Human Capital, Institutions, and Ambitious Entrepreneurship during Good Times and Two Crises

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Abstract

We argue that the positive relationship between pro-market institutions and entrepreneurial growth aspirations is dampened for individuals with general human capital (higher education), but augmented for those with specific human capital (experience in the marketplace). However, during a crisis, the differential effect of pro-market institutions on growth aspirations manifests only for entrepreneurs with specific human capital, with stronger effects than in good economic times. We run our empirical analysis on a dataset of individual- and country-level characteristics during 2005–2020, thus exploiting variation from the Global Financial Crisis and the Covid-19 pandemic. We confirm our predictions and show stronger results for early stage (compared to nascent) entrepreneurs, and potential complementarities between human capital types. Altogether, our work paves the way to institutional adaptive policymaking.

Keywords: pro-market institutions; human capital; growth aspirations; entrepreneurship; crisis

1. INTRODUCTION

Scholars have long studied human capital (Becker 1964; 1975; Mincer 1974), and more recently have focused on its positive effects on entrepreneurial activity (Hsu et al. 2017; Van Praag 2005; Wiklund and Shepherd 2003). Others have examined how macro factors such as pro-market institutions shape entrepreneurship (Bowen and DeClercq 2008; Baumol and Strom 2007; Dau and Cuervo-Cazurra 2014; Decker et al. 2020; McMullen et al. 2008). A growing literature connects individual and institutional characteristics to explain entrepreneurial ambitions (Amorós et al. 2019; Autio and Acs 2010; Estrin et al. 2013; 2016); however, the generality of findings that jointly depend on institutional and individual factors is yet to be consolidated. While we recognize that institutions may have a direct effect on entrepreneurial activity, we are interested in how they interact with idiosyncratic human capital to shape ambitious entrepreneurship.

In this paper, we first explain how pro-market institutions are related to higher entrepreneurial growth ambitions. Second, we hypothesize and show that pro-market institutions are related to a larger increase in the entrepreneurial growth aspirations of individuals with high human capital, but only when such capital is specific to experience in the marketplace. In contrast, the positive relationship between pro-market institutions and growth aspirations is lower for individuals with general, education-based human capital. Third, we propose and find that, during a crisis (i.e. the Global Financial Crisis (GFC) and the Covid-19 pandemic) compared to non-crisis times, the effect of pro-market institutions on growth aspirations is stronger for individuals with specific, market-based human capital. However, the interaction between pro-market institutions and general, education-based human capital includes mixed effects in a crisis and thus its outcome is unclear.

We start from North's (1990) view of institutions as "the rules of the game" molding human interactions as well as the context-specific nature of entrepreneurship (Welter 2011). Our assumption here is that the institutional context's orientation, considering a continuum of more pro-market or more regulated organization, tends to remain stable over decades, as proposed by Williamson (2000). In line with Knight (1985) and Klein (2008), we assume that entrepreneurs take the state of the market as a given when they strategically envision aspirations towards scaling up businesses (see, e.g., Estrin et al. 2022). Such growth aspirations could meaningfully impact regional economic growth through spillover effects (Acs et al. 2012; Audretsch et al. 2006), and even direct effects of human capital and allocation of talent to entrepreneurship (see, e.g., Gennaioli et al. 2013). This resonates with our focus on pro-market institutions which, similar to Dau and Cuervo-Cazurra (2014), we proxy through the level of economic liberalization. Such institutional contexts center on reducing transaction costs to ensure an adaptive business environment for entrepreneurs with different levels of ambitions (Bradley and Klein 2016; Fredström et al. 2021).

Our baseline hypothesis posits that in a more liberalized market (compared to a more regulated one), developing specific human capital through market experience and bearing the opportunity cost to manage market uncertainty (see Foss and Klein 2012) will magnify entrepreneurial growth aspirations. Conversely, general, education-based human capital can be at odds with economically liberalized markets, which may weaken the otherwise positive effect of pro-market institutions on entrepreneurial growth aspirations. Indeed, we expect higher education to be more useful for decisions in more predictable markets and thus a higher competitive advantage for navigating regulated environments. In addition, as occupational models may suggest

(Lucas 1978; Parker 2018), general human capital is more aligned with labor rather than entrepreneurial ambitions in dynamic (liberalized) markets.

Next, we argue that the baseline predictions are average effects over both good and bad economic times. We hypothesize that during a crisis (compared to non-crisis periods), there is a stronger joint effect of economic liberalization and specific (market-based) human capital on entrepreneurial growth aspirations. In periods of economic distress, higher uncertainty and scarcer opportunities increase the relevance of the (mis)alignment of market-based experience with the institutional context. Such reasoning is in line with single-country studies on human capital (Gruber et al. 2023) and on the capacity for attracting resources (Epure and Guasch 2020). However, during a crisis, we expect mixed interaction effects between liberalized markets and general human capital. In a crisis, entrepreneurs with higher education will continue being misaligned with a pro-market context, but compared to non-crisis times they will have an advantage for understanding crisis-driven temporary regulations (e.g. Covid-19 economic aid to small firms). In addition, they will hold the ability to combine current entrepreneurial action with signaling future labor returns from education in dynamic markets to attract resources during crises such as the GFC.

We conduct the empirical analysis combining data on individual characteristics (from the Global Entrepreneurship Monitor) with institutional indices from the Heritage Foundation and Fraser Institute, and macroeconomic data from the World Bank. Our data comprise 141,003 observations from 93 countries during the period 2005–2020. The empirical strategy relies on data representativeness and two key features. First, as we shall show, we benefit from relatively stable cross-sectional variation in institutional types, validating our assumption that entrepreneurs can take the market context as a given. Second, we exploit plausibly exogenous variation from the

GFC during 2008–2010, and the Covid-19 pandemic in 2020. Therefore, for good economic times, our results only leverage on the first data attribute, while for crisis times the combination of the two features leads to potentially causal interpretations.

We start by showing that the positive association between pro-market institutions, proxied through the level of economic liberalization, and growth aspirations is lower for entrepreneurs with higher education (i.e. general human capital), while it is larger for those with market experience (i.e. specific human capital). These results change asymmetrically in a crisis: the negative interaction of economic liberalization and general (education-based) human capital disappears; and the positive interaction of economic liberalization and specific human capital is stronger compared to non-crisis times. Interestingly, the latter result holds for both start-up and business angel experience during the GFC, and especially for start-up experience during the Covid-19. We argue that while start-up experience always matters, during the GFC business angel experience for attracting resources was key (as bank funding was scarce). However, during the Covid-19 pandemic, which was disconnected from economic fundamentals, entrepreneurs could access relief packages for resources rather than using market investment, and thus rely mostly on start-up experience. In additional analyses, we show that our results are stronger for early stage business owners compared to nascent entrepreneurs, underscoring start-up experience especially in a crisis. Finally, we explore potential complementarities or substitutions between human capital types.

We perform a battery of robustness checks. We show that economic liberalization rarely changes during our analysis period. Even so, we confirm that our results do not change when we redefine our index to capture economic liberalization changes rather than levels. Our results are also robust to different cut-off points for high versus low economic liberalization, and using alternative index definitions or decompositions into main pillars related to entrepreneurial activity.

In addition, findings do not change when using country or country-year intercepts in multilevel models, including country, industry, and year fixed effects in multilevel or OLS specifications, or stringently clustering standard errors at country-industry-year or country-year levels. Finally, a two-stage model validates that the stronger results for early (compared to nascent) stage can be unrelated to (self) selection between the two entrepreneurship phases.

Our work contributes to the literature on human capital and institutions in more than one way. We extend seminal and current discussions on how human capital types can serve to better adapt to the market context (Lazear 2005) and overcome challenges (Dencker et al. 2009a; Gruber et al. 2023). We move beyond results suggesting that higher levels of human capital are positively related to entrepreneurial growth aspirations (Autio and Acs 2010; Gilbert et al. 2006) and that favorable institutional contexts facilitate entrepreneurial action (Dau and Cuervo-Cazurra 2014; Estrin et al. 2013; McMullen 2008). We extend this literature by unpacking how institutions shape the effects of different types of human capital on entrepreneurial growth aspirations. Our framework shifts predominantly static conceptualizations of human capital towards market-adaptive categorization that capture heterogenous knowledge and skills together with the process to achieve them. As such, our study complements the work of Bylund and McCaffrey (2017) on interpreting institutional (mis)alignments that may become increasingly important in crisis times, by analyzing the links between Williamsonian level two institutions and actor-level attributes.

2. THEORY AND HYPOTHESES

2.1 Pro-market institutions and ambitious entrepreneurship

We draw on institutional economics to comparatively analyze the influence of pro-market institutions on ambitious entrepreneurship. Our baseline echoes North's (1990) view of institutions

as fundamental "rules of the game" that determine human interactions and market structures. Accordingly, even in an actor-centered conceptual framework such as ours, the macro dimension helps to understand how entrepreneurial action is shaped by institutions (Bowen and DeClercq 2008; Dau and Cuervo-Cazurra 2014; Decker et al. 2020).

Williamson (2000) posits that formalized institutions reflect a society's political and persistent economic preferences, which could range from more pro-market to more regulated organization. Such institutional orientations tend to remain stable for decades, even if single laws and business regulations may change in a range of years. While fundamental changes can occur at times (see, e.g., Bylund and McCaffrey 2017), their slow dynamics contrast sharply with actor-level actions that are continuous. This difference implies that entrepreneurs largely take the institutional (market) context as a given (Klein 2008; Knight 1985) and their actions and perception for the future depend on the alignment between individual and institutional features.

A growing body of research validated that institutional economics is an effective framework for analyzing the general entrepreneurial activity (Aidis et al. 2008; Bruton et al. 2010; Eesley 2016; Jennings et al. 2013), individual decisions to become an entrepreneur or form new businesses (Amorós et al. 2019; Estrin et al. 2016), as well as entry into ambitious entrepreneurship (Autio and Acs 2010; Estrin et al. 2013). However, there has also been a surge of relevant work calling for a more parsimonious analysis of the generality of such findings that jointly depend on individual (e.g. Estrin et al. 2022) and institutional factors (e.g. Dau and Cuervo-Cazurra 2014; McMullen et al. 2008).

Our analysis answers this call. Because entrepreneurship is context specific in its nature (Welter 2011), the literature has paid vast attention to the different roles which the institutional environment has played for entrepreneurial action across countries (see the review in Urbano et al.

2019). While institutions may have a direct effect on entrepreneurial aspirations, they interact with underlying individual characteristics to drive ambitions. Institutions influence the new venture creation process by easing or limiting entrepreneurial activity (McMullen 2008; Robinson and McDougall 1998), but the growth aspirations behind such process stem from the alignment between institutional arrangements and actor-level traits. To encompass key institutional characteristics, the literature examined the role of pro-market institutions as essential drivers of entrepreneurship and aggregate economic growth (Casson and Wadeson 2007; Dau and Cuervo-Cazurra 2014; Klapper et al. 2010).

