`The Emergence of Bank-Issued Credit in Russia:

An Empirical Characterization

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Abstract

Bank-issued credit is an important source of external financing for dynamic firms in transition economies. However, banks with a primary mission of issuing loans to private firms have only recently emerged in Russia. While this emergence (and subsequent expansion) appears to be carrying significant implications for Russia's continuing economic development, it is a far from universal phenomenon when viewed from a regional perspective. The purpose of this paper is to document regional patterns of the emergence and expanding importance of bank-issued credit within Russia; to note its relationship with regional patterns of economic activity; and to seek an empirical account of the regional variations we observe. In pursuing the latter objective, we document that regional variations in the influence of the communist party evident in the former Soviet Union retain remarkable explanatory power in accounting for regional variations in bank-financing activity. An account of the persistence of this influence will be the subject of future research.

JEL Codes: O4, P3, R1

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1. Introduction

The emergence of bank-issued credit as an important source of financing for private-firm investment is a recent phenomenon within Russia. Prior to 2000, banks certainly existed, but acted primarily as depositories and speculative investors. In consequence, private firms were largely forced to self-finance investment projects from the use of retained earnings or informal sources (e.g., see Shleifer and Treisman, 2001, Chapters 3 and 4; and Johnson, McMillan and Woodruff, 2002). However, the surge in export-driven growth spurred by the massive devaluation of the ruble following the financial crisis of 1998, and enhanced by a corresponding surge in oil prices, helped trigger institutional developments that by 2000 led to the emergence of banks as important sources of private financing (e.g., see Barnard, 2009; Chernykh and Cole, 2008). This phenomenon gained momentum throughout the course of the decade, so that by 2007 outstanding bank-issued loans to firms, measured as a percentage of GDP, grew from 10.5% in 1999 to 37.3%, implying an annualized growth rate of 17.2% (see Table 1 for details).

In previous work we expand upon below, we have found that the emergence and subsequent expansion of bank-issued credit since 2000 appears to be carrying significant implications for Russia's continuing economic development (Berkowitz and DeJong, 2010). In particular, based on regional variations observed for both real income and bank-issued credit, two-stage least-squares estimates indicate that one-standard-deviation increases in credit correspond with increases in annual economic growth ranging from roughly 1.2% to 1.6%, depending on the specific measure of credit and regression specification employed. This intra-national evidence complements cross-country studies that have highlighted the role of financial development in general, and bank-issued credits in particular, in stimulating economic growth (e.g., see La Porta et al., 1998; Levine, 2005; and Barth et al., 2009).

While the emergence and growth of bank-issued credit is clearly evident within Russia when viewed from an aggregate perspective, it is a far from universal phenomenon when viewed from a regional perspective. The primary purpose of this paper is to document regional patterns of the emergence and expanding importance of bank-issued credit within Russia; to note its relationship with regional patterns of economic activity; and to seek an empirical account of the regional variations we observe.

In pursuing the latter objective, we document two important empirical regularities. First, for regions wherein bank-lending activity is relatively modest, the source of the culprit appears to be from the credit-supply side of the market, rather than the credit-demand side. Based on firm-level survey

data compiled by Yakovlev and Zhuravskaya (2009), while the self-reported importance of access to credit is similar across regions, self-reported attempts to obtain bank-issued credit are relatively high in credit-poor regions; self-reported successes in obtaining credit are relatively low; and self-reported difficulties in obtaining credit are relatively high (and in all cases, differences are statistically significant). This evidence is important for interpreting the positive relationship noted above between regional variations in growth and bank-lending activity: apathy towards the pursuit of credit on the part of private firms (resulting e.g., from hostile economic conditions unrelated to credit access) does not appear as an underlying source of the relationship. Instead, credit availability appears as the underlying source.

Second, we find that regional variations in the influence of the communist party evident in the former Soviet Union retain remarkable explanatory power in accounting for regional variations in bank-financing activity, conditional upon controlling for a battery of additional regional characteristics. Similar patterns of influence across post-Soviet Russia have been documented by McFaul et al. (2004) for voting patterns; Remington (2008 and 2010, chapter 7) for variations in measures of democracy; Berkowitz and DeJong (2010) for small-scale entrepreneurial activities; and Acemoglu et al. (2009) for real wages and economic performance.[1]

Having documented the persistent regional influence of the communist party over the course of post-Soviet Russia's economic transition, we conclude with preliminary thoughts on factors that account for this persistence. Commercial banks in the former Soviet Union provided financing to state enterprises so that these enterprises could fulfill their plan targets. Because physical planning targets were more important than financial plans, state firms typically had "soft" financial budget constraints and were unconstrained by finance (e.g., see Kornai, Maskin and Roland, 2003). Soviet commercial banks also collected taxes from the state enterprise sector, which was the most important tax base. Bank credits also provided a means for regulators to monitor the activities of state enterprises (Garvey, 1977). In the early stages of Russia's post-Soviet economic transition, commercial banks continued to perform many tasks inherited from the Soviet era, including providing credit to state firms, financing state-related programs, financing government debt, and even helping to redistribute state assets (Tompson, 1997).

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[1] Acemoglu et al. also argue that regional variation in the death of Jews during the Holocaust is an important determinant of the regional influence of the communist party at the end of the Soviet Union.

The bottom line on these thoughts is the feeling that "old habits are hard to break". Under this "old habits" view, resistance towards the emergence of banks as important sources of credit for financing entrepreneurial activity should tend to be particularly strong in regions wherein sympathy towards the Soviet model of banking is strongest: i.e., in regions wherein the influence of the communist party was particularly strong during the Soviet era. The indirect evidence presented here is suggestive of this view; confronting this view with direct evidence is an area of future research.

In what follows, we first use an enriched data set to build on Berkowitz and DeJong (2010), illustrating that the availability of bank-issued credit is closely associated with regional economic growth within Russia. In section 3 we seek to identify factors that account for regional variations in lending activity. To explore the extent to which credit-supply factors are operational in accounting for these variations, we employ a survey of firms conducted in the fall of 2006 in nineteen Russian regions. Categorizing regions on the basis of the strength of the communist party during the Soviet era, the survey results indicate that credit-supply problems are relatively severe in regions where the communist party was relatively strong; in contrast, no such distinction is evident on the demand side. We supplement this evidence using a repeated survey of how firms view the regulatory environment in the nineteen Russian regions during 2002-2006, and find that access to credit is particularly problematic for small private firms. In section 4, we document the evidence noted above: that regional variations in the influence of the communist party evident in the former Soviet Union retain remarkable explanatory power in accounting for regional variations in bank-financing activity, conditional upon controlling for a battery of additional regional characteristics. In section 5 we conclude.

