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## Entrepreneurial choices depend on trust: Some Global Evidence

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### Abstract:

Interpersonal trust and people's trust in institutions are important components of social capital, which has been shown to possess not only innate social value but also diverse direct and indirect positive social and economic impacts. Using data for an economically and globally diverse group of countries, we empirically examine how changes in interpersonal trust and trust in institutions affect entrepreneurship over time. Our findings suggest that 1) enhancing either type of trust leads to more entrepreneurial activity and 2) an increase in interpersonal trust causes a structural change in the composition of the TEA-type entrepreneurship. Increased trust reduces the share of the relatively low value added necessity-driven entrepreneurial activity and increases the share of the higher value added improvement-driven opportunity entrepreneurial activity (Schumpeterian entrepreneurship).

*Keywords:* Entrepreneurship; European Values Study (EVS); Global Entrepreneurship Monitor (GEM); Improvement-driven opportunity entrepreneurial activity; Index of Economic Freedom (IEF); Institutional trust; Necessity-driven entrepreneurial activity; New Business Density (NBD); Social capital; Total early-stage entrepreneurial activity (TEA); Trust; World Bank Global Entrepreneurship Surveys (WBGES); World Values Survey (WVS)

*JEL Classification:* D02, H11, M13, Z13

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### 1. INTRODUCTION

In most countries small businesses generate a fraction of total firm revenues yet employ a great majority of the labor force. Small businesses also provide for competition in economy. Select few – think Apple, Alphabet, Amazon, Facebook, Tesla – become the leading drivers of innovation. By disrupting the existing order, they bring new positive dynamics to economies. Therefore, it is no wonder politicians constantly push to raise the rate of new business formation. By creating competition, new firms lower prices, increase the quality and variety of goods and services and raise economy's productivity and incomes (and tax revenue to finance public goods). In developing countries, where the problems of poverty and joblessness are pervasive, business startups and entrepreneurship are a

way, sometimes the only way, to meet daily needs of vast populations. However, to get the ordinary people start businesses, it is essential in developed and developing countries alike to have a conducive operating environment for entrepreneurship.

One often overlooked way to create new businesses is through the promotion interpersonal trust and trust in institutions. Merriam-Webster online dictionary defines trust as a “*belief that someone or something is reliable, good, honest, effective, [...]*.” Trust is a form of social capital that makes economies run better (Coleman 1988, Putnam 1993). When people are willing to trust each other and the institutions around them, it lowers the cost of economic transactions by eliminating uncertainty, thereby opening new economic opportunities, both of which increase people’s willingness to become entrepreneurs.

The trust between people (interpersonal trust) may be further reinforced by their trust in society’s institutions. Trust in the strength of property rights, consistent and impartial law courts, police, stable money, access to foreign markets, predictable government regulations and other such institutional characteristics further improves citizens’ everyday life. A high-quality institutional environment increases GDP growth (Nyström 2008). Rodrik & Subramanian (2003) call institutions the deep determinants of economic growth. In their meta-analysis of 65 countries Westlund & Westlund (2010) find trust to be a highly robust variable as well in explaining income growth. Whether trust is a similar deep determinant of entrepreneurial activity as institutions are of economic growth is yet to be determined.

This study, through a data set of 52 countries and 16 years, explores how the level of prevailing interpersonal trust in society affects the level of four measures of new entrepreneurial activity: (1) total early-stage entrepreneurial activity (TEA), (2) New business density, (3) Necessity-driven entrepreneurial activity, and (4) Improvement-driven opportunity entrepreneurial activity (called sometimes Schumpeterian entrepreneurship). Three of the four are survey measures (1, 3, 4) and include existing new firms and still under-planning (intent) firms, while one (2) considers the number of newly registered limited liability companies (LLCs). In addition to interpersonal trust, the study also analyzes how changes in trust in institutions may affect new entrepreneurial activity.

The findings can potentially provide governments an additional instrument - trust - to fine-tune their entrepreneurship policies. While conventional public policies target entrepreneurial activity through subsidies, loans, training, streamlining of bureaucracy, etc., increasing the level of trust in society could provide for a new, complementary way to boost entrepreneurship. Furthermore, Hodgson (2012) notes that trust has one particularly interesting quality. Namely, through evolution, people have evolved with an innate tendency to want to trust each other. Thus, policymakers do not need to teach people trust, but rather create environments where trust can flourish.

Our analysis complements the scarce existing literature on trust and entrepreneurship in five ways. First, we use four different definitions of new entrepreneurial activity in econometric estimations. Second, the data sample includes not only high-income countries, but a global mix of countries with various development levels. Third, instead of cross-section estimation, pooled OLS panel data is used to incorporate a time dimension to the findings. Fourth, the sample size of the study exceeds those of previous studies. Five, as robustness check, the pooled OLS model (POLS) is complemented with the random effects model (REM) to evaluate the uniformity of estimates.

## **2. LITERATURE REVIEW**

Terjesen et al (2016) point out that the comparative international entrepreneurship (CIE) research is “[...] highly fragmented with substantial gaps related to content, theory and methodology.” They note that while there are formal theories of entrepreneurship, these deal mostly with the internal workings of the firms; financing, technology usage, founders’ psycho-social characteristics and enterprise outcomes, not interpersonal and institutional trust in the context of new entrepreneurial activity. Consequently, the purpose of this study is to try to fill the gap, to create a better understanding of the connection between trust and new entrepreneurial activity. New covers what Engelen et al (2009) call the firms’ “infancy stage,” which includes the immediate time spans both before and after the enterprise creation.

Currently there is no generally accepted theoretical model to explain new entrepreneurial activity. Historically, limitations in data quality and coverage have prevented researchers from using international panel data set. Even with this limitation, Aldrich (2000) notes that over time a good amount of cross-national econometric evidence has been produced about the business creation process. This accumulated knowledge, even if limited in scope, has aided governments in identifying and strengthening institutions and policies that promote entrepreneurship. This is of great importance since, as Carree et al (2002) and Acs & Amorós (2008) note, nations' standard of living depends on it.

Trust, the subject of this study, is a form of social capital, which is made of social networks and the norms of reciprocity and trustworthiness that arise from them. One way to measure the level of interpersonal trust is to gauge a person's reaction to an unexpected behavior by her interaction partner (Fink et al 2009). The formation of trust usually requires many encounters, but when it occurs, participants can count on more reliable and consistent future transactions. Over time, this leads to a further expanding cooperation and co-dependence. The latter becomes more acceptable when the level of trust rises. This allows for a higher level of occupational specialization, which is the corner stone of the economies of the developed countries (Alfani & Gourdon 2012). Unfortunately, while creating trust is time-consuming, it can degrade and evaporate very quickly (Zucker 1986).

Unlike altruism, fairness and reciprocity, pure self-interest may or may not be compatible with building trust (Kahneman 2011). Despite the common portrayal in economics of humans as the ultra-rational *homo economicus*, a seeming irrationality can sometimes be a very efficient way to build or lose trust. For instance, people still voluntarily repay gifts even if there is no such expectation or need. They also sometimes retaliate against strangers even if it is costly for them and yields neither present nor future material rewards but only penalties (Fehr & Gächter 2000).

