

The Importance of Export Diversification on National Entrepreneurship Density

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Abstract

Economic integration is increasingly recognised as an important determinant of entrepreneurship. This study thus employs institutional theory to examine the influence of structural changes in export dynamics via export diversification on entrepreneurship, in a global sample of 61 countries over the period 2006-2014. Results from panel-corrected standard errors estimators show that higher overall export diversification and higher export-*intensive* margin appear to reduce entrepreneurship, while export-*extensive* margin is found as a leading factor of entrepreneurship. This study also reveals that export diversification may make a stronger contribution to entrepreneurship in low- and middle-income economies (LMEs) than in high-income economies (HIEs).

Keywords: Entrepreneurship; Export diversification; Institutions; Structural changes

JEL code: L26, M13, F61, F14, E02, D02.

1. Introduction

Entrepreneurship is one of the most important engines that currently boost the development of both developed and less developed economies (Schumpeter's theory of creative destruction). Entrepreneurship is not only found to be associated with economic development (Toma et al., 2014) and innovation (Douglas and Prentice, 2019), but also with many social-economic-environmental factors, such as the reduction of poverty and income inequality (Halvarsson et al., 2018), economic sustainability (Dhahri and Omri, 2018), and environment issues (Heiskanen et al., 2019).

The extant literature approaches the concept of entrepreneurship mostly from the microeconomic perspective (i.e., individual-level and firm-level behaviours) (Lanero et al., 2016, Liñán et al., 2016). However, there is another strand of research suggesting that entrepreneurial

activities vary remarkably between countries ([Simón-Moya et al., 2014](#), [Wales et al., 2019](#)). This argument implies that entrepreneurship is a product of national economic and institutional conditions ([Fuentelsaz et al., 2018](#)).

Research on the effects of national institutions (e.g., constitutional configurations) on entrepreneurship is hardly new in the literature ([Carbonara et al., 2016](#)). Specifically, previous studies largely employ institutional theory to argue for the positive influence of national institutions on entrepreneurial activities and performance. However, the institutional dimensions investigated in the literature are largely domestic-orientated, i.e., concerned with institutional settings and local issues, such as corruption control and domestic rule of law, leaving internationally orientated institutional settings unexplored. This study thus proposes that institutional arrangements aimed at promoting international economic integration may also affect local entrepreneurship. Our study is different from previous studies in the sense that it proposes that not only domestic-orientated institutions but also economic integration – an (outcome of) international-orientated institutions – are essential to entrepreneurship.

Research on globalisation suggests that economic integration and mutual reliance between local and global entities typically results in benefits for small business practice, innovation and new venture establishment ([Coulibaly et al., 2018](#)). Within this strand of research, scholars have specifically highlighted the importance of export diversification ([Parteka and Tamberi, 2013](#), [Osakwe et al., 2018](#)). Export diversification, defined as the dynamic evolution in the number of new products exported or in the number of new destinations for existing exports (export-extensive diversification) and the dynamic evolution in export values among existing exports (export-intensive diversification) ([IMF, 2018b](#)), is argued to have positive impacts on economic growth possibly by boosting the level of activeness of local entrepreneurship ([Clark, 2009](#), [Schrank, 2005](#)). However, the link between export diversification and entrepreneurship has never been examined via the lens of institutional theory.

This study is therefore set out to examine the importance of export diversification on entrepreneurship, which in this paper is narrowly defined as the number of newly registered businesses in a country. To do this, we employ a set of national-level data from several sources, including Direction of Trade Statistics (IMF), World Development Indicators (WDI) and Worldwide Governance Indicators (WGI) (World Bank), and Penn World Table 9.0 (PWT). Due to the availability of data, the final sample includes 61 countries over the period 2006-2014,

in which the overall export diversification index, export-extensive margin index, and export-intensive margin index are collected from the Direction of Trade Statistics (IMF). It is worth noting that an *increase* in these indices implies a *decrease* in export diversification.¹

Employing panel-corrected standard errors (PCSE) estimators to advance the time-series and cross-section analyses, while solving the problem of heteroscedasticity by robustness check from feasible generalized least squares (FGLS), and potential endogeneity by using all regressors in one-year lags, we find some interesting results. First, the overall export diversification index and export-*intensive* diversification index have positive impacts on entrepreneurship density. However, the export-*extensive* index has a negative impact on entrepreneurship. The results imply that higher overall export diversification and higher export-intensive margins (i.e., higher export values among existing exports) reduce entrepreneurship density, while higher export-extensive margins (more new destinations for existing exports) boost entrepreneurship density. Moreover, export diversification likely has stronger negative impacts on entrepreneurship in HIEs than LMEs.

