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INFORMAL LEGACY AND EXPORTING AMONG SUB-SAHARAN AFRICAN FIRMS

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Abstract: Around the world and especially in areas of widespread poverty, firms start their operations without registering with relevant authorities (i.e., in the informal economy). We explore whether firms that initiated their operations in the informal economy but later register have a higher propensity to export than firms that register at the time of their foundation. We reason that the experience of having operated informally provides formally registered firms with the advantage of low-cost and flexible exploration but also a domestic legitimacy liability. We suggest that these factors likely contribute to making foreign export markets more attractive after registration. Based on a comprehensive sample of Sub-Saharan African firms, we find that conditional on registration, firms with an informal legacy have a higher propensity to initiate exporting than firms that started their operations formally. We contribute with theoretical and policy-oriented insights on the dynamics of informality and exporting.

Keywords: Exporting, informal economy, experimentation, legitimacy, Sub-Saharan African firms.

INTRODUCTION

The informal economy, defined as “those actions of economic agents that fail to adhere to the established institutional rules or are denied their protection” (Feige, 1990: 990), constitutes a major part of economic activity worldwide. A recent report from the International Labor Organization (ILO, 2018) estimates that 89% of all workers in Sub-Saharan Africa are employed in the informal economy, while an International Monetary Fund report finds that the informal economy may account for 39% of GDP in low-income countries compared to 15% in advanced economies (Medina and Schneider, 2018).

It is generally acknowledged that informal firms suffer from a lower level of legitimacy than formal firms (Assenova and Sorenson, 2017; deSoto, 2000, LaPorta and Shleifer, 2014). By operating as unregistered enterprises, firms are faced with more uncertainty, struggle to obtain contracts, experience stigma from customers, and cannot attract qualified employees (McKenzie and Sakho, 2010; Nugent and Sukiassyan, 2009). The vastness of informal economic activity is therefore often regarded as a grand challenge (George, Howard-Grenville, Joshi and Tihanyi, 2016b) that prevents “good jobs and economic growth” (UN, 2016: 84). While many policy initiatives are currently directed toward formalizing informal firms (ILO, 2018; UN, 2016), research shows that formalization through registration does not automatically remedy their challenges. Some studies find that firm formalization can enhance organizational performance and effectiveness (e.g., Fajnzylber, Maloney and Montes-Rojas, 2011; Rand and Torm, 2012), whereas other studies find no performance changes (e.g., Benhassine et al., 2018; de Mel, McKenzie and Woodruff, 2013).

We explore whether firms that initiate their operations informally before formalizing by registering with national authorities have a higher propensity to access foreign markets through exporting than firms that were registered at the time of their foundation. According to World Bank Enterprise Surveys (2020), 19% of the sampled formal firms in Sub-Saharan Africa have a legacy of informal operations. For many of these firms, exporting can constitute a more desirable outcome than an increase in profit margins (Atkin, Khandelwal, and Osman, 2017). Besides offering unique opportunities to access external knowledge (Salomon and Jin, 2010) and innovation (Xie and Li, 2018), exporting can offer a pathway to overcoming domestic legitimacy liabilities (Witt and Lewin, 2007).

Exporting is therefore viewed as a particularly attractive growth strategy for firms based in emerging and developing economies (Gao et al., 2017).

Building on literature that emphasizes how heterogeneous sources of knowledge increase firms' export propensity (e.g., Brouthers and Hennart, 2007; Paul, Parthasarathy and Gupta, 2017; Sousa et al., 2008), we propose two interrelated mechanisms that increase the exporting propensity of firms that start informally but later register. First, firms' informal operations allow for exploration and experimentation outside the formal legal boundaries (deSoto, 2000; Khavul et al., 2009). With less 'red tape' compared to firms that register at the time of their establishment, those that started informally can more freely improve product quality and enhance business models, resulting in lower barriers to exporting after registration. Second, past informal operations may be regarded as a liability, as noncompliance with formal institutions may lead to a stigma from customers, employees, and other stakeholders in the firm's home markets (Assenova and Sorenson, 2017). Thus, while informal operations provide firms with the advantage of exploration and experimentation, their lack of domestic legitimacy may prevent them from realizing their potential domestically. This is likely to further increase the propensity to seek export markets after registration. We, therefore, hypothesize that past informal operations imprint an enticement to initiate exporting once formalized.

Using a sample of 7,223 firms across 27 Sub-Saharan African countries, we find that conditional on registration, starting informally is positively related to the propensity to initiate exporting. This result remains robust in an analysis of a matched sample and a two-stage least squares (2SLS) analysis. In an additional analysis, we find that both the number of years that firms have been informal and the absence of institutional trust in the firms' home countries increase their exporting propensity after registration. We reason that the variation in the time that firms operate informally is correlated with the likelihood of successfully generating better products and business models but also increases legitimacy liabilities stemming from informality, and thereby increases firms' exporting propensity after registration. Moreover, since formal institutional trust implies lower transaction costs, less corruption and bribery, and greater ease of doing formal business, we suggest that it reduces both the opportunities for informal experimentation and the stigma of domestic legitimacy liabilities and hence the propensity to export. While we believe that these additional results offer an indirect indication

of the validity of our theoretical expectations, we also acknowledge that none of our analyses offer direct evidence for the two proposed mechanisms.

We claim two main contributions to existing literature. First, while informal operations are conventionally associated with lower legitimacy and growth (Assenova and Sorenson, 2017), we reason that informal firms that eventually formalize may use this period as a learning laboratory that allows for exploration and experimentation outside the formal legal boundaries and hence without the interference of formal bureaucracy. This is not to suggest that pushing informal firms to register will automatically increase export propensity. However, early informal operations may allow firms that register organically to develop their concepts through flexibility and eventually seek foreign markets. This contributes to research seeking to understand how firms without initial access to efficient markets can grow and build competitive advantage (Mair et al., 2012; Peprah et al., 2022; Zoogah et al., 2015).

Second, by suggesting that the combination of a low domestic legitimacy and the opportunity to more freely explore new business opportunities imprints an enticement to export, we contribute to international business research on heterogeneous and non-traditional export antecedents (Sousa et al., 2008; Zahra, Neubaum and Naldi, 2007). In this vein, we discuss how it is somewhat paradoxical that many policy conversations are largely focused on eradicating the informal economy instead of catering to those firms that use this context as a platform for further business development (cf. Dacin et al., 2011).

THEORY AND HYPOTHESIS

The Informal Economy

Firms that do not officially register their enterprises at the time of their foundation can be classified as operating in the informal economy (Godfrey, 2011; Ihrig and Moe, 2004; Portes and Haller, 2005; Webb et al., 2009). According to this view, firm formalization occurs when a firm registers with the appointed authorities and complies with formal regulations associated with operations, taxes, and labor (Godfrey, 2011; Siqueira, Webb and Bruton, 2016; Williams et al., 2017). In this article, we compare firms that initiated their operations in the informal economy but later formalize by registering their enterprises to firms that registered from the outset. Moreover, we restrict our focus to firms that are not involved in

illicit products or practices, implying that past informal activities can be regarded as “illegal yet legitimate” (Webb, Bruton, Tihanyi, and Ireland, 2013; Webb, Tihanyi, Ireland, and Sirmon, 2009).