Pro-market institutions capture the functioning of markets as well as the role of the government to facilitate transactions in a healthy business environment (IMF 2004). Arguably, countries that feature effective pro-market institutions usually display higher economic wealth. This is supported by government action towards more efficient legal and regulatory frameworks, as well as investment in infrastructure and public goods essential for individuals and businesses to cope with market imperfections and grow their commercial activities (Frye and Shleifer 1997). In essence, pro-market institutions are designed to reduce transaction costs and favor impersonal exchange by providing an adaptive business environment in which active players would face lower entry barriers.

A measure of pro-market institutions of particular interest to the entrepreneurship literature is the national level of economic liberalization. As Dau and Cuervo-Cazurra (2014) argue, this approach is relevant due to its direct link to the deregulation of industries and markets, the liberalization of prices, and the privatization of state-owned businesses, thus focusing the role of the government on protecting property rights and facilitating economic transactions. Accordingly, higher levels of economic liberalization reflect fundamentals of the well-functioning of impersonal

markets, as well as an ease of incorporating economic activities into organizations (Simon 1991). Liberalized labor markets allow individuals to choose between flexible contracting into career building through traditional employment, and entry into entrepreneurship (Boeri et al. 2020). Taken together, these arguments suggest that pro-market institutions may affect entrepreneurial activity through their interaction with an individual's human capital and ambitions.

2.2 Economic liberalization and human capital types

Individuals possessing greater knowledge, which may lead to superior skill, will be better positioned to succeed in their endeavors than otherwise (Becker 1964; Mincer 1974). Not all knowledge is alike. Becker (1975) argues that there are two key components of knowledge: education and experience. Following Becker's seminal work, but also in line with more recent contributions (Cassar 2006; Colombo et al. 2004; Dencker et al. 2009a; Estrin et al. 2016; Gruber et al. 2023; Liang et al. 2018), we distinguish between general (education-based) and specific (market experience-based) human capital.

Both types of human capital can lead to competitive advantage in productive activities (e.g. Barney 1991; Pennings et al. 1998). Once an individual is in their possession, these advantages are hard to imitate because the mechanisms through which an individual arrives in their possession are costly; they are also fundamentally different. On the one hand, education-based human capital is essentially general knowledge and, while it could entail some degree of specificity—e.g., if related to jobs in dynamic industries (Acemoglu and Pischke 1998)—it is based on a stock of general knowledge that can be amassed and transmitted and is not specific to time and place. On the other hand, market-based human capital from start-up or business angel experience contains

hard-to-transmit time and place specific knowledge necessarily acquired by the individual in the marketplace (e.g. Dencker and Gruber 2014; Unger et al. 2011).

By focusing on the distinction between the two types of human capital, we can break the monolithic approach to human capital (e.g. Parker 2009) and explore its links to performance expectations (Gimeno et al. 1997). Indeed, entrepreneurship ambitions largely depend on an individual's perceptions of own ability stemming from human capital (Capelleras et al. 2019; Van Praag 2005). Individuals tend to invest in human capital with the objective to better adapt to the environment (Lazear 2005), increase the probability of success (Becker 1964; Mincer 1974) and improve the ability to face challenges (Cassar 2006; Dencker et al. 2009a; 2009b). Therefore, it seems natural to assume that both general human capital (i.e. higher education, see Estrin et al. (2016)) and specific human capital (i.e. entrepreneurship or business angel experience, see Baum and Silverman (2004) and Maxwell et al. (2011)) can increase entrepreneurial growth aspirations.

A tension resides in the expected utility of human capital investments in different institutional contexts. Dau and Cuervo-Cazurra (2014) took a first step in showing how market-oriented institutional arrangements favor formalizing entrepreneurship (see also McMullen 2008). But how does the effect of such pro-market institutional arrangements on entrepreneurial ambitions depend on their alignment with different types of human capital? As we have argued, pro-market institutions tend to focus on deregulation but provide support towards lower transaction costs in market exchanges. In this sense, possessing human capital (mis)aligned with the market (see Klein 2008; Knight 1985) will result in a magnified or dampened competitive advantages.

Probing into market fundamentals helps uncovering these differential advantages. A liberalized market allows individuals to use their own knowledge to pursue entrepreneurial objectives in a spontaneous rather than rationally designed system, with social welfare emerging

in a decentralized fashion (see, e.g., Bradley and Klein 2016). It also provides individuals strong incentives to allocate effort and resources by protecting their property rights and ensuring that those can be safely exchanged between interested parties (Coase 1960). Relying on these characteristics, an entrepreneur can navigate the Knightian uncertainty in the environment and bring about creative destruction (Schumpeter 1942).

We posit that a more liberalized (compared to a more regulated) market negatively interacts with general, education-based human capital to shape ambitious entrepreneurship. This codified and formally transmitted knowledge (e.g. via lectures, case studies and statistical analyses) may serve individuals more in a regulated context, with more predictable outcomes. Furthermore, in dynamic (liberalized) markets such general human capital may lead to labor rather than entrepreneurial ambitions (Lucas 1978; Parker 2018). Note that, as the reasoning in Coase (1960), we consider a continuum of real possibilities, in which completely free or completely regulated markets do not exist. In this sense, we argue that higher education can represent a comparatively greater competitive advantage for navigating a higher degree of regulation in the environment, while some of its features are at odds with more spontaneous market exchanges. In contrast, we expect specific, market-based human capital generated through experience as an entrepreneur or business angel to hold greater value in a liberalized market. Building knowledge and skills through experience and directly incurring the opportunity cost to manage market uncertainty (see Foss and Klein 2012) is likely to result in magnified growth aspirations when aligned with a pro-market institutional context.

Finally, all types of human capital can be seen as status proxies that can lead to positive expectations on future performance (see, e.g., Podolny 2005). However, the information carried by such proxies can differ by institutional context. Status may be transmitted through

entrepreneurial experience in a pro-market context focusing on lowering transaction costs, and valuing firms and the protection of private property rights above other aspects. Conversely, education can be a proxy of "formal" status and connectedness (carrying potential political value) useful in a more regulated context valuing networks among known actors. Overall, pro-market contexts reduce the importance of who you know and by focusing on facilitating open market exchanges increase the relevance of what you know. Considering all arguments on the (mis)alignments between actor- and institutional-level, we hypothesize that:

> **Hypothesis 1a.** The positive effect of economic liberalization on entrepreneurial growth aspirations is *lower* for individuals with more *general* (education-based) human capital.

> **Hypothesis 1b.** The positive effect of economic liberalization on entrepreneurial growth aspirations is *higher* for individuals with *specific* (market-based) human capital.

2.3 Navigating the market during a crisis

Business decision-making largely occurs under high levels of uncertainty, with the entrepreneur coordinating resources and managing capacity without actually knowing the economic value (e.g. residual profits) of exploiting a business idea (Alvarez and Barney 2005). The entrepreneur's human capital can facilitate the development of such decision-making process by providing analytical and judgment skills to navigate uncertainty and understand the institutional forces (Foss and Klein 2012). Especially when uncertainty heightens, entrepreneurial expectations are constrained by heterogenous individual perceptions (Amore et al. 2021), echoing seminal studies on pessimistic perceptions (usually related to risk) and entrepreneurial decisions (Kihlstrom and Laffont 1979).

While our previous arguments led to general predictions over both good and bad economic times, here we focus on how such predictions may change when uncertainty heightens during a crisis. We argue that particularly when resources are scarce, the entrepreneur's human capital is key for how the business environment is perceived (Åstebro and Thompson 2011; Dencker et al. 2009b). Lazear (2005) argued that experienced entrepreneurs could adapt better to the market state, and more recently Gruber et al. (2023) found for a single-country case that specific human capital is most useful in the best and worst conditions. Thus, we depart from the premise that periods of economic distress (compared to non-crisis periods) increase the importance of specific knowledge acquired through market experience.

We expect pro-market context to favor such market-adapting using the specific knowledge from experience. Awareness of the start-up and investment processes are especially valuable when resources are scarce, and furthermore they may send useful signals of business viability to the constrained market (Nikiforou et al. 2019). Epure and Guasch (2020) showed that during the GFC, firms with experience in attracting funding fared better. Here we argue that a pro-market context which facilitates financing and investment (see, e.g., Dau and Cuervo-Cazurra 2014; Klapper et al. 2020), is most useful to entrepreneurs with start-up and investment experience. This can occur during a crisis linked to economic fundamentals (such as the GFC), when bank financing was limited and scarce funding flowed to firms with a more market governance (Epure and Guasch 2020). It can also be the case during a crisis disconnected from firm fundamentals (such as the Covid-19 pandemic), when entrepreneurs could rely on their experience to navigate uncertainty through bricolage responses (Kuckertz et al. 2020).

These arguments suggest that the (mis)alignment between market-based human capital and the institutional context becomes more stringent when entrepreneurial opportunities are scarcer in

times of market distress. However, the joint effects of economic liberalization and general human capital are unclear in a crisis. In times of distress, individuals with higher education in a pro-market context may continue being misaligned with the environment. Nevertheless, compared to non-crisis times, higher education may shift opportunity costs (Estrin et al. 2016; Parker and Belghitar 2006) providing an advantage for understanding crisis-driven temporary regulations, rather than market dynamics. This could occur in the case of Covid-19 relief packages to small firms, which do not change the overall economic liberalization level due to their timing. From an occupational model standpoint (Lucas 1978; Parker 2018), higher education could entail the possibility of mixing entrepreneurial activity with signaling future labor outcomes, thus facilitating credit during the GFC, especially in pro-market contexts more dynamic both in terms of labor and financing than their counterparts. Therefore, we hypothesize that:

Hypothesis 2a. During a crisis, the differential effect of economic liberalization on entrepreneurial growth aspirations is *weaker* (with respect to good economic times) for individuals with more *general* (education-based) human capital.

Hypothesis 2b. During a crisis, the differential effect of economic liberalization on entrepreneurial growth aspirations is *stronger* (with respect to good economic times) for individuals with *specific* (market-based) human capital.

3. METHODS

3.1 Data and sample description

We employ a multilevel dataset in which individuals are nested within countries. Data come from several independent and publicly available sources for the period 2005–2020, thus including the GFC (2008–2010) and the Covid-19 pandemic (2020). Individual-level data are obtained from the

Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS), which contains a representative sample of the population in each participant country (see descriptions in Bosma (2013) and Reynolds et al. (2005), and relevant examples of validation and generalizability in Autio et al. (2013) and Estrin et al. (2013; 2016; 2022), among other). Individuals are randomly selected and surveyed through phone calls or face-to-face interviews, and the data collected are standardized such that comparisons across countries allow generalizability[1].

Therefore, GEM data hold a series of advantages for estimating our hypotheses on comparative entrepreneurial dynamics. Specifically, a key advantage of the survey is its representativeness of entrepreneurial activity in a large international sample, which allows to combine granular individual (e.g. human capital) and institutional dimensions. Another advantage is that the survey spans a relatively long time period, allowing us to exploit variation over good and bad economic times, the latter including crises of different natures. Indeed, the literature called for longer time series and exogenous shocks to move beyond correlational analysis in entrepreneurs' growth ambitions (e.g. Eesley 2016; Wyrwich 2013). The disadvantages are that the survey provides repeated country-year cross-sections, and that it does not include firm financials. However, to the best of our knowledge there is no comparable international dataset containing the richness of individual characteristics in the GEM survey and required to answer our research questions.

