



Contracting in a void: The role of the banking sector in developing property rights in Russia

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ABSTRACT

Despite a history of autocratic and uneven governance, resulting in erratic development of key economic institutions, the financial sector in Russia has been a consistent bright spot in the country's history. In particular, the banking sector thrived during the Tsarist era and, despite a long hiatus during communism, is now a developed and modern system similar to that in advanced economies. This paper examines the history of financial sector development in Russia, with an emphasis on the role of the banking sector in substituting for other institutional failings within the economy. In particular, we assert that bank deposits in Russia served as *ersatz* property rights in a low-quality institutional environment, representing an alternative institutional framework to the country's consistently repressive governance. Using time-series techniques on banking data in Russia during its transition period, our econometric results show that deposits in the banking sector did in fact correlate strongly with declines in property rights, even after controlling for a host of plausible other explanations. We conclude that the persistence of bank deposits as the preferred financial instrument of consumers is because they provide incipient property rights when the Russian government refused (or was unable) to.

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1. Introduction

Despite being a comparatively smaller member of the BRICS (Brazil, Russia, India, China, South Africa) grouping of countries – third in population and nominal GDP behind China and India – Russia remains the richest and most developed country (per capita) in the grouping (United National Development Program (UNDP, 2019). The role of hydrocarbons and other natural resources in Russia's growth performance has been remarked many times over elsewhere (Bass, 2019; Benedictow, Fjærtøft, & Løfsnæs, 2013; Rutland, 2015), and it is often assumed that the overwhelming preponderance of oil, gas, and minerals has been sufficient to overcome many (but not all) of the institutional deficiencies that Russia has faced since 1991 (Dutt et al., 2016). Indeed, when considering Russia's post-Soviet development, the legion of institutional obstacles it has faced, including corruption, uneven governance, autocratic politics, and a highly concentrated economic structure, have seemingly set it on a sub-optimal growth

path, one which would be unsustainable without a resource bonanza.

However, while these issues remain real and difficult to surmount, to focus on them alone means missing many of the institutional dynamics occurring within the country, while also glossing over the successes that Russia has had in building some effective economic institutions historically. A survey of Russian economic history shows that one economic institution in particular has persisted as a bright spot throughout turbulence and transition, namely the Russian financial sector; despite a position of virtual non-existence during the Soviet Union, over the past 30 years it has evolved into a developed modern system, comparable in terms of products, technology, and penetration to many of the advanced economies of the world.

While Russia's banks do not have assets comparable to Chinese banks (which occupied 4 out of the top 5 positions in the world in 2018) or the international visibility compared to ICICI from India (Russia's biggest bank, Sberbank, was 61st in the world by assets according to S&P in 2018 and had limited operational presence outside of the former Soviet republics), Russian banks have fulfilled a vital institutional and intermediary role within the Russian economy. In particular, banks dominate the financial system

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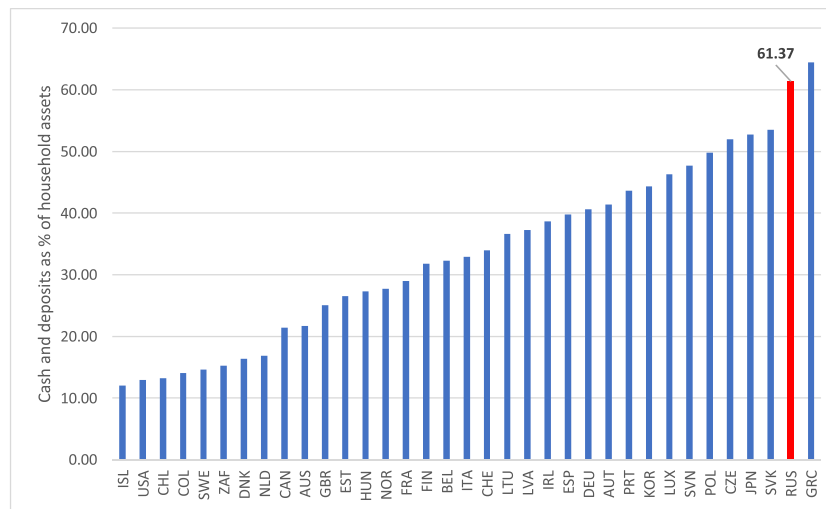


Fig. 1. Currency and Bank Deposits as a % of all Household Financial Assets, 2018.

Source: National Accounts of OECD Countries Database.

of the country, with the assets of Sberbank alone accounting for approximately 25 trillion rubles (almost 15 % of GDP at nominal prices) while overall retail bank deposits accounted for approximately 28 % of GDP (Igonina, 2017). Uniformly across the country's vast geographic expanse, bank deposits are the financial instrument of choice for consumers: according to Yumanova and Mazikova (2015), ruble bank deposits were used by 61 % of those who had any savings or investments, while an additional 10 % used hard currency bank deposits. Indeed, among OECD countries, Russia has the highest percentage of bank deposits as a percentage of all household assets, second only behind Greece, in 2018 (Fig. 1)

The fact that the banking sector rose (in contrast to a myriad of other financial vehicles) out of the ashes of communism would not be a surprise to those who take a long view of Russian development. As Garvy (1972) noted, the continuity in economic institutions between imperial Russia and the Soviet Union was especially strong in the area of banking and credit, and this continuity has remained throughout the years of the Russian Federation. Indeed, the resilience of the banking sector in Russia over the past two centuries is remarkable, especially when one considers that Russia passed through at least two major social revolutions (the architects of which explicitly and deliberately sought to repudiate the prior regime's institutional arrangements). The banking sector has survived due to comparative advantages, rising demand for financial intermediation in good economic times, institutional support, and the interest of the sovereign in keeping the banking sector alive as a source of rents.

But added to this list, especially in today's Russia, is the fact that banks have functioned as economic institutions unto themselves, papering over the other institutional defects in the Russian economy. As noted by Rajan (1998), financial institutions (specifically banks) can be thought of as an incipient form of property rights which fulfill a role not only of financial intermediation but to fill an institutional void in contracting. As Rajan (1998:525) notes, the "institutional form of the bank . . . arose to improve transaction possibilities over what was contractible through the marketplace." Building on this thesis, one may conjecture that "banking sectors do not only presuppose a minimum level of property rights, but they are a level of minimum property rights that can fill the holes left by other distortions in the economy" (Hartwell, 2017:82). A theory of banks as property rights in an atmosphere of little generalizable property rights may also help explain why financial sectors can persist in countries where broad-based property rights are inse-

sure or where governance and other institutional mechanisms are not directed towards investor protection.¹

This paper examines the development of the Russian banking sector since transition with an eye on its institutional role in providing such a contracting vehicle during persistent turbulence. The animating thesis of this paper is that the growth of the financial sector in the Russian economy, and in particular in its banks, helped to create economic development in post-Soviet Russia precisely through this institutional channel. While broad-based property rights in Russia have progressed somewhat since Tsarist times (but not as far relative to the rest of the world, see Fig. 2), we believe that the Russian banking system has served the Russian economy (and, in reality, the Russian President) by providing incipient property rights and stability so that the sovereign did (does) not have to, a reality which was true even during the Soviet Union.²

Fashioning a model of the drivers of bank deposit demand in Russia and applying cointegration techniques to a new database of monthly Russian data (including unique proxies for economic sentiment), our analysis finds that the constant demand for and reliance on deposits in Russian financial institutions in particular corroborates the thesis of banks as incipient property rights.³ Even after controlling for overall institutional quality, trust in government, a host of macroeconomic variables derived from the literature, and unobserved underlying trends, the main result – of bank deposits being negatively correlated with property rights – strongly holds.

To our knowledge, this is one of the few papers (apart from Hartwell (2017), which examines this issue in a broader context) to test the thesis of banks as contracting institutions. With regard to Russia specifically, this paper is similar in spirit to Berkowitz, Hoekstra, and Schoors (2014), which showed that the privatized

¹ In many ways, this is the exact opposite hypothesis as the "law and finance" literature, which posits that quality institutions are necessary for financial development. We show below in Section III that these two hypotheses are not mutually exclusive and, in fact, reinforce each other.

² Indeed, Russia is an interesting test case for the banks-as-contracting-vehicles thesis mainly because of this aforementioned persistence of banking in Russian history, remaining strong through all forms of institutional development and economic conditions.

³ Fig. 2 uses the Polity IV "executive constraints" indicator as an imprecise proxy for property rights. While it captures mainly the number of veto players in government, this metric has been found to be correlated with better property rights in general (Justesen, 2015).

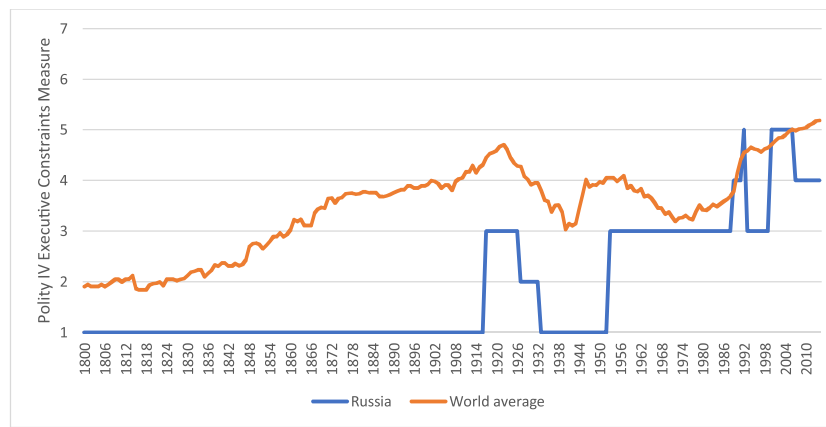


Fig. 2. Executive Constraints in Russia, 1800 to 2017.

Source: Author's calculations on data from the Polity IV database.

