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Do institutional structure and political connectedness matter?

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SMEs access to formal finance in post-communist economies: Do institutional structure and political connectedness matter?

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In post-communist economies, a disproportionately greater share of formal finance is channelled to larger enterprises and SMEs lack appropriately-priced formal finance. This article examines whether institutional structure and interpersonal connectedness with bureaucrats exacerbate this formal finance misallocation. We show that access to and use of interpersonal bureaucratic networks improve chances of receiving formal bank credit by between 4–10%. The benefits of interpersonal links are stronger for larger SMEs, and being connected to bureaucratic networks is not associated with enterprise growth. These findings imply that traditional policies that increase bank finance to SMEs should also aim to improve impartiality of bureaucratic institutions and enforceability of private contracts.

Keywords: Financial development; Formal finance; Firm-level analysis; Transition economies.

JEL Nos: G00; G38; B52; P3; M2.

1. Introduction

The demise of the Union of Soviet Socialist Republics (USSR) heralded a transition of the former Soviet Union (FSU) and Eastern European (EE) countries from a centrally planned to a market-based system. The ideological belief that a centrally planned system is concomitant with wastefulness while a market-based system yields an efficient allocation of resources (Kornai, 1982) was central to this extraordinary shift.

Although this belief might be true in principle, in reality various forms of inefficiencies occur in market-based systems and especially in the provision of financial services to enterprises. A rich body of empirical studies now emphasises that the distribution of formal finance is skewed towards larger enterprises and against small and medium sized enterprises (SMEs) who subsequently pay higher interest rates despite having higher capital productivity (Beck and Demirguc-Kunt, 2006; Claessens and Perotti, 2007).

Conventional explanations of this apparent inefficiency emphasise market and information imperfections as major causes of misallocation (Mina et al., 2013). More recent analyses highlight the role of institutional and political factors; for instance, Dasgupta (2005) and Rose (2001) argue that when anonymous market relations are imperfect and bureaucratic

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institutions lack credibility then rent-seeking behaviours become prevalent and extend well beyond the level of the political elite with ordinary agents trying to profit from a web of interpersonal relations. In less than efficient market conditions, a thick network of exclusive interpersonal relations can emerge to resolve allocative and redistributive issues, including access to formal finance (Fedderke et al., 1999). The importance of political connections for gaining access to formal finance is well known for large enterprises (Faccio, 2006; Faccio et al., 2006; Shurchkov, 2012, Boubakri et al., 2012, 2013; Cull et al., 2015) but there is only limited evidence for SMEs (Ruziev and Midmore, 2015).

Our rationale for focusing on SMEs and their access to formal finance is multidimensional. First, SMEs play an especially important role in emerging economies. They account for more than 90 percent of all enterprises and are more labour intensive, and hence contribute strongly to employment growth and facilitate poverty reduction. Second, to our knowledge, this is the first study that specifically assesses the impact of SMEs' interpersonal connections with government officials on improving both their access to formal finance and their growth potential across post-communist economies (PCEs). Third**,** SMEs rely heavily on bank loans out of all the possible sources of external finance and, in our dataset, access to formal finance was chosen by SMEs as the second biggest obstacle (after the tax rate) in the business environment. More than 37 percent of SMEs also cited a lack of external finance as either the main or a severe obstacle to their operation and growth. Fourth, SMEs are not simply scaled down versions of large enterprises, which means they typically face qualitatively different obstacles for their operation and growth than larger enterprises. Fifth**,** unequal access to finance results in some SMEs operating at sub-optimal levels despite having high capital productivity. Finally, given their long and time-consuming institution building experience towards a fully-fledged market economy, PCEs still provide an important case study example to investigate the impact of interpersonal relationships on gaining access to scarce and valuable resources including formal finance.

We source data from the Business Environment and Enterprise Performance Survey (BEEPS) dataset supplied by the European Bank for Reconstruction and Development (EBRD, 2016). BEEPS includes information on over 14,000 SMEs across 28 PCEs from the FSU and EE, employs a standard questionnaire across all countries and includes a dedicated section focussing on business-government relations which allows for the construction of several proxy variables of interpersonal connectedness. Another advantage of the BEEPS dataset is that it allows us to estimate the impact of SMEs' interpersonal political connectedness on access to formal credit in three distinct ways, which, to our knowledge has not been done before. First, we estimate the impact of our target variables on improving SMEs' access to bank credit. Second, conditional upon receiving a bank loan, we estimate the impact of our target variables on improving the stringency of collateral requirements. Third, we estimate the impact of interpersonal connectedness on reducing the cost of recent loans.

Our findings indicate that institutional structure and political connectedness exacerbate the already skewed distribution of formal finance against SMEs in PCEs. In particular, well-connected SMEs are found to have greater access to bank credit despite having low productivity of capital which has implications for the allocation of such scarce resource as bank finance. One of the key implications of our findings is that, to be more effective, traditional policies on increasing bank finance to SMEs should also aim at improving impartiality of bureaucratic institutions and enforceability of private contracts.

This study is organised as follows. The next section discusses relevant studies and exposes the gap in the literature. Section 3 provides contextual information about PCEs. Section 4 describes the data used in this study and presents stylised facts that emerge from an analysis of the raw data. Section 5 presents the estimation results and main findings. Section 6 provides a discussion of the findings and concludes.

2. SMEs' access to formal finance

SMEs play an important role in market economies where they represent more than 95 percent of all enterprises (Nichter and Goldmark, 2009) and because SMEs tend to be more labour-intensive compared with large enterprises, they also contribute more to employment growth and facilitate poverty reduction (Beck *et al*., 2005). Although the average size of SMEs varies with country-level per capita incomes, it has been estimated that SMEs in emerging economies with fewer than 100 workers employ more than half of the active labour force (Beck, 2013). SMEs are seen as an engine of growth and innovation with high-growth innovative enterprises being particularly important as they create most of the new jobs. For example, high-growth and innovative enterprises created more than half of all new jobs in the UK between 2003 and 2008 even though they accounted for only six percent of all enterprises (Anyadike-Danes *et al*., 2009).

SMEs are usually set up either to pursue profitable market opportunities (transformational SMEs) or to avoid unemployment (subsistence SMEs) (Beck, 2013; Xheneti and Bartlett, 2012). Subsistence SMEs are almost exclusively micro-entrepreneurial and set up to generate subsistence income; their share of the SME population increases during economic downturns (Nichter and Goldmark, 2009). Transformational SMEs can employ up to a couple of hundred people but only a small proportion of them ever succeed in becoming large enterprises. Most transformational SMEs never grow beyond a minimum efficiency scale due to, for example, owners' lifestyle orientation, market failures, policy and institutional constraints and/or a lack of access to adequately priced external finance (Claessens and Perotti, 2007; Beck and Demirguc-Kunt, 2006).

Access to formal finance is generally lower in emerging economies. Almost one-third of enterprises in emerging economies cite a lack of external finance as either the main or a severe obstacle to their operation and growth (Beck and Demirguc-Kunt, 2008). Poor access to financial services in developing countries may be due to high fixed costs associated with the provision of financial services and tight entry regulations (Claessens and Perotti, 2007) but low income countries typically lack a sufficiently large pool of domestic savings that can be efficiently mobilised to meet the demands for external finance. The existence of this external finance problem over a longer run can be explained by political factors; for instance, reforms that might challenge the status quo and affect the ability of the incumbent elite to extract rents would be resisted by that incumbent elite (Acemoglu *et al.*, 2005).