We match the GEM data at country-year with economic liberalization (pro-market) indices from the Heritage Foundation and Fraser Institute, and with macroeconomic data from the World Bank. After removing all observations with missing values in the GEM survey for any of our measures of interest, control variables, and institutional data, the final sample comprises 141,003

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[1] We focus on entrepreneurs in the nascent (first three months of activity) and early stages (more than three months but less than three and a half years of activity).

observations from 93 countries during the 16-year period of analysis. See Table A1 for variable definitions and data sources, Table 1 for descriptive statistics, and Table A2 for correlations.

Insert Table 1 about here

3.1.1 Dependent variable

We rely on the current and expected levels of employment of newly established entrepreneurs to calculate growth aspirations over the next five years. Growth aspirations are a valid predictor of future performance (Covin and Wales 2011), and can explain subsequent actual firm growth (see Baum et al. 2001; Cassar 2006; Davidsson et al. 2006; Delmar and Wiklund 2008; Wiklund and Shepherd 2003). We calculate entrepreneurial growth aspirations as the difference between the natural logarithm of the entrepreneurs' expected number of employees in five years and of the current number of employees (Capelleras et al. 2019; Estrin et al. 2013; 2022); we include the owner-manager in both expected and current employees (Parker 2009). Accordingly, the measure reflects a multiplier of how the expected future size of the firm relates to the current one.

Figure A1 illustrates the distribution of the variable for the whole sample, and decomposed by nascent (first three months of activity) and early stage entrepreneurs (more than three months but less than three years and a half of activity). As it is normal for entrepreneurial growth expectations, several entrepreneurs expect no growth (about 30% of the total sample), driven mostly by the early stage (compared to nascent) entrepreneurs, who may have a clearer business model. However, most of the sample expects a well-distributed positive growth, while few entrepreneurs expect negative growth even at incipient stages.[2]

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[2] To reduce concerns on outliers, we winsorize the dependent variable at 1% and 99%.

3.1.2 Pro-market institutions

Similar to Dau and Cuervo-Cazurra (2014), we proxy pro-market institutional contexts through the level of economic liberalization captured by the Heritage Foundation Index of Economic Freedom (Miller et al. 2013). This index has become a viable alternative to the vastly criticized World Bank measures (see Arruñada 2007), and thus its popularity in the entrepreneurship literature has increased (see, e.g., Bennet et al. 2021; Dau and Cuervo-Cazurra 2014; Fuentelsaz et al. 2021; McMullen et al. 2008). Specifically, we use a composite measure of the following equally weighted quantitative and qualitative factors of economic freedom: property rights, government integrity, government spending, tax burden, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom.[3] The index can take values from zero to 100. Table A3 summarizes the economic liberalization index for each country in the full sample, together with within-country variation. The very low coefficients of variation exhibited by the data during our 16-year period confirm our theoretical assumptions on cross-sectional variation given the relatively stable institutional (pro-market) contexts. Note also that this is a benchmarked index; even when the index value changes within-country, such change is benchmarked against other countries' changes in the same period to rank the pro-market orientation increasing its longer time-stability. However, in additional analyses, we explore the existing index changes (rather than levels).

For robustness, we further examine stable institutional contexts by comparing the more stringent differences between high (top quartile) vs. low (bottom two quartiles) pro-market environments. We also study the effects of individual index components more closely related to entrepreneurial activity, such as property rights, business freedom, investment freedom, and

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[3] These are all the available index components during our analysis period. For different time windows, the index may include fewer components or more, such as judicial effectiveness and fiscal health.

financial freedom. Last, we check whether our results hold when using the Fraser Institute Economic Freedom index which takes values from zero to one and accounts for: government size, legal system and security of property rights; sound money, freedom to trade internationally, and regulation.

3.1.3 Human capital variables

We operationalize general and specific human capital following Becker's (1975) seminal work, and recent studies (e.g. Cassar 2006; Colombo et al. 2004; Dencker et al. 2009a; Estrin et al. 2016; Gruber et al. 2023; Liang et al. 2018). For general human capital we create an indicator that takes the value of one if the entrepreneur has *higher education* (a post-secondary education degree), and zero otherwise. We then define two proxies for specific human capital. First, *entrepreneurial experience* is a dummy variable that takes the value of one if the entrepreneur has owned and managed a business that was then sold, shut down, discontinued, or quit in the past 12 months, and the business has continued its activity after the entrepreneur disengaged. Second, we account for *investment experience* through a dummy variable that takes the value of one if the entrepreneur has, in the past three years, personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds.

3.1.4 Control variables

We control for entrepreneur demographics that have been found to influence new venture growth prospects (Parker 2009). Existing results show that gender and age may relate to entrepreneurial aspirations, thus we include an indicator variable that takes the value of one for *male* and zero for female, and control for *age* (see, e.g., Amorós et al. 2019; Estrin et al. 2013). To tease out potential

confounding effects between market experience from process knowledge from social interactions, we create *knows other entrepreneurs* as a dummy variable that takes the value of one if the respondent indicates personally knowing someone who started a business in the past two years. Given that aspirations may correlate with personal wealth, we control for the entrepreneur's *household income* using a three-level income scale (Autio et al. 2013). This variable also helps to mitigate concerns of certain types of individuals (e.g. those with higher education) having a higher opportunity cost of undertaking ambitious or risky entrepreneurship endeavors.

Next, we include three perceptual measures or socio-cognitive traits (see, e.g., Boudreaux et al. 2019). *Fear of failure* that takes the value of one if the respondent reports that fear of failure could prevent starting-up a business (but did not necessarily do so); *start-up skill* takes the value of one if individuals perceive to have the knowledge, skill and experience required to start a new business; and *business opportunity* takes the value of one if individuals perceive that in the next six months there be good business opportunities for starting a business.

For firm-related variables we first account for the *current employment level* (including the owners), similar to Autio and Acs (2010), Autio et al. (2013); Capelleras et al. (2019), Estrin et al. (2013; 2016; 2022), among others. The economic logic of this control variable is that growth aspirations can differ when starting from a lower compared to a higher level. This is because marginal costs and benefits may asymmetrically increase and decrease, respectively (or even the opposite depending on the returns to scale in the industry).[4] Second, we use an indicator of *early stage vs. nascent* which takes the value of one if the individual is the owner-manager of a business of more than three months but less than three years and a half of activity (early stage), and zero if the individual is the owner-manager of a business in the first three months of activity (nascent).

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[4] In robustness checks, we confirm that our results do not change if we remove this control variable.

Finally, we also control for time-varying country macroeconomic characteristics known to affect entrepreneurial activity. We include measures of national wealth (the logarithm of *GDP per capita*), the growth cycle (*GDP growth*), the labor market (*unemployment rate*), and an indicator that takes the value of one for developed countries and zero otherwise.

3.2 Empirical strategy

Since in the GEM dataset individuals are nested within countries, for the baseline specifications we employ a multilevel hierarchical linear model which allows intercepts to vary across countries (see, e.g., Aguinis et al. 2013; Autio et al. 2013; Amorós et al. 2019; Estrin et al. 2013; 2022). Multilevel analysis is suitable for such datasets with potentially unobserved heterogeneity in cross-country, -time, and -individual dimensions. It also allows us to assume independence of observations, which would not be possible in standard multivariate methods (Hofmann et al. 2000). The latter would be assuming that individuals act homogenously but do not consider how the environment influences their decisions.[5]

We estimate our hypotheses using the following general specification:

$$EGA_{ijt} = \alpha + \beta_1 EconLib_{jt} + \beta_2 HumanCap_{ijt} \times EconLib_{jt} + \beta_3 HumanCap_{ijt} + \mathbf{X}_{ijt}\eta + \mathbf{Z}_{jt}\gamma + v_{it} + \psi_t +$$
$$\mu_{ijt} + \varepsilon_{jt} \tag{1}$$

where EGA_{ijt} is our measure of entrepreneurial growth aspirations of individual i within country j at year t, and $EconLib_{jt}$ is the index of economic liberalization. Our term of interest is β_2, which interacts the market index with $HumanCap_{ijt}$ (which includes the variables corresponding to higher education, entrepreneurial experience, and investment experience). While we observe all variables at time t, due to the nature of human capital formation, both transmitted and acquired human capital

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[5] We check whether using a multilevel model is suitable from an empirical standpoint. To this aim, we run a null model that indicates if random intercepts are statistically significant for our dependent variable.

represent the outcome of past (lagged) decisions, while entrepreneurial growth aspirations represent current projections about the future.

To estimate hypothesis 1, equation (1) exploits the cross-sectional variation captured by the interaction between the institutional context ($EconLib_{jt}$) and the human capital type ($HumanCap_{ijt}$). For hypothesis 2, we exploit exogenous variation from two crisis periods by defining a GFC indicator that takes the value of one for years 2008 to 2010, and zero otherwise, and an indicator for the Covid-19 pandemic that takes the value of one for 2020, and zero otherwise. We then estimate equation (1) for good (non-crisis) and crisis times, and compare the results.

For all cases, $\mathbf{X}_{ijt}$ includes individual level controls (male, age, knows other entrepreneurs, household income, fear of failure, start-up skill, business opportunity, current employment, early stage vs. nascent) and $\mathbf{Z}_{jt}$ are the country-level controls (GDP per capita (log), GDP growth, the unemployment rate, and an indicator of developed country).[6] In the random part of the equation, μ_{ijt} are the individual-level residuals and ε_{jt} are the country-level ones. We add industry effects (1-digit SIC) to control for potential time-constant endogeneity related to omitted industry characteristics (ν_{it}) and year effects to account for systematic shocks that lead to variations in all entrepreneurs' growth ambitions during a certain period (ψ_t).

We run a battery of robustness checks, on which we provide details after discussing our results. In some of the most relevant alternative specifications, we use country fixed effects and country-year intercepts in the multilevel model. In probably one of most stringent robustness checks possible on GEM survey data, we estimate OLS regressions with industry, year and country fixed effects, and cluster standard errors at country-industry-year or country-year levels.

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[6] The correlations between all variables presented in Table A2 do not indicate potential multicollinearity problems.

4. RESULTS

4.1 Economic liberalization and human capital

Table 2 reports the results on how the interaction between economic liberalization and different human capital types is related to entrepreneurial growth aspirations. Column 1 presents the baseline model including individual and country-level controls. In line with previous literature, economic liberalization and all types of human capital are positively associated to entrepreneurial growth aspirations. However, as shown in Column 2 of Table 2, the positive relationship between economic liberalization and entrepreneurial growth aspirations is lower for individuals with general, education-based human capital. This result supports hypothesis 1a. Next, Columns 3 and 4 reveal that the positive association of economic liberalization and entrepreneurial growth aspirations is larger for individuals with specific, market-based human capital (through entrepreneurial and investment experience, respectively). These results support hypothesis 1b. Column 5 confirms the results estimating the full set of interactions in a single specification. All findings hold controlling for the full set of individual and country controls, as well as for industry and year effects.