This study makes important contributions to the literature examining entrepreneurship at the national level, by showing that the interaction among economies (global economic integration) through export diversification is as important as national institutional settings in limiting/facilitating entrepreneurship. As such, policymakers who aim to boost entrepreneurship need not only to pay attention to their local socio-economic and institutional settings but also to consider integration through more destinations and products in the global value chains.

2. Literature review

Since Schumpeter (1911), the literature has documented various essential roles of entrepreneurs in generating innovation and boosting economic growth (Szirmai et al., 2011). Recently, in a thorough discussion, Sutter et al. (2019) explain that entrepreneurship could be critical for alleviating extreme poverty through the remediation of immediate resource concerns, reform in substantive institutional changes, and revolution in changing the underlying capitalist-based assumptions of business.

¹ See <https://www.imf.org/external/np/res/dfidimf/diversification.htm>

Given the importance of entrepreneurship in facilitating socio-economic development, scholars have long strived to identify the determinants of entrepreneurship/entrepreneurial ecosystem with the goal of improving the popularity/prosperity of entrepreneurship in economies ([Dvouletý, 2018](#), [Welsh et al., 2018](#)). This section reviews the literature on the determinants of entrepreneurship, with a specific focus on macro-drivers, including national institutions and global integration.

2.1. Institutions and entrepreneurship

Since neo-classical economic models fail to explain fully national outputs using factors of production (e.g., labour, capital, and technology) (see [Ceccobelli et al. \(2012\)](#)), new institutional economics (NIE) has been proposed and developed as an alternative explanation for economic development and variations between countries. [North \(1993\)](#) proposes new institutional economics as an attempt to link the theory of institutions into economics to form an interdisciplinary theory. Since then, many studies in the literature on entrepreneurship have employed the theory to test and confirm the importance of national institutional quality in shaping entrepreneurial activities and performance directly ([Simón-Moya et al., 2014](#)) or indirectly by moderating other drivers ([Ma et al., 2018](#), [Kimmitt and Munoz, 2017](#)).

Institutions are defined as a comprehensive framework of ‘the rules of the game’ in a society ([North, 2003](#)), which set ‘constraints’ on human behaviours ([North, 1990](#)). A large body of literature has documented that better institutional quality has a significant positive impact on economic activities through modifying social agents' incentives of conducting productive behaviours (e.g., entrepreneurship) (see [North \(1981\)](#), [Acemoglu and Robinson \(2008\)](#)). Thus, an improvement in institutional quality could induce more entrepreneurial activities ([Simón-Moya et al., 2014](#)).

Besides the mechanism of incentives, better institutional quality is also associated with lower informational asymmetry ([Leonard et al., 2013](#), [Leonard, 2002](#)), lower transaction costs ([Brouthers, 2013](#)), and lower uncertainty ([Ahmed and Suardi, 2009](#)), thereby enhancing market efficiency and asset allocation ([Williamson, 1981](#), [Cohen et al., 1983](#)).

By this maxim, governments with the role of setting the rules of the game, are essential in creating/modifying the national entrepreneurial ecosystem ([Dedehayir et al., 2018](#)). Supporting this argument, empirical studies have found a strong association between constructive policies and entrepreneurship. [Djankov et al. \(2002\)](#), for instance, suggest that the lower cost of medium-size business registration in the

US accounts for the country's entrepreneurial culture. In addition, [Herrera-Echeverri et al. \(2014\)](#) found a strong positive connection between national institutional quality and business generation in panel data of 87 countries over the period 2004-2009. Meanwhile, [Ma et al. \(2018\)](#) notice that institutional deficiency is an important factor in creating unnecessary financing difficulties for entrepreneurs in China. As such, [Clark and Ramachandran \(2019\)](#) propose that the way resources being allocated are embedded in the institutional frameworks provides unique advantages to enable entrepreneurial opportunities.

Following this strand of argument, economic integration is also (an outcome of) a dimension of national institutions. In other words, while institutions are defined as 'the rules of the game', economic integration can be associated with the actions occurring under a given set of 'rules'. By definition, economic integration is an arrangement among nations that typically includes the reduction or elimination of trade barriers and the coordination of monetary and fiscal policies ([Balassa, 2011](#)). What makes economic integration different from other well-known dimensions of national institutions (e.g., political stability, control of corruption) is in its international orientation (as opposed to the majority dimensions of other national institutional settings, which are domestic-orientated). Unfortunately, economic integration is rarely examined through the theoretical lens of institutional theory to establish a link to national entrepreneurship.

In this study, we argue that entrepreneurs may respond not only to domestic institutional settings but also to international-orientated institutional arrangements, including economic integration. Specifically, when there is a set of well-structured and efficient agreements between nations involved in integration, the level of economic integration between these countries increases, leading to a reduction in costs for both consumers and producers and an increase in trade and investments ([Balassa, 2011](#)). This resulting improvement in economic efficiency brings about more and/or better business opportunities for local entrepreneurs. As such, it is expected that economic integration, as an outcome of (international-orientated) national institutions, is positively associated with the activeness of entrepreneurship.