2. Finance, Politics and Growth

In previous work (Berkowitz and DeJong, 2010), we documented that bank-issued credit has been closely associated with regional patterns of growth observed within Russia. There, we measured bank-issued loans in per capita terms (i.e., credit was measured as the stock of ruble credits extended to private borrowers as of September 2001, per inhabitant). In order to correct for the potential endogeneity of bank-issued credit, we used as instruments regional variations in both the strength of the Communist party in the last years of the Soviet Union, and in attitudes towards the implementation of market reforms in post-Soviet Russia. Using this identification strategy, we found a strong association between regional variations in bank-issued credit and economic growth. Specifically, we found that a

one-standard-deviation increase in our measure of credit (reflecting roughly 11 percent of average monthly wages in 2001) is associated with an increase in real economic growth in the range of 1.1 to 1.3 annual percentage points over the period 2000:IV – 2007:IV. Thus it appears that the development of the banking sector within Russia has served as a significant contributor to economic growth.

In this section we complement this study by making three modifications. First, because additional data have become available, we now include two alternative measures of bank-issued credit: purchasing power adjusted (across regions) credit per capita, and credit per unit income. Second, following the "old habits" narrative sketched in the introduction, we now use only regional variations in the strength of the Communist party in the last years of the Soviet Union as an instrument.[2] Finally, following standard practice in the empirical growth literature, we add to the list of conditioning variables a measure of ethno-linguistic fractionalization in our growth regressions.

To measure growth we use household income rather than data on regional GDP. The reason for this is that GDP measures include the value of output generated by subsidized state enterprises, which is often disconnected from market valuations. Household income data more closely reflect market-driven activities. We adjust regional income levels to control for regional differences in ruble purchasing power in specific periods, and for differences in regional inflation over time. To make the adjustment for regional purchasing power, we normalize nominal income using an index that measures the cost of a basket of 83 consumer goods in the regions during the fourth quarter of 2007. Thus this normalization yields a nominal of purchasing power directly comparable across regions. This nominal measure is then converted to a real measure using monthly CPI data. This two-step conversion is used because the regional basket of 83 consumer goods is not available throughout the sample period. However, for the time periods during which it is available (beginning in December of 2001), its pattern of growth corresponds closely with that observed for the CPI. Thus our income measure provides a direct real measure of regional differences in average household income. This measure of income is used to compute regional measures of growth (computed as annual averages) between 2000:IV – 2007:IV.

The relevant data are taken from the Russian Statistical agency Rosstat (Web site: www.gks.ru.), and includes 68 of Russia's 83 regions. We exclude regions for which data are incomplete and/or cannot be matched with data on initial conditions such as education levels in the early 1990s, and strength of the Communist party in 1989: this includes, for example, the war-torn region of Chechniya. Moscow is

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[2] We thank Inessa Love for comments that pushed us in this direction.

excluded from the data set because, unlike the other regions, its banking sector was relatively developed before 2000.

Table 1 contains an overview of the real income growth in Russia during 2000-2007. During this period the growth in the average region in our sample was 15%, with all regions growing more quickly than 9%. Clearly, this dramatic growth is due is in due to some extent to the rapid growth in oil and gas prices after 2000. However, our analysis ignores the impact of these national level shocks and focuses on regional determinants of growth.

As noted, here we examine three alternative measures of bank credit issued to private individual borrowers (households and firms). The category of legal entities is excluded from these measures because it contains large state enterprises and members of financial industrial groups, both of which receive credits in part due to political connections. The first measure, credit per capita, is the stock of credit at the end of September 2001 normalized by regional population. The second measure, purchasing-power-adjusted credit per capita, is computed in two steps: first, the stock of credit at the end of March, September, June and December is normalized by the cost of a basket of consumer goods in March, June, September and December, respectively; then, these observations for March, June, September and December are averaged and normalized by regional population.[3] Finally, credit per unit of income is the stock of credit at the end of March, June, September and December, normalized by regional nominal income in March, June, September and December, respectively and then averaged. Credit data for these measures is available on the website of the Central Bank of Russia (http://www.cbr.ru/eng/publ/main.asp?Prtid=BBSR).

Table 2 describes credit in 2001 and its relationship with growth during 2001-2007. On average the stock of credit per capita in 2001 was 337 rubles, which is roughly 23% of an average monthly salary. However, there is considerable regional variation in credit per capita, running from 101 rubles in the Republic of North Ossetia to 976 rubles in the oil rich Tyumen oblast. A similar pattern holds for regional-purchasing-power-adjusted credit per capita. Credit per unit monthly income is 13.5% and ranges from 3.8% in (once again) the Republic of North Ossetia, to 27% in Altai Krai and Orenburg Oblast. Credit per capita and regional-purchasing-power-adjusted credit per capita are strongly positively correlated with a coefficient of 0.945; and each per capita measure is strongly positively correlated with credit per unit of income (correlation coefficients are 0.629 and 0.769). However, it is

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[3] The basket of goods used to construct purchasing power adjustments contains 33 goods in 2001.

somewhat surprising that the two credit per capita measures are weakly negatively correlated with growth in 2001-2007, while the credit per unit of income measure is weakly positively correlated. Thus, it appears that credit is closely associated with growth only conditional on other standard factors, such as initial income, human capital, ethno-linguistic fractionalization, etc.