The effects are also economically meaningful. Using the full model in Column 5 of Table 2, a one standard deviation increase in economic liberalization (9.17) is related to higher entrepreneurial growth aspirations by 16.7% with respect to the sample average. This baseline also represents the effect for individuals without any type of human capital. For entrepreneurs with higher education, this effect is lower by 4.5 percentage points. In contrast, for entrepreneurs with start-up and investment experience the effect is between 2.4 and 2.6 percentage points higher, reaching close to 20% with respect to the average.

To provide more practical examples over our sample period, moving from close to the 25th percentile of economic liberalization (e.g. a score of about 57, countries like Brazil or Greece) to close to the 75th percentile (e.g. a score of about 69, Belgium or Spain) is related to increased growth aspirations by 21.8%, which is lower by 5.8 percentage points for individuals with higher education, but higher by up to 3.4 percentage points for start-up and investment experienced entrepreneurs. Moving from the same 25th percentile to approximately the 90th percentile (e.g. a score of about 77 for the US and UK), is associated with increased growth aspirations by 36.4%, an effect lower by 9.8 percentage points for entrepreneurs with education-based human capital, but higher by up to 5.6 percentage points for those with market-based human capital.

Insert Table 2 about here

4.2 Differential effects during good and crisis times

Table 3 replicates our full model in Column 5 of Table 2 by splitting the sample between good (non-crisis) and crisis times. Column 1 shows that in non-crisis times, the average estimates are similar to those over the full sample period, albeit statistically weaker for entrepreneurship experience. The results of interest for estimating hypothesis 2 on crisis effects are presented in Column 2. We start by supporting hypothesis 2a: in times of economic distress, economic liberalization does not differentially alter the growth aspirations of entrepreneurs with general, education-based human capital. As we hypothesized and shall discuss below, this may be due to higher education shifting opportunity costs during a crisis, or providing a temporary advantage in understanding temporary regulation changes to overcome the negative shock.

Next, we corroborate the predictions in hypothesis 2b, by showing that the joint effects of economic liberalization and specific, market-based human capital are stronger and have greater

economic effects in a crisis. Specifically, a one standard deviation increase in economic liberalization leads to higher entrepreneurial growth aspirations by 23% (about 8 percentage points more with respect to non-crisis times). This effect becomes as large as 30.7% for entrepreneurs with start-up experience, and 27.5% for those with investment experience (an effect larger than in non-crisis times by about 10 percentage points).

Overall, these statistical and economic interpretations suggest that the alignment of economic liberalization and specific, market-based human capital is most relevant during times of economic distress. For instance, when the financing market is under shock, such as during the GFC, start-up and investment experience serve as viable signals as business viability to a constrained market (see Column 3 in Table 3). During the Covid-19 crisis, when governments reacted with economic aid to small firms, investment experience becomes less important (as resources were available to firms), but knowledge of the start-up process in a liberalized market remained a key driver of growth aspirations (see Column 4 of Table 3).

Insert Table 3 about here

4.3 The roles of venture stage and complementarities of general and specific human capital

We have shown that the joint effects of economic liberalization and human capital during a crisis are lower for general, education-based human capital, and larger for specific, market-based human capital. To further explore the heterogenous effects behind these results, in additional analyses, we explore the roles of the venture stage, and the complementarities or substitutions between general and specific human capital.

Table 4 decomposes the full sample effects by nascent (first three months of business activity) and early stage (more than three months but less than three years and a half of activity).

The results confirm for the full sample (Columns 1-2), non-crisis (Columns 3-4) and crisis (Columns 5-6) periods that the findings are mostly driven by early stage entrepreneurs. This may be because these entrepreneurs have a clearer business model and their prior and current experience effects become more relevant for using human capital in liberalized markets, aspects of increasing importance during a crisis. In robustness checks we further validate these results using a selection model of passing from the nascent to the early stage phase of the business venture.

Finally, in Table A4 we examine complementarities and substitutions between higher education and market experience. Interestingly, for the full sample and non-crisis times, we find a potential substitution between higher education and entrepreneurship experience in more liberalized markets. The corresponding interaction estimates are significant only for lower education experienced entrepreneurs (Columns 2 and 4 compared to 1 and 3). However, we find a potential complementarity in more economically liberalized markets between higher education and investment (business angel) experience over the full period, driven by non-crisis times (Columns 1 and 3, similar or qualitatively larger than 2 and 4). However, in times of distress, the substitution effects dominate, as significant interaction effects appear only for individuals with high market-based human capital but lower education-based human capital (Columns 5 and 6). These additional findings support our framework's focus on separate mechanisms by human capital type.

Insert Table 4 about here

4.4 Robustness checks

We start by checking the robustness of our pro-market measure. First, while our main analysis considers a continuum of more vs. less economically liberalized markets, we check if our results hold adopting a more drastic definition of pro-market contexts. In column 1 of Table A5, we

confirm our results comparing high (top quartile of economic liberalization) vs. low (bottom two quartiles and excluding the third quartile from the estimation) pro-market contexts. Second, we explore the impact of the few significant changes in the economic liberalization index during our sample period. Column 2 of Table A5 defines the pro-market measures as year-on-year changes in the economic liberalization index and supports results especially for higher education and investment experience. However, we take this result with a pinch of salt as we have documented that the pro-market measure exhibits little change during our sample period (see Table A3 and the related discussion in Section 3.1.2) and thus we rely on the index's mostly stable cross-sectional variation. Third, we replace the Heritage index of economic liberalization, with the Fraser Institute index of economic freedom and find very similar results (Column 3 of Table A5). Fourth, we address potential criticism related to the opaqueness of overall market indices (Arruñada 2007; Voigt 2013), which may hide relevant elements of institutional arrangements. Delving deeper into the index components that may more directly relate to entrepreneurial growth aspirations, we replace the overall economic liberalization index with its individual pillars for property rights, and business, investment or financial freedom. In Table A6 we report very similar results as for the composite measure for each of these entrepreneurship-related index pillars. In fact, this is not surprising given that in the raw data the overall index correlations with each of these individual measures range between 0.6 and 0.72.

We then move to address sample concerns. In most datasets, countries like the US or UK are the most represented, while in the GEM dataset the most represented countries tend to be Spain and Chile. Even if by design, the random samples in the GEM survey are arguably representative at the country-level, we rerun our main specification by dropping countries that may seem under- or over-represented. In Table A5, we show that our results do not change when we drop the ten

lowest (<300, Column 4) and ten largest (>3000, Column 5) countries in terms of observations. Also, as illustrated in Table A3 which provides the observations by country, survey coverage is not necessarily a function of economic liberalization or development.

Next, we tackle concerns related to econometric specifications. For the main multilevel specifications, we ensure that further accounting for country specific factors by using country fixed effects (Column 6 of Table A5) or country-year intercepts (untabulated) does not alter our results. While the multilevel model is most suited to our data structure, in one of most stringent specifications checks possible on GEM survey data, in Table A7 we estimate OLS regressions with country, industry, and year fixed effects, and cluster standard errors at the country-industry-year level.[7] Columns 1-4 show the findings for the full sample period, while Columns 5-6 decompose results by non-crisis and crisis periods, respectively. For all cases, the results are similar to the main findings from multilevel models.

Our findings are stronger for early stage entrepreneurs (those with more than three months but less than three years and a half of activity), compared to the nascent ones (in the first three months of activity). One may argue that there is a different likelihood of "entry" into the early stage sample depending largely on growth aspirations. To account for this potential selection, we estimate a two-step Heckman model. Specifically, we first estimate a model that predicts "entry" into early stage (selection equation) and then our main model of entrepreneurial growth aspirations (outcome equation). To fulfill the exclusion restriction, we include in the selection equation a variable that is expected to correlate with the probability of entry into entrepreneurship, yet it is largely uncorrelated with the outcome level of entrepreneurial growth aspirations. GEM data include a variable that captures entrepreneurs' social environment, operationalized as an indicator

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[7] This check also helps to mitigate concerns that our results may be driven by the fact that certain countries are present in the GEM data in different years. Results are similar if we cluster errors at the country-year level.

of whether people in the country consider starting a new business a desirable career choice. Results in Column 1 of Table A8 confirm our choice for the exclusion restriction. Next, we estimate the effects on growth aspirations (outcome equation) in Column 2 of Table A8, supporting that our baseline finding can be unrelated to (self) selection from nascent to early stage entrepreneurship.

5. DISCUSSION AND CONTRIBUTIONS

5.1 Contributions to institutional analysis and human capital

Pro-market institutions are thought to facilitate business activity (Dau and Cuervo-Cazurra 2014; McMullen et al. 2008). In line with Coase (1960), we analyze a continuum of real institutional arrangements, in which completely free or completely regulated markets do not exist. This allows us to evaluate how the joint effects of possible institutional contexts with idiosyncratic uncertainty interact with different types of entrepreneurs to shape their growth expectations. We contribute to the literature in several ways. Foremost, we hypothesize and empirically demonstrate that the alignment between the institutional context and the human capital type matters in understanding entrepreneurial growth prospects. Going back to Becker (1964; 1975), scholars have studied the implications of human capital in terms of practical knowledge and skills targeted at specific occupations and industries (e.g. Autio and Acs 2010; Estrin et al. 2013; 2016), and how founders' abilities to impact new firm outcomes (e.g. Cassar 2006; Dencker and Gruber 2014; Shane and Stuart 2002; Unger et al. 2011). We contribute to this ongoing debate by extending analyses of institutional alignment (Bylund and McCaffrey 2017) to integrate how market- and actor-level (mis)alignments affect growth aspirations.

We depart from the assumption that entrepreneurs envision growth aspirations initially shaped by an observed institutional (market) context (Klein 2008; Knight 1985), and further

altered by the alignment with individual human capital. Such capital can serve to better adapt to the institutional context (Lazear 2005), or it can be at odds with a pro-market context requiring to bear opportunity costs and navigate uncertainty (Foss and Klein 2012). Our baseline results show that general, education-based human capital can collide with attributes of liberalized markets, thus weakening their positive effect on entrepreneurial growth aspirations. Two mechanisms can be at play. First, higher education based on general knowledge (not specific to time and place) can confer an advantage to understand opportunities in more predictable, regulated markets. Second, in more dynamic (liberalized) labor markets, general human capital may increase labor (Lucas 1978; Parker 2018) compared to entrepreneurial ambitions. In contrast, the joint effect of economic liberalization and specific, market-based human capital (having created a venture or invested in one) acts as a catalyst of growth aspirations. We posit that the lower transaction costs and impersonal exchange increase the importance of specific knowledge in time and place, and lower the relevance of who you know (a personal market exchange characteristic). Therefore, liberalized markets favor experience in incurring opportunity costs to manage uncertainty (Foss and Klein 2012).

