Which Institutions Encourage Entrepreneurial Growth Aspirations?

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Abstract

We develop entrepreneurship and institutional theory to explain entrepreneurial growth aspirations across individuals and institutional contexts. Our framework generates hypotheses at the national level about the negative impact of higher levels of corruption, weaker property rights and greater government activity on entrepreneurs' aspirations to increase employment. We further explore whether individual's social networks compensate for weaknesses in national institutions. We use the Global Entrepreneurship Monitor surveys in 42 countries for 2001-2006, applying a multilevel estimation framework to test our ideas. We find that the relationship between growth aspiring entrepreneurs and institutions is complex; they benefit simultaneously from strong government (in the sense of property rights enforcement), and smaller government, but are constrained by corruption. Social networks mediate some but not all institutional deficiencies.

Keywords: Entrepreneurship; Growth Aspirations; Employment; Institutions; Corruption; Property Rights Social Networks; Government;

JEL Codes: L26, D23, D84, J24, P11

1. Introduction

It is widely appreciated that forms of entrepreneurial activity will be national-context specific and related to the character of institutions (see Batjargal, 2003; Hwang and Powell, 2005; Sobel, 2008; Boettke and Coyne, 2009). This is because, as Baumol (1990, 1993) identified, institutions create the structure of incentives determining the choice of entrepreneurship as against other occupations, and the type of entrepreneurship chosen. However, the literature to date has been fairly general with respect both to the forms of entrepreneurship and types of institution under consideration and more fine grained analysis is needed concerning both. Thus, there is little consensus about precisely which institutions are important for entrepreneurship; recent work illustrates a variety of different frameworks and measures (Desai et al, 2003; Acs et al., 2008; Bowen and de Clercq, 2008; Aidis et al., 2012). At the same time, the institutions favouring self-employment or very small firms might be different to those underpinning the formation of new ventures which plan to grow to considerable scale. Our attention is on the latter, because of their potential significance for economic growth, development and employment creation (Acs, 2006; Hessels et al., 2008; Minniti and Levesque, 2010, Autio and Acs, 2010). Indeed, a public policy which focuses on promoting entrepreneurship in general, but not on high growth firms, is likely to be ineffective in enhancing employment. Moreover, differences in entrepreneurial ambitions play a critical role: environmental factors may affect entrepreneurial attitudes and growth ambitions negatively, creating 'the Upas Tree' effect (van Stel and Storey, 2004).

The match between theories of entrepreneurship and the empirical testing of associated hypotheses is a non-trivial issue also because entrepreneurship itself is often measured imperfectly (Parker, 2009). Thus empirical researchers have been on occasion found themselves combining a variety of types of entrepreneurs: necessity and opportunity; self-employed, small and medium size enterprises. We agree with Autio (2011: 251) that high growth aspiration entrepreneurship fits best

"with the profile of entrepreneurs inferred from economic theories", and represents the group most likely to create jobs and to attract the interest of policy makers. However, almost no work addresses the determinants of entrepreneur's growth aspirations across institutional contexts. Thus Autio (2005, 2007) provides insights about cross-country patterns of high growth aspiration entrepreneurial activity, its associations with the national entrepreneurial environment, and individual characteristics of entrepreneurs, but does not offer testable implications regarding their determinants. Bowen and De Clercq (2008) consider the impact of institutions on entrepreneurs' intentions to create larger firms but do not consider micro level factors. Autio and Acs (2010) and Autio (2011) explain entrepreneurs' individual and country level expected employment but each study considers a single institution; intellectual property rights (IPR) and low-level regulation respectively.

Addressing this gap in the literature, we therefore develop a framework to analyse how the institutional context acts on entrepreneurs' ambitions to expand their young businesses to a significant size. We offer a conceptual framework to consider the differing impacts on entrepreneurial growth aspirations of a variety of key institutions, and the relationship between them, as well as exploring whether individuals' social networks can ameliorate the negative effects of weak institutions. Our discussion of institutions augments Williamson (2000) and the ideas of social micro level structures from Granovetter (1985) and DiMaggio and Powell (1991) to identify institutions and social structures of particular significance for the growth aspirations of entrepreneurs[1]. We enhance Williamson's "hierarchy of institutions "to identify the fundamental institutions likely to influence entrepreneurial growth aspirations and propose three related institutional hypotheses concerning the impact of corruption, the strength of property rights and the size of the government respectively. We also suggest ways that these macro-level structures may be

[1]Thus while our conceptual work is based on new institutional economics theory by North (1990), Baumol (1990) and Williamson (2000), it also incorporates elements of sociological institutionalism (Meyer and Rowan (1977); Granovetter (1985); Powell and DiMaggio (1991); Suchman (1995); Deephouse (1996); Batjargal (2010)).

moderated by local social ties, to explore whether local social structures can compensate in situations when institutional contexts are deficient.

We test the hypotheses derived from this framework using multi-level modelling methods on a large cross country cross individual dataset over time comprising a minimum of 2,000 people in each of 42 countries between 2001 and 2006. We find that the relationship between growth aspiring entrepreneurs and institutions is complex; they benefit simultaneously from strong government (in the sense of property rights enforcement), and smaller government, but are constrained by corruption. Social networks mediate some but not all of these institutional deficiencies.

2. Growth aspirations of entrepreneurs: theory and hypotheses

North (1990) proposed that many of the incentives underlying value-adding behaviour depend on the quality of institutions. He distinguishes between formal institutions, the laws and rules that define the economic incentives guiding individual and organisational choices, and informal institutions, the social arrangements and norms that influence how formal institutions operate in practice. His argument can be applied to entrepreneurial organisations, which adapt their strategies to fit the opportunities and limitations defined by the institutional context (Hwang and Powell, 2005; Boettke and Coyne, 2009). Thus, a functional business environment provides positive incentives for entrepreneurs while a weak one is likely to be deleterious (Baumol, 1993; Davidsson and Henrekson, 2002; Harper, 2003; van Stel and Storey, 2004). Delving more deeply into institutions, Williamson (2000) categorises them into a four level hierarchy, each level placing constraints on the ones below. He places *informal institutions* (customs, traditions and religious norms) -social embeddedness - at the top of the hierarchy because these are the deepest rooted and the slowest changing. This applies to entrepreneurship; for Baumol and Strom (2007), the most important example of an institution likely to influence entrepreneurship is individual, legal and

administrative probity[2], of which corruption is an important (negative) indicator (McMillan and Woodruff, 2002; Anokhin and Schulze, 2009).[3]

Formal institutions are located at the second level down, and here we extend Williamson's (2000) analysis by developing the difference between the constitutional foundations of the formal institutional environment and the lower level: detailed regulatory frameworks. Williamson emphasises that the key "rules of the game" relate to property rights, and Fogel et al. (2006), building on Acemoglu and Johnson (2005), propose that these features of the constitution are especially important for entrepreneurs who need to rely on the security of their residual claims for the returns from the organisations that they have created (see also Johnson et al., 1999, 2000; Desai et al., 2003). Entrepreneurs, especially those, whose growth aspirations are high, must raise capital, bear risks and enter new markets. Such activities require "transactional trust" over a long time horizon (Fogel et al., 2006), and this is strengthened by property rights that are stable and effectively enforced.

At the second level, regulatory institutions relate to the scale and the day-to-day effectiveness of the government apparatus. "Cumbersome regulations and burdensome rules can raise the costs of running new business" and government spending can crowd out private investment (Fogel et al., 2006), which again matters more for high aspiration projects. More generally, while weak property rights generate profound uncertainty in the business environment, we would argue that an extensive government is more appropriately seen as generating additional cost to entrepreneurs, and this is (relatively) predictable. Williamson (2000) stresses importance of property rights, but merges it with the regulatory environment under his second level of the institutional order that is formal institutions. For us, the distinction between the constitutional level and the regulatory level is important because these affect the growth aspirations of entrepreneurs in a different way.

[2] Historically these can be linked to prestige awarded to gentlemanly behaviour and honour (Baumol and Strom, 2007).
[3] Williamson's use of the term "embeddedness" differs from the terminology adopted by Granovetter (1985); see our discussion below.

Williamson's (2000) third level of institutions is *governance*, which shapes the way that individuals interact, aligning the governance structure they adopt with the types of transactions. He places particular emphasis on private governance; for entrepreneurship, this refers to the nexus of formal and informal arrangements underlying, for example, the provision of finance and the development of supply and distribution networks (Gompers and Lerner, 1999). Here we use the sociological perspective to extend further Williamson's framework in the context of entrepreneurship. Granovetter (1985) emphasises that types of social relations at the micro level are as, if not more, important than the governance structures discussed by Williamson (e.g. 1975; 1985; 2000).

The three previous levels of institutions all influence the fourth; *resource allocation*, including occupational choices such as entrepreneurship. We now go on to apply this (augmented) Williamson framework to propose specific ways in which these institutions influence the growth aspirations of entrepreneurs, addressing each of the levels of the institutional hierarchy in turn.

2.1. Corruption

Corruption is an informal (i.e. highest order) institution, in which the corresponding customs and patterns of behaviour are so widely shared that they become a norm. In a corrupt environment, officials realize private benefits at the cost of some business people, institutionalising corruption and leading to consistent expectations about it[4]. Corruption can thus be viewed like a tax, discouraging economic activities, including high aspiration entrepreneurship, which suffers from the higher transactions costs of a more corrupt environment (Anokhin and Schulze, 2009). Corruption may also be more serious for new firms than incumbents. Firms which survive in a corrupt environment will have adapted their behaviour to the corresponding informal norms in order to limit the negative effects of corrupt practices (Choi and Thum, 2005; Tonoyan et al., 2010)

[4] Seen this way, corruption is an example of a social element that can become institutionalised without gaining legitimacy (Jepperson, 1991).

and they will have developed contacts and social networks to mitigate the effects of corruption. Insofar as entrepreneurs do not have the relevant business experience, they will need to develop these strategies and contacts, and in the interim will operate at a disadvantage. This notion of corruption as an informal social norm providing advantages to incumbent firms can be linked to the concept of rent seeking (Desai and Acs, 2007), in which incumbents share private benefits with government administrators at the cost of newcomers (Aidis et al., 2008).

Aidis et al. (2012) present the case that returns to entrepreneurship will be lower when corruption is higher, but do not consider how the impact may vary according to the type of entrepreneur. In fact, Murphy et al. (1993) argue that the disincentive effects of corruption will be particularly serious for high growth aspiration entrepreneurs; that is, while corruption is detrimental to high value-added entrepreneurship, it will not affect subsistence entrepreneurship. They present a formal model exploring the trade-off between entrepreneurship and rent seeking (redistributing existing wealth, often through corrupt practises) and argue that the latter is rewarded more highly than the former in many institutional contexts. More generally, while corruption reduces the returns to all types of entrepreneurship, small-scale enterprises and self-employed workers can largely fly below the radar screens of corrupt officials, in a manner that would not be possible for new firms with a larger economic footprint[5]. Thus, corruption acts not only like a tax, but like a progressive tax, falling more heavily on entrepreneurs of sufficient scale to attract the attention of rapacious officials (see also Desai and Acs, 2007; Hunt and Laszlo, 2012). High growth entrepreneurs expanding their businesses reach a point after which the new firm will start to attract unwelcome attention from corrupt bureaucrats, reducing their returns. In the light of this, we hypothesise that:

Hypothesis 1. A higher level of corruption will reduce the growth aspirations of entrepreneurs.