In what follows we report results of regressions of growth during 2001-2007 on bank credit in 2001, initial income in 2001, and a host of initial conditions measured during the last years of the Soviet Union or during early transition. The initial conditions include education (EDU) and employment in the defense sector (DEF) as proxies for human capital; a regional measure of physical capital stocks (IO); and ethno-linguistic fractionalization (ETHNO).[4] In order to control for potential endogeneity between bank credit and growth, we use regional voter-participation patterns from the 1989 elections in the former Soviet Union (PART) as an instrumental variable. These elections are considered to be the first "semi-competitive elections" in Soviet history. While Soviet citizens were allowed to vote for some representatives to the national legislature, these elections opened up positions of power to opposition candidates and were a threat to the power of communist elites (McFaul and Petrov, 2004). In practice however, most people did not want to vote because the choice of viable opposition candidates was somewhat limited. Thus turnout was relatively high in regions where the communist party remained strong, because their still -intact apparatus "that extended into state farms and enterprises" was able to mobilize its citizens to vote (Petrov, 2004, p.250: also, see Berezkin et al., 1989).

McFaul and Petrov (2004) document that anti-reformist voting in the 1990s was strong in those regions where the communist party was able to mobilize a strong turnout in the 1989 elections. If the powerful Soviet regional party elites managed to retain their influence after the Soviet Union fell, then it is plausible that they continued to use their power to resist the implementation of market reforms. Elites in the former Soviet Union used commercial banks to control enterprises and to extract savings (Thomson, 1997). The emergence of decentralized commercial banks that make loans to the most efficient enterprises threatened elite power. Thus, under the "old habits" perspective, regions in which the communist party was strong in 1989 may have used their power to block the emergence of credit markets.

Figures 1 and 2 provide indirect evidence consistent with the "old habits" argument. In Figure 1, residuals from the regression of credit per capita in 2001 against log of real income in 2001:IV and the

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[4] The construction of these variables is described in Berkowitz and DeJong (2005, 2010).

set of initial conditions discussed above (EDU, DEF, IO, ETHNO) are plotted against 1989 voter turnout patterns; Figure 2 mimics Figure 1 using credit per unit of income in 2001. In Figure 1, a one-standard-deviation increase in voter participation is associated with a 0.4-standard-deviation decrease in the credit per capita residual (significant at the 1% level). In Figure 2, a one-standard-deviation increase in voter participation is associated with nearly a 0.3-standard-deviation decrease in the credit per unit of income residual (also significant at the 1%level). Thus in both cases, communist power is negatively associated with emerging credit markets in 2001, after accounting for the set of controls we employ.

In order for voter participation to be a valid instrument, besides being relevant for credit in 2001, it must satisfy the exclusion restriction in the structural growth regression. While we have argued that the strength of the communist party in 1989 is plausibly relevant for explaining the regional variation of bank-issued credit in 2001, it is not obvious that voting should influence growth exclusively through emerging bank credit. In particular, regions wherein the communist party was strong in 1989 also tended to vote for anti-reformist parties in the 1990s (McFaul and Petrov., 2004). In addition, Warner (2001) shows that ant-reformist voting for national legislative candidates in the Russian regions in 1995 is associated with slow price decontrol and slow privatization. In our work on market integration in Russia, we showed that regions that voted pro-communist in the 1996 elections often withdrew from internal markets, and this policy was associated with relatively poor economic performance (Berkowitz and DeJong, 1999); for an update of this evidence, see Gluschenko (2010). Thus communist control in 1989 is plausibly associated with anti-reformist voting in the 1990s, which in turn is plausibly associated with the implementation of bad economic policies. To deal with this issue, then, we also control for voting patterns in the 1996 elections.[5]

The results we obtain closely resemble those obtained in our previous study (Berkowitz and DeJong, 2010). Specifically, we estimate statistically significant (at the 10% level, at least) relationships between growth and all three measures of bank-issued credit. The relationships are quantitatively significant as well: in the full sample, a one-standard deviation increase in credit per capita, purchasing-power-adjusted credit per capita, and credit per unit of income is associated with an increase in real income per capita of 1.18, 1.3, and 1.25 annual percentage points, respectively. Removing outliers, the

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[5] This was the run-off election between President Yeltsin, who wanted to continue with the advancement of economic reforms, versus Zyuganov, who pushed for a return to communist-style economic policy. Below we characterize Red Belt regions as those that voted for Zyuganov. This is considered to be one of the formative political moments of the 1990s, in which the old communists tried to reassert themselves. We obtain a similar characterization of the Red Belt using voting patterns reformist parties observed in the 1995 national legislative elections. Our data on regional voting in 1996 is taken from Clem and Craumer (2000).

figures are 1.63, 1.28, and 2.11. Note also that the relationship between growth and credit is generally well-identified, as the F-test for the exclusion of 1989 voter participation rates in the first stage exceeds 10 in all but one case (credit per unit of income with outliers removed).

3. Variations in Bank-Lending Activity: A Supply-Side or Demand-Side Phenomenon?

While the evidence presented above clearly shows a close statistical relationship between regional variations in bank-lending activity and economic growth, and we have attempted to control for endogeneity in characterizing the relationship, it raises a fundamental question regarding whether it is reflective of supply-side or demand-side problems within regional credit markets. For example, it could be the case that for regions wherein bank-lending activity is relatively modest, the source of the culprit is apathy towards the pursuit of credit on the part of private firms. Such apathy could result, e.g., from regional economic conditions unrelated to credit access that have served to inhibit entrepreneurial activity. If this were the case it would not be appropriate to assign fundamental importance to the absence of credit as causal in accounting for regional variations in economic growth. Alternatively, if the source of the culprit is associated with issues regarding the availability of credit for firms seeking help with financing entrepreneurial endeavors, the assignment of causality would appear far more credible.

To shed light on this issue, we turn to an analysis of firm-level survey data compiled by Yakovlev and Zhuravskaya (2006). The survey was conducted in 19 regions, and over six rounds: the springs of 2002-2005, and the falls of 2002 and 2006. Details are provided in Table 4. Firms were categorized in three classes: all firms, private firms, and private firms owned by individual entrepreneurs. They were asked to respond to a battery of questions designed to characterize aspects of the climate they face in conducting their business, including issues regarding access to credit.

