

# **Investment in Young and Established Microenterprises in Russia**

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## **Abstract**

This paper shows that imperfections in the credit market and insecurity of property rights affect non-uniformly the investment of younger and established microenterprises in Russia. The empirical analysis of investment is based on the liquidity constraint model but also accounts for the added challenge that the weak institutional structure and the small size of the enterprises pose. Investment in younger firms is most constrained by the availability of funds, while investment in more established microenterprises is affected by the ability of the entrepreneurs to “secure” their property rights by paying bribes. Financial institutions are unable to distinguish good from bad borrowers but lend to firms that have transparent transactions.

## **1. Introduction**

Worldwide and particularly in transition economies, the entrepreneurial firm is perceived as an engine of economic growth. Across countries, entrepreneurs face various constraints and must overcome diverse challenges in order to sustain and expand their operations. This paper presents evidence that imperfections in the credit market and insecurity of property rights restrict small firms’ investment and growth in Russia.

The ability of entrepreneurs to fund new projects is essential for business expansion. Small firms often face financing constraints because their internal funds are limited, and since small firms find it difficult to signal their quality to investors, external funds are not always available. In Russia, additional restrictions come from the weak institutional framework and numerous legal and regulatory constraints. Moreover, the supply of external finance is limited, due to the lack of skilled bankers and appropriate lending technologies. Under these circumstances, small firms’ investment is often limited to the amount of available internal funds.

Recent studies have explored the degree to which firm size and financial leverage influence the sensitivity of investment to the availability of internal funds in small and medium-sized enterprises (SME) in transition countries. The small firms’ financial needs, however, are related to the age of the firm (the financial growth cycle), but this relationship has been largely unexplored. Moreover, the supply of credit is determined by existing lending technologies, and standard banking technology is not friendly to younger firms. This paper investigates to what degree the investment of small firms of different ages is sensitive to the availability of internal funds, and how does the security of property rights influence this relationship. The analysis concludes with estimation of a credit supply equation, in order to determine whether providers of formal finance are able to resolve problems of asymmetric information and offer sufficient funds to meet the small firms’ demands.

This paper is organized as follows. Part Two discusses the methodology and summarizes previous research on liquidity constraints in transition economies. Part Three describes the Russian financial system for the period of the study. The data and the empirical specifications are presented in Parts Four and Five. Part Six summarizes the results. Conclusions are offered in Part Seven.

## **2. Methodology and Previous Studies**

In a perfect capital market, the investment decision of the firm is independent of the source of finance (Modigliani and Miller, 1958). However, in the presence of transaction costs and

asymmetric information, external finance is either rationed or is available at a premium (Stiglitz and Weiss, 1981; Myers and Majluf, 1984). In such circumstances, external and internal finance are no longer perfect substitutes, and for firms facing high information costs, investment will be limited by the available internal funds (Fazzari *et al.*, 1988). The financing constraint does not affect all firms uniformly, however, and the degree of effective constraint that various firms face provides information on the capacity of the financial system to fund the growth of firms.

Fazzari, Hubbard and Peterson (1988) develop an empirical test to distinguish constrained from relatively less constrained firms. The methodology involves splitting the sample into sub-samples, based on theoretical priors (size, age, financial leverage, and the like), and estimating reduced-form investment equations. Within each sub-sample (fixed) investment is regressed on two groups of variables – investment opportunities and cash flow. A test is then performed to check whether the difference between the estimated cash flow coefficients in the sub-samples is statistically significant. Statistically significant difference is evidence that firms with higher dependence on cash flow for investment face higher information costs and are most likely to be unable to obtain external funds.

Studies have shown that the liquidity constraints that small and medium-size enterprises face in transition countries often differ from those observed in developed economies. In developed countries, the investment of the most informationally opaque firms (smaller, younger) is most sensitive to liquidity constraints (Fazzari *et al.*, 1988). Budina *et al.* (1999) argue that, in Bulgaria, smaller firms are more liquidity constrained but for reasons different from those suggested by theory. These authors show that, due to the prevailing soft budget constraints that characterized bank lending, the investment of firms with a significant level of long-term debt (bigger, mainly state-owned firms) was not liquidity constrained, while the investment of firms without debt, as were most of the smaller private firms, showed higher sensitivity to liquidity. Chow *et al.* (2000) show that smaller firms in China are less liquidity constrained than bigger firms. The authors attribute this to the greater efficiency of smaller firms. Perotti and Gelfer (2000) find evidence that Russian firms with closer ties to industrial-financial groups face lower liquidity constraints than those who do not have ties to the banks.