[5] A counter-argument is offered by Anokhin and Schulze (2009) who argue that while the presence of corruption will affect overall entrepreneurship negatively, high value-added projects will be less affected, as the gains could offset the additional costs. Our view is consistent with Aidis and Mickiewicz (2006).

2.2. Protection of property rights

Recent theories of entrepreneurship emphasise that "the institution of private property ... has an important psychological dimension that enhances our feelings of ... internal control and personal agency, and it thereby promotes entrepreneurial alertness" (Harper 2003: 74). Acemoglu and Johnson (2005) emphasise two related aspects of property rights: vertical, related to the risk of expropriation by arbitrary government, and horizontal, related to the quality of contracting institutions. The former aspect is more fundamental: effective constraints on the executive branch of the government ensure the protection and stability of property rights; in particular, Weingast (1995) views the limits imposed on the ability of the government to confiscate wealth as the constitutional foundation conducive to entrepreneurship. Property rights from this perspective are akin to the related but slightly wider concept of the "rule of law", in that this corresponds to a stable institutional framework restraining the arbitrary use of power by politicians and public administrators[6]. This argument parallels our earlier discussion of corruption, but rather than increasing direct transactions costs, a lack of secure property rights raises the more fundamental threat of expropriation. High growth entrepreneurs, if successful, have potentially more to lose, and are also more likely to attract the attention of potential expropriators because of the higher value of their assets. Hence insecure property rights are likely to have a greater demotivational effect on high growth entrepreneurs.

Prospect theory (Kahneman and Tversky, 1979) also leads us to expect that the impact of stronger property rights will be greater for new businesses than for established ones. This results from two tenets of prospect theory that are consistent with observed behaviour: (i) the point of reference is significant in the evaluation of prospects, (ii) different attitudes to risk come into play in the evaluation of strategies associated with gains as against losses (risk aversion on the upside and risk seeking on the downside). In our analysis, this implies that, arbitrary expropriation comes as a loss for established businesses, because they take their already achieved asset position as

[6]Note however that an executive constrained by law is different from the absent state. The latter implies no effective constraints on predatory behaviour by those with a local monopoly of violence.

reference point. However, for new and young businesses, the reference point will instead relate to their asset valuation at their starting position (pre-venture launch) and therefore their expectations primarily relate to the upside. In this situation, prospect theory suggests that while established business may adopt more risky (and therefore more entrepreneurial) strategies in response to threats (potential losses) to property rights, the effect may be just the opposite for new ventures, which may opt for safer strategies of limited growth.

Similar arguments derive from a horizontal contracting perspective,[7] the cornerstone of which is an independent judiciary. Once again here, weak institutions bear more heavily on higher growth projects, which have greater needs for capital investment and greater reliance on contractual arrangements for the supply of inputs and the distribution of products. For example, entrepreneurs that plan to expand rapidly need to think from the outset about feasible sources of finance and when property rights are weaker, potential investors are less protected. Providing funds for entrepreneurs entails the commitments of financial resources now, in return for promises about the future, and there are potentially serious asymmetries of information between lenders and borrowers, creating openings for opportunistic behaviour. The risks for the lender are greatly mitigated in an environment in which property rights are clearly defined and the legal system is transparent and effective. Moreover entrepreneurs must enter contracts with suppliers and retailers who, with asymmetries of information and perhaps greater experience compared to a newcomer, can have opportunities to cheat. Such issues are less significant for the self-employed and micro-firms, who are more likely to try to satisfy their financing requirements themselves or via family and friends, and who can rely to a greater extent on informal relationship with suppliers and distributors (Fogel et al., 2006). Yet, the horizontal and the vertical aspects of property rights are related; an independent judiciary that underpins the horizontal (contract-related) security is harder

[7]Associated with the level of governance in Williamson's hierarchy of institutions.

to achieve with an arbitrary government (vertical dimension), because political interventions into the judicial process make the outcomes of the latter uncertain.[8]

Thus, our next hypothesis is formulated as follows.

Hypothesis 2. Insecure property rights (arbitrary government) will reduce the growth aspirations of entrepreneurs.

2.3. Regulatory frameworks and government activity

Williamson highlights the role of regulatory frameworks in shaping incentives. In the context of entrepreneurship, we would argue, following Fogel et al. (2006) that the key corresponding dimension is the level of activity of the government. As the state sector grows, a bureaucratic apparatus replaces areas of private decision-making. But the government then faces an acute agency problem because most of its output is not produced according to market driven processes, so determining the value of output and evaluating efficiency becomes a challenge (Boettke and Coyne, 2009). This is alleviated by bureaucratisation, an extensive network of regulations, but these in turn lead to 'bureaucratic costs' (Williamson, 1985). The increased complexity affects not just the internal organisation of the government but also those who have to deal with them, including businesses. "Pressures to conform to procedural requirements" imply "larger and more complex" administrative structures of business organisations (Scott and Meyer, 1991:123). Newcomers have to learn the corresponding rules and regulations and this especially slows down

[8] The use of this conceptual framework leads us to de-emphasise a category of institution often stressed in the literature, intellectual property rights (IPR) (Autio and Acs,2010; Bowen and De Clercq,2008). If entrepreneurs are exploiting innovations, they are argued to be exposed to theft of their ideas, which would be protected by stronger IPR. However, Minniti and Lévesque (2010) question the centrality of innovation to entrepreneurial processes in all institutional contexts. Baumol and Strom (2007) suggest that the protection of IPR has become too rigid, strangling entrepreneurship instead of promoting it. Indeed, Lerner (2009) finds that strong IPR are negatively associated with innovation. Thus while we regard property rights as critical for high growth entrepreneurs, we propose that strong IPR will probably not have a similar impact across a variety of institutional environments including both developed and emerging economies.

the dynamism of new ventures. In particular, high growth entrepreneurs will be aware that if their firms do achieve larger scale, they will be involved in greater bureaucratic costs.[9]

Fogel et al. (2006) place administrative quality and government actions at the institutional level below property rights and the legal regime. Moreover, they identify the size of the government (measured by expenditures) as a concise measure of 'government activism'; an approach also applied by Aidis et al. (2012). Both argue that entrepreneurship will be negatively associated with the extent of government activity because of various forms of crowding out. As the government becomes more active, it needs to absorb a greater proportion of the resources of the economy and must compete for inputs with the private sector. It therefore bids up the supply prices for key resources needed by entrepreneurs, notably finance and human capital, and these higher costs may be felt more keenly by entrepreneurs than by existing firms because the former lack networks, contacts and experience.

Greater government activism also requires higher state revenues, and is associated with more extensive welfare system. These are likely significantly to influence both the opportunity cost and the net financial return to high growth entrepreneurship, affecting it relatively more seriously than entrepreneurship as a whole. The higher cost of capital resulting from financial crowding out will particularly affect high growth entrepreneurs, because, as discussed above, they will have greater need of investment, and will be more likely to rely on formal capital markets rather than informal loans through their personal networks. Their expected surpluses are greater, and so they are more likely to be demotivated by higher taxes, especially if these are progressive. Higher marginal rates of taxes will also weaken the incentives for growth aspiration entrepreneurship by reducing the expected gains[10] and more generally taxation may benefit larger incumbent firms at the cost of aspiring newcomers, especially if the former can increase their debt ratio more easily thereby

[9]Autio (2011) calculates long-term average prevalence rates of high growth-aspiration entrepreneurs. He comments on the fact that these are several times higher in China than in India and links it to the extent of regulation in the latter. In the European context, Spain and Greece have exceptionally low rates. Both economies have been characterised by a large scope of government intervention.

[10]Though different types of taxes have different, ambiguous and nonlinear effects (Bruce and Mohsin, 2006; Georgellis and Wall, 2006; Cullen and Gordon, 2007).

escaping corporate taxes (Henrekson, 2007). At the same time, higher levels of welfare support provide alternative sources of income and, by increasing the alternative wage, may therefore reduce the net expected return. Higher growth entrepreneurship may be particularly negatively affected because the reservation wages of new employees will also be increased. Equally, if not more important, extensive welfare support undermines the incentives for individual saving, which is a strong factor in entrepreneurial finance (Henrekson, 2007; Korosteleva and Mickiewicz, 2011). Again, the availability of savings is most critical for high growth entrepreneurship[11]. And last but not least, "countries with generous social security and welfare schemes do not emphasize the responsibility of the individual for their own survival, which may hamper ambitions to strive for innovation and growth." (Hessels et al., 2008: 328).

Accordingly we posit:

Hypothesis 3. A greater scale of government activity will reduce the growth aspirations of entrepreneurs.

To summarize, while we argue that insecure property rights (H2) affect entrepreneurial ambitions via increased risk and uncertainty, in contrast, both government activism (H3) and embedded corruption (H1) may be better seen as cost elements which also have progressive aspects, therefore affecting growth aspirations negatively as well.

[11]A counter-argument is that the additional insurance offered by welfare may actually enhance propensity to engage in risky ventures. However, Henrekson et al. (2010) question its empirical validity.

2.4. Micro level social structures and national level institutions

The characteristics and quality of social relations at a micro level are also important for entrepreneurial choices; failing to take these into account corresponds to what Granovetter (1985) describes as an 'undersocialized approach'. Micro-social structures are potentially significant determinants of entrepreneurship, and business networks in particular have been found to be important, both in assisting entrepreneurs to find the resources required for business creation (Aldrich et al., 1987; Aidis et al., 2008), and via social learning (Minniti et al., 2005). Network capital also facilitates entrepreneurs' access to finance (Aldrich et al., 1987; Johannisson, 2000; Korosteleva and Mickiewicz, 2011).

In addition to stimulating entrepreneurial activities directly, local social structures may also compensate for deficiencies in the institutional environment. We already hinted at this above while discussing H1-H3, highlighting that young businesses may be more affected by institutional deficiencies because unlike established businesses they cannot offset the problems with support from business-relevant social networks that established businesses may have had time to build. At the same time, new business owners-managers may differ in their access to social networks, which provides us with a way to explore this connection more directly.

Accordingly we posit that support from local social networks may be especially important for individuals and entrepreneurial teams starting new growth-orientated ventures in weak institutional contexts. In particular, business contact with other entrepreneurs may provide new entrepreneurs with advice, support and access to resources that result in the building of social capital which can support the growth of their young businesses. These factors are especially important in weaker institutional contexts; learning from experienced entrepreneurs how to cope with corrupt or otherwise dysfunctional environment may help aspiring ones to acquire the skills, relationships and confidence needed for expansion of their businesses. This perspective is similar to that of the 'institutional void" literature (Khanna and Palepu, 2010), which argues that

institutional deficiencies such as those discussed above may lead to higher transaction costs and in turn may be partly compensated with business networks.

