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Abstract

Although entrepreneurship plays a key role in economic development, it remains largely unknown. The reason is that it is challenging to measure entrepreneurship objectively and identify its determinants. In this paper, we analyze the effect of a particular feature of the institutional landscape, namely corruption, on entrepreneurship. It is expected that corruption discourages entrepreneurship since it undermines fair competition. We employ two proxies for entrepreneurship that are widely used in the literature: (i) nascent entrepreneurship collected from Global Entrepreneurship Monitor; and (ii) entry rate defined as the number of new firms divided by the total number of previous year's registered businesses, collected from the World Bank Group Entrepreneurship Survey. We find that better control of corruption promotes entrepreneurship. Our evidence is stronger when we use entry rate as a proxy of entrepreneurship. Our findings are preserved when we add other determinants of entrepreneurship which are drawn from the literature. When we use legal origins as instruments for corruption, our results remain essentially the same. The size of population, a proxy for market size, is positively associated with entrepreneurship while corporate taxes are negatively associated

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I. INTRODUCTION

Although entrepreneurship plays a key role in economic growth and development, it remains largely unknown. The reason is that it is challenging to measure entrepreneurship objectively. Perhaps more importantly, it is even more difficult to identify the determinants of entrepreneurship because all the relevant factors are interrelated. In other words, it is not easy to identify the exogenous determinants of entrepreneurship.

Nevertheless, there is a growing number of studies that seeks to determine the factors that are crucial to boosting entrepreneurship.² One strand of this literature emphasizes the importance of institutions. For example, Arin et al. (2015) find that institutional variables influence entrepreneurship significantly.³ Chowdhury et al. (2015) find that institutional factors, such as property rights, freedom from corruption, and fewer procedures for starting new businesses, are significantly and positively related to the emergence of new firms. Klapper et al. (2010) find that the quality of the institutional environment is related to entrepreneurship significantly. Aidis et al. (2010) also confirm that institutions have a long-term impact on entrepreneurial entry.

In this paper, we focus on a particular feature of the institutional framework, namely corruption, and analyze its effect on entrepreneurship. While there have been extensive studies that investigate the relationship between corruption and economic growth, relatively few studies are available that directly investigate the impact of corruption on entrepreneurship.⁴ Regarding the relationship between corruption and economic growth, there are two competing theories in the literature that contradict each other. One strand of the theories that is called the “grease the wheels” hypothesis presupposes a low quality of governance and suggests that corruption enhances economic performance by reducing the problems caused by such low quality. Another theory that is called the “sand the wheels” hypothesis emphasizes that corruption imposes additional costs, which hampers economic performance.

We believe that the two theories on the relationship between corruption and economic growth can be equally applicable to understand the impact of corruption on entrepreneurship. In particular, as emphasized by Dreher and Gassebner (2013), in highly regulating countries, corruption can boost

² Our brief literature review draws largely from the comprehensive survey on the literature on the determinants of entrepreneurship by Roman et al. (2018).

³ They included administrative complexity, globalization, and taxes as institutional variables.

⁴ Most studies find a negative relationship between corruption and economic growth. For example, Mauro (1995) finds that corruption lowers economic growth by reducing investment. Méon and Sekkat (2005) even find that corruption lowers economic growth independently from its impact on investment, which suggests that other channels are yet to be determined.

entrepreneurship by reducing the detrimental effects of regulations, i.e. by greasing the wheels. However, corruption can sand the wheels of entrepreneurship because the fruits of entrepreneurial activity may be arbitrarily confiscated by the authorities in the absence of bribes, especially in developing countries that are institutionally weak. Corruption also discourages entrepreneurship since it undermines fair competition. In a country with rampant corruption, as is the case in many developing countries, individuals may be more reluctant to become entrepreneurs because entrepreneurial success will depend on collusion with politicians and bureaucrats rather than fair competition in the marketplace. The prevalence of corruption may reduce the reward from risk taking, which is a defining feature of entrepreneurship, and thus deter entrepreneurship.

Hence, it is an empirical issue to determine how corruption affects entrepreneurship. Bologna and Ross (2015), by using a new measure of corruption collected from random audits of Brazilian municipal governments, estimated the effect of corruption on business. They found that there is a negative relationship between corruption and the number of business establishments in Brazilian municipalities. Based on a broader set of countries, Dutta and Sobel (2016) found that corruption hurts entrepreneurship, and this is even true under a bad business climate. However, Dreher and Gassebner (2013) find supporting evidence of the grease the wheels hypothesis in the sense that corruption facilitates firm entry in highly regulated economies. There are studies also that find a dual role of corruption. Chowdhury et al. (2015) find that corruption both boosts and lowers nascent international entrepreneurship. In particular, using unique cross-country data on entrepreneurship in both formal and informal sectors, Berdiev and Saunoris (2018) show that, while corruption deters entrepreneurship in the formal sector, it promotes informal entrepreneurship.

In this study, we revisit the relationship between corruption and entrepreneurship by using a sample that includes as many countries as possible and making the sample period as long as possible. The number of countries is 61 and the sample period is from 2007 to 2017. While our study focuses on the role of corruption, we also consider other five broadly defined determinants of entrepreneurship that are widely used in the literature. For entrepreneurship, we employ two proxies that are most popular in the empirical studies.⁵ The first is nascent entrepreneurship, collected from Global Entrepreneurship Monitor (GEM). It is defined as percentage of all respondents (ages 18–64) who are involved in a nascent business.⁶ The second is entry rate, calculated using data from the World Bank Group Entrepreneurship

⁵ Roman et al. (2018).

⁶ Refer to Appendix Table A1 for the definition.

Survey. It is defined as the number of new firms divided by the total number of previous year's registered businesses (footnote 6).

When we consider the whole sample period from 2007 to 2017, we find that better control of corruption has a positive effect on entrepreneurship. Our evidence is stronger when we use entry rate as the proxy for entrepreneurship. Our findings are preserved when we add other determinants of entrepreneurship which are drawn from the literature. If we divide the whole sample period into two subperiods of 2007–2012 and 2012–2017, we find essentially the same results for the first subperiod, while the evidence is even stronger for nascent entrepreneurship in the second subperiod. An additional finding is that population size, a proxy for market size, is positively associated with entrepreneurship.