The institutional structure of the transition process also affects the behavior of small firms. In a weak institutional environment, corrupt government officials and (semi-) criminal organizations influence the security of property rights and thus firms' investment and growth. Johnson *et al.* (1999) argue that firms will undertake projects with positive net present value only if convinced that they can use the fruits of the investment. If firms' property rights are badly defined and poorly enforced, firms will be less willing to expand and will invest less. These authors develop a pecking order model of investment, and incorporate the specific transition circumstances through an index that reflects the security of property rights. They show that, prior to 1997, the investment of small firms in Poland, Romania, Slovakia, Ukraine, and Russia was determined primarily by the security of property rights, while availability of internal and access to external funds were less important. Johnson *et al.* (1999) admit, however, that access to external finance will become important as profit margins decline.

Using 1997 survey data from *de novo* firms in the Czech Republic, Hungary and Poland, Bratkowski *et al.* (2000) also find that investment needs are met by the existing financial system. In their study, firms that did not apply for credit were less constrained by the availability of internal funds than was investment in firms that received credit. The authors also study what determines the supply of credit and find evidence that banks play an adequate role in financing small firms' growth, successfully mitigating problems of asymmetric information. Pissarides *et al.* (2000) and Lizal and Svejnar (2000), however, provide evidence that the lack of adequate

access to external funds has significantly constrained investment in SMEs in Bulgaria and Russia, and the Czech Republic.

Studies of liquidity constraints of firms in transition countries and in Russia have not accounted for the influence of the firm's financial growth cycle.<sup>1</sup> The financial needs of newly created small firms may differ from those of older firms; younger firms may find it more difficult to signal their quality to lenders and thus obtain external finance. Moreover, most of the research has been undertaken for SMEs, where small firms hire up to 100 employees and medium firms hire up to 500 employees. Research on very small firms is limited because it is difficult to observe and measure their transactions. This paper adapts the liquidity constraints approach to study the financing constraints of very small firms, with up to 25 employees.

### **3. Overview of the Russian Financial Sector**

Banking and banks in Russia have a very short history. The Soviet banking sector consisted of a mono-bank system, with a re-distributive function – supplying the planned funds from the public and the Government to enterprises and people. The banking reform of 1992 split up the main sectoral banks (the savings Sberbank, Vnesheconombank, and Agroprombank) into smaller banks. Unlike most transition countries, in Russia a very large number of new, private banks emerged shortly after the start of reform. While, up to 1995, the economy declined by 32 percent, the banking sector grew by 43 percent, and the number of new banks picked at 2,500 in 1995 (Warner, 1997). Evidently, it was profitable to engage in banking activities but lending was not the activity that banks pursued.

Post-soviet banking is characterized by three distinctive periods – from 1992 to 1995, from 1995 to the summer of 1998, and post 1998. During the first period, banks were primarily engaged in channeling the direct lending of the Government to state-owned enterprises and made their profits by paying only a 10 percent annual interest rate for funds, at a time when inflation reached 800 percent. Moreover, banks held more than 70 percent of their assets in non-interest bearing deposits. Cheap credit, however, did not flow to entrepreneurs. Banks rarely engaged in lending and kept the spread between lending and deposit interest rates broad, because the economic realities provided stronger incentives for other financial activities. For example, banks were allowed to hold foreign assets and profited from direct inflationary rents of servicing foreign transactions as well as from the fees collected as a result of the high demand for foreign currency (Warner, 1997).

The banking reform of 1995 eliminated these sources of profits. Banks, however, found it difficult to collect deposits in the post-hyper-inflationary environment and thus lacked resources to acquire risk evaluation expertise and to develop new lending technologies. Moreover, the proliferation of barter rendered traditional banking services less appealing. Banks earned income by non-lending activities such as trading GKO (a type of T-bills) and by organizing payment on *veksels* – financial instruments that enterprises used to extend credit to each other (Commander and Mumssen, 1998).

