The economic effects of politically connected entrepreneurs on the quality and rate of regional entrepreneurship

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Abstract

While research on institutional quality and entrepreneurship has consolidated over the last decade, the role that politically connected entrepreneurship (PE) plays in the perception of economic actors abo the quality and a rate of entrepreneurial activity in their cities remains unanswered. The origin and nature of PE are heterogeneous, and it is associated with economic activity in a strong formal and informal cooperation with local and national governments to access resources in a privileged way. This study uses primary data from 1729 economics agents surveyed in seventeen cities in East and South-East Europe as well as Balkans and Central Asia. In order to better understand the consequences of PE, one should look at how it moderates the relationship between access to capital for entrepreneurs and the outcomes of entrepreneurial activity. We find that politically connected entrepreneurship may limit access to debt finance by other – non-politically economic actors, in particular in countries with a high level of corruption and market uncertainty. PE does not affect equity capital availability for entrepreneurship. Important policy implications are discussed for developing productive entrepreneurship in cities in emerging and developing economies.

Keywords: politically-connected entrepreneurship, debt finance, equity finance, city, entrepreneurship

1. Introduction

More than fifty years ago, Baumol (1968) stated: "Trying to understand entrepreneurship without considering entrepreneurs is like trying to understand Shakespeare without including Hamlet in

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the discussion" (p.67). Those words proved prophetic. We add here the following: ignoring today the presence and the significant role of politically connected entrepreneurs (PE) in the regional economies would be a major and costly omission.

Entrepreneurial behavior has an economic impact, but *"*not everything labeled as 'entrepreneurial' is desirable" (Sauka & Welter, 2007: 88); entrepreneurship is not always positive and developmental "by nature" (Baumol, 1990; Desai & Acs, 2007; Desai et al., 2013; Wasilczuk & Stankiewicz, 2017).

The subject of politically connected entrepreneurship is complex and elusive. In practice, it comprises many facets: highly profitable contracts with state institutions using tricky ways to avoid the radars of legislation; privileged access to financing, blocking other entrepreneurs who are direct competitors using the informal network in the local or national government; lobbying for laws or decisions that favour interests of specific entrepreneurs related to authorities. With the realms of the accumulating body of research, some scholars have suggested that by engaging in political activities such as lobbying for preferential regulations and policies, firm can shape the environment to their benefit and risk exposure (Baron, Neale, & Rao, 2016; Doh, Lawton & Rajwani, 2012; Wrona & Sinzig, 2018). For instance, Faccio (2010) documents that politically connected firms enjoy important financial privileges such as low tax rates, excessive market share and can raise more leverage compared to their non-connected counterparts. Some other studies have demonstrated that political connection reduces the cost of equity (Boubakri et al. 2012a) and cost of debt (Chaney et al., 2011). Evidence suggests that politically connected firms have preferential access to debt financing (Backman, 1999).

While politically connected entrepreneurs may also have privileged access to bank loans (Khwaja and Mian, 2005) and government contracts (Agrawal and Knoeber, 2001; Duchin and

Sosyura, 2012), the economic effects of PE have been rarely discussed. The relevant work underlining this phenomenon include DiLorenzo (2005), who argued that “a political entrepreneur succeeds primarily by influencing the government to subsidize his business or industry, or to enact legislation or regulation that harms his competitors” (p.111), which was also seen as a wealth destruction factor on a long-term basis. That said, PE may also play a prominent role in attracting foreign investors in local joint ventures, often preferred by a foreign investor due to their strong political and financial connections, blocking the access of other legitimate players to the market (DiLorenzo, 2016). We define politically connected entrepreneurship as the process of creating or seizing an opportunity where a business owner-manager is a direct family member (i.e., father, mother, spouse, son, etc.) of anyone in the local or national government or has a publicly known friend of anyone in the government or known members of political parties. This relationship enables economic activity in a strong formal and informal cooperation with the local/national government to access economic resources privileged compared to other entrepreneurs.

In a context of evolving institutions in emerging and developing economies, it has been a glaring omission that the studies have not measured the risks and the economic outcomes of weak and unstable formal institutions and societal values and what politically-connected entrepreneurship may use as a mechanism to disrupt the economic development and entrepreneurship activity in a region. Faccio (2006), Boubakri et al. (2012a), and Guedhami et al., (2014) argue that political connections are more prevalent in the presence of weak legal institutions, weak regulatory and institutional environments, and widespread corruption. Against this background, we develop two research questions: i) How are politically connected entrepreneurship related to entrepreneurial activity quality and rate? ii) how the relationship

between the availability of equity and debt capital for entrepreneurs and the quality and rate of regional entrepreneurship activity can change with the perceptions of politically connected entrepreneurs in a region.

Study by Morck, Stangeland and Yeung (2000) of the political influence of billionaires across 41 countries showed that billionaire heirs are often successful in creating economic and legal barriers to competition by restricting access to cap.

Our main finding is that politically connected entrepreneurship interrupts debt financing limiting access to financial resources by entrepreneurs without networks with the government. At the same time, particularly for cities in developing economies, politically connected entrepreneurship can become a threat to other rent-seeking businesses. In a system when informal institutions dominate and institutional trust is lacking. (Webb et al., 2020) PEs will use their links with authorities to attract external capital, including VC and bank loans, to facilitate market entry.

The paper is organized as follows. In the next section of the paper, we unpack the empirical literature on politically connected entrepreneurship. In the third section, we present the research design. The fourth section presents some of the empirical evidence. The fifth section discusses the main findings and limitations of the paper and concludes.

2. Literature review

2.1. Defining politically connected entrepreneurship

Entrepreneurship has been defined as “the process of creating or seizing an opportunity and pursuing it regardless of the resources currently controlled” (Fayolle, 2007: 37), with entrepreneurship being growth-oriented and aiming to achieve high productivity (Stam, 2015;

Stam & van de Ven 2019). In this context, the key question concerns the economic activities which entrepreneurs pursue to create value, Baumol (1990, 1993) points on the necessity to distinguish between "positive" or "negative" activities, activities that are "honest, moral, fair" vs. activities that are "destructive to society, based on semi-formal access to resources."

Baumol (1990) described productive entrepreneurship as wealth-creating activity and unproductive entrepreneurship as a redistributive activity. *Destructive* entrepreneurship is defined by Desai et. al. (2013: 22) as being wealth destroying (such as the destruction of inputs for production activities). Destructive entrepreneurship includes also but is not limited to, illegal and criminal activity, as well as various forms of corruption (Sauka, 2008). In our opinion, "entrepreneurial" activities such as drug dealing, prostitution and trafficking in persons, rackets, blackmail cannot be considered entrepreneurial ventures. They are an extreme nuisance, conducted often with the complicity of state institutions, but, we consider, they must not be included in the free initiative category.

There is disagreement about what drives productive entrepreneurship activity that an entrepreneurial ecosystem can develop and prosper (Spigel & Harrison, 2018). Murphy, Shleifer and Vishny (1991) also distinguish between different entrepreneurship types (starting firms that innovate and foster growth) and *rent*-seeking (redistributing wealth and reducing growth).