In an important contribution we exploit a relatively long times series containing two exogenous crises, features often lacking in entrepreneurship research (see, e.g., Eesley 2016), and confirm our predictions on asymmetric changes of the baseline effects. First, the (mis)alignment between pro-market institutions and specific, market-based human capital increase in importance during crisis times. Our results connect entrepreneurial finance contributions (e.g. Epure and Guasch 2020) and institutional analyses (e.g. Dau and Cuervo-Cazurra 2014; Klapper et al. 2020). During the GFC, when financial resources were scarce, the joint effects of economic liberalization and start-up or investment experience led to more substantial positive associations with

entrepreneurial aspirations than in non-crisis times. Interestingly, in the Covid-19 crisis, when most governments provided liquidity to SMEs, the positive interaction effect was present only for start-up experience, highlighting the importance of knowing what to do (in absence of funding experience, much more needed during the GFC). Second, we reveal that during a crisis pro-market institutions do not alter growth aspirations for individuals with general, education based human capital. This is because the misalignment between liberalized markets and higher education diminishes during a crisis. It is plausible that higher education confers a competitive advantage in understanding temporary crisis-related regulatory changes (e.g. Covid-19 economic aid to SMEs); or more stable labor than entrepreneurial outcomes in times of crisis (which in a crisis like the GFC can also facilitate access to credit in more functional pro-market settings).

Last, joining debates on ventures' life cycle (Parker 2009; Parker and Belghitar 2006), we show that both average effects over the full business cycle, as well as during a crisis are stronger for entrepreneurs at the early but past the nascent stage of the venture. This highlights another channel of the relevance of entrepreneurial experience in pro-market contexts.

5.2 Implications for policymaking

Our study generates important policy implications. In recent decades, exacerbated by the effects of the GFC and the Covid-19 pandemic, vast funding projects have targeted business and education policies, spanning regulatory initiatives and formal education as well as professional training by employment agencies of individuals seeking support to create and develop new ventures. Various policy initiatives include generous monetary support for lowering barriers to entrepreneurship, hoping this will promote more and better entrepreneurs. However, such policies may not reach the desired effectiveness if individuals lack the appropriate, business context-adapted, human capital.

Consistent with our overall results and the specific findings on the potential complementarities between education and experience, recent proposals argue for a scientific approach to entrepreneurship (Camuffo et al. 2020). The promise of such approaches is that they may find synergies for educated entrepreneurs pitching business ideas to the capital market as well as executing them. A practical example could be to integrate formal learning and connections with debt providers and private equity investors, who are known to rely on signals based on early stage founder and firm characteristics (Epure and Guasch 2020).

The returns from such policies seeking complementarities general and specific human capital can be high in pro-market institutional contexts, known to enhance economic growth and welfare (Dau and Cuervo-Cazurra 2014; Frye and Shleifer 1997; IMF 2004). Indeed, the returns from innovation stemming from higher education can spur growth in regions (Aghion et al. 2021; Gennaioli et al. 2013). On the longer term, and considering that education-based human capital can be a precursor of economic growth (e.g. Eesley 2016; Glaeser et al. 2004), our findings reinforce the need to connect theoretical to real world training of prospective entrepreneurs, enabling them to scale-up ventures in growth-fostering institutional contexts. Overall, our work highlights challenges in institutional policy making (see Bradley et al. 2021), and speaks to national and regional policymaking aimed at fostering business and employment growth.

5.3 Limitations and further research

Our study relies on a large international dataset over a 16-year period. However, its cross-sectional nature impedes within-individual identification strategies. We have eased such concerns by exploiting exogenous variation from two crises and cross-sectional variation from relatively stable institutional contexts, and by running a battery of variable-, sample- and econometrics-related

robustness checks. Our efforts can serve as a stepping-stone for studies that may benefit from within-individual variation, which for now remain limited to certain regional contexts and time periods.

Linked to our policymaking implications, data gathering agencies could also focus on obtaining more detailed human capital variables. Here we rely on the advantages of coding and comparability of the GEM dataset, which is a necessary condition for cross-country research in which, for instance, binary scales minimize biases due to cultural interpretations of questions (Autio et al. 2013). However, when narrowing down to regional policymaking, additional research can aim at decomposing human capital types into more fine-grained components such as the sources of capital for previous investments in entrepreneurship or the types of education. Studies on entrepreneurial networks can also attempt to tease out potential status effects stemming from experience from social interactions in the market, or from political-type connections via education. In a similar vein, country-level analyses can disentangle how our generally accepted but broad definition of crisis periods can be adapted to local pre-existing conditions potentially leading to milder economic shocks or long(er) lasting distress effects.

Finally, future research could exploit not only the process of creating human capital but also the process of how pro-market institutions tend to emerge. This is beyond our scope here, as drawing on Williamson (2000) and showcased in the data, we consider institutions to be relatively stable in their orientation for the analyzed period. Future work could focus on how persistent pro-market institutions come into place (e.g. Bylund and McCaffrey 2017) to affect occupational choices and training (e.g. Acemoglu and Pischke 1998), and subsequent growth aspirations of entrepreneurs in markets with dissimilar economic development.

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TABLE 1. Descriptive statistics

No.	Variable	Obs.	Mean	Std. dev.	Median
1	EGA	141,003	0.976	1.064	0.693
2	Higher education	141,003	0.408	0.491	0.000
3	Entrep. experience	141,003	0.042	0.201	0.000
4	Invest. experience	141,003	0.127	0.333	0.000
5	Economic liberalization	141,003	65.424	9.172	66.400
6	Male	141,003	0.586	0.493	1.000
7	Age	141,003	37.169	11.387	36.000
8	Knows other entrepreneurs	141,003	0.667	0.471	1.000
9	Household income	141,003	2.174	0.808	2.000
10	Fear of failure	141,003	0.287	0.452	0.000
11	Start-up skill	141,003	0.850	0.358	1.000
12	Business opportunity	141,003	0.630	0.483	1.000
13	Current employment	141,003	1.927	5.528	0.000
14	Early stage vs. Nascent	141,003	0.523	0.499	1.000
15	GDP per capita (log)	141,003	9.295	1.078	9.414
16	GDP growth	141,003	2.697	3.831	2.891
17	Unemployment rate	141,003	7.888	5.247	6.950
18	Developed country	141,003	0.438	0.496	0.000

Notes: Complete variable definitions are provided in Table A1, and variable correlations in Table A2.

TABLE 2. Human capital and entrepreneurial growth aspirations in liberalized markets

Dep. var.: EGA	(1)	(2)	(3)	(4)	(5)
Economic liberalization	0.0169***	0.0186***	0.0167***	0.0165***	0.0182***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Higher education × Econ. liberalization		-0.0048***			-0.0049***
		(0.001)			(0.001)
Entrep. experience × Econ. liberalization			0.0031***		0.0026**
			(0.001)		(0.001)
Invest. experience × Econ. liberalization				0.0027***	0.0028***
				(0.001)	(0.001)
Higher education	0.1206***	0.4399***	0.1206***	0.1206***	0.4473***
	(0.005)	(0.037)	(0.005)	(0.005)	(0.037)
Entrep. experience	0.0727***	0.0729***	-0.1256	0.0739***	-0.0965
	(0.012)	(0.012)	(0.078)	(0.012)	(0.078)
Invest. experience	0.1547***	0.1547***	0.1549***	-0.0216	-0.0324
	(0.007)	(0.007)	(0.007)	(0.050)	(0.050)
Male	0.1468***	0.1470***	0.1467***	0.1466***	0.1468***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Age	-0.0043***	-0.0043***	-0.0043***	-0.0043***	-0.0043***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Knows other entrepreneurs	0.0498***	0.0499***	0.0497***	0.0496***	0.0497***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Household income	0.0766***	0.0766***	0.0766***	0.0766***	0.0766***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Fear of failure	-0.0539***	-0.0534***	-0.0538***	-0.0539***	-0.0533***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Start-up skill	0.0800***	0.0795***	0.0799***	0.0800***	0.0795***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Business opportunity	0.0967***	0.0968***	0.0968***	0.0969***	0.0970***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Current employment	-0.0212***	-0.0213***	-0.0212***	-0.0212***	-0.0213***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Early stage vs. Nascent	-0.8567***	-0.8559***	-0.8567***	-0.8567***	-0.8560***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
GDP per capita (log)	-0.0847***	-0.0866***	-0.0842***	-0.0832***	-0.0845***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
GDP growth	-0.0021*	-0.0023**	-0.0020*	-0.0020*	-0.0022**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate	-0.0003	-0.0005	-0.0002	-0.0002	-0.0004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Developed country	-0.0220	-0.0141	-0.0227	-0.0253	-0.0180
	(0.066)	(0.066)	(0.066)	(0.066)	(0.066)
Constant	0.6013***	0.5001***	0.6082***	0.6106***	0.5137***
	(0.160)	(0.160)	(0.160)	(0.160)	(0.160)
Observations	141,003	141,003	141,003	141,003	141,003
Industry fixed effects	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE 3. Differential effects in good and crisis times

Dep. var.: EGA	(1)	(2)	(3)	(4)
Sample:	No crisis	Crisis	GFC	C19
Economic liberalization	0.0160***	0.0251***	0.0049	-0.0035
	(0.002)	(0.004)	(0.003)	(0.014)
Higher education × Econ. liberalization	-0.0049***	-0.0024	-0.0026	0.0004
	(0.001)	(0.002)	(0.002)	(0.003)
Entrep. experience × Econ. liberalization	0.0015	0.0084***	0.0064*	0.0194***
	(0.001)	(0.003)	(0.004)	(0.006)
Invest. experience × Econ. liberalization	0.0028***	0.0049**	0.0047**	0.0055
	(0.001)	(0.002)	(0.002)	(0.004)
Higher education	0.4488***	0.2435**	0.2408**	0.0248
	(0.039)	(0.111)	(0.113)	(0.235)
Entrep. experience	-0.0165	-0.4831**	-0.2985	-1.2786***
	(0.084)	(0.202)	(0.221)	(0.375)
Invest. experience	-0.0271	-0.2085	-0.2093	-0.2532
	(0.054)	(0.131)	(0.143)	(0.253)
Male	0.1488***	0.1265***	0.0785***	0.1772***
	(0.005)	(0.012)	(0.014)	(0.021)
Age	-0.0040***	-0.0054***	-0.0042***	-0.0047***
	(0.000)	(0.001)	(0.001)	(0.001)
Knows other entrepreneurs	0.0464***	0.1088***	0.0724***	0.1097***
	(0.006)	(0.013)	(0.014)	(0.025)
Household income	0.0784***	0.0426***	0.0464***	0.0647***
	(0.003)	(0.008)	(0.009)	(0.013)
Fear of failure	-0.0557***	-0.0466***	-0.0416***	-0.0537**
	(0.006)	(0.013)	(0.015)	(0.021)
Start-up skill	0.0736***	0.1240***	0.1055***	0.1135***
	(0.007)	(0.018)	(0.019)	(0.033)
Business opportunity	0.0907***	0.1265***	0.1317***	0.0700***
	(0.005)	(0.013)	(0.014)	(0.022)
Current employment	-0.0214***	-0.0201***	-0.0085***	-0.0279***
	(0.000)	(0.001)	(0.001)	(0.002)
Early stage vs. Nascent	-0.8816***	-0.6341***	0.0263	-0.9550***
	(0.005)	(0.015)	(0.020)	(0.022)
GDP per capita (log)	-0.0654***	-0.0257	-0.0363	-0.0820
	(0.019)	(0.040)	(0.035)	(0.132)
GDP growth	0.0014	-0.0287***	-0.0034	-0.0062
	(0.001)	(0.002)	(0.003)	(0.019)
Unemployment rate	-0.0025*	-0.0160***	-0.0041	-0.0094
	(0.001)	(0.004)	(0.003)	(0.020)
Developed country	-0.0342	-0.3057**	0.0164	0.0033
	(0.068)	(0.123)	(0.084)	(0.236)
Constant	0.4982***	-0.2226	0.2636	2.3946**
	(0.177)	(0.402)	(0.296)	(0.941)
Observations	121,715	19,288	11,066	8,222
Industry fixed effects	yes	yes	yes	yes
Year fixed effects	yes			

