as a significant source of finance to private firms and households. Speculative bank activities along with falling world oil prices and the Asian crisis likely contributed to the near collapse of the Russian financial system in August of 1998. Following the crisis the Russian government defaulted on its domestic and international debts, GDP fell almost 5%, there was a massive outflow of capital from Russia, and hundreds of Russian banks went bankrupt.

After the financial crisis, there was a large increase in the growth of exports due in part to both the massive devaluation of the ruble and the large increase in world oil prices. It was during this period that banks became a significant source of external finance to private firms and households: between 1999 and 2007 bank-issued loans to firms as a share of GDP went from 10.5% to 37.3%. Moreover, during this period real income overall grew rapidly and there was also substantial variation in the growth in bank finance and income across the regions (see Berkowitz and DeJong, 2011). Thus, the period after the financial crisis is a good testing ground for whether the privatization of banks in Russia in the mid-1990s was good for finance and for growth.

### 3. Identification strategy and methodology

Estimating the causal impact of the bank privatization on finance and growth is difficult because of the potential for simultaneity and selection biases. That is, one might worry that countries that grow quickly and are rich can afford to privatize banks and pay for the relatively high salaries and the expensive infrastructure in a private banking sector. One might also worry that fast-growing and rich countries have more demand for loans, which might create a demand for a private sector that can more quickly dispense loans. Finally, bank privatization often arises as part of a package of reforms, such as simultaneous elimination of price controls and modernization of corporate governance procedures. As a result, it can be difficult to disentangle the impact of bank privatization from other reforms.

To overcome these identification problems, we exploit the variation in the number of spetsbanks per million inhabitants across the Russian regions in October of 1995. The identifying assumption is that regions

<sup>7</sup> For more evidence of this, see Johnson (2000), chapter 2, footnotes 4, 11 and 52 and Hellman (1993), pp.91–125.

<sup>8</sup> International Monetary Fund et al, *A Study of the Soviet Economy: Volume 2* (Paris: IMF, 1991), p.117, Annual Report of Promstroibank of 1992, 1993 and 1994.

<sup>9</sup> The most famous case is the "loans for shares" deal in 1995 in which the Yeltsin government effectively sold interests in lucrative nickel, oil and steel companies to bankers.

with many spetsbanks would have grown at the same rate as regions with few spetsbanks in the absence of privatized banking. This assumption is consistent with our discussion of how the location of the spetsbanks was determined largely on the basis of bureaucratic reasons inherited from the Soviet era, rather than economic ones.

Nonetheless, we test this identifying assumption empirically by asking whether the concentration of spetsbanks predicts either the log of per capita income in 1996 or the annual growth rate in personal income from 1993 to 1996, both of which were prior to the period when Russian banks made substantial loans to private firms and to households. Formally, we estimate the following:

$$\text{PreBankingOutcome}_i = \theta_0 + \theta_1 \text{Spetsbank}_i + \varepsilon_i \quad (1)$$

where  $i$  denotes the  $i$ th region, *PreBanking Outcome* measures either log income per capita in 1996 or the growth rate in real income per capita from 1993 to 1996, and *Spetsbank* is the number of spetsbanks per million population in October of 1995.<sup>10</sup> The coefficient of interest is  $\theta_1$ .

After empirically assessing the exogeneity of the spetsbank variation, we turn to whether additional spetsbanks increased bank finance in the 2000s. That is, we examine whether regions with higher concentrations of spetsbanks in October of 1995—a period when there was almost no lending in Russia—have more lending in the 2000s than regions with lower concentrations of spetsbanks in 1995. Formally, we estimate the following:

$$\text{Bank Outcome}_i = \beta_0 + \beta_1 \text{Spetsbank}_i + \beta_2 X_i + u_i \quad (2)$$

where *Bank Outcome* <sub>$i$</sub>  denotes either the log of lending per capita by region of the lender, log of lending per capita by region of the borrower, or the interest rate charged. Bank outcomes are measured from 2002 to 2006.  $X$  is a vector of covariates. In addition, in some specifications we also control for the concentration of non-spetsbanks, defined as all other banks that were registered during 1987–1991 and survived till October 1995, and new banks, defined as those that registered after 1991 and survived till October 1995. Importantly, these banks entered to finance the semi-private activity in the last years of the USSR and the early years of the Russian Federation. Thus, in contrast to the creation of spetsbanks, the creation of non-spetsbanks and new banks is endogenous to market conditions.

Finally, we examine whether the increased lending caused by having a higher concentration of spetsbanks in 1995 leads to differences in regional economic outcomes including investment, per capita income, unemployment, and the share of small business activity years later in 2007. To do this we replace the variable *Bank Outcome* <sub>$i$</sub>  in Eq. (2) with variables measuring regional economic outcomes in 2007.

We estimate models without and with control variables  $X$ , which include pre-banking per capita income and 19 other variables measuring demographics, political environment, institutional quality, and government involvement in markets. To the extent that our estimates are unaffected by the inclusion of covariates  $X_i$  that predict finance and growth in a significant way, we gain some confidence that including unobserved determinants of finance, investment and economic growth would also not matter (Altonji et al., 2005).

One important implication of our research design is that the coefficient of interest is a local average treatment effect that captures the effect of the increased lending induced by the privatization of successors to the original spetsbanks (Angrist et al., 1996). Thus, while these results are informative regarding the impact of privatization induced by the top-down creation of spetsbanks in the final years of the Soviet Union, they may be less informative of the causal impact of other types of

bank privatization on finance and growth. We return to this question of interpretation later in the paper.

#### 4. Data

Data on spetsbank and non-spetsbank status come from “A Guide to Russian Bank Data” (Karas and Schoors, 2010), as collected from various publications from the Central Bank of Russia. This source contains the registration records of all Russian banks from August 1988 through April 2007. Banks are classified as Soviet era spetsbanks if they were registered as an Agprombank, a Zhilsotbank, or a Promstroibank no later than December 30, 1991, as the Soviet Union no longer existed and the Russian federation instituted market reforms shortly after this date. All other banks registered no later than December 30, 1991 are denoted non-spetsbanks: these banks entered primarily after the announcement of the Law on Cooperation in May 1988. All banks registered after December 30, 1991 are denoted new banks. The non-spetsbanks and new banks enter spontaneously and function as private commercial banks.

In our baseline analysis we exclude the major cities Moscow and St. Petersburg because their financial markets were much more advanced than all other regions in Russia (see Berkowitz and DeJong, 2011).<sup>11</sup> Thus, our data cover 74 of Russia’s 83 regions.<sup>12</sup>

The bank registry contains records only for those banks that survived until October 1, 1995. Some spetsbanks that registered before December 30, 1991 subsequently were absorbed by the agricultural spetsbanks (Agprombank), while others went out of business. Of the 1307 commercial banks in operation on October 1, 1995, 196 of them (15%) were spetsbanks, 471 were non-spetsbanks (36%) and 640 (49%) were new banks. Additionally, our measures are conditional on survival as a spetsbank, non-spetsbank or new bank through October 1, 1995. This is reasonable since there was little bank lending activity to private firms and households as of October 1, 1995.

Spetsbanks, non-spetsbanks and new banks are reported in terms of regional population (in millions) at the start of 1996. In our baseline sample, the average region has 1.9 spetsbanks per million inhabitants with standard deviation of 1.9: six regions have no spetsbanks, and the Altai Republic has ten. There are 4.5 non-spetsbanks per million population (standard deviation is 4.1) and 5.7 new banks per million population (standard deviation is 5.7). Consistent with our argument that spetsbanks shaped the entry of non-spetsbanks and new banks, the correlation between the regional concentration of spetsbanks and non-spetsbanks (new banks) in 1995 is 0.56 (0.37).

Three measures of regional bank finance are used including lending per capita by the region of the lender, lending per capita by the region of the borrower, and the loan interest rate charged by the banks. These variables are measured during the period 2002 through 2006. This allows us to test whether having additional spetsbanks increases lending or bank competition in the years preceding 2007, when we measure economic outcomes of interest. All lending variables are deflated by a regional consumer price index (April 2007 = 100) acquired from Roskomstat (Web site: [www.gks.ru](http://www.gks.ru)) and expressed in thousands of deflated rubles per capita.

The source for lending per capita by region of lender and loan interest rate charged by the regional banks is “A Guide to Russian Bank Data” (Karas and Schoors, 2010), as meticulously collected from quarterly reports put out by Moscow-based information agency “Interfax” ([www.interfax.ru](http://www.interfax.ru)). Interfax publishes quarterly an extensive list of items from the financial statements and regulatory ratios of all Russian banks. The

<sup>11</sup> In robustness tests shown later we document that the main results are similar when these two regions are included.