An often-used explanation of entry into the informal economy highlights the role of states in creating the legal institutional contexts (deSoto, 2000). According to this perspective, firms start as informal enterprises because cumbersome government regulations and poorly protected property rights regimes prevent them from doing otherwise. The costs of bureaucracy and registration preclude informal firms from unleashing their potential and they thus find themselves abstained from reaping the same common goods such as access to capital and protection as their formal counterparts. According to deSoto (2000: 84), “the legal system [in Third World countries] imposes rules that thwart the expectations of those it excludes.” These insights are widely supported empirically. For example, using a panel of informal entrepreneurship across a wide range of countries, Dau and Cuervo-Cazurra (2014) find that while economic liberalization positively impacts the formation of both formal and informal enterprises, a country’s governance levels have a positive impact on formal entrepreneurship but a negative impact on informal entrepreneurship. Based on a field experiment in Sri Lanka, de Mel et al. (2013) find that only a small fraction of the owners of informal firms have accurate information about the cost of formalization and that most overestimate the time it takes to register. Nguyen et al. (2014) argue that firms’ motives for formalization are to obtain government support, limit the payment of bribes, and/or create growth opportunities.

Conventionally, being formal is viewed as superior to being informal, especially concerning productivity and firm performance (Assenova and Sorenson, 2017; Benjamin and Mbaye, 2012; La Porta and Shleifer, 2014). Formality is argued to give firms legitimacy, better access to capital, risk pooling mechanisms, government support programs, and access to a broader network, all of which can lead to better performance (Webb, Khoury and Hitt, 2019; Fajnzylber, Maloney and Montes-Rojas, 2011; La Porta and Shleifer, 2014; Rand and Torm, 2012). However, research suggests that many firms choose to remain informal, emphasizing that moving from informality to formality goes beyond a standard payment of a registration fee and taxes (e.g., De Castro et al., 2014; de Mel et al., 2013). For an informal firm, formalization involves transitioning from “one institutional framework based on minimal standards (i.e., standards underpinning the informal market) to another institutional framework

with specified and enforced standards of quality, efficiency, and volume (i.e., standards underpinning the formal market)” (Sutter et al., 2017: 421-422). It encompasses a fundamental change in business operations, including altering the reliance on trust and word-of-mouth to detailed contractual agreements (Godfrey, 2011; Sutter et al., 2017).

Studies that explore firm-level consequences of formalization provide mixed results. For example, Benhassine et al. (2018: 14) use experimental evidence from Benin to explore the benefits of formalization and find that firms which formalize “access more business training and pay lower taxes due to a tax exemption, but are not more likely to have business bank accounts, gain new customers, have higher profits or sales, or hire additional workers.” Demenet et al. (2016) use panel data from Vietnam to explore the value added by formalization. They find that firms that formalize experience a 20% increase in value-added compared to firms that do not formalize. Relatedly, de Mel et al. (2013) draw on a field experiment in Sri Lanka and find that formalization results in higher profits but only for a few firms that grow rapidly. Interestingly, the majority of the studies to date have focused on financial indicators, such as revenue, profits, and value-added, while disregarding other aspects of business development, such as geographical expansion.

Exporting

We explore whether firms that operate informally in the initial years after establishment but later register have a higher propensity to export by selling their products or services to customers outside the country than do firms that register at their establishment. In contrast to other means of internationalization such as foreign direct investment and joint ventures, exporting is a mode of foreign entry with relatively low levels of resource commitment and risk (e.g., Lu and Beamish, 2006). Exporting has therefore been seen as a conventional first step of internationalization, especially for small and medium-sized enterprises (e.g., Love and Roper, 2015). Selling products and services in foreign markets is not without costs, however. Firms may incur significant costs related to factors such as communication and transportation, the establishment of reliable distribution channels, the modification of products to serve foreign tastes, and foreign governmental barriers and currency restrictions. Although improvements in technology have contributed to lowering these exporting sunk costs, they still exist and provide entry

barriers that less productive firms may find difficult to overcome (Das, Roberts and Tybout, 2007). Being a small firm with fewer resources, these challenges are arguably exacerbated (Paul et al., 2017).

Prior literature has devoted much attention to understanding how firm resources and experience can reduce exporting barriers and thus initiate the internationalization of firms' products and services (cf. Sousa et al., 2008; Zahra, Neubaum and Naldi, 2007). For example, networks and experience with other international ventures reduce firms' liabilities of foreignness and enable them to overcome both internal barriers (e.g., difficulties in finding distributors and lack of negotiating power) and external barriers (e.g., lack of proper trade institutions and political instability) associated with exporting (Guler and Guillen, 2010; Paul et al., 2017; Zaheer, 1995). Relatedly, having foreign country-specific experience may reduce decision makers' perceptions of external uncertainties and, as such, imprint a motive to seek foreign expansion (Henisz and Macher, 2004; Tihanyi et al., 2005).

Informal Legacy and Export Propensity

Conditional on firm registration, we suggest that the experience of having operated informally positively influences firms' propensity to initiate exporting. To construct our argument, we rely on previous literature that emphasizes the importance of firm resources and experience in increasing firms' export propensity and discuss two interrelated export-inducing mechanisms of having an informal legacy: 1) exploration and experimentation outside of the formal institutional boundaries; and 2) a legitimacy liability from former informal operations.

First, compared to de novo formal firms that face more stringent requirements and regulations, firms that started their operations informally have for a certain period been able to operate with lower exposure to costly bureaucracy, regulations, and taxes (deSoto, 2000; Russo, 2008; Rocha, Ulyssea and Rachter, 2018; Webb, Khoury and Hitt, 2019). For example, Webb et al. (2009) note how informal entrepreneurs are not equally restricted by formal legal boundaries in their search for opportunities as formal firms. As a result, they may explore and experiment with business ideas and solutions that formal entrepreneurs would fail to notice or deem illegal and illegitimate. These activities subsequently increase their proclivity to expand in foreign markets. By using the informal economy as "learning laboratories" (Hitt et al., 2005), firms can more freely explore and experiment to develop better-suited

products or business models before eventually deciding to register (e.g., Godfrey, 2011). For example, in a study of informal family businesses in Africa, Khavul et al. (2009) argue that informality reduces the cost of experimenting with different businesses so that a venture can obtain valuable market feedback before completing the product-development process. Compared to firms that registered at their foundation, Williams et al. (2016) find that firms spending longer periods operating unregistered display higher subsequent sales, employment, and productivity growth rates. Other studies find that informal operations can facilitate flexible transactions and low-cost financing (Portes and Sensenbrenner, 1993; Venkatesh, 2006) and subsequently firms' ability to engage in product development (Bu and Cuervo-Cazurra, 2020).

We argue that the advantages stemming from firms' experience of having explored and experimented outside the formal legal boundaries constitute important drivers for exporting after registration. As a lack of experience and resources conventionally prevents nascent firms from participating in export markets (Das et al., 2007; Paul et al., 2017), informal firms might be able to purposefully exploit the period before registration to explore and experiment more freely to develop products and business models. Compared with *de novo* formal firms, firms that started informally and later registered are thus likely to have accumulated important experience and resources that will allow them to overcome exporting entry barriers. For example, in a study of informal micro-production firms in Soweto, South Africa, Grant (2013: 99) finds that access to informal international entrepreneurial networks, such as "Soweto taxi drivers traveling between Soweto-Maputo and Johannesburg-Harare" can facilitate exporting (see also Golub, 2015, for a review on informal cross-border trading in Africa). Based on a study of informal Ghanaian firms, Amoako and Lyon (2013) argue that their experience with traditional cultural institutions such as chieftaincy and religion (instead of formal courts) allows for more successful exporting with fewer commercial disputes. Relatedly, in a case study of Jumia, a Nigerian multinational online retailer, Peprah et al. (2022) discuss how interactions with domestic institutional voids in the initial phases after foundation prompt business model innovation and international expansion.

Second, we also emphasize that firms that started operating in the informal economy are more likely to have experienced lower levels of domestic legitimacy compared to formal firms (Assenova

and Sorenson, 2017). Without an official governmental stamp of approval, firms operating informally may experience stigma from customers, employees, and other stakeholders. By being informal, it is less likely that “key stakeholders [...] accept a venture as appropriate and right, given existing norms and laws” (Aldrich and Fiol, 1994: 648). For example, Assenova and Sorenson (2017: 805) find that firms that registered their enterprises at founding are more successful in terms of sales and employment than informal firms, arguing that “the loss of legitimacy associated with informality ... harm organizational performance”.

