Does connectedness improve SMEs' access to formal finance? Evidence from post-communist economies

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Evidence suggests that a disproportionately greater share of formal finance is channelled to large enterprises in emerging economies, limiting the flow of appropriately-priced finance to Small and Medium Enterprises (SMEs). Market and information imperfections are conventionally seen as major causes of this misallocation. However, the role of political factors in affecting the distribution of formal finance has become more widely acknowledged in recent times. Our analyses of SMEs in post-communist economies also show that measures of political connectedness improve the chances of receiving bank credit and that the benefits of these links are stronger for well established and larger SMEs.

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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 was central to this extraordinary shift (Kornai, 1982). Although this belief might be true in principle, in reality various forms of inefficiencies occur in market-based systems too and especially in the provision of financial services to enterprises. A rich body of empirical literature 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 (Pissarides, 1999; Beck and Demirguc-Kunt, 2006; de la Torre *et al.*, 2010; 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 institutions lack full credibility then rent-seeking behaviours become prevalent and extend well beyond the level of the political elite with ordinary agents also 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). A vital implication of the institutionalist view is that political connectedness, which is interpersonal and exclusive in nature, leads to inefficiencies in the distribution of formal finance. In other words, it partly

explains why a greater proportion of formal finance flows to large enterprises and why an already limited supply of formal finance to SMEs may also be unequally distributed.

The impact 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; Saeed et al., 2014, Cull *et al*., 2015) but there is only limited evidence for SMEs even though they make up the majority of firms. To the knowledge of the authors, 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 economies (PCEs).

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 reflecting interpersonal connectedness.

The next section discusses relevant studies and highlights a gap in the literature. Section 3 provides contextual information about PCEs and formulates our testable research question. Section 4 describes the data used here and presents stylised facts that emerge from an analysis of the raw data. Section 5 presents the estimation results and main findings while Section 6 provides a discussion of the findings and concludes.

2. SME access to formal finance and interpersonal connectedness

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 tend to 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 also 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 in 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' growth aspirations, 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 (Arestis and Demetriades, 1997). 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 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, 1961) 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, 1996; Cressy and Olofsson, 1997; Myers, 2000; Hussain *et al.*, 2006) and the distribution of limited formal finance is skewed against SMEs who subsequently pay higher interest rates than their larger counterparts (Pissarides, 1999; Beck and Demirguc-Kunt, 2006; de la Torre *et al.*, 2010). Unequal access to finance affects investment and 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 (Stiglitz and Weiss, 1981), hence providing a rationale for government intervention in the credit markets (Storm, 2015, p. 687). 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 (Armstrong *et al.*, 2013; Pissarides, 1999). Further, 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 social and political factors. According to this view, 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 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; Goldsmith, 1995). 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. There is growing evidence 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 for enterprises. This can result in a culture of favouritism and bribery which further suppress market-based impersonal exchange and resource allocation (Fedderke *et al.*, 1999) 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). On the one hand, 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). On the other hand, this view ignores the interpersonal nature of relations between public officials and entrepreneurs. For example, soliciting bribes is not costless for corrupt bureaucrats even under these circumstances, as there is 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). Moreover, the relatively small size of bribery transactions in the context of SMEs implies that, for corrupt bureaucrats, the pecuniary rewards of accepting bribes from unfamiliar individuals are small relative to the risk of being caught. In many countries bribe giving is as strict a

criminal offence as bribe taking. All of these factors reinforce the rationale for collaboration between bureaucrats and entrepreneurs who know and trust each other. Hence, having the right interpersonal connections becomes more valuable than simply affording explicit monetary payments as bribes.

Further, 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).[i]

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. Capital for enterprise start ups and investment expansions were financed from state budgets as non-repayable grants and subsidies (Ruziev and Dow, 2014).

<Table 1 >

In the early years of transition, policymakers prioritised macroeconomic reforms 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 with bartering, transactions in promissory notes, inter-enterprise arrears and mutual debt write-offs observed in almost all PCEs in the late 1990s (Carlin *et al*., 2000; Weller, 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 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 primary source of external finance for SMEs. 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. 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 >

<Figure 1>

However, these aggregate indicators are broad and do not fully reflect the variation in institutional and financial constraints faced by SMEs. 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 answer the following strategically important research question: does access to and use of interpersonal connectedness improve the chance of SMEs receiving formal credit and lower its cost? We proceed to examine whether being connected to an exclusive network, as measured by the use of gifts and bribes or in possession of a government contract, 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.