One caveat in interpreting the above evidence is that corruption may not be exogenous. In countries where entrepreneurship is weak, entrepreneurs tend to depend on political connections to make a profit rather than through their own efforts, thereby fostering corruption. Hence, causality can run in the opposite direction. Lack of entrepreneurship fosters corruption because individuals with limited entrepreneurial skills gain business by cultivating politicians and bureaucrats. Conversely, vibrant entrepreneurship weakens corruption because entrepreneurs compete with each other by creating new businesses instead of fostering political connections. Therefore, it is important to find appropriate instrumental variables that can be employed to eliminate potential estimation bias.

Another contribution of our study is that we try to avoid the endogeneity issue by employing instrumental variable regressions. We believe that legal origins can serve instrumental variables for corruption. Since the seminal studies by La Porta et al. (1998) and La Porta et al. (1999), a number of researchers found that the historical origin of a country's laws is highly correlated with institutions and, hence, can be used as an instrument. The reason is that legal origins are largely exogenous since legal traditions are rooted in foreign conquest and colonization in many countries. We follow these studies and use legal origins as instruments for corruption. Using the instrumental variable method does not materially affect the estimated relationship between corruption and entrepreneurship. We continue to find that population size is positively associated with entrepreneurship. In addition, we find that raising corporate taxes is negatively associated with entrepreneurship.

The rest of the paper is organized as follows. In section II, we explain the data and empirical strategy. In section III, we report and discuss the empirical findings. Section IV concludes.

II. DATA AND EMPIRICAL STRATEGY

It is not easy to measure entrepreneurship. In this study we use two most popular proxies for entrepreneurship. The first measure is nascent entrepreneurship, collected from GEM. GEM carries out survey-based research on entrepreneurship and constructs data on entrepreneurship by directly asking individual entrepreneurs. It measures the level of entrepreneurship for two stages—before and after a new firm is started. To be classified as a nascent entrepreneur, which is related to the first stage, three conditions should be satisfied.⁷ First, concrete activities were undertaken over the past 12 months. Second, the individual should be an owner of a business-in-gestation. Finally, the business is still in the nascent stage. After identifying all nascent entrepreneurs, we calculate the percentage of all respondents (ages 18–64) who are nascent entrepreneurs.

The second measure is entry rate, which is calculated using data collected from the World Bank Group Entrepreneurship Survey. It is defined as the number of newly registered firms per year, normalized by the total number of previous year's registered businesses.⁸ Acs et al. (2008) provide a detailed comparison of GEM and World Bank data on entrepreneurship. According to them, while the GEM measure captures the early stages of entrepreneurial activities, the World Bank measure captures the activities of registered businesses. In other words, while the first measure represents the potential supply of entrepreneurs, the second measure represents actual entrepreneurs who actually start businesses. Hence a discrepancy arises between the two measures when potential entrepreneurs do not start businesses and become actual entrepreneurs.

The central objective of our study is to empirically examine the impact of corruption on entrepreneurship. That is, corruption is our independent variable of interest. Our measure of corruption is control of corruption, collected from the World Bank's Worldwide Governance Indicators.⁹ It ranges from -1.83 to 2.47, with higher values denoting less corruption. Additionally, we also consider five broadly defined determinants that are widely used in the empirical literature (for example, Juneja 2015): (i) economic fundamentals related to the size of the market, (ii) political factors, (iii) labor markets (skilled

⁷ <https://www.gemconsortium.org/wiki/1181> (accessed 26 October 2021).

⁸ Refer to <https://www.doingbusiness.org/en/data/exploretopics/entrepreneurship/methodology> for detailed explanation on the World Bank data (accessed 26 October 2021) and Calá et al. (2015) for the definition of the entry rate.

⁹ Control of corruption is defined as “perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as ‘capture’ of the state by elites and private interests”. <https://info.worldbank.org/governance/wgi/Home/Documents> (accessed 29 October 2021).

labor), (iv) capital markets (easiness of financing), and (v) fiscal policies (corporate tax rates).¹⁰ The definitions and sources of these variables are explained in Appendix Table A1.

The sample period runs from 2007 to 2017. We select 2007 as the starting year since entry rate data starts in 2007 in most countries. At the same time, we select 2017 as the end year since nascent entrepreneurship prevalence rate data ends in 2017 in most countries. In the case of the nascent entrepreneurship prevalence rate, the value for 2017 is missing for some countries. To maximize the number of sample countries to as many as possible, if the 2017 value is missing, we use the 2015 or 2016 value instead, depending on availability. For entry rate, the sample period ends in 2018 for most countries. Hence, there is no problem with the end year. On the other hand, the 2007 value is missing in some cases. For these cases, we use the 2008 values. The main empirical methodology is cross section regressions. We regress increase in entrepreneurship, measured by the two proxies, on the initial level of determinants as follows:

$$\Delta ent = \beta_0 + \beta_0 \cdot corrupt + \gamma \cdot X + \varepsilon$$

where Δent is the increase in entrepreneurship measured by either nascent entrepreneurship or entry rate, $corrupt$ is control of corruption, and X denotes a vector of the other determinants of entrepreneurship. We measure the increase in entrepreneurship during the entire sample period from 2007 to 2017. To minimize endogeneity, the explanatory variables are measured by their 2007 values. In addition, we divide the sample period into two subperiods, (i) 2007–2012 and (ii) 2012–2017, and consider the same equation for each subperiod.

The estimates of the ordinary least squares (OLS) regressions of the above equations may be subject to bias if institutional factors, such as corruption, are endogenous. Studies in the growth literature find that institutions are a fundamental determinant of economic growth.¹¹ North (1990) defines institutions as follows: “institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic.” (p. 3). Hence, he concludes that “institutions affect the performance of economies is hardly controversial.” (p. 3).

¹⁰ We could also control for infrastructure, but we could not find data for infrastructure of entrepreneurship.

¹¹ For a survey, refer to Acemoglu et al. (2005).

However, subsequent studies note that institutions are also broadly endogenous. They too are determined by the past economic performances of the economy. Therefore, it is necessary to instrument institutions to investigate their effect more accurately. La Porta et al. (2008) emphasize that the historical origin of a country's laws is highly correlated with institutions, but largely exogenous. As such, they argue that it can be used as an instrument for institutions such as financial protection as well as other legal rules and institutions, including ownership of banks, burden or cost of entry regulations, regulation of labor markets, incidence of military conscription, and government ownership of media. In section III, we show that the extent of corruption varies systematically across legal families and, hence, legal origins can serve as instruments for corruption. The data for legal origins are collected from La Porta et al. (2008).