The term "political entrepreneur" has been first mentioned by Burton W. Folsom Jr. (1993) in his book *The Myth of the Robber Barons*. Among the classic papers on the subject, different meanings for "political entrepreneurship" can be observed. We strongly agree with the perspective of those researchers who consider PE "the negative character", quite the opposite of what we commonly understand by "the market entrepreneur" (Folsom, 1993; Younkins, 2002; DiLorenzo, 2005). Studies that shed light on the concept of political entrepreneurship are Salerno

(2011) who claims that “politically-connected entrepreneurship” is usually a metaphor for rent-seeking, and Folsom (1993), who distinguishes between *political entrepreneurs*, who run inefficient businesses supported by government favors, and *market entrepreneurs*, who succeed in facing vigorous competition. Other scholars specialists refer to political capital as a variation of social capital (Bourdieu, 2002) that can be used to grab entrepreneurial opportunities. However, Nee and Opper (2010) state that political capital has the additional characteristic of being connected to political power and in this way, it is rooted in institutional structure. Political capital could be the combination of other types of capital, corresponding with “the arena within which it is utilized”. (Brown et al, 2021, p.14)

Faccio (2006, p. 369) identified politically connected firms if “at least one of its large shareholders (anyone controlling at least 10 percent of voting shares) or one of its top officers (CEO, president, vice-president, chairman, or secretary) is a member of parliament, a minister, or is closely related to a top politician or party.” However, the most recent studies of Habib et al. (2018) argue that Faccio’s (2006) definition fails to reflect the diversity of the nature of political connections between business and the government.

We consider that politically connected entrepreneurs drawing on Faccio (2006), which is present in many ways within the institutional context mainly in developing and transition economies, but also can be noticed in the developed countries such as the United States, where politically connected firms can lobby the contracts of military procurement, oil and gas exploration and other (Goldman, Rocholl, So, 2013).

Political connections are more pronounced in countries with weak legal systems and high levels of corruption and the benefits of political connections are dependent on specific country-level characteristics (Faccio, 2006; Faccio, 2010, Chen et al., 2011; Boubakri et al., 2013). More

specifically, Banerji et al. (2016) argued political connections depend on each country's political environment, economic and legal settings, affirming the earlier finding of Boubakri et al. (2008), where the authors suggested that political connections are more prevalent in lower judicial independent countries.

Political entrepreneurs may inherit some of the characteristics of different types of Baumol's (1990) entrepreneurs, while pursuing the market opportunity is intrinsically connected with the political support and informal connections to influence the government to subsidize his business or industry and increase PE's profits. Given that political entrepreneur is conditional on the existence of informal networks and the link to the government, it may rather exhibit a "hit and run mentality" as policymakers in the office are usually limited to four or five years between elections.

In layman terms, a PE is an individual who uses her or his political connections as a direct relative or being a friend with local and national authorities to leverage resources and lobby for the privileged treatment of business (e.g. subsidies, "fat" contracts). Pes will find the loops in legislation, which they use, including corrupting authorities for "financial engineering", or speculate on "inside-information" via information leaks from the government, easing take-overs at bargain prices. Political entrepreneurs seek and receive help from the state and, therefore, it is sometimes not regarded as a true entrepreneur" (Younkins, 2002: 115).

The PE may represent the worst of a destructive entrepreneur (Baumol, 1990) as they rapidly acquire personal wealth using the privileged access to public resources and often produce losses for society (DiLorenzo, 2016). If we can say that a market entrepreneur succeeds by pleasing his or her customers, then political entrepreneurs succeed by influencing the government for their benefit.

2.2 Risks and challenges of politically-connected entrepreneurship

We are not the first to stress the negative role of politically connected entrepreneurship in regional economic development and impose substantial economic costs. Studies have documented various beneficial motives and several privileged treatments for acquiring political connections ranging from better corporate performance, stronger market power, easier access to external finance to preferential tax treatment (Johnson and Mitton 2003; Faccio, 2010; Liu, et al., 2012; Wu et al., 2012; Wisniewski, 2016; Chen et al. 2017). Some other studies (e.g., Agrawal and Knoeber, 2001; Goldman et al., 2013) have highlighted the benefits of direct political connections through board members in influencing government regulations, firm value, and gaining lucrative government contracts. For example, Faccio (2006) investigated several thousand firms in 47 countries and found that PEs have higher leverage and stronger market power but poorer accounting performance than market entrepreneurial firms. Agrawal and Knoeber (2001) argue that politically experienced directors support the firm with their knowledge of government procedures, connections with bureaucracy, and insights in predicting government actions. This evidence explicitly draws attention to the importance of political ties. Goldman et al. (2013) analyzed how politically connected firms affect the allocation of government procurement contracts and how this may influence company values in the USA. Some studies found that these kinds of firms receive more frequent bailouts and exhibit higher default rates. Faccio, Masulis and McConnell (2006) demonstrated with a cross-country sample of 450 bankrupt companies from 35 countries and showed that political entrepreneurs' companies are much more likely to get bailed out. Faccio (2010) added a more recent study added to the earlier research by suggesting that

connected firms report higher leverage, implying preferential access to credit, lower tax, and greater market share.

Most studies found that political entrepreneurs benefit from better access to finance, which could be the mechanisms which they influence the entrepreneurial ecosystem. Khwaja and Atif (2005), using a loan-level data set of more than 90,000 firms from Pakistan, investigated access to finance and discovered that firms run by political entrepreneurs receive substantial preferential treatment from lenders. There is no doubt that loan restructuring, rescheduling, and write-offs for politically connected entrepreneurs are common in developing countries. Claessens, Feijen and Laeven (2008) also demonstrated increased access to bank financing for Brazilian political, entrepreneurial firms, while Dinc (2005) provides cross-country, bank-level empirical evidence about politically motivated lending by government-owned banks in emerging markets in the form of increased lending in election years compared to private banks. Boubakri et al (2012) in a cross-country study, demonstrated that firms of politically connected entrepreneurs have a lower cost of equity capital than independent firms and that the benefits outweigh their costs. WE also find support for this argument in Houston et al. (2014) who documented evidence that the cost of bank loans is lower for firms that have politically connected board members.

Entrepreneurs connected through various pipelines to the state budget or with the intricate net of interests of politicians may be more likely to evade tariffs because they face a lower risk of being caught and lower penalties conditional on being caught. Rijkers et al. (2015) found out that politically connected entrepreneurs in Tunisia seem to have been especially likely to profit from tariff evasion.

Some researchers found that firms of politically connected entrepreneurs have better performance than independent firms. The explanation could be that easier access to credit, lower

taxation and awards of government contracts may lead to a competitive advantage for these firms. Fisman (2001) demonstrated that for a very large part of the Indonesian economy, politically connected entrepreneurship matters a lot; he investigated the effects of political connections on the value of firms. Niesen and Ruenzi (2010) investigated politically connected entrepreneurship in Germany, and results indicated that the firms involved are larger, more risk-averse and have lower market valuations than independent firms. Diwan et al. (2015), using data from 496 Egyptian firms with political connections, explored the economic effects of close state-business relations and demonstrated that these firms are more profitable and larger, but they reduce aggregate sector economic growth. In their study, Diwan and Haidar (2020) concluded a similar trend: politically connected entrepreneurship in Lebanon creates unfair competition that hurts the competitors so much that aggregate growth in the sector is negatively affected. A recent study of PE by Belitski et al (2021) has demonstrated that political entrepreneurs become moderators for the chain reaction inside the ecosystem and how they perform as a filter for the rest of the entrepreneurial actors (Belitski et al, 2021).

2.3. Discriminatory access to financial capital by politically-connected entrepreneurship

Access to financial capital is the most important factor influencing entrepreneurial success (Levie & Autio, 2008). Financing in a narrow sense is understood as taking all necessary actions leading to capital accumulation (Waniak-Michalak et al., 2018). Prior research identified capital availability using venture capital and the availability of bank loans for capital investments (Léon et al., 2016).