One modern conceptualization of trust is associated with reputation. Rational, self-interested individuals value private reputation because of its positive effect on trustworthiness (Bruni & Sugden 2000). Trustworthiness is transmitted through networks of trading relationships. The denser the network of trading relationships, the greater is the value of reputation and degree of trust in creating new valuable social interactions and entrepreneurial activity. Thus, economic (entrepreneurial) transactions take place in a distinctly social environment promoted by the reputation of the participating economic agents (Becker 1974).

While trust is not a new subject of study in economics, it has barely found its way into entrepreneurial activity studies. Recently, Bjørnskov & Foss (2016) could identify only 28 economics studies with a focus on international business creation or new entrepreneurial activity. When trust has been examined in empirical cross-country studies, it has overwhelmingly been in connection with economic growth. Those studies have found that a high level of trust not only increases incomes directly and through the increase in the volume of investments (Zak & Knack 2001), but also through the improved human capital stock that increases the productivity of investments (Bjørnskov & Foss 2008). Some findings suggest that trust is the sole component of social capital and determines not only the quality of governance and life satisfaction (Dearmon & Grier 2009), but also the level of corruption in society (Wiseman 2015).

Trust has also been found to increase information sharing, financial development, and the enforcement of property rights, all of which contribute positively to economic performance (Knack & Keefer 1995). Some evidence points out that trust encourages freer exchange of information and as a result leads to more R&D-related activities and inventions (Dakhli & De Clercq 2004), and high-value exports (Akçomak & ter Weel 2009). As for the magnitude of the effect of trust on economic outcomes, Knack & Keefer (1997) found that one standard deviation increase in country-level trust increases economic growth by more than one-half standard deviation.

While there are many studies on the relationship between trust and the GDP and various internal workings of firms, the academic field of trust and entrepreneurial activity still lacks a solid theoretical foundation on which to base empirical models. The choice of independent variables is typically guided by their statistical significance in previous studies. Generally, the existing trust studies have not studied the process behind new entrepreneurial activity directly but rather variables behind some entrepreneurial outcomes. By deductive reasoning, one can connect variables

behind desirable outcomes and the likelihood of new entrepreneurial activity. Therefore, our current knowledge about the role of trust in business founding is mostly indirect in its nature.

For instance, in a survey of 122 Slovenian SMEs, trust-based coordination in interfirm co-operative relationships was found to be a good predictor of firm performance, and potential future business creation (Fink et al 2009). In another study of 32,665 Italian households, a decrease in social capital was found to significantly increase the probability of a borrower being denied a loan. On the other hand: a high level of social capital was a good predictor of an area's level of financial development and business vigor (Guiso et al 2004).

Troilo's (2010) study using data from 2001 to 2003 found that trust matters more for enterprise creation in the developing rather than developed countries. This implies that interpersonal trust and trust in institutions may not always have to be complements but can also be substitutes to each other. Importantly, interpersonal trust can substitute up to a degree for lacking institutions. Furthermore, the Schumpeterian type improvement-driven opportunity entrepreneurs appear to benefit disproportionately from social capital.

McEvily et al (2003) argue that trust can increase the nascent entrepreneur's self-confidence by removing doubt (and its associated costs) about one's employees' and competitors' potentially adverse activities. On the other hand, overestimating the existing level of trust can also lead to a naïve entrepreneur being taken an advantage of (Welter 2012). Lastly, Kodila-Tedika & Agbor's (2016) cross-sectional study of 60 countries in 2010 found that changes in interpersonal trust explain about half of the entrepreneurial spirit in a country, the causality running from trust to entrepreneurship.

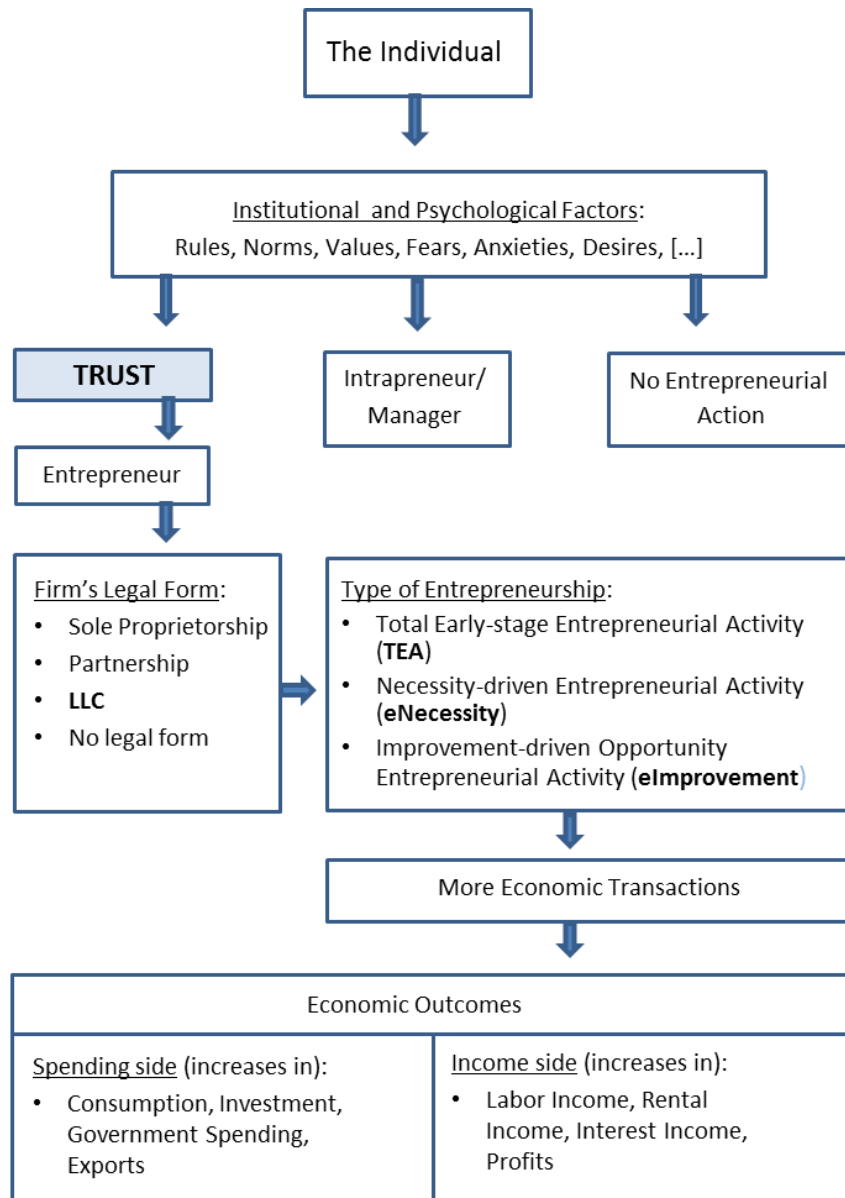
Hence, most current trust research supports the statement that “[...] relational trust plays an important role in surfacing, recognizing, refining, evaluating, selecting, and institutionalizing new business venturing initiatives,” even if creating and maintaining social networks can in some cases be rather costly (Zahra et al 2006, pp. 542, 552). Figure 1, condensed from previous literature, summarizes this study's trust and entrepreneurship framework.