“special banks” at the beginning of Russia’s transition increased lending but did not necessarily contribute to growth, mainly because they continued to lend to government enterprises; however, the authors did find that there were contributions to growth where property rights protections were strongest. Our argument is precisely the opposite, mainly that the broader banking sector in Russia, focused on consumers, contributed to growth, even in the absence of these property rights protections, by providing incipient rights themselves. Thus, this paper makes a contribution to the literature by framing the development of the Russian banking sector in terms of demand but also as a function of the property rights services it offered, with its success resting paradoxically on the rest of the economy’s institutional failures.

The rest of the paper proceeds as follows: the next section provides a review of consumer finance in Russia from the Tsarist times to the modern day, while Section III discusses the drivers of bank deposits and lays out our estimation strategy. Section IV analyzes our results, and Section V concludes with thoughts for future research.

2. Consumer banking in Russia from Tsar to Putin

Underpinned by an unwavering belief in the sovereign as omnipotent and omniscient, the Russian state from the Tsarist era onward saw itself as the proponent of the social and economic development of the country for the sake of the public good (Pravilova, 2014). In pursuit of this mission, the state, harkening back to Peter the Great, was often proactive in transferring technology and, quite commonly, corresponding institutions from the West (Sumner, 1950). Consumer finance was one of the areas where the institutional transfer was successful, for, as noted by Ukhov (2003), a paradox of Russian development throughout the Tsarist era was that relatively weak and shallow political institutions coexisted with relatively strong and robust financial institutions.

Banking was introduced into the country from above based on the blueprints of financial institutions in Western Europe. Tsarina Elizabeth explicitly sought to establish the first Russian banks “to keep those offices in everything according to example of the foreign merchant offices” (Decree on Banks, 1752). Ten years later, under the brief reign of Peter III, the Tsar established the so-called “big State Bank,” which was providing loans “at moderate interest” to “people of any estate, in accordance to their capital and wish” (Tolstoy, 1848:242) and issuing bank notes.⁴ In 1764, Catherine

the Great issued a decree that ordered the deposits not to be mixed with own capital of the bank and not to be used for state fiscal purposes (Tolstoy, 1848:243).

Financial deepening through these nascent institutions was slow to come about, as the state-run banks remained largely alien institutions with a weak role in the agrarian, serf-dominated economy. As Crisp (1976):113) noted, “the history of Russian banking from the beginning of organized banking in the 1750s to the 1860s is an uninspiring recital of the vicissitudes of a small variety of government organized and government operated banking institutions.” Russia’s financial sector entered a qualitatively new stage in 1864, however – after the emancipation of the serfs in 1861 – with the establishment of the first private joint stock bank. Its establishment followed the traditions of “private-state partnership” in the Russian Empire: the Charter of the bank was subject to the “Highest Approval,” the Minister of Finance personally consulted on the project, and the State Bank purchased 20 % of the shares of the “private” bank (Petrograd Private Commercial Bank, 1914). By mid-1870s there were over 40 private banks to service the growing industrialization of the economy, and by the First World War there were 53 private joint stock banks in the country.

Despite the push for industrialization in the latter half of the 19th century and a demonstrable increase in living standards (Mironov, 2012), the overall institutional matrix of the Russian state did not improve. The tentative steps towards liberalization of Tsar Alexander II did not result in a loosening of the binds of the state, and small increases in wealth led to demands for greater political representation, more equitable income distribution... and eventually to paroxysms of violence and terrorism across the country (Hartwell, 2020). Property rights were one of the key institutions which saw little progress: while Weickhardt (1994) argues that a legislative framework for land ownership in Tsarist Russia existed, as Fig. 2 showed, the Tsar’s authority reigned supreme at all levels of policy with no veto players or checks and balances, leading to Zhivov (2002):256) noting that the pretense of legality in Tsarist Russia was a “cultural fiction.” Additionally, Pipes (1998) noted that limited property rights for the gentry actually contributed to the persistence of serfdom and serfdom-like labour arrangements (while accurately pointing out that private property in the modern sense was a target of abuse by both conservatives and the intelligentsia alike throughout the 19th century).

Into this void and, aided by the expansion of Russia’s economy in the late 19th century, stepped the heretofore-dormant third tier of the Russian system of consumer finance, the savings *kasas* (сберегательная касса, coming from German *kasse* and French *caisse*). Introduced by Emperor Nikolai I in the 1840s, they served to accumulate the growing income of merchants and skilled work-

⁴ Russia was among the pioneers of fiat money in Europe, having stable circulation of paper “assignats” since the 1760s (Tolstoy, 1848).

ers post-serfdom. By 1914, the kassas had over 4000 branches and were arguably the most inclusive financial institution in pre-Revolutionary Russia with some 8.3 million depositors.⁵ However, even with the kassas in place, the banking system was small compared to the size of economy, and the low monetary income of the majority of the population, especially peasants, made deposits in commercial banks significantly more important than petty retail finance.⁶

The Communist takeover of Russia and the constitution of the Soviet Republic in 1917 led to an attempt to abolish money altogether (in line with Marxist tenets and in tandem with the elimination of property rights); when this approach proved unsuccessful, the Communist authorities instead embarked upon a new era of experimentation in finance and banking. As the deficit of consumer goods became chronic in the Soviet economy, the key function of the institutions of consumer finance was contracting demand or re-channeling it to the goods that were in surplus by reinvigorating the savings kassas. As stated in an internal memo by an economist of the Ministry of Finance of the USSR presented in 1962, “savings kassas . . . absorb the surplus of monetary mass in the hands of population . . . This sum, that exceeds the value of goods in retail channels . . . presses the monetary turnover and disrupts its functioning” (Maryakhin, 2012: 106).

This approach to consumer finance was effective in the short term in drawing liquidity out of the system,⁷ but, more importantly for our purposes, the kassas system was one of the strongest relatively independent institutions in the USSR. On an institutional level especially, the kassas functioned as no other; in a state that was seldom shy of interfering into private lives, kassas provided unique instruments like de-personalized on-demand deposits which could be used for private accumulation and transfer of money without limitations. One of the ideological excuses for the existence of the institution that was it was a step on the way to communism, given the inclusivity of the system and its apparent democratization of finance. While this may have been wishful propagandizing on the part of the Soviet authorities, there is no denying that the outreach of the kassas was indeed impressive. Comparing the number of branches per capita in the USSR (36 per 100,000 adults in 1986, a total of 78,763 kassas) with present-day statistics, we find that the USSR had branch coverage similar to Denmark (38.7), Croatia (35.7), Guatemala (36) and the USA (35.2).⁸ In 1986 there were 171 million deposits (i. e. 0.79 per capita), the average size of deposit stood at 1291 rubles (roughly half an annual salary), and the total volume of deposits stood at 38 % of GNI (Kazmin, 1996).

Yet, despite its reach, the system remained very low-tech, as virtually all operations were done through hand-written records (and, as a result, service was notoriously slow). Like the rest of the planned economy, queuing was part of everyday banking, especially

at the beginning of the month when people tended to make their utility payments. All operations involving an account could be done only in the branch where the account was opened, a fact which made the high density of the network irrelevant for the tasks of shopping; even if one had a deposit certificate (*sbergatelnaya knizhka*) on hand, they would not be able to obtain cash from the nearest branch (and the introduction of cashless payments through transfers was on the agenda since 1950s but no progress was made, see Bank of Russia (2012)). In sum, the savings system provided an alternative contracting mechanism for Soviet citizens and a modicum of property rights, but as a means of financial intermediation, it still served the state rather than the consumer.

Under Mikhail Gorbachev, as part of the ambitious program of reconstruction (*perestroika*) that included acceleration (*uskoreniye*) of the economy, there was a push to bring modern consumer banking to the USSR. In 1987, the existing network of savings kassas was reformed into the State Bank for Labor Savings and Credit (Sberbank) to provide a full range of banking services akin to a modern Western institution (much as the Tsarina had attempted to do in 1752). The Bank finally launched instruments of cashless payments, checkbooks against saving accounts, and even experimented with credit cards, joining VISA in 1989. Pilot Soviet VISA cards with a credit limit of 500 rubles were proudly presented to the members of Politburo (Kazmin, 1996).

In 1988 one more step towards the market economy was taken, as the law “On cooperatives” considerably expanded the area of private enterprise, permitting certain forms of incorporation and investment into fixed assets, and indirectly allowing to form the “cooperative” (actually, private) banks. A surge in the number of banks followed, in 1991 there were over 1300 officially registered “cooperative banks,” regulated since 1990 by the special law and providing another outlet for consumers to enjoy a contractual relationship.

By the end of the Soviet era there already existed a large number of private banks (peaking at almost 2500 in 1995), and regulation was institutionalized through Law on Banks and Central Bank (officially called the Bank of Russia). Perhaps unbelievably, consumer banking was not considered an important segment in the 1990s due to the drop in consumer incomes occasioned by the turmoil of transition. The banks of this era were instead focused on the checking/clearance operations, taking deposits, trading in currencies and commodities, and making direct investments, rather than supplying credit either to enterprises or consumers. Indeed, at the onset of transition, any number of financial instruments – including banks, insurance, and securities – had more or less equal chances to become the favored vehicle for Russians, especially due to the emphasis on privatization and the distribution of vouchers (Havrylyshyn & McGettigan, 1999). To budding capitalists, securities seemed “sexier” and more modern, and enjoyed a brief renaissance in the early 1990s (Marber, 1994) before fraudulent practices and Ponzi schemes sullied their reputation (Puffer & McCarthy, 2003; Rock & Solodkov, 2001).

While banks also faced similar challenges, their image improved much more rapidly under an improved legal framework (Nell, 1998) and soon became the preferred method of financial intermediation for consumers watching the policy gyrations taking place in Moscow. More importantly, these newly formed private banks were competing quite successfully with the remnants of the Soviet banking system during the mid-1990s, some of which were under the state control (Vneshtorgbank, Rosselkhozbank, and Sberbank) while others were privatized (e.g., Promstroibank). In mid-1993, Sberbank, which relied mostly on inherited retail operations and had little involvement into bigger corporate cash flows, was fifth in terms of assets, almost 10 times smaller than Vneshtorgbank (the leading bank). Banking at this point looked lucrative, at least on paper, with the average weighted return on assets of the top 20

⁵ Calculations based on Lyaschenko (1950: 351).