We suggest that a firm’s experience as an informal enterprise imprints an incentive to overcome such legitimacy liabilities through the means of relying more on foreign instead of only domestic markets. This type of behavior is well-documented in international business research. For example, Witt and Lewin (2007) build on Hirschman’s (1970) famous work on how organizational members may respond to deteriorating conditions by arguing that firms may partially or completely depart from domestic business systems to avoid such misalignments and their associated costs. Using a sample of Japanese firms, Sakakibara and Porter (2001) find a strong relationship between market instability and world export share. Narula (2002) finds that the lack of adaptation of the national innovation system to the R&D requirements of firms may prompt outward foreign direct investment to countries with more suitable innovation systems. Based on a sample of Ghanaian ventures, Adomako et al. (2019) find that domestic institutional voids induce firms to seek international markets.

Consequently, we argue that firms that incurred domestic legitimacy liabilities while operating informally will be more inclined to seek to export as an exit strategy once registered. The impetus to exit home markets through exporting, therefore, gets imprinted during the firm’s informal operations (e.g., Kriauciunas and Kale, 2006; Stinchcombe, 1965). While firm registration would grant firms more legitimacy, we expect that the initially imprinted exporting propensity is likely to persist also after enterprise registration. According to imprinting theory (Kriauciunas and Kale, 2006; Stinchcombe, 1965), firms’ strategic actions, including the decision to pursue export markets, are often influenced by the circumstances faced by them at the time of their founding. For example, Bu and Cuervo-Cazurra (2020) find that the costs of building internal and external agency relationships get imprinted during informal operations, and subsequently, constrain firms’ incentives to engage in new product innovation

after registration. Ganotakis and Love (2012) show how the initial attitudes and perceptions of the entrepreneurial founders towards internationalization may eventually function as a main determinant of the decision to become an exporter. Relatedly, Westhead et al. (2001) demonstrate how the characteristics of founders and businesses in the early years of operations explain the propensity to engage in exporting at a later stage. We, therefore, assume that the incentive to escape domestic markets through exporting as a means to overcome legitimacy liabilities also persists after the firm registers.

Taken together, while informal operations may provide firms that later register with the advantages of exploration and experimentation and thereby a means to overcome important exporting obstacles, their lack of domestic legitimacy is likely to prevent them from realizing their potential. Thus, the advantages stemming from informal operations imprint an additional enticement to initiate exporting once formalized. This logic leads us to our research hypothesis:

There is a positive relationship between having an informal legacy and engaging in exporting.

DATA AND METHODS

Empirical Setting

We assess firms' export propensity across 27 countries in Sub-Saharan Africa. Sub-Saharan Africa provides an appropriate setting for this study due to the widespread prevalence of informal organizations (ILO, 2018). Our data come from the World Bank Enterprise Survey, a pooled cross-sectional firm-level survey of a representative sample of private firms in the manufacturing and services industries. The survey uses a globally standardized methodology and includes questions about firm characteristics and the business environment. Given the sensitive nature of some of the survey questions (e.g., those relating to informality), the surveys are administered by private contractors and the anonymity of the respondents is guaranteed. This helps to limit desirability bias.

The Enterprise Surveys are administered to a stratified random sample based on sector, firm size, and geographical location. As the survey's sampling frame is derived from national business registers, only firms active in the formal sector are included. The sample size depends on the size of the economy: 1,200 to 1,800 in large economies, 360 in medium-sized economies, and 150 in smaller economies. The surveys are administered face-to-face in the local language to firm owners and top

managers, who are allowed to ask human resource specialists and accountants to answer questions about labor and sales. As a result of the exclusion of establishments with incomplete data for our variables of interest, the sample contains 7,223 interviews carried out from 2011 to 2018.

Variables and Measures

Our dependent variable, *exporter*, measures whether a firm participates in export markets. It is a discrete, self-reported variable that is set equal to 1 if a firm engaged in direct exports in the previous fiscal year and 0 otherwise. Of the firms in our sample, 12.0% participated in export markets. The median exporting firm exported 30% of its total annual sales.

Our main independent variable is a self-reported *informal legacy* indicator, which is derived from the World Bank Enterprise Survey. The survey asks respondents whether the firm was formally registered when it began operations. The informal legacy variable takes a value of 0 if the firm was registered at the time of its foundation and 1 if it was not. All firms in our sample were formally registered at the time of the survey. Hence, we compare firms that register at their foundation with those that registered later. Of the firms in the surveyed economies, 19.0% had an informal legacy. However, there is considerable cross-country heterogeneity. Figure 1 shows the variation in the percentage of firms with an informal legitimacy across Sub-Saharan Africa. While 2.9% of the firms in Guinea and 2.5% of the firms in Sudan reported having an informal legacy, the corresponding figure for Nigeria was 39.1%. Variations in the percentage of firms with a reported informal legacy in our sample are likely to depend on the national institutional context and the extent to which entrepreneurs trust the interviewer to guarantee anonymity. For example, in Sudan where trust in international organizations is low, fear of government repercussions might lead entrepreneurs to be reluctant to truthfully report whether they registered at the year of foundation.

[Insert Figure 1]

We include several control variables to capture variance related to export propensity and the decision to register at the foundation. Our control variables are all derived from the World Bank Enterprise Surveys. We control for sales at the time of the survey and 3 years prior. Indirectly, we thus control for the firm's sales growth. We also include the number of employees at the time of founding

and at the time of the survey, firm age in years, and we add dummy variables for female ownership, foreign ownership, and a location in one of the country's main business cities or a border region. We also add a dummy variable which is one if a firm has launched a new product or service over the last 3 years to account for firms that might register with the aim of commercializing innovation.

We also include two measures to control for the roles of the CEO and the employees. First, we include CEO experience, which we measure as the number of years the top manager has worked in the focal firm's sector. More experienced CEOs may be more likely to register an enterprise because they have knowledge about the costs and benefits of doing so. Moreover, they may be more likely to engage in export activities. Second, we control for the skill level of employees by measuring whether they have completed high school. Firms with a more skilled labor force are likely to be more productive and, therefore, more likely to export and register their firms at the start of operations.

Our continuous variables (i.e., sales, sales 3 years prior, employees, employees at the time of the founding, CEO experience, and firm age) are highly skewed. We, therefore, transformed them using the inverse hyperbolic sine. This transformation can be interpreted as a logarithmic scale, but it can take zeros into account. The distribution of the skill level of the employees is irregular with its mode at 100% of the employees have completed high school. We dichotomize the schooling variable so that it has a value of 1 if all employees at least completed high school and 0 otherwise.¹

Instead of including country-level control variables, we include country-year fixed effects that absorb all variation over countries and time (e.g., GDP, education, infrastructure, and institutions). These fixed effects also control for the variation in willingness to report truthfully on an informal legacy across countries. In addition, we include sector fixed effects, which account for sectoral differences in registration and exporting behavior. These sector fixed effects correspond to the World Bank Enterprise Survey's classification of firms into the following 14 sectors: basic and fabricated metals, chemicals, plastics and rubber, food, furniture, hospitality and tourism, non-metallic mineral products, printing and publishing, retail, services of motor vehicles, textiles and garments, transport, wholesale, other manufacturing, and other services.

¹ We also estimated our empirical model with the continuous education measure instead. The results do not differ substantially from those reported in the paper and are available from the authors on request.