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 post communist economies from Eastern Europe and the former Soviet Union. 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. 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.

Interpersonal connectedness is difficult to capture. Proxies of the interpersonal connectedness vary in empirical studies as dictated by data availability and constrains. The most popular measures include, for example, proportion of top managers' time spent with public officials, lobbying, frequency of offering bribes and gifts to public officials, holding government contracts, and whether or not top managers' friends and/or family members work or worked at government institutions (See e.g. Faccio, 2006; Boubakri *et al.,* 2012, 2013; Saeed *et al.*, 2014, Ruziev and Midmore, 2015). Despite their variability, all of these proxies have one thing in common, i.e. they attempt to measure firms' interpersonal connectedness

with public official in bureaucratic institutions. We source our indicators of interpersonal connectedness from two questions in the BEEPS: the frequency of bribes and gifts (q.39) and the receipt of government contracts (q.j6a).[ii] Since belonging to a network may open access to other networks, it is possible to gain indirect access to formal finance when one has personal connections with government officials.

Descriptions and summary statistics of variables are reported in table 3, which show that almost one third of SMEs held bank loans, and banks required collateral for 81 percent of these loans. The average age of SMEs in the sample is approximately 14 years (standard deviation = 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). Thirty-one percent of enterprises claimed to have offered bribes and gifts to public officials at least sometimes and 20 percent held government contracts.

<Table 3 >

Additional information about some of the key variables is presented in Panels A and B of table 4. 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),[iii]
- 6 non-EU countries of EE (non-EU-EE),[iv]
- 3 countries of the Caucasus region,[v]
- 4 countries from Central Asia[vi] and
- the remaining FSU countries (Belarus, Russia, Ukraine and Moldova: i.e. BRUM).[vii]

As can be seen from Panel A in table 4, 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 range from 60 to 90 percent across the region (Bonin *et al.*, 2015; Weller, 2000). Foreign banks do not have significant presence in the CIS countries (Ruziev and Dow, 2014) with, for example, foreign banks in Russia accounting 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.

The practice of offering bribes and gifts seems to be more prevalent in the BRUM and Central Asia regions than in the non-EU-EE, EU-EE and Caucasus regions. Government contracts seem to be more prevalent in the BRUM and Central Asia regions, followed by the EU-EE, Caucasus and non-EU-EE 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 gifts to government officials, which reflects the complex and time-consuming nature of building impersonal and market-facilitating bureaucratic organisations.

Panel B in table 4 reveals the potential impact of interpersonal connections on access to bank loans across the five regions. Row 1 in panel B shows the proportion of SMEs with bank loans that reported offering bribes and gifts to public officials whereas row 2 shows the proportion of SMEs with bank loans that did not offer bribes and gifts; the difference between these two rows is presented in row 3 along with an indication of statistical significance using a *t*-test. Similar information for bank loans with and without government contracts is presented in rows 4-6.

As can be seen from row 3 in panel B, 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 rows 1 and 2 are larger

and their statistical significance levels are stronger in the EE and Caucasus regions. A greater proportion of SMEs that held government contracts received bank loans compared to those that did not hold government contracts (row 6), and this result is consistent across all regions.

<Table 4 >

5. Interpersonal connectedness and access to bank loans

More than 37 percent of SMEs in our dataset 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 in the business environment (after the tax rate). The raw data indicates that SMEs with connectedness to bureaucrats seem to enjoy more privileged access to scarce resources.