⁶ Despite the developed network of branches, the savings kassas were losing to joint-stock banks in terms of volume of private deposits: 5.4 billion of German marks in kassas vs. 7 billion in banks in 1909. The situation was the reverse in Germany (13.9 billion marks in kasses vs. 7.1 billion in banks) and in France (4.2 billion in caisses and 3.7 billion in banks), the two countries which served as the model for establishing the system (Lyaschenko, 1950).

⁷ Unfortunately, it was hoped that these savings would soon be turned back into consumption by a rising supply of consumer goods. The stagnant Soviet economy of the late Khrushchev and Brezhnev years meant that the reverse was actually happening, as by 1970 it was estimated that approximately 1/3 of the volume of savings came from “unsatisfied demand,” with goods in stock worth only 66 rubles for each 100 rubles of deposits (down from 136 in 1961 and 90 in 1967, see Bank of Russia (2012)). As the economy became increasingly monetized in 1970s, the problem grew worse and, by the late 1980s, there existed only 0.13 rubles of goods in stock per each ruble of consumer savings.

⁸ Data from World Bank World Development Indicators.

banks for half a year at 1.33 % (if Vneshtorgbank – heavy on assets, but with low profitability – is omitted, the figure goes up to 2.5 %, an impressive number by modern standards).

Unfortunately, even though they fared better than financial alternatives, this high profitability proved to be not sustainable, as out of the top 10 banks of 1993, only four are still in operation as of 2021. Overall, more than a thousand banks went bankrupt in the mid-1990s, with assets totaling about half of the entire banking system (Gaidar, 1998; for technical analysis of the problems faced by banks, see Carree, 2003). It was not until the end of 1997 that the Russian economy appeared to normalize. The decline in GDP (which amounted to a cumulative total of 40 % from 1992 to 1996) was reversed, and both new and old enterprises were learning to operate in the context of the free market. At this time some of the current patterns of consumer banking started to take shape:

- *Preference of deposits over any other instruments of savings or investment.* In 1997, retail deposits were the single biggest source of funds for banks (USD 28 billion out of a total of USD 128 billion [Tarasevich, Grebennikova, & Leussli, 1999]), a signature feature of the Russian banking system even today;
- *Suspicion towards private banks,* which were prone to bankruptcy, a fact which led to the outstanding position of Sberbank on the market, even though it led a *de facto* confiscation of deposits performed by the state in 1990 (Spicer & Pyle, 2000; Tompson, 1998). Due to its dominant position, Sberbank could always have cheaper liquidity than any other institution on the market, giving it a substantial price advantage in lending; and
- *Preference for cash over non-cash instruments like cards,* a preference which has started to change only in very recent years.

Apart from Sberbank's inherited vast network, few other banks bothered to reach out for retail customers, generally viewing the market as non-profitable and relatively unimportant when compared to alternatives such as state treasury bonds. The bonds provided attractive returns and were seen as a low-risk investment, so virtually every bank on the market was involved.⁹ Unfortunately, they turned out to be another Ponzi scheme, the biggest one of all in Russia, as in August 1998 the state defaulted, sending the economy into deep crisis and making the banking system virtually collapse (Johnson, 2000). Some of the biggest banks never re-emerged from the crisis (Carree, 2003), while others halted operations and froze customer deposits in an effort to reorganize (Chowdhury, 2003).

Despite the carnage caused by the 1998 crisis in Russia, the economic recovery happened rather quickly, buoyed by upward movement in global markets for commodities (primarily oil), and Russia saw unexpectedly strong growth in 2000 and 2001 (Uzyakov, 2002) sustained through 2007 (Korovkin et al., 2016). By 2006, Russia returned to the level of GDP per capita of 1990; however, the ascension of Vladimir Putin and a severe aversion to continued turbulence like that seen in the 1990s meant that the Russian state began to return as a key player in the economy, including the banking industry.

Indeed, modern Russia represents a peculiar mix of market and non-market forces, with state banks dominating the financial sector in terms of assets, number of branches, share of the loan portfolio, and (in particular) trust of consumers. Re-nationalization of once-privatized assets and integrating them into new entities, state companies or *goskompanii* (operationally controlled by managers directly appointed by the state) has been a hallmark of Putin's terms in office; this process started early in Putin's presidency and was generally completed by the mid-2010s, with their share in the

economy estimated at 70 %. The financial holding of the state in these *goskompanii* may vary from 50 % + 1 share (like in the case of Sberbank and some others) to full ownership, in some cases, a substantial interest is held by foreign companies (which may also include Russians who are operating through offshore companies).

At the same time as this move of the state back into banking, an important development occurred in 2003, as the Law on Insurance of Deposits of Physical Persons was introduced. The Law created a state agency to collect obligatory insurance payments from all the retail banks (and to disburse these funds in case of bank distress). Deposits of up to 700,000 rubles per bank (approximately USD 30,000 at the time) were to be reimbursed in full, including accumulated interest (Camara & Montes-Negret, 2006; Tompson, 2004).¹⁰ The system played a vital role in reinstating the consumer confidence in banking in general, while at the same time it allowed smaller banks to compete on the market of retail deposits as they typically offered much higher interest rates. Overall, the ratio of retail deposits to GDP that dropped sharply during the first years of the market economy (under 5% in 1996) recovered steadily through 2000s and 2010s at the same time that political liberties were being vitiated, peaking at 27 % in 2016 (still significantly below 41.3 % in 1986). Even the global financial crisis, in which Russia saw a decline of approximately 8% of GDP, did not dent the increasing loans in the banking sector, again corresponding with an increase in political repression and crackdown on democracy demonstrations in 2010 and 2011 (Kara-Murza, 2013). At the same time, as Judah (2013) noted, despite seeing economic growth and as many billionaires in Moscow as in New York, Russia had approximately the same level of property rights as Kenya, a problem which even then-President Dmitry Medvedev acknowledged in 2011 (Sakwa, 2014).

Since the global financial crisis from 2007 to 2009, the Russian banking sector has been subjected to more hardships in the form of Western sanctions related to Russia's annexation of Crimea and involvement in Ukraine. In 2014 in particular, banks faced a massive withdrawal of deposits (inflation-adjusted deposits contracted by 2.5 % year on year according to data from the Central Bank of Russia [CBR]) and inflated interest rates to keep their deposit base as an essential source of liquidity. The CBR played a constructive role in protecting the banking sector, supplying banks with necessary liquidity, but the traditional reliance of banks on retail liquidity from internal markets (approximately 30 % of bank liabilities, according to the Central Bank of Russia) also played a long-term positive role, making restrictions on international borrowing relatively unimportant for the industry.

However, the economic conditions in Russia since 2014 have been reminiscent of the late Brezhnev period, in that stagnation has set in, a reality which also affected the banking sector, and the mid-2010s saw a series of failures of major private bank groups, including Promsvyazbank, Otkrytiye, and Probusinessbank (unlike the failures of the 1990s, however, the pain of these losses was mitigated due to the deposit insurance scheme, while the distressed banks were treated by the regulator as "too big to fail," in that they were not liquidated but put under the operational control of Central Bank). At the same time, the consolidation of "Imperial capitalism" under Putin led to further deterioration of property rights, as "property is not seen as an individual right, but as a privilege extended by the central political power, assigning rights to rent extraction that serve as a mechanism of self-restraint in translating economic power into political power" (Herrmann-Pillath, 2019:1503). Within this framework, consumers in Russia have continued to rely on deposits as the key instrument for saving and investment, in order

⁹ Simonov (2016) gives impressive statistics on the exposure of banks to the Treasury Bonds.

¹⁰ Savvy investors, noting that there is no limit on the total sum of personal assets under insurance, ensured greater levels of protection by splitting their assets across many banks but keeping it under the 700,000-ruble threshold.

to ensure a constant stream of liquidity, while also availing themselves of e- and m- banking and non-bank digital financial platforms (Korovkin, Plaksenkov, & Kabakova, 2015).¹¹ At the same time, Russian consumers have also seen growth in peer-to-peer financial activity performed through banks or other institutions like digital financial platforms (*Ibid.*), another way in which deposit functions can be carried out in an uncertain legal environment.

3. A theory of the institutional role of banks

3.1. Towards a theory of demand for deposits

The history of Russian consumer finance, as shown in the previous section, is one of modest gains and consumer loyalty, even through the most turbulent of political and economic transitions. But what is driving this demand for banking services? Ironically, the economics literature is oddly thin on what determines deposit demand and tends to be based more on demand for money rather than any underlying demand for financial intermediation. For example, seen from the supply side, financial institutions exist because there is a supply of surplus capital, pooled from investors or from depositors, which is chasing returns; thus, financial intermediation is only possible because there is capital that can be lent out, meaning either the success of an individual entrepreneur (the bank owner) or of the bank's clients (who have funds for savings and deposit). Without assets, banks cannot exist (Moshirian, 1994).

Other supply-side factors exist as well, however, including more political economy considerations, i.e., the reality that the financial sector has been driven historically by sovereigns, with Alessandri and Haldane (2011:169) stating that “the link between the state and the banking system has been umbilical.” As shown in the previous section, this was definitely the case in Russia, as a mixture of development financing and social welfare considerations led Tsars and Commissars alike to establish banks in pursuit of broader policy goals.¹² At the same time, in political systems with little accountability (or economic systems which have incomplete institutional mechanisms), banks often stand out as personal financing sources for elites, with specific banks supported by the sovereign and others shunned (Kryshstanovskaya & White, 2005).

Although supply-side factors are manifestly important for the existence of deposits, more familiar – and perhaps more important – explanations for the rise of bank-based finance come from the demand side. Taking a historical view, early banks in the Western world arose in response to demand for money-changing activities (Goldthwaite, 1985), with deposit accounts following this activity closely for ease of transacting and reducing the volume of transactions involved in money changing (Kashyap, Rajan, & Stein, 2002). As economic activity increased, and demand for capital by firms grew accordingly, banks began to lend as a way to provide liquidity (Diamond & Rajan, 2001) but also to complement the deposit-holding side of the business and share the cost of holding liquid assets (Kashyap et al., 2002).