Motivated in part by the "old habits" hypothesis characterized above, and in part by a previous study of ours (Berkowitz and DeJong, 1999), our analysis of these data focuses on the question of whether demand- and supply-side characteristics of regional credit markets differ systematically as a function of regional differences in the influence of the communist party observed during the time of the Soviet Union. Regarding the previous study, there we identified the existence of an internal border within Russia that we characterized as the Red Belt. Based on an analysis of the dispersion of commodity prices across regions measured in the early stages of Russia's economic transition, regions characterized as existing within the Red Belt (defined as regions in which reformist voting percentages in the 1996 presidential election were less than 50%) were observed to exhibit high degrees of price dispersion

prevailing in their local markets, relative to prices in neighboring regions, which indicated economic isolation from their neighbors. Moreover, Red-Belt regions were observed as being slow to adopt economic reforms, and exhibited relatively low rates of economic growth. Thus we considered the Red Belt as a natural demarcation for potential regional differences in bank-lending activity.

As a measure of robustness, we selected additional demarcations on the basis of voter participation rates observed in the Soviet elections of 1989. Figure 3 presents the CDF of these participation rates, and suggests several natural cutoffs. Hereafter we will report results based on a single cutoff based on an 88% participation rate, though results based on neighboring cutoff rates are quite similar. Table 4 indicates classifications of the 19 regions included in the survey based on voter participation rates and the Red Belt indicator. Only two Red Belt regions have participation rates under 88%; and no regions with rates above 88% fail to fall within the Red Belt. Seven of the 19 regions covered in the survey fall within the Red Belt; and nine lie above the 88% cutoff rate. In either case, we consider such regions as potentially prone to credit-demand- and credit-supply-side difficulties. Below we report only results obtained using the 88% cutoff rate, as results obtained using the Red Belt indicator are again quite similar.

Table 5 presents survey results for four highly relevant questions that, unfortunately, were asked only in the fall 2006 round. One question sheds light squarely on the demand side of the equation: Does your firm require access to credit? With a response of 1 indicating yes and 2 no, the average response obtained in the 'all firms' category, both above and below the 88% demarcation line, was 1.57. (We do not report results in the 'private firms' and 'private firms owned by entrepreneurs' in this table due to limitations in the number of respondents.) Thus on the basis of this admittedly limited snapshot, there does not appear to be a dramatic difference in credit demand across regional classifications.

A second question carries potential implications for both supply and demand: Has your firm tried to access credit in the past year? While primarily reflective of demand-side issues at first blush, this could reflect supply-side considerations as well for two reasons: difficulties in obtaining credit may necessitate greater efforts (more attempts) in obtaining credit, or may discourage efforts in obtaining credit. Regardless, conditional on responding affirmatively to the question regarding the need for credit, a higher proportion of firms above the 88% demarcation line reported attempts in obtaining credit than below the demarcation line: the average response was 1.25 above the line, and 1.38 below, with the difference being statistically significant at the 1% level on the basis of a standard t test. While this

question muddles demand and supply issues, taken together with question 1, it does indicate that differences in access to credit observed across the demarcation line do not appear as the result of a lack of effort on the part of firms to obtain credit.

The final two questions fall squarely on the supply side: Has your firm managed to obtain credit in the past year?; Did your firm face problems when obtaining credit? The former question admitted three possible responses: 1 for yes, 2 for no, three for never. Again conditioning on firms who reported a need for credit, firms above the demarcation line reported greater failure rates in attempting to obtain credit (average scores are 1.98 versus 1.78); and greater problems in obtaining credit (1.7 versus 1.58). Both differences are significant at the 5% level.

Having detected significant differences across the demarcation line with difficulties in obtaining credit, we turn to a broader range of questions asked in each round of the survey. One question addresses difficulties in accessing bank-issued loans; others ask about difficulties with tax rates and administration; anti-competitive barriers; political corruption; government regulations; business registration technicalities; and inspections. All questions admit five responses: 1 for no obstacle, 2 for minor obstacle, 3 for moderate obstacle, 4 for very severe obstacle, and 5 for life-threatening obstacle.

Table 6 reports differences in means observed across the 88% demarcation line for all questions. A negative difference indicates that difficulties were reported as relatively high among firms located in regions above the demarcation line. Among all firms, access to capital is not significantly more problematic for firms above the demarcation line. But for private firms, we obtain a difference of -0.28 (significant at the 10% level); and for private firms owned by entrepreneurs we obtain a difference of -0.78 (significant at the 1% level). Since we cannot condition on firms that actually have a need for access to credit in these surveys, this question is not as informative as that discussed in the context of Table 5. For both sets of private firms, taxes (either their levels or issues regarding their administration) also seem relatively onerous in regions above the demarcation line, while systematic differences are generally not apparent in the additional categories included in the survey.

In sum, differences in patterns of bank-issued credit activity evident across regions do not appear to reflect credit-demand-side issues. Instead, challenges with credit availability appear as the underlying source of these differences. Next, we explore an empirical explanation of the source of these challenges: the "old habits" explanation.

4. Accounting for Regional Variations in Bank-Issued Credit

Having characterized regional variations in bank lending activity as largely reflecting supply-side issues, we now quantify the association of these variations with measures of the strength of the communist party during the Soviet era. The lesson we glean from this analysis is that communist-party influence measured during the Soviet era appears to have had a persistent influence on credit markets in the post-Soviet era.

Table 7 presents OLS estimates of the relationship between voting in 1989 and the three measures of financial depth we analyze, measured in 2001; Table 8 repeats Table 7 using the financial depth measures computed in 2005.[6] In estimating these relationships we condition on (but do not report on) the full set of control variables employed in the two-stage least squares analysis reported above. The financial depth variables and voting variables are standardized, thus the point estimates characterize the quantitative significance of voting on financial depth (i.e., the relationship between a one-standard-deviation increase in voter turnout and changes in financial depth, measure in standard deviation units).

In the full-sample estimates, voter turnout in 1989 is always negatively associated with financial depth in 2001, and is always statistically significant at the 1% level. The quantitative significance of voting in 1989 is remarkably strong: -0.52, -0.48 and -0.49 for credit, purchasing-power-adjusted credit, and credit per unit of income. Similar results hold in 2005, albeit with marginally weaker measures of quantitative and statistical significance. Specifically, turnout in 1989 is now always significant at the 5% level, and quantitative significance measures fall to -0.37, -0.29 and -0.30. In contrast, for all three measures of financial depth, reformist voting patterns measured in 1996 are statistically insignificant: the marginal explanatory power of these voting patterns is thus negligible conditional on the 1989 patterns of voter turnout. Results obtained given the removal of outliers are quite similar.