In principle, under perfectly functioning market conditions, enterprises should be indifferent between alternative sources of external finance (Modigliani and Miller, 1958) and all projects with positive net present values should be financed regardless of enterprise size. However, in practice, SMEs often rely on bank loans out of all the possible sources of external finance (Berger and Udell, 1998; Cressy and Olofsson, 1997) and the distribution of limited formal finance is skewed against SMEs who subsequently pay higher interest rates than their larger counterparts (Beck and Demirguc-Kunt, 2006). Unequal access to finance affects investment and hence growth because some profitable entrepreneurial initiatives may never receive external finance and will operate at sub-optimal levels despite having high capital productivity (Claessens and Perotti, 2007).

Conventional explanations of the unequal distribution of finance emphasise market and information imperfections as the main underlying causes of misallocation away from SMEs (Mina et al., 2013). These imperfections originate from a variety of areas. For instance, SMEs should not be regarded as simply scaled down versions of large enterprises (Beck, 2013) as they are usually younger, less likely to possess acceptable collateral, informationally more opaque and face stiffer competition in product markets, which then affect cash flow

forecasting (Ruziev and Midmore, 2015). Despite SMEs accounting for a large share of enterprises, banks cannot fully utilise the law of large numbers to exploit economies of scale and enjoy the associated diversification benefits when lending to SMEs (Beck, 2013) and hence lending to SMEs is seen as higher risk, which leads to lower supply and higher costs of bank loans to SMEs (Berger et al., 2001).

An alternative explanation of the asymmetric availability of formal finance has been put forward by institutional economists and emphasises the role of institutional and political factors. Modern market-based economies are composed of anonymous markets, impersonal bureaucratic organisations and communitarian institutions that depend upon interpersonal networks (Dasgupta, 2005, Bauernschuster et al. 2010). Under such circumstances, entrepreneurial decisions will respond not only to market prices but also to rules and regulations that can jointly shape and manipulate incentivising and hindering mechanisms. Impersonal public and private bureaucratic organisations, which operate under the rule of law, facilitate the process of exchange, production and investment by enforcing rules, regulations and contracts (North, 1990; Weber, 1968). The interrelationships between these three layers of the economic structure are dynamic and change with the level of economic development (Stiglitz, 2001). Meanwhile, bureaucratic institutions in thin and underdeveloped markets usually lack credibility, cause inefficiencies and weaken market-based incentivising and constraining mechanisms. As a result, the role of bureaucratic institutions can be partly replaced by community-ruled horizontal webs of interpersonal networks that can grow in importance in production and exchange relations (Stiglitz, 2001). As a consequence, a network of exclusive interpersonal and reputation-based relations will emerge to resolve allocative and redistributive questions, including access to formal finance. Fighting against this can be the expansion of the market-based exchange system, which can develop, deepen and eventually reduce the importance of communitarian institutions, only to be replaced by formal contracts embedded in impersonal legal systems (Stiglitz, 2001).

A further explanation of the asymmetric availability of formal finance is that the less than impartial political elite affect economic outcomes formally through red tape and informally through individual connections and interpersonal relations. There is growing evidence which suggests that political connections play an important role in gaining access to formal finance and that larger enterprises gain more benefit from such connections (La Porta et al., 2002; Faccio, 2006; Faccio et al., 2006; Li et al., 2008; Boubakri et al., 2012; 2013; Cull et al., 2015). Entrenched elites may influence business environments by adopting formal rules and regulations to protect their rent-seeking interests and create unfavourable operational constraints and obstacles for enterprises. This can result in a culture of favouritism and bribery which further suppresses market-based impersonal exchange and resource allocation (Fedderke et al., 1999; Dort et al., 2014) and international evidence shows that smaller firms suffer more from these constraints (Schiffer and Weder, 2003).

Competing views exist on the influence and ultimate impact of corruption and rent-seeking behaviour on allocative efficiency and social welfare (Aidt et al., 2008; Green, 2011; Aligica and Tarko, 2014). Successful firms that generate more surplus can better afford to offer bribes and kickbacks and gain advantageous access to scarce resources, which can result in socially beneficial outcomes (Duvanova, 2014; Blackburn and Forgues-Puccio, 2009; Manion, 1996; Li, 1998; Du and Girma, 2010). This view, however, ignores the interpersonal nature of relations between public officials and entrepreneurs when supposedly ‘impersonal’ bureaucratic organisations do not enjoy full credibility.

Interpersonal networks are used more often when anonymous markets are suppressed, rent seeking behaviour is prevalent and rules and laws are dysfunctional (Dasgupta, 2005). Although interpersonal links may require some form of eventual pecuniary reward in exchange for favours, non-pecuniary obligations may dominate as these can be recurrent and

produce continuous benefits to both parties. Furthermore, soliciting bribes is not costless for corrupt bureaucrats even under these circumstances, as there is always a danger that they may be caught in the process and thus bureaucrats are more likely to cooperate with people who they know and trust to minimise the risk of being caught (Becker, 1968; Ryvkin and Serra, 2012). Hence, having the right interpersonal connections becomes more valuable than simply affording explicit monetary payments as bribes.

Not all entrepreneurs are fortunate enough to have economically beneficial interpersonal networks and the most valuable networks can be the most exclusive. Belonging to a single network may open access to other networks as some entrepreneurs will be members of multiple networks. For example, entrepreneurs may gain indirect access to formal finance through their connections with government officials. The interpersonal and exclusive natures of such networks vindicate that a small number of strategically well-connected entrepreneurs will be able to seize a disproportionately large share of common resources and opportunities, which can result in further allocative inefficiencies (McKean, 1992). This compares to anonymous market-based exchange systems which can be thought to be more efficient because 'the best' buyer or seller may not be a part of exclusive networks (Serageldin and Grootaert, 2001).

3. Post-communist economies: a brief background

PCEs had relatively similar economic conditions when they started their transformations towards market-based systems in the late 1980s, especially in relation to the banking structure and enterprise finances (Dow et al., 2008). However, unlike other emerging economies where firms' access to formal finance had historically been poor, PCEs had to deal with an over-dependence of enterprises on bank finance at the start of transition; table 1 shows that often half of enterprises' working capital was financed by bank credit. Kornai (1982) calls this phenomenon 'soft budget constraints' and argues that it was one of the main causes of resource misallocation under central planning, as it allowed loss-making enterprises to stay afloat. As for fixed capital financing, enterprise start up capitals and investment expansions were financed from state budgets as non-repayable grants and subsidies (Ruziev and Dow, 2014).

Table 1: Sources of enterprise working capital financing in the FSU in 1980

	National Economy	Industry	Agriculture	Trade
Own resources	24.0	33.0	22.8	28.0
Bank credits	46.3	50.2	55.7	56.6
Other	29.7	16.8	21.5	15.4
Total	100.0	100.0	100.0	100.0

Source: Geraschenko and Lavrushin (1982)

In the early years of transition, policymakers prioritised macroeconomic reforms (such as privatization, price liberalization and macroeconomic stabilisation) and a hardening of 'soft budget constraints' (Fischer and Gelb, 1991). Liberalisation policies were fast and perceived to be successful in small-scale enterprise and retail sectors in all transition economies. Opportunities emerged for private entrepreneurial activities that resulted in higher demand for financial services. However, rhetoric concerning increasing productive capacities of SMEs and improving their access to financial services was not matched by policy. In particular, hardening of the soft budget constraints was a painful experience and involved a

complete restructuring of the banking sector. The sudden and sharp reduction in bank credit resulted in enterprises resorting to alternative ways of financing working capital; bartering, transactions in promissory notes, inter-enterprise arrears and mutual debt write-offs were observed in almost all PCEs in the late 1990s (Carlin et al., 2000) but were most severe in Russia and Ukraine where, at its peak in 1998, barter accounted for more than 50 percent of all industrial transactions (Ivanenko and Mikheyev, 2002).