Consistent with this, we posit:

Hypothesis 4. Social contacts with other entrepreneurs will (i) support an individual's growth aspirations, and (ii) attenuate the negative impact on growth aspirations of deficiencies in the national institutions discussed in hypotheses 1-3.

3. Data and methodology

3.1. Individual Data

We construct the dataset to test our hypotheses by merging data from the Global Entrepreneurship Monitor (GEM) (see Reynolds et al., 2005) with a variety of time-varying national institutional indicators and macroeconomic controls. We utilize data collected through the GEM adult population surveys in 2001-2006 that cover 42 countries worldwide (for details of the sampling procedure, see Reynolds et al., 2008)[12]. In this study, we use *young firms* (created in the past 42 months) as our proxy for entrepreneurial entry. This category serves well the purpose of our study because growth aspirations refer to firms already in existence. Also unlike an alternative measure, nascent entrepreneurship, the young firm category provides good coverage of the current level of employment used in defining our dependent variable. Owners-managers of nascent ventures find it difficult to respond to questions concerning the current level of employment; in our dataset, only 8% of the nascent but 83% of young firms actually report the level of employment.

[12]The GEM data capture a wide range of business creation activities, distinguishing between (a) individuals who intend to create a new venture, (b) who are in the process of establishing a new firm (start-ups, or nascent entrepreneurs), (c) currently operating young firms (under 3.5 years), and (d) other owners-managers of established businesses.

3.2. Dependent variable

We use employment growth aspirations (EGA) of entrepreneurs as our dependent variable capturing the intentions of newly established entrepreneurs to increase employment over a five year horizon. The use of aspirations to indicate outcomes has a sound theoretical and empirical base derived from the central role attributed to 'strategic dynamism' in the analytical construct of 'entrepreneurial orientation'. This has robust empirical validity in terms of predicting performance (Covin and Wales, 2011). Moreover, there is empirical evidence that entrepreneurial aspirations are closely related to entrepreneurial outcomes. Thus, Kolvereid and Bullvag (1996), Baum et al. (1998), Baum et al. (2001), Wiklund and Shepherd (2003) and Delmar and Wiklund (2008) find a positive significant link between entrepreneurs' growth aspirations and actual growth[13]. We calculate the entrepreneur's employment growth aspirations as the difference between the natural logarithms of expected level (five years hence) and the current level of employment, which approximates the expected rate of employment growth[14]. Previous studies utilizing GEM data (Bowen and DeClercq, 2008; Autio and Acs, 2010) use instead the level of employment[15]. We do not consider this to be an appropriate measure because the employment growth rate may become zero or even negative when we take account of the current level of employment, even in a business classified as having high growth aspirations. Of the entrepreneurs who expect to employ others five years hence, 28.5% have their expected employment equal to their current level of employment; hence their actual expectation is of zero employment growth[16].

[13] Psychologists have studied the same issue; a meta-analysis finds that aspirations have a significant impact in explaining outcomes, though this is not the only explanation (Sheeran, 2002).
[14]Following existing practice (Parker, 2009), we add the owner-manager to the expected and current employees to calculate employment.
[15]The question is worded, 'How many people will be working for this business, not counting the owners but including all exclusive subcontractors, when it is five years old?', which does not capture the expected net employment creation compared with the current level.
[16]There are also some cases when the expected rate of employment growth is actually negative (4.5%).

Figure 1 illustrates the differences between countries in the employment growth aspirations of new businesses, with 95% confidence intervals[17]. We observe considerable heterogeneity across countries. Thus, the national average aspired rate of employment growth over five years is as low as 16% in Greece and as high as 74% in Chile. The average across all countries in our sample is 41%, which is the horizontal line at zero in the figure.

{Figure 1}

Figure 2 plots young businesses' prevalence rates against growth aspirations across countries. Thus on the horizontal axis we have average prevalence rates of young businesses and growth aspirations on the vertical. The figure supports the starting point for this paper; that even at the national level, entrepreneurship and high growth aspiration entrepreneurship do not match closely. Thus Chile has middle-range prevalence rate of entrepreneurship, but entrepreneurs' growth aspirations are high. In contrast, similar middle-range prevalence rate in Jordan comes with low average aspirations. Greece, with a prevalence rate similar to other relatively developed economies, has remarkably few high-growth-aspiration entrepreneurs.

{Figure 2}

3.3. Cross country and micro data related to our hypotheses

While other studies used World Bank data to explore some related hypotheses (e.g. Desai et al., 2003; Djankov et al., 2002), we favour the Heritage Foundation dataset because it covers more years, and therefore matches more closely the variation by country and time in our GEM sample (see McMullen et al., 2008; Aidis et al., 2012). Therefore, to test Hypothesis 1, we use the Heritage

[17]These were calculated from a random-intercept model that included only country effects. These mean scores for countries are calculated on the basis of random intercepts, while confidence intervals are based on empirical Bayesian predictions.

Foundation Index of 'Freedom from Corruption'[18] (*l.Corr*, where the operator *l* is added to denote that a variable is lagged). This indicator shows the perception of corruption in the business environment, including levels of governmental administrative, judicial and legal corruption (Beach and Kane, 2008). It ranges from 0 to 100; after our transformation, 100 indicates the highest level of corruption[19]. For the strength of property rights (Hypothesis 2), we follow Acemoglu and Johnson (2005) and use the Polity IV measure of efficient constraints on the arbitrary power of the executive branch of the government (Marshall and Jaggers, 2007), "*constraints on executive*" (*l.ExecConstr*). In a supplementary test, we also investigate the significance of IPR, using its measure from the World Economic Forum. It is scored as a continuous variable from 1, denoting weak protection, to 7, representing the world's most stringent level of protection (*l.IntelPro*). We also use the Heritage Foundation to measure the size of the government in Hypothesis 3. This measure is a quadratic transformation of the ratio of government expense to GDP *(l.GovSize)*[20].

In order to test hypothesis 4, we mediate the institutional factors with a variable capturing social networking. We measure this by using the response to a GEM question about whether the individual knows an entrepreneur involved in any start-up personally (*KnowsEntrep*), interacted separately with each of the institutional factors: corruption, constraints on executive and government size.

3.4 Control Variables

Our estimation method is multilevel modelling and we have control variables at both the country and individual levels. Thus, we include the national level of development with per capita (pc) GDP at purchasing power parity (*l.GDPpc*) and the GDP annual growth rate (obtained from

[18] Transformed by subtracting it from 100 to reverse the scale.
[19] Separating different components of corruption would produce sharper tests, but we are not aware of data with sufficient coverage to correspond to our GEM sample by country and year.
[20] To make the interpretation easier, we follow Reynolds (2010) in transforming the Heritage Foundation measure to obtain the original ratio of government expense to GDP, so that larger values reflect a larger size of government. This is done by reversing the formula used by Heritage Foundation which is:
Heritage measure of Government size = 100 – 0.03(Government expense to GDP)/2 (Beach 2008: 46).

the World Bank) for cyclical effects (*l.GDPgrowth*) (see Aidis et al., 2012), as well as some key individual characteristics of entrepreneurs (Parker, 2009). Thus, previous GEM-based research shows that individuals with higher educational attainment are more likely to direct their efforts towards high-growth activities (Autio, 2005) so we control for tertiary education (*EducPost*). In addition, age has been considered as a factor affecting entrepreneurial growth aspirations in the past (Kolvereid, 1992), so we control for age (*Age*).[21] Being a male may affect growth aspirations (Estrin and Mickiewicz, 2011) so we include a dummy variable for gender (*Male*). We also control for the current level of employment, expecting a higher initial level of employment to be negatively related to employment growth plans (*CurrEmp*) and introduce a dummy variable denoting individual experience of being a business angel (*BusAngel*). Previous entrepreneurial experience enhances self-efficacy, both through "direct mastery experience (learning by doing) and vicarious experience (learning by seeing)" (Harper 2003: 46), and may therefore affect growth aspirations. However, owning another existing business (*EstabBus*) may raise the opportunity cost of a new involvement at a larger scale.

Finally, we introduced a set of sectoral (industry) controls in all our specifications to take account of sectoral differences in capital-intensity and optimum size of the firm that may affect growth aspirations.

The definitions of all variables are presented in Table 1 below.

{Table 1}

[21]We tested for non-linearity in age but the results were insignificant.

3.5 Methodology

We use multilevel modelling to address unobserved heterogeneity within the context of a cross-country, cross-time, cross-individual dataset. Multilevel modelling takes account of the fact that the dataset has a hierarchical structure in which *individuals* represent level one, *country-years* samples represent level two and *countries* represent level three. This allows us to control for clustering of the data first within a country and second within a country-year subsample. Failure to do this would lead to biased results (Rabe-Hesketh et al., 2005). We utilise more sample information by choosing country and country-years for our level two and three groupings correspondingly, to take account of differences in samples collected in different years. We tested whether the choice of multilevel modelling with country and country-year effects was justified and accepted its use: we found that both country and country-year group effects (random intercepts) were statistically significant.

In addition to individual effects (subscript *ijk* below, where *i* represents an individual, *j* a particular annual-country sample, and *k* a country) we also introduced country averages (subscript *k* below), distinguishing between individual level and group level variation, so that for instance coefficient β_5 for $EstabBus_{ijk}$ represents an individual effect of being an owner of established business, and coefficient $\beta_{12}$for $EstabBus_k$ represents a peer effect of the prevalence rate of established firms in a given country group that may affect entrepreneurs' growth aspirations. By using the LR test, we verified whether the inclusion of peer effects was justified.

Our baseline regression model is therefore specified as follows:

$$\begin{aligned} EGA_{ijk} &= \beta_0 + \beta_1 CurrEmp_{ijk} + \beta_2 Age_{ijk} + \beta_3 Male_{ijk} + \beta_4 EducPost_{ijk} + \beta_5 EstabBus_{ijk} + \\ &+ \beta_6 BusAngel_{ijk} + \beta_7 KnowsEntrep_{ijk} + \beta_8 CurrEmp_k + \beta_9 Age_k + \beta_{10} Male_k + \beta_{11} EducPost_k + \\ &+ \beta_{12} EstabBus_k + \beta_{13} BusAngel_k + \beta_{14} KnowsEntrep_k + \beta_{15} l.GovSize_{jk} + \beta_{16} l.ExecConstr_{jk} + \\ &+ \beta_{17} l.Corr_{jk} + \beta_{18} l.Intelpro_{jk} + \beta_{19} l.GDPgrowth_{jk} + \beta_{20} l.GDPpc_{jk} + u_k + v_{jk} + \varepsilon_{ijk} \end{aligned} \quad (1)$$

where EGA_{ijk} is our measure of entrepreneurial growth aspirations,

$$\{\ CurrEmp_{ijk}, Age_{ijk}, Male_{ijk}, EducPost_{ijk}, EstabBus_{ijk}, BusAngel_{ijk}, KnowsEntrep_{ijk}\}$$

represent individual-level direct effects,

$$\{\ CurrEmp_{k}, Age_{k}, Male_{k}, EducPost_{k}, EstabBus_{k}, BusAngel_{k}, KnowsEntrep_{k},\ \}$$

represent country mean effects, and

$$l.GovSize_{jk}, l.ExecConstr_{jk}, l.Intelpro_{jk}, l.Corr_{jk}, l.GDPgrowth_{jk}, l.GDPpc_{jk}$$

represent the lagged values of the institutional variables and macroeconomic controls[22].