<sup>12</sup> We drop three small regions for which data are limited including the Jewish Autonomous oblast, the Komi-Perm Autonomous oblast and Taimyr Autonomous district. We also drop the war-torn Chechen Republic and Ingush Republic for which data are also limited. We also drop the autonomous republics of Khanti-Mansiisk and Yanalo-Nenetsk because the lack data for the 1990s.

<sup>10</sup> We use data on the number of spetsbanks per million inhabitants rather than a size or asset-weighted measure of spetsbanks because there are no reliable data on assets prior to 1999. In addition, in 1999 we observe assets only for the 58% of the original spetsbanks that survived until 1999.

loan interest rate is calculated as the volume-weighted annualized rate charged to firms and individuals. Lending per capita by region of lender is computed as the total stock of loans to private firms and households made by the banks in a region during the period 2002–2006. While the advantage of these data is that they include the entire population of banks, the downside is that they may capture lending to firms and individuals in other states. This is a problem primarily for Moscow and St. Petersburg, because banks registered in these cities often make loans throughout Russia. Thus, Moscow and St. Petersburg are not included in our baseline analysis. However, to be safe, we include data on aggregate lending per capita by region of the borrower during the period 2003–2006, the source of which is the Bulletin of Banking Statistics: Regional Supplement (Central Bank of Russia, various years).<sup>13</sup>

Our primary outcomes of interest include finance during 2002–2006; per capita income growth from 1996 to 2007; per capita GNP growth from 1996 to 2007; investment, employment and unemployment rates; and the number of small and medium enterprises per capita in 2007. All measures were collected by the Russian official statistical agency (sources: Goskomstat, 1996, 2001, 2008a, 2008b, 2010).

Our data allow for the inclusion of many important control variables. We ask whether the inclusion of these controls affects the stability of our estimates, which tests whether the across-region variation in spetsbank concentration appears to be as-good-as-random. We measure these variables in 1996 or earlier, which is well before the period when bank finance of the private sector emerges. Education in a region is taken from 1994 Russia micro-census and is measured as the share of the population at least fifteen years old as of 1994 that has completed secondary school and has at least some post-secondary education (source: Goskomstat, 1995). Another important potential determinant of future growth is ethno-linguistic fractionalization, which is related to levels of trust, corruption and financial depth (see, for example, Alesina et al., 2003). We use the standard measure<sup>14</sup> using data from the All Union Census of 1989 (Goskomstat, 1990), where higher values represent more ethnically fragmented regions. We also have data on urban population share in 1989 and 1996, as well as migration inflows per 10,000 inhabitants in 1996 and 1986–1990 (source: Goskomstat, 1991, pp.88–109, 2008a, 2010, 1992, pp. 49–51). In addition, since Moscow was and is the financial capital of the former Soviet Union and Russia, respectively, we also include distance to Moscow. Finally, as argued by Acemoglu et al. (2011, p.910) the size of the educated middle class in the Russian regions during the end of the Soviet era in 1989 is an important predictor of good political institutions and good economic outcomes in the Russian regions after the demise of the USSR. Following Acemoglu et al., we measure the middle class in 1989 as the share of the regional population classified as white collar workers (source: Goskomstat, 1991, pp.88–109).<sup>15</sup>

We also have several political measures in order to capture popular sentiment regarding market reform, as these preferences may well predict future growth after the fall of the Soviet Union. One such measure is the urban Jewish population in areas occupied by the Nazis during World War II measured just prior to their invasion. As argued by Acemoglu et al., 2011, this variable predicts the extent of the destruction of the Soviet urban middle class during World War II and the subsequent anti-market and pro-Communist sentiment that persists long after the fall of the Soviet Union. In addition, our data also contain a measure of the regional importance of powerful elites inherited from the former Soviet Union, which we proxy using voter participation rates in the Russian regions in 1989.<sup>16</sup> In what was considered to be the first open elections in Soviet history, Soviet citizens were allowed to vote for some representatives to the national legislature. However,

these elections for the first time allowed opposition candidates to compete with Communists for power. Thus, in regions where the Communist Party remained strong and well organized, the Communists used their traditional administrative structures to mobilize voter turnout from traditional bases of support including state farms and state owned enterprises. Thus, high voter turnout in these elections is an indicator of the strength of the old Communist party.

Our last measures of the political environment are proxies for pro-reform sentiment among the general population, in that they measure the share of the regional population that voted for then President Yeltsin in the presidential election in June of 1991, and the share of the regional population that supported Yeltsin again in June of 1996 in the first round of a presidential runoff election.<sup>17</sup> In both elections, Yeltsin stood for economic and political reform and his opponents wanted a return to the socialist past; therefore, pro-market sentiment is stronger when vote shares for Yeltsin are higher.

To proxy for the quality of political institutions, we use an indicator variable that equals 1 if the appointed regional executive in 1991 was an insider and 0 if he/she was outsider (source: Remington, 2011). This variable then picks up the extent to which entrenched Soviet elites could remain in power after the fall of the Soviet Union.

Finally, our data include four direct measures of government involvement in the mid-1990s and during the Soviet era including the share of production subsidies in regional budget expenditures in 1995; the share of agriculture subsidies in the regional budget in 1995; the share of enterprises in commerce, public catering, and public services owned as state or municipal property as of July 1, 1997; the weighted average of goods and that had regulated prices in 1996 (source: Remington, 2011); and defense employment in 1985. Defense employment is measured as the number of workers employed in the defense industry per thousand employed workers in 1985 (source: Gaddy, 1996). Gaddy (1996) argues that defense employment is a critical predictor of post-Soviet growth because the defense attracted some of the most skilled and educated workers in the former Soviet Union.

Summary statistics are shown in Table 1. Figures are taken from the last years of the Soviet Union when there was no market-based banking and during 1995–1996 in Russia when banks were not a significant source of external finance for private firms and households. In addition, we show statistics separately for regions with more and fewer than 1.4 spetsbanks per million, which is the median number of spetsbanks across the regions. This was done to enable evaluation of the identifying assumption that these groups should otherwise trend similarly over time.<sup>18</sup>

As shown in Table 1, by construction these two groups have significantly different levels of banking. This highlights the relatively high degree of variation in the full sample, where the number of spetsbanks per million people ranges from 0 to 10, averages 1.9, and has a standard deviation of 1.9. In addition, consistent with our understanding of how non-spetsbanks and new banks chose to locate near spetsbanks in the last years of the USSR and the early years of the Russian Federation, we note there are more non-spetsbanks in High Spetsbank regions. However, while there are somewhat more new banks in High Spetsbank regions, these differences are small (0.57 spetsbanks or 0.30 of a standard deviation) and statistically insignificant. We provide more evidence about the potential correlation between early spetsbanks and new banks later in this section.

Importantly, there are few other statistically distinguishable differences between regions with high and low concentrations of spetsbanks. Only 3 of 19 differences are statistically significant at the 10% level and only 1 of 19 at the 5% level. This is approximately what one would expect observe due to chance. Regions with more spetsbanks experienced somewhat different levels of migration, though the difference of 43

<sup>13</sup> We measure 2003 loans as the average of the stock of loans held by private firms and households in October 2002 and October 2003, and in 2006 average the stock of loans for October 2005 and October 2006.

<sup>14</sup> Where  $g_{i,reg}$  is the number people in ethnic group  $i$  in a region,  $POP_{reg}$  is the total population of the region, and  $J$  is the total number of ethnic groups.

<sup>15</sup> The other groups include blue collar workers, collective farmers and private farmers.

<sup>16</sup> This argument is taken from Berezkin et al. (1989) and Berkowitz and Dejong (2011).

<sup>17</sup> We obtain similar results if we use the second round of the election in July of 1996.

<sup>18</sup> In the main analysis, we exploit the continuous variation in spetsbank concentration. Here, for ease of illustration, we simply categorize regions into two groups based on spetsbank concentration.