Estimation strategy

To study the effect of an informal legacy on the propensity to export, the section ‘Descriptive Statistics’ first compares the characteristics of firms with and without an informal legacy. In the section ‘Hypothesis Testing’, we provide the results of our main analyses. As our dependent variable is a dummy variable, we obtain these results using a logit model with robust standard errors clustered at the country level.² The clustered robust standard errors combined with the country-year fixed effects account for the possible interdependence of enterprises within a country.

Because the decision to register at the foundation is likely to be correlated with characteristics of the firm and its local environment which may also be correlated with the decision to export, we also test our hypothesis on a matched sample and using a 2-Stage-Least-Square (2SLS) regression. These results provide additional support for our hypothesis and are reported in the section ‘Robustness Checks’. In this section, we also explore the impact of the timing of firm registration and the degree to which home country institutions are trusted. While we acknowledge that these tests do not offer any direct measure of our theoretical mechanisms, we believe that they can offer an indirect indication of whether our expectations are valid.

RESULTS

Descriptive Statistics

Table 1 provides descriptive statistics for the sampled establishments and a correlation matrix of our variables. In Table 2 (Columns 1-2), we compare firms with informal legacies to those without. When covariates are not taken into account, we cannot reject the null hypothesis that firms with informal legacies are equally likely to export as firms that formally registered at the beginning of their operations ($p = 0.659$). This can largely be explained by differences in other firm characteristics. For example, previous research shows that firms in the informal economy are smaller and rely less on an educated workforce than firms in the formal economy (Assenova and Sorenson, 2017; La Porta and Shleifer,

² We prefer the logit model to a probit model because of its ease of interpretation. However, the probit model produced qualitatively identical results.

2014). This difference is maintained when we consider firms that formally registered at a later point in time. In our sample, firms with an informal legacy are, on average, characterized by less skilled employees ($p = 0.000$) and fewer employees, both at the time of the survey ($p = 0.000$) and when the firm was founded ($p = 0.008$). They also tend to have lower sales at the time of the survey ($p=0.001$) and 3 years prior to the survey ($p=0.000$), be younger ($p = 0.008$), more often run by CEOs with less experience ($p = 0.000$), more likely to have a female ($p = 0.000$) or foreign owner ($p = 0.000$) and less likely to be located in a business city ($p = 0.000$) or border region ($p = 0.001$). Despite lower sales, skills, and experience, we do not find any difference between the two groups of firms concerning the likelihood to launch new products in the 3 years prior to the survey ($p = 0.932$).

[Insert Table 1 and 2 around here]

On average, firms with an informal legacy registered in their sixth year of operations. Figure 2 shows the distribution of the duration of informality. The majority of enterprises that started informally registered in the first four years of operations, with 12.8% registering in the first year, 19.1% registering in the second year, 16.3% registering in the third year and 11.2% registering in the fourth year. Only 15.0% of the firms with an informal legacy had been informal for more than 10 years.

[Insert Figure 2 around here]

In Table 2 (Columns 3-4), we distinguish between firms that had been informal for three years or less and those that had been informal for more than three years. Presumably, those firms that were informal for a longer period had more time to experiment and explore but also suffered more from domestic legitimacy liabilities. It is thus not surprising that the firms that have been informal for more than 3 years are more likely to export than those that have been informal for 3 years or less, although the difference is not statistically significant ($p = 0.173$). Overall, the two groups of firms share many characteristics. For example, there is no statistical difference between the sales at the time of the survey ($p = 0.262$) and sales 3 years prior to the survey ($p = 0.401$) of firms that have operated informally for up to 3 years and those that have been informal for longer. They are also similar with regards to the number of employees at the time of survey ($p = 0.622$) and at the time of founding ($p = 0.191$), the propensity that the firm is located in a business city ($p = 0.362$), has a female owner ($p = 0.462$) or launched a new product ($p = 0.0225$). However, firms that have been informal for more than 3 years

are on average older ($p = 0.000$), have more experienced CEOs ($p = 0.000$), require a higher skill level ($p = 0.022$), and are less likely to be located in a border region ($p = 0.022$) than firms that have registered within 3 years from their registration.

Because the sampling frame of the World Bank Enterprise Survey does not include any informal firms, we cannot directly compare these descriptive statistics to those of the average informal firm in Africa. However, the World Bank samples informal firms in a separate survey. The sampling methods and questions differ from the normal Enterprise Survey, but a rough comparison suggests that these informal firms are significantly smaller and less productive than the firms that register at their foundation and those that do so later. For example, the median number of employees is 3 for African informal firms (La Porte and Shleifer, 2011), compared to 8 for firms with an informal legacy and 15 for the firms without an informal legacy in our sample. Overall, this comparison suggests that the firms that register either at foundation or later are considerably larger and more productive than those that stay informal. With regards to the interpretation of our results, we are careful not to externalize our results to firms that continue to operate informally, as these firms are likely to differ significantly from firms that have successfully formalized.

Hypothesis Testing

Table 3 presents our baseline results obtained using logistic regression. Model 1 includes the control variables only. In Model 2, we add the informal legacy variable, while in Models 3 and 4 we add the sector fixed effects and the country-year fixed effects, respectively.

[Insert Table 3 around here]

In line with our hypothesis, we find a positive and significant association between having an informal legacy and engaging in exporting in all estimations. Of these, Model 4 provides the most conservative estimates due to the inclusion of both sector and country-year fixed effects. The odds of a firm with an informal legacy engaging in exporting are 33% higher than the odds of a firm without an informal legacy engaging in exporting. On average, a firm with an informal legacy is 2.8 percentage points more likely to export, all else equal.

Most of the control variables behave as expected. Firms with higher sales at the time of the survey are more likely to export, although the effect is only significant at the 10% level in Models 2 and 3. Sales 3 years prior to the survey are negatively related to the propensity to export. This might seem counterintuitive but, combined with the positive effect of sales at the time of the survey, it suggests that firms that experience higher sales growth are more likely to export. The number of employees at the time of the survey and at foundation, firm age, and female ownership are also positively related to the propensity to export, although female ownership is only significant at the 10% level in Models 3 and 4. As expected, firms with foreign ownership are considerably more likely to export. The odds that foreign-owned firms engage in exporting activities are more than three times higher than the odds for firms without foreign ownership. Moreover, firms located in one of the main business cities or a border region are more likely to export, although the significance of the business city coefficient varies over the models. As expected, the launch of new products is positively and significantly related to export propensity. However, we do not find evidence that firms with highly skilled labor are more likely to export. The coefficient is actually negative, suggesting that firms that do not require a high school education are more likely to export. The coefficient of CEO experience has a large standard error and is not significantly related to exports.

Coarsened Exact Matching and Instrumental Variable Regression

The descriptive statistics in Table 2 demonstrate that firms with an informal legacy differ significantly from firms that register at their foundation. The firms that register at their foundation are on average larger, have skilled employees and more experienced managers than firms with an informal legacy. To ensure that the firms with and without an informal legacy are comparable apart from the timing of registration and to limit selection bias, we test the robustness of our results on a matched sample. Specifically, we use coarsened exact matching (CEM) to match firms with an informal legacy to firms without an informal legacy on all the control variables and the sector fixed effects. We match exactly for binary outcomes (i.e., 2 bins), while we use the Stata default algorithm (Sturges) for continuous variables. This decreases our sample size to 2,689 firms.

In Table 4 Model 1, we report the results of the logistic regression analysis on the matched sample. We include the control variables, sector fixed effects, and the country-year fixed effects in the regression analysis. We continue to find support for our hypothesis: an informal legacy has a positive effect on the propensity to export. Despite the small sample size, the coefficient is statistically significant at the 1% level.