III. EMPIRICAL FINDINGS

In this section, we report and discuss the main empirical findings. Table 1 presents the summary statistics of the variables. The sample period is from 2007 to 2017. We divide the whole period into period 1 (2007–2012) and period 2 (2012–2017). Δ_1 denotes the 5-year difference during subperiod 1 (or subperiod 2) and Δ_2 denotes the 10-year difference during the whole sample period.¹² We take the logarithm of population and denote it as $\ln pop$. The first variable is the nascent entrepreneurship prevalence rate. The mean of the nascent entrepreneurship prevalence rate is 7.0%, meaning that on average 7.0% of the population is engaged in the early stage of starting new businesses. The standard deviation is 5.0%. Average increases in the nascent entrepreneurship prevalence rate for one subperiod (5 years) and the whole sample period (10 years) are 0.6 and 1.2 percentage points, respectively.

The mean of entry rate is 12.1%, meaning that, on average, newly registered firms account for 12.1% of all existing firms. The standard deviation is 8.3% and, on average, entry rate decreases over time. Average increases in the entry rate for one subperiod (5 years) and for the whole sample period (10 years) are -1.9 and -3.9 percentage points, respectively.

The control of corruption (*corrupt*) ranges from -1.83 to 2.47 with a mean of -0.05. It is constructed so that a higher value denotes less corruption. Polity2 is political score that captures the political system. It ranges from -10 to 10, with a higher number representing a more democratic political system. The mean of polity2 is 3.9 and standard deviation is 6.3. We include economic fundamentals related to the size of

¹² Since the nascent entrepreneurship prevalence rate is quite volatile, we take 3-year moving averages for 2007, 2012, and 2017 before taking the difference.

the market, namely *lpop* (logged population), trade openness, and capital market openness. Trade openness is defined as the sum of exports and imports divided by gross domestic product. The mean is 0.67 and standard deviation is 0.57. Capital market openness is the Chinn-Ito Index that is normalized to one for the full capital market openness. The mean is 0.67 and standard deviation is 0.38. *Skdlabor* is the share of skilled labor, which represents the quality of the labor force. Stock market capitalization is defined as the ratio of the size of the stock market to gross domestic product. The mean of the corporate tax rate, which represents tax policy, is 25.0% and the standard deviation is 8.7%. Legal origins, which will instrument corruption, are classified into five families: British common law (*legor_uk*), French civil law (*legor_fr*), German civil law (*legor_ge*), Scandinavian civil law (*legor_sc*), and socialist law (*legor_so*). The shares of each legal origin are 34%, 43%, 18%, 3%, and 3%, respectively.

Table 2 presents the OLS regression results for the full sample period of 2007–2017. The top panel presents the regression results when the dependent variable is the increase in the nascent entrepreneurship prevalence rate ($\Delta_2suboan$) and the bottom panel shows the results when the dependent variable (Δ_2entry) is the increase in the entry rate. The prefix *L2* represents two period lagged values of each explanatory variable, which means that the initial values are 2006 values. Using the initial value of an explanatory variable makes it a predetermined variable and, hence, mitigates potential endogeneity.¹³ In column (1), we use *corrupt* as the sole explanatory variable. Then we add other control variables one by one in columns (2)–(6) and include all variables in column (7).¹⁴ In column (2), we add economic fundamental variables related to the size of the market, which are population (*lpop*), trade openness (*openness*), and capital openness (*kaopen_norm*); in column (3), political system proxied by polity index (*polity2*); in column (4), the share of skilled labor (*skdlabor*); in column (5), stock market capitalization (*stock_cap*); in column (6), corporate tax rate (*corp_tax*); and in column (7), all control variables together. Numbers in brackets are robust standard errors and ***, **, and * denote the significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

¹³ We address the endogeneity issue later by employing instrumental variables. We prefer the cross-section specification, since the instrumental variables that will be employed to correct the endogeneity issue are time invariant.

¹⁴ In the last column, the number of observations decreases as we need to use the countries for which all the explanatory variables are available. However, we still have enough degree of freedom in estimating the equation. It will be interesting to check nonlinearity of the effect by dividing the countries into two groups where each of the two competing theories can be applied, respectively. However, in that case, we do not have enough degree of freedom to estimate the equation separately for each group.

The top panel shows that the coefficient of corruption is always positive, and statistically significant in the last column, where all the control variables are included. This suggests that the increase in nascent entrepreneurship prevalence rate may be positively associated with less corruption. The coefficient of corruption suggests that one standard deviation decrease in corruption increases the nascent entrepreneurship prevalence rate by 2.1 percentage points. The coefficient of stock market capitalization is negative and statistically significant in column (5), but its significance disappears in column (7). The coefficient of corporate tax rate is negative but insignificant in both columns (6) and (7).

The bottom panel presents the results when the increase in the entry rate is used as the dependent variable. The results show some evidence that the increase in the entry rate is positively associated with less corruption. The estimated coefficient of corruption is always positive, and statistically significant in columns (2) and (3). The coefficients of corruption in columns (2) and (3) suggest that one standard deviation decrease in corruption increases the entry rate by 1.4–3.3 percentage points. The coefficient of population is positive in both columns (2) and (7), and statistically significant at the 5% level in column (7). The coefficient of capital market openness is negative and statistically significant in column (3), but its statistical significance disappears in column (7).

Overall, the evidence in Table 2 suggests that less corruption is associated with enhancing entrepreneurship. However, the evidence is mixed for the other variables.

In Table 3, we present the same regression results for subperiod 1 (2007–2012). In the top panel, the control of corruption is again always positive, and significant in column (7). The share of skilled labor is negative in both columns (4) and (7), and significant in column (7). The corporate tax rate is negative in both columns (6) and (7) but insignificant. In the bottom panel, when the entry rate is the proxy for entrepreneurship, we find somewhat stronger evidence that less corruption promotes entrepreneurship in the sense that the coefficient of corruption is always positive and statistically significant in columns (2), (3), (4), and (6). Population size is positive and significant in column (7). Corporate tax rate is negative in both columns (6) and (7) but insignificant.

In Table 4, we also report the same regression results for the second subperiod from 2012 to 2017. The evidence is somewhat stronger in the top panel and weaker in the bottom panel. Corruption is always positive and significant in four columns in the top panel, but it is positive and significant in only columns (4) and (5) in the bottom panel.