Besides the economic effects, economic integration also exerts an important impact on the way of doing business across countries. For example, economic integration may facilitate both institutional trust (trust in governments) and generalised trust (trust in strangers) ([Aidis et al., 2008](#)). Specifically, when several specific economies are highly integrated (for example, the European Union), the frequent interaction of entrepreneurs in different countries may create a set of international informal norms of doing business, or even a set of international formal standards such as regulations and codes of conduct ([McDonald et al., 2004](#)). These improvements in international institutions (both

formal and informal) reduce informational asymmetry and transaction costs. As such, international institutions embedded in economic integration also encourage entrepreneurial activities across countries involved in the integration agreements.

2.2. Export diversification and entrepreneurship

In the previous section, we argue that economic integration, as a dimension of national institutions, may influence entrepreneurship activities. However, economic integration is one of several forms of operationalization. In this paper, we pay particular attention to export diversification as an emerging presence of economic integration, while controlling for traditional measures of economic integration such as foreign direct investment (FDI) and trade openness.

Export diversification has started to gain more research attention only in the last few years ([Osakwe et al., 2018](#)). Specifically, [Cadot et al. \(2011\)](#) propose three dimensions in measuring export diversification, namely overall export diversification, export-intensive margin (within), and export-extensive margin (between), that reflect the variety of both products and destinations in exporting activities. Export diversification is argued to have a positive impact on economic diversification ([Albassam, 2015](#)), which is found to have some links to entrepreneurship ([Schrank, 2005](#)). For example, [Contractor and Kundu \(2004\)](#) find that diversified entrepreneurial and export-led development strategies better stimulate economic growth than inward-looking development strategies. Specifically, they investigate the impact of the booming entrepreneurship in software and information technology sectors in India, China, and Taiwan, and conclude it is the diversification of these activities that is boosting these countries' economic development.

Moreover, export diversification may have a positive effect on domestic entrepreneurship through its influence on domestic institutional environments. One channel could be that an increase in export diversification (either new products or new export markets) would require governments to boost their governance structures toward liberalisation, in terms of economic freedom and legislative conditions assisting the development of the entrepreneurial sector ([Pitlik, 2007](#)). Moreover, export diversification may boost government efficiency by the effects of competition, when governments try to support their domestic firms entering new markets ([Feketekuty, 2000](#)). For example, entrepreneurship may gain benefits from the support programmes/subsidies that encourage local firms to export innovative products ([Hillman and Ursprung, 1996](#)).

Nonetheless, export diversification may also impose some adverse effects on entrepreneurship due to the costs and risks associated with diversification. [Fillat et al. \(2015\)](#) argue that multinational activities may boost diversification benefits, but also come with fixed and sunk costs of entry in new markets or new products. These costs are mostly exogenous and vary across markets and products. Moreover, the cost-benefit relationship in export diversification is also contingent on the levels of the export intensity. Specifically, [Vannoorenberghe et al. \(2016\)](#) find that small Chinese firms face greater volatility when they expand the scope of their export partners. Meanwhile, large exporters face little volatility when they employ the same strategy. As such, [Vannoorenberghe et al. \(2016\)](#) propose that one essential disadvantage of small firms in pursuing export diversification is the presence of fixed costs of exporting per destination and short-run demand shocks. [Xuefeng and Yaşar \(2016\)](#) further explain that firms in the initial stages of export diversification face higher costs due to lack of knowledge and experience, and that the process of market diversification would only result in lower long-run average costs when a threshold level of accumulated investment is achieved.

Also in this line of argument, [Jones et al. \(2011\)](#) suggest that higher levels of export diversification imply greater exposure of domestic economic activities to international systematic risk (due to the integration). As a result, local entrepreneurs are exposed to a more challenging and riskier ecosystem. In addition, the expansion of export activities may lead to a larger government size ([Liberati, 2007](#)). The larger public sector may then crowd out the private sector, including entrepreneurship.

Given the analysis of the pros and cons of export diversification on the economy and society, we argue that export diversification may have both positive and negative impacts on entrepreneurship. However, the effects in the short run are more likely to be negative than the effects in the long run due to the costs associated with setting up initial export activities. This expectation will be tested using a global sample.