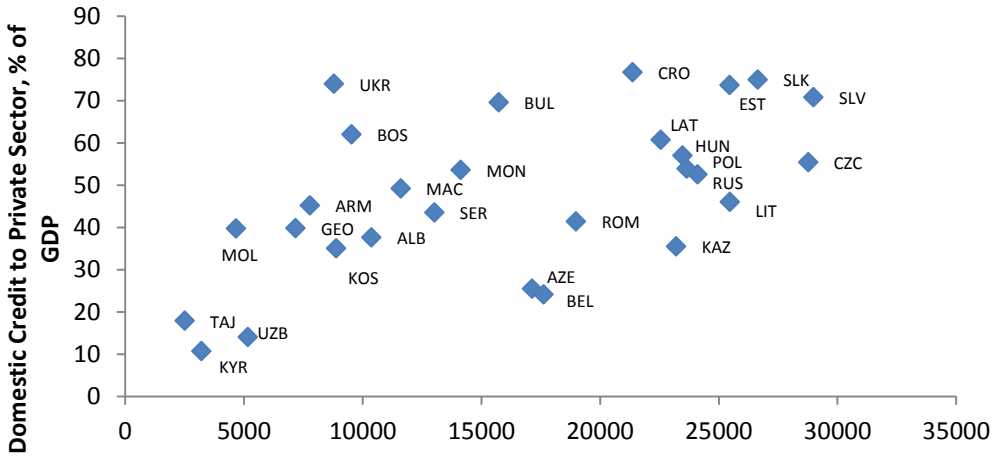
Table 2 presents financing sources of SMEs' working and fixed capital in 2012-14 and illustrates that formal finance by banks to enterprises remained considerably lower than in the pre-transition period but continued to be the most important source of external finance for SMEs. In particular, bank financing of SME activities was lower on average in Georgia and the Commonwealth of Independent States (CIS) compared to that in the EE region, with this difference being more pronounced for fixed capital financing. Part of this difference may be explained by macroeconomic conditions (e.g. depth of financial sector development, progress made in banking and enterprise reforms, per capita income levels) and figure 1 highlights that most CIS countries are less developed financially and have lower per capita income levels compared to their EE counterparts.

Table 2: SME financing sources according to BEEPS survey data
(As a percentage of total financing)

		Georgia and CIS	EE
Working capital	Internal finance	81.7	70.1
	Formal finance	9.0	13.7
	Trade credit	7.1	13.6
	Other	2.1	2.5
Fixed capital	Internal finance	78.5	69.4
	Formal finance	10.5	18.5
	Owners funds and/or new equity	5.2	4.6
	Trade credit	3.3	5.4

Source: BEEPS 2012-14 (EBRD, 2016)

Figure 1. Measures of Financial Depth and Per Capita Income in 2013.



Source: World Development Indicators (2016)

An important caveat, however, is that these aggregate indicators are broad and do not fully reflect the variation in institutional and financial constraints faced by SMEs. For example, while more developed financial systems generally offer better access to financial services, aggregate measures of financial development (e.g. private sector credits, broad money, banking sector assets, etc.) do not provide enough information about the breadth and quality of financial depth and neglect other issues, such as the proportion of economically active entities responsible for the utilisation of available formal finance (Claessens and Perotti, 2007). Despite the intensification of market-based exchanges and improving credibility of formal bureaucratic organisations in most PCEs, evidence suggests that public officials and civil servants in otherwise impersonal bureaucratic organisations still personalise their positions by using the rigidity of rules and regulations as an excuse for rent-seeking (Duvanova, 2014), which Rose (2001) describes as an organisational failure and with smaller enterprises affected disproportionately more by these institutional constraints (Schiffer and Weder, 2003; Ruziev and Midmore, 2015).

Given the underlying literature and the PCE context, we sought to identify answers to the following strategically important questions:

1. Does access to and use of interpersonal bureaucratic networks improve the chance of SMEs receiving formal credit?
2. Are benefits to interpersonal bureaucratic networks more important for smaller or larger SMEs?
3. Is enterprise growth associated with bureaucratic networks?

We proceed to empirically examine whether being connected to an exclusive network is important in enabling SMEs to gain access to valuable resources in economies where bureaucratic institutions lack credibility and efficiency, which breeds a culture of favouritism, corruption and bribery. Since belonging to a network may also open access to other networks, it is possible to gain indirect access to formal finance when one has personal connections with government officials.

4. Data

We sourced data from the 2012-2014 sweep of the BEEPS dataset (EBRD, 2016), which provides information on more than 14,000 enterprises in 28 PCEs from the FSU and EE. The survey employs a stratified random sampling technique where the strata are based on firm size, economic sectors and geographic regions within each country. Around 360 enterprises were interviewed in most countries although a greater number were sampled in larger economies. Only formally registered enterprises with more than 5 employees were interviewed and enterprises with 5 to 19, 20 to 99 or 100 or more employees being defined as small, medium or large respectively.

Since SMEs are not simply scaled down versions of large enterprises (Beck, 2013) and typically do face qualitatively different obstacles for their operation and growth than larger enterprises, we extracted data from the BEEPS that corresponds only to SMEs. We removed unreliable and potentially implausible observations from the sample, which included enterprises who claimed to have bank credit but indicated no or limited (less than 200 local currency units) bank loans. We also dropped observations when interviewees admitted to reporting arbitrary and unreliable responses at the end of interviews. The total number of enterprise observations in our SME sample is 11,714.

The BEEPS dataset has several advantages. It uses a standard questionnaire across all countries and contains information on business environments, business-government relations

and enterprise characteristics, such as firm age, industry experience, annual sales and enterprise financing sources. The questionnaire also contains information on interpersonal connections. We draw on three binary variables: while securing government contracts (question j6a in the questionnaire) and subsidies (q.53) relate to the *use* of interpersonal networks, the frequency of payments of bribes and gifts (q.39) relates to the *access* to such networks. The question relating to *access* to interpersonal links asks SME managers about the behaviour of 'typical firms.' According to Dabla-Norris and Koeda (2008), enterprise managers base their responses on their own experiences when answering these types of questions.

Descriptions and summary statistics of the variables used are reported in table 3, which shows that the average age of SMEs in the sample is approximately 14 years with the standard deviation of 9 years, implying that more than two thirds of SMEs are at least 5 years old. The average SME has a relatively experienced manager (16 years). Almost one third of SMEs held bank loans for fixed and/or working capital needs, and banks required collateral for 81 percent of these loans. Thirty-one percent of enterprises claimed to have offered bribes and gifts to public officials at least sometimes and 20 percent held government contracts. Our sample is relatively evenly split between the services (53%) and manufacturing sectors.

Additional information about some of the variables is presented in tables 4-5. Table 4 breaks down the data on bank loans, bribes and gifts, and government contracts across five geographic regions:

- 11 EU member EE countries (EU-EE),[1]
- 6 non-EU countries of EE (non-EU-EE),[2]
- 3 countries of the Caucasus region,[3]
- 4 countries from Central Asia[4] and
- 4 BRUM countries.[5]

Enterprise access to bank loans varies across these regions: in general, SMEs have greater access to bank loans in the EE region which boasts more developed financial sectors and higher per capita income levels. Part of this can be explained by the strong presence of western banks in the EE region where the share of foreign-owned bank assets in total banking sector assets ranges from 60 to 90 percent across the region (Bonin et al., 2015). In contrast, foreign banks do not have significant presence in the CIS countries (Ruziev and Dow, 2014); for example, foreign banks in Russia accounted for less than 20 percent of banking sector assets in 2010 (IMF, 2011). A strong foreign bank presence can contribute to a deepening of the financial sector, and this explains the relatively high share of foreign-currency denominated loans in the EE region (>50%).