While the results in Tables 2–4 are suggestive, they may be potentially subject to endogeneity. As explained in section II, we will use legal origins as instruments for *corrupt* to tackle potential endogeneity.

Table 5 presents the first-stage regression results where we regress *corrupt* on legal origins. We drop the legal origin of socialist law and use it as the base to interpret the coefficients of the other legal origins as relative performance. In line with the literature, countries whose laws are rooted in British common law perform better than countries with laws based on French civil law. While the estimated coefficient of British common law (*legor_uk*) is positive and highly statistically significant, that of French civil law (*legor_fr*) is negative and insignificant. Interestingly, however, the performance of countries with German civil law or Scandinavian civil law is even better. The estimated coefficient of German civil law (*legor_ge*) and Scandinavian civil law (*legor_sc*) is even larger and statistically significant.¹⁵

In Table 6, we report the instrumental variable (IV) regression results for the full sample period. The top panel presents the results when the dependent variable is the increase in the nascent entrepreneurship prevalence rate from 2007 to 2017. The bottom panel shows the results when the dependent variable is the change in the entry rate during the same period. We instrument *corrupt* using legal origins of English common law, French commercial code, German commercial code, and Scandinavian civil law, collected from La Porta et al. (2008). The first-stage F statistics and the Sargan–Hansen test of overidentifying restrictions pass the usual qualifications in most columns.¹⁶ The coefficients of corruption that are statistically significant suggest that one standard deviation decrease in corruption increases the entry rate by 2.0–10.0 percentage points. The top panel exhibits somewhat weaker evidence for *corrupt* than the OLS regression results in Table 2. However, corporate tax rate is consistently negative in both columns (6) and (7), and significant at the 5% level in column (7). The bottom panel shows even stronger evidence that control of corruption promotes entrepreneurship. The coefficient of *corrupt* is always positive and significant in four columns, including column (7) where all control variables are included. Another notable finding in Table 6 is that corporate tax rate is negative and statistically significant in column (7) in both panels. Finally, population size is positive in both columns and significant in column (7) in the bottom panel. Overall, the results in Table 6 show that control of corruption boosts entrepreneurship, particularly when entrepreneurship is proxied by entry rate. The results also suggest that entrepreneurship is positively associated with market size and negatively associated with corporate tax rate.

¹⁵ La Porta et al. (2008) report that, for some financial institutions such as debt enforcement, countries of Scandinavian civil law performs better than those of British civil law. Beck et al. (2003) find that countries of German legal origin generally outperform countries of British legal origin on financial development measures, such as private credit and stock market development.

¹⁶ This is also true in all other IV regression results reported in Tables 7 and 8.

Table 7 presents the same IV regression results for subperiod 1. The top panel presents when the dependent variable is the increase in nascent entrepreneurship prevalence rate from 2007 to 2012. The bottom panel shows the results when the dependent variable is the change in entry rate during the same period. The results in Table 7 are quite consistent with those in Table 6. In the top panel, corruption is always positive and significant in column (7), but insignificant in the other columns. The coefficient of corruption in column (7) suggests that one standard deviation decrease in corruption increases the nascent entrepreneurship prevalence rate by 1.2 percentage points. In the bottom panel, corruption is positive in all columns and significant in four columns, including column (7). The coefficients of corruption that are statistically significant suggest that one standard deviation decrease in corruption increases the entry rate by 1.6–6.1 percentage points. Corporate tax rate is negative in both columns (6) and (7) in both panels, and significant in column (7) in the top panel. Population size is positive in column (7) in both panels and significant in the bottom panel.

Table 8 presents the same IV regression results for subperiod 2 from 2007 to 2012. The results in Table 8 are generally consistent with those in Tables 6 and 7. In the top panel, however, corruption is insignificant in all columns. While not significant, corporate tax rate is negative in both columns. In the bottom panel, however, corruption is positive and significant in three columns, including column (7). While population size is insignificant in both columns in the top panel, it is positive in both columns and significant in column (7) in the bottom panel.

IV. CONCLUSION

Entrepreneurship is a vital ingredient of economic growth and development. Entrepreneurs create businesses and industries, develop new products and industries, and generate jobs. In light of the economic importance of entrepreneurs, a natural question to ask is, what are the key determinants of entrepreneurship? One key determinant identified by a growing empirical literature is a country's institutional environment, i.e. the set of institutions entrepreneurs and would-be entrepreneurs.

In this paper, we examine the relationship between a specific dimension of a country's institutional landscape, namely corruption, and entrepreneurship. In many countries, especially developing countries, corruption is widespread and even an integral part of doing business. Intuitively, however, corruption can be a powerful deterrent against entrepreneurship. In a corrupt society, individuals may be discouraged from starting businesses because they will face unfair competition from those who have cultivated the political elite. Further, individuals may be reluctant to take risks and

become entrepreneurs since the fruits of their risk-taking could be arbitrarily expropriated by political authorities unless they pay costly bribes.

The central objective of our paper is to empirically investigate whether corruption harms entrepreneurship by using cross-country analysis. That is, we examine whether less corrupt countries tend to have higher levels of entrepreneurship. We employ two proxies for entrepreneurship that are widely used in the literature. The first is nascent entrepreneurship, collected from GEM. The second is entry rate, which is defined as the number of new firms divided by the total number of previous year's registered businesses, collected from the World Bank Group Entrepreneurship Survey.

Our central empirical finding is that control of corruption is positively associated with entrepreneurship. Countries which are better able to control corruption enjoy higher levels of entrepreneurship. Our evidence of a link between corruption and entrepreneur is stronger when we use entry rate as the measure of entrepreneurship. Our central finding stands when we add controls variables that are identified as determinants of entrepreneurship in the literature. In addition, we find a positive association between population size, a proxy for market size, and entrepreneurship and a negative association between corporate tax rate and entrepreneurship.

Our central result of a negative association between corruption and entrepreneurship is subject to potential endogeneity since entrepreneurship can affect corruption. In other words, causality in corruption–entrepreneurship can run both ways. For instance, when entrepreneurship is underdeveloped, individuals with limited entrepreneurial skills may try to grow their business by bribing officials. Following the empirical literature on institutions and economic performance, we use legal origins as instruments for corruption to address potential endogeneity. Our central finding is preserved even when we run IV regressions.