Finally, it is also noteworthy that the reverse effect of entrepreneurship on export diversification should not be neglected. There are at least two mechanisms that allow such a flow of causality to happen. First, entrepreneurship as a process of creative destruction is associated with economic disequilibrium – a situation when the economy shifts from the old modes to the new modes ([Schumpeter, 1965](#)). Specifically, entrepreneurs acquiring Schumpeterian rent will try to push the economy out of its current equilibrium by introducing new products that come to replace older products. This creative destruction process is usually associated with innovation, new business models, and improved efficiency, which may lead to export diversification ([Stephan et al., 2015](#)). Second, a boom in entrepreneurship may force governments to

improve their governance structure and institutional quality in accordance with the demands of new business activities ([Nguyen et al., 2018](#)). Meanwhile, economic integration in general, and export diversification in particular, are a dimension of national institutions. To realise/expand their business opportunities, entrepreneurs may actively press their governments to create/enhance integration agreements with other economies. Therefore, increasing entrepreneurship may reasonably boost export diversification. We take into account this reverse effect in the empirical estimations, using appropriate econometric methods to control for endogeneity.

2.3. Business environment and entrepreneurship

Even though the key objective of this study is to examine the effects of export diversification on the activeness of national entrepreneurship, we acknowledge that economic integration is more than export diversification. Also, economic integration is only one factor in broader business environments that affect the establishment, operation and performance of entrepreneurial ventures. As such, in this section, we (1) summarise the literature on other forms of economic integration, which are FDI and trade openness; and (2) briefly explain the effects of other domestic economic and non-economic factors that have been well-documented in the literature also to influence entrepreneurial activities. Our aim is to provide a comprehensive overview of the factors affecting entrepreneurship which will underpin the empirical model presented in Section 3.

2.3.1. Other forms of economic integration

A set of well-structured and efficient international-orientated institutions promotes not only export diversification but also FDI and trade openness. From the macro-economic perspective, these two traditional presentations of economic integration have been identified as key determinants of national economic performance ([McMillan et al., 2014](#)). For example, FDI inflows make a positive impact on productivity through the spillover effects of technology and human capital ([Tuan et al., 2009](#)). These spillover effects may create opportunities and build capabilities for entrepreneurs to pursue entrepreneurial activities through the diffusion of technology, new ideas, and skills ([Danakol et al., 2013](#)). One of the most popular spillover channels is that domestic businesses serve as new suppliers or customers of foreign entities. Another channel could be labour mobility from foreign firms with better capabilities and skills to domestic businesses ([Munemo, 2017](#)). Empirically, [Albulescu and Tămășilă \(2014\)](#) find that FDI inflows make a positive impact on the performance of opportunity-driven

entrepreneurs in 16 European countries over the period 2005-2011. Interestingly, [Munemo \(2017\)](#) suggests that FDI inflows have a crowding-in effect on business start-ups in 92 developing countries over the period 2004-2012 and that this effect is more salient when financial development is below a certain level in the host countries.

However, FDI inflows are also blamed for targeting low labour-cost countries only ([Bevan and Estrin, 2004](#)), which substantially limits the positive spillover effects ([Crespo and Fontoura, 2007](#)). Also, FDI inflows may play as competitors with better capability and resources against domestic entrepreneurs ([Munemo, 2017](#)). For example, [Pathak et al. \(2013\)](#) find that countries with higher levels of FDI intensity and stronger intellectual property rights protection have lower levels of technology entrepreneurship. Therefore, in this study, we hold a neutral viewpoint against the impacts of FDI on local entrepreneurship.

Similarly, trade openness, another dimension of economic integration, may also have diverse effects on domestic entrepreneurship. International trade is, by nature, employed to take advantage of opportunity costs and gain productivity using national relative comparative advantages ([Ricardo, 1891](#)). The extant literature has pointed out that a higher degree of trade openness increases the likelihood that domestic businesses successfully gain access to global value chains ([Melitz, 2003](#), [Pavcnik, 2002](#)), which increases opportunities for domestic producers not only in increasing the quality of their products but also in providing a variety of intermediate inputs ([Grossman and Helpman, 1991](#)). As a result, there would be more opportunities for entrepreneurs under trade liberalisation. [Herrera-Echeverri et al. \(2014\)](#), for instance, find that international trade has a dominant influence in spurring business generation in low-income countries in a sample of 87 countries over the period 2004-2009. [Coulibaly et al. \(2018\)](#) further explain the relationship between trade openness and entrepreneurship, citing the importance of economic integration and mutual reliance between local or global entities in facilitating small business practices.

However, it is also noticed that trade liberalisation means lower tariffs and/or other trading constraints, which stimulate higher competition in local markets ([Helpman and Krugman, 1985](#)). In many cases, international products may completely replace domestic products and substantially limit chances for local entrepreneurs. [Lin and Yang \(2017\)](#), for instance, show that trade liberalisation encourages opportunity entrepreneurship but discourages necessity entrepreneurship in the OECD countries over the period 2001-2012. Similarly, [Nickerson and](#)

Konings (2007) observe that lower output tariffs induce tougher competition in Indonesian manufacturing over the period 1991-2001. Therefore, as with FDI, we hold a neutral viewpoint on the impacts of trade liberalisation on local entrepreneurship.