The practice of offering bribes and gifts seems to be more prevalent in the BRUM (around 40%) and Central Asia (33%) regions than in the non-EU-EE (28%), EU-EE (20%) and Caucasus (19%) regions. Government contracts also seem to be more prevalent in the BRUM and Central Asia regions (both 24%), followed by the EU-EE (19%), Caucasus (16%) and non-EU-EE (14%) regions. Although EU-EE countries are assigned higher scores in transition indicators of institutional and market reforms by international financial institutions (EBRD, 2011), around 20 percent of enterprises from this region reported offering bribes and

[1] Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia

[2] Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Montenegro and Serbia

[3] Armenia, Azerbaijan and Georgia

[4] Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan

[5] Belarus, Russia, Ukraine and Moldova

gifts to government officials, which reflects the complex and time-consuming nature of building impersonal and market-facilitating bureaucratic organisations.

Table 3: Description and summary statistics of main variables

Variables	***Description***	***μ***	**σ**	**N**
bank_loan	=1 if in receipt of bank loan to finance working and/or fixed capital needs in the last fiscal year, =0 otherwise.	0.28	0.45	11124
collateral	=1 if collateral was required for the most recent bank loan, =0 otherwise.	0.81	0.39	3535
loan_interest	Annual interest charged on the most recent bank loan, %.	12.04	7.12	2799
loan_fx	=1 if the most recent loan is in foreign currency, =0 otherwise.	0.31	0.46	3606
enterprise_age	Enterprise age in years.	13.63	9.39	11631
enterprise_age2	enterprise_age squared divided by 100.	2.74	6.78	11631
manager_experience	Top manager's experience in the sector in years.	15.99	9.61	11425
manager_experience2	manager_experience squared divided by 100.	3.48	4.16	11425
trade_credit	Percentage of inputs purchased on credit.	37.88	37.09	10889
leasing_fxassets	=1 if leasing fixed assets, =0 otherwise.	0.18	0.38	11645
lnlabour	Natural log of full time employee numbers.	2.71	0.92	11714
lnsales	Natural log of annual sales in the last fiscal year.	15.76	2.65	9317
exp_sales	=1 if sales are expected to increase next year, =0 otherwise.	0.52	0.50	10600
services	=1 if SME operates in the services sector, =0 otherwise.	0.53	0.50	11714
exporter	=1 if SME directly or indirectly exports, =0 otherwise.	0.17	0.38	11714
quality_cert	=1 if SME hold internationally recognised quality certificate, =0 otherwise.	0.18	0.39	11564
accnts_audited	=1 if most recent annual statement is certified by external auditors, =0 otherwise.	0.27	0.44	11423
product_concentr	Percentage of sales from main product/service	84.11	22.27	11352
own_website	=1 if SME has its own website, =0 otherwise.	0.58	0.49	11680
city	=1 if main business city and/or population exceeds 1 million, =0 otherwise.	0.29	0.45	11714
Non_EU_EE	=1 if non-EU member eastern European country, =0 otherwise.	0.13	0.34	11714
caucasus	=1 if the Caucasus region, =0 otherwise.	0.11	0.31	11714
BRUM	=1 if Belarus, Russia, Ukraine, and Moldova, =0 otherwise.	0.41	0.49	11714
central_asia	=1 if the central Asia region, =0 otherwise.	0.09	0.28	11714
bribes_n_gifts	=1 if regularity of bribes and gifts was rated at least as "sometimes", =0 otherwise.	0.31	0.46	10765
gov_contract	=1 if government contract was obtained, =0 otherwise.	0.20	0.40	11565
subsidies	=1 if subsidies received in the last three years, =0 otherwise.	0.07	0.26	11622
dc	Domestic credit to private sector, % of GDP.	49.57	15.75	11714
inflation	Annual CPI inflation, %.	4.34	3.57	11714
tax_rate	Corporate tax rate, %.	17.0	4.10	11714

Note: μ refers to mean and σ to standard deviation; N is the number of observation

Table 4: Selection of sample variables across the regions

	EU-EE	Non-EU-EE	Caucasus	BRUM	CA
SMEs with Bank Loans	35.5%	44.0%	30.3%	21.5%	17.3%
FX Loans to Bank Loans	50.3%	54.6%	41.7%	6.5%	28.0%
Bribes and Gifts	19.6%	27.5%	18.8%	40.10%	32.6%
Government Contracts	19.4%	13.6%	15.5%	23.9%	23.7%

Source: Authors' calculations based on BEEPS 2012-2014 (EBRD, 2016)

Table 5 reveals the potential impact of interpersonal connections (as measured by bribes and gifts and government contracts) on access to bank loans across the five regions. Column A shows the proportion of SMEs with bank loans that reported offering bribes and gifts to public officials whereas column B shows the proportion of SMEs with bank loans that did not offer bribes and gifts; the difference between these two columns is presented in column C along with an indication of statistical significance using a *t*-test. Similar information for bank loans with and without government contracts is presented in column D-F. As can be seen from column C, with the exception of the Central Asian region, a greater proportion of SMEs that bribed public officials obtained bank loans than SMEs that did not bribe and these differences are statistically significant. In particular, the magnitudes of the differences between the two sub-sample averages reported in columns A and B were larger and their statistical significance levels stronger in the EE and Caucasus regions. Likewise, as can be seen from column F, a greater proportion of SMEs that held government contracts received bank loans compared to those that did not hold government contracts, and this time the results are statistically significant across all five regions.

Table 5: SME use of bank loans under different sub-samples

	Bank Loans		Difference between	Bank Loans		Difference between
	Bribes and Gifts=Yes	Bribes and Gifts=No	(A) and (B)	Government contract=Yes	Government contract=No	(D) and (E)
Regions	(A)	(B)	(C)	(D)	(E)	(F)
EU-EE	42.30%	34.20%	*8.10%***	43.00%	34.10%	*8.90%***
Non-EU-EE	49.60%	41.90%	*7.70%***	57.10%	42.20%	*14.90%***
Caucasus	38.40%	29.80%	*8.60%***	44.60%	28.40%	*16.20%***
BRUM	23.20%	21.00%	*2.20%***	25.80%	20.10%	*5.70%***
CA	16.49%	17.01%	*-0.52%*	21.40%	16.10%	*5.30%***

Note: * refers to 10%, ** to 5%, and *** 1% level of statistical significance respectively. Source: Authors' calculations based on BEEPS 2012-2014 (EBRD, 2016)

5. Bureaucratic connectedness and access to bank loans

In our dataset more than 37 percent of SMEs reported that access to formal finance was a moderate to severe obstacle to their current operations and access to finance was chosen as the second biggest obstacle (after the tax rate) in the business environment. The raw data also indicates that SMEs with connectedness to bureaucrats seem to enjoy more privileged access to scarce resources.