Trust in institutions has many benefits associated with it, which should lead to a higher level of business creation. Employers in high-trust societies can start businesses and invest and innovate at a greater level knowing that quality institutions will protect them from asset appropriation, intellectual property rights abuses, rundown inflation, punitive taxes, international trade restrictions or overregulation, allowing entrepreneurs the opportunity to focus on business development.

To create a coherent set of quality institutions together is challenging. Any institution may have many opposing forces within it, one enhancing and the other stifling new business creation and entrepreneurial activity. For instance, a large government size may imply a high present tax burden on entrepreneurs, which is a distinct disincentive to start a business. On the other hand, the extracted taxes may be used for potentially high-returning projects such as strengthening property rights and creating a supportive regulatory framework, both encouraging business creation. To get these simultaneous institutional choices and their effects correct is a challenge, though governments can lessen the challenge by relying on evidence-based governance (Krichevskiy & Snyder 2015).

Well thought-out laws and regulations affect entrepreneurial activity positively— perhaps by increasing the level of trust. Conversely, poorly working institutions will quickly cause the opposite effect, decreasing entrepreneurial activity and spirit (Mann & Shideler 2015, Méndez-Picazo & Galindo-Martín et al 2012).

Figure 1. Trust, Entrepreneurship and Outcomes



Source: Adapted from Ovaska (2014)

Finally, while previous econometric studies of the roles of trust on entrepreneurship are scarce, there exist a number of recent studies that use different analytical approaches. Case studies use qualitative methods such as structured interviews and content analysis. Leite et al (2016), for example, conduct a Brazilian case study investigating the qualitative aspect of social networks. They assert that networks that afford trust are an important factor behind well-functioning business. Ngoma's (2016) case study using structured interviews finds trust to be important in Chinese business practices. Bauke et al (2016) use German and Chinese micro data from 203 entrepreneurs to highlight the interplay among relational trust, national level institutional quality and entrepreneurs' performance. Analyzing their cross-sectional data set of interviews with Chinese entrepreneurs, Ren et al (2016), using McAllister's (1995) conceptualization of trust, show that affective and cognitive trust play a critical role in the interrelationship between network ties and entrepreneurial behaviors. In their study of Spain, Nieto and González-Álvarez (2016) show that

individual and regional social capital have a positive effect on entrepreneurship. Afandi et al (2017) use single year cross-sectional data comprised of individuals from 35 countries across Europe and Asia and find that dimensions of social capital (trust, network, norms) foster entrepreneurship, albeit at different development stages.

The above studies provide important insights into the relationship between trust and entrepreneurship. Methodologically, some are case studies of a specific country or a single year, taking advantage of qualitative assessment and (semi-) structured interviews, while others are econometric analyses of microdata for a single year. In what follows, we depart from the previous literature by utilizing panel data for 52 countries over 16 years. The data set enables us to study highly diverse social, economic, and political environments and their change over time.

### **3. DATA**

The measurement of trust is a key issue in all empirical studies of trust and entrepreneurial activity. In cross-country studies, the best sources of trust data are the European Values Study (EVS) and the World Values Survey (WVS). Micro studies running experiments are also becoming a real option to acquire trust data (Glaeser et al. 2000). The entrepreneurship data for this study's four forms of entrepreneurship is drawn from two sources: The Global Entrepreneurship Monitor (GEM) and the World Bank Global Enterprise Surveys (WBGES). For its entrepreneurship data, GEM runs an annual survey of a minimum of 2,000 adults and 36 experts in each country. GEM defines its most comprehensive measure of entrepreneurship, (1) Total early-stage entrepreneurial activity (TEA), as "the sum of nascent entrepreneurship and new business ownership. Nascent entrepreneurship is the percent of population age 18 to 64 that are currently setting up a business that still has not paid any income. New business ownership is the percent of population age 18 to 64 owning and running a business that has paid incomes for more than three months but for no more than forty-two months."

The second measure of entrepreneurship, (2) New business density (NBD), is obtained from the World Bank's World Development Indicators database. The NBD is defined as new business registration per 1,000 populations age 15 to 64. It measures "the number of new limited liability corporations (LLC)" in internationally comparable units. Partnerships and sole proprietorships are not included in the database due to differences in definitions and regulations worldwide. The advantage of the NBD measure is its country coverage and reliance on objective data. Overall, TEA and NBD measure distinctly different entrepreneurial dynamics (Acs et al 2008). TEA is about entrepreneurial intent and spirit, whereas NBD is about entrepreneurial entry in the form of LLC establishments. Thus, TEA is in a way a measure of the potential supply of entrepreneurs, whereas NBD captures the actual supply. While TEA provides for uniform definitions across countries for nascent and start-up phase firms (that have survived), the mixing of intent and actual can make interpretations challenging, and the measure may also miss dual entrepreneurs. NBD is a consistent measure of private sector development in the developed world, but it does not capture any informal activity, the modus operandi in some countries. NBD also relies on the accuracy of national business registers, which may include non-entrepreneurial shell companies and already closed businesses.

How do the TEA and NBD compare quantitatively? The average annual score of TEA in the data set is 11.1, which means that about 11% of working-age population was in some way engaged in early-stage entrepreneurship. In contrast, the average new business density is 3.4 - about 0.34% of population is involved in new entrepreneurial activity. As noted before, the difference in entrepreneurial activity between the two measures is due to differing definitions of entrepreneurship. TEA includes entrepreneurial intent and actual entrepreneurial activities in both the formal and informal sectors. NBD, on the other hand, captures business registrations of limited liability corporations in the formal sector.

GEM also provides data on two other types of entrepreneurial activity. (3) Necessity-driven entrepreneurial activity (eNecessity) is "the share in TEA of individuals 15-65 of age who engage in entrepreneurial activities because there are no other feasible options for employment." Necessity-driven entrepreneurship thus pertains to people who have found it challenging if not impossible to find paid employment; for them becoming an entrepreneur has become the last resort solution to employment.

(4) The improvement-driven opportunity entrepreneurial activity (eImprovement) is sometimes called Schumpeterian entrepreneurship. It gauges the share in TEA of individuals who become entrepreneurially active to track new business opportunities and through “creative destruction” attempt to create new rules-breaking products and processes. This is also the riskiest type of business. The eImprovement definition is: “the relative prevalence percentage of those involved in TEA who (i) claim to be driven by opportunity as opposed to finding no other option for work; and (ii) who indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining their income.”