2.3.2. Other business environment conditions

Besides economic integration, other economic and non-economic factors embedded in domestic business environments also influence entrepreneurial activities. These factors may include: quality of the workforce; access to finance; social conditions and services; and cultural, attitudinal, and religious influences. For example, Lafuente et al. (2018), in the context of African countries, document that a young and well-educated workforce is strongly associated with entrepreneurship density. Also, social conditions such as welfare, social security, and unemployment security have been found to be associated with the influence of the aspiration of starting businesses by potential entrepreneurs. For example, it is found that social security negatively affects a country's supply of ambitious entrepreneurship in a sample of 29 countries in 2005 (Hessels et al., 2008). Meanwhile, access to finance has long been identified as an important determinant of entrepreneurship in both developing (Guariglia et al., 2012) and developed countries (Guariglia and Mateut, 2006). Also, country cultures, norms, and values play an important role in connecting other factors. For instance, Dheer (2017), in a sample of 84 nations, finds that individualism positively moderates the effect of political freedom, negatively moderates the effect of corruption, and positively moderates the effect of education, on the rate of entrepreneurial activity across nations.

This section does not aim to systematically review all the factors relevant in explaining entrepreneurship but to acknowledge that economic integration is one in a (long) list of the determinants. Built on this review, our empirical settings will consider the potential effects of these covariates and propose an appropriate estimation technique for econometric issues.

3. Data and method

3.1. Model

We begin with a conventional model of entrepreneurship (*Entre*), which is a function of economic development variables, including national income level (*Income*), industrialisation (*Industry*), and human capital (*HC*); demographic variables, including population structure

(*Workpop*) and urbanisation (*Urban*); and financial development (*FD*) (Fuentelsaz et al., 2019, Sahasranamam and Nandakumar, 2018, Dutta and Sobel, 2018, Coulibaly et al., 2018), as follows:

$$\text{Entre} = f(\text{Income}, \text{HC}, \text{Workpop}, \text{FD}, \text{Industry}, \text{Urban}) \quad [1]$$

Previous studies (Toma et al., 2014) have noticed that economic development in parallel with structural changes in demographics and environments are antecedents of adaptive entrepreneurship and other entrepreneurial activities. For example, economic development with a new sector, e.g., tourism development (Wang et al., 2019), or with a new value, e.g., corporate social responsibility (Kimbu and Ngoasong, 2016), would create more opportunities for entrepreneurship.

Meanwhile, new business generation is in line with the speed of industrialisation (Bagnasco and Trigilia, 1990). Specifically, industrialisation provides a platform for knowledge diffusion through mass production. This may prepare the basic conditions for future entrepreneurial activities. However, there are also arguments that industrialisation leads to specialisation in production and higher demand for labour (Baer and Hervé, 1966, Jinglian, 2007), which could limit the activeness of entrepreneurship.

Human capital is one of the most important factors determining the success of entrepreneurial activities. Romero and Martínez-Román (2012), find that entrepreneurship in terms of self-employment requires education and management skills to achieve innovation. Plotnikova et al. (2016) further argue that self-employment without sufficient knowledge and management skills would reduce the chance of survival of entrepreneurial activities.

Demographic factors, including population age and urbanisation, are also important. The population in the 15-64 age range should be expected to be a positive contributor to innovation and entrepreneurial activities (Crescenzi and Rodríguez-Pose, 2009). Bloom et al. (2000) observe that the working population (mostly young and dynamic) is among the strongest drivers of extant economic development in Asia. Also, Crescenzi and Rodríguez-Pose (2013) unveiled that the relative working population (aged between 15 and 24) is currently the leading driver of technology innovation in the US. Thus, working people, with their dynamism and creative nature, benefit entrepreneurship.

The second factor of demographics is urbanisation. Kaiming (2009) argues that urbanisation with city-like infrastructure benefits innovation activities and knowledge diffusion. In addition, cities and large urban areas help provide the best context in nurturing

innovation-based learning economies and entrepreneurial activities (Fischer, 2001). Moreover, urbanisation is typically a con-coherent process of industrialisation in many economies (Gollin et al., 2016), which also boosts entrepreneurial activities. Finally, financial development is added to the function of entrepreneurship as a positive determinant. The reason for this is that financial constraints are among the most crucial barriers for new venture establishment and operation Magd and McCoy (2014). For example, Ma et al. (2018) estimate that a 10 per cent decrease in the probability of being credit constrained would add 4.3 million newly created household businesses in China, which is equivalent to 11 million jobs.

