Investments and Property Rights in Russia: Evidence from Small Firms in Samara [1, 2]

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Introduction

Worldwide, and 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 in Russia restrict small firms' investments and growth.

Entrepreneurs' ability to fund new projects is essential for business expansion. Small firms often have financing constraints because 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 week institutional structure and numerous legal and regulatory constraints. Moreover, the supply of external finance is limited due to the lack of skilled bankers and adequate lending technologies. Under these circumstances, small firms' investments are often limited to the amount of internal funds.

Recent studies have explored the degree to which firm size and financial leverage influence the sensitivity of investments to internal funds in small and medium-sized enterprises (SME) in transition countries. Small firms' financial needs, however, are related to the financial growth cycle but this relationship is largely unexplored.

Additionally, credit supply is determined by the lending technologies, and standard banking technology discriminated against younger firms. This paper investigates to what degree the investments of small firms of different age are sensitive to internal funds, and what is the role of property rights. We complete the analysis by estimating a credit supply equation to determine whether providers of formal finance are able to resolve problems of asymmetric information and thus provide sufficient funds to meet small firms' demands.

This paper is organized as follow. Part two presents the methodology and summarizes previous research on liquidity constraints in transition. Part three describes the Russian financial system for the period of the study. The data and the empirical specifications are presented in part four and five. Part six summarizes the results. Conclusions are offered in part seven.

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 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, investments will be limited by the available internal funds. (Fazzari *et al.*, 1988). The financing constraint does not affect all firms uniformly, and the degree of

effective constraint that various firms face provides information on the capacity of the financial system to finance firms' growth.

Fazzari, Hubbard and Peterson, 1988 develop an empirical test to distinguish constrained from relatively less constrained firms. The methodology involves splitting the sample in sub-samples based on theoretical priors (size, age, financial leverage, etc.) and estimating reduced form investment equations. Within each sub-sample (fixed) investments are regressed on two groups of variables – investment opportunities and cash flow - and a test is 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 investments face higher information costs, and are most likely to be unable to obtain external funds.

Studies have shown that the liquidity constrains that small and medium-size enterprises (SME) face in a transitional environment often differ from those in developed economies. In developed countries, the investments of most informationally opaque firms (smaller, younger) are most sensitive to liquidity constrains (Fazarri *et al.*, 1988,). Budina *et al.*, 1999 argue that smaller firms in Bulgaria are more liquidity constrained but for reasons different from those suggested by the theory. They show that due to the prevailing soft budget constraints that characterized bank lending, investments of firms with significant level of long-term debt (bigger, mainly state-owned firms) are not liquidity constrained, while investments of firms without debt, as were most of the smaller private firms, show higher sensitivity to liquidity. Chow *et al.*, 2000, show that smaller firms in China are

less liquidity constrained than bigger firms, which authors attribute to the higher efficiency of smaller firms. Perotti and Gelfer, 2000 find evidence that Russian firms with closer ties to industrial-financial group face lower liquidity constraints than those who do not have ties to banks.

The institutional structure of the transition process also affects the behavior of small firms. In a week institutional environment, corrupt government officials and (semi-) criminal organizations influence the security of property rights and thus firms' investments 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 investments. If firms' property rights are badly defined and poorly enforced, firms will be less willing to expand and will invest less. Authors develop a pecking order model of investments and incorporate the specific transition circumstances through an index that reflects the security of property rights. They show that, prior to 1997, investments of small firms in Poland, Romania, Slovakia, Ukraine, and Russia were determined primarily by 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 a 1997 survey data from *de novo* firms in the Czech Republic, Hungary and Poland, Bratkowski *et al.*, 2000, also find that investments needs are met by the existing financial system. In their study, firms that did not apply for credit were less constrained by availability of internal funds than were investments in firms that have received credit. Authors also study what determines supply of credit and find evidence that banks play 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 external funds has significantly constrained the investments in SME in Bulgaria and Russia, and Czech Republic.

Studies of liquidity constraints of firms in transition countries and in Russia have not accounted for the influence of firm's financial growth cycle.[4] 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 is done for SMEs, where small firms have up to 100 employees and medium firms have 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.

Overview of the Russian Financial Sector

Banking and banks in Russia have a very short history. The Soviet banking sector consisted of mono-bank system, with a merely 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) in smaller banks. Unlike in most transition

[4] 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 equal desire to grow –"life cycle trap."

countries, in Russia, a very large number of new, private banks emerged shortly after the start of the 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 2500 in 1995 (Wartner 1997). Evidently, it was profitable to engage in banking activities but lending was not the activity that banks pursued.