The combination of $u_k+v_{jk}+\varepsilon_{ijk}$ represents the random part of the equation, where u_k are the country level residuals, v_{jk} are the year-country residuals, and ε_{ijk} are individual-level residuals.

Our study may be subject to some potential endogeneity because the country-year individual growth aspirations when aggregated are likely to affect some of the macro variables, for instance GDP growth rate. We alleviate this issue by lagging the macroeconomic and institutional variables; the institutional variables by three years, which was the longest available without reducing the sample, and the macroeconomic indicators by one year.[23] To investigate potential multicollinearity problems, we calculated variance inflation factors (VIF) for all our variables[24]. Apart from the interaction term between one of the institutional variables (executive constraints) and *KnowsEntrep* (knowing other entrepreneurs), and its composites, we found no indication of multicollinearity problems. Thus the VIF for all other variables are well below the conventional level of 10. Moreover, for our sample, the impact of multicollinearity is to some extent counterbalanced by the large sample size, i.e. we do not face the "micronumerocity" problem (Goldberger, 1991) which

[22]We also encountered the same problems with outliers in the employment growth expectations variable as Autio and Acs (2010) and resolved them in the similar way. We eliminated 171 individual-level observations based on the definition of severe outliers as being outside the outer fence (defined by inter-quartile range multiplied by three). We checked the sensitivity of our results to eliminating outliers and found that some of our results do not hold in the presence of outliers but our approach is justified by the fact that expectations become very imprecise for largest numbers and are outside a plausible range.

[23] We were able to construct three years lags for all our institutional variables but intellectual property rights, for which we use a two year lag.

[24]Based on specification 7 in Table 3.

can be another source of instability in coefficients. Despite this, we still choose to apply a conservative strategy of focusing on simple correlations to guide our approach to specification in the face of multicollinearity. We take a cut-off point of over 0.7 (for correlation matrix, see Table 2), to determine the specifications and robustness checks we report below, as we discuss in the next section[25].

{Table 2}

4. Empirical results

Our empirical results are presented in Table 3. We report a variety of specifications to indicate the robustness of our findings. First, we report the model without country means as specification (1), and then add country-aggregates of individual-level variables (peer effects) as specification 2. The latter corresponds to our baseline regression as discussed in the previous section. We next perform the likelihood ratio (LR) test to check whether the inclusion of the peer effects improves the goodness of fit. The LR ratio test statistic (see a note to Table 3) informs us that adding all the peer effects does not improve the fit, so we thereafter retain only the one which is statistically significant: the country-averaged owners of established business in specification 3. The LR test now indicates an improvement in the model goodness of fit over the baseline specification. Specification 4 addresses a multicollinearity issue, in that we observe in Table 2 that corruption is

[25]We also considered the bias caused by potential interdependence between the choice of whether to become an entrepreneur and growth aspirations, by introducing into the employment growth aspirations equation (second stage or outcome equation) the inverse Mill's ratio based on modelling the choice to become an entrepreneur (first stage or selection equation). To identify the first stage of the Heckman selection model, we chose a variable that is correlated with the first stage dependent variable (entrepreneurial entry) and uncorrelated with the second one (growth aspirations). We utilised two alternative identification strategies to ensure robustness. In the first, we use a series on start-up entry regulation procedures from the World Bank's Doing Business indicators. Theory suggests that entrepreneurial entry will be closely related to start-up entry regulation procedures (see e.g. Djankov et al., 2002) but because they constitute sunk costs, they should not be relevant for employment growth aspirations of new firms. Our alternative identification strategy focuses on informal finance. This is a major influence on entrepreneurial entry (Bygrave, 2003) but is likely to play a less important role in growth aspirations, as for those formal sources of funds will be needed. We therefore introduce the prevalence rate of informal investors into the selection equation. These are derived from GEM data by taking the average percentage of respondents who invested in another start-up in the past three years in each country-year sub-sample. However neither of these was statistically significant. Thus, we could not detect a selection bias arising from the possibility that the factors determining the decision to become an entrepreneur might differ from those determining a new firm's employment growth expectations. Accordingly, we focus further only on the employment growth aspiration models.

highly correlated with GDP per capita (-0.85); well above our cut-off point of 0.7. We therefore run specification 4 using an alternative control for the level of development; a set of GDP pc dummies denoting the five quintiles of its distribution. Finally, we explore whether the general measure of protection of property rights substitutes for IPR as used by Autio and Acs (2010) and Bowen and De Clercq (2008), creating an omitted variable problem. To verify this, we run specification (5), where the constitutional level measure of property rights (effective constraints on the executive) is substituted with IPR. Due to the high correlation between IPR and corruption (-0.83), we also omit corruption, otherwise it could work against getting a significant result for IPR. Specifications 6-8 report the interaction term results, testing Hypothesis 4: in these three specifications we augment our model with the cross-level interaction terms between knowing other entrepreneurs and government size, corruption and constraints on the executive correspondingly. Each model reports log-likelihood and Akaike Information Criterion to indicate the goodness of fit (Grilli and Rampichini, 2011).

Considering our results, we find the coefficient on corruption to be highly significant and with the expected sign in all specifications where it is included, supporting Hypothesis 1 that entrepreneurs in institutional environments which are more corrupt have lower employment growth aspirations. We also find evidence in support of Hypothesis 2. The variable that we use to measure the strength of property rights, constraints on executive, is significant and positive in all specifications but (1) and (2). In contrast, the coefficient on IPR is insignificant in specification (5). Thus, as expected, we do not identify a significant impact of the strength of IPR on entrepreneurs' employment growth aspirations. We further find strong support for hypothesis 3 in all five specifications; the coefficient on the size of the government is always negative and highly significant.

{Table 3}

4.1. Interaction Effects

Hypothesis 4 proposes that social effects at individual level may moderate the impact of the institutional context. We therefore ran a series of models in which we interacted our three institutional measures with the social network variable (knowing other entrepreneurs). These are reported in Table 3 (specifications 6-8). We find support for Hypothesis 4. Hence, for interactions with constraints on executive and corruption measures, embeddedness in local social networks decreases the significance of these macro effects (Table 3, specification (6)). To make the evaluation of the interactions easier, where we found significant effects, we also plot as Figures 3 and 4 respectively the corresponding predictive margins separately for those respondents who have business contact (as captured by "knowing other entrepreneurs") and those who have not for a range of values of respective institutions. On both graphs the line corresponding to respondents without these social contacts is steeper, implying their aspirations are more strongly affected by the institutional quality, consistent with H4.

{Figures 3 and 4}

4.2. Control variables

Turning to the control variables, the patterns largely conform to expectations and findings elsewhere in the literature. The individual age effects are significant and negative: older people have lower employment growth aspirations. Higher or postsecondary education and being a male is positively associated with growth aspirations, as is previous experience as a business angel. Being the owner of an existing business has no significant effect. In contrast, the impact of network capital (knowing other entrepreneurs) is highly significant and positive across all specifications. The current level of employment, although with the expected negative sign, is insignificant. Per capita GDP is negatively related to growth aspirations and when this variable is replaced with a set of quintile dummies, countries which fall within the three highest 20^{th} percentiles of GDP per capita are found to have lower growth aspirations. These results are consistent with the view that there is a wider set of high growth opportunities for entrepreneurs in developing economies.

5. Discussion

We have explored how heterogeneity in institutions across countries might affect entrepreneurs' employment growth aspirations. We drew on the ideas of North (1990), Williamson (2000) and Granovetter (1985) to formulate our conceptualisation of the institutions relevant to high growth entrepreneurship. We also built on the empirical developments of Bowen and De Clercq (2008) and Autio and Acs (2010). Using a large inter temporal cross-country cross-individual dataset and multilevel modelling methods, we found support for all our hypotheses concerning the effects of corruption, property rights, government activity, and the cross-level mediating effects of individual social networks and these institutions on the growth aspirations of entrepreneurs.

Our finding on property rights is directly consistent with Williamson (2000), who emphasises these as being at the core of the formal institutional order. While he does not stress corruption, following North (1990) he also attaches significance to informal institutions and we have proposed that corruption represents an embedded pattern of informal behaviour norms that becomes institutionalised as part of a slow changing informal order. We go beyond Williamson's (2000) framework in emphasising the difference between the constitutional level formal institutions (constraints on executive branch of the government) and the lower level formal setup, more related to medium and short-term policy choices, and best captured by government activism. Aspirations of entrepreneurs may be affected by both, but the mechanisms are different. We argue that institutional deficiencies at the constitutional level create profound unpredictability in the environment that the entrepreneurs face. On the other hand, a more active government, though it can also make the environment relatively less stable due to policy changes, is best seen as imposing additional, but predictable costs on businesses, which the entrepreneurs must take into account in shaping their aspirations.

Our results robustly indicate that both weak property rights and corruption do independently constrain entrepreneur's employment growth aspirations. We also find strong support for the idea that high growth entrepreneurship will be crowded out by government activism. Thus the key institutions for entrepreneurs are several, and related in a complex way; the notion of "weak" or strong "institutions is insufficiently fine grained. A large, active government may play many important roles in society, but there is a cost in terms of entrepreneurial employment aspirations. Importantly, lack of security of property rights and government size are not highly correlated empirically (see Table 2); consistent with Aidis et al. (2012), we have found support for the idea developed in our conceptual framework that they cannot be compressed into a single institutional dimension. For example, the growth aspirations of owners-managers of young businesses may be

low both in Russia and Germany, but that may be caused more by the arbitrariness of the government in the former case, and more by its size in the latter[26].

While we adopt Williamson's hierarchy of institutions, we argue that it is an analytical tool which should be handled carefully. In particular, Granovetter's (1985) critique of the new institutional economics should be taken seriously. He argues that, at the lower level of institutional structure, not only the formal governance structures but also local social structures and social networks are important. Our results are consistent with this view: the impact of macro level institutions, notably corruption and property rights, is weaker where local social ties are stronger.[27] This is also in line with much of the sociological literature on new institutionalism, which suggests that the impact of macro level institutional order is moderated by local social structures (Meyer and Rowan, 1977; DiMaggio and Powell, 1991; Suchman, 1995).