Building on a conventional three-pillar model (economic, demographic, and financial), we incorporate two additional covariates into the entrepreneurship function, namely globalisation and institutions. Specifically, globalisation is measured using two variables, FDI inflows (*FDI*) and trade openness (*Trade*) (Coulibaly et al., 2018). Meanwhile, institutions are measured by the quality of national institutional settings (*INST*). As such, we have the following equation:

$$Entre = f(Income, HC, Workpop, FD, Industry, Urban, FDI, Trade, INST) \quad [2]$$

Based on this extended model of entrepreneurship, we investigate the importance of export diversification (*EXDiv*). The final function of entrepreneurship for the empirical investigation is as follows:

$$Entre = f(Income, HC, Workpop, FD, Industry, Urban, FDI, Trade, INST, EXDiv) \quad [3]$$

Assuming [3] is a linear additive function, we propose the following regression equation:

$$Entre_{it} = \beta_0 + \beta_1 Income_{it} + \beta_2 HC_{it} + \beta_3 Workpop_{it} + \beta_4 FD_{it} + \beta_5 Industry_{it} + \beta_6 Urban_{it} + \beta_7 FDI_{it} + \beta_8 Trade_{it} + \beta_9 INST_{it} + \beta_{10} EXDiv_{it} + \varepsilon_{it} \quad [4]$$

in which: *i* denotes a country, *t* a year *t*; β is coefficient; and ε is the residual term.

3.2. Data

We employ the number of newly registered businesses from the World Development Indicators (WDI) from the World Bank ([Bank, 2018](#)) to proxy for entrepreneurship (*Entre1*). Moreover, the newly registered businesses per thousand population in age 15-64 is also used as an alternative measure, i.e., entrepreneurship intensity (*Entre2*).²

Real GDP per capita, total population in age 15-64, domestic credit to the private sector, industry value-added to GDP, and urbanisation level, are recruited from the WDI to proxy for national income, population demographics, financial development, industrialisation, and urbanisation, respectively. Meanwhile, the human capital index is collected from the Penn World Table version 9.0 (PWT) ([Feenstra et al., 2015](#)) to proxy for human capital accumulation. The ratio of FDI inflows to GDP and trade openness is also collected from the WDI to proxy for globalisation. Six different institutional indicators of Worldwide Governance Indicators (WGI) from the World Bank ([Bank, 2019](#)) are employed as a proxy for national institutional quality.

We measure export diversification (*EXDiv1*) and the two sub-indices, namely export-extensive margin (*EXDiv2*) and export-intensive margin (*EXDiv3*) using the Direction of Trade Statistics database of the IMF (DOT) ([IMF, 2018a](#)). Specifically, the export-extensive margin index reflects the dynamic evolutions in the number of new products exported, or in the number of new destinations for existing exports; while the export-intensive margin index indicates the dynamic evolution in export values among existing exports; and the overall export diversification index is the sum of the two ([Cadot et al., 2011](#)). Thus, a higher extensive margin implies a larger variety of products and destinations of a country in exporting activities ([Aldan and Çulha, 2016](#)), while the intensive margin index reflects the depth of export. As such, an increase in the intensive margin index implies a higher quality of exporting products ([Chen, 2013](#)), remembering that the indices of export diversification from the IMF are calculated with the meaning that a higher value implies a lower level of export diversification.³

² In estimating eq. [4] with log of total new businesses per 1000 people at 15-64 (*Entre2*) as dependent variable, the population in age 15-64 will be dropped out since the 15-64 population is in calculation of *Entre2*.

³ See <https://www.imf.org/external/np/res/dfidimf/diversification.htm>

Due to the availability of data, the final sample includes 61 countries over the period 2006-2014; including 36 low-and-middle-income economies (LMEs) and 25 high-income economies (HIEs) in the period 2006-2014 as the best measure of the global sample.⁴

We also acknowledge that entrepreneurial activity is not narrowly defined as new business creation. Entrepreneurship is regarded as a process of identifying opportunities, building capabilities, and sustaining entrepreneurial alertness ([Nguyen, 2018](#)). Thus, we also extract a set of indicators from the Global Entrepreneurship Monitor ([GEM, 2019](#)) to measure national entrepreneurship. Specifically, 15 indicators of entrepreneurial behaviours and attitudes, and 12 indicators of entrepreneurial framework conditions from GEM are employed as robustness checks.

Variable definitions and descriptions are presented in *Table 1*. Unconditional correlations between variables are presented in *Table 2*. The number of newly registered businesses (*Entre1*), and newly registered businesses per thousand population in age 15-64 (*Entre2*), real GDP per capita (*Income*), human capital index (*HC*), and total population in age 15-64 (*Workpop*) are taken in logarithm form. We also calculate the average of six institutional indicators (*INST1*) from the WGI to proxy for overall institutional quality in the empirical investigation.