While the drivers of liquidity consumption (i.e., borrowers) are apparent in understanding the depositary functions of banks, less explored are the motivations of liquidity suppliers, i.e., savers. A literature on savings behavior and the demand for deposit vehicles from the side of individual has blossomed in recent years, sup-

ported by papers such as Finger and Hesse (2009), Boadi, Li, and Lartey (2015) and Ayadi, Arbak, Naceur, and De Groen (2015); however, Yakubu and Abokor (2020:123) correctly note that “research on what factors drive deposit growth is scanty, as most studies are delved towards explaining the determinants of savings behavior.” Despite this scarcity of specific models on deposits *per se*, the consensus from the recent research done in this area is that individual bank attributes (such as bank size or efficiency, see Ünvan and Yakubu (2020)) or the banking sector taken as a whole play a role in demand, as savers are more likely to demand deposits at banks that they themselves feel are trustworthy. At the same time, there is empirical evidence (Larbi-Siaw & Lawer, 2015) that the broader macroeconomy also plays a large role in driving demand, with both global trends (including business cycles, see Finger and Hesse (2009)) and country-specific factors (monetary policy, interest rates, inflation) influencing whether or not citizens want deposit services (Yakubu & Abokor, 2020).

3.2. Banks as property rights

To these familiar demand-side factors should be added an additional thesis advanced by Rajan (1998), namely that banks are themselves a form of incipient property rights in a low-quality institutional environment (Hartwell, 2017). Banks provide many services related to institutional failings in an economy, with the first and foremost perhaps being the filling of information vacuums. As Diamond (1984:393) notes, banks have as a function the “minimum cost production of information useful for resolving incentive problems,” providing “delegated monitoring” which helps to vet potential partners but also reveals information about underlying assets involved in a transaction. Similarly, as Kohn (1999) noted, lending and payment services in their early years depended upon personal knowledge of the debtor, with reputation playing a substantial role. With the spread of commerce and trade, reputation could not be relied upon for repayment of debts (for both merchants and consumers), and thus banks allowed for the gathering of information (and overcoming of institutional deficiencies related to information dissemination) to facilitate loans to people who were strangers – but credit-worthy.

Beyond just the crucial aspect of facilitating information, banks have many other attributes which make them suitable for building the contractual foundations of property rights. Importantly, banks can offer some protection against arbitrary expropriation by the government via a myriad of channels. In the first instance, even the original money-changing functions of depositary institutions were done in order to guard against incomplete (social) contracts with the state, as incentives to debase currency and imprecise coinage meant that merchants needed a clearinghouse for sound money, relying on banks for this function (Kashyap et al., 2002). Given that bankers needed to maintain large sums of liquid assets in order to drive their business, a depositor could also be confident that his contract would be honored when the time came (Myers & Rajan, 1998), a guarantee which was unlikely to be met by a state with little accountability. From a purely practical standpoint as well, the use of deposits also introduces a middleman (with some privacy rights) into the relationship between consumer and government; put in a different way, the government must take extra steps to seize assets from the populace, introducing a transaction cost speed bump to expropriation. Finally, banks offer a hedge against higher risk via the offering of higher interest rates, an important draw in an environment which is prone to dramatic shifts in risk, and one which represents a contract for a stream of payments regardless of external conditions (i.e., the stream is unaffected, only the price changes).

With the bank as a small-scale contractual enforcement mechanism, outside of (or alongside) the purview of the state, individual

¹¹ Any financial intermediation in Russia should be licensed under the Central Bank of Russia, however lighter licensing is required for non-bank credit organization, a financial institution that does not provide lending or savings products

¹² Of course, this was not unique to Russia of the 19th century, with this idea underpinning theories of “big push” development (Rosenstein-Rodan, 1961) and the current fashion for “development banks” (Yeyati, Micco, Panizza, Detragiache, & Repetto, 2007).

consumers could enjoy the benefits of some carefully delineated property rights, even when the state did not provide a comprehensive legal framework or independent judiciary. The relationship between bank-based property rights and broader property rights would thus seem to be inverse, for the lack of broader property rights would keep consumer funds in banks, the only contract that could be counted upon. On the other hand, if broader property rights were improving throughout the country, this would offer a host of additional financial alternatives for consumers, ones which could be taken on in the longer term and which had some protections against predations of the state. In this instance, while property rights were developing in the broader economy, we should expect to see deposits decrease as attractive alternatives became “safe” for investing.

A key point to note here is that the relationship between property rights and bank deposits does *not* suggest that the increase of property rights leads to an immediate conversion of deposits into cash; this would be an interpretation which would be wholly unsupported by theory or empirical evidence. Instead, what the theoretical relationship between deposits and property rights suggests is that environments of stronger property rights allow for the conversion of cash deposits into more tangible assets which can propel economic growth, whether this be investments in fixed capital, other financial vehicles, or consumer purchases more accurately classified as longer-term investments (real estate or durable goods). The link between investment and growth has been proven repeatedly in the literature, while the literature on investment and property rights is also legion (Svensson (1998) is perhaps the most important in this regard). Thus, we would suggest here that the improvement of general property rights would lead to a withdrawal of deposits and investment in areas which can drive growth, rather than a move towards consumers suddenly hoarding cash in an environment of improved possibilities and alternative investments.

Finally, a note must be made on the relationship of this theory to the well-known school of “law and finance,” epitomized by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), which posits that institutional quality is necessary for financial development. The Rajan (1998) thesis appears to be an exact inversion of the findings of this literature, as it suggests that financial development – in the form of bank deposits – occurs *before* institutional quality improves and *instead* of institutional quality improvements, meaning that finance comes before law. However, these two views need not necessarily be mutually incompatible, especially if one considers that bank deposits are not necessarily a reliable indicator for financial sector development. To illustrate, deposits can be thought of also as credit depth within an economy, as a fractional reserve system utilizes deposits to generate credit minus reserve requirements.¹³ But just because more credit is available does not necessarily mean that a country financial sector is more developed, as merely expanding the credit available to the private sector can be the result of monetary policy, directed lending, or other supply-side phenomena unrelated to demand for finance. There is no reason why financial depth should precede an improvement in financial intermediation (this is why high levels of credit-to-GDP are often linked with financial crises (Feldkircher, 2014), and in fact, the relationship has been shown to be the other way around (Ang & McKibbin, 2007)). Thus, the link between good governance leading to improved financial intermediation may in fact be present, but the link between good governance and mere credit growth – or, in this case, increased use of bank deposits – is less clear, meaning the Rajan thesis may not only be plausible, but likely.

4. Model and estimation strategy

Based on this theoretical basis and our historical overview of Section II, it appears on the surface that Russia did indeed see a strong correlation between poor governance, poor protection of property rights, and demand for bank deposits throughout its history. In order to examine if this relationship is indeed significant statistically, in this section we attempt to fashion an econometric model of the demand for bank deposits utilizing monthly data on post-Soviet Russia.

The model we fashion here is based explicitly on papers such as Finger and Hesse (2009), Boadi et al. (2015), and Ayadi et al. (2015), all of whom examine demand for deposits in an emerging market context (and provide some evidence for the relationship between deposits and property rights). Based on this work and our own theories of the effect of property rights on deposits as shown above, the basic model can be shown as:

$$Y_t = \alpha PropertyRights_t + \beta MacroFactors_t + \rho Institutions_t + \delta BankFactor_t + \gamma GlobalFactors_{t-1} + \varepsilon_t \quad (1)$$

Where Y is defined here as the percentage of bank deposits to M2 in a particular month. In this metric, all deposits held in financial institutions are considered, both consumer and businesses, and encompasses transferable (i.e. checkable, savings, and money market deposit accounts, part of M1) and timed household deposits in rubles (added to M1 to make up M2), as well as transferable and other deposits from non-financial organizations and financial institutions (excepting credit institutions), also in rubles; in reality, this number is obtained by subtracting out M0 (currency in circulation) from M2. In addition, as noted below, we also perform a robustness check replacing Y with the (log) percentage of consumer retail deposits to tease out consumer-specific effects and any aggregation issues which come from using monetary aggregates.¹⁴

The right-hand side of Eq. 1 contains our variable of interest, Property Rights, proxied by two indicators in the case of Russia. Each metric of property rights captures a slightly different aspect of the broader phenomenon of property rights, whether it be right to dispose/transfer of property without threat of government intervention, the overall framework for property governance, or the ability of the state to extract rents in the absence of effective rights. This paper is not the place to explore all facets of property rights (see Demsetz (1966) or, more recently, Furubotn and Richter (2010)), but these two indicators have been chosen to give a more complete look of the myriad of rights encapsulated in broader property rights (the month-on-month changes in these rights are shown in Fig. 3):

- First, in order to obtain the longest time series, we use the International Country Risk Guide (ICRG) “political risk rating” (PRR) indicator. This indicator has the benefit of capturing corruption as well as a much more comprehensive set of variables related to governance, including bureaucratic quality, democratic accountability, government stability, and conflict. More so than a mere focus on corruption alone, the PRR index provides an overall view of governance in Russia, as well as capturing other mechanisms by

¹⁴ A valid concern here is that Russian households, especially in the early years of transition, might have held a non-trivial amount of deposits in foreign currency, something which would not have shown up in M monetary aggregates. However, such a reality does not alter the basic premise here, as it can be conjectured that flights to dollarization would likely occur during times where property rights are abysmal, such that even banks cannot provide a minimum level of contractual protection. When property rights were high, on the other hand, foreign currency deposits would also likely be low; thus, the presence of foreign deposits may affect the overall magnitude of the relationship between domestic deposits and property rights, they will in no way affect the direction of the relationship between the two.

¹³ Thanks to an anonymous referee for suggesting this argument.