A plausible channel through which Soviet-era communists could exert lasting influence on current economic conditions is through their influence on regional politics. Evidence supporting this view is provided by McFaul and Petrov (2004) and Remington (2008, 2010). Table 9 augments this evidence by reporting a series of OLS estimates of the relationship between alternative measures of local political climates in post-Soviet Russia and the 1989 voter turnout measure (serving as an

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[6] We used the 2001 measures in our two-stage least-squares analysis due to an interest in treating credit as an initial condition to be associated with subsequent growth. However, if we instead use the 2005 measures we obtain quantitatively similar results regarding the relationship between credit and growth to those reported in Table 3.

explanatory variable). Once again, estimates are obtained conditional on the additional controls employed in the two-stage least-squares analysis. The specific measures of post-Soviet local political climates include patterns of reformist voting observed in the elections of 1993, 1996 and 1999; indices of democracy for measured over I991-2000 and 2000-2004; and an index of media freedom measured in 2000. Descriptions and sources of the data are provided in the table. As in Tables 7 and 8, reported results are for standardized variables. Here we report one set of results for each regression, as there are no apparent outliers in any variable beyond the credit measures. Excluding the media freedom index, the relationship between the dependent variable and 1989 voting patterns is estimated as statistically significant at the 1% level in each regression; respective measures of quantitative significance are -0.6, -0.5 and -0.45 for reformist voting patterns in the 1993, 1996 and 1999 elections; and -0.5 and -0.55 for the 1991-2000 and 2000-2004 democracy measures. In the case of free media, the figure is -0.1 and statistically insignificant. While at this point we cannot rule out the possibility that these results reflect omitted-variables bias, they provide tentative evidence that the Soviet-era communist party has managed to remain influential in regional politics, which in turn has enabled it influence local credits as hypothesized under the "old habits" perspective.

4. Conclusions

The rise of banks as important sources of financing for private firms is a relatively recent phenomenon within Russia, and its emergence and development has proceeded unevenly across regions. We have documented a strong statistical association between a regional measure of Soviet-era communist-party influence and regional differences in financial depth. Seeking an account for this relationship, the evidence we have presented here is consistent with an "old habits" view: in regions of historical strength, the communist party has been relatively successful in retarding the unshackling of banks from their Soviet-era responsibilities towards advancing the economic objectives of the state.

In future work we hope to further explore the plausibility of this view by supplementing the firm-level survey data we have explored here with additional surveys conducted on both sides of the bank-loan window. Specifically, while it would be helpful to extend the surveys of firms seeking bank-issued credit across space and time, it would be equally helpful to survey banks as well.

From the firm side, we would like to dig deeper into the extent and nature of challenges they do or do not face in seeking to obtain bank-issued credit. For example, do firms need to signal political loyalty to local governments and banks to obtain loans? Are firms expected to use loans to complete

projects that the local governments favor even if these projects are not necessarily profitable? Etc. From the bank side, what sorts of criteria do they establish for issuing loans? Are loans prioritized for relatively profitable firms, or firms loyal to political regimes? Are loans to private firms viewed as an important aspect of their overall mission? Etc. In short, there has been a great deal of survey and field work aimed at developing an understanding of the demand for bank-issued credit by small and entrepreneurial firms in developing economies and emerging markets (e.g., de Mel et al., 2008). The case of Russia suggests that it would be helpful to enhance our understanding of supply-side factors as well.

Table 1: Growth of Russian Banking System

	Assets (share of GDP)	Loans to Firms (share of GDP)	Household Deposits (share of GDP)	GDP growth rate (over previous year and inflation adjusted)
1999	32.9	10.5	6.2	6.15
2000	32.3	11.6	6.1	10.08
2001	35.3	14.8	7.6	5.05
2002	38.3	16.6	9.5	4.70
2003	42.3	20.3	11.5	7.38
2004	42.1	22.9	11.7	7.15
2005	45.1	25.3	12.8	6.33
2006	52.4	29.9	14.3	7.63
2007	61.4	37.3	15.6	8.05
1999-2007	Annual average change in shares			Annual average growth rate
	8.1%	17.2%	12.2%	6.9%

Sources: Assets, loan and deposit data are taken from Chernykh and Cole (2008), Table 1, who collected their data from the "Bulletin of Banking Statistics", Central Bank of Russia, selected issues (2002-2008). Growth of GDP (adjusted for inflation) is from http://www.tradingeconomics.com/Economics/GDP-Growth.aspx?Symbol=RUB.

Table 2 – Summary Statistics

Panel A: Descriptive Statistics

	GROWTH 2000:IV – 2007:IV	Credit per capita, 2001 (rubles)	PP-adjusted credit per capita, 2001 (rubles)	Credit per unit (monthly) income, 2001 (shares)
Average	15.0%	337	361	13.5%
Median	14.6%	297	308	12.3%
Standard Deviation	2.9%	175	167	5.8%
Maximum	22.9%	976	819	27.0%
Minimum	9.1%	101	128	3.8%

Panel B: Correlation Patterns

	Growth, 2001:IV-2007:IV	Credit per capita, 2001	PP-adjusted credit per capita, 2001	Credit per unit income, 2001
Growth	1.00			
Credit per capita	-0.203	1.00		
PP-adjusted credit per capita	-0.114	0.626	1.00	
Credit per unit income	0.183	0.769	0.945	1.00

Notes: Moscow is dropped from the sample because, unlike all the other regions, it has a developed credit market through the 1990s. Excluding Moscow, there are 67 regions for which we have a complete data set on financial depth, growth and initials conditions.