[insert Table 1, 2 here]

[insert Figure 1, 2 here]

Figure 1 presents the total number of newly registered businesses across countries in our sample in 2006 and 2014. The UK, Russia, South Africa, Australia, France, Spain, and Hong Kong are among the top countries with the highest number of newly registered businesses. It is interesting to note that these countries include both advanced and emerging economies. Meanwhile, *Figure 2* shows that Cyprus, Hong Kong, Estonia, Australia, Malta, Norway, and the UK are among the top countries in terms of entrepreneurship intensity.

[insert Figure 3, 4 here]

⁴ See Table A1, Supplementary material, for the list of countries in our sample. In income classification, we follow the income classification in World Development Indicators 2006 of World Bank to classify. This is as there are some changes in income groups of countries during the period 2006-2014, the use of 2006 income classification ensures the initial stage of countries.

Figure 3 shows the relationship between newly registered businesses (*Entre1*) and income level; human capital; population in 15–64 age; financial development; industrialisation; urbanisation; and FDI inflows and trade openness. *Figure 4* further presents the relationships between entrepreneurship intensity (*Entre2*) and socioeconomic factors. It shows that better macro-socio-economic conditions are likely linked with higher entrepreneurship intensity. These statistics initially affirm that the data in use is consistent with the theoretical literature.

3.3. Estimations

The sample examined in this study includes 61 countries in the period 2006-2014. This sample has a large N (61 countries) with a relatively short time ($T=9$ years), and thus each variable is checked using Pesaran's CD test ([Pesaran, 2004](#)) for the existence of cross-sectional dependence. In addition, [Pesaran's \(2007\)](#) CIPS ($Z(t\text{-bar})$), Fisher stationarity test based on Phillips–Perron type ($Z(\text{inverse normal})$) unit root test ([Choi, 2001](#)), Im-Pesaran-Shin unit root test ([Im et al., 2003](#)), Levin-Lin-Chu unit-root test ([Levin et al., 2002](#)), and Harris-Tzavalis unit-root test ([Harris and Tzavalis, 1999](#)), are employed to check the stationarity of variables.

[insert Table 3 here]

The results in *Table 3* show the existence of cross-sectional dependence and stationarity in most variables. Next, the Granger causality test for the panel data of [Dumitrescu and Hurlin \(2012\)](#) is used to identify the causality between each independent variable and the dependent variable.

[insert Table 4 here]

The results in *Table 4* show that there is mutual Granger causality between most of the independent variables and the dependent variable. This causes the problem of endogeneity in estimating *Eq. [4]* due to the feedback effects from the dependent variable to the independent variables ([Roodman, 2009](#)). Therefore, we estimate *Eq. [4]* using all one-year lags of independent variables to limit this effect.

We employ a panel-corrected standard errors model (PCSE) to estimate *Eq. [4]* (with lagged independent variables). The PCSE model is appropriate to tackle the existence of cross-sectional dependence of variables in small panel data with short T and large N ([Bailey and Katz, 2011](#)). Moreover, we also use feasible generalised least squares (FGLS) ([Hansen, 2007](#)) for a robustness check to mitigate issues related to

heteroscedasticity in entrepreneurship between the countries.⁵ Lastly, it is noteworthy that the estimates may suffer from omitted variable bias. In fact, the study period ranges from 2006-2014, including the 2008 global financial crisis, which had severe economic consequences that may have altered entrepreneurship activities. Moreover, there are heteroscedastic conditions across countries by different income levels. As such, we also conduct additional robustness checks by including year-fixed effects and income-fixed effects in the PCSE estimate. All results are consistent and robust.⁶

4. Results

4.1. Total sample

[insert Table 5 here]

The results of the full sample of 61 countries are reported in *Table 5*. In terms of the control variables, *Table 5* (results from PCSE estimators) shows that conventional macro-economic factors including national income (*Income*), human capital (*HC*), working population (*Workpop*), and urbanisation (*Urban*), are positively associated with both entrepreneurship (*Entre1*) and entrepreneurship intensity (*Entre2*).

Regarding economic openness, FDI inflows (*FDI*) and trade openness (*Trade*) are also positively associated with entrepreneurship; and trade openness has a stronger statistical significance. Similarly, overall export diversification (*EXDiv1*) and export-intensive diversification (*EXDiv3*) have significant positive impacts on both entrepreneurship and entrepreneurship intensity. This implies that the higher values in the overall export diversification index and export-intensive index have positive correlations with higher entrepreneurial activities. Meanwhile, export-extensive diversification (*EXDiv2*) has a negative impact on entrepreneurship. Recalling that an increase in export diversification indices means lower levels of diversification, the results are explained as follows. A higher overall diversification or higher

⁵ The study also performs Pooled OLS, robust Pooled OLS for robustness check. However, due to a large number of results for constructing the tables, the results of these estimations are provided upon request.