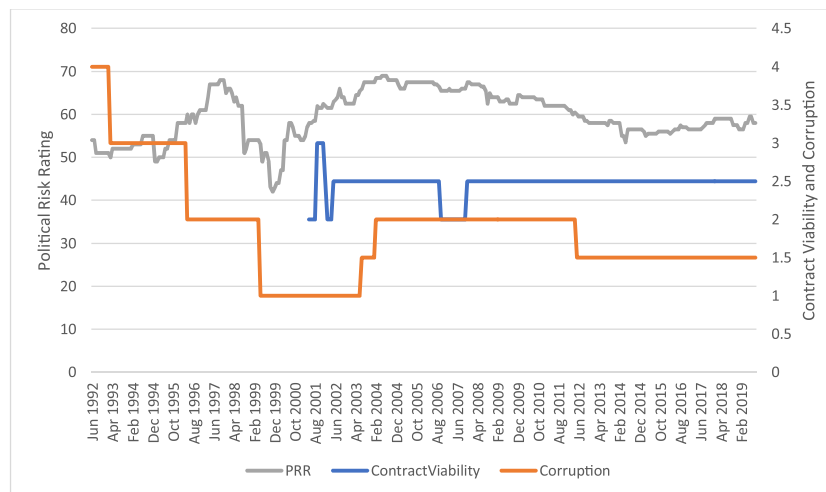


Fig. 3. – Property Rights Indicators in Russia, 1992-2019.

Source: ICRG.

which property rights might be affected. Higher values of the PRR variable mean less political risk, and this indicator has extensive variability across the time period shown here (Fig. 3).

- Secondly, and much more specifically related to property rights, is the ICRG “contract viability/expropriation” measure. This rating, a sub-component of the country’s overall “investor profile” score, measures the strength of contractual enforcement and the likelihood of expropriation by official authorities. The interpretation of this variable is easier than the other ICRG measure, as higher values of contract viability correspond with more property rights protection. Although this is the most targeted of the indicators which we use to proxy for property rights, it has the shortest time series and perhaps the least variability, which is why it is used as the second variable in this list.

Alongside these property rights variables are a complement of controls derived from the literature and economic theory, broken out into macroeconomic, institutional banking sector, and global factors. Under macroeconomic factors, we have included (following Finger & Hesse, 2009) industrial production (as a measure of the health of the economy), interest rates, registered unemployment, stock market returns (as a proxy for substitute financial instruments), inflation measured as change month-on-month (to proxy for dollarization, not insubstantial in Russia in the 1990s), and USD/ruble exchange rates; we anticipate industrial production and interest rates to be positively correlated with bank deposit demand, while unemployment, stock market returns, inflation, and exchange rates should be negatively correlated. Under institutional factors, we include a novel measure of trust in government, using the Levada.ru poll of government approval; in this way, we incorporate the thesis of Spicer and Okhmatovskiy (2015), who show that bank deposits are related to trust in the government, albeit this is not necessarily a function of property rights.¹⁵ In addition, to gather overall economic sentiment, we use the Business Trust Survey published by the Russian Statistical Service, a proxy for trust in the entire Russian institutional matrix, on the theory that it perhaps is this overall trust and/or improved broader institutional quality driving the use of banks rather than the property rights function of

¹⁵ This metric captures the percentage of the populace polled which expresses approval in the way in which the government is working. The purpose of this variable is to strip out short-term policy opinions (i.e. is this particular policy of the government good for Russia?) from longer-term institutional effects (i.e. are property rights increasing or decreasing?).

deposits. Given that the government trust indicator starts only in 2000, we utilize this in a separate regression to account for the loss of observations,

In line with the extant literature (Ünvan & Yakubu, 2020), we also use bank-specific factors, to examine if the health of the banking sector itself was responsible for the increase in deposits. As bank-specific information on Russia is scarce even before 2004,¹⁶ we have amassed a metric of concentration, namely the assets per bank for the banks which hold 80 % of all assets in the entire sector. We would anticipate that higher levels of concentration, reflected in more assets per bank, would likely signal lower bank efficiency due to the elimination of competition (Delis & Papanikolaou, 2009), and thus less deposits being held in the sector.¹⁷ Finally, we also include global variables to proxy for global economic conditions (as well as the availability of alternatives to keeping one’s money in Russia): this includes both returns on the Dow Jones Industrial Average for the previous month (on the theory that global conditions will take some time to reach Russia) and the VIX volatility index, also for the previous month. The VIX index also performs a valuable measure here in capturing risk for the entire banking sector, as high levels of global volatility are likely to manifest themselves in riskiness for Russian banks.

The data used for this examination is, as noted, monthly data for the Russian Federation, with sources for each variable is shown in Table 1, while summary statistics are shown in Table 2. The entire dataset covers June 1992 to December 2019 but, due to the unavailability of some specific variables in the early years of independent Russia, in practice the data coverage is (depending upon the variables included) either from February 1995, February 1997, or June 2001 (this is noted in the analysis below). Given the fact that the data covers many institutional shifts which may have occurred over a month’s time, the independent variables are measured contemporaneously with the dependent variable, with only global factors

¹⁶ Suggestions from an anonymous reviewer and from the literature included share of foreign bank ownership, state versus privately owned banks, or the effect of regulatory changes (in Russia possibly captured by the EBRD banking reform index). Unfortunately, foreign bank ownership was a difficult series to come by and is only available on an annual basis (see Appendix), state and privately owned banks suffered the same issue, and regulatory changes proxied by the EBRD index only run through 2010 and also were just available annually. More on this topic is in the Appendix.

¹⁷ Similar to the government approval metric, the concentration metric is only available back to 2000, and so regressions are used both using and setting aside this metric in order to capture additional observations.

Table 1
Data and Sources.

Variable	Description	Source	Availability
Assets of Top Banks	Log of the average assets per bank held by banks which hold 80 % of all assets in the Russian banking sector.	Author's calculations from Central Bank of Russia data, linearly interpolated from quarterly data from 2000–2009	Dec 2000 – Dec 2019
Business Survey for Manufacturing	Percent change in the Confidence Indicator of the Business Survey, month-on-month. Confidence indicator calculated as average of assessments of actual levels of demand, stocks of finished products, and change in output expected in the next 3 months	Russian Statistical Service	Oct 1992 – Dec 2019
Contract Viability	Risk rating for contract viability, coded from 0 to 6, with higher values indicating higher property rights/contract enforcement	ICRG	June 1992 – Sept 2019
Deposits to M2	Percentage of total M2 comprised of bank deposits, calculated as total M2 less currency held by households as a proportion of M2	Author's calculations from Central Bank of Russia data	Dec 1992 – Dec 2019
Dow Jones Returns	Log returns calculated from end of month Dow Jones Industrial Average level, $\ln(P_t/P_{t-1})$	Author's calculations from Bloomberg	June 1992 – Dec 2019
Exchange Rate	Monthly average of daily exchange rates from RUB to USD.	IMF International Financial Statistics	June 1992 – Dec 2019
Government Approval	Percentage of polled answering in the affirmative to the question, "Do you generally approve or disapprove of the government of Russia?"	Levada.ru	Jan 2000 – Dec 2019
Immediate Interest Rates	Immediate interest rates, less than 24 h: Central Bank Rates for the Russian Federation	Central Bank of Russia	Jan 1995 – Dec 2019
Industrial Production	Industrial production index, 2015 = 100, seasonally adjusted	St. Louis FRED	Jan 1993 – Dec 2019
Inflation	Month-on-month change in the CPI, in percent	St. Louis FRED	July 1992 – Dec 2019
Political Risk Rating	Overall political risk rating for a country, encompassing government stability, bureaucratic quality, socioeconomic conditions, property rights, internal/external conflict, law and order, and ethnic and religious tensions. Coded from 0 to 100, with higher values reflecting less political risk.	ICRG	June 1992 – Sept 2019
Registered Unemployed Rate	Percent of the labour force registered as unemployed, seasonally adjusted	St. Louis FRED	June 1992 – Dec 2019
Stock market returns	$\log(P_t/P_{t-1})$ of MICEX/MOEX Index, where P_t is index at time t and P_{t-1} is the index the month prior.	MICEX Website and Bloomberg	Sept 1997 – Dec 2019
VIX	CBOE VIX indicator, shown here in levels.	St. Louis FRED	June 1992 – Dec 2019

Table 2
Summary Statistics.

	Business Survey	Contract Viability	Deposits to M2	Dow Jones Returns	Exchange Rate	Government Approval	Immediate Interest Rates	Industrial Production
Mean	0.02	2.46	0.7	0.01	30.45	45.37	27.08	82.34
Median	0.012	2.50	0.7	0.01	29.03	44.5	11.5	83.90
Maximum	2.022	3.00	0.81	0.10	75.17	66.00	200.00	110.91
Minimum	-2.131	2.00	0.57	-0.16	0.10	25.00	5.25	49.94
Std. Dev.	0.455	0.16	0.07	0.04	19.07	8.86	39.87	17.42
Skewness	-0.358	-1.492	0.127	-0.866	0.435	0.154	2.982	-0.093
Kurtosis	8.348	8.515	1.615	4.838	2.647	2.364	11.552	1.601
n	329	221	327	333	325	228	301	324
	Inflation Change	Log of Total Assets Per Bank	Political Risk Rating	Registered Unemployment Rate	Stock Market Returns	VIX		
Mean	0.025	15.258	59.64	1.88	0.0008	19.15		
Median	0.008	14.792	59.00	1.85	0.0006	17.06		
Maximum	0.325	19.073	69.00	3.68	0.0356	59.89		
Minimum	-0.005	12.248	42.00	0.28	-0.0371	9.51		
Std. Dev.	0.048	2.002	5.70	0.73	0.0062	7.55		
Skewness	3.217	0.357	-0.341	0.377	0.5195	1.767		
Kurtosis	13.669	1.713	2.624	2.365	15.1298	7.668		
n	332	231	328	332	294	331		

lagged to incorporate the time needed for Russian markets (and consumers) to absorb global economic changes.