The entrepreneur may be described as seeking and identifying opportunities and exploiting them (Timmons, 1994). Still, she or he is looking for money to invest at various stages of her/his

venture (Roundy, 2017). In this context, the need for funding and support for companies to navigate from one type of funding source to another is critical, both for growth and up-scaling (North et al., 2013). The providers of such a precious resource are various actors: banks, business angels, venture capital firms; and in recent years, several new players have emerged: accelerators, crowdfunding, venture debt funds, and family offices (Stam, 2015; Léon et al. 2016; Block et al., 2018). Bank loans are the main source of finance for entrepreneurial firms, but venture capital finance is often associated with start-ups (Wintona & Yerramillib, 2008; Waniak-Michalak et al., 2018).

Where there is access to finance, we will evidence the following: on the one hand, institutions that make the rules and collect what's due for the entire society to function, but, on the other hand, unfortunately, some new players that are exempted of the general rules – the political entrepreneurs. PEs use limited public and commercial resources via their influence and connections, and their networks that are making the rules, and these players are bending the rules to their interests.

Boubakri et al. (2012a) report evidence that politically connected firms experience a lower cost of equity capital, suggesting that they are considered less risky compared to their non-connected counterparts, and Chaney et al. (2011) provide similar evidence for the cost of debt.

The preferential treatment to political entrepreneurs is not just a result of government banks selecting firms with worse default rates. Using firm fixed effects and exploiting the only variation within the same firm borrowing from both government and private banks, Khwaja and Mian (2005) demonstrated that government banks differentially favor politically connected firms by providing them greater access to credit. This access to finance could be even higher for bigger political entrepreneurs with a higher propensity to default. We argue that the local context

matters as firms with “stronger” politicians on their boards or political party networks may be given greater preferential access to equity and debt capital in both state and commercial banks. Khwaja and Mian (2005) findings explain a mechanism of political rent-seeking which consistent with the institutional environment of the regional and national banking system, which is used to serve business projects of firms connected to the politicians. Political entrepreneurs obtain rents from government and commercial banks by exercising their political influence on bank employees. They also obtain foreign direct investments and access to equity capital by exercising their political influence on investors who want to expand in the market and who require a privileged regime (e.g., industrial development in green or brown areas, environmental standards of manufacturing, etc.). The more powerful is the political party to which PE is networked, the greater is PE’s ability to attract external equity investments in the projects and influence banks. This influence expands to both government banks under control and commercial banks who may be threatened of non-extending their licenses or additional tax inspections if finance is not provided to a PE. PEs can threaten bank owners with transfers and license cancel-outs, removal of the main staff, or criminal investigation in the banks. Access to finance may ensure further rewards by the government bodies, public office appointments, transfers, and potential promotions outside the bank. Banks may survive providing privileged access to finance to PE as they use the soft-budget constraints (Kornai, 1986) and may increase the costs and fees for other entrepreneurs to compensate the cost of access to finance for PEs. In the same way, investors may be limited in investing in other industry projects, as they either run out of equity or are unlikely to invest in the same region and industry where they already have a share of investment and would not want to raise competitive projects. Based on the above, we hypothesize:

Hypothesis 1: Politically connected entrepreneurship negatively moderates the relationship between access to capital (debt and equity) and a) quality of regional entrepreneurship; b) rate of regional entrepreneurship.

3.1. Materials and methods

The empirical analysis is based on a novel cross-sectional dataset constructed via an online survey from November 2018 to February 2020 in 17 cities in four representative regions of Central and East Europe (Austria, Poland, Ukraine), South-East Europe (Bulgaria, Romania, Turkey, Georgia), Central Asia (Kazakhstan) and Balkan countries (Bosnia and Herzegovina, Croatia). Participation in the survey was optional. The data collected in this study is the first attempt for generating statistics on city-level entrepreneurship in emerging and developing economies, which are not collected by official statistics or by university scientists. The online survey generated a comparatively small dataset that could be plagued by a non-response bias or information disclosure bias.

Primary data is on the individual level 1,729 interviewees were not aggregated to 17 cities and was analyzed individually, adding corruption in the robustness check as a region-level indicator. Only the robustness check considers the single variable from a regional level that does not change within individuals from the same city.

The surveys were not conducted anonymously, i.e., the names and emails of the respondents were known before and after the survey. We include a series of individual-level control to measure some individual-specific effects (age, occupation, human capital). Their position (entrepreneur, professor, director of technopark, lawyer, consultant, manager) may envisage their skills, competencies, and awareness of entrepreneurship activities in their cities. The selection

question was "Are you aware of what is entrepreneurship activity and its objectives (providing a definition)?" if no, respondents could not proceed with the answers.

The authors have thoroughly reviewed the data. Unique features of the survey include sampling for representativeness at the level of regions in each country (at least one capital and one regional center), except Austria (Klagenfurt), Turkey (Istanbul), and Bosnia and Herzegovina (Sarajevo). In each city, eight economic agents were identified following Brown and Mason (2017) and Godley et al. (2019) with four major groups such as entrepreneurs (38.0% of the sample), university professors (9.0% of the sample), policymakers (8.1% of the sample), investors with multiple affiliations (29.1% of the sample) and other. Other four groups included managers of multinational firms and Technology transfer offices in Universities, technoparks, lawyers, journalists, and students who own their businesses. The survey in the category "other affiliations" also includes representatives from the chamber of commerce and managers in business incubators.

Table 1 in Appendix provides a list of cities where we approached individual stakeholders to participate in the survey. These countries were selected, building upon the societal clusters proposed by the Global Leadership and Organizational Behavior Effectiveness research program (GLOBE) that groups countries based on cultural dimensions and similar institutions (Huyghe et al. 2016).

Our main advantage of asking economic agents their perception about the extent of political entrepreneurship in their city is that the perceptions may better predict where things are. Prior research often used public data to identify political connections come from various publicly available sources such as the Chiefs of State and Cabinet Members of Foreign Governments

(U.S. Central Intelligence Agency, 1997) and the official website of each country's government/or parliament. However, it may not be possible to measure the pervasive type of informal connections, also known as institutionalized corruption, when petty corruption or external support by the government formally and informally may not be considered something illegal or immoral and if often institutionalized as part of the business routine (Cuervo-Cazurra, 2008).

TABLE 1 ABOUT HERE

All cities in the dataset share a common history and similar institutional and cultural characteristics. Seven out of seventeen cities are part of the European Union (EU).

We started by collecting email and telephone information for the 7,715 individuals who fall into the entrepreneurship system stakeholder definition (Brown and Mason, 2017) via the web pages of major universities in these cities, technology transfer offices (TTO), incubators (at university and off-campus) and technoparks, chambers of commerce, association of accountants and lawyers, free press and journalists association as well as registered venture capital associations and unions in those cities. We used the script with the help of the Phython program during September -November 2018. In each country, authors hired a research assistant who has been responsible for the outreach of potential economic agents in their cities and sending the reminders. To increase the response rate, research fellows followed up with telephone interviews with each respondent in case comments were left or missing values were noticed. The records could generally be found by typing their full name and association (chamber of commerce, TTO, venture capitalist, university, technopark, science park, incubator, accelerator, etc.). Of the 7,715 emails identified and emailed, 2,603 responded. This means the initial response rate was 33.74 percent. Only a subsample of 1729 respondents (66.42 percent) could comment on politically

connected entrepreneurship in their cities when followed up with by research fellows, which was our main variable of interest. Consequently, when an individual does not disclose their perception of politically connected entrepreneurship, it may mean they are either corrupt themselves but do not wish to disclose it or do not know the fact of politically connected entrepreneurship. We excluded these observations; also, we included regional control for corruption level in each city from the external source of World Bank (2017). This strategy used to control for possible bias in the perceptions of the sample of respondents, as we also were able to identify an average rate of firms that felt corruption had been an obstacle in this city (more information in the control variables section).