Poorly designed and badly enforced regulations also impeded the ability of banks to lend. Banks were required to block the clients' accounts if any default on tax payments occurred (Hendley *et al.*, 1998). To reduce both the visibility of their transactions and the banks' access to their accounts, enterprises avoided payments through the banking system. The restrictions on the free transfer of enterprises' funds from non-cash into cash additionally prevented firms from

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<sup>1</sup> Financial growth cycle refers to the varying financial needs since time of creation through maturity. The approach has been criticized because it assumes that all firms have an equal desire to grow (life cycle trap).

opening and using bank accounts. These regulations made intermediation almost impossible, because banks could not collect information on their clients' transactions and could not use such information when deciding to whom to lend. At the same time, the central bank failed to curb activities that indeed jeopardized the safety of the banking system. Prudent lending requires that banks develop and use financial products that match their information processing capabilities, so that the credit risk can be properly handled. Regulators failed to prevent the development of too sophisticated products, such as the infamous forward contracts for foreign currency, for which banks did not have the information processing capability (Roe *et al.*, 1998).

When the government defaulted on its GKO in the summer of 1998, and the currency was devalued, many banks went bankrupt. The irony of the Russian crisis is that mainly smaller banks, engaged in prudent lending to small and medium-sized enterprises, were able to survive the 1998 financial crisis. Within a year following the August financial crisis, lending was stagnant.

In an environment of low-level of intermediation, lending to smaller enterprises was even less appealing. Many, especially the big banks, found it unprofitable to lend to small and newly established firms. Traditional bank technology requires that a potential borrower presents audited financial statements for the previous three years. Such lending technology is inefficient, because banks do not trust financial statements in Russia. Moreover, younger firms (as were the majority of small firms) cannot satisfy the requirement of three years of financial statements. In developed countries, the credit history of the owner is widely used as an indicator for borrower credibility and managerial skills (Berger and Udell, 1998). Russian bankers, however, find it difficult to evaluate the managerial ability of an entrepreneur. For example, if a firm uses the informal sector's help to enforce its contracts with business partners, banks have no means to evaluate and monitor such "business contracts". At the same time, anecdotal evidence suggests that both banks and small entrepreneurs used private protection because they did not believe that the formal legal system could enforce their contracts. The higher cost of servicing smaller firms and the absence of a technology to deal with the specific risk kept the price of bank credit in Russia high (Roe *et al.*, 1998).

There are not many alternative sources of formal loans for micro and small businesses in Russia. Government programs to support small businesses are few, and they often primarily provide non-financial services. For example, the Federal Fund for Small Business Support provides mainly technical assistance, as its employees have limited experience with credit evaluation. The Regional Enterprise Support Funds, including the one operating in Samara, provide funding for small entrepreneurs but mainly to entrepreneurs who can invest a significant amount of their own capital. These government programs are capital constrained, tend to fund "priority sectors/activities," and often misallocate resources, as government officials grant credits to friends and relatives.

In the more rural areas, mutual credit associations and consumer cooperatives also provide some funds to their members.<sup>2</sup> Innovative microfinance organizations (MFOs) that lend exclusively to micro and small businesses (Opportunity International, FINCA, the EBRD Small Business Fund) emerged in the mid-nineties but their influence is limited. MFO arrival is somewhat late because only recently have regulations changed to allow their operations.

Overall, the high information costs that entrepreneurs face worldwide is accentuated in Russia by the lack of banking tradition and managerial skills, and by the limited information

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<sup>2</sup> There are no credit unions in Russia.

processing capability of the system. Moreover, banks operated in a restrictive legal environment, which discourages transparency of entrepreneurial activity and makes credit risk evaluation even more difficult. Alternative formal loans have limited capacity to fund small firms' investment. As a consequence, Russian small businesses have been forced to rely even more on their internal funds for investment.

#### **4. The Data**

The data come from a survey of 203 very small enterprises (up to 20 employees) in Samara, Russia. The survey was implemented in August 1999, using a sample obtained from the Statistical Department of Samara Oblast. The database of the Statistical Department is comprehensive, because all entrepreneurs are required by law to register in order to start operations. The survey covered both individual private entrepreneurs and private companies. The sampling is subject to the usual bias that only surviving firms were surveyed.

The firms in the sample are very small with average number of employees is 7.8 (including the owner). Most of the firms are retail businesses, approximately a quarter operate in production and a quarter are in services (Table 1). Two thirds of the owners hold university degrees, but the share of the younger firms' owners with a university degree is smaller than for the more mature firms. A third of the entrepreneurs indicated that they had specific plans to invest in physical capital in the forthcoming year and approximately a third reported that they faced limited opportunities and would have returned to their previous employment if that were possible.