However, it is likely that the decision to register at the foundation is correlated with not only the observed characteristics included in the matching routine but also correlated with unobserved characteristics (e.g., the entrepreneur's ability or regional institutions). For example, firms might decide not to register at their foundation, because the strength of their informal network makes access to formal institutions redundant. A strong informal network might simultaneously increase entrepreneurs' propensity to export. While our country-year fixed effects control for any national variation in institutions, regional variations in institutions could be another source of endogeneity, as such regional variation could affect both exporting and the propensity to register. Therefore, we use a two-stage least squares probit (2SLS) estimator to obtain consistent parameter estimates.

We generated Mundlak (1978) instruments by estimating a regression with the informal legacy variable as a dependent variable and time and industry dummies as the independent variables (see Leone, Oriani and Reichstein, 2015; Reitzig and Puranam, 2009, for similar approaches). The parameter estimates of these dummies represent the tendency of enterprises to register at the time of foundation, in a certain sector, and at a certain time. The time dummies are based on the founding date of the enterprise. To ensure that they are not influenced by the characteristics of a single firm, they represent the deciles of the founding-year variable rather than a single year. The sector dummies are the same as the sector-fixed effects in our baseline models (see Table 3). We extracted the parameter estimates for the sector and year dummies and attached those values to the observations. As there are many firms in each sector and in each time decile, the (unobserved) characteristics of a single firm should not influence these instruments. These sector and time propensities are mainly influenced by campaigns launched by governments and international organizations to support the formalization of specific sectors in certain time periods. Hence, we expect the instruments to be exogenous to the main specification.

[Insert Table 4 around here]

Table 4 (Model 2) shows the results of the 2SLS probit analysis. The estimation includes country-fixed effects but excludes sector-fixed effects because these are perfectly collinear with our sector propensity instruments. The Amemiya-Lee-Newey minimum chi-squared is a test of over-identifying restrictions that is comparable to a Sargan test but adapted to binary outcome variables. It shows that we cannot reject the null hypothesis that the over-identifying restrictions are valid, which provides some evidence for the exogeneity of our instruments. The F-statistic in the first stage is satisfactory and we reject the null-hypothesis of under-identification. The informal legacy variable is positive and significant at the 10% level. We thus continue to find support for our hypothesis.

However, we recognize that it is difficult to identify a perfect instrument in this setting. Despite the reassuring diagnostic test results, the propensity of enterprises to register at the time of foundation in a certain sector, and at a certain time might itself increase with the performance and internationalization of that sector. Although we are unaware of any studies that postulate this exact type of industry effect on formalization, we cannot guarantee the validity of our instrument. Therefore, these results should be interpreted as indicative, and not definite support for the causal relationship between an informal legacy and export propensity.

Heterogeneity in Timing of Registration and Exporting

Arguably, the extent to which firms' exporting propensity is derived from their informal legacy should be positively correlated with the number of years that they have operated informally. The variation in the duration of firms' informal operations could plausibly be correlated with their opportunities to experiment and generate better products and business models in the informal sector, but also with the likelihood of imprinting a desire to overcome domestic legitimacy liabilities. In this section, we explore the heterogeneity in the timing of registration and exporting to boost confidence in our theoretical mechanisms.

In Table 5 Model 1, we include the number of years the firm has been informal before registering as an alternative measure of an informal legacy. We transform the *years informal* using an inverse hyperbolic sine transformation because it is likely that the effect of the number of years that a firm operated informally on the propensity to export is non-linear. In line with our theoretical

framework, the results show that firms that have been informal for longer have a higher propensity to export. This effect is statistically significant at the 5% level.

In addition, we would expect that the effect of an informal legacy on domestic legitimacy liabilities and experimentation might fade over time. The longer the firm has operated formally, the less likely it is that an informal legacy continues to influence export behavior. We thus include the number of years that the firm has operated formally (*years formal*) as a moderator in Model 2 (Table 5). Again, we transform the number of years using a hyperbolic sine transformation. To avoid multicollinearity, we omit firm age from this regression model. The main effect of *years informal* is positive and statistically significant, implying that the number of years that enterprises have operated under formal institutions increases the propensity to export. In line with our assumption that the effects evaporate over time, we find that the *years formal* moderator is negative, but it is not statistically different from zero.

[Insert Table 5 around here]

In Models 3 and 4 (Table 5), we test for two alternative timing-related explanations for our findings. In many Sub-Saharan African economies, it can take a long time to complete the registration process. Hence, some of the entrepreneurs that we classify as having an informal legacy might already have started the formalization process at their foundation date. To ensure that these entrepreneurs do not affect our results, we only classify firms as having an informal legacy if they were not yet registered two years after their foundation. The results are reported in Model 3. The effect of an informal legacy continues to be positive and statistically significant at the 1% level. Finally, we exclude firms that start exporting one year after registration, because these firms might have formalized with the aim of exporting. Model 4 in Table 5 shows the results of this analysis. Our results continue to hold, which suggests that they are not attributable to selection effects.

Heterogeneity in National Institutional Trust

The effect of an informal legacy on export propensity is also potentially contingent on the institutional characteristics of the country in which the enterprise was founded.³ In particular, we suspect that the degree to which institutions are trusted in the firm's home country is likely to impact the effect of an informal legacy on the propensity to export. Institutional trust can be defined as individuals' and organizations' expectations that formal institutions, such as the judicial system, local governments, and tax authorities, will act predictably and in goodwill (e.g., Maguire and Phillips, 2008; Rousseau et al., 1998). In contexts where formal institutions are trusted and seen as legitimate, there may be less scope for firms to explore and experiment in the informal economy (Webb et al., 2009; Mair et al., 2012). Moreover, when formal institutions are strong, the stigma of having operated in the informal economy might be lessened, suggesting less impact on firms' domestic legitimacy liabilities (Assenova and Sorenson, 2017).

To explore whether the effect of an informal legacy on exporting depends on *institutional trust*, we run a moderator analysis in Table 6. We follow the approach of Assenova and Sorenson (2017) and use the Afrobarometer Survey (2011-2013) to create a composite measure of trust in three formal institutions: (1) the tax department, (2) the court system, and (3) the local government. The trust index ranges from 0.31 for Nigeria to 0.72 for Niger. Note that the Afrobarometer does not survey all countries covered by our original sample. Therefore, we removed Chad, the Democratic Republic of Congo (DRC), Ethiopia, Mauritania, and South Sudan from the moderator analysis.

[Insert Table 6 around here]

In Column 1 (Table 6), we include the formal institutional trust moderator but exclude the country year-fixed effects. In Column 2, we also included country-year fixed effects to limit the effect of other country-level factors, but as a result, the main effect of institutional trust is excluded. In both analyses, we find evidence that the effect of an informal legacy on export propensity becomes indeed smaller when the formal institutional trust increases. This is confirmed in the interaction plots (Figure 4). In countries with a trust index of 0.35 or less (e.g., Cameroon, Ivory Coast, and Nigeria), the

³ We estimated the baseline regressions for each country separately, which confirmed the considerable country-level heterogeneity.

probability of exporting is significantly higher for establishments with an informal legacy than for those without.

The moderating effect of institutional trust is economically meaningful—in a country with a trust index of 0.30 (e.g., Nigeria), firms with an informal legacy are 6.1 percentage points more likely to export than those without an informal legacy. This effect is considerably larger than being located in a border region (2.6 percentage points) or business city (2.1 percentage points). In countries where formal institutions are more generally trusted (trust index > 0.35), we find no significant difference in the probability of exporting between establishments with or without informal legacies. While we acknowledge that this moderation analysis does not offer direct evidence for our theoretical mechanisms, we believe that the findings offer an indirect indication of the validity of our expectations.