We proceed to estimate econometric models to examine if SMEs with greater connectedness to bureaucrats have more privileged access to bank finance than those who do

not, and identify if such a relationship remains after controlling for a variety of firm- and country-specific characteristics. The equation to estimate is:

$$Y_i = \alpha + X_i\beta + Z_i\gamma + \varepsilon_i \quad (1)$$

where Y is a dependent variable that reflects the use of bank loans; X and Z are vectors of predictors that affect Y, where the former includes both continuous and categorical control variables reflecting firm-level characteristics and the latter includes variables representing interpersonal networks, namely bribes and gifts, government contracts and subsidies. Parameters α, β and γ are to be estimated and ε is the random error term.

The BEEPS dataset allows for the parameterisation of access to formal credit in three distinct ways. In model 1, the dependent variable takes the value of 1 if an SME held a bank credit for working and fixed capital purposes in the last fiscal year and 0 otherwise. Conditional upon receiving a bank loan, we parameterise the dependent variable in model 2 by using data on whether collateral was requested for the most recent loan, with a variable equal to 1 if it was and equal to 0 otherwise. In model 3, the dependent variable measures the annual interest rate paid on the most recent loan. The coefficient estimates in models 2 and 3 are expected to have the opposite signs to those for model 1, as variables that relate to an *improvement* in access to bank loans (model 1) are also likely to *reduce* the relative stringency of collateral requirements (model 2) and *lower* the interest rate charges (model 3). We estimate models 1 and 2 using a probit maximum likelihood approach and model 3 using ordinary least squares. Marginal effect estimates at the mean after probit estimation for models 1 and 2 are provided along with OLS estimates for model 3. Asymptotic standard errors, clustered by country, are reported in parentheses. The complete list of predictors and the estimated results of equation (1) for all 3 models are reported in table 6.

Estimates of model 1 corroborate expectations. The variables *enterprise_age* and *manager_experience*, used as proxies for human capital and entrepreneurial ability respectively, have positive associations with the probability of obtaining formal credit. This diminishes as the values of *enterprise_age* and *manager_experience* increase, as illustrated through the estimates of their respective squared terms. The underlying logic is that the length of business experience will make entrepreneurs appreciate the importance of using their input resources, including external finance, more efficiently. Moreover, from the lenders' perspective, enterprises that have been established for a longer time may have better reputations, credit histories and longer-term relationships with formal credit institutions (Cavaluzzo and Cavaluzzo, 1998).

Because SMEs are informationally more opaque than larger enterprises and as the financial systems in emerging economies are still evolving considerably, banks in PCEs tend to use SMEs' formal credit arrangements with their suppliers and other credit institutions as screening devices when considering loan applications (Cook, 1999; Agostina and Trivieri, 2014; Beck, 2013). Our results corroborate this perspective: the difference in the estimated coefficient magnitudes between *trade_credit* and *leasing_fxassets* (0.1% vs. 7.0% respectively) underscores that banks see SMEs' prior formal credit arrangements with other credit institutions as a stronger screening device when considering loan applications. Estimates of the effects of enterprise size, *lnsales* and *lnlabour* (see Cavaluzzo and Cavaluzzo, 1998), are positive and reflect that formal credit organisations prefer lending to larger SMEs due to the higher transaction costs associated with monitoring a large number of small loans.

Table 6: Bank loan use estimations

Predictors	Exp. Sign (+/-)	Model 1: Bank Loans Probit Marginal Effects (M.E.)	Model 2: Loan Collateral Probit Marginal Effects (M.E.)	Model 3: Loan Interest OLS Estimates
enterprise_age	+	0.003**	0.002	0.050
		(0.001)	(0.002)	(0.045)
enterprise_age2	-	- 0.004**	- 0.003***	- 0.047
		(0.002)	(0.001)	(0.041)
manager_experience	+	0.003*	0.002	- 0.001
		(0.002)	(0.003)	(0.035)
manager_experience2	-	- 0.010***	- 0.003	- 0.006
		(0.004)	(0.007)	(0.074)
trade_credit	+	0.001***	0.000	- 0.004
		(0.000)	(0.000)	(0.007)
leasing_fxassets	+	0.069***	- 0.023	- 0.103
		(0.018)	(0.018)	(0.290)
lnlabour	+	0.039***	0.043***	- 0.680*
		(0.009)	(0.014)	(0.372)
lnsales	+	0.014***	- 0.007	0.058
		(0.004)	(0.008)	(0.340)
exp_sales	+	0.055***	0.017	- 0.071
		(0.013)	(0.017)	(0.461)
services	-	- 0.022*	- 0.010	- 0.136
		(0.012)	(0.019)	(0.282)
exporter	+	0.051***	- 0.010	0.300
		(0.013)	(0.017)	(0.434)
quality_cert	+	0.028	0.017	- 0.018
		(0.021)	(0.019)	(0.406)
accnts_audited	+	0.031**	0.025	- 0.216
		(0.016)	(0.020)	(0.392)
product_concentr	-	- 0.001***	0.000	0.003
		(0.000)	(0.000)	(0.005)
own_website	+	0.034***	- 0.042**	- 0.942***
		(0.010)	(0.019)	(0.359)
city	-/+	- 0.046***	- 0.013	0.060
		(0.018)	(0.018)	(0.319)
Non_EU_EE	-	0.089**	- 0.001	1.654
		(0.039)	(0.055)	(1.223)
caucasus	-	0.089***	0.111**	6.284***
		(0.028)	(0.051)	(1.017)
BRUM	-	- 0.120***	0.055*	8.295***
		(0.028)	(0.033)	(1.539)
central_asia	-	- 0.175***	0.167***	7.417***
		(0.034)	(0.048)	(1.820)
bribes_n_gifts	+	0.030**	- 0.042***	- 0.362
		(0.015)	(0.014)	(0.426)
gov_contract	+	0.037**	0.014	- 0.080
		(0.018)	(0.021)	(0.326)
subsidies	+	0.090***	0.041	- 1.278**
		(0.020)	(0.029)	(0.493)
loan_term		_	0.001***	- 0.007
			(0.000)	(0.005)
loan_fx		_	0.005	- 0.941
			(0.024)	(0.774)
Number of observations		6813	2223	1965
Goodness of fit (R^2)		0.11	0.05	0.34

Notes: *** refers to 1%, ** to 5%, and * to 10% levels of significance respectively. Constant terms not reported for brevity. Asymptotic standard errors, clustered by country, are reported in parentheses. Coefficients of Models 1 and 2 are marginal effects at the mean after probit estimation.

Signs of coefficients associated with enterprise competitiveness and quality of financial information (*exporter*, *quality_cert*, *accnts_audited*, *own-website*, *product_concentr* and *quality_cert*) meet expectations. Coefficients for the BRUM and Central Asian regions have expected signs but the ones for the Non-EU-EE and the Caucasus regions are positive, which initially looks counter-intuitive. However, a closer look at the raw data shows that the Non-EU-EE region reports the highest proportion of SMEs with bank loans and the proportion of SMEs with bank loans in the Caucasus region was comparable to that in the EU-EE region; similar observations apply to the share of foreign-exchange denominated loans.

The estimated coefficients of our key variables (*bribes_n_gifts*, *gov_contract* and *subsidies*) are all positive and statistically significant at least at the 5 percent level. The impact of interpersonal connectedness identified in table 5 persists after controlling for enterprise characteristics. Although the marginal effects of the estimated coefficients should be interpreted with caution, results indicate that offering bribes and gifts increases the chance of gaining access to formal credit by 3 percent, having a government contract improves the chance of obtaining a bank loan by 4 percent and being in receipt of subsidies increases it by 9 percent.