Russian entrepreneurs identified lack of funds as the main constraint to growth – 46 percent reported financing as their most serious obstacle. Markets are the main constraint to grow for 43 percent of the entrepreneurs and direct regulations rank third, with 9 percent of the cases. When asked to rank current problems on a scale of one to four (where 1= least problematic, 2= sustainable, 3=problematic and 4 =most problematic), entrepreneurs ranked only taxes higher than financing. Corruption and private protection were ranked as least problematic (index of 2 and 1.3, respectively). It seems that financing constraints dominate property rights issues, although this does not mean that businesses do not participate in extra-legal exchanges with government officials or private protection companies.

We did not believe that we could obtain an honest answer if we asked the entrepreneurs directly about their transactions with government officials. To measure the influence of the security of property rights, we asked if the entrepreneurs thought that other businesses pay extra legally to government officials for various permits and for business protection. More than two thirds of the entrepreneurs reported that they believed that government officials are being paid extra-legally to issue permits and to protect the business. A third of the entrepreneurs also reported that they themselves pay people for protection (90 percent answered this question.). Moreover, about 40 percent believe that government officials can change and re-interpret rules concerning individual tax obligations.

The combination of data on extra-legal payments and the ranking of constraints to growth seem to suggest that, after several years of changes, businesses have adapted to the environment and have colluded with government officials in establishing some basic security of property rights, which allow businesses to function. Bad laws serve a country best when badly enforced, because they allow the most efficient small firms to pay the fee and do their business, as suggested by the theory of the second best applied to small firms in Russia. The evidence also shows that younger firms rely more on private protection, while older firms rely more on extralegal transactions with government officials.

## 5. Empirical Specifications

The empirical model is constructed after Fazzari, Hubbard and Peterson (1988). The sample is first split into two sub-samples – younger firms (age less or equal to 3 years) and older firms (age more than 3 years). We test whether the availability of internal funds influences the firms' decision to invest in fixed capital. This specification captures the influence of the financial growth cycle, and it allows us to check whether the existing lending technology is biased against younger firms. In addition, the sample is split into micro (with less than 5 employees) and small firms (with 5 up to 35 employees) to study how size may influence investment sensitivity to cash flows.

The biggest challenge in studying micro and small entrepreneurs' investment is to distinguish between business and family assets. Any measure of the level of investment may be incorrect because it is not always possible to separate the physical capital that entrepreneurs use for private purposes from that used for business purposes. Furthermore, Russian entrepreneurs do not have any incentives to correctly represent their assets and the level of investment. On the contrary, pilot tests revealed that questions about the level of investment were systematically not answered. This problem is resolved here by the use of a qualitative dependent variable (as in Johnson *et al.*, 1999), which in a sense “endogenizes the scale”. Instead of a linear regression, we estimate a tobit model to establish whether a firm's decision to invest in fixed assets can be explained by investment opportunity and availability of internal finance. The dependent variable takes the value of one if the firm has specific plans to invest in fixed capital in the following year, and zero otherwise.

Employment growth is the variable used as a proxy for investment opportunities. An alternative is to use the change in sales as in many sales accelerator models. However, Anderson and Kegels (1997) and Grosfeld and Nivet (1997) have argued that in transition countries such backwards looking variables as sales are not an appropriate proxy for the expected profitability of investments. Bratkowski *et al.* (2000) have also maintained that sales growth is especially inappropriate for start-ups because those can have excellent investment prospects but their sales record would not be impressive. Bratkowski *et al.* (2000) and Johnson *et al.* (1999) use employment growth as a proxy for investment opportunities as in the present empirical specification. The variable that captures the cash flow influence is a dummy that takes the value of one if the entrepreneur indicated that he/she has positive cash flow.

Estimation of probability that a firm will invest in fixed capital is augmented by variable(s) that represent the security of property rights. The index of property rights mirrors the index used by Johnson *et al.* (1999). It has a value of 0 if the entrepreneur has answered that he must pay extra legally for protection to informal groups, and to government officials for permits and business protection. The index has value of 3 if the entrepreneur does not pay for private protection, and believes that businesses do not pay extra legally to government officials for permits and businesses protection. In Johnson *et al.* (1999) value of zero stands for least secure property rights while value of three measures most secure property rights. Their index captures “security” of property rights when the legal system and institutions function normally and protect the property rights of businessmen. We argue, however, that in a weak institutional structure and property rights get “secured” through extralegal payments. A negative significant coefficient of the index of security of property rights, therefore, would be interpreted as evidence that bribes actually secure entrepreneurs property rights.