DISCUSSION AND CONCLUSION

In a comprehensive sample of Sub-Saharan African firms, we find evidence that firms that started their operations in the informal economy (i.e., have an informal legacy) and later register are more likely to initiate exporting than firms that were launched as formal enterprises. Our article responds to calls to explore the potential for extending management and strategy research into the informal economy (Bruton et al., 2012; Godfrey, 2011; McGahan, 2012). Although a great deal of research on the informal economy has been carried out in such fields as economics and sociology, it is noteworthy how the influence of the informal economy has been somewhat omitted in conventional management and organizational theory (important exceptions exist, such as e.g., Assenova and Sorenson, 2017; McCann and Bahl, 2017; Uzo and Mair, 2014). As emphasized by Bruton et al. (2012: 1), “this dearth of investigation by management scholars is surprising not only because of the significant impact of informal firms on the overall world economy but also because of the dominant role informal firms play in the economy of many individual nations.”

In our theoretical framework, we build on research that emphasizes how heterogeneous sources of knowledge drive exporting (Brouthers and Hennart, 2007; Johanson and Vahlne, 1977) and reason that the informal institutional environment may act as a learning laboratory that allows firms to develop their concepts through flexibility and eventually seek other markets. This is an important insight that

adds to research seeking to understand how firms without access to an efficient market can use informal operations to grow and build competitive advantage (Mair et al., 2012; Peprah et al., 2022; Zoogah et al., 2015). As Stern (2005: 16) suggests, “a favorable environment for entrepreneurship and a high level of economic experimentation go hand in hand.” We argue that firms can benefit from experimentation while being informal which allows them to navigate uncertainties and develop superior strategies after formalization. Prior research has noted how this type of exploration within the informal economy leads to higher post-registration financial performance (Williams et al., 2016). We suggest that this experience increases firms’ “internationalization readiness” and makes foreign expansion more likely (Tan et al., 2007). Accordingly, having operated in institutionally inferior environments can help firms overcome export barriers (Reuber and Fischer, 1997). Future research could continue investigating how such firm exploration might affect other firm-related outcomes such as innovation (Bu and Cuervo-Cazurra, 2020) and imitation (Peprah et al., 2022).

In addition, by suggesting how the combination of a low domestic legitimacy and the opportunity to more freely explore new business opportunities imprints an enticement to export after registration we provide insights to research on heterogeneous and non-traditional export antecedents (Sousa et al., 2008; Zahra, Neubaum and Naldi, 2007). While conventional international business wisdom holds that institutional quality is positively associated with exporting (Gao et al., 2010; Peng et al., 2009), in an exploratory analysis we find that strong, trusted institutions eliminate the positive effect of an informal legacy on exporting. On the one side, these institutions imply a higher degree of congruency between formal and informal institutions, and thus less scope for informal entrepreneurial opportunities (Webb et al., 2009). On the other side, they disincentivize firms to exit the home environment (Witt and Lewin, 2007). Future research should continue to explore how firms can accumulate resources given the interaction between formal and informal institutions that eventually affect their propensity to initiate exporting.

With this research, we also respond to recent calls to focus more management research on Africa (George, 2015; George et al., 2016a; Mol et al., 2017). According to George et al. (2016c: 389), “Africa offers great potential as a context for management research, [...] more empirical and conceptual work is warranted to explain the richness of the opportunities on the African continent.” Just as others

have used the contexts of transition (Meyer and Peng, 2005) and emerging economies (Awate et al., 2015) to extend and modify current management and organizational theories, the African continent provides a unique context to study the effects of informality. Specifically, while the vast array of the informal economy in Sub-Saharan Africa is largely deprived of decent working conditions and thus nothing to romanticize, it offers a valuable theoretical context to investigate firm exploration and experimentation in less constrained environments.

Finally, our article provides insights for policy-makers. As the informal economy constitutes the lion's share of many low- and middle-income economies, official development policies are often directed at dealing with the challenges of informality. The United Nations explicitly emphasizes firm formalization as central to its Sustainable Development Goals. Relatedly, the International Labor Organization's "Decent Work" campaign has a dedicated focus on the working conditions of people in the informal economy. Although much research has examined the financial performance consequences of formalization (Benhassine et al., 2018; Fajnzylber, Maloney and Montes-Rojas, 2011; Rand and Torm, 2012), we suggest that experience with informality may spur business expansion after formalization. We show that conditional on firm registration, firms with an informal legacy are more likely to initiate export activities—activities that are viewed as highly desirable in most developing and emerging economies. Given these results, we believe there is a need to better understand how policies can cater to those firms that use the informal context as a platform for further business development instead of seeking to eliminate informal operations (cf. Dutt et al., 2016).

The results of our research should be assessed in light of its limitations. First, as a result of our research design, we cannot empirically isolate whether exploration and experimentation in the informal economy and domestic legitimacy liabilities are the sole mechanisms driving export activities of firms with an informal legacy. Our post-hoc analyses using the number of years that firms have been informal and the degree of institutional trust can only provide indirect support for our theoretical mechanisms. We also aimed to identify the causal effect of an informal legacy on exporting propensity using a matched sample and a 2SLS regression. However, the results of the 2SLS should be interpreted with some caution, because despite the reassuring test statistics, the validity of our instruments cannot be guaranteed. These estimations thus only provide an indication of the robustness of our results. As such,

while we have structured our research using a hypothetico-deductive method by formulating a research hypothesis that can be falsified based on observable data, we acknowledge that our approach of proposing potential theoretical mechanisms to our results—but offering no definite proof—resembles the logic of abductive reasoning (Sætre & Van de Ven, 2021; Locke et al., 2008). Abductive reasoning is currently gaining impact in organization research (see e.g. Mitchell et al., 2022, for a recent example) and can be described as the process of “Turning “surprising facts” into matters of course” (Mantere & Ketokivi, 2013: 72) by first observing anomalies and then generating explanations to that anomaly. We thus invite future research to deductively test the empirical relevance of our proposed mechanisms that explain the relationship between informal legacy and exporting propensity.

As our argument also suggests that firms develop their products and services within a domestic environment, it is not certain that these products and services may easily fit in foreign environments. Indeed, Guler and Guillen (2010) find that firms with a high social status advantage in their home country are more likely to enter foreign markets, as home country reputations are transferred to foreign markets and thereby signal quality. Thus, firms’ export success would ideally depend on some form of compatibility between the home and foreign environment. However, as we do not have data on firms’ export destinations, we are not able to distill the effect of home and host country (dis)similarities. We encourage future research to understand how firms’ exporting destinations affect our arguments.

Moreover, we restricted our analysis to Sub-Saharan African firms. Although informality is statistically a more prominent phenomenon in Africa than in any other region, the informal economy is a global phenomenon. In advanced economies with stringent regulation and enforcement, informal firm activity may be described as a “hidden enterprise culture.” This culture takes the form of “undeclared labor, tax evasion, unregulated or unlicensed enterprises” (Gerxhani, 2004: 293), and “off-the-books enterprise creation” (Williams, 2006). In developing countries, the informal economy is not nearly as marginalized as in advanced economies and, in fact, it often constitutes the majority of a country’s economic activity due to incomplete, insecure, and/or impotent institutions (Godfrey, 2011). Thus, future research should seek to explore whether former informal operations also increase export propensity in other contexts.

Finally, all the firms in our sample are registered; they have merely done so at different points in time. These formalized firms can be expected to have more resources than the firms that continue to stay informal. Thus, while we conclude that formalized firms with an informal legacy are more likely to export than firms that register at their foundation, we cannot conclude that pushing informal firms to register will positively affect their export propensity. Many informal firms simply do not have the capabilities and resources required to internationalize irrespective of the knowledge they have obtained from their informal operations. We encourage future work to use an experimental design randomizing formalization at different time periods across firms to shed more light on this relationship.

In conclusion, the informal economy is vast and ensures the livelihood of more than two billion people (ILO, 2018). Yet, our knowledge of that economy is limited. Although we have focused on the particular issue of exporting among formal firms that started their operations as informal enterprises, several important research questions related to strategy, organizational design, and performance among informal economy firms remain. We, therefore, hope future research will continue to explore this important phenomenon.