We contribute to the empirical literature, which seeks to identify the determinants of entrepreneurship by empirically investigating the link between corruption and entrepreneurship. More specifically, our paper contributes to the growing empirical literature on the relationship between institutions and entrepreneurship. Further, in light of the substantial interest in the economic impact of corruption, our analysis helps shed light on a specific channel, i.e. corruption, through which institutions affect economic performance. This is an especially important issue in developing countries which tend to suffer from higher levels of corruption, which is viewed as a major impediment to economic growth and development. Finally, while our analysis is far from definitive, we hope that it kicks off active research into the link between corruption and entrepreneurship.

REFERENCES

- Acemoglu, D., S. Johnson, and J. Robinson. 2005. Institutions as the Fundamental Cause of Long-Run Growth. In Aghion, Philippe and Stephen Durlauf, eds. *Handbook of Economic Growth*. North Pole.
- Acs, Z. J., S. Desai, and L. F. Klapper. 2008. What Does “Entrepreneurship” Data Really Show? *Small Business Economics* 31(3), pp. 265–281.
- Aidis, R., S. Estrin, and T. Mickiewicz. 2010. Institutions, Finance and the Level of Development: the Impact on Entrepreneurship in Transition. *Review of Economics and Institutions* 1(1).
- Arin, K. P., V. Z. Huang, M. Minniti, A. M. Nandialath, and O. F. M. Reich. 2015. Revisiting the Determinants of Entrepreneurship: A Bayesian Approach. *Journal of Management* 41 (2), pp. 607–31.
- Beck, T., A. Demirgüç-Kunt, and R. Levine. 2003. Law and Finance: Why Does Legal Origin Matter? *Journal of Comparative Economics*. 31 (4), pp. 653–675.
- Berdiev, A.N. and J.W. Saunoris. 2018. Corruption and Entrepreneurship: Cross-Country Evidence from Formal and Informal Sectors. *Southern Economic Journal* 84(3), pp. 831–848.
- Bologna, J. and A. Ross. 2015. Corruption and Entrepreneurship: Evidence from Brazilian Municipalities. *Public Choice* 165(1), pp. 59–77.
- Chowdhury, F., D. B. Audretsch, and M. Belitski. 2015. Does Corruption Matter for International Entrepreneurship? *International Entrepreneurship and Management Journal* 11 (4), pp. 959–980.
- Chowdhury, F., S. Terjesen, and D. Audretsch. 2015. Varieties of Entrepreneurship: Institutional Drivers Across Entrepreneurial Activity and Country. *European Journal of Law and Economics* 40 (1), pp. 121–148.
- Dreher, A. and M. Gassebner. 2013. Greasing the Wheels? The Impact of Regulations and Corruption on Firm Entry. *Public Choice* 155(3), pp. 413–432.
- Dutta, N. and R. Sobel. 2016. Does Corruption Ever Help Entrepreneurship? *Small Business Economics* 47 (1), pp. 179–199.
- Juneja, P. 2015. Factors Which Affect Entrepreneurship. *Management Study Guide*. <https://www.managementstudyguide.com/factors-which-affect-entrepreneurship.htm>.
- Klapper, L., R. Amit, and M. F. Guillén. 2010. Entrepreneurship and Firm Formation Across Countries. In Lerner, J. and A. Schoar, eds. *International Differences in Entrepreneurship*. Chicago: University of Chicago Press (pp. 129–158).
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny. 1998. Law and Finance. *Journal of Political Economy* 106 (6), pp. 1113–1155.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. W. Vishny. 1999. The Quality of Government. *Journal of Law, Economics, and Organization* 15 (1), pp. 222–279.

- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 2008. The Economic Consequences of Legal Origins. *Journal of Economic Literature* 46 (2), pp. 285–332.
- Mauro, P. 1995. Corruption and Growth. *Quarterly Journal of Economics* 110 (3), pp. 681–712.
- Méon P. and K. Sekkat. 2005. Does Corruption Grease or Sand the Wheels of Growth? *Public Choice* 122 (1), pp. 69–97.
- North, D. C. 1990. *Institutions, Institutional Change, and Economic Performance*. New York: Cambridge University Press.
- Roman, A., I. Bilan, and C. Ciumas. 2018. What Drives the Creation of New Businesses? A Panel-Data Analysis for EU Countries. *Emerging Markets Finance and Trade* 54 (3), pp. 508–36.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>suboan</i>	179	6.98	4.99	1.33	27.50
Δ_1 <i>suboan</i>	113	0.61	2.78	-7.84	12.31
Δ_2 <i>suboan</i>	51	1.22	3.38	-6.28	13.1
<i>entryr</i>	220	12.07	8.31	3.00	65.91
Δ_1 <i>entryr</i>	136	-1.92	6.97	-35.04	36.29
Δ_2 <i>entryr</i>	61	-3.94	7.85	-30.30	9.04
<i>polity2</i>	463	3.91	6.25	-10.00	10.00
<i>corrupt</i>	545	-0.05	1.00	-1.83	2.45
<i>lpop</i>	504	2.05	1.93	-3.04	7.26
<i>openness</i>	504	0.67	0.57	0.08	5.49
<i>kaopen_norm</i>	517	0.54	0.38	0.00	1.00
<i>skdlabor</i>	242	78.38	7.28	42.01	95.46
<i>stock_cap</i>	198	85.33	151.37	0.07	1274.90
<i>corp_tax</i>	490	24.96	8.72	0.00	55.00
<i>legor uk</i>	185	0.34	0.47	0.00	1.00
<i>legor fr</i>	185	0.43	0.50	0.00	1.00
<i>legor so</i>	185	0.18	0.38	0.00	1.00
<i>legor ge</i>	185	0.03	0.16	0.00	1.00
<i>legor sc</i>	185	0.03	0.16	0.00	1.00

Max = maximum, Min = minimum, Obs = observations, Std.Dev. = standard deviation.

Notes: The definitions and sources of the variables are listed in Appendix Table A1. The sample period is from 2007 to 2017. We divide the whole period into subperiod 1 (2007–2011) and subperiod 2 (2011–2017). Δ_1 denotes the 5-year (or 6-year) difference during subperiod 1 (or subperiod 2) and Δ_2 denotes the 11-year difference during the full period. Since nascent entrepreneurship prevalence rate is quite volatile, we take 3-year moving averages for 2007, 2012, and 2017 before taking differences. We take the logarithm of population and denote it as *lpop* (logged population).

Source: Authors' calculations.