To control for the discretionary power of officials on taxes we use a dummy. It takes the value of one if the entrepreneur has indicated that he believes tax authority have discretionary power to change individual tax obligations and zero otherwise.

To gain additional information on the possibility that in the formal credit market younger and smaller firms are more rationed we estimate a tobit model of credit supply, following Bratkowski *et al.* (2000). The dependent variable is one if the applicant received a formal loan and zero if the applicant was denied a formal loan. The sample consists of only those firms that have applied for formal credit so that identification is achieved. A self-selection bias may exist because entrepreneurs who believe they cannot obtain a formal loan have not applied.

The explanatory variables in the credit supply equation must affect only credit supply but not investment in order to achieve proper identification of the effect of credit constraints on investment. Prudent lending requires that banks fund profitable projects and guard against unexpected events by requiring collateral. Employment growth is used as a proxy for profitability of the project. The data set does not contain information on the availability of collateral, but collateral can alleviate asymmetric information problems only if the lender can promptly repossess and resell the asset to recuperate the loss. In Russia, however, very few physical assets can serve as collateral. For example, only in specific circumstances can apartments serve as collateral (Nadolnyak and Hartarska, 1999). Furthermore, since it is expensive and time consuming to seize collateral, and since reselling the assets on underdeveloped secondary markets is not always possible, banks in Russia are forced to use other methods to guard against losses.

Russian entrepreneurs often manipulate their financial statements therefore lending based on financial statements would not be prudent. However, Russian firms that use the banking system to pay suppliers and to receive payments from clients have established a record that banks can use to evaluate borrowers' credibility. Moreover, by using the banking system firms signal that they are better quality clients because such firms risk having their assets frozen if they are unable to meet tax obligations. Finally, firms that actively use the banking system are *de facto* providing collateral, as the funds in their accounts will be seized in case of default. A dummy that takes the value of one if the borrower has actively used his bank account and zero otherwise is used to measure whether banks have used firms' payment record to guard against default.

In developing countries, banks often use the personal credit history of the owner of the business when deciding who gets credit (Berger and Udell, 1998). We use the entrepreneurs' age and education level as a proxy for entrepreneurial abilities.

## **6. The Results**

Both investment opportunities and cash flow have a positive and significant effect on the probability that a firm will invest in fixed assets when sub-sampling is done according to age. Significant Chi-squared confirms that the approach is appropriate. Models one and two (Table 2) show that younger firms with internal funds are 60 percent more likely to invest than are younger firms who do not have internal funds. Older firms with internal funds are 40 percent more likely to invest than are older firms without internal funds. Clearly, the investment decision is linked to internal capital and the information costs that younger firms face are higher than the information costs that older and more established firms face. Overall, investment in younger firms is 20 percent more dependent on the availability of internal capital than is investment in older firms. The difference between the coefficients on the cash flow variable is statistically significant.

The security of property rights has a non-uniform influence over the investment decision of small firms in Russia. Older firms' decision to invest is affected by the security of property

rights but the index of security of property rights is insignificant in the investment equation for younger firms. These results are technically contrary to what Johnson *et al.* (1999) found. However, these authors use data from the earlier stages of the economic transition, when profit margins were high and there was a lack of information regarding the bribe practices of various government officials and private “protection firms”. The more people (“institutions”) entrepreneurs had to bribe, the more discouraged they became regarding the future of their business and invested less. This is well captured by the security of property rights index where more “secure” property rights means paying to a smaller number of officials. Unlike in 1996, in 1999 Russian established businesses were well aware of the extra legal prices charged by various government officials and private protection people. Therefore, the more extralegal “relationships” older firms secured through extra legal payments, the more likely were they to invest and expand the business. In this sense, the results here confirm the suggestion of Johnson *et al.* (1999) that it is the insecurity regarding the incidence of extra legal payments, not the need to pay extra legally that affects firms’ investment decision. For younger firms, however, the need to grow may outweigh concerns of property rights security as shown by the insignificant coefficient on the index of security of property rights.