**Table 1**  
Descriptive statistics for states in 1995–1996, by spetsbank concentration.

	Low spetsbank	High spetsbank	Difference	Observations
<i>Banking:</i>				
Spetsbanks in October 1995, per million population	0.66 (0.43)	2.27 (1.74)	1.61*** (0.29)	74
Non-spetsbanks in October 1995, per million population	1.97 (1.46)	4.35 (4.38)	2.39*** (0.74)	74
New banks in October 1995, per million population	5.45 (0.89)	6.03 (1.00)	0.57 (1.33)	74
<i>Demographics:</i>				
Population (millions), 1996	2.01 (1.25)	1.55 (1.25)	−0.46 (0.29)	74
Share of 15-year olds with at least some tertiary education, 1994	12.9 (2.0)	13.5 (2.2)	0.627 (0.49)	74
Ethno-linguistic fractionalization, 1990	0.30 (0.22)	0.32 (0.19)	0.03 (0.05)	74
Share of middle class in 1989	0.29 (0.03)	0.31 (0.04)	0.01 (0.01)	74
Urban population share, 1989	36.5 (20.4)	40.5 (22.5)	4.1 (5.0)	74
Urban population share, 1996	67.9 (10.3)	68.9 (13.8)	1.1 (2.8)	74
Migration per 10,000, 1986–1990	5.69 (42.49)	6.66 (38.72)	0.97 (9.49)	74
Migration per 10,000, 1996	19.9 (55.9)	−23.1 (118.7)	−43.01** (21.2)	74
Distance to Moscow (km)	1753.5 (1758.4)	2823.1 (3310.9)	1070* (607.50)	74
<i>Political environment:</i>				
% of Urban Jewish Population in 1939 in regions subsequently occupied by the Nazis	0.09 (0.22)	0.08 (0.24)	−0.01 (0.05)	74
Strength of Communist Party, 1989 (proxied by participation in Soviet elections)	88.2 (5.8)	86.6 (6.3)	−1.7 (1.4)	74
Support for Yeltsin, 1991	53.6 (10.2)	50.9 (12.7)	−2.8 (2.7)	74
Support for Yeltsin, 1996	31.2 (8.7)	32.9 (10.2)	1.7 (2.2)	74
<i>Institutions:</i>				
Appointed Governor, 1991, Insider or Outsider	0.30 (0.41)	0.17 (0.34)	−0.13 (0.09)	74
<i>Government involvement in markets:</i>				
Budget subsidies, 1995	17.0 (14.8)	13.1 (4.6)	−3.9 (2.6)	74
Agricultural subsidies, 1995	9.0 (4.6)	10.4 (6.0)	1.4 (1.2)	74
Defense employment per 1000 employed workers, 1985	2.5 (1.3)	2.0 (1.2)	−0.5* (0.3)	70
Share of municipal and state enterprises, July 1, 1997	18.2 (15.0)	24.8 (21.1)	6.6 (4.2)	74
Weighted average of goods and services with regulated prices, 1996	16.4 (10.4)	14.4 (6.9)	−2.0 (2.1)	74

Notes: Figures represent the average across all states during that time period. Standard deviations/robust standard errors are in parentheses. Low and High Spetsbank refer to regions with below- and above-median spetsbanks per million.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

migrants per population of 10,000 is economically small. Distance to Moscow is also somewhat different with high-concentration regions located an average of 900 km further away than regions with fewer spetsbanks per million population. Finally, defense employment per 1000 employed workers in 1985 was marginally different.

However, the overwhelming pattern in Table 1 is the similarity between the two groups: they have similar levels of education, urban population shares, political environment, institutional quality, and government involvement in the economy. While this is somewhat surprising given that politics and institutions in particular have been shown to be drivers of finance,<sup>19</sup> it is consistent with what we would

expect based on our understanding of how spetsbanks were created by Soviet bureaucrats.

Table 2 also contains summary statistics for regions with low and high concentrations of spetsbanks for variables available both circa 1996 and 2006. Thus, these results offer a preview of the primary results of the paper on the impact of bank privatization, as well as a way to see whether other plausibly exogenous covariates are changing systematically over time.

As shown in Table 2, banking in Russia took off quickly between 1996 and the post-financial crisis time period of 2002–2006. While real loans per capita (in 2007 rubles) were only 30 and 50 rubles for the two groups in 1996, this increased to over 1000 and 2000 rubles per capita. It is also striking all three kinds of banks – spetsbanks, non-spetsbanks and new banks – made more loans in the High-Spetsbank

<sup>19</sup> See Malmendier (2009).

**Table 2**  
Descriptive statistics before and after modern banking, by presence of spetsbanks.

	1996 (Prior to modern banking in Russia)		2006	
	Low spetsbank	High spetsbank	Low spetsbank	High spetsbank
Spetsbanks, per million population	0.7 (0.4)	2.3 (1.7)	0.5 (0.5)	1.6 (1.8)
Non-spetsbanks, per million population	2.0 (1.5)	4.4 (4.4)	1.1 (1.2)	2.3 (2.5)
New banks, per million population	4.0 (0.7)	4.4 (0.7)	2.0 (0.3)	2.9 (0.5)
Bank loans to households and firms (Thousands of rubles per capita)	0.03 (0.03)	0.05 (0.05)	1.41 (1.31)	2.31 (2.67)
Loans by spetsbanks	0.01 (0.02)	0.02 (0.02)	0.33 (0.47)	0.57 (0.74)
Loans by Soviet-era non-spetsbanks	0.01 (0.01)	0.01 (0.01)	0.37 (0.68)	0.54 (0.80)
Loans by new banks	0.01 (0.01)	0.02 (0.03)	0.72 (0.94)	1.20 (2.11)
Real income per capita in rubles April 2007 = 100	4227 (1738)	5004 (2038)	8296 (2677)	8723 (3242)
Employment rate (%)	93.7 (7.6)	91.4 (5.5)	89.7 (5.9)	89.8 (5.9)
Unemployment rate (%)	10.6 (4.7)	10.6 (3.7)	7.3 (3.9)	6.7 (3.1)
Migration	19.9 (55.9)	-23.1 (118.7)	-2.5 (35.4)	-11.9 (39.3)
% Urban	67.9	68.9	67.9	69.1
Population, millions	2.01 (1.25)	1.55 (1.25)	1.92 (1.25)	1.46 (1.23)

Notes: Standard deviations are in parentheses. Low and High Spetsbank refer to regions with below- and above-median spetsbanks per million population, respectively. Banking figures shown in Column 4 are for 2002–2006. Bank loans to private sector prior to modern banking are from the last 2 quarters of 1997, as this is the earliest time for which reasonable data coverage is available.

regions in 2006. This suggests that the idiosyncratic creation of spetsbanks from the last years of the Soviet Union may have influenced finance through each kind of bank because many of the original spetsbanks from 1995 survived through 2006, and the original influence of spetsbanks on non-spetsbank and new bank location persisted. Suggestive evidence for this mechanism is the high correlations between the regional concentration of spetsbanks in 1995 with the regional concentration of spetsbank survivors (0.63), non-spetsbank survivors (0.48) and new banks (0.52) in 2006, respectively. We explore these potential mechanisms later on in the paper.

However, what is important for our research design is this increase in banking was not accompanied by a systematic change in other plausibly exogenous variables such as percent urban or population, which is consistent with the assumption of our research design. It also appears that the divergence in banking did not cause a divergence in real income per capita growth. Specifically, while real per capita income went up by 96% on average in states with below-median spetsbank concentration,

it went up by only 74% in states with above-median spetsbank concentration. These patterns are also apparent from Figs. 1 and 2, where Fig. 1 shows the positive relationship between the log of per capita lending during 2002–2006 and the number of spetsbanks in 1995, and Fig. 2 shows the lack of such a relationship between the annualized increase in real income per capita from 1996 to 2007 and the number of spetsbanks in 1995. Along similar lines, Fig. 3 shows that per capita lending in high-spetsbank regions quickly outpaced lending in low-spetsbank regions between 1997 and 2007, while Fig. 4 shows that per capita real income did not.

The increased presence of spetsbanks did appear to increase the employment rate, as shown in Table 2. This is intriguing, as it gives some indication of what the spetsbanks might be doing with their private lending, if not funding productivity-enhancing projects.

Table 3 contains summary statistics for spetsbanks and all other banks in 1995 and 2006. As expected, the ownership of both types of banks is overwhelmingly private at the beginning and end of the sample

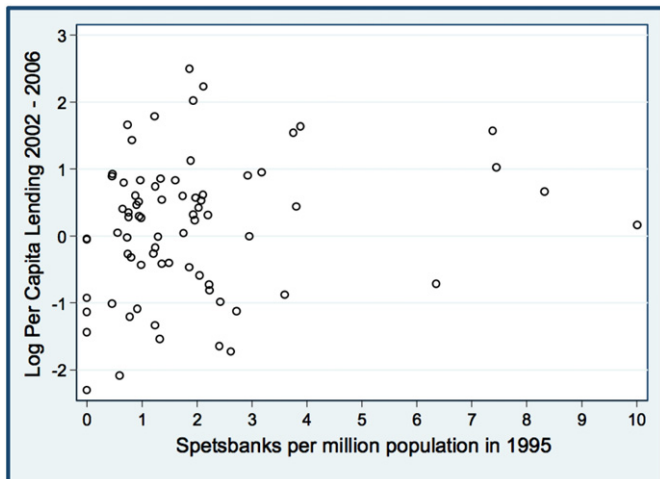


Fig. 1. Spetsbank concentration and per capita lending from 2002 to 2006.