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Figure 1: Percentage of establishments with an informal legacy

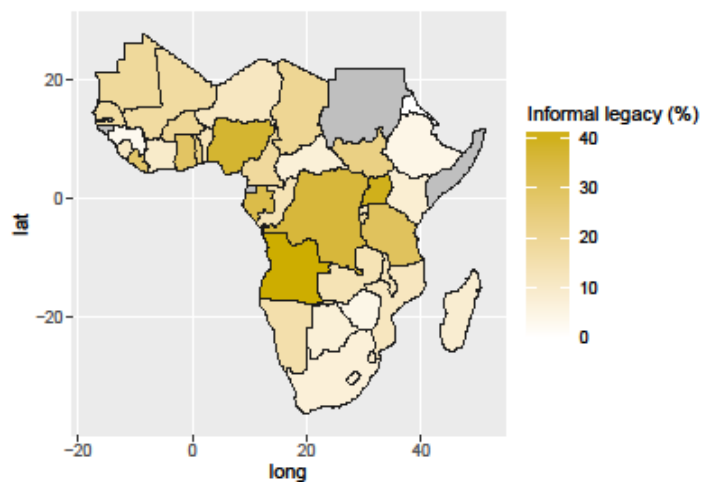


Figure 2. Duration of informality in years

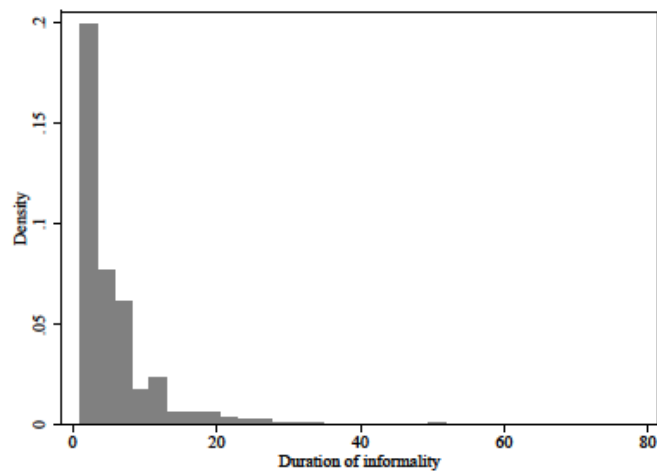


Figure 3. Predictive margins of an informal legacy and the institutional trust index with 95% confidence intervals (based on estimates in Model 1, Table 6).

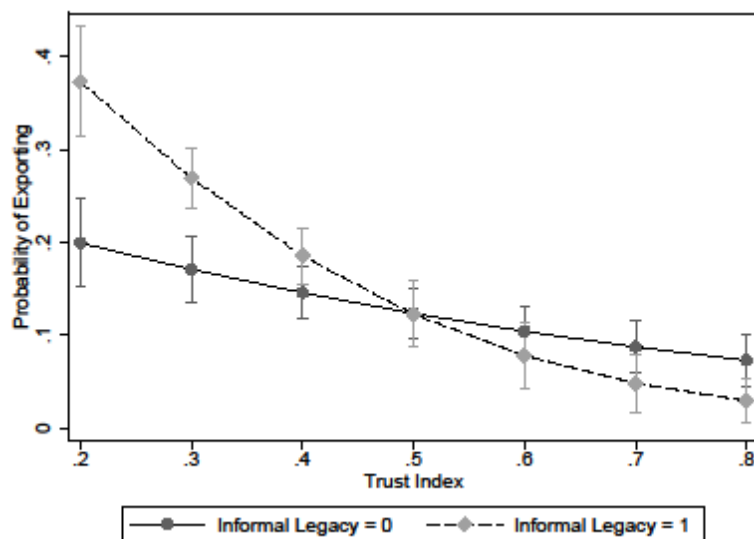


Table 1. Descriptive statistics and correlation table

	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Exporter	0.12	0.32	0	1	1													
(2) Informal legacy	0.19	0.39	0	1	-0.02	1												
(3) Sales (ln)	17.12	3.23	0	24.94	0.14	-0.11	1											
(4) Sales 3 year prior (ln)	16.76	3.89	0	24.51	0.09	-0.14	0.8	1										
(5) Employees	3.52	1.21	0	11	0.26	-0.19	0.45	0.37	1									
(6) Employees at founding	2.87	1.18	0	9.21	0.19	-0.2	0.31	0.25	0.65	1								
(7) Firm age	3.13	0.84	0	5.94	0.14	0.01	0.22	0.17	0.31	0.19	1							
(8) Female owner	0.27	0.44	0	1	0.03	-0.04	0.04	0.05	0.05	0.03	0.04	1						
(9) Foreign ownership	0.17	0.38	0	1	0.19	-0.09	0.17	0.14	0.24	0.21	0	0.02	1					
(10) Business city	0.48	0.5	0	1	0.05	-0.07	0.04	0.07	0.07	0.06	0.01	0.07	0.05	1				
(11) Border region	0.33	0.47	0	1	0.01	-0.01	0.03	-0.02	0.01	-0.01	0.02	-0.04	0.01	-0.06	1			
(12) New product	0.37	0.48	0	1	0.07	0.01	0.06	0.06	0.06	0.05	0.05	0.07	0.01	0.19	-0.1	1		
(13) CEO experience	3.16	0.76	0	4.97	0.06	-0.03	0.16	0.14	0.19	0.1	0.49	0.01	-0.01	0.04	0.02	0.02	1	
(14) Highly skilled	0.24	0.43	0	1	-0.05	-0.08	-0.02	0.01	-0.05	-0.03	0.01	0.05	-0.02	0.04	0.01	0.01	-0.02	1

Table 2. Descriptive statistics of firms with and without informal legacies

	Formal start (<i>N</i> = 5,602)	Informal start (<i>N</i> = 1,642)	Informal start ≤3 year (<i>N</i> =721)	Informal start >3 year (<i>N</i> =921)
Exporter	0.125 (0.330)	0.108 (0.311)	0.085 (0.279)	0.126 (0.332)
Sales (ln)	17.31 (3.25)	16.38 (3.09)	16.39 (3.042)	16.37 (3.128)
Sales 3 year prior (ln)	17.05 (3.82)	15.66 (4.08)	15.71 (3.987)	15.63 (4.147)
Employees	61.86 (353.9)	23.44 (122.4)	20.91 (66.72)	25.45 (152.7)
Employees at founding	32.87 (157.4)	21.02 (168.8)	23.47 (168.4)	19.01 (169.2)
Firm age	16.15 (14.69)	15.12 (12.19)	11.17 (8.433)	18.41 (13.76)
Female owner	0.282 (0.450)	0.241 (0.428)	0.255 (0.436)	0.231 (0.422)
Foreign ownership	0.191 (0.393)	0.103 (0.304)	0.115 (0.320)	0.094 (0.292)
Business city	0.505 (0.500)	0.413 (0.492)	0.414 (0.493)	0.412 (0.492)
Border region	0.323 (0.468)	0.309 (0.462)	0.326 (0.469)	0.296 (0.457)
New product	0.374 (0.484)	0.390 (0.488)	0.378 (0.485)	0.400 (0.490)
CEO experience	15.35 (10.19)	14.27 (9.23)	12.22 (8.056)	15.90 (9.769)
Highly skilled	0.253 (0.435)	0.172 (0.378)	0.195 (0.396)	0.154 (0.361)

Standard deviations in parentheses.