A key attribute of the monthly data utilized here is that there is strong evidence of non-stationarity across variables, based on a panoply of commonly utilized unit root tests. As Table 3 shows, this is especially evident in the deposit data, many of the macroeconomic variables, and in one of the two property rights variables

(the global data was unaffected).¹⁸ As we are interested in the correlation across levels rather than rates of change, in order to cope with this non-stationarity we examine if there is the presence of

¹⁸ All non-stationary variables were found to be stationary at first differencing, making them I(1). Results not shown here for reasons of space.

Table 3
Results of Unit Root Tests.

	Business Survey	Contract Viability	Deposits to M2	Dow Jones Returns	Exchange Rate	Government Approval	Immediate Interest Rates	Industrial Production
<i>Null of unit root</i>								
ADF	-7.53***	-5.39***	-2.90	-17.35***	-2.41	-2.45	-4.99***	-5.55***
DF-GLS	-2.72*	-3.29**	-1.28	-3.68***	-2.44	-2.46	-1.19	-1.13
PP	-6.13***	-5.37***	-5.38***	-17.33***	-1.95	-3.09	-4.43***	-3.73**
ERS	4.92**	5.69*	67.45	0.96***	4.35**	7.71	111.17	60.49
<i>Null of stationarity</i>								
KPSS	0.02***	0.08	0.38***	0.08	0.21**	0.20**	0.30***	0.21**
Advantage	Stationary	Stationary	Non-stationary	Stationary	Non-stationary	Non-stationary	Non-stationary	Non-stationary
	Inflation Change	Log of Total Assets Per Bank	Political Risk Rating	Registered Unemployment Rate	Stock Market Returns	VIX		
<i>Null of unit root</i>								
ADF	-3.53**	-1.77	-2.07	-3.56**	-7.53***	-3.88**		
DF-GLS	-3.26**	-1.83	-1.91	-1.40	-6.91***	-2.53		
PP	-5.83***	-1.74	-2.23	-3.26*	-14.77***	-4.99***		
ERS	4.59**	12.79	12.58	19.65	0.04***	2.28***		
<i>Null of stationarity</i>								
KPSS	0.29***	0.31***	0.31***	0.17**	0.22***	0.18**		
Advantage	Stationary	Non-stationary	Non-stationary	Non-stationary	Stationary	Stationary		

Note: ADF – Augmented Dickey Fuller; DF-GLS – Dickey Fuller–Generalized Least Squares; PP – Philips Perron; ERS – Elliot, Rothenberg, and Stock Point Optimal Test; KPSS – Kwiatkowski, Phillips, Schmidt, and Shin Test. All tests performed with a trend and intercept, lag length chosen by Akaike Information Criterion (spectral estimation, where applicable, done by Barnett kernel and Newey-West bandwidth). In the case of conflicting results, the determination of stationarity went by majority rules. All non-stationary variables were found stationary at first differencing (results not shown here). *, **, *** denote significance at 10 %, 5%, and 1% levels respectively.

Table 4
Summary Results of Johansen Cointegration Test.

Data Trend:	None	None	Linear	Linear	Quadratic
Test Type	No Intercept	Intercept	Intercept	Intercept	Intercept
	No Trend	No Trend	No Trend	Trend	Trend
Trace test	3	5	4	4	6
Max-Eigenvalue test	1	2	2	1	2

Note: Table shows the number of significant (0.05 level) cointegrating relations by model. Lag length set at 3, chosen from an unrestricted VAR.

cointegration among the variables, accomplished via the [Johansen \(1991\)](#) cointegration test. Summary results of this test across the entire set of explanatory and dependent variables is shown in [Table 4](#), including (and excluding) an intercept, a linear trend, and a quadratic trend in the cointegration equation; as shown in the Table, it appears that there are from 1 to 6 cointegrating equations at the 0.05 level, depending upon which specification is utilized. Given that the most restrictive assumptions, including linear and quadratic trends and intercepts, settle upon 6 equations (for 8 variables) under the trace statistic and 2 for the max eigenvalue test, we may assume that there are at least two stable, long-term relationships among our variables; this confirmation allows for the use of cointegration techniques to understand the drivers of the deposit data (similar to [Larbi-Siaw and Lawer \(2015\)](#)).

In particular, as we are interested in a more economic approach (i.e., understanding the economic drivers rather than merely atheoretical relationships as captured in a vector error correction model), we are able to utilize cointegrating regressions, in particular the fully-modified OLS (FMOLS) model of [Phillips and Hansen \(1990\)](#), the Dynamic OLS model of [Stock and Watson \(1993\)](#), and the Canonical Cointegrating Regression (CCR) of [Park \(1992\)](#). Each of these models has a different approach to dealing with the non-stationary nature of the data: in the first instance, FMOLS is “a semi parametric correction for the problem of long run correlation among cointegrating equation and stochastic regressors innovations” which employs correction vectors to the data to remove both endogeneity and serial correlation ([Abdullah, Siddiqua, & Huque, 2017:4](#)). On the other hand, the CCR approach is similar to FMOLS but involves a transformation of the underlying data in order to remove the long run dependence between the stochastic innovations and the

cointegrating equation, eliminating any endogeneity between the two. As the last of the three, DOLS uses a method which augments the cointegrating regression with both lags and leads of the independent variables (chosen, in this model, by Akaike Information Criterion), so that the resulting error term of the cointegrating equation is orthogonal to all of the stochastic regressor innovations encapsulated in the system. While DOLS is often presumed superior to FMOLS and CCR due to its integration of lags and leads, it is sensitive to the number of lags/leads chosen, especially when the time-series dimension is large relative to any cross-sectional dimension ([Buch, 2004](#)), which is undoubtedly the case here (with *t* of approximately 200 and only one cross-section, Russia). Given these differing approaches to the data, we utilize all three methods in order to provide a fuller picture of the relationship between deposits and property rights.

5. Results

The results of these three cointegrating regressions across the two property rights variables and the three various estimators are shown in [Tables 5](#) through 8. A quick glance at the tables taken together shows that, across all specifications and property rights proxies, our basic thesis is validated: bank deposits and formal property rights protection move in opposite direction in Russia in the post-Soviet period. For the political risk rating regressions ([Table 5](#)), there is a remarkable consistency across specifications, where a lessening of political risk by one point (i.e., an increase in the PRR) leads to between a 0.2 % and 0.3 % drop in total deposits. Given that the PRR is tabulated to 100, a 50 % lessening of Russia’s political risk rating would thus correspond to an approximately 10

Table 5
Results of Cointegrating Regressions, Deposits/M2 as a function of Property Rights (Political Risk).

	1 FMOLS	2 FMOLS	3 FMOLS	4 DOLS	5 DOLS	6 DOLS	7 CCR	8 CCR	9 CCR
Political Risk Rating	−0.002 4.71***	−0.002 4.91***	−0.003 11.08***	−0.002 4.23***	−0.003 6.04***	−0.003 6.57***	−0.002 4.44***	−0.002 5.18***	−0.003 10.47***
Overnight deposit rate	−0.0002 3.44***	0.0005 0.08	0.0003 0.05	0.002 2.71***	0.001 1.08	0.001 0.86	0.0002 2.93***	0.0003 0.38	0.0005 0.07
Industrial Production Index	0.001 2.27**	0.001 4.18***	0.002 8.64***	0.001 2.19**	0.002 4.75***	0.002 6.88***	0.001 2.21**	0.001 4.07***	0.002 7.68***
Registered Unemployed	0.004 0.90	0.002 0.69	0.01 5.44***	0.0003 0.06	0.004 1.13	0.008 2.40**	0.004 0.75	0.004 1.21	0.01 5.30***
USD/RUB Exchange Rate	−0.0004 2.60***	−0.0003 3.31***	0.0004 0.39	−0.0004 2.77***	−0.0002 2.20**	−0.0003 0.29	−0.0005 2.42***	−0.0003 2.96***	0.0002 0.20
Lag of Dow Jones Returns	0.03 0.75	0.02 0.98	0.001 0.89	0.12 1.26	0.13 2.06**	0.06 1.25	0.07 1.07	0.02 0.61	0.02 0.75
Lag of VIX	0.0001 0.53	0.0002 1.33	−0.0002 1.86*	0.0003 1.23	0.0005 3.03***	0.0001 0.73	0.0002 0.80	0.0002 1.54	−0.002 1.66*
Stock Market Returns	−0.31 1.37	−0.12 1.04	0.01 0.15	−0.66 2.22**	−0.14 0.84	0.02 0.13	−0.48 1.52	−0.20 1.21	0.006 0.06
CPI M-o-M Change	−0.31 4.43***	0.39 2.81***	0.09 0.92	−0.76 4.28***	0.17 0.94	0.05 0.30	−0.26 2.26**	0.54 3.17***	0.11 0.97
Business Survey Rating	−0.01 2.09**	0.006 2.50**	0.0005 0.28	−0.01 2.26**	−0.0008 0.21	0.00 1.35	−0.01 1.96*	0.006 2.27**	0.0005 0.29
Government Approval Rating		0.0006 4.43***	0.0001 1.14		0.0003 1.81*	0.0002 1.09		0.0005 3.86***	0.0001 1.09
Log of Assets per Top Banks			−0.004 7.66***			−0.003 3.48***			−0.003 7.23***
C	0.62 23.50***	0.57 33.45***	0.75 39.57***	0.62 23.12***	0.60 27.91***	0.68 23.97***	0.62 22.40***	0.57 32.29***	0.74 37.30***
n	272	236	225	270	234	223	272	236	225
Adjusted R-squared	0.95	0.98	0.99	0.97	0.99	0.99	0.95	0.98	0.99
Cointegrating deterministics	trend	trend	trend	trend	trend	trend	trend	trend	trend

Note: Absolute value of t-stats shown under coefficients, *, **, *** denote significance at 10 %, 5%, and 1% levels respectively. FMOLS – fully-modified OLS, DOLS – dynamic OLS, and CCR – canonical cointegrating regression. FMOLS and CCR long run covariance errors pre-whitened using Bartlett kernel and Newey-West bandwidth with lag specification chosen by AIC; DOLS uses HAC consistent standard errors and lag length chosen by AIC. Cointegrating deterministics chosen by general to specific method.