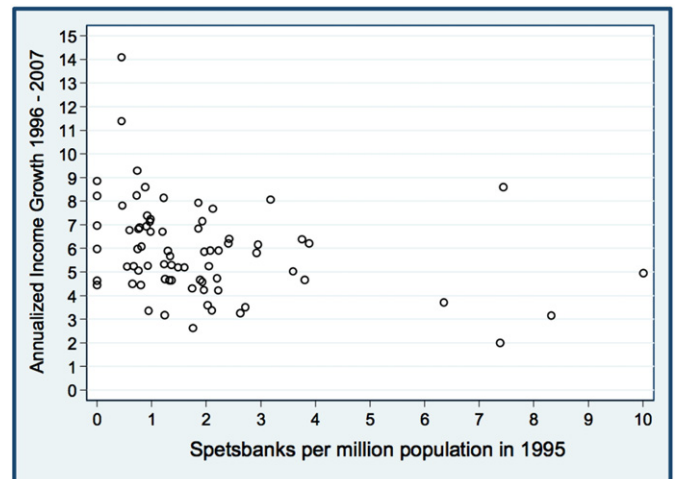


Fig. 2. Spetsbank concentration and per capita income growth from 1996 to 2007.

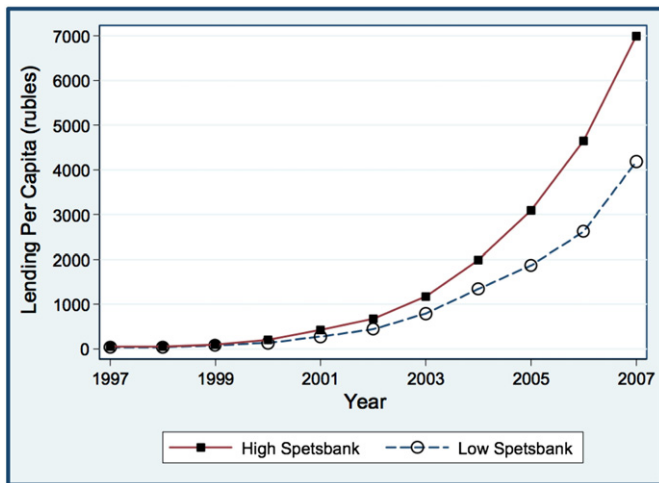


Fig. 3. Lending per capita from 1996 to 2007, by spetsbank concentration.

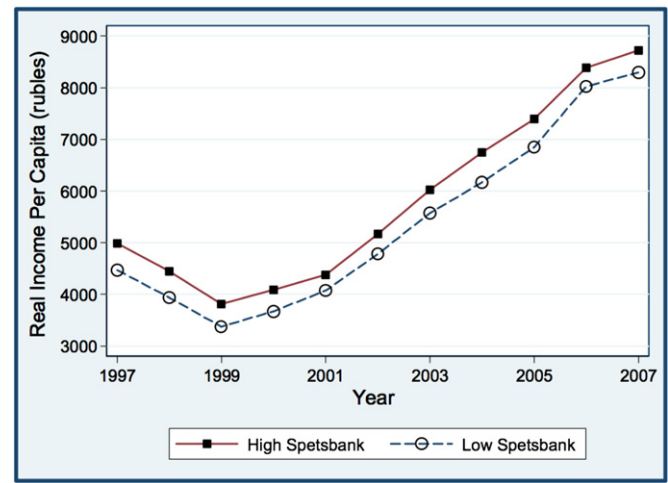


Fig. 4. Real income per capita from 1996 to 2007, by spetsbank concentration.

period. There is hardly any foreign ownership of banks.<sup>20</sup> There are fewer exits of spetsbanks: roughly half of the spetsbanks in operation in 1995 were still in operation as of 2006, compared to 37% for all other banks. New entry is limited as only 4% of all other banks operating in 2006 had registered after 2005. Finally, despite the fact that not all the spetsbanks survived, they maintained a sizable market share of lending to private firms and households of roughly 20% in 2006.

## 5. Results

### 5.1. The correlation between spetsbank concentration and pre-banking income levels and growth

As described earlier, the identifying assumption of our study is that regions with high concentrations of spetsbanks in 1995 would have had similar levels of finance and economic growth after 2002 compared to other regions. Here we formally examine that assumption by asking whether regional spetsbank concentration is correlated with income levels or growth in the period before modern banking in Russia. Estimates are shown in Table 4, and are not statistically different from zero. Point estimates indicate that regions with one more spetsbank per million population had 4% higher per capita income in 1996 and grew 0.4 percentage points faster per year. This is consistent with the identifying assumption and suggests that if anything, the types of regions that had more spetsbanks might have had *better* economic growth prospects than other regions.

### 5.2. The effect of spetsbanks on banking capacity in the modern banking era

We now examine whether higher concentration of spetsbanks in 1995 increases banking capacity once modern banking takes hold in Russia. The raw data are shown in Figs. 1 and 3, while the estimation results are shown in Table 5. There are three specifications corresponding to each outcome. The first includes no controls, while the second controls for non-spetsbanks and new banks, per million population in 1995, the log of per capita income in 1996 and all other pre-banking characteristics from Table 1. By examining the stability of the coefficient to the inclusion of these controls, we intuitively ask whether the variation in spetsbank concentration is orthogonal to observed determinants of finance and growth, in the spirit of Altonji et al. (2005). The third

column includes the regions containing the capital cities of Moscow and St. Petersburg, which are outliers in terms of foreign investment, growth, and finance.

The first three columns of Table 5 estimate the effect of spetsbank concentration on the log of per capita lending in 2002–2006, as measured by the state of the lender. As described earlier, these are the most reliable data we have, as they come from banks' administrative records and include the entire population. Results in column 1 indicate that having one more spetsbank per million population—or about a ½ standard deviation increase in spetsbanks—causes a statistically significant 11% increase in per capita lending. Adding controls in column 2 increases this estimate to 22%. Doing so also increases the R-squared significantly from 0.04 to 0.66, which suggests that the controls are explaining much of the cross-regional variation in lending over this time period. Using the intuition formalized by Altonji et al. (2005), this suggests that if anything, our estimates may underestimate the true impact of spetsbanks on total lending. Finally, we note that including Moscow and St. Petersburg in column 3 changes the estimate only slightly to 21%.

In columns 4 through 6 of Table 5, we show results using a second measure of regional lending compiled by the Central Bank of Russia. While this measure falls somewhat short of the gold standard of administrative data, the advantage is that regional lending is defined at the level of the borrower. Results indicate that having one more spetsbank in a region increases lending during 2003–2006 by 12 to 14%, all of which are statistically significant at the 5% level, and two of which are significant at the 1% level.

Finally, in columns 7 through 9 we estimate the effect of spetsbanks on the (volume-weighted) average interest rate charged on loans in each region. Estimates vary from  $-0.27$  to  $0.13$ . None is significant at the 10% level, and all estimates are economically small compared to the average annual rate in 2006 of 16.6%.

We next focus on which banks are responsible for the increase in finance in high-spetsbank regions. While we would certainly expect a large part of the increase in lending to come from the spetsbank successors themselves, as described earlier there are also reasons to expect why there may be more loans from non-spetsbanks and new banks that chose to locate near spetsbanks in the early 1990s. Results are shown in Table 6, where the first three columns replicate the first three columns of Table 5, and the remaining columns show results for lending by spetsbank survivors, lending by non-spetsbank survivors, and lending by new banks that enter after the demise of the Soviet Union. Estimates of the effect of lending by spetsbank survivors range from an unconditional estimate of 16% that is not statistically significant, to estimates of 71 and 73% once including controls, which are significant at the 1% level. Thus, while the estimates are more sensitive to the

<sup>20</sup> In Moscow and St. Petersburg there was very little foreign ownership in 1995, and by 2006 5.6% of the spetsbank survivor and 7.4% of all other banks were foreign owned. This is additional evidence that Moscow and St. Petersburg are quite different than all other Russian regions.



**Table 3**  
Bank ownership structure and market share.

	1995		2006	
	Spetsbanks	Other banks	Spetsbanks	Other banks
Percent privately owned	99.5	98.7	99.0	97.2
Foreign owned	0.0	0.0	0.0	0.2
Persistence – percent of banks operating in 1995 still operating in 2006	–	–	51.5	37.2
Entrants – percent of banks operating in 2006 that did not exist in 1995	–	–	0.0	4.0
Percent market share of total private lending in Russia	–	–	20.5	79.5
Number of banks	196	1111	101	430

inclusion of controls than the estimates on aggregate lending, there is evidence of a large increase in lending by spetsbank survivors in regions with more early spetsbanks.

In contrast, there is much less evidence that a higher early concentration of spetsbanks led to increases in regional lending by non-spetsbank survivors, or by new banks. Estimates for non-spetsbank survivors range from 8 to 19%, only one of which is significant at the 10% level, while estimates for lending by new banks are less than 10% and statistically indistinguishable from zero. Thus, while there is some suggestive evidence that higher initial concentrations of spetsbanks induced more lending by other banks that chose to locate near them in the early 1990s for reasons described earlier, by far the most compelling evidence is that the increase in regional lending was driven by the spetsbank successors themselves.