There are some important limitations to our study which one might wish to address in subsequent research. While GEM provides the largest cross-country dataset available on entrepreneurial activity, the number of countries and especially developing countries is restricted. Thus, the variation in institutions is somewhat limited. Moreover, the time horizon of the dataset is still quite short; certainly not long enough for testing the impact of institutional development on entrepreneurial aspirations within any one country. Hence, our hypotheses relate primarily to the impact of cross-sectional variation in institutions. This limitation can be addressed in the future by undertaking a similar analysis to that presented in this paper when the number of countries and years has expanded, especially once GEM includes more low and middle income countries. Last but not least, while we took some steps to alleviate endogeneity, we cannot claim to eliminate it.

[26] It may seem surprising that we are unable to confirm the impact of strong IPR on growth aspirations. However, our results are consistent with both Minniti and Lévesque (2010), who point out that the role of Schumpeterian innovation-oriented entrepreneurship may be overemphasised, and with Baumol and Strom (2007) who stress the counter-productive effects if the protection of IPR becomes too strong.

[27] However, in the case of government size, we did not find a significant moderating effect of networks. This may be simply due to the fact that we do not measure network characteristics that would be relevant here. It could be, for instance, that 'knowing government officials' could prove significant, but we do not have such a survey instrument at our disposal.

Availability of panel data or further exploration of possible instruments would be important to overcome the problem.

Our findings have important implications for policy makers. Institutions are multi-faceted, and higher level institutions are slower to change than lower level ones. Our results suggest that policy makers concerned to increase growth and employment creation through entrepreneurship first try to understand more carefully which aspects of the institutional environment is deficient, and then work systematically to improve them, focusing consistently on the long term as well as short term changes. Moreover, it is inappropriate to rely on social networks to substitute for real institutional reform. We have shown that entrepreneurs adopt high growth aspirations in some contexts because macro institutions such as property rights have been substituted by a greater or lesser extent by (micro) local informal ones like social networks. However, while this effect reduces the negative impact of deficient higher order institutions, it does not eliminate it, as documented by our Table 3 results, illustrated in Figures 3 and 4. The higher order institutions remain important for growth aspiration entrepreneurship, even when we account for moderating impact of local social structures: growth aspirations are significantly reduced where corruption is high, property rights protection is inadequate, or government size is large. These three indicate the directions for any policy reform aiming to enhance growth aspirations of owners-managers of young businesses.

References

Acemoglu, D., Johnson, S., 2005. Unbundling institutions. Journal of Political Economy 113, 943-995.

Acs, Z., 2006. Start-ups and entry barriers: small and medium sized firms population dynamics. In: Casson, M., Yeung, B., Basu, A., Wedeson, N. (Eds.). The Oxford Handbook of Entrepreneurship. Oxford, Oxford University Press, pp.194-224.

Acs, Z. J., Desai, S., & Hessels, J., 2008. Entrepreneurship, economic development and institutions. Small Business Economics 31(3), 219-234.

Aidis, R., Mickiewicz, T., 2006. Entrepreneurs, expectations and business expansion: lessons from Lithuania. Europe-Asia Studies 58(6), 855-880.

Aidis, R., Estrin, S., Mickiewicz, T., 2008. Institutions and entrepreneurship development in Russia: a comparative perspective. Journal of Business Venturing 23, 656-672.

Aidis, R., Estrin, S., Mickiewicz, T., 2012. Size matters: entrepreneurial entry and government. Small Business Economics 39, 119–139.

Aldrich, H., Rosen, B., Woodward, W., 1987. The impact of social networks on business funding and profit. Frontiers of entrepreneurship research. Babson College, Wellesley, MA.

Anokhin, S. Schulze, W., 2009.Entrepreneurship, innovation and corruption. Journal of Business Venturing 24(5), 465-476.

Autio, E., 2005. Global Entrepreneurship Monitor: 2005 Report on high-expectation entrepreneurship. London Business School and Babson College, London, U.K., and Babson Park, MA.

Autio, E., 2011. High-Aspiration Entrepreneurship. In: Minniti, M. (Ed.), The dynamics of entrepreneurship. Oxford University Press, Oxford, 181-208.

Autio, E., 2007. Global Entrepreneurship Monitor: 2007 Global report on high-growth entrepreneurship. London Business School, Babson College, London, U.K., and Babson Park, MA.

Autio, E. and Acs, Z., 2010. Intellectual property protection and the formation of entrepreneurial growth aspirations. Strategic Entrepreneurship Journal 4(3), 234–251.

Batjargal, B., 2003. Social capital and entrepreneurial performance in Russia: a longitudinal study. Organisation Studies, 24: 535-556.

Batjargal, B., 2010. The effects of network's structural holes: polycentric institutions, product portfolio, and new venture growth in China and Russia. Strategic Entrepreneurship Journal 4, 146-163.

Baum, .J.R., Locke, E.A., and Kirkpatrick, S.A., 1998. A longitudinal study of the relation of vision and vision communication to venture growth in entrepreneurial firms. Journal of Applied Psychology 83(1), 43–54.

Baum, J. R., Locke, E., A. and Smith, K.J., 2001. A Multidimensional Model of Venture Growth. Academy of Management Journal 44(2), 292-303.

Baumol, W., 1990. Entrepreneurship: productive, unproductive, and destructive. Journal of Political Economy 98 (5, Part I), October, 893-921.

Baumol, W. J., 1993. Formal entrepreneurship theory in economics: existence and bounds. Journal of Business Venturing 8 (3), 197-210.

Baumol, W. J. Strom, R. J., 2007. Entrepreneurship and economic growth. Strategic Entrepreneurship Journal 1 (3-4), 233-237.

Beach, W., Kane, T., 2008. Methodology: measuring the 10 economic freedoms. In: Holmes, K., Feulner, E., O'Grady, M. (Eds.), 2008 Index of Economic Freedom: 39-55. The Heritage Foundation: Washington.

Boettke, P.J. Coyne C.J., 2009. Context matters: institutions and entrepreneurship. Foundations and Trends in Entrepreneurship 5 (3), 135-209.

Bowen, H.P., DeClercq, D., 2008. Institutional context and allocation of entrepreneurial effort. Journal of International Business Studies 39 (4), 747-767.

Bruce, D., Mohsin, M., 2006. Tax policy and entrepreneurship: new time series evidence. Small Business Economics, 26, 409-425.

Bygrave, W., 2003.Financing entrepreneurs and their ventures. In: Reynolds, P., Bygrave, W., Autio, E. (Eds.), Global Entrepreneurship Monitor 2003 Global report. Kauffman Center for Entrepreneurial Leadership at the Ewing Mario Kauffman Foundation, Kansas City.

Choi, J.P., Thum, M.,2005. Corruption and the shadow economy. International Economic Review 46(3), 817-36.

Covin, J.G.Wales, W.J., 2011. The measurement of entrepreneurial orientation. Entrepreneurship Theory and Practice. DOI: 10.1111/j.1540-6520.2010.00432.x

Cullen, J.B., Gordon, R., 2007. Taxes and entrepreneurial risk taking: theory and evidence for the U.S. Journal of Public Economics 91, 1479-1505.

Davidsson, P., Henrekson, M., 2002. Determinants of the prevalence of start-ups and high-growth firms. Small Business Economics 19(2), 81-104.

Delmar, F., Wiklund, J., 2008. The effect of small business managers' growth motivation on firm growth: a longitudinal study. Entrepreneurship Theory and Practice, 32(3), 437-457.

Desai, M., Gompers, P. and Josh Lerner, J., 2003. Institutions and entrepreneurial firm dynamics: evidence from Europe. Harvard Negotiation, Organizations and Markets Research Paper No. 03-59.

Desai, S., Acs, Z., 2007. A theory of destructive entrepreneurship. Jena Economic Research Papers 85.

Deephouse, D.L., 1996. Does isomorphism legitimate? Academy of Management Journal 39 (4), 1024-1039.

DiMaggio, P.J., Powell, W.W., 1991. The iron cage revisited: institutional isomorphism and collective rationality in organization fields. In: Powell, W.W. DiMaggio, P.J. (Ed.) The new

institutionalism in organizational analysis. University of Chicago Press Chicago and London, pp. 63-82.

Djankov, S., LaPorta, R., Lopez-De-Silanes, F., Shleifer, A., 2002. The regulation of entry. Quarterly Journal of Economics CXVII (1), 1-36.

Estrin, S., Mickiewicz, T. 2011. Institutions and female entrepreneurship. Small Business Economics 37(4), 397–415.

Fogel, K., Hawk, A., Morck, R., Yeung, B., 2006. Institutional obstacles to entrepreneurship. In: Casson, M., Yeung, B., Basu, A., Wedeson, N. (Eds.). The Oxford Handbook of Entrepreneurship. Oxford University Press, Oxford, pp. 540-579.

Georgellis, Y., Wall, H.J., 2006.Entrepreneurship and the policy environment.Federal Reserve Bank of St. Louis Review 88 (2), 95-111.

Goldberger, S., 1991.A course in econometrics. Harvard University Press, Boston, MA.

Gompers, P. A., Lerner, J. , 1999.The Venture Capital Cycle. MIT Press, Cambridge, MA.

Granovetter, M., 1985. Economic action and social structure.The problem of embeddedness. American Journal of Sociology 91(3), 481-510.

Grilli, L., Rampichini, C., 2011.A review of random effects modelling using gllamm in Stata, available from http://www.bristol.ac.uk/cmm/learning/mmsoftware/reviewgllamm.pdf..

Harper, D., 2003. Foundations of entrepreneurship and economic development. Abingdon: Routledge.

Henrekson, M., 2007. Entrepreneurship and institutions. Comparative Labor Law and Policy Journal 28(4), 717-742.

Henrekson, M., Johansson, D., Stenkula, M., 2010. Taxation, labor market policy and high-impact entrepreneurship. Journal of Industry, Competition and Trade10(3), 275-296.

Hessels, J., van Gelderen, M., Thurik, R., 2008. Entrepreneurial aspirations, motivations, and their drivers. Small Business Economics 31(3), 323–339.

Hunt, J., Laszlo, S., 2012. Is bribery really regressive? Bribery's costs, benefits, and mechanisms. World Development 40 (2), 355–372.

Hwang, H., Powell, W., 2005. Institutions and entrepreneurship. In: Alvarez, S., Agarwal, R., Sorenson, O. (Eds.), Handbook of entrepreneurship research: disciplinary perspectives. Springer, New York, NY, pp. 201-232.

Jepperson, R., L., 1991. Institutions, institutional effects and institutionalism. In: Powell, W.W. DiMaggio, P.J. (Ed.) The new institutionalism in organizational analysis. University of Chicago Press, Chicago and London, pp. 143-163.

Johannisson, B., 2000. Networking and entrepreneurial growth. In D. Sexton, H. Lawrence (Eds), The Blackwell handbook of entrepreneurship: 368-386. Blackwell: Oxford.

Johnson, P., McMillan, J., Woodruff, C., 1999. Contract enforcement in transition. EBRD Working Paper, No. 45.

Johnson, P, McMillan, J., Woodruff, C., 2000. Entrepreneurs and the ordering of institutional reform. Economics of Transition 8(1), 1-36.