The interpersonal trust data comes from the World Values Survey (WVS). Its definition has the benefit of unambiguity: it avoids what Welter (2012) argues has become increasingly common in entrepreneurship literature - trust as a catch-all phrase for all sorts of entrepreneurial contacts. The trust survey question in WVS is: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” WVS is run on participating countries once in each survey wave. A minimum of 1,000 participants between ages 18 and 85 are chosen for face-to-face interviews by random sampling. Since the WVS question repeats in the European Values Study (EVS), we combine the two surveys to calculate the percent of respondents in each wave and country of survey who answered “Yes, most people can be trusted.”

The trust in institutions data comes from The Wall Street Journal/ Heritage Foundation’s Index of Economic Freedom (IEF), which measures the quality of about 50 institutions in over 150 countries. The idea behind the use of the IEF composite score as the trust in institutions measure is the strong positive correlation between the quality of institutions and people’s trust in them. In this study, all data on entrepreneurship and trust is averaged over three five-year time periods that correspond to WVS survey waves 1999-2004, 2005-2009 and 2010-2014.

Table 1 includes the study’s descriptive statistics. The dependent variables in our empirical estimation take turns, and are the four forms of entrepreneurship discussed above. The two independent variables of focus are interpersonal trust and trust in institutions, and their effect on business founding. In addition to the two trust variables, the independent control variables (from previous literature) include real income per capita, unemployment rate, share in labor force of people with secondary and tertiary education, domestic credit to private sector as percentage of GDP, real interest rate, Gini coefficient, life expectancy at birth, and society’s general attitude towards entrepreneurship. The estimations also include a post-socialist country dummy. The post-socialist transition economies have developed their institutions under unique social, political and economic circumstances, which may have affected the development of their entrepreneurial environment differently from other countries. Except for trust, all variables are sourced from the World Bank World Development Indicators and the Global Entrepreneurship Monitor database. The list of all countries included and the post-socialist countries can be found in Table 6 of the Appendix.

Table 1. Summary Statistics

Variable	N	Mean	S.D.	Min	Max	Median
TEA (% yes of age18-65)	186	11.11	7.26	2.26	40.27	8.84
New Business Density (/1,000 pop)	238	3.44	4.54	0.02	28.48	1.99
Necessity-driven entrepreneurship (% of TEA)	186	24.17	11.72	4.76	57.20	22.61
Improvement-driven entrepreneurship (ibid.)	144	48.87	12.76	13.01	78.94	49.53
Interpersonal trust (% yes of adults)	212	27.07	15.86	2.84	76.04	23.68
Trust in institutions (0-100)	292	62.59	11.07	16.67	89.72	62.77
GDP per capita (in ‘000s, 2011 PPP, int. USD)	302	21.87	20.64	0.63	133.89	15.50
Unemployment rate (%)	303	9.06	6.06	0.50	34.84	7.56
Labor force w/ secondary education (%/pop)	204	43.12	17.31	2.00	79.50	44.01
Labor force with tertiary education (%/pop)	205	22.64	9.29	1.30	52.05	22.75



Share of private credit (% /GDP)	294	63.40	51.88	1.27	248.33	46.81
Real interest rate (%)	246	5.56	8.85	-23.08	85.92	4.17
Gini coefficient (0-100)	266	37.07	8.67	16.64	63.90	34.24
Life expectancy (years)	306	72.44	8.03	43.21	83.43	74.03
Desirability of entrepreneurship (%)	177	65.78	13.70	18.22	95.29	65.99

Sources: European Values Study, Global Entrepreneurship Monitor, Index of Economic Freedom, World Development Indicators, World Values Survey

The variable “the desirability of entrepreneurship,” is a new addition to the empirical studies in economics, though it is well-established in previous qualitative studies on entrepreneurial activity. GEM defines the variable as “the percentage of population age 18 to 64 who responded to a survey that in their opinion entrepreneurship is a desirable career choice.” In addition to personal preferences, this question reveals information about society’s prevailing social norms, the acceptance of entrepreneurship as a whole (Ovaska et al 2014).

Significant variations in the level of interpersonal trust can be observed across countries. For instance, in 2014 about 64% of Swedes trusted their fellow citizens, while only 4% of Colombians did. On average 27% of populations across countries and time periods agreed that most people can be trusted. Turned around, a remarkable three out of four people don’t trust others. While the level of distrust is high, it is a typical finding in cross-country surveys. Global events can also affect scores. Interpersonal trust score for Egypt, for instance, changed little between pre-Arab Spring (2005-2009) and post- Arab Spring (2010-2014) as in both periods the scores are about 20 % of adults. However, these periods score lower than the period of 1999-2004 (a drop by 18 percentage point from 38 to 20). Likewise, Jordan experienced a decrease of 14 percentage point (from 27 to 13) in the same time span. The 2007-2008 global financial crisis also affected some countries while leaving others unaffected. For example, Chile experienced a deterioration of interpersonal trust by 10 percentage point from 23% to 13% over the sample period, while United States scores stayed stable around 36%-38%. Though not included in our empirical analysis due to insufficient of data, China’s interpersonal score over the sample period increased from 54% to 64% while the war-torn Iraq suffered a loss from 47% to 32%. For the trust in institutions the data values among countries are equally diverse. The sample average (scale 0-100) over all three time periods is about 63 but ranging from a low of 17 (Iraq) to a high of 90 (Hong Kong). The correlation coefficient matrix for all variables of the study can be found in Table 5 of the Appendix.<sup>1</sup>

The data sample highlights a few interesting relationships. Countries with relatively high score of interpersonal trust such as the Nordic countries often have markedly low entrepreneurship rates. That may be because people can trust that the social welfare system will take care of them if they run out of money. There are also significant differences in entrepreneurship rates among the low trust countries. Nigeria, Zambia, and Peru, for example, have TEA rates passing 30%, while some other low trust countries, including Romania, Turkey, and Kosovo, score below 10%. For trust in institutions, the story is equally multifaceted. Countries’ attitudes toward entrepreneurship also vary considerably. For example, in Nigeria and Peru about 80% of adults consider entrepreneurship a desirable career. On the other hand, Romania and Turkey are at 70% and 67% respectively. Sweden and Finland score yet lower at 53% and 44% respectively, and Japan scores even lower at 30%.

#### 4. EMPIRICAL ANALYSIS: ESTIMATION STRATEGY

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<sup>1</sup> The correlation coefficients, which run from 0 to 1 in absolute terms quantify the underlying factors two variables share with each other. A correlation of 0.5 would be equivalent to the genetic relationship between that of a parent and child who share 50% of their DNA. A zero would imply no genetic relationship.

To examine the relationship between entrepreneurship and trust, we use the following equation:

$Entrepreneurial\ Activity_{it} = \beta_0 + \beta_1 trust_{it1} + \sum \beta_k x_{itk} + u_{it}$  for cross-country  $i$  and time period  $t$ , with several macroeconomic and socio-economic control variables,  $x_{itk}$ . While each variable has total number of observations in the range of 144 to 306, estimating the model in panel reduces available observations significantly. Furthermore, the variables of interest, entrepreneurial activity, interpersonal trust and trust in institutions tend to vary little over time for each country. The same applies to the Gini coefficient and the desirability of entrepreneurial career.