Coefficients of our target variables *bribes_n_gifts*, *gov_contract* and *subsidies* are expected to be negative in models 2 (stringency of collateral requirements) and 3 (interest rate charges), as enterprises are likely to use interpersonal links to reduce collateral requirements and loan interest rates when obtaining bank loans; however, inspection of the coefficients in models 2 and 3 reveal mixed results. The coefficient of *bribes_n_gifts* has the expected sign but is only statistically significant in model 2, *gov_contract* is statistically insignificant in both models and *subsidies* is statistically significant only in model 3. These results imply that offering bribes and gifts, having a government contract and being in receipt of subsidies are particularly important for obtaining a bank loan while paying bribes or gifts soften collateral requirements and receiving subsidies lowers the cost of borrowing.

The expected signs of *lnlabour* and *lnsales* in model 2 are uncertain due to the net effect of two considerations. On the one hand, larger enterprises are likely to provide banks with better quality information about their creditworthiness, which should lower banks' collateral requirements. On the other hand, smaller enterprises are less likely to possess tangible collateral that is acceptable to banks, which means larger enterprises are likely to report more collateral. *lnlabour* is found to be significant in models 2 and 3: although larger enterprises face more stringent collateral rules, banks seem to compensate them by charging lower interest rates. Of the variables contributing to enterprise creditworthiness, only *own_website* is significant in both models: these enterprises face less stringent collateral requirements (4%) and pay lower interest rates (almost 1% lower).

Models 2 and 3 shed light on the quality of access to credit across regions. Financial systems are less developed in the BRUM, Caucasus and Central Asian regions compared with the EU-EE, implying enterprises are more likely to face more stringent collateral requirements and pay higher interest costs in these regions. Moreover, the raw data indicate that we should not observe a significant difference between the EU-EE and non-EU-EE regions. As expected, the regression results highlight that enterprises in the BRUM, Caucasus and Central Asian regions face stiffer collateral requirements and pay higher loan rates compared to their counterparts in the EU-EE. Although SMEs in the Caucasus region have relatively better access to credit (model 1), they seem to be subjected to more stringent collateral requirements (11% more than in the EU-EE) and face higher loan interest costs (6.3% higher than in the EU-EE). Similarly, SMEs in the BRUM are 6 percent more likely, and those in Central Asia are 17% more likely, to be asked for collateral when obtaining a bank loan; they also pay around 7-8% more on their bank loans compared to their EU-EE counterparts.

Since loan term and loan currency may also influence banks' collateral requirements and interest rate charges, we augmented the models 2 and 3 to include *loan_term* and *loan_fx*. The intuition here is that collateral requirements and interest charges may vary depending on the duration and currency of bank loans. Hence, *loan_term* is expected to have a positive sign in both models, whereas *loans_fx* is expected to have a positive sign in model 2 and a negative sign in model 3. We reveal corroborating evidence only for a positive effect of *loan_term* in model 2. To summarise, our results reveal the following:

- offering bribes or gifts, receiving subsidies and possessing a government contract all enhance the likelihood of an SME acquiring a bank loan,
- paying bribes or gifts soften SME collateral requirements,
- receiving subsidies lowers the cost of borrowing for SMEs, and
- possessing a government contract does not reduce loan collateral requirements or interest repayments for SMEs.

The ramifications of these results could be far-reaching with important and timely policy implications that have wide-spread significance for growth and development across the former Soviet Union and Eastern Europe. Such findings deserve and require sensitivity testing to identify the stability of the results. Below we conduct five sensitivity analyses to examine different aspects of stability.

Sensitivity test #1: macroeconomic factors

The results may be sensitive to macroeconomic factors. We re-estimate models 1-3 with three additional variables: the share of the private sector credit to GDP (as a proxy for financial depth), the inflation rate (a proxy for macroeconomic stability) and the tax rate (which was ranked as the number one obstacle for SMEs in our survey and hence is a proxy for the general business environment). Results of these estimates are presented in table 7. The results of model 1 reveal that only the tax rate is statistically significant in acquiring a bank loan. Relative to the results reported in table 6, the inclusion of these macroeconomic indicators marginally enhance the magnitude and statistical significance of the coefficients of our three target variables. The coefficient of the non-EU-EE region is no longer statistically significant now, which is broadly in line with our expectations. Re-estimations of models 2 and 3 indicate that SMEs in the Caucasus and BRUM regions pay up to 6 percent higher inflation-adjusted loan rates compared with their EE-EU counterparts. These estimates corroborate earlier results: paying bribes and gifts remain important in softening collateral requirements, subsidies are important in lowering the cost of borrowing and possessing a government contract appears to hold no statistical importance in either model.

Sensitivity test #2: self-selecting borrower behaviour

It is possible that the higher success rates for SMEs with interpersonal connections could be due to self-selecting borrower behaviour. For example, SMEs without strong interpersonal connections with government officials may be less optimistic about their chances of obtaining formal credit and hence be less likely to apply for a bank loan. The omitted variable problem could also affect the results. For instance, banks typically require carefully drafted business plans and feasibility studies when considering loan applications. The variables included in our models will capture many features of creditworthiness, personal wealth and entrepreneurial drive and skills, but an incomplete characterisation of these issues may impact on our results.

Table 7: Bank loan use estimations with selected macroeconomics covariates.

Predictors		Model 1: Bank Loan - Probit M.E.	Model 2: Collateral - Probit M.E.	Loan Interest - OLS
enterprise_age	+	0.003**	0.002	0.040
		(0.001)	(0.002)	(0.030)
enterprise_age2	-	- 0.004**	- 0.003**	- 0.032
		(0.002)	(0.001)	(0.028)
manager_experience	+	0.003*	0.002	0.013
		(0.002)	(0.003)	(0.033)
manager_experience2	-	- 0.010***	- 0.002	- 0.020
		(0.004)	(0.006)	(0.070)
trade_credit	+	0.001***	0.0004	- 0.001
		(0.000)	(0.0003)	(0.006)
leasing_fxassets	+	0.065***	- 0.027	- 0.155
		(0.018)	(0.018)	(0.277)
lnlabour	+	0.038***	0.036***	- 0.199
		(0.008)	(0.012)	(0.192)
lnsales	+	0.017***	0.002	- 0.518***
		(0.005)	(0.006)	(0.167)
exp_sales	+	0.051***	0.015	- 0.322
		(0.012)	(0.018)	(0.344)
services	-	- 0.024**	- 0.009	- 0.324
		(0.011)	(0.019)	(0.265)
exporter	+	0.052***	- 0.008	0.357
		(0.012)	(0.019)	(0.311)
quality_cert	+	0.028	0.011	0.257
		(0.022)	(0.020)	(0.404)
accnts_audited	+	0.027*	0.022	- 0.291
		(0.016)	(0.020)	(0.285)
product_concentr	-	- 0.001***	0.000	0.008*
		(0.000)	(0.000)	(0.004)
own_website	+	0.039***	- 0.038*	- 0.557*
		(0.011)	(0.021)	(0.330)
city	-/+	- 0.051***	- 0.018	0.206
		(0.019)	(0.018)	(0.246)
e_europe_2	-	0.012	- 0.082	0.347
		(0.051)	(0.052)	(1.084)
caucasus	-	0.105***	0.097**	5.122***
		(0.041)	(0.041)	(1.110)
BRUM	-	- 0.088***	0.107**	6.032***
		(0.028)	(0.048)	(1.733)
central_asia	-	- 0.202***	0.109***	2.813
		(0.051)	(0.048)	(1.940)
bribes_n_gifts	+	0.033**	- 0.039***	- 0.377
		(0.015)	(0.014)	(0.373)
gov_contract	+	0.039**	0.012	- 0.068
		(0.017)	(0.020)	(0.326)
subsidies	+	0.094***	0.047	- 0.966***
		(0.021)	(0.030)	(0.368)
dc	+	- 0.001	- 0.002	- 0.083**
		(0.002)	(0.002)	(0.033)
inflation	-	- 0.002	- 0.013*	0.573*
		(0.004)	(0.007)	(0.308)
tax_rate	-	- 0.011***	- 0.009**	- 0.066
		(0.004)	(0.004)	(0.109)
loan_term		_	0.001***	- 0.001
			(0.000)	(0.006)
loan_fx		_	0.025	- 1.467*
			(0.023)	(0.753)
Number of observations		6813	2223	1965
Goodness of fit (R^2)		0.11	0.06	0.42

Notes: ***, ** and * refers to statistical significant at the 1, 5 and 10% levels respectively. Asymptotic standard errors from Probit estimations, clustered by country, are reported in parentheses. The constant terms not reported for brevity.