Our survey questions provide a comprehensive perceptual set of characteristics about the individual's perception of the quality of regional entrepreneurship , socio economic and framework conditions (Stam, 2015, 2018) and Stangler and Bell-Masterson (2015). Our final cross-sectional dataset includes 1729 individual observations from 17 different cities and 10 different countries, with 54% of observations from capitals and 45% from stakeholders in the EU.

We matched aggregated firm data by regions (secondary data) on corruption level available from the World Bank Enterprise Surveys to calculate the regional corruption level. The World Bank (2017) to our respondent's individual-level data. World Bank data does not vary by respondents within each city. We use the latest wave for 2013-2016 across regions in focus, assuming that corruption is a slow-changing informal institution (Estrin et al. 2013) and that the difference is in 3 years.

We cleaned the data for outliers, used the maximum observations available for non-missing values, and replaced non-responses or all non-applicable with missing values.

Our approach suggests that cities are the most appropriate spatial units to fully understand the drivers of regional entrepreneurship that are spatially bound (Bosma & Sternberg, 2014; Audretsch & Belitski, 2017). Thus, a research strategy limits a sample within a certain administrative boundary, like cities (Feldman et al., 2005). We limited the geography of our search using the Eurostat approach of core-city, also known as a local administrative unit (LAU), corresponding to the city's administrative boundaries (European Commission, 2010). Core-cities provide a more fine-grained analysis than larger regions, where aggregate additional populations and areas skew the values in an unknown direction.

Data used in this study is reported in Table 2.

TABLE 2 ABOUT HERE

Dependent Variables

Our dependent variables include measures of the quality and rate of entrepreneurial activity (Stenholm et al. 2013; Stam, 2015).

Our first variable is the quality of the entrepreneurial activity. We use the measure of "There is a strong, growth-oriented entrepreneurship activity in my region (city)" measured on the Likert scale from 1 – very weak to 7 – very strong. The statement of strength and growth-oriented entrepreneurship activity is associated with studies of ecosystems dynamism and high-growth firms (Stam, 2015, 2018). The average value of entrepreneurship quality is 4.81 and a standard deviation of 1.47.

Our second variable is the rate of entrepreneurial activity measured by the survey question "There is a significant number of entrepreneurs compared to another type of business activity (e.g., corporations, large manufacturing, incumbents firms, generation firms, etc.) registered in

my region" measured on the Likert scale from 1 – very weak to 7 – very strong. A key focus of this question is its emphasis on the rate of entrepreneurship.

Independent Variables

Independent variables measure the access to finance by entrepreneurs and the perceptions about the role of political connections in a region (Faccio et al. 2006).

Our first and second explanatory variables are equity and debt financing. We use the following survey question to measure it. To measure the perceptions about the availability of equity capital for entrepreneurs, we use the following survey question: "There is a sufficient access to private equity - venture capital (e.g. equity crowdfunding, angel investors, venture capital, equity lending, and mezzanine loans, etc.) in my city (1- very weak, 7 - very strong)". To measure the perceptions about the availability of debt capital for entrepreneurs we use the following survey question: "There is sufficient access to debt capital (e.g. bank capital, government loan programs, peer-to-peer lending, business-to-business lending, etc.) in my city (1- very weak, 7 - very strong).

Our main variable of interest is politically connected entrepreneurship. Our definition is different from Faccio et al. (2006) as it measures perceptions of the economic agents about the general institutional context and specific cases of politically connected firms they may have come across in their regions. We definer the extent of politically connected entrepreneurs in a region with the following survey question: "There is politically-connected entrepreneurship in my city (economic activity in a strong formal and informal cooperation with local/national government in accessing economic resources in a privileged way compared to other entrepreneurs) (1- very weak, 7 - very strong). This also includes a large stakeholder or a head of state (i.e., president, king, or prime minister), a government minister, or a national parliament member who controls

the company's voting shares". We draw on the studies of Folsom (1993) and DiLorenzo (2005, 2016) in understanding the perceptions of PE and , the type of entrepreneurship which is reported as politically connected if at least one of its top officers or owner-managers are connected to a larger political party or government, those authorities who may hold a share and control the company's voting (Faccio et al. 2006) .

Control Variables

We have included several control variables. We control for the individual characteristics of respondents. We use the respondent's occupation as a set of binary variables, gender, human capital (university degree or above), age range (Reynolds et al., 1999; Reynolds & Curtin, 2010), as well as their perceptions of competencies, skills and knowledge on sustainability and sustainable development on the Likert scale from 1 – not at all to 7 – very high. We control cities' agglomeration effects (Fritsch & Mueller, 2004; Audretsch et al., 2015) as a binary variable if a city is a capital-city, zero otherwise. Capital cities are known to generate more entrepreneurship, agglomeration effects and in the region of study are important centers of economic development and growth.

Our framework conditions build on the institutions and entrepreneurship literature (Aidis et al., 2012; Ostrom, 2005; Kogut and Ragins, 2006; Audretsch & Belitski, 2017; Fritsch et al., 2019). Availability of media supports to entrepreneurship: "There is a sufficient support of independent mass media to entrepreneurship in my region (city) - e.g., media stories, blogs, etc.", that is related to creating a conducive image of an entrepreneur (Stenholm et al., 2013). Another variable is entrepreneurial culture, for which we used the question "There is a strong entrepreneurship culture and orientation in my region (city)" (Godley et al., 20199). Both measures apply on the Likert scale from 1 – very weak to 7 – very strong. In cities where

entrepreneurs' societal contribution is highly valued, and the social status, including respect for entrepreneurs, is high, there are higher entrepreneurial aspirations and financial success. Finally, government support programs were also included as a control for the drivers of entrepreneurship (Chowdhury et al., 2019), which is a key factor of the systemic conditions of entrepreneurial ecosystems.

The majority of public interventions to support entrepreneurs are based on promoting start-ups, fostering networks, incubators, and accelerators that focus on assisting the creation of high-growth firms (Brown and Mason, 2017). In order to measure the role of formal and informal networks (Motoyama and Knowlton, 2016), we use the following two measures from the survey: "There is a sufficient formal network to support entrepreneurship in my region (city) such as universities, incubators, accelerators, Chamber of Commerce, etc." and "There is a sufficient informal network in my region of investors not officially registered such as family links, informal networking, business angels" both measured on the Likert scale from 1 – very weak to 7 – very strong. The role of networks is to develop relational and institutional foundations and facilitate synergies between economic actors within localized contexts. These dynamic interactions between economic actors who aim to produce more than the "sum of their parts" (Mason & Brown, 2014; Brown and Mason, 2017) but generate synergies.