We proceed to estimate models to examine if SMEs with 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:

$$LOAN_i = \alpha + FIRM_i \beta + CONNECTEDNESS_i \gamma + D_i \delta + \varepsilon_i \quad (1)$$

where $LOAN_i$ is a dependent variable that reflects either the use of bank loans or interest rate on these loans; $FIRM_i$ and $CONNECTEDNESS_i$ are vectors of predictors that affect $LOAN_i$, where the former includes both continuous and categorical control variables reflecting firm characteristics and the latter includes variables representing interpersonal connectedness, namely *Bribes and Gifts* and *Government Contract*. D_i is a set of dummy variables for sectors, countries and time; the sector and country dummy variables control sector- and country-fixed effects and the time dummy variable controls the year of data collection in individual countries. Parameters α, β, γ, and δ are to be estimated and ε is the random error

term, which is clustered at the country level to allow for correlation of errors within but not across countries in our estimations.

The BEEPS dataset allows for the parameterisation of access to and use of formal credit in two distinct ways. First, we estimate equation (1) with the dependent variable taking the value of 1 if an SME held a *bank loan* in the last fiscal year and 0 otherwise. We then estimate equation (1) with the dependent variable measuring the annual *loan interest* rate paid on the most recent loan. The estimation results of the *bank loan* models are presented in table 5 and those of the *loan interest* models are in table 6. Models 1-5 in table 5 are estimated using a probit maximum likelihood approach and Models 6-10 in table 6 are estimated using ordinary least squares (OLS). Coefficient estimates for models 1-5 in table 5 are marginal effects at the mean after probit estimation and those for models 6-10 in table 6 are OLS estimates. Asymptotic standard errors, clustered by country, are reported in parentheses.

<Table 5>

We start our estimation of the *bank loan* equation with our target variables *bribes and gifts* and *government contract* in models 1 and 2, and sequentially add other important measures of firm characteristics and macroeconomic factors to the right hand side of the equation. The estimates presented in table 5 corroborate expectations. In model 1, only our main target variable *bribes and gifts* is included and its estimate has the expected sign and is statistically significant at the 1 percent level. Model 2 includes both of our target variables, *bribes and gifts* and *government contract,* and both of these variables have expected signs and are statistically significant. 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 about 3 to 4 percent and having a government contract improves the chance of obtaining a bank loan by 7 percent. To check if the estimated relationships persist after we control for various firm characteristics, we add several variables

to our estimation in model 3, which consists of *enterprise age, trade credit, leasing, log(labour), expected sales, quality certificate, accounts audited, product concentration, own website* and *city*. The inclusion of these variables reduces the magnitudes of our targets variables slightly but our results remain statistically significant at least at the 5 percent level.

As for the control variables, *enterprise age* is expected to have positive association with the probability of obtaining formal credit. 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). The relationship, however, is not linear: its importance diminishes as the values of *enterprise age* increase, as illustrated through the estimates of *enterprise age squared*.

Variables *trade credit* and *leasing* are expected to have positive signs. 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; Martinez *et al*., 2014; Beck, 2013), and our results corroborate this perspective. The difference in the estimated coefficient magnitudes between *trade credit* and *leasing* (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.

The estimate of the effect of *log(labour)*, which measures enterprise size (see Cavaluzzo and Cavaluzzo, 1998) has the expected positive sign and is statistically significant. This means that formal credit organisations prefer lending to larger SMEs due to the higher transaction costs associated with monitoring a large number of small loans. Signs of coefficients associated with enterprise competitiveness and quality of financial information

(*expected sales, quality certificate, accounts audited, product concentration* and *own website*) meet expectations and most are statistically significant.

In model 4, we add *manager experience,* which measures top managers' experience in industry to capture human capital and entrepreneurial ability. 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. The squared term of the variable is included to reflect diminishing marginal impact of the variable. Both *managerial experience* and its squared term have expected signs and are statistically significant. The impacts of interpersonal connectedness proxies persist after controlling for enterprise characteristics.

One of the caveats with the results reported in model 5 is that they may be sensitive to macroeconomic factors including the depth of financial development (Arestis and Demetriades, 1997). We therefore add three variables to our estimations in model 5: 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 is a proxy for the general business environment). The results of model 5 reveal that all three macroeconomic variables have expected signs and are statistically significant. The inclusion of the macroeconomic indicators had no impact on the magnitudes and statistical significances of the coefficients and corroborates the results from models 1-4: both of the connectedness proxies remain statistically significant in improving access to formal finance.