The post-soviet banking has 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 from Government to state-owned enterprises and made their profits by paying only 10 percent annual rate for the funds, at a time when inflation reached 800 percent. Moreover, banks had more than 70 percent of their assets in non-interest bearing deposits. Cheap credit, however, did not flow to the entrepreneurs. Banks rarely engaged in lending and kept the spread between lending and deposit rates high because the economic realities provided stronger incentives for other 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 result of the high demand for foreign currency.

The banking reform in 1995 eliminated these sources of profits. However, banks found it difficult to collect deposits in post-hyper inflationary environment and thus lacked resource 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 like trading GKOs (type of T-bills) and

by organizing payment on *veksels* – financial instruments that enterprises used to extend credit to each other.

Poorly designed and badly enforced regulations also impeded the ability of banks to lend. Banks were required to block clients' accounts if default on tax payment occurred (Hendley *et al.,* 1998). To reduce both the visibility of transactions and banks' access to their accounts, enterprises avoided payment through the banking system. The restrictions on free transfer of enterprises' funds from non-cash into cash additionally prevented firms from opening and using bank accounts. These regulations made intermediation almost impossible because banks could not collect information on clients' transaction, and could not use such information when deciding to whom to lend. On the other hand, 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, like the infamous now forward contracts for foreign currency, for which banks did not have the information processing capability.

When the government defaulted on its GKO in the summer of 1998, and the currency devaluated, 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 has been stagnant but the case for lending as an important banking activity has been made.

In an environment of low-level of intermediation lending to smaller enterprises was even less appealing. Many, especially big banks, found it unprofitable to lend to small and newly established firms. Traditional bank technology requires that a potential borrower presents financial statements for the last three years. Such lending technology is inefficient because banks do not trust financial statements. Moreover, younger firms (as were majority of small firms) can not satisfy the requirement for three years 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 informal sector 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 can enforce their contracts. The higher cost of servicing smaller firms and the absence of 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 often provide primarily non-financial services. For example, the Federal Fund for Small Business

Support provides mainly technical assistance since the 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 that can invest significant amount of own capital. These government programs are capital constrained, tend to fund "priority sectors/activities," and often misallocate resources as government official grant credits to friends and relatives.

In the more rural areas mutual credit associations and consumer cooperative also provide some funds to their members. [5] Innovative micorifnance organizations (MFO) that lend exclusively to micro and small businesses (Opportunity International, FINCA, The EBRD Small Business Fund) have emerged in mid nineties but their influence is limited. MFO arrival is somewhat late because only recently have regulations changed to allow MFOs' operation.

Overall, the high information costs that entrepreneurs face worldwide is enhanced in Russia by the lack of banking tradition, managerial skills, and limited information processing capability of the system. Moreover, banks operated in a restrictive legal environment that discourages transparency of entrepreneurial activity and makes credit risk evaluation even more difficult. Alternative formal loans have limited capacity to fund small firms' investments. As a consequence, Russian small businesses were forced to rely more on internal funds for investments.

[5] There are no credit unions in Russia.

The Data

The Data comes from a survey of 203 small (up to 25empoyees) enterprises 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 operation. The survey covers 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 – the average number of employees is 7.8. 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 are with university degrees, but the share of the younger firms' owners with university degree is smaller than that of the more mature firms. A third of the entrepreneurs have indicated that they have specific plans to invest in physical capital in the forthcoming year and approximately a third have reported that they have limited opportunity and would have returned to their previous employment if that were possible.

Russian entrepreneurs have identified lack of funds as the main constraint to growth – 46 percent report financing is the most serious obstacle. Markets are the biggest constraint to growth for 43 percent of the entrepreneurs and direct regulations rank third with 9 percent. 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 rank

only taxes higher than financing. Corruption and private protection are ranked as sustainable and least problematic (index of 2 and 1.3 respectively). It seems that financing constraints dominate property right 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 security of property rights we asked if the entrepreneurs thought that other businesses pay extra legally to government officials for 1/ various permits and 2/ 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 protect the business. A third of the entrepreneurs also reported that they pay to Mafia people for protection (ninety percent have answered this question.). Moreover, about forty percent indicate that they believe the government officials can change and re-interpret 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 colluded with government officials establishing some basic security of property rights which allows 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 business, as suggested by the theory of the second best applied to the small firms in

Russia. The evidence also shows that younger firms rely more on private protection, while older firms reply more on extralegal transactions with government officials.