Table 2: Ordinary Least Squares Estimation Results for Change in Entrepreneurship: Full Sample Period from 2007 to 2017

Dependent Variable							
$\Delta_2 suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L2.corrupt</i>	0.517 [0.503]	0.594 [0.927]	0.585 [0.630]	0.345 [0.889]	0.764 [0.457]	0.525 [0.536]	2.140** [0.950]
<i>L2.lpop</i>		-0.127 [0.377]					0.293 [0.753]
<i>L2.openness</i>		-0.541 [0.654]					-0.096 [1.017]
<i>L2.kaopen_norm</i>		0.132 [2.700]					-2.926 [3.163]
<i>L2.polity2</i>			-0.037 [0.099]				-0.856 [0.591]
<i>L2.skdlabor</i>				-0.051 [0.126]			-0.229* [0.121]
<i>L2.stock_cap</i>					-0.002*** [0.001]		-0.000 [0.010]
<i>L2.corp_tax</i>						-0.023 [0.055]	-0.139 [0.098]
Observations	51	51	49	33	42	49	25
R-squared	0.025	0.031	0.025	0.012	0.080	0.028	0.474
$\Delta_2 entryr$							
<i>L2.corrupt</i>	0.989 [0.769]	3.261*** [1.004]	1.417* [0.805]	2.304 [2.035]	1.523 [1.235]	1.266 [0.766]	8.718 [5.908]
<i>L2.lpop</i>		0.815 [0.571]					5.656** [2.336]
<i>L2.openness</i>		0.757 [1.428]					1.248 [3.072]
<i>L2.kaopen_norm</i>		-9.781** [3.745]					-6.064 [13.228]
<i>L2.polity2</i>			-0.158 [0.209]				-1.850 [1.292]
<i>L2.skdlabor</i>				0.023 [0.376]			0.049 [0.454]
<i>L2.stock_cap</i>					0.000 [0.003]		0.001 [0.063]
<i>L2.corp_tax</i>						0.036 [0.125]	-0.654 [0.429]
Observations	61	61	58	32	36	54	21
R-squared	0.019	0.155	0.032	0.068	0.031	0.031	0.566

Notes: The top panel presents the ordinary least squares (OLS) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_1 suboan$) during the full sample period from 2007 to 2017. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_1 entryr$) during the same period. The prefix L2 represents one period lagged values of each explanatory variable, which means that the values are 2006 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

Table 3: Ordinary Least Squares Estimation Results for Change in Entrepreneurship: Subperiod 1 from 2007 to 2012

Dependent Variable							
$\Delta_1 suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L.corrupt</i>	0.514 [0.485]	0.453 [0.808]	0.393 [0.508]	0.185 [0.705]	0.614 [0.512]	0.513 [0.511]	1.686** [0.661]
<i>L.lpop</i>		0.100 [0.269]					0.282 [0.531]
<i>L.openness</i>		-0.491 [0.759]					-0.279 [0.685]
<i>L.kaopen_norm</i>		1.288 [2.748]					-3.265 [2.696]
<i>L.polity2</i>			0.053 [0.081]				-0.319 [0.487]
<i>L.skdlabor</i>				-0.039 [0.128]			-0.266*** [0.086]
<i>L.stock_cap</i>					-0.005 [0.005]		-0.004 [0.007]
<i>L.corp_tax</i>						-0.024 [0.047]	-0.106 [0.079]
Observations	54	54	53	36	42	51	25
R-squared	0.030	0.045	0.032	0.006	0.044	0.033	0.553
$\Delta_1 entryr$							
<i>L.corrupt</i>	1.039* [0.590]	2.835* [1.543]	2.141** [0.949]	1.798* [1.020]	1.083 [0.775]	1.200** [0.497]	5.064 [3.104]
<i>L.lpop</i>		-0.274 [0.834]					4.971* [2.590]
<i>L.openness</i>		0.299 [1.754]					3.601 [2.803]
<i>L.kaopen_norm</i>		-9.595* [5.107]					-2.599 [13.795]
<i>L.polity2</i>			-0.458* [0.267]				-1.055 [1.227]
<i>L.skdlabor</i>				0.107 [0.243]			0.079 [0.276]
<i>L.stock_cap</i>					0.005 [0.004]		0.025 [0.045]
<i>L.corp_tax</i>						-0.011 [0.088]	-0.594 [0.477]
Observations	67	66	63	34	39	58	22
R-squared	0.019	0.117	0.111	0.086	0.054	0.036	0.555

Notes: The top panel presents the ordinary least squares (OLS) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_1 suboan$) during subperiod 1 from 2007 to 2012. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_1 entryr$) during the same period. The prefix L represents one period lagged values of each explanatory variable, which means that the values are 2006 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

Table 4: Ordinary Least Squares Estimation Results for Change in Entrepreneurship: Subperiod 2 from 2012 to 2017

Dependent Variable							
$\Delta_1 suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L.corrupt</i>	0.566** [0.252]	0.265 [0.295]	0.520* [0.284]	0.434* [0.258]	0.413 [0.316]	0.591** [0.259]	0.245 [0.613]
<i>L.lpop</i>		-0.181 [0.200]					0.013 [0.445]
<i>L.openness</i>		0.149 [0.630]					0.159 [0.709]
<i>L.kaopen_norm</i>		0.903 [1.344]					1.720 [1.683]
<i>L.polity2</i>			0.006 [0.073]				-0.169 [0.187]
<i>L.skdlabor</i>				-0.039 [0.069]			-0.060 [0.090]
<i>L.stock_cap</i>					0.010 [0.008]		0.019 [0.014]
<i>L.corp_tax</i>						-0.028 [0.037]	-0.084 [0.057]
Observations	59	59	57	51	43	58	37
R-squared	0.057	0.093	0.050	0.055	0.119	0.068	0.289
$\Delta_1 entryr$							
<i>L.corrupt</i>	0.332 [0.515]	0.656 [1.132]	-0.137 [0.659]	1.526* [0.899]	1.425** [0.532]	0.315 [0.543]	3.644 [2.256]
<i>L.lpop</i>		0.842 [0.617]					1.099 [0.634]
<i>L.openness</i>		-0.064 [1.161]					-1.248 [1.046]
<i>L.kaopen_norm</i>		-0.252 [3.522]					-0.259 [2.888]
<i>L.polity2</i>			0.136 [0.130]				-0.455 [0.384]
<i>L.skdlabor</i>				-0.127 [0.116]			-0.072 [0.260]
<i>L.stock_cap</i>					-0.005*** [0.001]		-0.019 [0.018]
<i>L.corp_tax</i>						0.007 [0.094]	-0.051 [0.132]
Observations	69	67	63	45	37	65	25
R-squared	0.004	0.056	0.018	0.110	0.191	0.004	0.388