We next estimate the *loan interest* equation to test if the interpersonal connectedness proxies can help SMEs to reduce the cost of loans with these results presented in table 6. Most of the right hand side variables in the *loan interest* equation are the same as in the *bank loan* equation. Because the variables that relate to an *improvement* in access to bank loans

(table 5) are also likely to *lower* the interest rate charges on these loans, the coefficient estimates for the sets of models in tables 5 and 6 are expected to have the opposite signs. For example, *bribes and gifts* is expected not only to *increase* access to formal finance but also to *reduce* its cost to connected firms. *Collateral* is the only new variable added to models 9 and 10, and it is expected to have a negative sign as banks are likely to charge lower rates on loans with good collateral. The estimation results from models 6-10 indicate that all variables have expected signs. For brevity table 6 only reports the results for *bribes and gifts* and *government contract* but both target variables have expected signs in all models although only *government contract* is statistically significant in model 7. When we control for firm characteristics and macroeconomic factors *government contract* becomes insignificant in Models 8-10. To summarise, our results reveal the following: offering bribes or gifts and possessing a government contract enhance the likelihood of an SME acquiring a bank loan although the same factors are not associated with lowering borrowing costs.

<*Table 6*>

The ramifications of these results could be far-reaching with important and timely policy implications that have widespread significance for growth and development across the FSU and EE. Such findings deserve and require further sensitivity testing to identify the stability of the results. Below we present the results of four sensitivity analyses to examine different aspects of stability of our *bank loan* equation estimations. We use model 5 in table 5 for our sensitivity tests.[viii]

Sensitivity test #1: subsamples

Blanchflower *et al.* (2003) and Muravyev *et al.* (2009) suggest estimating regressions on sub-samples to ensure coefficient stability and we adopt the following approaches. First, as more established 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 that are younger than 10 years old versus SMEs that are more than 10 years old. 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.'

The results from these sub-samples are presented in table 7. For brevity, only the estimates of *bribes and gifts* and *government contract* are reported. The results for the enterprise age sub-samples, which are reported in columns 3 and 4, indicate that *bribes and gifts* and *government contract* are statistically significant for older, more established firms. *Government contract* is only marginally significant for younger firms, and the magnitude of the coefficient is also smaller (3.7% v 4.9%). The results for the access to finance sub-sample, which are presented in columns 5 and 6 in table 7, show that both *bribes and gifts* and *government contract* are highly insignificant for poorer firms (the firm sample that says access to bank finance is difficult). As for the alternative sub-sample, *bribes and gifts* is marginally significant at the 11.6% level and *government contract* is statistically significant at the 1 percent level.

In general, these sensitivity tests suggest that both *bribes and gifts* and *government contract* are likely to have greater impact on improving access to bank finance for more established and wealthier enterprises. Since younger enterprises are also likely to be less wealthy, these findings imply that, on top of information opacity, lack of interpersonal connectedness to bureaucratic officials will further exacerbate access to formal finance for

newer firms. Moreover, we cannot rule out reverse causality, and firms with more access to finance to have greater liquity and better performance could be awarded with more government contracts and have larger cash reserves that enable them to conduct more bribes; when a panel of firms is available for analysis, future research should establish which way(s) the causality runs.

<Table 7 >

Sensitivity test #2: scale effects

The estimated effects of our proxy variables for enterprise connectedness on the ability to obtain a bank loan may vary with the scale of the SME. Table 8 reports the marginal effects of *bribes and gifts* and *government contract* on holding a bank loan if the representative values of *log*(*labour)* move up to two standard deviations from their mean values. The results show that the magnitudes of the marginal effects of both variables increase, albeit marginally when the values of *log(labour)* increase. In other words, interpersonal connections become increasingly important as the enterprise gets bigger, and this adds an additional dimension to our earlier observation about the importance of interpersonal connections for older and wealthier enterprises.

<Table 8>

Sensitivity test #3: variations across regions

Although we allow for correlation of errors within countries in our estimations, the overall results are presented as representing PCE averages. It is possible, however, that interpersonal connectedness is more important in some regions than others. In order to account for potential variation across regions, we divided the sample across five geographic regions as in table 4. We differentiate between EU member (EU-EE) and non-EU (non-EU-EE) member

countries of EE, and use popular geographic boundaries for the CIS countries: BRUM (to represent the European part of the CIS), Caucasus and Central Asia.