The above data limitations render the fixed effects model significantly inefficient and not appropriate for finding the effect of trust on entrepreneurship. Hence, a pooled OLS model is used to estimate the regression coefficients. The estimation results from the random effects model (REM) are shown in Table 4 of the Appendix. The estimation results from REM are very similar to the results found with the pooled OLS.

Tables 2 and 3 show coefficient estimates for pooled OLS regressions with robust standard errors. The number of observations varies from 49 to 87 (behind each observation are thousands of people who were surveyed). The observations are the averages for time periods 1999-2004, 2005-2009 and 2010-2014. Each table includes interpersonal trust, trust in institutions, and two of the four dependent variables: (1) Total early-stage entrepreneurial activity (TEA), (2) New business density (NBD), (3) Necessity-driven entrepreneurial activity (eNecessity) and (4) Improvement-driven opportunity entrepreneurial activity (eImprovement). Some of the control variables repeat in every model specification (base model) while others change from model to model.

## 5. TOTAL ENTREPRENEURIAL ACTIVITY RELATED TO TRUST

The results show that interpersonal trust and to lesser extent trust in institutions affect TEA rates positively, interpersonal trust in particular being a statistically and economically significant predictor of new entrepreneurial activity. To start with Table 2, the size and significance of estimated regression coefficients are steady between the base model and the model with more control variables. With 95% confidence level, interpersonal trust is positive and significant in TEA equations (1) and (2). The estimated coefficient of 0.106 suggests that a 1%-point increase in trust among adult population increases entrepreneurial activity (entrepreneurial intent plus start-up activity) by 0.106%-points. Put another way, an increase in trust by one standard deviation leads to an increase in TEA by approximately one-third of a standard deviation.

Consider Genera, a fictional country representative of the study's country sample. In Genera, there were 34.15 million adults (18-65 age) and 113,667 newly found firms employing 0.503 million people in 2014, and Genera's average TEA between 2010 and 2014 was 11.86%. These numbers translate to an active TEA population of 4.05 million adults. Thus, it took about 35.8 self-declared TEA adults in Genera to generate one new firm, which in turn translates to an average of 4.45 new employees.<sup>2</sup> Using the above data and the estimated regression coefficient of equation (1), a 10%-point increase of interpersonal trust in Genera would lead to a potential new supply of 11,996 firms and 53,381 new jobs. A good result in a country of 34 million people.

Even if only half of the potential new firms survive their first five years, as has been the case in the U.S. historically, there are still enough surviving firms left to have a major effect on employment, the competitive environment and the overall vigor of the economy. If the same coefficients held true for all countries in the sample, countries with particularly low trust values, such as Colombia at 4%, could reap formidable economic benefits by moving up the trust scale.

Interpersonal trust is not statistically significant in explaining new business density (NBD), shown in equations (3) and (4). On the other hand, the data set also includes developing countries with presumably sizeable informal sectors. Being limited to formal sector, NBD would fail to capture this data. In addition, while trust was not found to affect LLC creation, this does not exclude the possibility that it could influence other legal forms of

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<sup>2</sup> The Federal Reserve Bank of St. Louis, FRED database ([fred.stlouisfed.org](http://fred.stlouisfed.org), accessed 03-07-2021), The U.S. Bureau of Labor Statistics Online ([www.bls.gov](http://www.bls.gov), accessed 03-07-2021), Global Entrepreneurship Monitor (GEM)

entrepreneurship, such as sole proprietorships or partnerships. Unfortunately, no data sets exist for a coherent cross-country estimation of this possibility.

Table 2. Impact of Trust on Total Entrepreneurial Activity (TEA) and New Business Density (NBD)

Independent Variables	(1)	(2)	(3)	(4)
Dependent Variables	TEA	TEA	New Business Density (NBD))	New Business Density (NBD)
	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
<b>Interpersonal trust</b> (% yes)	0.106*** (0.037)	0.102** (0.048)	0.026 (0.019)	0.029 (0.025)
<b>Trust in institutions</b> (0-100)	0.147* (0.084)	0.165 (0.108)	0.212*** (0.056)	0.202*** (0.069)
Post-socialist country (dummy)	-2.917 (2.067)	-4.678** (2.340)	5.170*** (1.267)	5.305*** (1.541)
GDP per capita (thousands, USD 2005 PPP)	-0.386*** (0.086)	-0.401*** (0.111)	0.066** (0.031)	0.045 (0.046)
Unemployment (%)	-0.278*** (0.096)	-0.248** (0.109)	0.027 (0.031)	0.035 (0.038)
Labor force with secondary education (%/pop)	0.075 (0.052)	0.081 (0.057)	-0.059** (0.026)	-0.048* (0.029)
Labor force with tertiary education (%/pop)	--	0.102 (0.100)	--	-0.029 (0.046)
Private credit (%/GDP) (credit availability)	--	-0.009 (0.017)	--	0.018 (0.015)
Real interest rate (%) (cost of money)	--	0.179 (0.156)	--	0.093* (0.053)
Gini coefficient (0-100) (income distribution)	0.250*** (0.094)	0.122 (0.091)	0.090** (0.038)	0.088* (0.046)

Life expectancy (years) (health)	0.251** (0.131)	0.108 (0.160)	-0.049** (0.054)	-0.005 (0.072)
Desirability of entrepreneurship (% yes)	0.148*** (0.048)	0.184*** (0.054)	-0.018 (0.023)	-0.058** (0.028)
Constant	-31.21*** (11.446)	-21.323 (12.787)	-10.384* (5.423)	-11.564* (6.150)
Observations	87	71	82	67
R-squared	0.64	0.68	0.48	0.56

Inside parentheses robust standard errors. \*\*\*, \*\*, \* denote statistical significance at the 99%, 95% 90% level of confidence. Data sources: Global Entrepreneurship Monitor (GEM), Index of Economic Freedom (IEF), World Development Indicators (WDI), World Values Survey / European Values Study (WVS, EVS)

Based on TEA, interpersonal trust has a marked effect on promoting entrepreneurial activities that include both the formal and informal types. Interpersonal trust could be a useful tool in stimulating entrepreneurship in developing countries, perhaps substituting for lacking quality institutions. While data limitations do not allow to confirm this with a statistically efficient estimation, the coefficients that were estimated (not shown) for interpersonal trust were about three times larger for countries with per capita GDP of less than \$15,500 than for the other countries.

The estimates do show, however, that new business density is affected by trust in institutions. The finding is in alignment with previous literature. The positive effect of institutional trust on new business density is positive at the 99% confidence level in both equations (3) and (4). The coefficients of 0.212 and 0.202 correspond to about one-third and one-half of standard deviation of new business density. Alternatively, they are equivalent to 50% to 64% of the mean value of new business density. A 10-point increase in trust in institutions from the sample mean (62.59) would increase new business density by 2.12 firms/1,000 residents. A country with a 100 million population moving from 62.59 to 72.59 in institutional trust could expect a creation of 212,000 new LLCs.