Notes: The top panel presents the ordinary least squares (OLS) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_1 suboan$) during subperiod 2 from 2012 to 2017. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_1 entryr$) during the same period. The prefix L represents one period lagged values of each explanatory variable, which means that the values are 2006 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

Table 5: Validity of Instrumental Variables

Variable	constant	legor_uk	legor_fr	legor_ge	legor_sc	Observations	R-squared
<i>corrupt</i>	-0.291** [0.123]	0.481*** [0.173]	-0.117 [0.157]	1.763*** [0.269]	2.416*** [0.140]	182	0.283

Notes: The dependent variable is *corrupt*. We report the estimation results for year 2017 when we use instruments for *corrupt* as explanatory variables. The instrumental variables are legal origins collected from LaPorta et al. (2008): *legor_uk*, *legor_fr*, *legor_ge*, and *legor_sc* denote legal origins of English common law, French commercial code, German commercial code, and Scandinavian civil law, respectively. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively.

Source: Authors' calculations.

**Table 6: Instrumental Variable Estimation Results for Change in Entrepreneurship:
Full Sample Period from 2006 to 2017**

Dependent Variable							
$\Delta_2suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L2.corrupt</i>	0.043 [0.598]	-0.046 [0.758]	-0.229 [0.730]	0.423 [0.722]	0.214 [0.776]	0.193 [0.536]	1.107 [0.793]
<i>L2.lpop</i>		-0.092 [0.383]					0.358 [0.608]
<i>L2.openness</i>		-0.130 [0.734]					0.640 [0.850]
<i>L2.kaopen_norm</i>		1.185 [2.156]					-2.712 [2.467]
<i>L2.polity2</i>			0.046 [0.094]				-0.419 [0.567]
<i>L2.skdlabor</i>				-0.052 [0.120]			-0.243** [0.099]
<i>L2.stock_cap</i>					-0.002 [0.001]		0.004 [0.008]
<i>L2.corp_tax</i>						-0.024 [0.055]	-0.141** [0.072]
First-stage F-statistic	36.96	38.74	22.43	29.71	30.49	38.40	10.76
Overidentification test p-value	0.764	0.668	0.883	0.479	0.538	0.693	0.0722
Observations	51	51	49	33	42	49	25
R-squared	0.004	0.011	-0.021	0.012	0.043	0.018	0.435
$\Delta_2entryr$							
<i>L2.corrupt</i>	1.495 [0.988]	2.733** [1.332]	2.014* [1.177]	2.041 [1.652]	4.877** [2.418]	1.080 [1.006]	9.986** [4.837]
<i>L2.lpop</i>		0.785 [0.553]					5.745*** [1.871]
<i>L2.openness</i>		1.073 [1.646]					0.616 [2.671]
<i>L2.kaopen_norm</i>		-9.029*** [3.341]					-6.415 [9.647]
<i>L2.polity2</i>			-0.198 [0.211]				-1.971* [1.047]
<i>L2.skdlabor</i>				0.040 [0.349]			0.017 [0.337]
<i>L2.stock_cap</i>					-0.005 [0.004]		-0.009 [0.051]
<i>L2.corp_tax</i>						0.035 [0.121]	-0.668** [0.328]
First-stage F-statistic	80.41	74.00	55.88	34.03	30.24	70.72	6.038
Overidentification test p-value	0.380	0.434	0.360	0.463	0.208	0.255	0.340
Observations	61	61	58	32	36	54	21
R-squared	0.014	0.152	0.026	0.067	-0.098	0.030	0.563

Notes: The top panel presents the instrumental variable (IV) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_2suboan$) during the full sample period from 2007 to 2017. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_2entryr$) during the same period. We instrument corruption using legal origins of English common law, French commercial code, German commercial code, and Scandinavian civil law, collected from LaPorta et al. (2008). The prefix L2 represents two period lagged values of each explanatory variable, which means that the values are 2006 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

**Table 7: Instrumental Variable Estimation Results for Change in Entrepreneurship:
Subperiod 1 from 2007 to 2012**

Dependent Variable							
$\Delta_1 suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L.corrupt</i>	-0.093 [0.492]	-0.271 [0.562]	-0.284 [0.569]	0.286 [0.575]	-0.189 [0.916]	-0.038 [0.454]	1.142* [0.632]
<i>L.lpop</i>		0.148 [0.265]					0.316 [0.439]
<i>L.openness</i>		0.038 [0.770]					0.108 [0.538]
<i>L.kaopen_norm</i>		2.547 [2.385]					-3.152 [1.992]
<i>L.polity2</i>			0.116 [0.103]				-0.089 [0.417]
<i>L.skdlabor</i>				-0.043 [0.118]			-0.273*** [0.074]
<i>L.stock_cap</i>					-0.001 [0.007]		-0.001 [0.006]
<i>L.corp_tax</i>						-0.028 [0.048]	-0.106* [0.059]
First-stage F-statistic	43.79	48.64	29.19	34.39	31.37	43.20	10.76
Overidentification test p-value	0.879	0.869	0.916	0.370	0.675	0.829	0.190
Observations	54	54	53	36	42	51	25
R-squared	-0.012	0.017	-0.011	0.005	-0.029	0.001	0.537
$\Delta_1 entryr$							
<i>L.corrupt</i>	1.645* [0.855]	2.320 [1.428]	2.734** [1.213]	1.612 [1.161]	4.812** [1.949]	1.184 [0.786]	6.120** [2.975]
<i>L.lpop</i>		-0.288 [0.820]					5.003** [2.027]
<i>L.openness</i>		0.641 [1.666]					3.042 [2.280]
<i>L.kaopen_norm</i>		-8.881* [4.542]					-2.988 [10.269]
<i>L.polity2</i>			-0.499* [0.272]				-1.199 [1.050]
<i>L.skdlabor</i>				0.118 [0.231]			0.063 [0.215]
<i>L.stock_cap</i>					-0.001 [0.003]		0.018 [0.034]
<i>L.corp_tax</i>						-0.011 [0.085]	-0.611 [0.383]
First-stage F-statistic	63.40	63.88	38.40	44.33	31.62	48.00	12.10
Overidentification test p-value	0.224	0.241	0.329	0.405	0.497	0.182	0.232
Observations	67	66	63	34	39	58	22
R-squared	0.013	0.115	0.106	0.085	-0.166	0.036	0.552