The results of these estimations are presented in table 9. The coefficient estimates of *bribes and gifts* and *government contract* have expected signs and are statistically significant for the EU-EE and non-EU-EE regions. While *bribes and gifts* is highly insignificant, *government contract* is statistically significant for the Caucasus and Central Asia regions. Neither of our target variables are statistically significant for the BRUM region. Given the slower pace of market-oriented institutional reforms in the CIS region, the results across the CIS regions are initially counter-intuitive and puzzling. However, this may indicate that the similarity of economic structures, and not the simple geographic proximities, may be a better measure for creating the CIS sub-samples. Consequently, we separate three oil rich countries, Azerbaijan, Kazakhstan and Russia (CIS Oil Rich), from the rest of the CIS sample (CIS Other) and re-estimate the relationships.

<Table 9>

The estimation results for these sub-samples, presented in the last two columns of table 9, indicate that both *bribes and gifts* and *government contract* are now statistically significant for the non-oil rich CIS countries but highly insignificant for the oil-rich CIS countries. The context of recent economic developments in the three oil-rich countries explains why this might be the case: the three oil rich CIS economies grew at about 10 percent per year for most of the 2000s, mostly due to their booming oil sectors, which resulted in significant foreign reserve accumulation. Although part of these reserves were sterilised, inevitably, domestic currencies appreciated sharply and the domestic money supplies increased. The latter was partly by design as the authorities tried to promote diversification of their economies by supporting domestic production (see e.g. Ruziev and Majidov, 2013). It is important to point out, however, that the lack of statistical significance

of the connectedness proxies for the oil-rich CIS countries does not imply that corruption is less of a problem in these economies. It simply means that interpersonal connectedness matters more when resources in question are in relatively short supply.

Sensitivity test #4: 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 have received preferential treatment. We estimate additional regressions to test the potential relationship between SME growth and our variables representing enterprise connectedness. 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 10. In model 11, the dependent variable takes the value of 1 if the SME reported employment growth and 0 otherwise, while in model 12 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 and gifts* are not statistically associated with either employment or sale growth. However, *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 10>

All in all, although our findings only confirm the existence of a statistical correlation and not of a theoretical causation, the literature is full of empirical studies that find corruption to be negatively associated with firm performance (e.g. Frye and Shleifer, 1997; Hunt and Laszlo, 2011; Seker and Yang, 2014). Further, corruption and rent seeking cannot be justified

as these practices rely on insider-outsider distinctions, suffocate equality of opportunities, and hence are morally repugnant and economically costly (Bowles and Gintis, 2002).

6. Concluding Remarks

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. 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 wave of the BEEPS dataset, this study shows that access to and the use of interpersonal bureaucratic networks improve the chances of receiving bank credit by between 3 and 8 percent. The benefits of interpersonal links are also found to be stronger for older, wealthier and 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, for example, 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.

The evidence presented in this study imply that traditional policy measures designed to increase the supply of formal finance to SMEs should be complemented with decisive and credible reforms to improve the transparency and impartiality of bureaucratic institutions whose ultimate goals is to facilitate, not to hinder, market-based exchanges. The reforms in this area, for example, could include developing fair and competitive remuneration schemes for government employees, including establishing explicit meritocratic criteria to foster longer term career development planning, careful identification and credible punishment of corrupt officials, continuous professional development workshops aimed at raising awareness about the consequences of corruption, etc.