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE 4. Nascent and early stage entrepreneurs

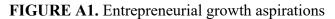| Dep. var.: EGA	(1)	(2)	(3)	(4)	(5)	(6)
Sample:	Nascent	Early stage	Nascent no crisis	Early stage no crisis	Nascent crisis	Early stage crisis
Economic liberalization	0.0267***	0.0074***	0.0222***	0.0069***	0.0061	0.0095***
	(0.002)	(0.001)	(0.003)	(0.001)	(0.008)	(0.003)
Higher education × Econ. liberalization	-0.0077***	-0.0023***	-0.0074***	-0.0021***	-0.0053	-0.0025
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.002)
Entrep. experience × Econ. liberalization	0.0021	0.0026**	0.0011	0.0012	0.0140**	0.0087***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.007)	(0.003)
Invest. experience × Econ. liberalization	0.0020	0.0025***	0.0023*	0.0023**	0.0048	0.0036*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.002)
Higher education	0.6557***	0.2314***	0.6347***	0.2183***	0.4515*	0.2225**
	(0.060)	(0.042)	(0.062)	(0.045)	(0.253)	(0.113)
Entrep. experience	0.0038	-0.1492*	0.0766	-0.0723	-0.8979**	-0.4821**
	(0.136)	(0.083)	(0.143)	(0.091)	(0.449)	(0.208)
Invest. experience	0.0810	-0.0721	0.0673	-0.0582	-0.1688	-0.1517
	(0.083)	(0.056)	(0.087)	(0.061)	(0.294)	(0.136)
Male	0.2159***	0.0798***	0.2191***	0.0756***	0.1784***	0.0944***
	(0.008)	(0.006)	(0.008)	(0.006)	(0.024)	(0.013)
Age	-0.0042***	-0.0037***	-0.0040***	-0.0037***	-0.0051***	-0.0039***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
Knows other entrepreneurs	0.0563***	0.0595***	0.0540***	0.0571***	0.1278***	0.0722***
	(0.008)	(0.006)	(0.009)	(0.006)	(0.027)	(0.014)
Household income	0.1070***	0.0435***	0.1101***	0.0424***	0.0683***	0.0406***
	(0.005)	(0.003)	(0.005)	(0.004)	(0.015)	(0.009)
Fear of failure	-0.0745***	-0.0469***	-0.0782***	-0.0484***	-0.0415*	-0.0528***
	(0.008)	(0.006)	(0.009)	(0.007)	(0.024)	(0.014)
Start-up skill	0.0853***	0.0776***	0.0819***	0.0731***	0.1286***	0.1032***
	(0.011)	(0.008)	(0.011)	(0.008)	(0.036)	(0.019)
Business opportunity	0.0939***	0.0930***	0.0913***	0.0848***	0.0766***	0.1252***
	(0.008)	(0.006)	(0.009)	(0.006)	(0.025)	(0.014)
Current employment	-0.0614***	-0.0075***	-0.0651***	-0.0073***	-0.0389***	-0.0097***
	(0.001)	(0.000)	(0.002)	(0.000)	(0.003)	(0.001)
GDP per capita (log)	-0.1069***	-0.0170	-0.0501	-0.0052	-0.0797	-0.0573*
	(0.029)	(0.014)	(0.033)	(0.015)	(0.076)	(0.032)
GDP growth	-0.0015	-0.0045***	0.0030	-0.0022	0.0181**	0.0004
	(0.002)	(0.001)	(0.002)	(0.001)	(0.009)	(0.004)
Unemployment rate	0.0066***	0.0007	0.0004	-0.0008	0.0201**	-0.0021
	(0.002)	(0.001)	(0.003)	(0.001)	(0.008)	(0.003)
Developed country	-0.0128	-0.0620	-0.0726	-0.0877*	0.1272	-0.0056
	(0.103)	(0.044)	(0.105)	(0.046)	(0.175)	(0.085)
Constant	-0.4797*	0.0395	-0.6891**	-0.0153	0.2386	0.1972
	(0.281)	(0.134)	(0.301)	(0.144)	(0.643)	(0.304)
Observations	67,193	73,810	60,962	60,753	6,231	13,057
Industry fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	yes

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.
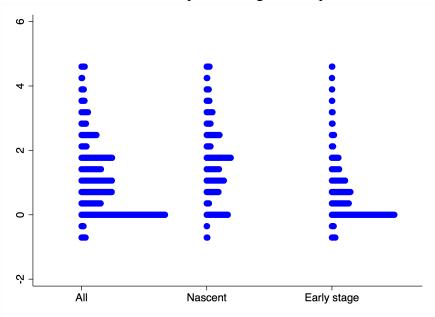
FIGURE A1. Entrepreneurial growth aspirations

Notes: This figure illustrates the distribution of entrepreneurial growth aspirations (EGA) computed as the difference between the natural logarithm of the entrepreneurs' expected number of employees in five years and the current number of employees (including the owner-manager in both expected and current employees).

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TABLE A1. Variable definitions

</div>

Variable	Definition	Source
Individual variables		
Entrepreneurial growth aspirations (EGA)	The difference between the natural logarithm of the entrepreneurs' expected number of employees in five years and the current number of employees (including the owner-manager in both expected and current employees).	GEM
Higher education	Indicator variable: 1 = participants holding a post-secondary education degree, 0 = otherwise.	GEM
Entrepreneurial experience	Indicator variable: 1 = participant owned or managed a business that was then sold, shut down, discontinued or quit in the past 12 months, and then this business continued its activity after the entrepreneur disengaged., 0 = otherwise.	GEM
Investment experience	Indicator variable: 1 = participant personally provided funds for a new business started by someone else, excluding any purchases of stocks or mutual funds, in the last three years, 0 = otherwise.	GEM
Male	Indicator variable: 1= male, 0 = female.	GEM
Age	Current age of survey participant in years.	GEM
Knows other entrepreneurs	Proportion of individuals in the country who personally know someone who started a business in the past two years.	GEM
Household income	Categorical variable that categorizes the position in the national income distribution: 1= highest third, 2 = middle third, and 3 = lowest third.	GEM
Fear of failure	Indicator variable: 1= individuals in the country for whom fear of failure could prevent them from starting a business (but did not necessarily do so), 0 = otherwise.	GEM
Start-up skill	Indicator variable: 1 = individuals in the country who answer "yes" to "Do you have the knowledge, skill and experience required to start a new business?", 0 = for individuals who answer "no" to the same questions	GEM
Business opportunity	Indicator variable: 1 = individuals in the country who answer "yes" to "In the next six months, will there be good business opportunities for starting a business in the area where you live?", 0 = for individuals who answer "no" to the same questions	GEM
Current employment level	Current number of employees (not counting the owners).	GEM
Early stage vs. Nascent	Indicator variable: 1 (early stage) = if the individual is the owner-manager of a business of more than three months but less than three years and a half of activity, 0 (nascent) = if the individual is the owner-manager of a business in the first three months of activity	GEM
Country variables		
Economic liberalization index (Heritage)	Index of economic freedom from the Heritage Foundation operationalized as a composite measure of the following equally weighted quantitative and qualitative factors: property rights, government integrity, government spending, tax burden, business freedom, labor freedom, monetary freedom, trade freedom, investment freedom, and financial freedom. The index can take values from 0 to 100.	HF
Economic freedom index (Fraser)	Index from the Fraser Institute measuring degree of economic freedom present in five major areas: government size, legal system and security of property rights; sound money, freedom to trade internationally, and regulation. The index can take values from 0 to 1.	FI
GDP per capita (log)	The natural logarithm of the GDP divided by population.	WDI
GDP growth	Annual growth rate of GDP at market prices based on constant local currency.	WDI
Unemployment rate	The proportion of a country's unemployed population. The working-age population is generally considered to be ages 15 and older.	WDI
Developed country	Indicator variable: 1 = if the country is classified as a high-income country, 0 = otherwise.	WDI

Notes: GEM APS – Global Entrepreneurship Monitor Adult Population Survey (https://www.gemconsortium.org) for the individual-level variables. HF – Heritage Foundation (https://www.heritage.org/index/) and FI – Fraser Institute (https://www.fraserinstitute.org) for market indices, and WDI – World Bank's World Development Indicators (https://data.worldbank.org/products/wdi) for macroeconomic data.

No.	Variable	1	2	3	4	5	6	7	8	9
1	EGA	1.00								
2	Higher education	0.13	1.00							
3	Entrep. experience	0.01	0.00	1.00						
4	Invest. experience	0.08	0.05	0.10	1.00					
5	Economic liberalization	0.13	0.21	-0.03	0.03	1.00				
6	Male	0.11	0.04	0.02	0.07	0.03	1.00			
7	Age	-0.05	0.03	-0.01	-0.02	0.13	0.00	1.00		
8	Knows other entrepreneurs	0.04	0.09	0.04	0.10	0.02	0.05	-0.06	1.00	
9	Household income	0.09	0.23	0.01	0.08	0.05	0.11	0.01	0.11	1.00
10	Fear of failure	-0.04	-0.01	0.02	-0.02	-0.03	-0.05	0.02	-0.04	-0.06
11	Start-up skill	0.06	0.06	0.02	0.04	0.04	0.06	0.03	0.14	0.07
12	Business opportunity	0.08	0.00	0.02	0.05	0.00	0.01	-0.07	0.14	0.05
13	Current employment	-0.17	0.08	0.05	0.08	0.02	0.08	0.02	0.05	0.09
14	Early stage vs. Nascent	-0.47	-0.06	0.02	0.00	-0.10	-0.02	-0.01	0.03	0.02
15	GDP per capita (log)	0.06	0.26	-0.04	-0.04	0.61	0.07	0.16	-0.01	0.06
16	GDP growth	-0.03	-0.08	0.03	0.02	-0.16	-0.01	-0.04	-0.01	0.02
17	Unemployment rate	0.02	0.05	-0.02	-0.03	0.02	0.04	0.03	-0.03	-0.01
18	Developed country	0.04	0.27	-0.02	0.01	0.66	0.06	0.15	0.04	0.06

No.	Variable	10	11	12	13	14	15	16	17	18
10	Fear of failure	1.00								
11	Start-up skill	-0.16	1.00							
12	Business opportunity	-0.11	0.13	1.00						
13	Current employment	-0.02	0.01	0.01	1.00					
14	Early stage vs. Nascent	0.00	-0.01	-0.03	0.25	1.00				
15	GDP per capita (log)	-0.01	0.01	-0.08	0.08	-0.06	1.00			
16	GDP growth	-0.04	-0.04	0.09	0.04	0.06	-0.26	1.00		
17	Unemployment rate	0.00	0.03	-0.13	-0.01	-0.01	0.13	-0.30	1.00	
18	Developed country	-0.01	0.05	-0.08	0.07	-0.06	0.77	-0.26	0.14	1.00

Notes: Observations: 141,003. Complete variable definitions are provided in Table A1, and variable correlations in Table A2.