Empirical Specifications

The empirical model is constructed after Fazzari, Hubbard and Peterson, 1988. The sample is first split in two sub-samples – younger firms (age less than 3 years) and older firms (age more than 3 years). We test whether availability of internal funds influences firms' decision to invest in fixed capital. This specification captures the influence of financial growth cycle, and allows 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' investments is to distinguish between business and family assets. Any measure of the level of investments 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 investments. On the contrary, pilot tests revealed that questions about the level of investments were systematically not answered. This problem is resolved by the use a qualitative dependent variable (as in Johnson *et al,* 1999) which in a sense "endogenizes the scale". Instead of linear regression, we estimate a tobit model to establish whether firms' decision to invest in fixed assets can be explained by investment

opportunity and availability of internal finance. The dependent variable takes 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 proxi for investment opportunities. An alternative is to use 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 variable as sales is not an appropriate proxi 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 prospective but their sales record is not impressive. Bratkowski *et al.,*2000 and Johnson *et al.,* 1999 use employment growth as a proxi for investment opportunity as in the present empirical specification. The variable that captures 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 (least secure) if the entrepreneur has answered that he must pay for (1) informal groups protection, and entrepreneurs pay (2) extra legally to government officials for permits and (3) extra legally to government officials business protection. The index has value of 3 if (1) the entrepreneur does not pay for protection and believes that (2) businesses do not pay extra

legally to government officials for permits and (3) businesses protection. Therefore, 0 stands for least secure property rights while 3 measures most secure 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 and zero if the applicant was denied 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 can not 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. We use employment growth as a proxi for profitability of the project. The data set does not contain information on 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 Hartrska, 1999). Furthermore, since it is expensive and time consuming to seize the collateral, and since

reselling the assets on the 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 and lending based on financial statements only would not be prudent. However, Russian firms that use the banking system to pay suppliers and to receive payments from clients have build a record that banks can use to evaluate borrowers' credibility. Moreover, just by using the banking system firms signal that they are better quality because such firms risk having their assets frozen if 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 entrepreneurs' age and education level as a proxy for entrepreneurial abilities.

Results

Both investment opportunities and cash flow have 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 the appropriateness of the approach. Models one

and two (Table 4) 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 those of older and more established firms. Overall, investments in younger firms are 20 percent more dependent on availability of internal capital than are investments in older firms and the difference between the coefficient on the cash flow variable is statistically significant.

Property rights considerations have 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 property rights in 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 earlier stages of 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 property right index where more "secure" property rights means paying to smaller number of officials. In 1999 however, Russian established businesses were well aware of the extra legal price charged by various government officials and private protection people. Therefore, the more extralegal "relationships" older firms secured trough extralegal payments, the more likely were they to invest and expend their businesses. In this sense, results 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 outweighs property rights concerns as shown by the insignificant coefficient on the index 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 4, Model 2). This result only strengthens the conclusion that the necessity to bribe *per se* does not deter investments. 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 got credit and who did not. 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 guarded against default by lending to firms who actively used the banking system for their business transactions and who have build payment history record. The up shot 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 investments, so projects in services were generally not funded.

The results of the investment equation for small versus micro firms show that liquidity constraint approach is inappropriate for micro firms (Model 3, Table 4). For them factors other than cash flow and investment opportunities affect the investment decision. For example, family or other circumstances may matter more, or microentreprneurs may have access to informal loans. Moreover, micro firms may be isolated from the formal financial system because in the credit supply equation, size (positively) influences the probability that the firm would be given a formal loan.

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 investments in small firms are strongly influenced by the availability of internal capital. Overall, younger firms' investments are 20 percent more dependent on internal capital than are investments in older firms. The security of property rights influences investments only in more mature firms. The more extralegal "relationships" older firms had secured trough extralegal payments, the more likely they were to invest and expend the business. The upshot is that insecurity regarding the incidence of extra-legal payments, not the need to pay extra-legally affects firms' investment decision. 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.