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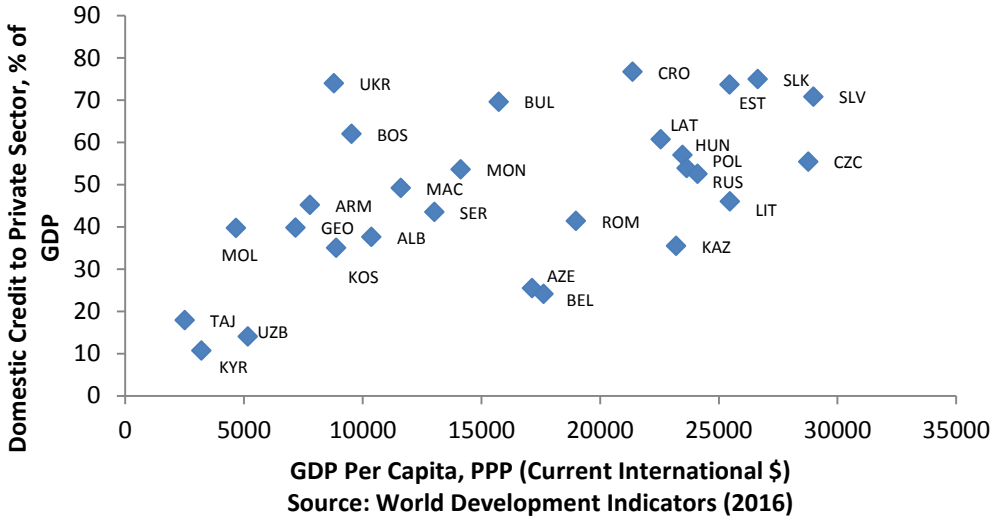
FIGURES

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



Source: World Development Indicators (2016)

TABLES

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)

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

	CIS*	**Eastern Europe**
Internal finance	81.7	70.1
Formal finance	9.0	13.7
Trade credit	7.1	13.6
Other	2.1	2.5

Note: * Includes Georgia which is formally no longer a member of the CIS. Source: BEEPS 2012-14 (EBRD, 2016)

Table 3: Description and summary statistics of main variables

	Variables	*Description*	*μ*	*σ*	*N*
Dependent Variables	*Bank Loan*	=1 if in receipt of bank loan in the last fiscal year, =0 otherwise.	0.28	0.45	11124
	Loan Interest	Annual interest charged on the most recent bank loan, %.	12.04	7.12	2799
Controls for Firm Characteristics	*Enterprise Age*	Enterprise age in years.	13.63	9.39	11631
	Enterprise Age Squared	*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 Experience Squared	*experience squared* divided by 100.	3.48	4.16	11425
	Trade Credit	Percentage of inputs purchased on credit.	37.88	37.09	10889
	Leasing	=1 if leasing fixed assets, =0 otherwise.	0.18	0.38	11645
	Log(Labour)	Natural log of full time employee numbers.	2.71	0.92	11714
	Log(Sales)	Natural log of annual sales in the last fiscal year.	15.76	2.65	9317
	Expected Sales	=1 if sales are expected to increase next year, =0 otherwise.	0.52	0.50	10600
	Exporter	=1 if SME exports, =0 otherwise.	0.17	0.38	11714
	Certificate	=1 if SME hold internationally recognised quality certificate, =0 otherwise.	0.18	0.39	11564
	Accounts Audited	=1 if most recent annual statement is certified by external auditors, =0 otherwise.	0.27	0.44	11423
	Product Concentration	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
	Collateral	=1 if collateral was required for the most recent bank loan, =0 otherwise.	0.81	0.39	3535
Proxies for Connected	*Bribes and Gifts*	=1 if regularity of bribes and gifts was rated at least as "sometimes", =0 otherwise.	0.31	0.46	10765
	Government Contract	=1 if government contract was obtained, =0 otherwise.	0.20	0.40	11565
Macro Variables	*Domestic Credit*	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 under different sub-samples

	EU-EE	***Non-EU-EE***	***Caucasus***	***BRUM***	***CA***
Panel A. Bank loans and political connectedness across regions.					
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%
Panel B. Political connectedness and SMEs with bank loans.					
Bribes and Gifts=Yes (A)	42.30%	49.60%	38.40%	23.20%	16.49%
Bribes and Gifts=No (B)	34.20%	41.90%	29.80%	21.00%	17.01%
Difference between (A) and (B)	*8.10%****	*7.70%****	*8.60%****	*2.20%***	*-0.52%*
Government Contract=Yes (C)	43.00%	57.10%	44.60%	25.80%	21.40%
Government Contract=No (D)	34.10%	42.20%	28.40%	20.10%	16.10%
Difference between (C) and (D)	*8.90%****	*14.90%****	*16.20%****	*5.70%****	*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)