Kahneman, D. Tversky, A. 1979. Prospect Theory: an analysis of decision under risk. Econometrica 47(2), 263-291.

Khanna, T., Palepu, K. 2010.Winning in emerging markets. Harvard Business Press: Boston, MA.

Kolvereid, L. 1992. Growth aspirations among Norwegian entrepreneurs. Journal of Business Venturing 7(3), 209–222.

Kolvereid, L., Bullvag, E., 1996. Growth intentions and actual growth: The impact of entrepreneurial choice. Journal of Enterprising Culture 4(1), 1–17.

Korosteleva, J., Mickiewicz, T., 2011.Startup finance in the age of globalisation. Emerging Markets Finance and Trade 47(3), 23-49.

Lerner, J., 2009. The empirical impact of intellectual property rights on innovation: puzzles and clues. American Economic Review 99, 343-348.

Marshall, M., Jaggers, K., 2007. Polity IV Project. Centre for Systemic Peace.

McMillan, J., Woodruff, C., 2002. The central role of entrepreneurs in transition economies. Journal of Economic Perspectives 16(3), 153-170.

McMullen, J., Bagby, R., Palich, R., 2008. Economic freedom and the motivation to engage in entrepreneurial action. Entrepreneurship Theory and Practice 32, 875-895.

Meyer, J.W.,Rowan, B., 1977. Institutionalised organisations: formal structures as myth and ceremony. American Journal of Sociology 83 (2), 340-363.

Minniti, M., Arenius, P., Langowitz, N., 2005. Global Entrepreneurship Monitor: 2004 Report on women and entrepreneurship. Centre for women's leadership at Babson College: London Business School, London.

Minniti, M., Lévesque, M., 2010. Entrepreneurial types and economic growth. Journal of Business Venturing 25, 305-314.

Murphy K.M., Shleifer,A., Vishny, R. W., 1993. Why is rent seeking so costly to growth? American Economic Review 83(2), 409-14.

North, D., 1990. Institutions, institutional change and economic performance. Cambridge University Press: Cambridge.

Parker, S. C., 2009. The economics of entrepreneurship. Cambridge University Press, Cambridge, UK.

Rabe-Hesketh, S., Skrondal, A., Pickles, A. , 2005. Maximum likelihood estimation of limited and discrete dependent variable models with nested random. Journal of Econometrics 128 (2), 301-323.

Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, A., Lopez-Garcia, P., Chin, N., 2005. Global Entrepreneurship Monitor: Data collection design and implementation 1998-2003. Small Business Economics 24, 205-231.

Reynolds, P., Hechavaria, D., 2008. Global entrepreneurship adult population data sets: 1998-2003. Codebook and data set description. ICPSR Project, No.20320.

Reynolds, P., 2010. New Firm Creation: A Global Assessment of National, Contextual, and Individual Factors. Foundations and Trends in Entrepreneurship6 (5–6), 315–496.

Scott, R.W., Meyer, J.W., 1991. The organization of societal sectors: propositions and early evidence. In: Powell, W.W., DiMaggio, P.J. (Eds.) The new institutionalism in organizational analysis. University of Chicago Press, Chicago and London, pp. 108-142.

Sheeran, P., 2002. Intention-behavior relations: A conceptual and empirical review. In: W. Stroebe, Hewstone, M. (Eds.), European Review of Social Psychology 12, 1-36. Chichester, England: Wiley.

Sobel, R., 2008. Testing Baumol: institutional quality and the productivity of entrepreneurship. Journal of Business Venturing, 23(6), 641-655.

Suchman, M.C., 1995. Managing legitimacy: strategic and institutional approaches. Academy of Management Review 20 (3), 571-610.

Tonoyan, V., Strohmeyer, R., Habib, M., Perlitz, M., 2010. Corruption and entrepreneurship: how formal and informal institutions shape small firm behaviour in transition and mature market economies. Entrepreneurship Theory and Practice 34 (5), 803-831.

Van Stel, A., Storey, D., 2004. The link between firm births and job creation: is there a upas tree effect? Regional Studies 38 (8), 893-909.

Weingast, B.R., 1995. The economic role of political institutions: market-preserving federalism and economic development. Journal of Economics, Law and Organization 11 (1), 1-31.

Wiklund, J., Shepherd, D., 2003. Aspiring for and achieving growth: the moderating role of resources and opportunities. Journal of Management Studies 40, 1919-1941.

Williamson, O., 1975.Markets and Hierarchies. Free Press, New York.

Williamson, O.,1985.The Economic Institutions of Capitalism. Free Press, New York.

Williamson, O., 2000. New institutional economics.Journal of Economic Literature 38, 595-613.

Table 1
Descriptive statistics and definitions of explanatory and variables.

Variable	Definition	Mean	S.D.
Explanatory variables: business environment & macroeconomic variables			
Constraints on executive (t-3)	Polity IV 'Executive Constraints'; scores from 1="unlimited authority" to 7="executive parity"; higher value denotes less arbitrariness	6.57	1.06
Intellectual property rights (t-2)	Intellectual Property Protection index (Global Competitiveness Report); scores from 1="weak protection" to 7="strong protection"	5.25	1.06
Corruption (t-3)	Heritage Foundation 'Corruption' index, ranging from 0 to 100; higher value denotes more corruption	29.33	21.56
Government size (t-3)	Government spending / GDP; calculated from Heritage Foundation 'Government size' index (HF), reversing their formula: Government Size = $[(100 – HF) / 0.03]^{0.03}$	38.27	11.7
GDP per capita ppp (t-1)	GDP per capita at purchasing power parity, constant at 2000 $USD (WB WDI 2010)	25,244	11,191
GDP growth rate (t-1)	Annual GDP growth rate (WB WDI 2010)	3.15	2.67
iq2	The second quintile of the logarithm of GDP pc at PPP (t-1)	.21	.41
iq3	The third quintile of the logarithm of GDP pc at PPP (t-1)	.18	.39
iq4	The fourth quintile of the logarithm of GDP pc at PPP (t-1)	.17	.37
iq5	The fifth quintile of the logarithm of GDP pc at PPP (t-1)	.20	.40
Explanatory variables: personal characteristics			
Age	The exact age of the respondent between 14 and 99 at time of interview	39	12
Male	1=male, 0 otherwise	.63	.48
Current employment	Current number of employees + owner-manager	97	5688
Education: Post-secondary	1=respondent has a post-secondary education	.18	.38
Owner-manager of existing business	1=current owner/manager of business, 0 otherwise	.04	.19
Bus angel in last 3 years	1=business angel in past three years, 0 otherwise	.08	.28
Knows other entrepreneurs	1=personally knows entrepreneurs in past two years, zero otherwise	.62	.48
Dependent variable:			
Entrepreneur's employment growth aspirations (EGA)	Percentage change in the expected level of employment in 5- yrs' time over the current level of employment by new firms	.42	.67

Source: GEM 2001-2006 unless specified otherwise; the reported statistics are based on the set of observations actually used in estimations (8,160) to eliminate the joint effect of missingess in all variables.

Table 2
Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Entrepreneur's Growth Aspirations (1)	1																		
Current employment level (2)	-.02	1																	
Age (3)	-.11	-.01	1																
Male (4)	.08	.00	-.00	1															
Education: postsecondary (5)	.03	-.00	.05	.01	1														
Owner-manager of exist. bus (6)	-.03	-.00	.05	.02	.06	1													
Bus angel in last 3 years (7)	.05	-.00	-.01	.04	.06	.08	1												
Knows other entrepreneurs (8)	.11	.01	-.12	.11	.06	.00	.10	1											
Owner-manager of exist. bus, country mean(9)	-.01	.00	-.08	-.07	-.04	.01	.02	-.02	1										
Government size, HF (t-3) (10)	-.08	.01	.06	.05	.04	.01	-.00	.06	-.51	1									
Constraints on executive (t-3) (11)	-.03	.00	.08	-.03	.01	.02	-.01	-.02	-.17	.55	1								
Intellectual property rights (t-2) (12)	-.02	.01	.13	.04	.06	-.05	-.00	.03	-.57	.56	.36	1							
Corruption (t-3) (13)	.02	-.01	-.14	-.03	-.12	.00	-.01	-.05	.56	-.61	-.35	-.83	1						
GDP growth rate (t-1) (14)	.03	-.02	-.03	-.04	.02	.00	.00	.02	.28	-.40	-.39	-.40	.28	1					
GDP per capita ppp (t-1) (15)	-.04	.01	.14	.05	.11	.05	.02	.03	-.59	.52	.34	.80	-85	.24	1				
iq2 (16)	-.04	.01	.03	.01	-.05	.18	.00	-.05	.11	.05	.14	-.21	.09	.10	-.05	1			
iq3 (17)	-.01	-.01	.04	.04	-.05	-.07	-.04	.04	-.32	.42	.18	.34	-.35	-.22	.21	-.24	1		
iq4 (18)	-.01	-.01	.04	-.01	.13	-.03	-.02	-.01	-.26	.23	.18	.41	-.31	-.13	.26	-.23		1	
iq5 (19)	.00	.03	.05	.02	.04	-.03	.06	.04	-.12	-.05	-.08	.30	-.32	-.03	.55	-.26	-.24	-.23	1

Source: GEM 2001-2006; Polity IV, Global Competitiveness Report (various issues), HeritageFoundation, UNCTAD, World Bank WDI. All variablesexcept for dummy variables are standardised. The correlation matrix is produced based on the set of observations actually used in estimations (8,160).

Table 3
Estimation results for entrepreneur's growth aspirations, Multilevel Random Intercept model.