### 5.3. The effect of spetsbanks on investment, per capita income, unemployment, and small business activity

Next, we turn to whether the increase in bank privatization induced by the creation of spetsbanks affects investment, per capita income growth, per capita GNP growth, employment rates, unemployment rates, or the number of small and medium enterprises per capita. Results are shown in Table 7. As shown in Panel A, there is no evidence that additional spetsbanks increase real per capita income growth or real per capita GNP growth. In contrast, point estimates are negative and, in some cases, statistically significant. For example, in our preferred specification in column 2, results indicate that one additional spetsbank reduced annualized per capita income growth from 1996 to 2007 by a marginally significant 0.29 percentage points. This is also clear from Fig. 2, which graphs the percent increase in real per capita income from 1996 to 2007 against spetsbank concentration. Results for annual per capita GNP growth are similar: column 5 suggests that one additional spetsbank reduced per capita GNP growth by a marginally significant 0.56 percentage points.

Importantly, estimates remain relatively stable with the inclusion of 22 controls measuring per capita income in 1996, non-spetsbank concentration in 1995, new bank concentration in 1995, demographics, institutions, political environment, and government involvement in the economy. For example, adding controls to the annual per capita income growth model (from column 1 to column 2) changes the coefficient by only 0.02 percentage points, and doing the same for GNP per capita

**Table 4**  
Correlation between spetsbank concentration and pre-banking income and income growth.

Dependent variable:	Log 1996 income	Annual growth rate 1993–96
Spetsbanks in October 1995, per million population	0.043 (0.03)	0.432 (0.42)
Observations	74	72

Notes: Each column represents a different regression. Robust standard errors are in parentheses.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

growth rate (from column 4 to column 5) changes it only by 0.12 percentage points. This is true despite the fact that in both cases, the additional controls have substantial explanatory power: the r-squared increases by 45 to 55 percentage points. This gives us some comfort that the variation in spetsbank concentration is exogenous, and that the inclusion of unobserved determinants would not change our conclusion that privatized banking in Russia does not improve economic growth. We also note that none of our estimates are affected by the inclusion of Moscow and St. Petersburg, which were and remain the financial centers of Russia.

Interestingly, we do find some suggestive evidence that additional banking may increase employment rates and reduce unemployment, though most estimates are imprecisely estimated.<sup>21</sup>

## 6. Interpretation and discussion

Our findings are somewhat surprising: even though privatized banking increases lending, there is no impact on growth. Put differently, while the presence of an additional spetsbank induced an 11 to 22 percent increase in lending over the following 10 years, it did not increase growth in GNP or personal income. In contrast, point estimates suggest that if anything, the additional spetsbank reduced economic growth rates. We also find some suggestive evidence that spetsbanks may have instead reduced unemployment.

This pattern of results is intriguing, as it indicates spetsbanks behaved like traditional Soviet banks, despite the fact that they were privatized and competed against other private banks. For example, under the Soviet regime, the role of the “banks” was often to help traditional large firms retain workers, in part to build popular support for the regional political elites and in part because these firms provided public goods such as health services and education to the populace and thus helped maintain social stability (see Remington, 2011).

One potential explanation of these results is the persistence of political connections in spetsbanks after privatization. If banks retain their political connections and objectives after privatization, the implications are significant for countries that privatize their longtime state-owned banks (such as Russia) as well as for countries that consider nationalizing their banks during times of financial crisis. That is, to the extent that political connections formed during nationalization persist even after eventual privatization, nationalization may impair the long-term performance of banks.

We use two approaches to assess whether political connections persisted. First, we check whether key employees in the privatized spetsbanks held similar positions in Soviet-era banks, compared to

<sup>21</sup> In many respects the average effects of the spetsbanks on finance and outcomes in Russia during 2000–2007 is qualitatively similar to the average effects of bank nationalization on credit markets in India circa 1980 as studied by Cole (2009). Spetsbanks in Russia cause more lending to the private sector: similarly, credit markets in India with nationalized banks had faster credit growth. In Russia, the average effects of spetsbanks on growth and investment in Russia are negligible: similarly, in India bank nationalization has no discernible effect on agricultural outcomes. However, while spetsbanks cause marginal increases in employment and reductions in unemployment, bank nationalization “may have slowed the growth of employment in the more developed sectors of trade and service” (Cole, 2009, p.33).

**Table 5**  
The effect of spetsbank presence on banking capacity.

	1	2	3	4	5	6	7	8	9
	Log per cap. lending 2002–2006, by state of lender			Log per cap. lending 2003–2006, by state of borrower			Loan interest rate charged in 2006		
Spetsbanks in October 1995, per million population	0.11** (0.05)	0.22** (0.09)	0.21** (0.09)	0.12*** (0.04)	0.13** (0.05)	0.14** (0.05)	0.13 (0.20)	–0.27 (0.19)	–0.26 (0.19)
Non-Spetsbanks in October 1995, per million population	–	0.00 (0.04)	0.00 (0.04)	–	–0.03 (0.02)	–0.02 (0.02)	–	0.05 (0.09)	0.07 (0.08)
New Banks, per million population	–	0.02 (0.02)	0.00 (0.00)	–	0.00 (0.01)	–0.00* (0.00)	–	0.03 (0.04)	0.01 (0.01)
Observations/regions	74	74	76	74	74	76	71	71	73
R-squared	0.04	0.66	0.77	0.12	0.77	0.81	0.01	0.73	0.74
Includes controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Capital cities are included (Moscow and St Petersburg)	No	No	Yes	No	No	Yes	No	No	Yes

Notes: Each column represents a separate regression. Household lending is deflated by the CPI where April 2007 = 100, and the first two quarters of 2007 are included. Loan interest data in 2006 is missing for three regions including the Kursk, Magadan and the Republic of Kalmykia. Controls include the log of per capita income in 1996 and all of the pre banking characteristics shown in Table 1.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

**Table 6**  
The effect of spetsbank presence on banking capacity, by type of banking.

	1	2	3	4	5	6	7	8	9	10	11	12
	Total log per cap. lending 2002–2006			Log per cap. lending by spetsbank survivors			Log per capita lending by non-spetsbank survivors			Log per capita lending by new banks		
Spetsbanks in October 1995, per million population	0.11** (0.05)	0.22** (0.09)	0.21** (0.09)	0.16 (0.15)	0.71*** (0.17)	0.73*** (0.17)	0.19* (0.10)	0.09 (0.20)	0.08 (0.20)	0.05 (0.08)	0.09 (0.18)	0.06 (0.19)
Non-Spetsbanks in October 1995, per million population	–	0.00 (0.04)	0.00 (0.04)	–	–0.09 (0.09)	–0.10 (0.08)	–	0.19** (0.08)	0.17** (0.08)	–	–0.10 (0.07)	–0.07 (0.07)
New banks in October 1995, per million population	–	0.02 (0.02)	0.00 (0.00)	–	–0.04 (0.03)	0.00 (0.01)	–	–0.02 (0.03)	0.00 (0.00)	–	0.08* (0.04)	0.00 (0.01)
Observations/Regions	74	74	76	74	74	76	74	74	76	74	74	76
R-squared	0.04	0.66	0.77	0.02	0.58	0.62	0.04	0.58	0.66	0.00	0.51	0.53
Includes controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Capital cities are included (Moscow and St. Petersburg)	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

Notes: The outcome is lending by state of lender between 2002 and 2006. Each column represents a separate regression Household lending is deflated by the CPI where April 2007 = 100, and the first two quarters of 2007 are included. Loan interest data in 2006 is missing for three regions including the Kursk, Magadan and the Republic of Kalmykia. Controls include the log of per capita income in 1996 and all of the pre-banking characteristics shown in Table 1. Spetsbank (Non-Spetsbank) survivors are banks registered (not registered) as spetsbanks during the Soviet era that are still in operation from 2002 to 2006. New banks are banks registered after the demise of the Soviet Union and in operation from 2002 to 2006.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

employees in other banks. We use data from all banks in which relevant personnel data is given. In addition, in order to take advantage of all available data we use a sample that includes Moscow and St. Petersburg.<sup>22</sup> One caveat of this analysis is that because the sampling procedure is not random, results are suggestive. The results are reported in Table 8, where data are from 1995. While there was little difference between spetsbanks and other banks in the political connections of the board members, who almost all represent the new shareholders, there were major differences in the political connections of members of the management committee (i.e., the directors). Specifically, privatized spetsbanks were much more likely to have politically connected directors (75.9 versus 25.4%), as well as a politically connected General Director (89.9 versus 28.6%) and Head Bookkeeper (85.9 versus 31.3%). These findings suggest that political connections established in the original spetsbanks were persistent through at least the mid-1990s, which potentially explains the banks' ineffectiveness.