Table 3. Results of logistic regression

	(1)	(2)	(3)	(4)
Informal legacy		1.50*	1.42*	1.33**
		(0.334)	(0.286)	(0.175)
Sales	1.10	1.10*	1.10*	1.09
	(0.064)	(0.060)	(0.060)	(0.084)
Sales 3 yr prior	0.92***	0.92***	0.93***	0.95***
	(0.010)	(0.011)	(0.010)	(0.004)
Employees	1.34**	1.35**	1.33***	1.33***
	(0.171)	(0.162)	(0.144)	(0.093)
Employees at founding	1.13**	1.15**	1.14**	1.13**
	(0.058)	(0.064)	(0.064)	(0.065)
Firm age	1.51***	1.49***	1.44***	1.19***
	(0.130)	(0.127)	(0.111)	(0.066)
Female ownership	1.07	1.08	1.16*	1.18*
	(0.088)	(0.087)	(0.099)	(0.102)
Foreign ownership	2.94***	2.97***	3.00***	3.50***
	(1.093)	(1.130)	(1.127)	(1.416)
Business city	1.00	1.03	1.01	1.26*
	(0.083)	(0.087)	(0.097)	(0.149)
Border region	1.46***	1.48***	1.48***	1.31*
	(0.211)	(0.214)	(0.213)	(0.214)
New product	1.36***	1.36***	1.32**	3.50***
	(0.150)	(0.150)	(0.146)	(1.416)
CEO experience	0.97	0.98	0.98	1.00
	(0.060)	(0.062)	(0.056)	(0.050)
Highly skilled	0.71	0.73	0.74	0.57**
	(0.220)	(0.212)	(0.228)	(0.131)
Constant	0.03***	0.02***	0.02***	0.00***
	(0.043)	(0.026)	(0.021)	(0.005)
Pseudo R-squared	0.126	0.129	0.140	0.189
Observations	7,223	7,223	7,223	7,223
Sector FE	No	No	Yes	Yes
Country-year FE	No	No	No	Yes

Coefficients are expressed as odds ratios. Cluster robust standard errors in parentheses. Results are obtained using a logistic regression. *** p<0.01, ** p<0.05, * p<0.1

Table 4. Logistic regression on a CEM-sample and 2SLS probit

	(1)	(2)	
	CEM	2SLS	
		1st stage	2nd stage
Informal legacy	1.68*** (0.29)		0.78* (0.464)
Sales	1.00 (0.05)	-0.02*** (0.003)	0.06*** (0.014)
Sales 3 yr prior	0.95*** (0.02)	-0.00** (0.002)	-0.02*** (0.008)
Employees	1.17 (0.17)	-0.00 (0.006)	0.16*** (0.025)
Employees at founding	1.40** (0.19)	-0.05*** (0.005)	0.10*** (0.028)
Firm age	1.53** (0.31)	0.05*** (0.007)	0.07 (0.044)
Female owner	1.15 (0.22)	0.00 (0.010)	0.08* (0.046)
CEO experience	7.79*** (1.71)	-0.00 (0.007)	0.01 (0.033)
Highly skilled	1.45** (0.24)	-0.07*** (0.011)	-0.25*** (0.071)
Foreign ownership	1.43* (0.28)	-0.04*** (0.012)	0.70*** (0.054)
Business city	1.99*** (0.33)	-0.00 (0.010)	0.14*** (0.045)
Border region	0.73* (0.14)	-0.07*** (0.013)	0.18*** (0.062)
New product	0.46*** (0.10)	-0.00 (0.009)	0.13*** (0.044)
Constant	0.01*** (0.02)	0.67*** (0.061)	-3.49*** (0.320)
Sector tendency		0.55*** (0.072)	
Time tendency		0.26 (0.165)	
Amemiya-Lee-Newey minimum Chi-squared			0.834
Kleibergen-Paap rk Wald F statistic			56.764
Kleibergen-Paap rk LM statistic			29.544***
Observations	2,689	7,348	7,348
Sector FE	YES	NO	NO
Country-year FE	YES	YES	YES

Robust standard errors in parentheses. CEM results are obtained using a logistic regression. 2SLS results are obtained using a 2SLS probit. *** p<0.01, ** p<0.05, * p<0.1

Table 5. Exploring the timing of registration and exporting

	Years informal	Years formal	Informal legacy: firms do not register in the 2 years after foundation	Exclude firms exporting 1 year after registration
	(1)	(2)	(3)	(4)
Years informal	1.13** (0.06)			
Informal legacy		3.17 (2.25)	1.46*** (0.18)	1.44*** (0.16)
Years formal		1.17** (0.08)		
Informal legacy x years formal		0.77 (0.15)		
Sales	1.11 (0.08)	1.10 (0.08)	1.10 (0.08)	1.09 (0.08)
Sales 3 yr prior	0.95*** (0.00)	0.95*** (0.00)	0.95*** (0.00)	0.94*** (0.00)
Employees	1.31*** (0.09)	1.33*** (0.09)	1.32*** (0.09)	1.37*** (0.09)
Employees at founding	1.13** (0.06)	1.13** (0.06)	1.14** (0.06)	1.11* (0.07)
Firm age	1.16*** (0.06)		1.15*** (0.06)	1.47*** (0.09)
Female owner	1.16* (0.10)	1.16* (0.10)	1.19** (0.10)	1.10 (0.10)
Foreign ownership	3.28*** (1.26)	3.47*** (1.40)	3.48*** (1.40)	3.73*** (1.63)
Business city	1.25* (0.15)	1.27** (0.14)	1.27** (0.14)	1.29* (0.20)
Border region	1.27 (0.22)	1.28 (0.20)	1.29 (0.21)	1.45** (0.27)
New product	1.23*** (0.09)	1.23*** (0.09)	1.23*** (0.09)	1.41*** (0.16)
CEO experience	1.00 (0.06)	1.04 (0.05)	1.01 (0.05)	1.03 (0.06)
Highly skilled	0.57** (0.14)	0.57** (0.13)	0.57** (0.13)	0.52*** (0.10)
Constant	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.01)	0.00*** (0.00)
Observations	7,455	7,534	7,648	7,169
Sector FE	YES	YES	YES	YES
Country-Year FE	YES	YES	YES	YES
Pseudo R-squared	0.186	0.190	0.190	0.216

Coefficients are expressed as odds ratios. Cluster robust standard errors in parentheses. Estimates are derived using a logistic regression model. *** p<0.01, ** p<0.05, * p<0.1

Table 6. Exploring the heterogeneity in national institutional trust

	(1)	(2)
Informal legacy	5.82*** (1.996)	3.79*** (1.180)
Trust in institutions	0.11*** (0.056)	
Informal legacy x trust in institutions	0.03*** (0.027)	0.08*** (0.064)
Sales	1.08* (0.046)	1.06 (0.077)
Sales 3 yr prior	0.95*** (0.006)	0.95*** (0.004)
Employees	1.39*** (0.177)	1.42*** (0.128)
Employees at founding	1.11 (0.075)	1.12 (0.077)
Firm age	1.23*** (0.083)	1.14** (0.069)
Female owner	1.24** (0.107)	1.26** (0.115)
Foreign owner	3.36*** (1.389)	3.93*** (1.595)
Business city	1.06 (0.133)	1.23* (0.142)
Border region	1.30* (0.202)	1.32 (0.222)
New product	1.42*** (0.168)	1.35*** (0.110)
CEO experience	0.95 (0.049)	0.98 (0.052)
Highly skilled	0.64 (0.206)	0.54*** (0.126)
Constant	0.01*** (0.015)	0.01*** (0.011)
Observations	5,772	5,772
Sector FE	Yes	Yes
Country-Year FE	No	Yes
Pseudo R-squared	0.159	0.192

Coefficients are expressed as odds ratios. Cluster robust standard errors in parentheses. Estimates are derived using a logistic regression model. *** p<0.01, ** p<0.05, * p<0.1