TABLE A3. Sample composition and economic liberalization

No.	Country	Obs.	Mean	Std. dev.	Coef. of variation	No.	Country	Obs.	Mean	Std. dev.	Coef. of variation
1	Algeria	360	51.67	1.67	0.03	48	Lebanon	1474	60.03	0.82	0.01
2	Angola	1753	49.95	2.84	0.06	49	Libya	156	34.97	0.00	0.00
3	Argentina	1547	48.37	3.55	0.07	50	Lithuania	479	72.04	0.68	0.01
4	Australia	1027	80.90	1.19	0.01	51	Luxembourg	336	73.76	0.42	0.01
5	Austria	802	71.01	1.10	0.02	52	Macedonia	457	67.01	2.77	0.04
6	Bangladesh	230	53.00	0.00	0.00	53	Malawi	1031	55.86	0.58	0.01
7	Barbados	477	68.41	0.58	0.01	54	Malaysia	1048	69.12	4.17	0.06
8	Belgium	421	69.89	1.20	0.02	55	Mexico	2424	66.09	0.70	0.01
9	Bolivia	1014	49.51	1.76	0.04	56	Montenegro	37	63.63	0.00	0.00
10	Bosnia and Herze	493	57.43	0.95	0.02	57	Morocco	887	63.33	1.63	0.03
11	Botswana	1614	70.58	0.97	0.01	58	Namibia	126	61.94	0.00	0.00
12	Brazil	7482	57.27	1.15	0.02	59	Netherlands	1642	74.73	1.07	0.01
13	Canada	1460	78.57	0.87	0.01	60	New Zealand	51	82.33	0.00	0.00
14	Chile	13731	77.05	1.30	0.02	61	Nigeria	1864	55.89	0.67	0.01
15	China	3678	52.45	0.94	0.02	62	Norway	808	69.71	1.63	0.02
16	Colombia	8244	68.71	2.58	0.04	63	Pakistan	346	55.15	0.79	0.01
17	Costa Rica	471	67.29	0.76	0.01	64	Panama	2795	66.25	2.47	0.04
18	Croatia	1062	60.06	2.48	0.04	65	Peru	2892	67.50	2.16	0.03
19	Czech Republic	395	70.41	1.25	0.02	66	Philippines	1396	59.11	2.18	0.04
20	Denmark	522	76.58	1.29	0.02	67	Poland	1314	67.44	1.89	0.03
21	Dominican Republ	128	56.78	0.00	0.00	68	Portugal	700	64.14	0.90	0.01
22	Ecuador	3721	49.04	1.54	0.03	69	Qatar	1368	71.39	0.27	0.00
23	Egypt	1133	57.61	1.37	0.02	70	Romania	654	65.22	1.14	0.02
24	El Salvador	505	66.73	1.47	0.02	71	Russia	607	53.42	3.37	0.06
25	Estonia	865	75.95	1.35	0.02	72	Saudi Arabia	1811	64.16	1.14	0.02
26	Ethiopia	352	52.05	0.00	0.00	73	Singapore	539	88.25	0.75	0.01
27	Finland	715	73.39	0.81	0.01	74	Slovakia	1226	67.22	1.27	0.02
28	France	527	63.20	1.02	0.02	75	Slovenia	776	62.99	2.42	0.04
29	Georgia	141	72.60	0.02	0.00	76	South Africa	1488	61.99	1.02	0.02
30	Germany	1907	71.87	1.54	0.02	77	Spain	9814	68.51	0.84	0.01
31	Ghana	963	60.95	0.32	0.01	78	Suriname	49	52.52	0.96	0.02
32	Greece	1149	57.10	2.75	0.05	79	Sweden	1068	72.13	0.93	0.01
33	Guatemala	3603	62.51	1.19	0.02	80	Switzerland	1019	80.54	0.89	0.01
34	Hong Kong	187	88.98	0.63	0.01	81	Thailand	3706	64.18	1.18	0.02
35	Hungary	929	66.66	0.74	0.01	82	Trinidad & Tobago	778	63.95	1.69	0.03
36	Iceland	441	75.68	0.94	0.01	83	Tunisia	173	57.87	0.35	0.01
37	India	1588	56.52	1.83	0.03	84	Turkey	3099	62.66	1.29	0.02
38	Indonesia	2522	58.83	2.90	0.05	85	Uganda	2466	61.37	0.84	0.01
39	Iran	2658	43.57	2.70	0.06	86	United Arab Emir	842	72.07	3.71	0.05
40	Ireland	1230	78.89	2.31	0.03	87	United Kingdom	3055	77.66	1.93	0.02
41	Israel	675	69.23	2.13	0.03	88	United States	2875	77.41	1.67	0.02
42	Italy	456	61.51	1.23	0.02	89	Uruguay	1647	69.30	0.66	0.01
43	Jamaica	1493	66.02	0.77	0.01	90	Vanuatu	270	56.38	0.00	0.00
44	Japan	425	72.91	1.53	0.02	91	Venezuela	174	39.58	3.30	0.08
45	Jordan	282	68.34	0.10	0.00	92	Vietnam	799	51.15	0.38	0.01
46	Kazakstan	423	63.69	2.36	0.04	93	Zambia	1426	58.42	0.31	0.01
47	Latvia	1210	68.79	2.84	0.04						

TABLE A4. Educated and experienced entrepreneurs

Dep. var.: EGA	(1)	(2)	(3)	(4)	(5)	(6)
	All higher	All lower	No crisis	No crisis	Crisis	Crisis
Sample:	educ.	educ.	higher educ.	lower educ	higher educ.	lower educ.
Economic liberalization	0.0099***	0.0057**	0.0074***	0.0038	-0.0017	0.0210***
	(0.003)	(0.002)	(0.003)	(0.003)	(0.007)	(0.006)
Entrep. experience × Econ. liberalization	0.0027	0.0080***	0.0016	0.0053**	0.0108	0.0227***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.008)	(0.005)
Invest. experience × Econ. liberalization	0.0077***	0.0076***	0.0088***	0.0069***	0.0010	0.0119***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.005)	(0.004)
Entrep. experience	-0.1159	-0.4275***	-0.0275	-0.2496*	-0.6978	-1.3654***
	(0.161)	(0.126)	(0.169)	(0.137)	(0.524)	(0.323)
Invest. experience	-0.3219***	-0.3405***	-0.3834***	-0.2933***	0.0731	-0.6680***
	(0.104)	(0.090)	(0.110)	(0.097)	(0.307)	(0.231)
Male	0.1759***	0.1253***	0.1822***	0.1280***	0.1483***	0.0960***
	(0.011)	(0.008)	(0.012)	(0.009)	(0.029)	(0.022)
Age	-0.0051***	-0.0046***	-0.0047***	-0.0043***	-0.0069***	-0.0062***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)
Knows other entrepreneurs	0.0712***	0.0482***	0.0669***	0.0445***	0.1461***	0.1203***
	(0.012)	(0.008)	(0.013)	(0.009)	(0.032)	(0.023)
Household income	0.0754***	0.0602***	0.0778***	0.0587***	0.0408**	0.0489***
	(0.007)	(0.005)	(0.008)	(0.005)	(0.018)	(0.014)
Fear of failure	-0.0705***	-0.0425***	-0.0741***	-0.0441***	-0.0504*	-0.0487**
	(0.012)	(0.009)	(0.013)	(0.009)	(0.031)	(0.023)
Start-up skill	0.0937***	0.0523***	0.0846***	0.0485***	0.1711***	0.0920***
	(0.017)	(0.011)	(0.018)	(0.012)	(0.046)	(0.031)
Business opportunity	0.1077***	0.0730***	0.1092***	0.0677***	0.0731**	0.1220***
	(0.012)	(0.009)	(0.013)	(0.009)	(0.029)	(0.023)
Current employment	-0.0194***	-0.0226***	-0.0192***	-0.0226***	-0.0201***	-0.0214***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Early stage vs. Nascent	-0.9772***	-0.7783***	-1.0007***	-0.8021***	-0.8117***	-0.5700***
	(0.012)	(0.008)	(0.012)	(0.009)	(0.031)	(0.025)
GDP per capita (log)	-0.1685***	-0.2015***	-0.1279***	-0.1734***	-0.0016	-0.2117***
	(0.030)	(0.024)	(0.032)	(0.029)	(0.064)	(0.052)
GDP growth	-0.0095***	-0.0034*	-0.0031	0.0016	-0.0313***	-0.0261***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.005)	(0.004)
Unemployment rate	0.0124***	0.0130***	0.0124***	0.0121***	-0.0099	-0.0088
	(0.003)	(0.002)	(0.003)	(0.003)	(0.007)	(0.007)
Developed country	0.2557***	0.4962***	0.1952**	0.4532***	-0.0342	0.2005
	(0.088)	(0.087)	(0.089)	(0.090)	(0.152)	(0.154)
Constant	1.7129***	1.9688***	1.5097***	1.8543***	1.2583**	1.5242***
	(0.272)	(0.230)	(0.282)	(0.249)	(0.550)	(0.543)
Observations	33,158	46,490	28,727	40,773	4,431	5,717
Industry fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes		

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE A5. Robustness to different index and sample specifications