The study's results on control variables are consistent with previous research. In TEA equations a negative relationship was found between income per capita and total entrepreneurial activity (McMullen et al 2008, Bjørnskov & Foss 2008, Nyström 2008, Salaz-Fumas & Sanchez-Asin 2013). Wealth accumulation appears to slow down entrepreneurial activity, maybe because developed economies have relatively more opportunities for regular employment, such as in large corporations. Entrepreneurship in the developed world also often takes the form of intrapreneurship, which is not measured by any of the four dependent variables. An intrapreneur works and thinks like an entrepreneur would, but from within the confines of an established firm as a paid employee.

In the data set most LLCs are located in developed countries, where entrepreneurs can benefit from highly developed institutions. The overall findings suggest that interpersonal trust and trust in institutions not only complement each other, but also substitute for each other. In particular, an entrepreneur may feel less need for interpersonal trust if a nation's high-quality institutions (security of property rights, stable money, judicious regulations, etc.) have already removed most obstacles to founding a new business. Having both types of trust in place simultaneously is an extra positive for entrepreneurial activity in most cases.

The coefficient of trust in institutions is positive in one of the two TEA equations, though with only 90% confidence level. One standard deviation increase in trust in institutions raises TEA by about one-fourth or 23% of a standard deviation. The trust in institutions' economic significance on TEA and NBD is similar. A 10%-point increase in trust

in institutions would move the percentage of TEA adults from the sample average of 11.11% to 12.58%, in the case of the U.S. an increase of about 3.0 million adults.

The desirability of entrepreneurship as a career choice was statistically and economically significant at 99% confidence level in both TEA equations (Ovaska et al 2014) whereas the effect was not economically significant in the NBD equations. In the full data set about 66% of respondents had a positive view on entrepreneurship as a career choice. If that rose by 10%-points, the TEA would move up by between 1.48 and 1.84%-points. Interestingly, a positive change in attitudes towards entrepreneurship has an equal or larger effect on TEA than GEM's other two entrepreneurship measurements. The finding highlights how the prevailing values and norms of society clearly matter for business creation. In policy terms, pro-entrepreneurship education from early school years on could plausibly have a very positive effect on later entrepreneurial activity.

The post-socialist country dummy was statistically and economically significant in one of the two TEA equations and in both NBD equations. In the case of the TEA-equation, the large negative coefficient (TEA-activity 4.7%-points lower than in countries with no socialist history) may reflect the fact that socialist systems raised individuals to stay away from private initiative. The reason for the equally large positive coefficient in the NBD equations is not as clear. One possibility is that business registers in transition economies contain a disproportionate number of shell companies (for tax-avoidance). A lacking bureaucratic capability may also result in relatively many non-operating businesses still appearing in transition country business registers.

## **6. RELATIONSHIP OF TRUST AND NECESSITY- AND IMPROVEMENT-DRIVEN ENTREPREURIAL ACTIVITY**

Does the level of trust affect necessity-driven entrepreneurial activity (eNecessity) and improvement-driven opportunity (Schumpeterian) entrepreneurial activity (eImprovement)? The results are shown in Table 3. Equations (5) and (7) are base models and equations (6) and (8) add more control variables to the base.

With respect to eNecessity and eImprovement, the regressions yield mixed findings. For the estimates on necessity-type, the coefficients of interpersonal trust are negative though statistically insignificant in both equations (5) and (6). For the estimates on improvement-type, trust is positive and significant at 95% level confidence in equation (7), but insignificant in (8). Addition of extra control variables reduces the statistical significance of the trust estimates, though the sizes and signs of variable coefficients remain steady.

While statistically not significant (though close), the estimated coefficient in base model (5) implies that when interpersonal trust increases by 10%-points, eNecessity decreases by 0.9%-points. Overall, this means that as society fosters more interpersonal trust, there is a change in the distribution of entrepreneurial types. The actual mechanism behind the composition change may be rather complex. From Table 2, however, we know that extra interpersonal trust leads to more TEA (*ceteris paribus*). Some of the newly minted entrepreneurs may be of necessity-type, while some old necessity-type entrepreneurs may simultaneously have shifted to improvement-type. Or, all the new entrepreneurs may be of improvement-type. In any case, more trust leads to a reduction in the share of the necessity-type entrepreneurship in TEA and to an increase in the share of the improvement-type in TEA. The improvement-driven entrepreneurship is also called Schumpeterian entrepreneurship due to its ability to drive positive economic change in society (creative destruction). Our estimates show that while increases in trust simultaneously destroy and create entrepreneurial activity of different types, the overall economic effect to society is positive. This is because high value-added firms are now replacing low value-added firms.

Getting back to the example of the fictional country of Genera. Suppose the share of eImprovement in its TEA was 58.84% in the period 2010-2014. Given the overall TEA rate of 11.86%, this means that about 6.98% (or 2.38 million) Generalian adults during that period took part in improvement-driven opportunity entrepreneurial activities. If interpersonal trust rose by 10%-points, the number of eImprovement adults in the total group of 34.15 million adults aged between 18 and 65 would rise by 73,500 people. Using the same adults-to-firms coefficient (35.8) as with the TEA example yields a potential 2,053 new high value-added Schumpeterian firms due to improved trust

between people. At the same time, the estimated coefficient for eNecessity is a negative 0.12. This means that while a 10%-point increase in interpersonal trust creates 2,053 new Schumpeterian firms, it simultaneously wipes out 1,018 necessity-driven entrepreneurial activity firms.

Table 3. Impact of Trust on Necessity- and Improvement-driven Opportunity Entrepreneurial Activity

Independent Variables \ Dependent Variables	(5)	(6)	(7)	(8)
	Necessity-driven Coef. (S.E.)	Necessity-driven Coef. (S.E.)	Improvement-driven Coef. (S.E.)	Improvement-driven Coef. (S.E.)
<b>Interpersonal trust</b> (% yes)	-0.090 (0.055)	-0.064 (0.063)	0.182** (0.090)	0.196 (0.138)
<b>Trust in institutions</b> (1-100)	-0.097 (0.127)	-0.175 (0.168)	0.074 (0.152)	-0.037 (0.184)
Post-socialist country (dummy)	6.418** (3.102)	10.094*** (3.045)	-6.616 (4.848)	-8.662 (6.707)
GDP per capita (thousands, USD 2005 PPP)	-0.127 (0.098)	-0.119 (0.117)	0.082 (0.173)	0.022 (0.213)
Unemployment (%)	0.525*** (0.091)	0.489*** (0.115)	-0.900*** (0.194)	-0.870*** (0.228)
Labor force with secondary education (%/pop)	0.092 (0.061)	0.008 (0.058)	0.043 (0.090)	0.158 (0.142)
Labor force with tertiary education (%/pop)	--	-0.020 (0.086)	--	-0.116 (0.191)
Private credit (%//GDP) (credit availability)	--	0.005 (0.019)	--	0.061* (0.034)
Real interest rate (%) (cost of money)	--	0.197 (0.130)	--	0.155 (0.142)