Table 6
Results of Cointegrating Regressions, Deposits/M2 as a function of Property Rights (Contract Viability).

	1 FMOLS	2 FMOLS	3 FMOLS	4 DOLS	5 DOLS	6 DOLS	7 CCR	8 CCR	9 CCR
Contract viability	−0.03 5.56***	−0.03 5.20***	−0.02 3.65***	−0.02 2.77***	−0.02 2.80***	−0.01 3.22***	−0.03 5.32***	−0.03 5.06***	−0.02 3.45***
Overnight deposit rate	0.0030 3.12***	0.0020 1.99**	0.001 1.65	0.003 3.00***	0.002 2.43**	0.002 2.39**	0.002 2.72***	0.001 1.57	0.001 1.45
Industrial Production Index	−0.0001 0.19	−0.0002 0.09	0.000003 0.02	0.0003 0.89	0.0003 0.85	0.00005 0.26	0.0005 0.09	..0004 0.08	−0.001 0.26
Registered Unemployed	−0.01 4.78***	−0.01 4.30***	−0.01 4.49***	−0.01 4.48***	−0.01 3.91***	−0.01 3.84***	−0.01 5.01***	−0.01 4.28***	−0.01 4.32***
USD/RUB Exchange Rate	−0.0002 0.97	−0.0002 1.02	0.0001 0.92	−0.0001 0.83	−0.0001 0.85	0.0001 0.62	−0.002 1.10	−0.0002 1.00	0.0001 0.93
Lag of Dow Jones Returns	0.06 2.47**	0.05 2.19**	0.02 1.08	0.07 1.12	0.07 1.19	0.03 0.72	0.09 2.32**	0.08 2.05**	0.03 0.71
Lag of VIX	0.0003 2.14**	0.0002 1.30	−0.0002 1.62	0.0005 2.98***	0.0004 2.04**	0.00004 0.28	0.0003 2.18**	0.0002 1.41	−0.0002 1.22
Stock Market Returns	−0.01 0.11	−0.007 0.06	0.002 0.02	−0.02 0.13	−0.04 0.23	−0.03 0.27	−0.05 0.28	−0.04 0.23	0.001 0.01
CPI M-o-M Change	0.13 0.83	0.10 0.71	0.11 0.83	0.30 1.30	0.22 1.00	0.05 0.27	0.23 1.22	0.16 0.88	0.17 0.98
Business Survey Rating	0.006 2.12**	0.006 2.35**	0.004 1.89*	0.00 0.43	−0.0030 0.59	0.00 0.24	0.005 1.58	0.005 1.88*	0.004 1.62
Government Approval Rating		0.0003 2.51**	0.0001 0.41		0.0002 1.06	0.0001 0.57		0.0004 2.61***	0.0005 0.31
Log of Assets per Top Banks			−0.004 4.97***			0.003 3.84***			−0.004 4.59***
C	0.53 22.42***	0.53 23.59***	0.61 22.10***	0.49 21.40***	0.50 22.27***	0.57 22.27***	0.53 21.27***	0.53 22.36***	0.60 20.95***
n	220	220	220	218	218	219	220	220	220
Adjusted R-squared	0.98	0.98	0.99	0.99	0.99	0.99	0.98	0.98	0.98
Cointegrating deterministics						Trend and trend ²			

Note: Absolute value of t-stats shown under coefficients, *, **, *** denote significance at 10 %, 5%, and 1% levels respectively. FMOLS – fully-modified OLS, DOLS – dynamic OLS, and CCR – canonical cointegrating regression. FMOLS and CCR long run covariance errors pre-whitened using Bartlett kernel and Newey-West bandwidth with lag specification chosen by AIC; DOLS uses HAC consistent standard errors and lag length chosen by AIC. Cointegrating deterministics chosen by general to specific method.

Table 7
Results of Cointegrating Regressions, Log of Consumer Deposits as a function of Property Rights (Political Risk).

	1 FMOLS	2 FMOLS	3 FMOLS	4 DOLS	5 DOLS	6 DOLS	7 CCR	8 CCR	9 CCR
Political Risk Rating	−0.01 3.36***	−0.04 8.82***	−0.01 2.76***	−0.01 2.53**	−0.01 2.16**	−0.02 2.59***	−0.01 2.43**	−0.01 2.68***	−0.02 3.91***
Overnight deposit rate	0.0800 9.70***	−0.0050 0.43	0.0100 1.54	0.010 1.69*	0.007 0.54	0.005 0.46	0.0200 2.09**	0.0200 1.45	0.0200 2.40**
Industrial Production Index	0.05 13.68***	0.05 14.85***	0.04 11.69***	0.02 2.33**	0.01 2.55**	0.02 3.50***	0.02 4.54***	0.02 5.63***	0.03 8.32***
Registered Unemployed	−0.06 1.41	−0.15 3.29***	−0.31 7.62***	−0.11 1.86*	−0.09 1.59	−0.05 0.87	−0.11 2.38**	−0.07 1.54	−0.09 2.17**
USD/RUB Exchange Rate	0.0004 0.21	0.02 8.41***	0.01 6.96***	−0.001 0.72	−0.001 0.59	0.002 1.08	−0.0005 0.26	−0.002 0.82	0.002 1.20
Lag of Dow Jones Returns	−1.98 7.14***	−0.54 2.04**	2.05 9.98***	0.71 3.76***	0.70 3.04***	0.60 3.21***	0.64 2.41**	0.70 2.26**	2.31 13.12***
Lag of VIX	0.02 10.60***	0.03 14.32***	0.03 18.26***	0.01 5.06***	0.01 4.00***	0.008 4.09***	0.01 7.86***	0.01 7.40***	0.01 9.58***
Stock Market Returns	25.61 15.24***	21.51 13.67***	10.08 8.58***	−0.40 0.98	−0.42 0.96	−0.31 0.84	2.70 1.35	0.51 0.27	2.32 1.71*
CPI M-o-M Change	−47.53 26.48***	−47.57 26.18***	−26.86 19.02***	−2.27 1.25	2.46 1.26	−3.46 1.92*	−3.09 1.94*	−2.86 1.87*	−6.48 4.54***
Business Survey Rating	−0.009 0.25	0.04 1.08	0.10 4.08***	0.10 2.80***	0.10 2.57***	0.09 3.13***	0.11 2.84***	0.15 3.98***	0.13 4.67***
Government Approval Rating		−0.01 6.52***	−0.02 11.14***		0.003 1.02	0.0002 0.10		0.003 1.63	−0.003 2.16**
Log of Assets per Top Banks			−0.08 10.11***			−0.050 3.57***			−0.03 3.72***
C	7.74 34.53***	7.59 32.88***	9.14 28.06***	8.05 25.00***	8.11 24.10***	9.55 33.93***	7.79 34.83***	7.96 34.82***	8.80 26.54***
n	206	201	190	206	202	191	206	201	190
Adjusted R-squared	0.94	0.94	0.96	0.99	0.99	0.99	0.99	0.99	0.98
Cointegrating deterministics	trend and trend ²								

Note: Absolute value of t-stats shown under coefficients, *, **, *** denote significance at 10 %, 5%, and 1% levels respectively. FMOLS – fully-modified OLS, DOLS – dynamic OLS, and CCR – canonical cointegrating regression. FMOLS and CCR long run covariance errors pre-whitened using Bartlett kernel and Newey-West bandwidth with lag specification chosen by AIC; DOLS uses HAC consistent standard errors and lag length chosen by AIC. Cointegrating deterministics chosen by general to specific method.

% drop in its deposits to M2 ratio. Similarly, for contract viability (Table 6), there is once again consistency across the magnitude of the effects, with each increase (improvement) in property rights leading to a 2–3% decline in overall bank deposits to M2. This result remains statistically significant at the 1% level for each of the regressions (FMOLS, DOLS, and CCR) and with the inclusion of several additional control variables (as noted above) for robustness.

At the same time, control variables behave as expected, although the main drivers of bank deposits apart from property rights appear to be only deposit interest rates (perhaps not surprisingly), unemployment, the exchange rate, and bank concentration (which enters the model negatively). In the contract viability regressions, the exchange rate and interest rates lose significance, with unemployment and bank concentration once again leading the way in determining savings behavior. In any event, however, the relationship between property rights and bank deposits appears to confirm our hypothesis, namely that bank deposits are an effective contractual relationship when no other such relationships exist in the economic or political institutional system.

As noted above, as a robustness test, we change our Y variable from all deposits as a percentage of M2 to those originating from consumers only. This may have the added benefit of removing political connections or firm-specific attributes from the overall set of deposits kept in financial institutions, leaving only household determination of the strength of property rights in the country as important. The results of this robustness test are shown in both Tables 7 and 8, and the regressions support the results found in our examination of all deposits: property rights are negatively correlated with bank deposits and are statistically significant, no matter which proxy for property rights is chosen. As with the total deposit regressions from Table 5, the political risk rating is somewhat less robust for consumer deposits, showing a negative correlation in the DOLS regressions with the longest time series but only significant

at the 5% level, while at the shorter time series (i.e., those including the bank concentration variable) it retains strong significance: for example, in the CCR regression (Column 9), a diminution of political risk (i.e. a rise in the PRR indicator) is associated with an decrease of 2% in consumer deposits. The relatively weaker performance of PRR could show that the broader political risk concept is less important for households than it is for businesses, but more likely shows that, in the earlier years of the transition, business behavior was what is really driving the results shown in the total deposits regressions and it only shifted to consumers in later years (i.e., post financial crisis of 1998).

Moving to our final proxy for (and perhaps most directly related measure of) property rights, contract viability, we see the strongest relationship yet between bank deposits and property rights, as the magnitude of the correlation for households is almost 32 times higher than for businesses and households pooled together. Statistically significant far beyond the 1% level, the effects of an increase in property rights leads to a decline of between 24 % and 64 % in consumer deposits, showing impressive evidence of the possibility of bank deposits in Russia being utilized as a substitute for broader property rights.