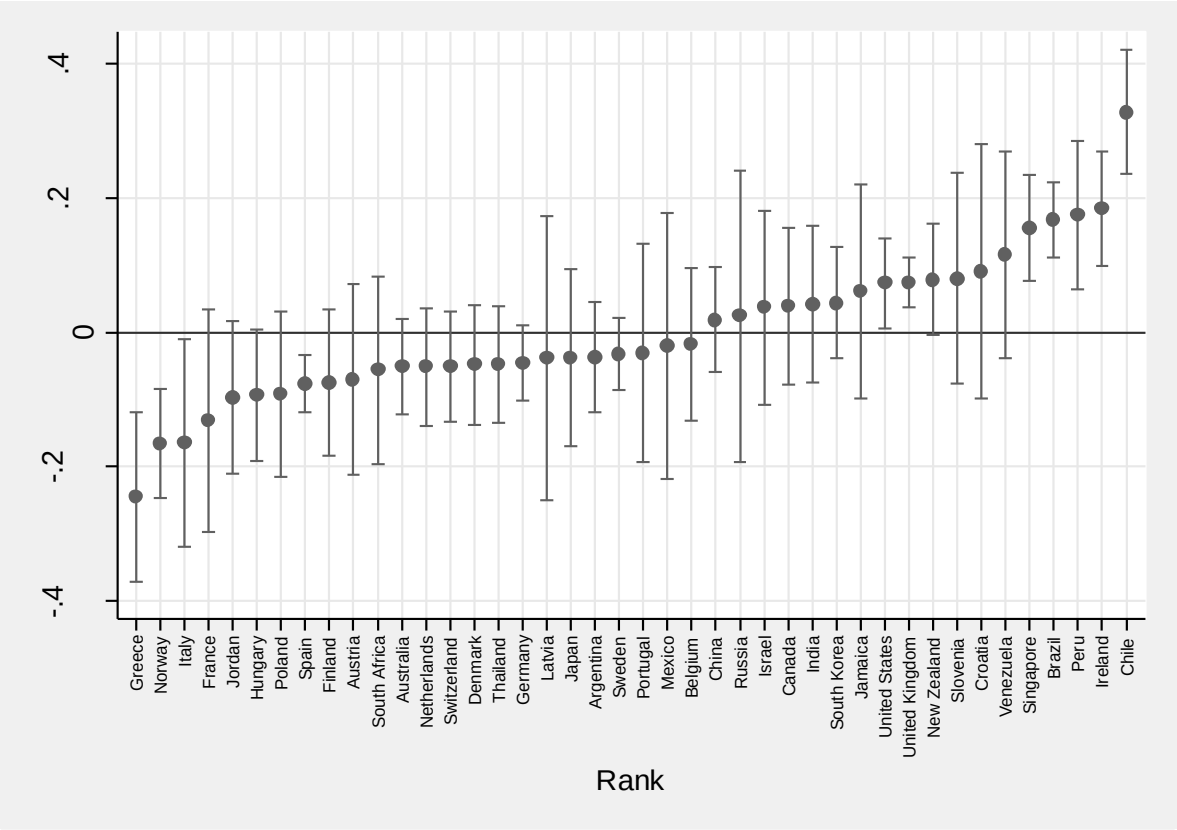
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Individual level variables				
Current employment level	-0.0107	-0.0104	-0.0105	-0.0105	-0.0106	-0.0104	-0.0104	-0.0104
	(0.0072)	(0.00718)	(0.00718)	(0.00718)	(0.0072)	(0.0072)	(0.00718)	(0.0072)
Age	-0.114***	-0.115***	-0.114***	-0.114***	-0.11***	-0.11***	-0.114***	-0.11***
	(0.0132)	(0.0132)	(0.0132)	(0.0132)	(0.0132)	(0.0132)	(0.0132)	(0.0132)
Male	0.114***	0.114***	0.114***	0.114***	0.112***	0.11***	0.114***	0.11***
	(0.0194)	(0.0194)	(0.0194)	(0.0194)	(0.0194)	(0.0194)	(0.0194)	(0.0194)
Education: postsecondary	0.0541**	0.0548**	0.0542**	0.0527**	0.0569**	0.052**	0.0517**	0.053**
	(0.0253)	(0.0253)	(0.0252)	(0.0253)	(0.0254)	(0.0253)	(0.0253)	(0.0253)
Owner-manager of exist	-0.0602	-0.0590	-0.0604	-0.0609	-0.0578	-0.0609	-0.0607	-0.0617
businesses	(0.0524)	(0.0523)	(0.0523)	(0.0524)	(0.0524)	(0.0524)	(0.0523)	(0.0524)
Bus angel in last 3 years	0.131***	0.132***	0.132***	0.131***	0.131***	0.13***	0.130***	0.13***
	(0.0333)	(0.0333)	(0.0333)	(0.0333)	(0.0333)	(0.0333)	(0.0333)	(0.0333)
Knows other entrepreneurs	0.144***	0.142***	0.144***	0.144***	0.144***	0.139***	0.142***	0.14***
	(0.0195)	(0.0195)	(0.0195)	(0.0195)	(0.0195)	(0.02)	(0.0195)	(0.02)
				Country level means				
Current employment level	-	-0.00636	-	-	-	-	-	-
country mean	-	(0.0129)	-	-	-	-	-	-
Male, country mean	-	-0.0156	-	-	-	-	-	-
	-	(0.0230)	-	-	-	-	-	-
Education: postsecondary,	-	-0.0144	-	-	-	-	-	-
country mean	-	(0.0225)	-	-	-	-	-	-
Owner-manager of exist	-	-0.0481**	-0.051***	-0.0417**	-0.0340	-0.041**	-0.0401**	-0.044**
bus, country mean	-	(0.0241)	(0.0190)	(0.0191)	(0.0216)	(0.0191)	(0.0191)	(0.0193)
Bus angel in last 3 years,	-	-0.0279	-	-	-	-	-	-
country mean	-	(0.0271)	-	-	-	-	-	-
Knows other entrepreneurs,	-	0.0520	-	-	-	-	-	-
country mean	-	(0.0326)	-	-	-	-	-	-
				Variables related to hypotheses 1-3				
Government size, HF index	-0.100***	-0.130***	-0.123***	-0.120***	-0.09***	-0.11***	-0.120***	-0.12***
reversed (t-3)	(0.0224)	(0.0234)	(0.0216)	(0.0235)	(0.0241)	(0.0264)	(0.0234)	(0.0237)
Constraints on executive	0.0288	0.0303	0.0381**	0.0343*	-	0.0344*	0.0362*	0.06***
(t-3)	(0.0199)	(0.0213)	(0.0181)	(0.0189)	-	(0.0188)	(0.0188)	(0.0225)
Intellectual property rights	-	-	-	-	0.0171	-	-	-
(t-2)	-	-	-	-	(0.0313)	-	-	-
Corruption (t-3)	-0.088***	-0.095***	-0.099***	-0.086***	-	-0.08***	-0.115***	-0.09***
	(0.0331)	(0.0323)	(0.0302)	(0.0309)	-	(0.0309)	(0.0329)	(0.0311)
				Interaction terms				
Government size (t-3) x	-	-	-	-	-	-0.022	-	-
Knows other entrepreneurs	-	-	-	-	-	(0.018)	-	-
Constraints on executive	-	-	-	-	-	-	-	-0.038**
(t-3) xKnows other entr.	-	-	-	-	-	-	-	(0.017)
Corruption (t-3) x	-	-	-	-	-	-	0.0452**	-
Knows other entrepreneurs	-	-	-	-	-	-	(0.014)	-

Table 3
Follow up.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Macroeconomic level control variables				
GDP growth rate (t-1)	0.0128	0.00837	0.0148	0.0138	0.0116	0.0135	0.0133	0.0134
	(0.0132)	(0.0132)	(0.0128)	(0.0130)	(0.0139)	(0.0130)	(0.0130)	(0.0131)
GDP per capita ppp (t-1)	-0.0579*	-0.0671**	-0.083***	-	-	-	-	-
	(0.0311)	(0.0312)	(0.0293)	-	-	-	-	-
GDP per capita ppp (t-1):	-	-	-	-0.0985	-0.0126	-0.0994	-0.100	-0.0978
iq2	-	-	-	(0.0656)	(0.0712)	(0.0655)	(0.0654)	(0.0660)
GDP per capita ppp (t-1):	-	-	-	-0.146*	-0.0337	-0.145*	-0.146*	-0.147*
iq3	-	-	-	(0.0866)	(0.0917)	(0.0864)	(0.0863)	(0.0870)
GDP per capita ppp (t-1):	-	-	-	-0.171*	-0.0501	-0.170*	-0.171**	-0.171*
iq4	-	-	-	(0.0875)	(0.0929)	(0.0873)	(0.0871)	(0.0879)
GDP per capita ppp (t-1):	-	-	-	-0.184**	-0.0475	-0.184**	-0.185**	-0.184**
iq5	-	-	-	(0.0826)	(0.0847)	(0.0825)	(0.0823)	(0.0831)
Constant	-0.381***	-0.373***	-0.367***	-0.25***	-0.37***	-0.245	-0.245	-0.245
	(0.0445)	(0.0437)	(0.0436)	(0.0699)	(0.043)	(0.07)	(0.069)	(0.070)
Industrial controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,160	8,160	8,160	8,160	8,160	8,160	8,160	8,160
Number of country groups	42	42	42	42	42	42	42	42
Log Likelihood	-9947	-9942	-9944	-9945	-9949	-9944	-9942	-9942
Df	15	21	16	19	18	20	20	20
Akaike Information Criterion	19931.48	19934.14	19927.36	19935.6	19942.0	19936.1	19931.5	19932.9
				Random effects parameters				
sigma_u	0.097***	0.074***	0.078***	0.08***	0.11***	0.08***	0.08***	.086***
	(0.0204)	(0.0198)	(0.020)	(0.021)	(0.0221)	(0.021)	(0.02)	(0.021)
sigma_v	0.072***	0.0702***	0.072***	0.07***	0.07***	0.07***	0.07***	0.07***
	(0.0179)	(0.018)	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)
sigma_e	0.815***	0.815***	0.815***	0.81***	0.81***	0.81***	0.81***	0.81***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)

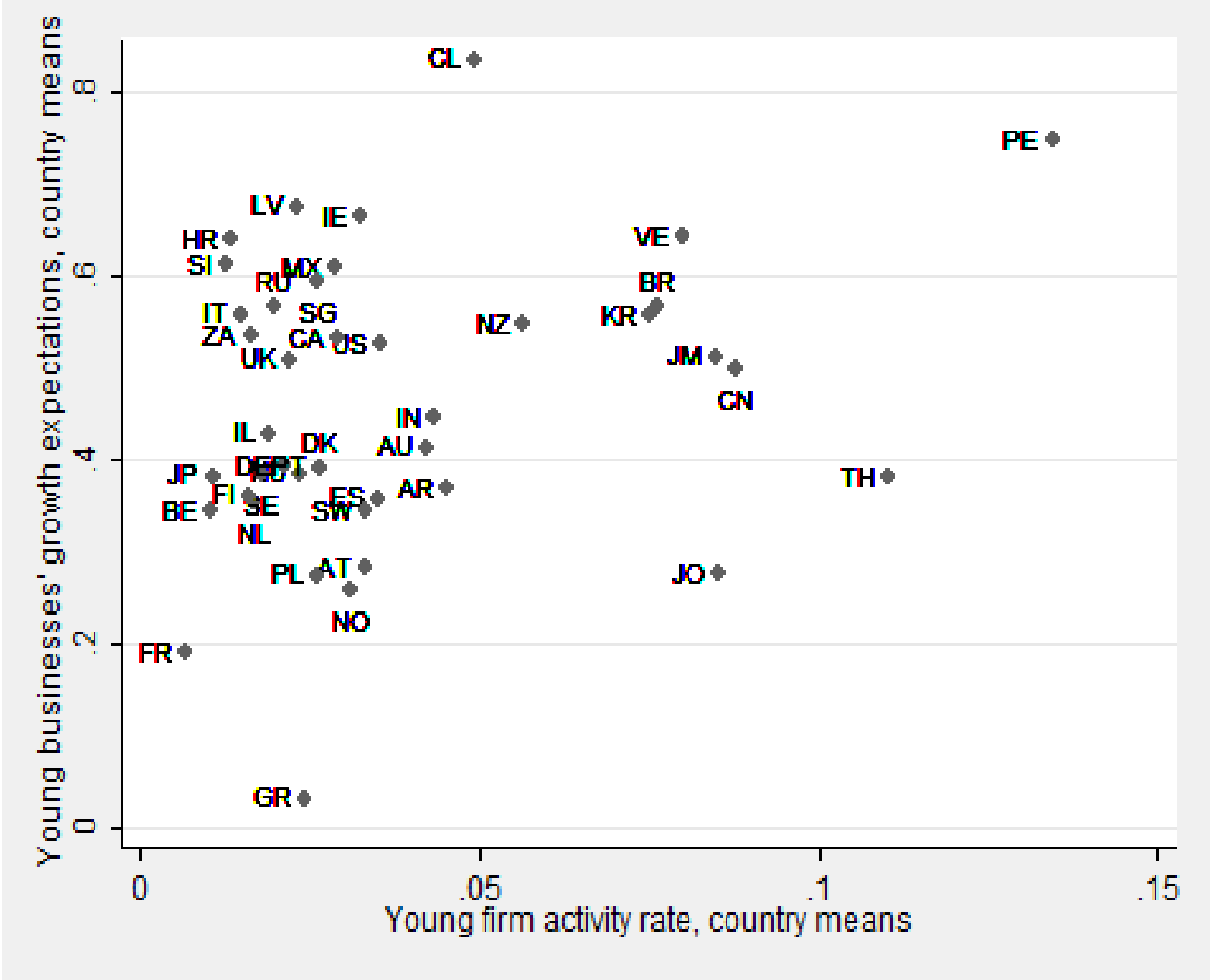
Note: Standard errors in parentheses; p<0.01, ** p<0.05, * p<0.10; all variables with exception of dummy variables are standardised. Likelihood ratio test (model2 vs model1) chi2(6)=9.34; prob>chi2=0.1554. Likelihood ratio test (model3 vs model1) chi2(6)=6.12; prob>chi2=0.01.