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Attachment

Table 1. Profile of the Business

	All	Younger	Older	Micro	Small
Industry					
Production (%)	23.6	18	27	14	30
Trade (%)	48.3	54	43	54	44
Services (%)	28.1	27	29	31	35
Average Number of Employees	7.8	6.8	10.5	2.5	15.3
Average Employment Growth (percentage per year)	35	54	17	20	45
Entrepreneurs Education					
High School Degree	4.2	39	30	35	33
University Degree	43.8	61	70	65	67
Plan to invest in physical capital	33	32	33	21	41
Would like to return to previous employment	32	30	33	27	35
Constraints to growth					
Financing Constraints	46	47	46	41	55
Regulation induced	9	14	8	41	34
Markets	43	39	46	41	34
Ranking of the current problem (1 least problematic, 4 most problematic)					
Financing	2.2	2.3	2.1	2.3	2
Corruption	2.0	1.9	2.1	2.0	2.0
Taxes	2.9	2.7	3.0	2.7	3.0
Protection People	1.2	1.3	1.2	1.3	1.2
% who believe that other businesses pay extra legally to government officials for permits	68.9	67	71	70	69
% who believe that other businesses pay extralegally to government officials for business protection	71.8	69	76	72	73
% who pay for protection (including racket)	36.1	40	33	30	41
% who believe that other businesses pay extra legally to government officials to facilitate tax payment	46.6	46	48	48	37
% who believe that government officials can change and interpret the tax code differently for different businessmen	39.0	49	31	42	37
% who would have undertaken an investment but did not due to regulations and taxes	15.3	19	12	12	18

Source: OSU survey

Table 2. Internal Capital Characteristics

	All	Young	Older	Micro	Small
Funds at Start of Business (% of the capital)					
Personal/Family Savings	54.9	53	56	70	43
Private Individual Lender	8.7	14	4	12	6
Bank or Formal Loan	2.4	2.3	2.5	1	3
Equity	23.1	21	25	13	31
Other	8	6	9	4	12
Currently Have Equity Partners (%)	49.75	40	57	27	67
Partner Equity (%)	52.18	56	50	50	53
Participate in Other Business with Equity (%)	16.6	20	14	11	21
Use bank account	58.0	58	34	20	61
Save for Business Investments		32	31	27	35

Source: OSU survey

Table 3. External Capital: Perceived Access to Funds and Experience with Credit

	Younger			Older		
	Perceived Access (%)	Applied (%)	Received (%)	Perceived Access (%)	Applied (%)	Received (%)
Institutional	*68*	*37*	*25*	*68*	*54*	*36*
Trade	*67*	*57*	*56*	*77*	*73*	*72*
Informal	*66*	*55*	*54*	*60*	*45*	*42*

Source: OSU survey

Table 4 Probit Investment in Fixed Capital

	Model 1		Model 2		Model 3	
	Young	Old	Young.	Old.	Small	Micro
Investment Opportunity (Dummy Employment Growth)	0.589** (0.289)	0.714*** (0.256)	0.593** (0.294)	0.708*** (0.258)	0.659*** (0.248)	0.192 (0.345)
Positive Cash Flow	0.592** (0.280)	0.387* (0.232)	0.596** (0.285)	0.380* (0.235)	0.734*** (0.248)	0.071 (0.268)
Index of Property Rights	-0.159 (0.159)	-0.383*** (0.158)	-0.158 (0.159)	-0.388*** (0.161)	-0.380*** (0.158)	-0.220 (0.166)
SERVICE	-0.677* (0.388)	-0.252 (0.297)	-0.671* (0.395)	-0.257 (0.298)	-0.310 (0.310)	-0.324 (0.384)
TRADE	-0.907*** (0.308)	-0.802*** (0.276)	-0.902*** (0.318)	-0.807*** (0.277)	-0.958*** (0.265)	-0.389 (0.344)
Taxes Negotiable			-0.021 (0.275)	0.051 (0.285)		
Chi Squared	11	20	10.5	20	20	NS
P	p>0.04	p>0.001	p>0.05	p>0.001	p>0.001	NS
Observations	93	110	93	110	117	86

Table 5. Credit Supply. Probit Received a Formal Loan (sample of those who applied)

	Model 1.	Model 2
Profitability	.217	.177
(Employment Growth)	(.211)	(.196)
Proxy for Collateral	.692**	.672**
(using bank account)	(.328)	(.337)
Enterprise Age	.204	.195
	(.312)	(.319)
Size	.537*	.584*
	(.306)	(.348)
Dummy Service	-.745**	-.671*
	(.322)	(.391)
Dummy Trade	-.226	-.129
	(.285)	(.371)
Manager's Education		.253
		(.291)
Manager's Age		.006
		(.009)
Chi Squared	20.1	21.7
P	p>0.001	p>0.001
Observations	92	92