6. Conclusions

The relationship between financial sector development and overall development has become an established part of the growth literature, but a lesser explored facet of financial sector development is the dynamics which are occurring and driving the development of specific financial institutions. This paper examined the determinants of bank deposits in post-Soviet Russia as a function of property rights, theorizing that the lack of broad-based property rights made bank deposits an attractive alternative as a contracting mechanism. Using cointegration regressions on a new

Table 8
Results of Cointegrating Regressions, Log of Consumer Deposits as a function of Property Rights (Contract Viability).

	1 FMOLS	2 FMOLS	3 FMOLS	4 DOLS	5 DOLS	6 DOLS	7 CCR	8 CCR	9 CCR
Contract Viability	-0.32 4.66***	-0.33 4.54***	-0.30 4.94***	-0.49 2.85***	-0.64 3.49***	-0.25 4.29***	-0.31 4.78***	-0.23 3.64***	-0.29 5.53***
Overnight deposit rate	0.02 1.71*	0.005 0.42	0.004 0.43	0.030 1.38	0.02 0.71	0.007 0.86	0.03 3.13***	0.01 1.42	0.01 1.21
Industrial Production Index	0.009 2.55**	0.008 2.27**	0.007 2.39**	0.01 2.02**	0.01 1.76*	0.007 3.23***	0.01 3.24***	0.008 2.45**	0.01 5.53***
Registered Unemployed	-0.13 3.37***	-0.11 2.78***	-0.12 3.60***	-0.23 2.91***	-0.27 2.91***	-0.15 4.40***	-0.17 5.24***	-0.17 5.11***	-0.18 6.63***
USD/RUB Exchange Rate	-0.002 1.12	-0.002 1.05	0.0008 0.38	-0.003 0.95	-0.004 1.12	0.002 1.07	0.003 1.51	-0.003 1.62	0.001 0.79
Lag of Dow Jones Returns	0.73 2.57**	0.80 2.66***	0.68 2.74***	1.04 0.81	1.78 1.08	0.66 3.24***	0.54 3.16***	1.36 6.17***	1.95 10.89***
Lag of VIX	0.01 6.43***	0.01 2.52***	0.008 4.27***	0.02 4.12***	0.02 3.74***	0.008 4.22***	0.01 9.66***	0.01 9.49***	0.02 10.60***
Stock Market Returns	-0.07 0.04	-0.32 0.19	-0.33 0.24	-1.02 0.46	-3.76 1.39	-0.60 1.62	0.51 0.28	8.50 5.64***	7.56 5.95***
CPI M-o-M Change	-1.03 0.52	-1.24 0.60	-1.90 1.11	-2.22 0.36	-1.00 0.21	-2.72 1.51	-3.21 2.07**	0.90 0.64	-0.23 0.24
Business Survey Rating	0.08 2.42**	0.09 2.56**	0.08 2.80***	0.17 1.44	0.2300 1.32	0.10 4.74***	0.12 3.37***	0.09 2.59**	0.12 4.28***
Government Approval Rating		0.006 2.77***	0.002 1.30		0.0050 1.64	0.0010 0.51		0.001 0.74	-0.003 2.30**
Log of Assets per Top Banks			-0.05 4.62***			-0.050 5.05***			-0.03 3.65***
C	8.38 26.72***	8.50 25.58***	9.65 25.70***	8.80 16.75***	9.27 12.17***	9.44 41.70***	8.25 17.31***	8.05 28.90***	8.49 26.10***
n	185	185	185	183	182	186	185	185	185
Adjusted R-squared	0.98	0.98	0.99	0.98	0.99	0.99	0.98	0.98	0.98
Cointegrating deterministics	trend and trend ²								

Note: Absolute value of t-stats shown under coefficients, *, **, *** denote significance at 10 %, 5%, and 1% levels respectively. FMOLS – fully-modified OLS, DOLS – dynamic OLS, and CCR – canonical cointegrating regression. FMOLS and CCR long run covariance errors pre-whitened using Bartlett kernel and Newey-West bandwidth with lag specification chosen by AIC; DOLS uses HAC consistent standard errors and lag length chosen by AIC. Cointegrating deterministics chosen by general to specific method.

monthly database of Russian data, we found that this was indeed the case: for every proxy for property rights and every indicator of banking sector deposits, there was a stark negative relationship between property rights and deposits. For each increase in property rights, Russians went away from the banking sector but – more frequently the case – every diminution of property rights resulted in increases in deposits between 2% and (for consumers) a lower bound of 24 %.

As noted above, the incorrect interpretation of our results is that we are explaining the negative of the share of cash in the ruble money supply, i.e., that we are simply showing how better property rights leads consumers to convert their deposits into cash.¹⁹ While there may be an intermediate step of conversion into cash, what we have shown is in fact more simple and in line with the extant literature on the link between property rights and investment, namely that better property rights allows for alternative uses of money, uses with a longer time-horizon and more benefits for the overall economy. In this sense, our results show higher frequency responses than are normally seen in consumer behavior, a direct consequence of the rapidly changing environment which was Russia of the 1990s.

We believe that the key driver of this behavior, as was shown in our historical overview, has been the experience of Russian consumers under all facets of authoritarian governance. In reality, not only has banking provided a safe haven for rights in an environment of uncertain property rights, but it has also fulfilled this role for hundreds of years, even during the darkest days of communism. As noted in the introduction, the paradox of Russia's institutional development is that it had a strong financial sector even in Tsarist

times, perhaps precisely to act as a safety valve and provide rights so that the sovereign did not have to.

Extensions to this work are legion, especially given that the literature on determinants of bank deposits remains so thin on the ground. In the first instance, this single-country study could be expanded to other transition and emerging market economies, which shared an experience of rapid institutional change, to see if property rights and demand deposits correlate as well as they do in Russia. A more nuanced approach using microeconomic bank data could also prove useful, to see if bank-specific attributes played a role in this broader macroeconomic shift. Beyond a move from time-series to panel data, it would also be interesting to draw out the channels of influence even further, to see how bank deposits-as-contracting-mechanisms in place of formal property rights affects overall growth; that is, do bank-based rights substitute in some way for formal property rights in driving growth? Can we tease out the linkages between deposits and investment? Is there a threshold beyond which bank-based rights cannot carry growth? And where is Russia on this spectrum? All of these questions should keep researchers occupied in the search for more linkages between the financial sector and economic growth and the growing field of the political economy of finance.

Appendix A. Additional Attributes of the Russian Banking Sector in Transition

As noted in the text, data on the Russian banking sector in the early years of transition are scarce, fragmented, and done usually on only an annual basis. A clear example of this is understanding the share of foreign ownership in Russia which, even in the most open days of the early 1990s, was never very significant (Sherif, Borish, & Gross, 2003). To take a look at this issue, the most comprehensive database of banks by ownership in Russia comes from

¹⁹ Thanks to an anonymous commenter who provided this erroneous interpretation and allowed us the chance to explain how this is not the case.

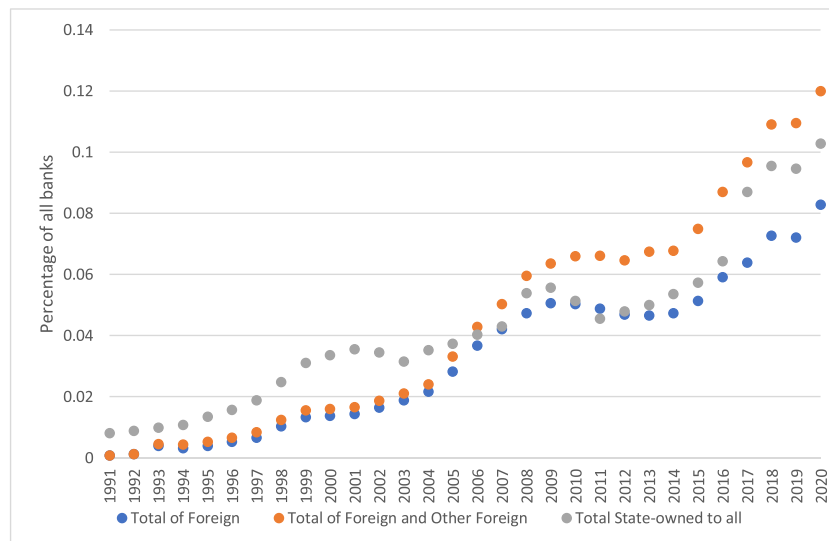


Fig. A1. Foreign and State-owned banks as Percentages of All Banks.

Source: Author's calculations based on Vernikov (2021), several World Bank and IMF publications from the 1990s (for the total number of Russian banks), the Central Bank of Russia statistical archives, and the Central Bank of Russia Annual Report for 1998.

Vernikov (2021), who works off of annual registration data and has a treasure trove of data on bank ownership. If we use this registration data, broken out by owners, we can combine it with total number of banks in Russia to get a sense of foreign ownership percentages. However, here too is a problem: St. Louis FRED data on the number of commercial banks in Russia goes back to 2004, while the Central Bank of Russia has quarterly statistics only back to 2001. It then takes much sleuthing through a number of older IMF and World Bank publications from the early 1990s (e.g., Belyanova & Rozinsky, 1995) and the Central Bank of Russia Annual Report of 1998 to obtain an approximation of the actual number of banks in the country.

Once we finally secured this data, we created a metric of the percentage of foreign banks relative to all banks registered and active in Russia over the transition period. As can be seen Fig. A1, the “pure” foreign banks (i.e., not state-owned and involved in lending activities) never reached more than 10 % in Russia, with their share of the number of banks (not assets) only reaching over 1% of all banks in 1998. If we expand the definition of foreign owned to include foreign “other” (defined by Vernikov (2021) as “other foreign owner (non-financial company, natural person, etc.), banks mostly engaged in non-lending activity”), we reach a high of foreign ownership of 12 % of banks in 2020. This reality means that it is unlikely that the penetration of foreign banks had an effect on perceptions of the overall banking sector, and thus also little impact on driving the demand for deposits in Russia in transition.

Declaration of Competing Interest

The authors declare that they have no conflict of interest with regard to this paper.

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