Figure 1. New businesses' employment growth expectations: country effects in rank order with 95% confidence intervals



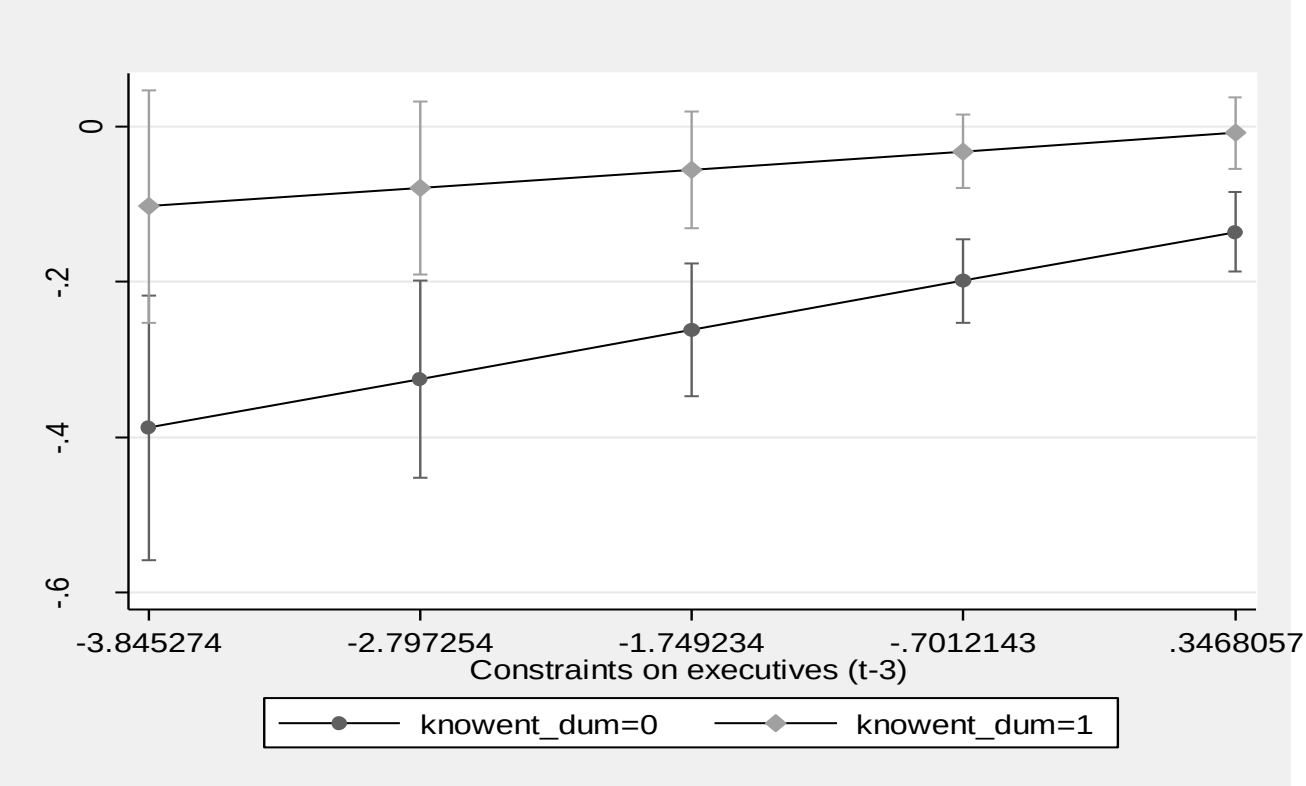
Source: GEM 2001-2006. Note: We calculated the intercepts and confidence intervals using the set of observations without 171 outliers (see discussion in section 3.5).

Figure 2.Young businesses' Growth Expectations vis-à-vis Young business activity rate, country means



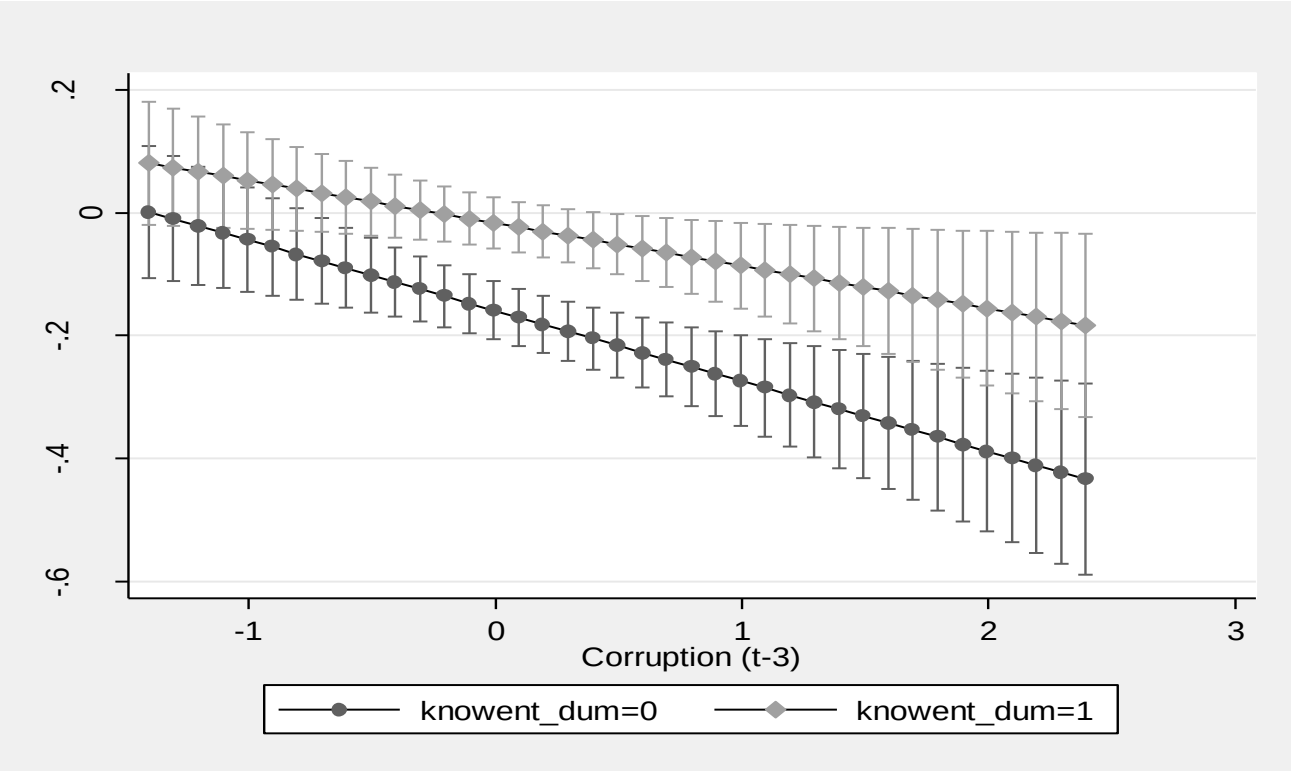
Source: GEM 2001-2006. Country abbreviations denote: AR – Argentina; AT – Austria; AU – Australia; BE- Belgium; BR- Brazil; CA- Canada; CL – Chile; CN – China; DE – Germany; DK – Denmark; ES- Spain; FI – Finland; FR – France; GR – Greece; HR – Croatia; HU – Hungary; IE – Ireland; IL – Israel; IN – India; IT – Italy; JM – Jamaica; JO – Jordan; JP – Japan; KR – South Korea; LV – Latvia; MX – Mexico; NL – Netherlands; NO – Norway; NZ – New Zealand; PE – Peru; PL – Poland; PT – Portugal; RU – Russia; SE – Sweden; SG – Singapore; SI – Slovenia; SW – Switzerland; TH Thailand; UK – United Kingdom; US – United States; VE - Venezuela; ZA – South Africa.

Figure 3: Predictive margins of knows other entrepreneurs by executive constraints with 95 % CIs



Source: GEM 2001-2006. Note: *knowent_dum* denotes "Knows other entrepreneurs". CI stands for confidence intervals. All variables with exception of dummy variables are standardised. We tested the significance of difference between the two categories of 'Knows other entrepreneurs' by contrasting the two profiles and it proved to be statistically significant. We tested this vice versa, also confirming that difference in marginal effects of executive constraints by "Knows other entrepreneurs" on growth aspirations is statistically significant. Results are available from authors upon request.

Figure 4. Predictive margins of knows other entrepreneurs by corruption with 95 % CIs



Source: GEM 2001-2006. Note: *knowent_dum* denotes "Knows other entrepreneurs". CI stands for confidence intervals. All variables with exception of dummy variables are standardised. We tested the significance of difference between the two categories of 'Knows other entrepreneurs' by contrasting the two profiles, and it proved to be statistically significant. We tested this vice versa, also confirming that difference in marginal effects of corruption by "Knows other entrepreneurs" on growth aspirations is statistically significant. Results are available from authors upon request.