Gini coefficient (0-100) (income distribution)	0.287** (0.126)	0.307** (0.121)	-0.317 (0.231)	-0.337 (0.286)
Life expectancy (years) (health)	0.160 (0.158)	0.172 (0.166)	0.108 (0.464)	0.118 (0.439)
Desirability of entrepreneurship (% yes)	0.158*** (0.056)	0.171*** (0.059)	0.144* (0.074)	0.075 (0.109)
Constant	-1.578 (13.935)	13.219 (13.005)	39.043 (35.476)	45.110 (36.574)
Number of observations	87	71	65	49
R-squared	0.73	0.80	0.67	0.70

Inside parentheses robust standard errors. \*\*\*, \*\*, \* denote statistical significance at the 99%, 95% 90% level of confidence. Data sources: Global Entrepreneurship Monitor (GEM), Index of Economic Freedom (IEF), World Development Indicators (WDI), World Values Survey / European Values Study (WVS, EVS),

In contrast to interpersonal trust, trust in institutions does not have a statistically significant effect on the two sub-categories of entrepreneurial activity. Even when statistically insignificant, the trust coefficients in eImprovement equations (7) and (8) are interesting. Whereas the Schumpeterian entrepreneurs appear encouraged by increases in interpersonal trust, this does not apply to trust in institutions. At first glance this is surprising since the Schumpeterian type entrepreneurship is the riskiest entrepreneurship type. One would expect the Schumpeterian entrepreneurs to be appreciative of high institutional quality (strong property rights, etc.). In light of the coefficient signs, the opposite is the case - perhaps the new Schumpeterian entrepreneurs view society's institutions also somewhat constraining (say, excessive taxes and regulations). In addition, discounting the value of high-quality institutions is consistent with one character trait that behavioral economists have continually associated with entrepreneurs - overconfidence.

The post-socialist country dummy was statistically and economically significant and positive in eNecessity, while it was negative and insignificant in eImprovement. The results show that post-socialist countries have a larger share of necessity-driven entrepreneurship than other countries. Yet, as shown in previous section, post-socialist countries' total entrepreneurial activity is relatively lower.

The TEA as well as the eImprovement regressions show that when unemployment increases, entrepreneurial activity decreases (Peren Arin et al. 2015). While starting a firm in a depressed economy is no doubt hard, this term may also capture the role of the welfare state: when a firm experiences trouble, a reasonable alternative to keeping the business as an ongoing concern is to fold it, or simply not start one, but to collect social insurance payments from the state. To the Schumpeterian entrepreneurs rising unemployment may serve as an overconfidence reset, or a reminder, of the riskiness of starting a new business. The positive unemployment coefficient in the eNecessity equation may imply that when unemployment rises and all potential sources of income have dried up (paid employment, savings, support from larger family and government benefits), starting a new business is the natural last resort option.

Interestingly, the financial measures were generally statistically insignificant in explaining changes in the level of entrepreneurship (Chowdhury et al 2015). Education was also not statistically significant in any of the eight equations (Kodila-Tedika & Agbor 2016). Conversely, income inequality had a positive coefficient and was statistically (and economically) significant in all but the improvement equations at 95% level of confidence (Mendez-Picazo et al 2012). One interpretation is that rising inequality serves as a reminder to the general population that it is possible to move upwards in society, inequality becoming a motivating device for entrepreneurship. Alternatively, rising inequality in developed countries in particular can trigger new entrepreneurship programs with financial incentives.

Because of their anti-entrepreneurship values, many countries seem to be leaving a lot of potential income unpicked on the sidewalk. In 2014, Puerto Rico (18%) was a case in point in this among small countries, Japan (30%) among the large countries. One interesting discovery is how little society's general views on the desirability of entrepreneurship as a career choice seem to affect improvement-driven opportunity entrepreneurial activity. It appears that the Schumpeterian entrepreneurs plow ahead regardless of what most of the others think about their projects, thereby displaying a strong independent trait.

## **7. CONCLUSION**

This study covers 52 countries over time periods 1999-2004, 2005-2009 and 2009-2014. The main purpose of the study is to discover the effect trust (interpersonal, in institutions) has on four different measures of entrepreneurship: total early-stage entrepreneurial activity, new business density, necessity-driven entrepreneurial activity and improvement-driven opportunity entrepreneurial activity. The trust effects were estimated using pooled OLS, the random effects model (in appendix) serving as a complementary method.

One major finding of the study is that while an increase in interpersonal trust increases overall entrepreneurial activity, it also changes the composition of the type of businesses in society from low- towards high-value added activity. For instance, a 1%-point increase in interpersonal trust leads to an increase in total entrepreneurship (TEA) of 0.11%-points and to a 0.18%-point increase in improvement-driven opportunity entrepreneurial (Schumpeterian) activity share. The findings are both statistically and economically highly significant.

Another important finding is that increases in trust in institutions affect entrepreneurship positively, although the effect varies by entrepreneurship type. The effect on the most holistic form of entrepreneurship, TEA, is positive: every extra 1%-point in trust in institutions increases entrepreneurial activity by about 0.15%-points. The effect of trust in institutions is positive for both the TEA and new business density, while is no statistically significant effect on the share of necessity- and improvement-driven opportunity entrepreneurial activity. The above finding implies that when government functions get better in quality, people are less willing to take chances with entrepreneurship (as necessity). The Schumpeterian entrepreneurs, on the other hand, seem to some extent immune to the effects of institutions and to society's prevailing values and norms. To them the level of interpersonal trust is more important when deciding whether or not to enter entrepreneurship.

Regarding policy, the findings suggest that governments have every reason to take the degree of trust in society seriously. Creating trust among citizenry could become one goal of entrepreneurship promotion. The relevant policy areas (and their many sub-categories) could include property rights (law and order), the size and scope of government, regulation of labor and business, fiscal and monetary policy, trade policy, and income and wealth distribution. While any detailed policy advice is well beyond the scope of this paper, based on previous literature and the results of this study, governments would do well to try to identify the kind of policy actions most consistent in creating trust. Successful increases in societies' level of trust could potentially enrich the lives of millions of people all over the world by opening up new opportunities in self-realization through entrepreneurship. In addition, increased trust among nations – through increased socio-economic interactions and diplomacy – could further bolster political stability, trade and financial flows, which together have lifted hundreds of millions of people out of poverty over the last century and a half.