Notes: The top panel presents the instrumental variable (IV) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_2 suboan$) during subperiod 1 from 2007 to 2012. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_2 entryr$) during the same period. We instrument corruption using legal origins of English common law, French commercial code, German commercial code, and Scandinavian civil law, collected from LaPorta et al. (2008). The prefix L represents one period lagged values of each explanatory variable, which means that the values are 2011 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

**Table 8: Instrumental Variable Estimation Results for Change in Entrepreneurship:
Subperiod 2 from 2012 to 2017**

Dependent Variable							
$\Delta_1 suboan$	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>L.corrupt</i>	0.490 [0.371]	0.563 [0.543]	0.394 [0.414]	0.319 [0.310]	0.288 [0.469]	0.534 [0.377]	-0.246 [0.674]
<i>L.lpop</i>		-0.183 [0.192]					-0.003 [0.401]
<i>L.openness</i>		-0.071 [0.690]					0.466 [0.547]
<i>L.kaopen_norm</i>		0.525 [1.471]					2.293* [1.376]
<i>L.polity2</i>			0.017 [0.072]				-0.142 [0.165]
<i>L.skdlabor</i>				-0.037 [0.068]			-0.049 [0.074]
<i>L.stock_cap</i>					0.011 [0.008]		0.024** [0.011]
<i>L.corp_tax</i>						-0.028 [0.036]	-0.074 [0.051]
First-stage F-statistic	84.07	46.50	51.21	49.62	53.11	70.61	7.424
Overidentification test p-value	0.559	0.395	0.621	0.313	0.347	0.461	0.125
Observations	59	59	57	51	43	58	37
R-squared	0.056	0.083	0.048	0.052	0.115	0.067	0.274
$\Delta_1 entryr$							
<i>L.corrupt</i>	0.404 [0.651]	0.476 [1.007]	-0.076 [0.887]	1.570* [0.850]	1.796** [0.788]	0.429 [0.564]	3.794** [1.772]
<i>L.lpop</i>		0.826 [0.622]					1.122** [0.570]
<i>L.openness</i>		0.017 [1.056]					-1.321 [0.927]
<i>L.kaopen_norm</i>		-0.021 [3.052]					-0.286 [2.304]
<i>L.polity2</i>			0.132 [0.136]				-0.479 [0.296]
<i>L.skdlabor</i>				-0.130 [0.101]			-0.079 [0.201]
<i>L.stock_cap</i>					-0.006*** [0.001]		-0.020 [0.016]
<i>L.corp_tax</i>						0.006 [0.092]	-0.053 [0.105]
First-stage F-statistic	58.01	75.31	63.21	16.64	29.85	36.52	2.971
Overidentification test p-value	0.712	0.597	0.807	0.846	0.597	0.518	0.120
Observations	69	67	63	45	37	65	25
R-squared	0.004	0.055	0.018	0.110	0.179	0.003	0.387

Notes: The top panel presents the instrumental variable (IV) regression results when the dependent variable is the change in nascent entrepreneurship prevalence rate ($\Delta_2 suboan$) during subperiod 2 from 2012 to 2017. The bottom panel shows the results when the dependent variable is the change in entry rate ($\Delta_2 entryr$) during the same period. We instrument corruption using legal origins of English common law, French commercial code, German commercial code, and Scandinavian civil law, collected from LaPorta et al. (2008). The prefix L represents one period lagged values of each explanatory variable, which means that the values are 2011 values. Numbers in brackets are robust standard errors and ***, **, and * denote significance levels of 1%, 5%, and 10%, respectively. The constant term is included but not reported.

Source: Authors' calculations.

APPENDIX

Table A1: Definitions of Variables and Data Sources

Variables	Description and Construction	Data Source
Nascent entrepreneurship (<i>suboan</i>)	Percentage of all respondents (18–64): involved in nascent business (new firm start-up), defined as active, expect to be a full or part owner, and no salaries or wages paid for over 3 months [Nascent Firm Prevalence Rate]	Global Entrepreneurship Monitor's Adult Population Survey, global national level data
Entry rate (<i>entryr</i>)	Number of new firms divided by the total number of lagged registered businesses	WBGES, entrepreneurship database
Corruption (<i>corrupt</i>)	Control of corruption	World Bank's Worldwide Governance Indicators
Population (<i>pop</i>)	Population (million)	Penn World Table 10.0
Openness (at current purchasing power parities), (<i>openness</i>)	Share of merchandise exports–share of merchandise imports	Penn World Table 10.0
Financial openness, (<i>kaopen_norm</i>)	Chinn-Ito Index; a country's degree of capital account openness (normalized to one)	M. D. Chinn and H. Ito. 2006. What matters for financial development? Capital controls, institutions, and interactions. <i>Journal of Development Economics</i> . 81 (1). pp. 163–192
Political score (<i>polity2</i>)	A single regime score that ranges from +10 (full democracy) to -10 (full autocracy); composite index computed by subtracting the autocracy index from democracy index from Polity5 project database	The Center for Systemic Peace, Polity5: Regime Authority Characteristics and Transitions Datasets, 1800–2018
Skilled labor, 1990–2019 (<i>skdlabor</i>)	Labor force with advanced education (percentage of total working-age population with advanced education)	World Bank's World Development Indicators
Capitalization of primary stock market	Market capitalization (also known as market value) is the share price times the number of	World Federation of Exchange

Variables	Description and Construction	Data Source
<i>(stock_cap)</i>	shares outstanding (including their several classes) for listed domestic companies divided by gross domestic product. Investment funds, unit trusts, and companies whose only business goal is to hold shares of other listed companies are excluded. Data are end-of-year values.	
Corporate tax rates <i>(corp_tax)</i>	Corporate tax rates	Tax Foundation, Corporate Tax Rates Around the World, 2020
Legal origin <i>(legor_uk, legor_fr, legor_ge, legor_sc)</i>	Identifier for a legal system that each country follows: common law (British) and civil law (French, German, and Scandinavian) (* a dummy variable for socialist law is omitted in regression in Table 5 because of multicollinearity)	R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2008. The Economic Consequences of Legal Origins. <i>Journal of Economic Literature</i> 46 (2). pp. 285–332.

WBGES = World Bank Group Enterprise Survey.
Source: Authors' compilation.