We control for the regional level variables such as the regional level of corruption. Corruption is largely associated with negative effects on economic activity (Glaeser and Saks, 2006; Busenitz, Gomez and Spencer, 2000; Ehrlich & Lui, 1999). In many emerging economies, corruption is so pervasive that it becomes an expectation in society (Rodriguez et al., 2005) or worse than that, it is deeply rooted in the society and tolerated as acceptable behavior (Estrin and Mickiewicz, 2011). Our regional corruption level comes from the World Bank Enterprise Surveys (2017) and

it represents a share of businesses in a region that found corruption as an obstacle to business activity (Aidt, 2003). The values vary from only 2 percent of firms in Klagenfurt (Austria) reporting corruption as an obstacle to 50 percent of firms who see corruption as a significant business obstacle in Bucharest, Romania.

3.2. Model

To test our hypothesis, we use ordinary least square (OLS) estimation controlling for heteroscedasticity in standard errors. We follow Baltagi (2008) who considered the regression model to measure the direct effects of availability of financial capital and other pillars of entrepreneurship on entrepreneurial outcomes, including the moderating effect of PE on regional entrepreneurial rate and quality.

the effects within the cross-sectional data given by (1). This does not allow to control for unobserved heterogeneity across individuals – EE stakeholders and has its drawbacks related to inferences and establishing the causal relationship. Standard errors are robust for heteroscedasticity in both models for quality and rate of regional entrepreneurial activity. The following model was estimated:

$$E_i = \beta_0 + \beta_1 Debt\ finance_i + \beta_2 Equity\ finance_i + \beta_3 (Equity\ finance * PE)_i + \beta_4 (Debt\ finance * PE)_i + \beta_5 Z_{iR} + \beta_6 w_i + \beta_7 Corruption_R + \varepsilon_i \quad (1)$$

where E_i is either quality or rate of entrepreneurial activity perceived by economic agent *i*. $\beta_1 is$ estimated effect of perception about debt capital availability on entrepreneurial outcome; $\beta_2 is$

estimated effect of perception about equity capital availability on entrepreneurial outcome, $\beta_3 is$ estimated effect of equity capital availability on entrepreneurial outcome conditional on the level of individual perceptions of politically connected entrepreneurs in a region; $\beta_4 is$ estimated effect of debt capital availability on entrepreneurial outcome conditional on the level of individual perceptions of politically connected entrepreneurs in a region; β_5- estimated effect of a set of control variables on entrepreneurial outcomes; Z_{iR} is a vector of control variables about the perception of various regional characteristics – R , by an individual respondent I, which may directly affect entrepreneurship outcomes from prior research (Brown and Mason, 2017); β_6 – estimated effect of individual characteristics w_i (age, education, position, etc.) of individual respondents i participated in the survey; β_7 – estimated effect of regional corruption (World bank, 2017) on entrepreneurial outcome (regional level indicator) ; ε_i is an error term . To address the concern of multicollinearity, we used variance inflation factor (VIF) in the models of quality and connectedness as dependent variables.

4. Results

Table 3 presents the results of OLS estimations with level variables for the cross-sectional estimation of the quality (model 1) and rate of entrepreneurial activity (model 2). It includes both basic models (columns 1, 5) and models including the interaction terms (columns 3-4 and 6) for the quality of entrepreneurial activity and (columns 7 and 8) for rate of entrepreneurial activity. There are two interaction terms in our analysis: first interaction term has venture capital interacted with PE on the Likert scale 1-7 and the second interaction term includes the variable debt capital interacted with PE on the Likert scale 1-7. The signs of the interaction coefficients and confidence intervals demonstrate that the relationship between both debt (β= -0.026, $p<0.01$)

and venture capital (β= 0.027, p<0.001) is conditional on the level of PE. The PE does not directly change the rate and quality of regional entrepreneurial activity, as the coefficients of PE are not statistically significant. However, the interaction term coefficient is significant, demonstrating that the relationship between debt and equity availability and regional entrepreneurship is conditional on PE, supporting H1a.

TABLE 3 ABOUT HERE

Figure 1A- left (using specification 4, Table 3) illustrates the predictive margins of the effect of changes in access to venture capital (equity funding) on the quality of regional entrepreneurship as politically connected entrepreneurship increases. When politically connected entrepreneurship is low, one can see that the quality of regional entrepreneurship is high. However, as the level of venture capital increases in cities with a high and low level of politically connected entrepreneurship, there remains a difference in the quality of regional entrepreneurship. On average, one can see that at the low rates of private equity capital, stakeholder's perceptions about the quality of regional entrepreneurship are higher when politically connected entrepreneurship activity is low. This finding contributes to what we know from prior research on PE from Backman (1999) and Faccio et al.. (2006) as previous studies found that firms' political connections limit access to mainly debt capital. Digitalization of economic relations and fundraising and an increase in digital technologies' role in venture investing also demonstrate that VCs in the developing countries are active and increase the quality of regional entrepreneurship. However, politically connected entrepreneurship may limit this ability (Figure 1A). We find similar results for the rate of entrepreneurial activity, supporting H1b. Figure 1A – right (using specification 8, Table 3) illustrates that an increase in perceptions about the availability of equity capital increases the rate of entrepreneurial activity for cities with a high

and low level of politically connected entrepreneurship. This means if the supply of equity capital is high – then one can expect a higher rate of entrepreneurship at any level of PE..

Our H1a is supported by the interaction between PE and debt capital. An increase in perceptions about the availability of debt capital is negatively associated with the quality of regional entrepreneurial activity if PE increases. PEs are known to block or limit financial resources for other entrepreneurs in a region (Wisniewski, 2016; Belitski et al., 2021). We use predictive margins (Williams, 2012) reported in Figure 1B to explore the interaction effects in more detail. Figure 1B- left (using specification 4, Table 3) illustrates the predictive margins of quality of regional entrepreneurship when the perceptions about the access to debt capital increase along with the level of politically connected entrepreneurship.

Interestingly, under a low level of politically connected entrepreneurship and increased access to debt capital, the quality of entrepreneurship increases on average from 4.5 to 5. Politically connected entrepreneurship reduces the access to debt capital and, therefore, the quality of entrepreneurship activity in a region. Politically connected entrepreneurship may therefore distort the equilibrium in the financial markets.

It is well-known that most small firms lack financial resources. If they are challenged, they go to banks. This is one of the reasons why the PE's presence in an ecosystem is such a nuisance, so dangerous: PEs can influence the behavior of banks (Khwaja & Mian, 2005) in the sense that he can subjectively channel the loans and create barriers for competitors and new entrants (Johnson et al., 1997).

Our H1b is not supported for the rate of entrepreneurial activity, as an increase in perceptions about the availability of debt capital is positively associated with the rate of regional entrepreneurship for cities with a high and low level of politically connected entrepreneurship.

(Figure 1B – right) (specification 8, Table 3). Our finding demonstrates that it is a perception about the quality of entrepreneurship changes with PEs influencing financial sector behavior (Khwaja & Mian, 2005).