Dep. var.: EGA	(1)	(2)	(3)	(4)	(5)	(6)
Specification:	High / low econ. liber.	Index change	Alternative index	Drop 10 low obs. countr.	Drop 10 low 10 high obs. countr.	Countr. fixed effects
Pro-market index:	High econ. liber.	Δ(Econ liber.)	Fraser index	Econ. liber.	Econ. liber.	Econ. liber.
Pro-market	0.2041**	0.0015***	0.1259***	0.0189***	0.0086***	0.0197***
	(0.097)	(0.000)	(0.016)	(0.001)	(0.002)	(0.001)
Higher education × Pro-market	-0.0877***	-0.0025***	-0.0509***	-0.0051***	-0.0028***	-0.0049***
	(0.012)	(0.000)	(0.007)	(0.001)	(0.001)	(0.001)
Entrep. experience × Pro-market	0.0580**	0.0015	0.0462***	0.0028**	0.0049***	0.0026**
	(0.029)	(0.001)	(0.014)	(0.001)	(0.002)	(0.001)
Invest. experience × Pro-market	0.0700***	0.0012**	0.0493***	0.0028***	0.0080***	0.0028***
	(0.017)	(0.001)	(0.009)	(0.001)	(0.001)	(0.001)
Higher education	0.1682***	0.1194***	0.4884***	0.4570***	0.3008***	0.4426***
	(0.008)	(0.005)	(0.048)	(0.038)	(0.049)	(0.037)
Entrep. experience	0.0604***	0.0754***	-0.2496**	-0.1077	-0.2436**	-0.0960
	(0.016)	(0.012)	(0.099)	(0.080)	(0.097)	(0.078)
Invest. experience	0.1294***	0.1577***	-0.2007***	-0.0282	-0.3495***	-0.0297
	(0.010)	(0.007)	(0.066)	(0.051)	(0.066)	(0.050)
Male	0.1449***	0.1459***	0.1462***	0.1472***	0.1481***	0.1468***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)
Age	-0.0039***	-0.0044***	-0.0043***	-0.0043***	-0.0048***	-0.0043***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Knows other entrepreneurs	0.0475***	0.0493***	0.0498***	0.0500***	0.0585***	0.0500***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)
Household income	0.0858***	0.0775***	0.0772***	0.0766***	0.0677***	0.0766***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
Fear of failure	-0.0581***	-0.0529***	-0.0536***	-0.0532***	-0.0533***	-0.0531***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)
Start-up skill	0.0745***	0.0791***	0.0798***	0.0800***	0.0672***	0.0795***
	(0.008)	(0.007)	(0.007)	(0.007)	(0.009)	(0.007)
Business opportunity	0.0974***	0.0983***	0.0970***	0.0960***	0.0854***	0.0972***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)
Current employment	-0.0209***	-0.0211***	-0.0212***	-0.0213***	-0.0211***	-0.0213***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Early stage vs. Nascent	-0.8414***	-0.8570***	-0.8588***	-0.8530***	-0.8634***	-0.8559***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)
GDP per capita (log)	-0.1579***	-0.0753***	-0.0970***	-0.0884***	-0.2591***	-0.1145***
	(0.019)	(0.017)	(0.017)	(0.016)	(0.022)	(0.019)
GDP growth	0.0030**	-0.0031***	-0.0046***	-0.0020*	-0.0066***	-0.0022**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate	-0.0025	-0.0023*	-0.0024**	-0.0007	0.0121***	-0.0015
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
Developed country	0.2472***	0.1523**	0.0773	0.0251	0.5598***	0.2836***
	(0.094)	(0.064)	(0.066)	(0.067)	(0.088)	(0.087)
Constant	2.1238***	1.5437***	0.8673***	0.4645***	2.3166***	0.5464***
	(0.163)	(0.143)	(0.163)	(0.160)	(0.209)	(0.206)
Observations	101,547	135,427	140,733	139,781	79,648	141,003
Industry and year fixed effects	yes	yes	yes	yes	yes	yes
Country fixed effects						yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE A6. Robustness to economic liberalization index components

Dep. var.: EGA	(1)	(2)	(3)	(4)
	Property	Business	Investment	Financial
Pro-market index:	rights	freedom	freedom	freedom
Pro-market	0.0039***	0.0061***	0.0013**	0.0010*
	(0.000)	(0.001)	(0.001)	(0.001)
Higher education × Pro-market	-0.0019***	-0.0029***	-0.0024***	-0.0030***
	(0.000)	(0.000)	(0.000)	(0.000)
Entrep. experience × Pro-market	0.0012**	0.0027***	0.0016***	0.0018**
	(0.000)	(0.001)	(0.001)	(0.001)
Invest. experience × Pro-market	0.0017***	0.0033***	0.0014***	0.0016***
	(0.000)	(0.001)	(0.000)	(0.000)
Higher education	0.2331***	0.3278***	0.2740***	0.2979***
	(0.014)	(0.030)	(0.016)	(0.019)
Entrep. experience	0.0103	-0.1116*	-0.0161	-0.0278
	(0.029)	(0.062)	(0.033)	(0.042)
Invest. experience	0.0614***	-0.0733*	0.0641***	0.0635**
	(0.019)	(0.040)	(0.022)	(0.027)
Male	0.1464***	0.1456***	0.1459***	0.1462***
	(0.005)	(0.005)	(0.005)	(0.005)
Age	-0.0043***	-0.0043***	-0.0043***	-0.0043***
	(0.000)	(0.000)	(0.000)	(0.000)
Knows other entrepreneurs	0.0493***	0.0494***	0.0490***	0.0492***
	(0.005)	(0.005)	(0.005)	(0.005)
Household income	0.0762***	0.0768***	0.0773***	0.0772***
	(0.003)	(0.003)	(0.003)	(0.003)
Fear of failure	-0.0530***	-0.0546***	-0.0539***	-0.0543***
	(0.005)	(0.005)	(0.005)	(0.005)
Start-up skill	0.0800***	0.0798***	0.0794***	0.0797***
	(0.007)	(0.007)	(0.007)	(0.007)
Business opportunity	0.0968***	0.0975***	0.0974***	0.0973***
	(0.005)	(0.005)	(0.005)	(0.005)
Current employment	-0.0213***	-0.0212***	-0.0213***	-0.0213***
	(0.000)	(0.000)	(0.000)	(0.000)
Early stage vs. Nascent	-0.8565***	-0.8555***	-0.8565***	-0.8568***
	(0.005)	(0.005)	(0.005)	(0.005)
GDP per capita (log)	-0.0736***	-0.0936***	-0.0746***	-0.0707***
	(0.016)	(0.017)	(0.016)	(0.016)
GDP growth	-0.0026**	-0.0027**	-0.0032***	-0.0033***
	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate	-0.0018	-0.0039***	-0.0023*	-0.0022*
	(0.001)	(0.001)	(0.001)	(0.001)
Developed country	0.0357	0.1186*	0.1467**	0.1511**
	(0.066)	(0.064)	(0.064)	(0.064)
Constant	1.3488***	1.3082***	1.4515***	1.4320***
	(0.143)	(0.142)	(0.142)	(0.142)
Observations	141,003	140,847	141,003	141,003
Industry fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Multilevel models. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE A7. Robustness to OLS regressions with clustered standard errors

Dep. var.: EGA	(1)	(2)	(3)	(4)	(5)	(6)
Sample:	All	All	All	All	No crisis	Crisis
Economic liberalization	0.0201***	0.0183***	0.0182***	0.0197***	0.0177***	0.0367***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.007)
Higher education × Econ. liberalization	-0.0048***			-0.0049***	-0.0048***	-0.0023
	(0.001)			(0.001)	(0.001)	(0.002)
Entrep. experience × Econ. liberalization		0.0031*		0.0026*	0.0015	0.0083**
		(0.002)		(0.002)	(0.002)	(0.004)
Invest. experience × Econ. liberalization			0.0026***	0.0028***	0.0028***	0.0048**
			(0.001)	(0.001)	(0.001)	(0.002)
Higher education	0.4353***	0.1202***	0.1202***	0.4426***	0.4436***	0.2306*
	(0.043)	(0.006)	(0.006)	(0.043)	(0.045)	(0.124)
Entrep. experience	0.0725***	-0.1247	0.0734***	-0.0960	-0.0185	-0.4829*
	(0.015)	(0.106)	(0.015)	(0.104)	(0.112)	(0.250)
Invest. experience	0.1549***	0.1551***	-0.0191	-0.0297	-0.0239	-0.2011
	(0.008)	(0.008)	(0.063)	(0.061)	(0.066)	(0.146)
Male	0.1470***	0.1467***	0.1466***	0.1468***	0.1487***	0.1265***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.014)
Age	-0.0043***	-0.0043***	-0.0043***	-0.0043***	-0.0040***	-0.0054***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Knows other entrepreneurs	0.0502***	0.0501***	0.0499***	0.0500***	0.0468***	0.1062***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.014)
Household income	0.0766***	0.0767***	0.0766***	0.0766***	0.0784***	0.0433***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.009)
Fear of failure	-0.0532***	-0.0535***	-0.0536***	-0.0531***	-0.0555***	-0.0470***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.013)
Start-up skill	0.0795***	0.0799***	0.0800***	0.0795***	0.0736***	0.1235***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.017)
Business opportunity	0.0970***	0.0969***	0.0971***	0.0972***	0.0908***	0.1258***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.014)
Current employment	-0.0213***	-0.0212***	-0.0212***	-0.0213***	-0.0215***	-0.0202***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Early stage vs. Nascent	-0.8558***	-0.8565***	-0.8566***	-0.8559***	-0.8814***	-0.6309***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.035)
GDP per capita (log)	-0.1170***	-0.1139***	-0.1126***	-0.1145***	-0.1060**	0.0543
	(0.040)	(0.040)	(0.040)	(0.040)	(0.045)	(0.095)
GDP growth	-0.0023	-0.0019	-0.0020	-0.0022	0.0016	-0.0281***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Unemployment rate	-0.0015	-0.0013	-0.0013	-0.0015	-0.0042	-0.0172***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.007)
Constant	0.9451**	1.0308**	1.0280**	0.9511**	1.0188**	-1.7628*
	(0.425)	(0.423)	(0.424)	(0.424)	(0.459)	(0.950)
Observations	141,003	141,003	141,003	141,003	121,715	19,288
R-squared	0.343	0.342	0.342	0.343	0.346	0.356
Industry fixed effects	yes	yes	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes	yes	

Notes: *** p<0.01, ** p<0.05, * p<0.1. OLS regressions. Standard errors clustered at the country-industry-year level in parentheses. EGA: Entrepreneurial growth aspirations. Variables are summarized in Table 1 and their complete definitions are provided in Table A1.

TABLE A8. Heckman selection model

Model:	(1) 1st stage	(2) 2nd stage
Dep. var.	Entry to early stage	EGA
Economic liberalization	0.0198***	0.0201***
	(0.001)	(0.004)
Higher education × Econ. liberalization	-0.0042***	-0.0044***
	(0.001)	(0.001)
Entrep. experience × Econ. liberalization	0.0029	0.0045**
	(0.003)	(0.002)
Invest. experience × Econ. liberalization	0.0040**	0.0031**
	(0.002)	(0.001)
Higher education	0.4179***	0.4027***
	(0.076)	(0.095)
Entrep. experience	-0.1985	-0.2765**
	(0.162)	(0.141)
Invest. experience	-0.0653	-0.0863
	(0.108)	(0.087)
Entrepreneurship as a good career choice	0.0219*	
	(0.011)	
Observations	64,194	64,194
Individual-level controls	yes	yes
Country-level controls	yes	yes
Industry fixed effects	yes	yes
Country fixed effects		yes
Year fixed effects	yes	yes

Notes: *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Standard errors in parentheses. EGA: Entrepreneurial growth aspirations. The number of observations is lower compared to the main specifications due to (1) using the sample early stage entrepreneurs, and (2) missing values in the "Entrepreneurship as a good career choice" variable. Individual- and country-level controls are the same as those used in Table 2. All variables and summarized in Table 1 and defined in Table A1.