In our second approach for determining whether spetsbank successors remained connected to the government, we ask how similar spetsbanks are to other banks in their region. Specifically, we ask whether spetsbank successors charge similar interest rates as the other banks of similar size who operate in the same region. We also ask whether

spetsbank successors generate a greater share of their interest income from government and government-owned firms. Specifically, using bank-level data, we regress the outcome of interest (interest rate charged or share of income) on regional fixed effects, log of bank assets, and an indicator for whether the bank had its origins as a spetsbank.

Results are shown in Table 9. Using data from the period 1999–2006, we find that the biggest difference between spetsbanks and all other banks is that spetsbanks receive significantly more of their interest income from firms owned by the government (1.58 percentage points), and substantially less from households (3.14 percentage points). These differences are striking, as spetsbanks and all other commercial banks had been privatized since at least the early 1990s. Thus, in principle, the spetsbank successors should not be receiving additional financial support from the government.<sup>23</sup>

<sup>23</sup> In results available upon request, we find some similarities between spetsbanks and all other banks on other dimensions. Specifically, spetsbank successors do not hold significantly more government deposits and do not reap significantly higher profits from government-owned firms than their counterparts. Moreover, while spetsbank successors receive somewhat more transfers from federal and regional governments during 1999–2006, this difference is not statistically significant. Our measure of profits from government owned firms is interest payments received net of expenses paid to government owned firms. Our measure of transfers from the government is interest payments from the government net of expenditures paid. In making these calculations we control for bank assets and region and quarter fixed effects during 1999–2006.

<sup>22</sup> Thus, we expand our sample of spetsbanks in 1995 from 196 to 236.

**Table 7**

The effect of banking on income growth, GNP growth, investment, small businesses, employment, and unemployment.

	1	2	3	4	5	6	7	8	9
Panel A: Income and investment	Annual Growth Rate in Income per capita, 1996–2007			Annual Growth Rate in Real GDP per capita, 2001–2007			Log Investment Per Capita in 2007		
Spetsbanks in October 1995, per million population	−0.31** (0.14)	−0.29* (0.15)	−0.33** (0.15)	−0.44* (0.26)	−0.56* (0.31)	−0.57* (0.30)	0.012 (0.029)	−0.089* (0.047)	−0.092** (0.044)
Non-Spetsbanks in October 1995, per million population	–	(0.11) 0.12*	(0.07) 0.07	–	0.34* (0.18)	0.37** (0.18)	–	0.021 (0.018)	0.023 (0.017)
New Banks in October 1995, per million population	–	0.06** (0.03)	−0.01* (0.00)	–	0.05 (0.04)	−0.01* (0.01)	–	0.005 (0.006)	−0.002** (0.001)
Observations/regions	74	74	76	74	74	76	74	70	72
R-squared	0.09	0.66	0.66	0.08	0.54	0.54	0.00	0.78	0.78
Panel B: small enterprises and employment	Log small and medium enterprises per capita in 2007			Employment rate in 2007			Unemployment rate in 2007		
Spetsbanks in October 1995, per million population	0.023 (0.033)	−0.005 (0.035)	0.002 (0.033)	0.16 (0.31)	−0.10 (0.43)	0.16 (0.48)	0.04 (0.24)	−0.30 (0.19)	−0.33* (0.19)
Non-spetsbanks in October 1995, per million population	–	0.011 (0.014)	0.010 (0.014)	–	−0.04 (0.24)	0.00 (0.25)	–	−0.17* (0.09)	−0.16* (0.09)
New banks in October 1995, per million population	–	−0.012 (0.009)	−0.001 (0.001)	–	−0.31*** (0.10)	0.00 (0.02)	–	0.08* (0.04)	0.01* (0.01)
Observations/regions	74	74	76	74	74	76	74	74	76
R-squared	0.01	0.66	0.74	0.00	0.66	0.59	0.00	0.80	0.80
Includes controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Capital cities are included	No	No	Yes	No	No	Yes	No	No	Yes

Notes: Each column in each panel represents a separate regression. Each specification controls for the lagged level of the dependent variable in 1996 (2001 for GNP growth and investment). Controls include the log of per capita income in 1996 as well as all of the pre-banking characteristics shown in Table 1. The average annual per capita income growth rate was 5.8%.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

**Table 8**

Political connections within spetsbanks and all other banks in 1995.

	Spetsbanks	Other banks
% politically connected board members	1.5	1.4
% politically connected directors	75.9	25.4
% politically connected general director	89.9	28.6
% politically connected head bookkeeper	85.9	31.3
Observations	99	146

Notes: Each firm has one General Director and one Head Bookkeeper.

Thus, we find considerable evidence that while spetsbanks do induce an increase in private lending, they remain more connected to government than other banks. This relationship exists despite the fact that spetsbank successors are operating in competitive markets as private firms, and, to our knowledge, free from any financial support from the government. Yet, the persistence of a business relationship with government may help explain why spetsbank lending does not increase growth. Perhaps spetsbanks are unable to develop the culture and capabilities necessary to make productivity-enhancing loans, or perhaps they are pursuing other objectives that have persisted due to their origins, such as reducing unemployment.

To the extent that spetsbank successors lend to inefficient firms—either intentionally to increase employment,<sup>24</sup> or unintentionally due to poor capital allocation skills<sup>25</sup>—it raises questions about the impact of this lending on the private sector. For example, Caballero et al. (2008) present compelling evidence that by keeping credit flowing to otherwise insolvent borrowers nicknamed “zombies” by the authors,

<sup>24</sup> We attempted to acquire data on employment at the regional level at firms that were formerly state-owned—that is, firms known to be less efficient—in order to examine whether spetsbanks increased employment at those firms, but we were unable to do so.

<sup>25</sup> We did compare the rate of non-performing loans across spetsbanks to non-spetsbanks as a way of measuring loan quality. However, non-performing loan rates are small across all banks in Russia, which we suspect is due in large part to loan restructurings that would make it hard for us to infer much from those data.

Japanese banks suppressed job destruction and creation and lowered productivity.

However, while poor capital allocation is one explanation for why spetsbank lending does not cause positive growth, another explanation is that the institutional context in Russia makes it difficult for any lending to lead to investment and economic growth. For example, if firm owners do not believe their property rights will be protected after they take risks to expand and grow their business, they may not be willing to invest.

To test more directly for whether our finding that zero or even negative growth is caused by spetsbank behavior or regional institutional context, we exploit the heterogeneity of both across the different regions of Russia. Specifically, we use measures of bank behavior taken prior to 2001, and ask whether different types of spetsbanks have different effects on economic growth from 2001 to 2007.

The first measure of bank behavior captures how closely spetsbanks are connected to the federal government. Spetsbanks that are highly connected receive federal government transfers, which are measured as interest income received from federally owned firms net of payments to these firms as a share of total loans. In each region, then, we can compute these transfers to spetsbanks during 1999–2001 and use banks assets as weights. However, one might worry that the level of government involvement by spetsbanks within a region is endogenous to current and future expected growth, or that there are region-specific differences that cause both high government involvement by *all* banks as well as future growth. Consequently, we ask whether regions in which spetsbanks are less connected to government *than their counterparts in the same region* experience higher growth as a result.<sup>26</sup>

Our second measure captures spetsbank similarity to other banks in their region more directly. Specifically, we regress spetsbank status on a set of variables describing sources and share of deposits and loan activity as well as log assets from 1997 to 2001, and then calculate an F-statistic for each region testing whether the coefficients on the deposit and loan variables are jointly equal to zero. We normalize the

<sup>26</sup> The analysis is thus necessarily limited to regions that have spetsbanks.

**Table 9**  
Differences between the business practices of spetsbank successors and all other banks, 1999–2006.

	Interest rates charged to:		The share of interest income that comes from:						
	Firms	Individuals	Government	Central bank of Russia	Domestic banks	Foreign banks	Firms owned by the govt.	Private firms	Households
Spetsbank survivors, 1999–2006	0.14	−1.89**	0.64	−0.11	1.09	0.32	1.58***	0.53	−3.14***
Observations	(0.71)	(0.74)	(0.43)	(0.08)	(0.90)	(0.32)	(0.59)	(1.71)	(0.98)
	18,669	17,964	19,704	19,704	19,704	19,704	19,704	19,704	19,704

Notes: Each column represents a separate regression. Each specification includes logged bank assets, region fixed effects, and quarter fixed effects. Standard errors are clustered at the bank level. Private firms include domestic and foreign firms and registered entrepreneurs. Firms owned by the government include federal and sub-federal firms.

\* Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

F-statistics to have mean zero and standard deviation one. This variable thus measures the degree of to which spetsbanks' deposit and loan behavior is different from other banks of similar size in their region.