Table 3: Finance and Growth, 2SLS Estimates

Dependent Variable is Growth 2000:IV-2007:IV

Panel A: Full sample

Credit per capita, 2001	1.18* (0.626)	X	X
PP-adjusted credit per capita, 2001	X	1.30* (0.699)	X
Credit per unit income, 2001	X	X	1.25* (0.707)
Log of real income, 2001:IV	-2.33*** (0.394)	-2.26*** (0.378)	-1.55*** (0.322)
Reformist Voting in 1996	-0.325 (0.406)	-0.256 (0.401)	-0.159 (0.378)
Additional Controls Education	Education, Ethno-linguistic fractionalization, IO, Defense		
Observations	67	67	67
	Strength of instrument		
F-test for voting participation in 1989 (p values in parentheses)	20.6 (0.000)	13.1 (0.001)	10.8 (0.002)

Table 3

Panel B: Outliers Dropped

Credit per capita, 2001	1.63** (0.806)	X	X
PP-adjusted credit per capita, 2001	X	1.28** (0.650)	X
Credit per unit income, 2001	X	X	2.11* (1.12)
Log of real income, 2001:IV	-2.59*** (0.433)	-2.22*** (0.333)	-1.48*** (0.346)
Reformist Voting in 1996	-0.593 (0.496)	-0.236 (0.404)	-0.490 (0.486)
Additional Controls Education	Education, Ethno-linguistic fractionalization, IO, Defense		
Observations	64	64	64
	Strength of instrument		
F-test for voting participation in 1989 (p values in parentheses)	14.5	20.3 (0.000)	6.16 (0.016)

Notes: Robust standard errors accompanying point estimates are given in parentheses: *, ** and *** denote significance at the 10%, 5% and 1% levels. All independent variables are standardized to have a zero mean and a unit standard deviation. In all specifications the constant is estimated but not reported. The excluded instrument is voter participation in the 1989 election. The sample of credit measure is skewed upwards; outliers are defined as being two standard deviations greater than the sample average.

Table 4: Regions and Firms - Survey from Yakovlev and Zhuravskaya (2006)

Regions	Total firms	Private firms	Private firms owned by persons-entrepreneurs	Voter participation rate, 1989	Red Belt, 1996*
Altai krai	419	24	8	89.8%	1
Amur oblast	552	48	11	**86.3%**	**1**
Chelyabinsk oblast	541	10	1	84.4%	0
Kaluga oblast	557	24	15	93.3%	1
Khabarovsk krai	556	10	7	82.0%	0
Komi Republic	569	15	1	78.7%	0
Krasnoyarsk Krai	545	24	9	80.0%	0
Kurgan oblast	555	37	18	91.2%	1
Moscow city	492	17	2	83.5%	0
Nizhni Novgorod oblast	551	32	24	86.8%	0
Novosibirsk oblast	548	7	0	**80.8%**	**1**
Perm oblast	563	24	4	73.0%	0
Primorskiy krai	529	9	4	80.5%	0
Rostov oblast	527	5	1	87.1%	0
Sakhalin oblast	574	13	6	85.4%	0
Samara oblast	546	7	0	87.1%	0
Saratov oblast	545	16	2	90.0%	1
Smolensk oblast	587	43	7	94.3%	1
St. Petersburg city	544	40	11	75.9%	0
Totals	10,300	405	131		

Notes: The survey consists of six rounds conducted in the spring of 2002, the fall of 2002, the spring of 2003, the spring of 2004, the spring of 2005 and the fall of 2006. Each region appears in all six rounds, except for the Altai krai which is absent from the fourth round. The Red Belt is defined to include regions wherein reformist voting was less than 50% in the 1996 presidential election. Novosibirsk and Amur are the only regions that are in the Red Belt, and yet had voter participation rates of less than 88% in 1989.

Table 5
Credit Access for Firms, Fall 2006 Survey, 88% Voter Participation Threshold

Question	Firms Below the Threshold	Firms Above the Threshold	Difference in Means
Does your firm need credit (1 = Yes, 2 = No)	1.57 (0.135) 1,348	1.57 (0.026) 373	0.005 (0.029) 1,721
Sample below is limited to firms who need credit			
Has your firm tried to get credit in the last year (1 = Yes; 2 = No)	1.38 (0.020) 572	1.25 (0.034) 158	0.133*** (0.043) 730
Has your firm managed to get credit in the last year (1 = Yes, always; 2 = Not always, 3 = Never)	1.78 (0.045) 358	1.98 (0.081) 117	-0.201** (0.091) 475
Did your firm face problems when obtaining credit (1 = No, 2 = Yes)	1.58 (0.026) 358	1.70 (0.043) 117	-0.125** (0.052) 475

Each cell contains the sample, then the standard error (in parentheses) and then the number of observations. *, ** and *** denote significance at the 10%, 5% and 1% levels. We use the standard t-test of the null hypothesis that there is no difference in sample means, under the assumption that sample variances are the same in the two groups. Results are similar if we relax this assumption.

Table 6: Difference in Means - All Six Rounds of the Survey

	All Firms	Private Firms	Private Firms owned by Entrepreneurs
Tax level (high tax rates)	-0.091*** (0.029) 8,693	-0.430*** (0.137) 370	-0.368 (0.232) 121
Tax administration (problems with forms and inspections)	-0.021 (0.029) 8,694	-0.313** (0.131) 370	-0.716*** (0.203) 121
Anti-competitive barriers	-0.071** (0.032) 8,659	0.007 (0.143) 365	0.122 (0.245) 119
Corruption	0.015 (0.031) 8,638	0.088 (0.125) 364	-0.162 (0.219) 117
Access to capital (Problems with getting loans)	-0.038 (0.035) 8,662	-0.283* (0.159) 367	-0.780*** (0.246) 120
Government regulations (problems with officials, forms, licensing, etc)	0.044 (0.030) 8,689	0.019 (0.133) 370	-0.357* (0.203) 121
Business registration	0.047* (0.025) 8,612	-0.030 (0.100) 369	-0.110 (0.154) 120
Inspections	-0.109*** (0.029) 7,718	-0.198 (0.127) 299	-0.172 (0.223) 94

Notes: All questions are on a scale of 1 to 5 where 1 = no obstacle, 2 = minor obstacle, 3 = moderate obstacle, 4 = very severe obstacle and 5 = life threatening. Each cell contains difference in mean, the standard error (in parentheses) and then the number of observations. *, ** and *** denote significance at the 10%, 5% and 1% levels. We use the standard t-test to the test the null hypothesis that there is no difference in sample means, computed under the assumption that sample variances are the same in two groups. Results are similar if we relax this assumption. Each cell contains a point estimate for the differences in means between regions above and below the 88% threshold. A difference in means with a negative sign indicates that the situation is worse in areas above the threshold. Below the differences in sample means, there is a standard error (in parentheses) and the total number of observations.