Taxes rank highest within the group of current problems, and 40 percent of the entrepreneurs believe that tax authorities have the discretionary power to reinterpret individual tax obligations. Surprisingly, however, the dummy for discretionary power of government officials is insignificant in firms’ investment equations (Table 2, Model 2). This result only strengthens the conclusion that the necessity to bribe *per se* does not deter investment. Industry controls show that in both groups retail businesses do not plan to expand their activities, while younger firms operating in both retail and services have limited investment opportunities.

The results from the credit supply equation suggest that lenders were not successful in identifying the best investment projects because profitability, at least as proxied by average employment growth, did not influence who did or did not receive credit (Table 3). Moreover, unlike lenders in developed countries who extensively use the main owners’ personal characteristics as a measure of borrower credibility, banks in Russia were unable to distinguish entrepreneur’s type, at least not if management abilities can be proxied by managers’ age and education. Banks, however, attempted to guard against default by lending to firms who actively used the banking system for their business transactions and who built a payment history. The upshot is that small businesses who did not want to have their activities transparent by using the official payment system had very limited access to formal loans and had to limit their investment to the amount of internal sources or informal loans.

Age is not significant in the credit supply equation. Nevertheless, it may only appear that banks did not discriminate on the basis of age, because this result may be due to a self-selection bias – younger firms, aware that they can not get a formal loan did not even apply. Size played a role in the supply of credit but bigger firms had only a slight advantage. Finally, banks did not believe that the service industry offers good returns to investment, so projects in services were generally not funded.

## **7. Conclusions**

Research on the financing constraints of very small firms is scarce because it is difficult to observe and measure very small firms’ transactions. This paper contributes to the literature by studying the relationship between firm age and liquidity constraints. The liquidity constraint model is adapted to the specific circumstances of small firms in Russia, and the process of economic transition is added through an index of security of property rights.



We find evidence that investment in small firms is strongly influenced by the availability of internal capital. Overall, younger firms' investment is 20 percent more dependent on internal capital than is investment in older firms. The security of property rights influences investment only in more mature firms. The more extralegal relationships older firms had "secured" through extra legal payments, the more likely they were to invest and expand the business. The upshot is that insecurity regarding the incidence of extra legal payments, not the need to pay extra legally affects firms' investment decisions. Results also show that for younger firms the need to grow the business outweighs property rights concerns. The formal financial sector did not channel funds to the most successful investment projects but there is evidence that loans were given to firms that had more transparent transactions.

## References:

- Anderson, R. and C. Kegels (1997), "Finance and Investment in Transition: Czech Enterprises, 1993-1994," IRES Discussion Paper 9715.
- Berger, A.N. and G.F. Udell (1998), "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle", *Journal of Banking and Finance*, Vol. 22, pp. 613-673.
- Bratkowski, A, I. Grosfeld, and J. Rostowski (2000), "Investment and Finance in De Novo Private Firms: Empirical Results from the Czech Republic, Hungary and Poland", *Economics of Transition*, Vol. 8, No.1, pp. 101-116.
- Budina N., H. Garretsen, and E. de Jong (2000) "Liquidity Constraints and Investment in Transition Economies," *Economics of Transition*, Vol. 8, No2, pp. 453-475.
- Chow, C. K.-W., and M.K.Y. Funk (2000), "Small Businesses and Liquidity Constraints in Financiang Business Investments: Evidence from Shanghai's Manufacturing Sector," *Journal of Business Venturing*, Vol. 15., pp. 363-383.
- Commander, S and C. Mumssen (1998), "*Understanding Barter in Russia*", EBRD, Working Paper No. 37.
- Fazzari, S., R. Hubbard, and B. Petersen (1988), "Financing Constraints and Corporate Investment," *Brooking Papers on Economic Activity* No.1, pp. 141-195.
- Grosfeld, I. and J-F Nivet (1997), "Wage and Investment Behavior in Transitions: Evidence form a Polish Panel Set," CERP Discussion Paper No. 1726.
- Hendley, K., P. Murel, R. Ryterman (1999), "Law, Relationships, and Private Enforcement: Transactional Strategies of Russian Enterprises," Working Paper University of Maryland.
- Johnson, S., J. McMillan, and C. Woodruff (1999), "Property Rights, Finance and Entrepreneurship", EBRD Working Paper No. 43.
- Lizal, L. and J. Svejnar (Forthcomming), "Investment, Credit Rationing and the Soft Budget Constraint: Evidence from Czech Panel Data," *Review of Economics and Statistics*.
- Modigliani, F. and M. Miller (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment," *American Economic Review*, Vol. 48, No.3, pp. 261-297.
- Myers, S.C. and Majluf, N. S. (1984), "Corporate Financing and Investment Decision When Firms Have Information That Investors do not Have," *Journal of Financial Economics*, Vol.13, No.2, pp. 187-221.