To measure the institutional context of each region, we use a measure of property rights protection constructed by experts at the Moscow Carnegie Center under the direction of Nikolai Petrov and Alexei Titkov. It is measured on a scale of 1 to 5, where higher numbers mean that greater protection of property rights.<sup>27</sup>

Results are shown in Table 10, where the first four rows contain coefficients. The last three rows use those coefficients to estimate the marginal effects of spetsbanks that have different levels of government involvement, similarity with other banks in their region, or operate in regions with differing protections of property rights. Importantly, the marginal effect of spetsbanks on lending does not vary significantly by these three factors, as shown in Appendix Table A1. This means that any differential effects on economic outcomes are not due to differences in the magnitude of the first stage on the quantity of lending. We examine three outcomes: annual growth in real personal income from 2001 to 2007, annual real GNP growth from 2001 to 2007, and log investment in 2007.

Several patterns emerge. First, spetsbanks that operate in regions with better institutions—namely, better protections of property rights—have a significantly more positive effect on growth. For example, columns 7–10 indicate that operating in a region where protections of property rights are classified as one standard deviation better (0.75 points) causes the marginal spetsbank per million population to increase growth by between 0.67 and 0.87 percentage points. This suggests that the institutional context of banking matters, and is consistent with the conclusions of others highlighting the importance of institutions for economic growth with respect to bank privatization (e.g., Andrianova et al., 2008) as well as more generally (e.g., Acemoglu et al., 2001).

There is less clear evidence that having connections to the federal government is bad for growth. While these connections appear to lower growth in real personal income, there is no evidence that it lowers real annual GNP growth, and it somewhat counter-intuitively appears to increase investment.<sup>28</sup> For example, estimates in columns 7–8 imply that a one standard deviation increase in spetsbanks' relationship to the federal government leads to between a 0.31 percentage point

reduction and a 0.28 percentage point increase in the annual growth rate. However, there is much stronger evidence to suggest that spetsbanks most different from other banks are bad for growth; estimates in columns 9 and 10 indicate that a one standard deviation increase in the dissimilarity index results in annual growth that is between 0.27 and 0.60 percentage points lower, though neither is quite statistically significant at the 10 percent level.

The net impacts of these factors shown in the last three rows of Table 10 suggests that while there is no effect of spetsbanks on economic growth or investment on average (see columns 1, 6, and 11), there is substantial heterogeneity depending on both the behavior of the spetsbank as well as the institutional environment. For example, the marginal effect of spetsbanks that are most connected to the federal government or are the least similar to other banks in their region is to reduce economic growth and investment, when they operate in a region with poor protection of property rights. Specifically, 4 of the 8 estimates on per capita income and GNP growth rates are significant at the 5% level, and 3 of those are significant at the 1% level. In contrast, spetsbanks that are not connected to government, or that appear to behave similarly to their non-spetsbank counterparts, increase economic growth by between 0.3 and 1.1 percentage points when they are located in a region with strong property rights protections, though estimates are somewhat imprecise.<sup>29</sup>

In summary, two interesting findings shed light on our result that lending by spetsbank successors does not increase growth or investment, but does increase employment. We show that despite having been privatized and subject to market competition, spetsbank successors have retained some of their historical relationships with government. This provides a potential explanation for why spetsbanks may lend to increase employment, rather than productivity. In addition, the impact of spetsbank-induced lending on economic growth depends on both the behavior of the spetsbanks and especially on the institutional environment in which they operate.

## 7. Conclusions

This paper examines whether bank privatization is good for finance and good for growth. To overcome biases due to selection and simultaneity, we exploit variation induced by the creation of state “banks” in

<sup>27</sup> This is a measure taken during 1996–2000 of the “extent of economic liberalism and protection of private ownership.” It is the earliest reliable measure that we could obtain. This variable is broadly used by scholars studying the Russian regions and is described in Nikolai Petrov, “Regional Models of Democratic Development,” in Michael McFaul, Nikolai Petrov and Andrei Ryabov, eds., *Between Dictatorship and Democracy: Russian Post-Communist Political Reform*. (Washington, DC, Carnegie Endowment for International Peace, 2004): 239–267. These data can be downloaded from the website [http://atlas.socpol.ru/indexes/index\\_democr.shtml](http://atlas.socpol.ru/indexes/index_democr.shtml).

<sup>28</sup> One potential explanation is that while spetsbanks with close connections to the federal government may induce additional investment, it may be investment aimed primarily at increasing employment, rather than productivity growth. This would be consistent with the findings of Caballero et al. (2008) in Japan.

<sup>29</sup> If spetsbanks are indicative of the quality of financial institutions in a region, then one interpretation of these findings is that financial development and property rights are complements. When financial institutions are bad (i.e., spetsbanks are different from other banks, or they are connected to the federal government) and there is a low level of property rights protections, then an additional spetsbank reduces economic growth and investment. However, if financial institutions are of high quality and there are strong protections of property rights, then the marginal spetsbank has a positive impact on growth. In contrast, the general equilibrium trade model in Ju and Wei (2011) predicts that when property protections in a country are sufficiently strong, then at the margin better financial institutions do not promote more trade (and, therefore, growth). However, when property rights protections are sufficiently weak, then an improvement in financial institutions is good for a country's comparative advantage and trade.

**Table 10**

The differential impact of spetsbanks on growth and investment by relationship to government, similarity to all other banks, and the extent of regional property rights protection.

Dependent variable:	1					2					3					4				
	Annual growth rate in real personal income, 2001–2007					Annual growth rate in real per capita GNP, 2001–2007					Log investment in 2007									
Spetsbanks in October 1995, per million	0.36 (0.53)	−2.66*** (0.96)	−1.32 (1.42)	−1.52 (1.11)	−1.56 (1.41)	−0.34 (0.44)	−4.13*** (0.66)	−3.60*** (1.17)	−3.42*** (0.86)	−2.90** (1.14)	−0.10 (0.06)	−0.34** (0.14)	−0.40** (0.18)	−0.12 (0.11)	−0.41 (0.24)					
Spetsbanks × property rights protection (higher → more protection)		0.80*** (0.29)	0.56 (0.52)	0.48 (0.33)	0.67 (0.46)		1.16*** (0.20)	1.16** (0.41)	0.96*** (0.28)	0.89** (0.41)		0.09** (0.04)	0.10 (0.06)	0.03 (0.03)	0.11 (0.08)					
Spetsbanks × Difference in Spetsbanks' vs other banks' relationship with fed govt (higher → spetsbanks more involved)		−0.91 (0.55)	−0.39 (0.95)				−0.44 (0.37)	0.40 (0.70)				0.09** (0.04)	0.10 (0.06)							
Spetsbanks × within-region index of differences between spetsbanks and all other banks (higher → less similar)				−0.55** (0.26)	−0.30 (0.65)				−0.27 (0.17)	−0.60 (0.36)				−0.14** (0.03)	0.01 (0.08)					
Est. Marginal effect of spetsbank on region at:																				
10th Pctile of institutions; 90th pctile of fed govt connection/dissimilarity with other banks		−1.81** (0.69)	−0.52 (1.07)	−0.4 (0.54)	−0.14 (0.74)		−2.18** (0.45)	−0.96 (0.75)	−1.42*** (0.37)	−0.94*** (0.43)		−0.30*** (0.09)	−0.40*** (0.12)	−0.02 (0.05)	−0.20* (0.10)					
50th Pctile of institutions; 50th pctile of fed govt connection/dissimilarity with other banks		−0.25 (0.23)	0.38 (0.60)	0.06 (0.24)	0.52 (0.56)		−0.65*** (0.14)	−0.13 (0.32)	−0.47*** (0.17)	−0.08 (0.30)		−0.07* (0.04)	−0.11 (0.05)	0.00 (0.03)	−0.09 (0.06)					
90th Pctile of institutions; 10th pctile of fed govt connection/dissimilarity with other banks		0.95*** (0.33)	1.11 (0.90)	0.25 (0.34)	1.03 (0.78)		0.70*** (0.22)	0.87 (0.59)	0.34 (0.33)	0.5 (0.65)		0.10* (0.05)	0.09 (0.09)	−0.05 (0.05)	0.02 (0.09)					
Observations/regions	46	46	46	46	46	46	46	46	46	46	43	43	43	43	43					
Includes additional controls	Yes	No	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No	Yes					

Notes: Each column in each panel represents a separate regression. Each income growth specification includes logged income in 2001; each GNP growth specification includes logged GNP in 2001; each investment specification controls for logged investment in 2001. Each specification that allows for interaction effects also allows for the direct effect of property rights protection, spetsbank relationship with the federal government, and/or the spetsbank similarity index. Additional controls include the log of per capita income in 1996 as well as all of the pre-banking characteristics shown in Table 1.