We also demonstrated that other factors are also important in determining the rate and quality of regional entrepreneurship. These factors include the role of culture that "support and reward entrepreneurial activity by treating entrepreneurship as a legitimate and worthy pursuit" (Roundy, 2017: 249); networking – which "strongly shapes the performance of entrepreneurial actors within a region" (Brown et al., 2020: 9); government support – that can contribute positively by creating efficient institutions without bureaucracy and corruption and decreasing "red tape" linked with applications for business permits and licenses (Neck et al., 2004). We also found that the systemic factors (Stam, 2018) such as the role of social media and attitudes to entrepreneurship through success stories can play a critical role in the formation and evolution of entrepreneurial ecosystem by identifying its culture, building the ecosystem's identity, and putting a light on it (Roundy, 2017). As part of the robustness check, we controlled for regional corruption in the model (1). The relationship between politically connected entrepreneurship and regional entrepreneurial activity does not change and remains insignificant. Our interaction coefficients of PE and debt capital does not change, while the interaction coefficient of PE and venture capital is no longer significant. Corruption is an illegal practice and is viewed to get around regulatory requirements perceived to be difficult or expensive, while this is also an additional cost and an invisible tax on entrepreneurs. Politically connected entrepreneurship is a legally incorporated business activity that limits opportunity pursuit for other entrepreneurs (Wiklund & Shepherd, 2003) who are not networked or related to local and national authorities. While an entrepreneur may be motivated in the short term to pay bribes, political entrepreneurs

do not need to do so, and may prevent their rivals from paying bribes to authorities by limiting their access to financial resources and market entry (Desai et al., 2013).

In both models in Table 3, the coefficient of regional corruption is positive and statistically significant, which supports Chowdhury et al. (2019), Belitski et al. (2016), and Méon and Sekkat (2005) argument that corruption could have the effect of "greasing" the wheels of business in countries where the quality of institutions is low.

5. Discussion

5.1. Policy and managerial implications

Regional entrepreneurial activity is affected by the perception of financial resources available to entrepreneurs and is conditional on economic agents' perceptions of politically connected entrepreneurship.

Several important implications should be discussed. First, politically connected entrepreneurs may create barriers for other entrepreneurs and incumbents to access debt funding and market entry (including licensing, permits and fines for competitors). In particular, smaller firms may be affected. In the cities where financial capital is limited, politically connected entrepreneurship further reduces its supply of debt capital. Politically connected entrepreneurship may also attract available equity resources, with investors supporting politically connected entrepreneurs, particularly in countries with poor institutional quality (Chowdhury et al. 2019). We also find that managers of non-politically-connected firms may be less affected in regions where equity financing is abundant (e.g. capital cities, large financial centers, etc.). Politically-connected entrepreneurship does not change the perceptions of other economic actors about the availability of equity capital and its effect on entrepreneurship rate.

Government and commercial banks are more likely to be the source of rent-seeking behavior of politically connected entrepreneurs because they are the more dominant domestic player in the financial sector (Wisniewski, 2016; Chen et al., 2017). The role of debt financing has remained important, with PEs having different tools in hand to access debt financing. Banks may go further in allowing PEs access to finance or to remain solvent despite high levels of default and risk of the project. Private banks and venture financing face harder budget constraints and are more independent in decision-making whom to finance, making rent provision more difficult to sustain in the long term or if political party changes.

Second, firms may be pushed into self-financing, which offers flexibility, control, and minimizes risk due to an increased cost of debt financing, e.g., loans, credits (Lee et al., 2016; Leon et al. 2016) or due to inability to obtain a loan, government support grants and loans and other equity funding. The banking system will need to adjust for the cost of access to resources for PEs in a privileged way by increasing the cost of capital for other entrepreneurs who are not connected to politicians.

A bank loan is a sensitive mechanism for entrepreneurial entry. The cash-flow problems are the main concern for a business no matter the stage of his venture. The majority of small firms have no or little financial resources available, and they rely on the bank to fill the financial gaps. This is one of the reasons why the presence of PE in a region is so dangerous: it can indirectly affect the behavior and decision-making of banks on business loans (Khwaja & Mian, 2005) in that sense it can channel the loans to politically-connected entrepreneurship and letting other to file a bankruptcy or search for other sources. Studies such as Boubakri et al. (2012b) and Faccio (2010) posit that politically connected firms can hold more cash as they are able to raise finance at better terms and pay fewer taxes. In that way, an arbitrary hierarchy will be established

regionally, an unjust order with long-term devastating effects on the entrepreneurial ecosystem. Consequently, the regions may lose out and become engaged in corrupt practices, losing out valuable investors and startups driven by ideas and not by rent-seeking of PEs. (Johnson et al., 1997).

Somehow in that line of logic, we may notice negative secondary effects. For instance, we know that there is a (large) category of entrepreneurs who, although they have good talent and potential to grow at large, if they reach the conclusion that the future is uncertain, they decide to remain small, unnoticed, and their growth potential and value creation could never happen (Desai et al, 2013)

Third, firms may need to seek political support in economies with weak institutions to attract equity finance. The choice is between equity finance or debt finance as a potential funding source, with equity finance winning the race for political entrepreneurs. In a country where institutional voids are high, politically connected entrepreneurship is a powerful tool to grease the wheels of business and attract external finance (Webb et al., 2020). This may crowd out more competitive and productive entrepreneurs, who would also compete for equity funding but will be pushed to leave the market or self-fund the project as equity finance will be first obtained by firms that may lobby a better treatment from authorities, institutional support, and market entry. In developing countries with weak institutions, venture capital would be at least extremely cautious about investing in a venture in an alien world, on uncertain grounds, seeking political guarantees or joint ventures to secure pervasive support.

Fourth, the role of PE is to facilitate networks between investors and formal institutions in countries with institutional voids (Webb et al., 2020), including the national and local government, which guarantees returns on investment and the rule of law (Aidis et al., 2012). This

may be associated with the privileged treatment of procurement and contracts (Agrawal and Knoeber, 2001). Every economic actor may benefit from such networks (Boubakri et al., 2012a), particularly in the early stages of transition, when private capital is limited and investors are uncertain about investment returns. It should be mentioned that there are situations when the potential investor is not looking for the best return for his money, but he has in mind other interests: political, strategic, or even social ones (Block et al., 2018), in which case the PE's abilities match.

Finally, access of PEs to debt finance limits debt capital for other economic actors reducing the quality of entrepreneurial activity (Roundy, 2017). This becomes possible and more common due to "evasive institutions lag" (Desai et al., 2012: 34), changing rules after the market entry, weak control over the business activity, and tax payments altogether reduce entrepreneurial entry. Policymakers should carefully approach the matter if they want long-term prosperity and growth for their regions and a country. They should act to stop the proliferation of long-term practices of exploiting the ecosystem and financial markets (Liu, Uchida, & Gao, 2012), creating unfair competition, rising interest rates, and inflation.

5.2. Theoretical contribution

Unlike in developed countries, productive, unproductive, and destructive entrepreneurship activities are not clearly distinct in developing countries. When unproductive and destructive entrepreneurship meets corrupt authorities, politically connected entrepreneurship emerges (Belitski et al., 2021; Wrona & Sinzig, 2018; Doh, Lawton & Rajwani, 2012; Faccio, 2010). Baumol's (1990) concepts of unproductive and destructive entrepreneurship and politically connected firms (Faccio et al., 2006) intersect but do not overlap. Politically connected entrepreneurs are in a privileged position in the market, while may also become an incentive for

investors in countries with weak institutional quality. However, the long-term consequences are unpredictable and severe. Political connections could create a strategic advantage by helping a firm defend and maintain market share and reducing business environmental uncertainty and transaction costs (Lawton et al., 2013). They often enjoy a privileged treatment by state companies, such as banks and raw material producers, preferential treatment when competing for government contracts, tax exemptions or lighter taxation (Dinc, 2005; Claessens et al., 2008; Faccio, 2010).

Our empirical results have demonstrated the following. First, PEs do not directly affect the rate and quality of the regional entrepreneurial activity. Second, PEs negatively moderate economic agents' perception about the quality of regional entrepreneurship and the availability of debt and equity capital.