Table 5: *Bank Loan* estimations

Predictors	Exp. Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Bribes and Gifts	+	0.035***	0.031***	0.030**	0.029**	0.029**
		(0.001)	(0.009)	(0.014)	(0.014)	(0.014)
Government Contract	+		0.068***	0.044***	0.044***	0.044***
			(0.017)	(0.160)	(0.016)	(0.016)
Enterprise Age	+			0.002*	0.002*	0.002*
				(0.001)	(0.001)	(0.001)
Enterprise Age Squared	-			-0.003**	-0.003**	-0.003**
				(0.001)	(0.002)	(0.001)
Trade Credit	+			0.001***	0.001***	0.001***
				(0.000)	(0.000)	(0.000)
Leasing	+			0.069***	0.072***	0.072***
				(0.016)	(0.016)	(0.016)
Log(Labour)	+			0.056***	0.056***	0.056***
				(0.008)	(0.009)	(0.009)
Expected Sales	+			0.040***	0.039***	0.038***
				(0.009)	(0.009)	(0.009)
Exporter	+			0.066***	0.068***	0.068***
				(0.009)	(0.009)	(0.009)
Quality Certificate	+			0.022	0.023	0.023
				(0.020)	(0.021)	(0.021)
Accounts Audited	+			0.027*	0.027*	0.027*
				(0.015)	(0.015)	(0.015)
Product Concentration	-			-0.001***	-0.001***	-0.001***
				(0.000)	(0.000)	(0.000)
Own Website	+			0.039***	0.038***	0.038***
				(0.011)	(0.011)	(0.011)
City	+/-			-0.035*	-0.035*	-0.035*
				(0.020)	(0.020)	(0.020)
Manager Experience	+				0.003**	0.003**
					(0.001)	(0.001)
Manager Experience Squared	-				-0.008**	-0.008**
					(0.003)	(0.003)
Log(Domestic Credit)	+					0.026*
						(0.015)
Inflation	-					-0.007**
						(0.002)
Tax Rate	-					-0.015***
						(0.001)
Number of Observations		10,249	10,139	8,359	8,235	8,235
Correctly Classified		72.23%	72.19%	72.57%	72.60%	72.60%

Notes: *** refers to 1%, ** to 5%, and * to 10% levels of significance respectively. Constant terms not reported for brevity. Country, industry and time dummies are included in all regressions. Asymptotic standard errors, clustered by country, are reported in parentheses. Coefficients are Probit marginal effects at the mean.

Table 6 : *Loan Interest* estimations

Predictors	Exp. Sign	Model 6	Model 7	Model 8	Model 9	Model 10
Bribes and Gifts	-	- 0.118	- 0.151	- 0.270	- 0.280	- 0.280
		(0.217)	(0.238)	(0.289)	(0.274)	(0.274)
Government Contract	-		- 0.609***	- 0.229	- 0.175	- 0.175
			(0.203)	(0.243)	(0.223)	(0.223)

Notes: OLS estimation. For brevity, only the results of the target variables are reported. The variables lists in models 8, 9 and 10 are similar to those in models 3, 4 and 5 in table 5. Collateral is the only new variable added to Models 9 and 10. Country, industry and time dummies are included in all regressions. Asymptotic standard errors, clustered by country, are reported in parentheses. *** refers to 1%, ** to 5%, and * to 10% levels of significance respectively.

Table 7: Model 5 estimation results from enterprise age and access to finance sub-samples

Predictors	*Enterprise age sub-sample*		*Access to finance sub-sample*	
	10 year old or younger	More than 10 year old	Access difficult	Access Easy
Bribes and Gifts	*0.031*	*0.026***	*0.005*	*0.025*
	(0.019)	*(0.012)*	*(0.020)*	*(0.016)*
Government Contract	*0.037**	*0.049****	*0.031*	*0.039****
	(0.022)	*(0.015)*	*(0.023)*	*(0.015)*
Number of Observations	4584	3645	3192	4976

Notes: Model 5 is identical to that reported in Table 5. For brevity, only the results of the target variables are reported. ***, ** and * refer to statistical significant at the 1, 5 and 10% levels respectively. Asymptotic standard errors, clustered by country, are reported in parentheses. Coefficients are Probit marginal effects at the mean.