Nadolnyak, D. and V. Hartarska (1999), "Review of the Legal and Regulatory Constraints for Private Entrepreneurs In Russia and Samara," Occasional Paper, The Ohio State University, Rural Finance Program.

Perotti E. C. and S. Gelfer (Forthcoming), "Red Barons or Robber Barons? Governance and Financing in Russian Financial-Industrial Groups." *European Economic Review*.

Roe A., P. Siegelbaum, and T. King, (1998), "Analyzing Financial Sectors in Transition: With Special Reference to the Former Soviet Union," Working Paper No 1982, The World Bank, Washington DC.

Pissarides, F., M.Singer, and J. Svejnar (2000), "Objectives and Constraints of Entrepreneurs: Evidence from Small and Medium-Sized Enterprises in Russia and Bulgaria", EBRD Working Paper No. 59.

Stiglitz, J.A., A. Weiss (1981), "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 71, pp. 912-927.

Warner, Andrew (1997) "The Emerging Russian Banking System", Harvard Institute of International Development, Occasional Paper.

## Attachment

Table 1. Profile of the Business

	<b>All Businesses</b>	<b>Enterprise age is less than 3 years</b>	<b>Enterprise age is more or equal to 3 years</b>
Industry			
Production (%)	23.6	18	27
Trade (%)	48.3	54	43
Services (%)	28.1	27	29
Average Number of Employees	7.8	6.8	10.5
Average Employment Growth (Annual percentage change)	35	54	17
Plan to invest in physical capital	33	32	33
Would like to return to previous employment	32	30	33
Have positive cash flow		32	31
Use bank account	58.0	58	34
Constraints to growth			
Financing Constraints	46	47	46
Regulation induced	9	14	8
Markets	43	39	46
Ranking of the current problem (1 least problematic, 4 most problematic)			
Financing	2.2	2.3	2.1
Corruption	2.0	1.9	2.1
Taxes	2.9	2.7	3.0
Protection People	1.2	1.3	1.2
% who believe that other businesses pay extra legally to government officials for permits	68.9	67	71
% who believe that other businesses pay extralegally to government officials for business protection	71.8	69	76
% who pay for protection (including racket)	36.1	40	33
% who believe that other businesses pay extra legally to government officials to facilitate tax payment	46.6	46	48

Source: OSU survey

Table 2. Probit Investment in Fixed Capital

	Model 1		Model 2	
	Young	Older	Young	Older
Investment opportunity (dummy growth)	0.589** (0.289)	0.714*** (0.256)	0.593** (0.294)	0.708*** (0.258)
Positive cash flow	0.592** (0.280)	0.387* (0.232)	0.596** (0.285)	0.380* (0.235)
Index of “security” of property rights	-0.159 (0.159)	-0.383*** (0.158)	-0.158 (0.159)	-0.388*** (0.161)
Service	-0.677* (0.388)	-0.252 (0.297)	-0.671* (0.395)	-0.257 (0.298)
Trade	-0.907*** (0.308)	-0.802*** (0.276)	-0.902*** (0.318)	-0.807*** (0.277)
Taxes negotiable			-0.021 (0.275)	0.051 (0.285)
Chi Squared	11	20	10.5	20
P	p>0.04	p>0.001	p>0.05	p>0.001
Observations	93	110	93	110

Table 3. Credit Supply. Probit Received a Formal Loan  
 (The sample includes only those who applied for a formal loan)

	<b>Model 1</b>	<b>Model 2</b>
Profitability (Employment Growth)	0.217 (0.211)	0.177 (0.196)
Credit History (use bank account)	0.692** (0.328)	0.672** (0.337)
Enterprise Age	0.204 (0.312)	0.195 (0.319)
Size	0.537* (0.306)	0.584* (0.348)
Dummy Service	-0.745** (0.322)	-0.671* (0.391)
Dummy Trade	-0.226 (0.285)	-0.129 (0.371)
Manager's Education		0.253 (0.291)
Manager's Age		0.006 (0.009)
Chi Squared	20.1	21.7
P	p>0.001	p>0.001
Observations	92	92