Third, PEs negatively moderate economic agents' perception about the rate of regional entrepreneurship and availability of equity capital, with the results for equity capital are not significant. These results demonstrate that in a developing and transitional regional context, PEs may influence access to financial resources through providers (e.g. government agencies, state and private banks, loan programs, etc.), potentially reducing the overall entrepreneurial activity. On the one hand, our finding contributes to regional entrepreneurship literature by suggesting that PEs are important economic agents, and their activity should be analyzed within the institutional economics and finance literature. On the other hand, stronger institutions may eliminate the existence of PEs, while we know that billionaire heirs are often successful in creating economic and legal barriers to competition by restricting access to cap (Morck, Stangeland, & Yeung, 2000). PEs may lead to political chaos, impeachment, revolutions, re-elections and unless a different political system were in place.

The PE may exist in various forms, one not easy to detect: using money and relations, they could (and will) buy shares in legitimate and clean firms, gaining a legitimate status. In developed countries, the line between the PE and the rest of the entrepreneurs is blurred. In developing and transition country contexts, PEs are more visible but harder to control or protect yourself due to corruption and institutional voids.

5.3. Limitations and future research

Undoubtedly, our method overlooks some instances of politically powerful connections of entrepreneurs, particularly those where members of the ruling party or government are not directly involved in support of an entrepreneur and have no publicly known relationship and do not hold voting rights. This gives credit to the political connections of entrepreneurs and the depth of such connections as perceived by economic agents in a region and that more powerful connections might appear first. More importantly, we believe that, to the extent that this procedure leads to a sample bias, the bias is likely to understate the importance of political connections. One of the main limitations of this study is that identifying causal effects is challenging given that the distribution of PEs is non-random and that we only have cross-sectional data. Also, it is difficult to make a strong case for particular mechanisms by asking economic agents about their perceptions about access to debt and equity capital as well as their perception about the rate of politically connected entrepreneurship.

Future research will also use longitudinal data to enforce causality as well as aim to better understand the state-business relations, possibly by demonstrating how stakeholders could be better informed about the influence of PE on the system and how to prevent the destructive character of PEs. Future research can examine the general implications of the existence of

politically connected entrepreneurs and sectoral implications of lower levels of competition and financing due to the presence of PEs.

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Table 1: Cities included in this study

city, country	Obs.	%
Kyiv Ukraine	120	6.94
Lviv Ukraine	96	5.55
Wroclaw Poland	102	5.9
Warsaw Poland	102	5.9
Batumi Georgia	59	3.41
Tbilisi Georgia	129	7.46
Astana KZ	102	5.9
Almaty KZ	104	6.02
Cluj Romania	115	6.65
Bucharest Romania	118	6.82
Istanbul Turkey	88	5.09
Sarajevo B&H	103	5.96
Zagreb Croatia	115	6.65
Osijek Croatia	105	6.07
Klagenfurt	114	6.59
Sofia	88	5.09
Plovdiv	69	3.99

Source: City level data urban audit

Table 2 Descriptive statistics

Variables	Description of variables	Mean	St. Dev.	Min.	Max.
Quality of entrepreneurial activity	There is a strong, growth-oriented entrepreneurship activity in my region (city)" measured on the Likert scale from 1 – very weak to 7 – very strong.	4.76	1.47	1	7
Rate of entrepreneurial activity	"There is a significant number of entrepreneurs compared to another type of business activity (e.g., corporations, large manufacturing, incumbents firms, generation firms, etc.) registered in my region" measured on the Likert scale from 1 – very weak to 7 – very strong.	4.82	1.55	1	7
Skills	Entrepreneurship skills, 1 – not at all, 7 – high skills	4.81	1.25	1	7
Entrepreneur	Area of activity (entrepreneur = 1, otherwise =0)	0.35	0.48	0	1
Professor	Area of activity (professor=1, otherwise =0)	0.10	0.30	0	1
Policymaker	Area of activity (policymaker = 1, otherwise = 0)	0.08	0.26	0	1
Multiple position	Multiple occupations (entrepreneur, professor, policymaker, investor, director/manager in a multinational company, manager of TTO,	0.30	0.46	0	1

	manager in techno park (accelerator); lawyer, other) (multiple = 1, otherwise = 0)				
Male	Gender (male=1, female=0)	0.59	0.49	0	1
Degree	Have you got a university degree or higher? (1 - yes; 0 - no)	0.88	0.32	0	1
Age	Age group (less than 29 years old = 1; 30-39 = 2; 40-49 = 3; 50-59 = 4; 60-69 = 5; more than 70 = 6)	2.41	1.12	1	6
Capital city	Capital city=1, 0 otherwise	0.50	0.50	0	1
Gov support	There is a sufficient number of government entrepreneurship support programs in my region (city) (1- very weak, 7 - very strong)	3.87	1.49	1	7
Media support	There is a sufficient support of independent mass media to entrepreneurship in my region (city) (1- very weak, 7 - very strong)	3.85	1.55	1	7
Culture	There is a strong entrepreneurship culture and orientation in my region (city) (1- very weak, 7 - very strong)	4.16	1.61	1	7
Politically-connected entrepreneurship	There is a politically-connected entrepreneurship in my city: an economic activity in a strong formal and informal cooperation with local / national government in accessing economic resources in a privileged way compared to other entrepreneurs (1- very weak, 7 - very strong)	4.48	1.55	1	7
Formal networks	There is a sufficient formal network (national and local government, administrations, private and public educational institutions, official societies, trade unions, firms and corporations, private entrepreneurs and investors) to support entrepreneurship EE in my region (city) (1- very weak, 7 - very strong)	3.86	1.39	1	7
Informal networks	There is a sufficient informal network (commonness of personal contacts, family relationships, informal organizations, unwritten rules of behaviour, social media) to support entrepreneurship EE in my region (city) (1- very weak, 7 - very strong)	4.42	1.51	1	7
Venture capital	There is a sufficient access to private equity - venture capital in my city (1- very weak, 7 - very strong)	3.43	1.55	1	7
Debt capital	There is a sufficient access to debt capital in my city (1- very weak, 7 - very strong)	4.45	1.69	1	7
Regional corruption	Percentage of firms in a city-region which reported corruption as a high obstacle for business (World Bank, 2017)	0.22	0.13	0.02	0.501