In order to investigate these concerns, we apply Heckman-type probit selection models that estimate credit use and selection equations jointly while assuming non-zero correlation (ρ) and joint normality of error terms (Cavaluzzo *et al*. 2002; Cavaluzzo and Cavaluzzo, 1998). If the former condition is not satisfied, i.e. ρ=0, then the results from general models are considered unbiased and consistent (Wooldridge, 2002; Kennedy, 2003). Estimation of these types of models requires an instrument that affects the probability of submitting a credit application in the selection model but does not belong to the main model in its own right. Unfortunately the dataset provides a limited set of potentially suitable candidates for these instruments, and we select and use three. The most promising one is the proportion of the senior manager's time spent in dealing with regulatory compliance (*time_4_reg_compliance*). We conjecture that the more time managers spend in dealing with rules and regulations, the more likely that this could lead to forming interpersonal links with government officials, thereby increasing the chance of applying for a bank loan. A second instrument is a variable indicating whether the SMEs has a single owner (*entrepreneur*), and the argument here is that SMEs with a single owner are likely to be smaller in size compared to those with multiple owners who subsequently will have a higher chance of forming interpersonal links. We expect the sign of the *entrepreneur* coefficient to be negative in the selection model. We create a third instrument, *top_obstacle_fin*, which takes a value of 1 if SMEs cite external finance to be the most important obstacle for their operation and 0 otherwise. Ranking external finance as a number one obstacle, from the list of 15 potential obstacles, is likely to be the result of detailed knowledge about and actual experience of applying for external finance, so we expect a positive sign for its coefficient.

The results of these Heckman maximum likelihood probit models are reported in table 8. Only the coefficient estimates of the target variables and those of the identifying instruments are reported for brevity. The results indicate that all three selection instruments have expected signs although *entrepreneur* is not statistically significant. The correlation coefficients between the error terms of the main and selection equations are statistically significant. Crucially, these results are not qualitatively different from those in table 6.[6]

Sensitivity test #3: subsamples

Blanchflower *et al.* (2003) and Muravyev *et al.* (2009) suggest estimating further regressions on sub-samples to ensure coefficient stability and we adopt the following approaches. First, as larger enterprises are more likely to obtain bank loans and rely on businesses' rather than owners' resources to repay obligations, we create two sub-samples involving SMEs with less than 10 employees versus SMEs with 10 or more employees. Second, the dataset contains a variable which measures respondents' subjective evaluation of their access to bank credit from 0 to 4, with 0 representing 'no obstacle' to access to finance and 4 representing a 'very severe obstacle.' Since wealthier business owners are less likely to be constrained by a lack of external finance, they are also less likely to complain about access to bank credit. Hence, we split the sample into two with the first subsample containing SMEs with 'no obstacle' and 'minor obstacle' responses, which we term 'access easy,' and the remaining responses belong to the second sub-sample which we term 'access difficult.'

[6] The caveat, however, is that these findings may not be suggestive of the presence or absence of selection problems as the similarity of the estimates with and without selection correction may also be the result of statistical problems (Kennedy, 2003, p.291; Wooldridge, 2006, pp.609-11) and/or because the instrument of our choice is not strong enough. Heckman-type models were estimated for the loan collateral (model 2) and loan interest (model 3) models but the null hypothesis of ρ=0 could not be rejected for the collateral model and none of the selected instruments were statistically significant. These results are not reported for brevity.

Table 8: Model 1 with Heckman maximum likelihood estimators

Predictors		**Bank Loan - Heckprob M.E.**	**Bank Loan - Heckprob M.E.**	**Bank Loan - Heckprob M.E.**
bribes_n_gifts	+	0.039***	0.033***	0.035***
		(0.012)	(0.012)	(0.012)
gov_contract	+	0.035***	0.033**	0.031**
		(0.014)	(0.013)	(0.013)
subsidies	+	0.088***	0.093***	0.093***
		(0.020)	(0.019)	(0.019)
		Selection equation instruments		
time_4_reg_compliance	+	0.005**	_	_
		(0.002)		
entrepreneur	-	_	-0.112	_
			(0.085)	
top_obstacle_fin	+	_	_	0.328***
				(0.128)
Likelihood ratio test of the		χ^2(d.f.)	χ^2(d.f.)	χ^2(d.f.)
independence of equations (ρ=0)		9.33(1)***	10.45(1)***	13.90(1)***
Log-likelihood value		-3989	-4160	-4317
Likelihood ratio test		811.6 (26)***	779.5 (26)***	811.6 (26)***
Observations		6514	6727	6961

Notes: Model 1 is identical to the one reported in Table 7; for brevity, only the results of the target variables and those of the selection equation instruments are reported. ***, ** and * refers to statistical significant at the 1, 5 and 10% levels respectively. Asymptotic standard errors are reported in parentheses. Coefficients are marginal effects at the mean.

The results of these sensitivity tests are presented in table 9, and only the estimates of the main target variables (*bribes_n_gifts*, *gov_contract* and *subsidies*) are reported for brevity. The results for model 1 are qualitatively similar to those reported in tables 6 and 7. The estimated coefficients of *subsidies* are statistically significant in all sub-samples under panels A and B, and the magnitudes of the coefficients are not radically different from our earlier estimations. The results for *bribes_n_gifts* are mixed: in panel A it is statistically significant in the small-size enterprise sub-sample, but in panel B it is significant only at the 10 percent level in the wealthier enterprise sub-sample. The *gov_contract* coefficients are statistically significant in the larger and wealthier enterprise sub-samples. In general, these sensitivity tests suggest that the effect of bribes and gifts is likely to be stronger for smaller enterprises and those with easy access to bank credit. Having a government contract is likely to have a greater effect on the ability to acquire a bank loan for larger and wealthier enterprises. Receiving a subsidy beneficially affects enterprises irrespective of their size or ability to access bank credit.