Table 7: Politics and Financial Depth 2001

Panel A: Full Sample

Dependent Variable	Credit per capita	PP-adjusted credit per capita	Credit per unit income
Voter participation rate, 1989	-0.523*** (0.115)	-0.475*** (0.131)	-0.492*** (0.150)
Reformist Voting, 1996	-0.085 (0.109)	-0.131 (0.118)	-0.213 (0.142)
Controls	Log of real income 2001:IV, EDU, ETHNO, IO, DEF		
R^2	0.445	0.352	0.268

Panel B : Outliers Dropped

Dependent Variable	Credit per capita	PP-adjusted credit per capita	Credit per unit income
Voter participation rate, 1989	-0.529*** (0.085)	-0.496*** (0.110)	-0.337*** (0.136)
Reformist Voting, 1996	-0.058 (0.100)	-0.124 (0.112)	-0.024 (0.117)
Controls	Log of real income 2001:IV, EDU, ETHNO, IO, DEF		
R^2	0.471	0.391	0.261

Notes: Variables for financial depth and voting are standardized. In each row there are 67 observations. Standard errors are robust; *, ** and *** denote significance at the 10%, 5% and 1% levels. Constants are estimated but not reported. Outliers are regions with credit measures two standard deviations above or below average.

Table 8: Politics and Financial Depth 2005

Panel A: Full Sample

Dependent Variable	Credit per capita	PP-adjusted credit per capita	Credit per unit income
Voter participation rate, 1989	-0.370*** (0.119)	-0.290** (0.126)	-0.301** (0.150)
Reformist Voting, 1996	-0.050 (0.119)	-0.147 (0.156)	-0.264 (0.161)
Controls	Log of real income 2001:IV, EDU, ETHNO, IO, DEF		
R^2	0.535	0.416	0.276

Panel B: Outliers Dropped

Dependent Variable	Credit per capita	PP-adjusted credit per capita	Credit per unit income
Voter participation rate, 1989	-0.365*** (0.107)	-0.328*** (0.112)	-0.276* (0.148)
Reformist Voting, 1996	-0.014 (0.108)	-0.262*** (0.094)	-0.246 (0.159)
Controls	Log of real income 2001:IV, EDU, ETHNO, IO, DEF		
R^2	0.485	0.407	0.265

Notes: Variables for financial depth and voting are standardized. In each row there are 67 observations. Standard errors are robust; *, ** and *** denote significance at the 10%, 5% and 1% levels. Constants are estimated but not reported. Outliers are regions with credit measures two standard deviations above or below average.

Table 9: Political Persistence

Dependent Variable	Reformist voting, 1993	Reformist voting, 1996	Reformist voting, 1999	Democracy 1991-2000	Democracy 2000-2004	Free media, 2000
Voter Participation, 1989	-0.584*** (0.114)	-0.495*** (0.120)	-0.456*** (0.123)	-0.535*** (0.115)	-0.527*** (0.111)	-0.155 (0.133)
Controls	Log of real income 2001:IV, EDU, ETHNO, IO, DEF					
R^2	0.478	0.391	0.453	0.488	0.445	0.445

Notes: Reformist voting in 1993 and 1999 is the share of voting for reformist candidates as defined by Clem and Craumer (200). Democracy in 1991-2000 and in 2000-2004 is a composite measure of democracy drawn up by a group of experts at the Moscow Carnegie. These data are available at http://atlas.socpol.ru/indexes.index_democr.shtml. The data on free media are also constructed by a group of experts in Russia (see www.freepress.ru/arh_e.shtml) See Remington (2008), Section 7, for a discussion of these data on democracy and free media. In each row there are 67 observations. Standard errors are robust and *, ** and *** denote significance at the 10%, 5% and 1% levels. Constants are estimated but not reported.
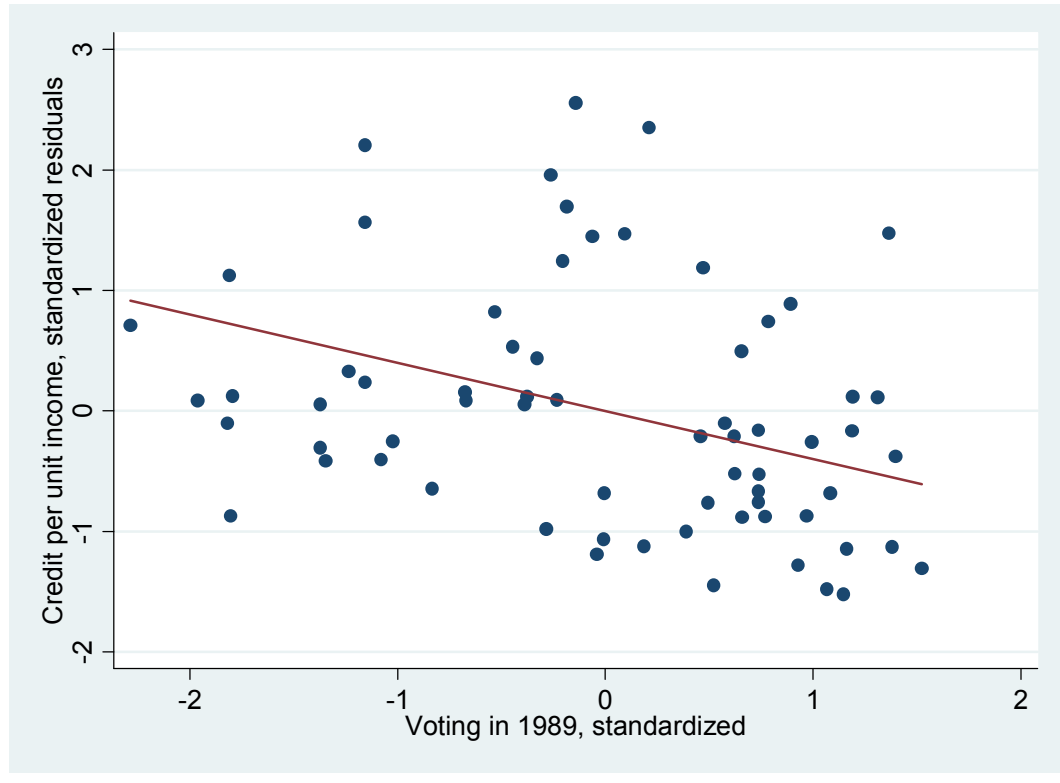
Figure 1:

Credit Per Capita in 2001 and Voting in 1989
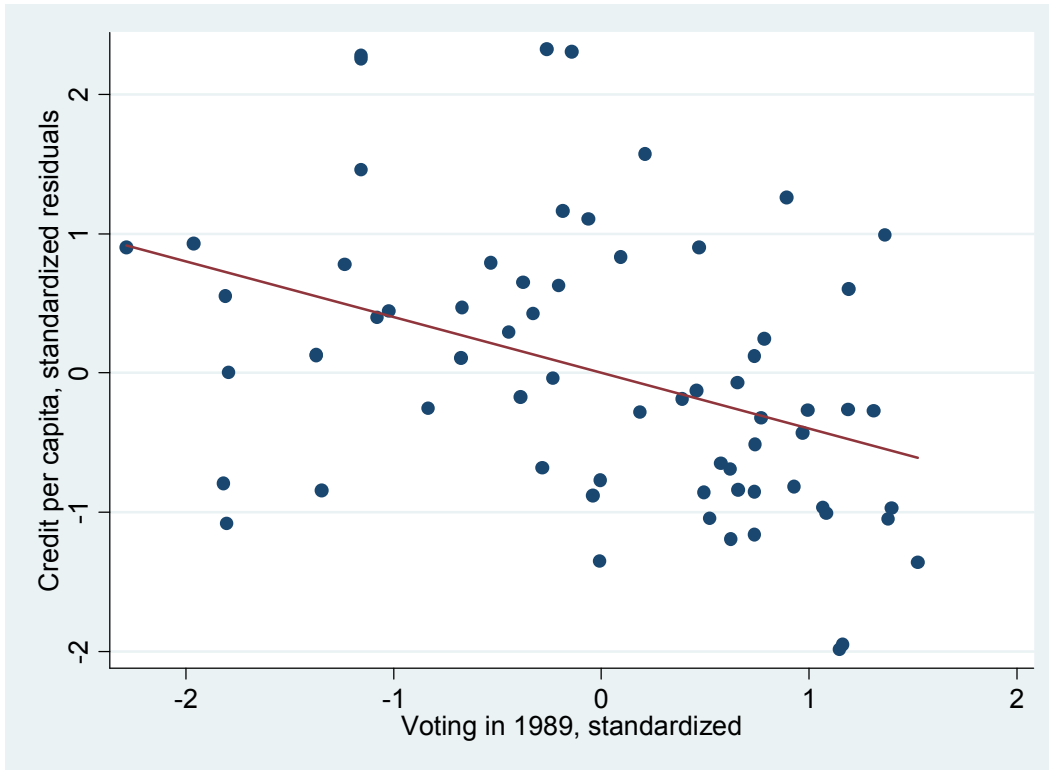
Notes: If we regress the residuals of credit per capita on voting in 1989 and include a constant, then the estimated slope coefficient implies that a one standard deviation increase in voting participation in 1989 is associated with -0.40 standard deviation decline in credit in 2001; and, this association is significant at the 1-percent level. Voting participation accounts for 16 percent of the variation in this residual.

Figure 2:

Credit per Unit Income in 2001 and Voting in 1989

Notes: If we regress the residuals of credit per unit income on voting in 1989 and include a constant, then the estimated slope coefficient implies that a one standard deviation increase in participation in 1989 is associated with a 0.29 standard deviation decline in credit in 2001; and, this association is significant at the 1-percent level. Voting participation accounts for 8.7 percent of the variation in this residual.

Figure 3:

Voting Participation in the 1989 Elections
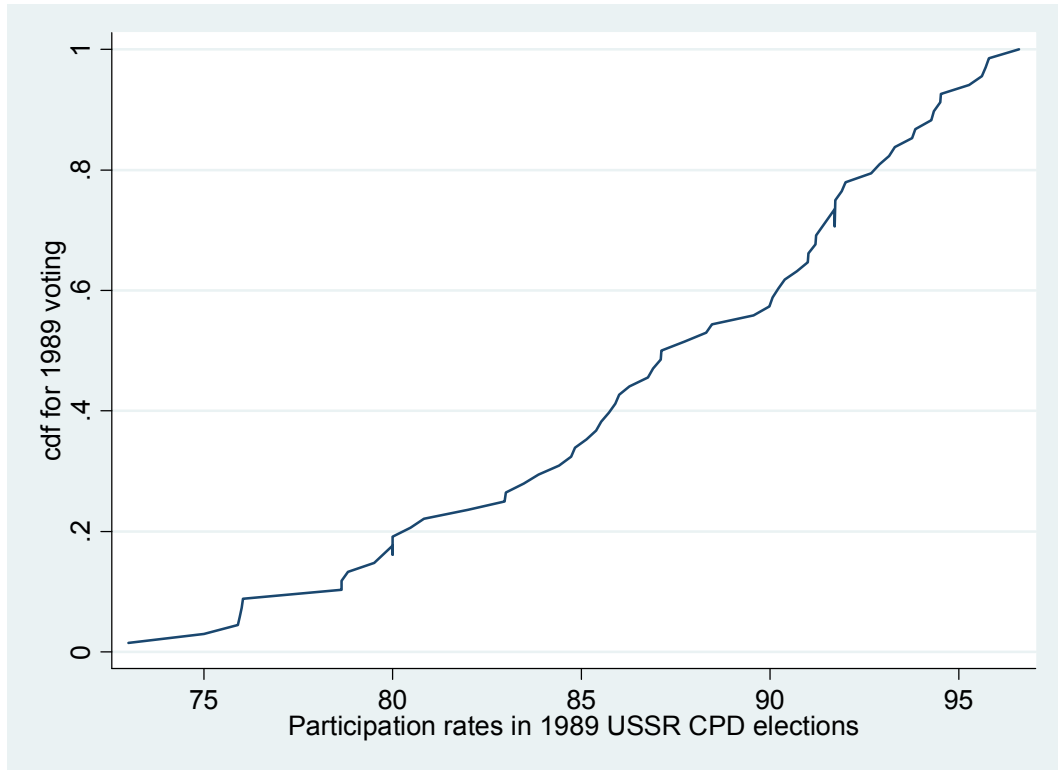
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