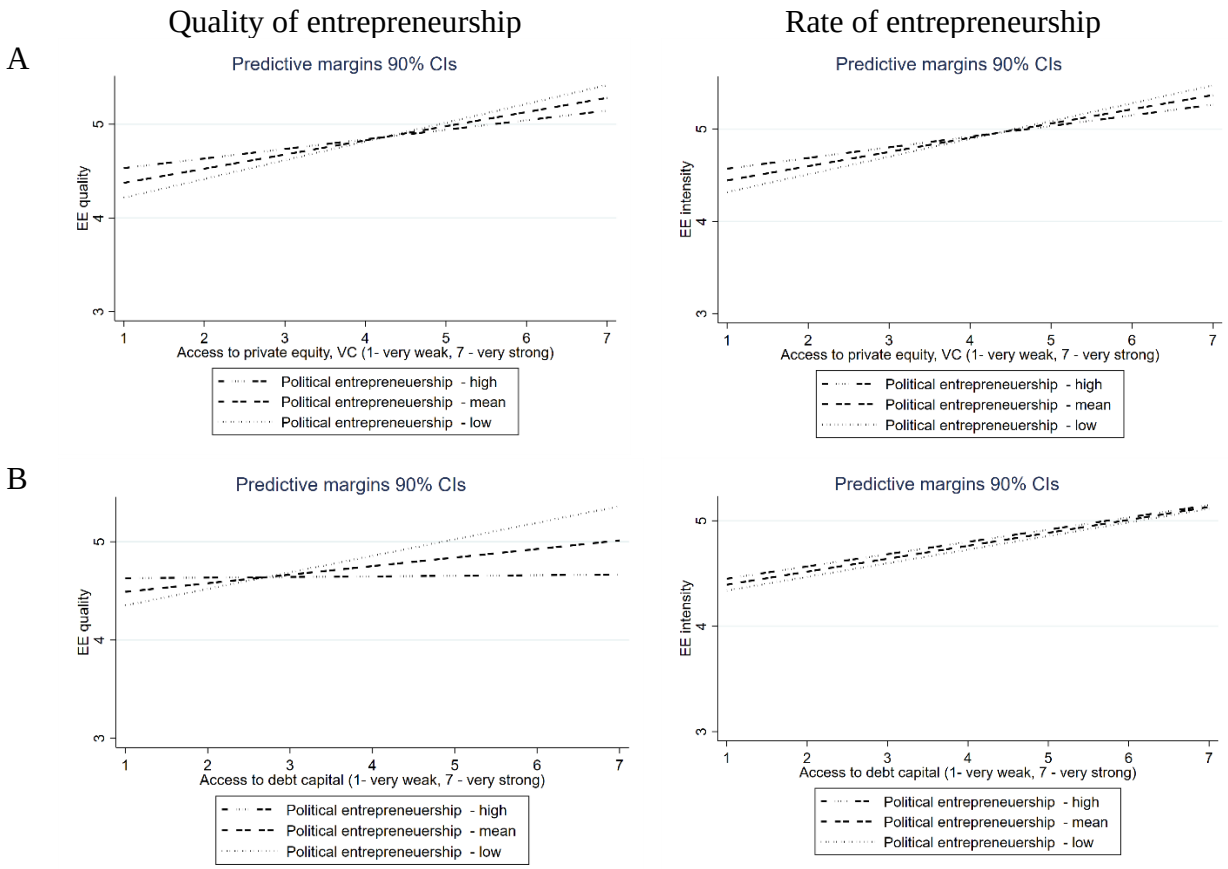
Source: City level data urban audit

Table 3: OLS regression. Dependent variables: Quality (specification 1-4) and rate of regional entrepreneurial activity (specification 5-8)

Dependent variable	Quality of entrepreneurial activity				Rate of entrepreneurial activity			
Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Entrepreneurship skills	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.03 (0.02)	0.04* (0.02)	0.04* (0.03)	0.04* (0.03)	0.05** (0.03)
Entrepreneur	0.33*** (0.09)	0.34*** (0.09)	0.34*** (0.09)	0.33*** (0.09)	0.39*** (0.10)	0.35*** (0.09)	0.35*** (0.09)	0.34*** (0.09)
Professor	-0.05 (0.12)	-0.01 (0.11)	-0.01 (0.11)	-0.05 (0.11)	-0.02 (0.13)	-0.02 (0.13)	-0.05 (0.13)	-0.04 (0.12)
Policymaker	-0.04 (0.13)	0.02 (0.13)	0.02 (0.13)	0.02 (0.12)	-0.24* (0.14)	-0.19 (0.14)	-0.19 (0.14)	-0.19 (0.14)
Multiple position	-0.08 (0.09)	-0.02 (0.09)	-0.02 (0.09)	0.03 (0.09)	-0.11 (0.10)	-0.04 (0.10)	-0.04 (0.10)	-0.01 (0.09)
Male	-0.06 (0.06)	-0.02 (0.06)	-0.02 (0.06)	-0.01 (0.06)	- 0.17*** (0.07)	-0.12* (0.06)	-0.12* (0.06)	-0.11* (0.06)
Degree	0.77*** (0.09)	0.74*** (0.08)	0.74*** (0.08)	0.66*** (0.08)	0.60*** (0.11)	0.55*** (0.10)	0.55*** (0.10)	0.47*** (0.11)
Age	0.03 (0.03)	0.04* (0.03)	0.04* (0.03)	0.04* (0.02)	0.01 (0.03)	0.04 (0.03)	0.04 (0.03)	0.03 (0.03)
Capital city	-0.07 (0.06)	-0.10* (0.06)	-0.10* (0.06)	-0.02 (0.06)	0.06 (0.07)	0.02 (0.07)	0.02 (0.07)	0.10 (0.07)
Gov support	0.25*** (0.02)	0.17*** (0.03)	0.17*** (0.03)	0.18*** (0.02)	0.29*** (0.02)	0.20*** (0.03)	0.20*** (0.03)	0.21*** (0.03)
Media support	0.11*** (0.02)	0.05** (0.02)	0.04** (0.02)	0.03 (0.02)	0.11*** (0.03)	0.05* (0.03)	0.05* (0.03)	0.03 (0.03)
Culture	0.33*** (0.02)	0.25*** (0.02)	0.26*** (0.02)	0.23*** (0.02)	0.28*** (0.02)	0.19*** (0.03)	0.19*** (0.03)	0.17*** (0.03)
Politically-connected entrepreneurship	0.01 (0.02)	-0.02 (0.02)	-0.03 (0.05)	0.06 (0.05)	0.08*** (0.02)	0.03 (0.02)	0.05 (0.06)	0.06 (0.06)
Formal networks		0.03 (0.03)	0.03 (0.03)	0.05** (0.03)		-0.05* (0.03)	-0.06* (0.03)	-0.03** (0.02)
Informal networks		0.06** (0.03)	0.07*** (0.03)	0.08*** (0.03)		0.14*** (0.03)	0.14*** (0.03)	0.14*** (0.03)
Venture capital		0.13*** (0.03)	0.02 (0.02)	0.05 (0.03)		0.16*** (0.03)	0.18*** (0.06)	0.21*** (0.06)
Debt capital		0.07*** (0.02)	0.19*** (0.06)	0.19*** (0.06)		0.12*** (0.02)	0.13** (0.06)	0.13** (0.06)
Venture capital x PE (H1a, 1b)			**0.027** (0.01)**	**0.016 (0.01)**			**-0.005 (0.01)**	**-0.012 (0.01)**
Debt capital x PE (H1a, 1b)			**- 0.026** (0.01)**	**- 0.027** (0.01)**			**-0.001 (0.01)**	**-0.002 (0.01)**
Regional corruption				1.57*** (0.21)				1.51*** (0.24)
Constant	1.01*** (0.21)	0.69*** (0.21)	0.60** (0.29)	0.25 (0.30)	0.91*** (0.24)	0.51** (0.24)	0.40 (0.34)	0.08 (0.34)
Number of observations	1729	1729	1729	1729	1729	1729	1729	1729
R2	.39	.42	.43	.45	.34	.39	.39	.41
RMSE	1.15	1.12	1.12	1.10	1.26	1.21668	1.21	1.20
F stat	119.36	102.70	93.37	95.54	91.74	84.96	76.29	77.67
loglikelihood	- 2723.01	- 2645.40	- 2640.90	- 2612.95	- 2882.27	- 2783.90	- 2783.56	-2761.63

Source: Authors

Figure 1: Predictive Margins of the effect of change in access to debt and venture capital on regional entrepreneurial activity quality (left) and rate (right) with 90% confidence intervals and the level of politically-connected entrepreneurship in a city



Source: Authors