Table 9: Model 1 estimation results from sub-samples

	Model 1 - Bank loans		Model 1 with macroeconomic variables	
Panel A. Enterprise size sub-samples				
Predictors	Less than 10 employees	10 or more employees	Less than 10 employees	10 or more employees
bribes_n_gifts	*0.078***	*0.004*	*0.080***	*0.010*
	(0.020)	*(0.012)*	*(0.020)*	*(0.015)*
gov_contract	*0.026*	*0.044***	*0.026*	*0.045***
	(0.200)	*(0.022)*	*(0.19)*	*(0.020)*
subsidies	0.089***	0.096***	0.096***	0.094***
	(0.036)	(0.021)	(0.031)	(0.023)
N. Obs.	2357	4456	2357	4456
Panel B. Access to finance sub-samples				
Predictors	Access difficult	Access easy	Access difficult	Access easy
bribes_n_gifts	*0.020*	*0.027**	*0.004*	*0.030**
	(0.023)	*(0.017)*	*(0.023)*	*(0.016)*
gov_contract	*0.032*	*0.027***	*0.031*	*0.031***
	(0.030)	*(0.014)*	*(0.030)*	*(0.014)*
subsidies	*0.104****	*0.080****	*0.113****	*0.083****
	(0.029)	*(0.024)*	*(0.030)*	*(0.025)*
Obs.	2669	4093	2669	4092

Notes: Model 1 is identical to those reported in Tables 6 and 7; for brevity, only the results of the target variables are reported. Panel A reports the estimates from sub-samples split on the basis of enterprise size. For Panel B, the sample is split on the basis of enterprises' subjective evaluation of their access to formal finance. ***, ** and * refers to statistical significant at the 1, 5 and 10% levels respectively. Asymptotic standard errors are reported in parentheses. Coefficients are marginal effects at the mean.

Sensitivity test #4: scale effects

The estimated effects of our proxy variables for enterprise connectedness (*bribes_n_gifts* and *gov_contract*) on the ability to obtain a bank loan may vary with the scale of the SME. Table 10 reports the marginal effects of *bribes_n_gifts* and *gov_contract* on holding a bank loan if the representative values of *lnsales* (panel A) and *lnlabour* (panel B) move two standard deviations from their mean values. The results show that the magnitudes of marginal effects of both variables increase, albeit marginally when the values of *lnsales* and *lnlabour* increase, confirming our earlier observation that the importance of interpersonal connections strengthens when the size of SMEs increases. In other words, interpersonal connections become increasingly important as the enterprise gets bigger.

Table 10: Impact of SME size on the marginal effects of target variables in Model 1

	bribes_n_gifts		***gov_contracts***	
	Marginal Effects	***p-value***	***Marginal Effects***	***p-value***
Panel A. Representative Values of Lnsales				
2 s.d. below the mean	0.028	0.034	0.033	0.041
1 s.d. below the mean	0.031	0.028	0.036	0.031
Mean	0.033	0.025	0.039	0.026
1 s.d. above the mean	0.035	0.023	0.041	0.023
2 s.d. above the mean	0.036	0.023	0.043	0.022
Panel B. Representative Values of Lnlabour				
2 s.d. below the mean	0.029	0.027	0.035	0.026
1 s.d. below the mean	0.031	0.026	0.037	0.026
Mean	0.033	0.025	0.039	0.026
1 s.d. above the mean	0.035	0.024	0.041	0.026
2 s.d. above the mean	0.036	0.024	0.043	0.026

Notes: Model 1 is identical to the one reported in Table 7; for brevity, only the results of the target variables are reported. ***, ** and * refers to statistical significant at the 1, 5 and 10% levels respectively. Obs: 6813.

Sensitivity test #5: previously successful enterprises

A further concern is that well-connected SMEs may have been more successful enterprises in the recent past and so may subsequently receive preferential treatment by banks. We estimate additional regressions to test the potential relationship between SME growth and our variables representing enterprise connectedness: *bribes_n_gifts* and *gov_contract*. We use two popular measures of SME growth as our dependent variables: employment growth, which according to Xheneti and Bartlett (2012) is one of the most reliable measures especially for PCEs, and sales growth. The results of these regressions are reported in table 11. In model 4, the dependent variable takes the value of 1 if the SME reported employment growth and 0 otherwise while in model 5 the dependent variable takes the value of 1 if the enterprise reports sales growth compared to the previous period and 0 otherwise. The results indicate that *bribes_n_gifts* are not statistically associated with either employment or sale growth. However, possessing a government contract is strongly and *negatively* associated with sales growth. All in all, our results indicate that enterprises with interpersonal connectedness to bureaucrats have better access to formal finance despite having lower growth potential.

Table 11: Impact of the target variables on SME growth

	Model 4: employment growth	**Model 5: sales growth**
	Probit M.E.	Probit M.E.
Predictors	(Standard errors)	(Standard errors)
Panel A: Estimations without macroeconomic variables		
bribes_n_gifts	0.011	-0.004
	(0.016)	(0.0144)
gov_contract	0.001	-0.051***
	(0.013)	(0.015)
Obs.	6961	5628
Panel B: Estimations with macroeconomic variables		
bribes_n_gifts	0.009	-0.001
	(0.016)	(0.015)
gov_contract	-0.001	-0.06***
	(0.014)	(0.014)
Obs.	6961	5628

Notes: The right hand side variables in Panels A and B are the same as those used Model 1 reported in Tables 6 and 7 respectively; for brevity, only the results of the target variables are reported. ***, ** and * refers to statistical significant at the 1, 5 and 10% levels respectively. Asymptotic standard errors are reported in parentheses. Coefficients are marginal effects at the mean.

6. Concluding Remarks

SMEs play in important role in market-based economies in terms of employment generation, poverty reduction and contribution to economic growth. However, SMEs in PCEs often lack adequate access to appropriately-priced formal finance and a disproportionately higher portion of formal finance is channelled to larger enterprises. Evidence suggests that financing from formal, rather than informal, financial institutions is associated with faster firm growth (Ayyagari et al., 2008) and smaller enterprises benefit more from the improved availability of formal finance (Beck et al., 2008).

Traditional explanations to the unequal distribution of finance focus on market and information imperfections. A more recent approach adds an additional dimension to this phenomenon by highlighting the role of institutional and political factors in the economic process. Market-based systems can be characterised by anonymous markets and impersonal public and private bureaucratic organisations which, by enforcing contracts, rules and regulations, facilitate entrepreneurial decisions concerning exchange, production and investment (Weber, 1968). When markets are thin or suppressed, bureaucratic state institutions lack credibility and rules and laws are dysfunctional, so rent-seeking behaviour may became prevalent as agents try to profit from the web of interpersonal relations.

Growing evidence suggests that political connections play an important role in gaining access to formal finance for larger enterprises (Faccio, 2006; Faccio et al., 2006; Boubakri et al., 2012, 2013). This is the first study to assess whether interpersonal connections with government officials (among other potential factors) improve SMEs' access to formal finance across post-communist countries. Using the most recent BEEPS dataset that covers more than 14,000 SMEs in 28 post-communist economies, this study shows that access to and the use of interpersonal bureaucratic networks improve the chances of receiving

bank credit by between 4 and 10 percent. The benefits of interpersonal links are also found to be stronger for larger SMEs. Being connected to strategic networks, however, does not seem to be associated with enterprise growth.

Our findings have important policy implications. The traditional policy response to an unequal distribution of finance has been to increase the supply of funds to SMEs by offering tax incentives to commercial banks and/or by setting up specialised institutions to cater for the needs of SMEs. Our results show that, in less mature market-based systems where political connectedness and interpersonal networks matter in issues concerning resource allocation, even the smaller portion of formal finance left for SMEs can be distributed unequally with a disproportionately higher portion being allocated to SMEs with interpersonal links to government officials, which consequently crowds out other SMEs from the credit market despite having higher investment productivity. Traditional policy measures designed to increase the supply of formal finance to SMEs should be complemented with decisive and credible reforms to improve enforceability of private contracts and the transparency and impartiality of bureaucratic institutions whose ultimate goals is to facilitate, not to hinder, market-based exchanges. Without these reforms, entrepreneurs will not be incentivised to use prices, rules and regulations as signals and instead will rely on interpersonal connections with bureaucrats, which will continue to result in a misallocation of scarce credit resources.

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