Property rights protection is a measure constructed by experts at the Moscow Carnegie Center under the direction of Nikolai Petrov and Alexei Titkov and is measured on a scale of 1 to 5. The difference in spetsbanks\* and all other banks' relationship with the federal government is defined as the difference between the share of bank asset weighted federal transfers to spetsbanks and other banks, where the federal transfer is interest payments net of payments from federally owned firms paid to banks divided by the value of overall bank loans. The within-region index of differences between spetsbanks and non-spetsbanks is calculated as the normalized E-statistic arising from a region-specific regressions in which an indicator for spetsbank status is regressed on a set of variables describing sources and share of deposits and loan activity.

(continued on next page)

the former Soviet Union as a source of exogenous variation in privatized banking in Russia. Existing qualitative research on these spetsbanks characterizes the locational decision as bureaucratic and exogenous to economic factors, which is consistent with what we find empirically. Despite their Soviet origins, however, spetsbanks have become an important source of lending in Russia: in 2006, privatized spetsbank successors accounted for 20% of all lending to firms and households in Russia.

Results indicate that while having one additional spetsbank per million population increases private lending up to 10 years later by 11 to 22%, this increase in lending does not cause an economically meaningful increase in investment or economic growth. This is consistent with other findings showing the persistence of the Soviet-era political connections and management at spetsbanks into the era of privatization.

Furthermore, we find evidence that the effectiveness of privatized banking in causing economic growth was determined in part by the behavior of the spetsbanks and in larger part to the institutional environment in which they operated. Specifically, we find that a one standard deviation increase in the regional index of property rights protections increases the marginal effect of a spetsbank on annual economic growth by nearly one percentage point. Similarly, our results suggest that spetsbanks that are either less connected to government, or are more similar to their non-spetsbank counterparts, subsequently increase economic growth. These latter findings are roughly consistent with the conclusion of Jayaratne and Strahan (1996), who argue that lending quality, rather than volume, is responsible for growth.

Taken together, these findings indicate that the origins and history of banking institutions appear to persist even after privatization. As a result, privatization by itself is insufficient for turning state-owned banks into effective generators of economic growth. Rather, a broader strategy of breaking political connections and improving the protection of property rights appears to be critical for bank privatization to be successful in overcoming the legacy of non-market institutions.

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.jdeveco.2014.05.005>.

## References

- Abanbanell, Jeffrey S., Meyendorff, Anna, 1997. Bank privatization in post-communist Russia: the case of zhihsotsbank. *J. Comp. Econ.* 25, 62–96.
- Acemoglu, Daron, Johnson, Simon, Robinson, James A., 2001. The colonial origins of comparative development: an empirical investigation. *Am. Econ. Rev.* 91, 1369–1401.
- Acemoglu, Daron, Hasan, Tarek A., Robinson, James A., 2011. Social Structure and Development - A Legacy of the Holocaust in Russia. *Q. J. Econ.* 126 (2), 895–946.
- Alesina, Alberto, Devleeschauwer, Arnaud, Easterly, William, Kurlat, Sergio, Wacziarg, Romain, 2003. Fractionalization. *J. Econ. Growth* 8, 155–194.
- Altonji, Joseph, Elder, Todd, Taber, Christopher, 2005. Selection on observed and unobserved variables: assessing the effectiveness of catholic schools. *J. Polit. Econ.* 113, 151–184.
- Andrianova, Svetlana, Demetriades, Panicos, Shortland, Anja, 2008. Government ownership of banks, institutions and financial development. *J. Dev. Econ.* 85, 218–252.
- Angrist, Joshua D., Imbens, Guido W., Rubin, Donald B., 1996. Identification of causal effects using instrumental variables. *J. Am. Stat. Assoc.* 91, 444–455.
- Berezkin, A., Smirnyagin, L., Kolosov, V., Pavlovskaya, M., Petrov, N., 1989. The geography of the 1989 elections. *Sov. Geogr.* 30, 607–634.
- Berkowitz, Daniel, DeJong, David N., 2011. Growth in post-Soviet Russia: a tale of two transitions? *J. Econ. Behav. Organ.* 79, 133–143.
- Caballero, Ricardo J., Hoshi, Takeo, Kashyap, Anil K., 2008. Zombie lending and depressed restructuring in Japan. *Am. Econ. Rev.* 98, 1943–1977.
- Clarke, George R.G., Cull, Robert, Shirley, Mary M., 2005. Bank privatization in developing countries: a summary of lessons and finding. *J. Bank. Financ.* 29, 1905–1930.
- Cole, Shawn A., 2009. Financial development, bank ownership and growth. Or, does quality imply quality? *Rev. Econ. Stat.* 91 (1), 33–51.
- Gaddy, Clifford, 1996. *The Price of the Past*. Bookings Institute, Washington, DC.
- Garvy, George, 1977. *Money, Financial Flows, and Credit in the USSR*. Ballinger, Cambridge, MA.
- Gokomstat, Rossi, 1991. *Kratkaya Sotsial'naya Demograficheskaya Nasileniya RFSFS, Chast'II. Goskomstat Rossii, (Moscow)*.
- Gokomstat, Rossi, 1992. *Chislennost', Sostav I Dvizheniye Nasileniya v Rossiiskoi Federatsii. Goskomstat Rossii, (Moscow)*.
- Gokomstat, Rossi, (2001, 2008b). *Maloye Predprimatel'stvo v Rossii. Goskomstat Rossii, (Moscow)*.
- Gokomstat, R.S.F.S.R., 1990. *Natsional'niy Sostav Naseleniya RSFSR (po dannim vsesoyuznoy perepisi naseleniya 1989 g). Goskomstat Rossii, (Moscow)*.
- Gokomstat, Rossii, 1995. *Obrazovanie Naseleniya Rossii (po dannim mikroperpisi naseleniya 1994 g.)*, (Moscow).
- Gokomstat, Rossii, 1996, 2002, 2008a, 2010. *Rossiyskiy Statisticheskii Yezhegodnik, (Goskomstat Rossii, Moscow)*.
- Guiso, Luigi, Sapienza, Paola, Zingales, Luigi, 2004. Does local financial development matter? *Q. J. Econ.* 119, 929–969.
- Hellman, Joel S., 1993. *Breaking the Bank: Bureaucrats and the Creation of Markets in a Transition Economy*. Columbia University Doctoral Dissertation, New York.
- Jayartne, Jith, Strahan, Philip E., 1996. The finance–growth nexus: evidence from bank branch deregulation. *Q. J. Econ.* 111, 639–671.
- Johnson, Juliet, 2000. *A Fistful of Rubles: The Rise and Fall of the Russian Banking System*. Cornell University Press, New York.
- Johnson, Simon, McMillan, John, Christopher Woodruff, C., 2002. Property rights, finance and entrepreneurship. *Am. Econ. Rev.* 92, 1335–1356.
- Ju, Jiandong, Wei, Shang-jin, 2011. When is quality of financial system a source of comparative advantage? *J. Int. Econ.* 84, 178–187.
- Karas, Alexei, Schoors, Koen, 2010. *A Guide to Russian Bank Data (August 13, 2010)*. (August 13, 2010). Available at SSRN: <http://ssrn.com/abstract=1658468>.
- Khwaja, Asim, Mian, Atif, 2005. Do lenders favor politically connected banks? Rent provision in an emerging financial market. *Q. J. Econ.* 12, 1371–1411.
- King, Robert, Levine, Ross, 1993. Finance and growth: Shumpeter might be right. *Q. J. Econ.* 108, 717–738.
- Kornai, János, Maskin, Eric, Roland, Gérard, 2003. Understanding the soft budget constraint. *J. Econ. Lit.* 41, 1095–1136.
- La Porta, Rafael, Lopez-de-Silanes, Florencio, Shleifer, Andrei, 2002. Government ownership of banks. *J. Financ.* 57 (1), 265–301.
- Malmendier, Ulrike, 2009. Law and finance at the origin. *J. Econ. Lit.* 47, 1076–1108.
- Meggison, William L., 2005. The economics of bank privatization. *J. Bank. Financ.* 29, 1931–1980.
- Remington, Thomas F., 2011. *The Politics of Inequality in Russia*. Cambridge University Press, New York.
- Sapienza, Paola, 2004. The effects of government ownership on bank lending. *J. Financ. Econ.* 72, 357–384.
- Schoors, Koen, 2003. The fate of Russia's former state banks: chronicle of a restructuring postponed and a crisis foretold. *Eur.-Asia Stud.* 55, 75–100.
- Shleifer, Andrei, Treisman, Daniel, 2001. *Without a Map: Political Tactics and Economic Reform in Russia*. MIT Press, Cambridge.
- Tompson, William, 1997. Old habits die hard: fiscal imperatives, state regulation and the role of Russia's Banks. *Eur.-Asia Stud.* 49, 1159–1185.
- World Bank, 1993. *Russia: The Banking System During Transition*. The World Bank, Washington, DC.