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## APPENDIX

Table 4. Impact of Trust on Entrepreneurship: Random Effects Model

	(1)	(2)	(3)	(4)
	TEA	TEA	New Business Density	New Business Density
	Coef.	Coef.	Coef.	Coef.
<b>Interpersonal trust</b> (% yes)	0.112** (0.044)	0.109** (0.053)	0.022 (0.022)	0.022 (0.022)
<b>Trust in institutions</b> (0-100)	0.131 (0.081)	0.133 (0.105)	0.175*** (0.055)	0.141** (0.059)
Post-socialist country (dummy)	-2.481 (2.096)	-4.615* (2.416)	4.209*** (1.126)	4.160*** (1.254)
GDP per capita (thousands, USD 2005 PPP)	-0.355*** (0.095)	-0.381*** (0.119)	0.064* (0.373)	0.061 (0.043)
Unemployment (%)	-0.222** (0.096)	-0.205* (0.108)	-0.008 (0.044)	-0.002 (0.049)
Secondary education (%/pop)	0.058 (0.058)	0.075 (0.058)	-0.028 (0.022)	-0.010 (0.021)
Tertiary education (%/pop)	--	0.116 (0.122)	--	-0.060** (0.030)
Gini coefficient (0-100)	0.263*** (0.102)	0.129 (0.083)	0.034 (0.043)	0.085** (0.043)
Life expectancy (years)	0.270* (0.148)	0.128 (0.164)	-0.046 (0.094)	-0.010 (0.060)
Desirability of entrepreneurship (% yes)	0.127** (0.053)	0.176*** (0.062)	-0.007 (0.022)	-0.043* (0.022)
Private credit (%/GDP)	--	-0.007 (0.016)	--	0.013 (0.012)
Real interest rate (%)	--	0.187 (0.193)	--	-0.057 (0.046)
Constant	-31.572*** (10.967)	-21.699** (10.964)	-7.327 (6.361)	-7.319 (5.130)
Number of observations	87	71	82	67
R-squared	0.64	0.68	0.43	0.46

Robust standard errors under the parentheses. \*\*\*, \*\*, \* denote statistical significance at the 99%, 95% 90% level

of confidence. Data sources: Global Entrepreneurship Monitor (GEM), Index of Economic Freedom (IEF), World Development Indicators (WDI), World Values Survey / European Values Study (WVS / EVS)

Table 4 Continues

	(5) Necessity-driven Coef.	(6) Necessity-driven Coef.	(7) Improvement-driven Coef.	(8) Improvement-driven Coef.
<b>Interpersonal trust</b> (% yes)	-0.081 (0.062)	-0.061 (0.070)	0.182** (0.084)	[Lacking number of observations to calculate]
<b>Trust in Institutions</b> (0-100)	-0.217* (0.126)	-0.191 (0.166)	0.074 (0.161)	
Post-socialist country (dummy)	7.585** (3.346)	10.191*** (3.015)	-6.616 (5.143)	
GDP per capita (thousands, USD 2005 PPP)	-0.117 (0.093)	-0.109 (0.112)	0.082 (0.167)	
Unemployment (%)	0.509*** (0.095)	0.490*** (0.118)	-0.899*** (0.192)	
Secondary education (%/pop)	0.071 (0.064)	0.005 (0.059)	-0.043 (0.089)	
Tertiary education (%/pop)	--	-0.018 (0.091)	--	
Gini coefficient (0-100)	0.322*** (0.120)	0.316*** (0.108)	-0.317 (0.234)	
Life expectancy (years)	0.208 (0.161)	0.190 (0.173)	0.108 (0.468)	
Desirability of entrepreneurship (%)	0.165** (0.065)	0.176** (0.070)	0.144* (0.080)	
Private credit (%/GDP)	--	0.004 (0.018)	--	
Real interest rate (%)	--	0.204* (0.117)	--	
Constant	-6.173 (14.119)	-7.064 (13.140)	39.043 (36.303)	
Number of observations	87	71	65	--

R-squared                      0.73                      0.80                      0.67                      --

Robust standard errors under the parentheses. \*\*\*, \*\*, \* denote statistical significance at the 99%, 95% 90% level of confidence. Data sources: Global Entrepreneurship Monitor (GEM), Index of Economic Freedom (IEF), World Development Indicators (WDI), World Values Survey / European Values Study (WVS, EVS).

## APPENDIX

Table 5. Correlation Matrix (1999-2004, 2005-2009, 2010-2014)

	A1.	A2.	A3.	A4	B1.	B2.	C1.	C2.	C3.	C4.	C5.	C6.	C7.	C8.	C9.
A1. TEA (%)	1														
A2. New business density (/1,000 pop.)	-0.17	1													
A3. eNecessity (%)	0.31	-0.31	1												
A4. eImprovement (%)	-0.13	0.31	-0.75	1											
B1. Interpersonal trust (%)	-0.34	0.22	-0.44	0.49	1										
B2. Trust in institutions (0-100)	-0.25	0.54	-0.48	0.44	0.25	1									
C1. GDP per capita (ln, USD 2005 PPP)	-0.44	0.34	-0.60	0.51	0.40	0.63	1								
C2. Unemployment (%)	-0.12	-0.08	0.41	-0.52	-0.23	-0.22	-0.30	1							
C3. Secondary education (%/pop.)	-0.24	0.07	0.07	-0.09	-0.01	0.21	0.08	0.10	1						
C4. Tertiary education (%/pop.)	-0.22	0.30	-0.40	0.34	0.36	0.40	0.42	-0.13	0.19	1					
C5. Private credit (%/GDP)	-0.41	0.59	-0.43	0.46	0.39	0.59	0.47	-0.23	-0.06	0.40	1				
C6. Real interest rate (%)	0.22	-0.08	0.21	-0.05	-0.27	0.01	-0.25	0.06	-0.02	-0.30	-0.13	1			
C7. Gini coefficient (0-100)	0.56	-0.15	0.45	-0.32	-0.45	-0.11	-0.35	0.06	-0.38	-0.26	-0.11	0.26	1		
C8. Life expectancy (years)	-0.55	0.37	-0.46	0.38	0.37	0.54	0.59	-0.03	0.19	0.48	0.55	-0.25	-0.37	1	
C9. Desirability of entrepreneurship (%)	0.54	-0.30	0.41	-0.29	-0.42	-0.47	-0.49	0.16	-0.33	-0.44	-0.49	0.19	0.47	-0.46	1

Sources: Global Entrepreneurship Monitor (GEM), Index of Economic Freedom (IEF), World Development Indicators (WDI), World Values Survey (WVS), European Values Study (EVS)

## APPENDIX

Table 6. List of Countries

Australia	Jordan
Austria	Latvia*
Belgium	Macedonia, FYR*
Bosnia and Herzegovina*	Malaysia
Brazil	Mexico
Canada	Montenegro*
Chile	Morocco
Colombia	Netherlands
Croatia*	Norway
Czech Republic*	Peru
Denmark	Poland*
Egypt	Portugal
Estonia*	Romania*
Finland	Russian Federation*
France	Serbia*
Georgia*	Slovenia*
Germany	South Africa
Greece	Spain
Guatemala	Sweden
Hungary*	Switzerland
Iceland	Thailand
India	Tunisia
Indonesia	Turkey
Iran, Islamic Rep.	United Kingdom
Ireland	United States
Italy	Uruguay

Countries with asterisk (\*) are post-socialist countries.