Table 8: Impact of SME size on the marginal effects of target variables in Model 5

	Bribes and Gifts		***Government Contract***	
	Marginal Effects	p-value	Marginal Effects	p-value
Panel A. Representative Values of Log (labour)				
2 s.d. below the mean	0.024	0.06	0.036	0.01
1 s.d. below the mean	0.027	0.05	0.040	0.01
Mean	0.029	0.04	0.044	0.01
1 s.d. above the mean	0.032	0.04	0.047	0.01
2 s.d. above the mean	0.033	0.04	0.050	0.01
Panel B. Representative Values of Log (sales)				
2 s.d. below the mean	0.017	0.04	0.028	0.01
1 s.d. below the mean	0.023	0.03	0.036	0.00
Mean	0.027	0.03	0.043	0.00
1 s.d. above the mean	0.030	0.03	0.048	0.00
2 s.d. above the mean	0.031	0.03	0.050	0.00

Notes: Model 5 is identical to that reported in Table 5. For brevity, only the results of the target variables at various representative values of Log(labour) and Log(sales) are reported. Coefficients are Probit marginal effects at the mean. Number observations for Panel A is 8235 and for Panel B is 6834.

Table 9: Model 5 estimation results across regions

Predictors	Exp. Sign	EU-EE	Non-EU-EE	Caucasus	Central Asia	BRUM	CIS Other	CIS Oil Rich
Bribes and Gifts	+	0.059***	0.084***	0.033	- 0.008	0.005	0.036**	- 0.009
		(0.022)	(0.031)	(0.052)	(0.043)	(0.007)	(0.017)	(0.017)
Government Contract	+	0.042**	0.074**	0.147***	0.030***	0.031	0.079***	0.019
		(0.019)	(0.035)	(0.043)	(0.001)	(0.023)	(0.023)	(0.013)
Number of Observations		2275	1145	624	915	3268	1866	2942
Correctly Classified		67.34%	64.45%	70.51%	83.28%	78.03%	76.05%	79.23%

Notes: *** refers to 1%, ** to 5%, and * to 10% levels of significance respectively. Constant terms not reported for brevity. Country, industry and time dummies are included in all regressions. Asymptotic standard errors, clustered by country, are reported in parentheses. Coefficients are marginal effects at the mean.

Table 10: Impact of the target variables on SME growth

	Model 11: employment growth	**Model 12: sales growth**
Predictors	Marginal effects	Marginal effects
Panel A: Estimations without macroeconomic variables		
Bribes and Gifts	0.001	0.014
	(0.012)	(0.017)
Government Contract	- 0.001	-0.045***
	(0.012)	(0.015)
Panel B: Estimations with macroeconomic variables		
Bribes and Gifts	0.009	0.008
	(0.013)	(0.016)
Government Contract	- 0.003	- 0.055***
	(0.012)	(0.013)
Number of Obs.	8462	5641

Notes: The right hand side variables in Panels A and B are the same as those used Models 4 and 5 respectively in Table 5. 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, clustered by country, are reported in parentheses. Coefficients are Probit marginal effects at the mean.

Endnotes:

[i] We use the term interpersonal connectedness to imply entrepreneurs' links with bureaucrats which can give firms unfair advantage in accessing scarce resources which in this case is formal finance. Given the exclusive and interpersonal nature of such contacts, we will use the terms interpersonal connectedness and interpersonal bureaucratic networks interchangeably.

[ii] The *size* of bribes and gifts (q.j6) has a large number of missing observations in the dataset (more than four fifths of the observations) and therefore it is not used here to reflect informal payments.

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

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

[v] Armenia, Azerbaijan and Georgia

[vi] Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan

[vii] Belarus, Russia, Ukraine and Moldova

[viii] Similar tests were also carried out for the *loan interest* equation. Our target variables remained insignificant in all these tests, so these results are not reported here for brevity but are available on request.