⁶ The results using fixed-effects are provided in the Appendix, Table A5, A6, and A7. The authors are grateful for helpful suggestion from anonymous reviewer.

export-intensive margins (or higher values of existing exporting products) would have negative impacts on entrepreneurship activities. In contrast, higher export-extensive margins or more destinations and products in exports would induce entrepreneurship activities.

Table 5 further reports the results with an average of the six institutional indicators (*Inst1*) as a proxy of institutional quality. The estimation results for all six institutional indicators (*Inst2* to *Inst7*) are reported in *Table A2* and *Table A3*, Appendix, for *Entre1* and *Entre2*, respectively. Interestingly, all estimated coefficients are consistent with the results in Table 5. The institutional quality measured by the average of six institutional indicators from the WGI (*Inst1*) and five institutional indicators, including control of corruption (*Inst2*), government effectiveness (*Inst3*), political stability (*Inst4*), regulatory quality (*Inst5*), and rule of law (*Inst6*), are positively associated with entrepreneurship; while voice and accountability (*Inst7*) has a negative effect on entrepreneurship (*Entre1* in Table A2, Supplementary materials). However, all institutional variables have significant positive impacts on entrepreneurship intensity (*Entre2* in Table A3, Supplementary materials). These results imply that while institutions are important to entrepreneurship, global economic integration also has an essential role to play.

Next, we employ the FGLS estimators on 15 indicators of entrepreneurial behaviours and attitudes (*Entre3* to *Entre17*) and 12 indicators of entrepreneurship conditions (*INST8* to *INST19*) from the GEM database. The detailed results are available upon request. The summary is presented in *Table A4*, Supplementary materials. *Table A4* shows that all three dimensions of export diversification have positive impacts on perceived capabilities (*Entre4*), entrepreneurial intention (*Entre6*), total early-stage entrepreneurial activity (TEA) (*Entre7*), established business ownership (*Entre8*), Female/male TEA (*Entre11*), high status of successful entrepreneurs (*Entre16*), and entrepreneurship as a good career choice (*Entre17*). Meanwhile, the three dimensions of export diversification have negative impacts on fear of failure rate (*Entre5*), female/male opportunity-driven TEA (*Entre12*), and business services sector (*Entre15*). Finally, export diversification is of mixed effect on entrepreneurial employee activity (*Entre9*), and high job creation expectation (*Entre13*).

These results reveal that export diversification has dissimilar effects on different measures of entrepreneurship. However, the key finding that a higher level of export diversification is negatively associated with the number of newly established firms remains robust across specifications and estimations.

4.2. Sub-sampling

This section presents the results for two sub-samples; namely 36 LMEs and 25 HIEs.

[insert Table 6 here]

Table 6 reports the effects of export diversification on entrepreneurship in LMEs, controlling for institutions.⁷ Table 6 shows the consistent impacts of export diversification on entrepreneurship activities in LMEs. Specifically, overall export diversification and export-intensive margin indices (*EXDiv1*, *EXDiv3*) have positive impacts on entrepreneurship (*Entre1*) and also entrepreneurship intensity (*Entre2*). Meanwhile, the export-extensive margins index has a significant negative impact on both proxies of entrepreneurship. That is, the findings in the full sample are reaffirmed; that overall diversification or the export-intensive margin have negative impacts on entrepreneurship activities, while the export-extensive margin has a positive impact on entrepreneurship activities.

This is quite interesting compared to the earlier findings, as the two results are completely consistent. The effects of each institutional indicator in six institutional indicators (*Inst2* to *Inst7*), and export diversification on entrepreneurship, are consistent with the findings in Table 5 and are available upon request.

[insert Table 7 here]

The results for the case of HIEs are presented in Table 7. The estimates show consistent findings obtained using the full sample in the case of total entrepreneurship (*Entre1*); however, there is a difference in the impact of the export-extensive margin on entrepreneurship per 1000 people in the age 15-64 (*Entre2*). Specifically, overall export diversification and export-intensive margin have positive impacts on total new businesses (*Entre1*), while export-extensive margin has a negative impact. In the case of entrepreneurship density (total new businesses per 1000 people in age 15-64), all three indices of export diversification have positive impacts. The effects of each institutional

⁷ Results without institutional variables remain consistent.

quality from *Inst2* to *Inst7*, and export diversification on entrepreneurship, are consistent with the findings in *Table 5* and are available upon request.

5. Discussion and conclusion

This study investigates the importance of structural changes as the dynamics of economic integration, with particular attention to export diversification, on national entrepreneurship. Previous studies have demonstrated that national socioeconomic and institutional factors are essential determinants of entrepreneurial activities. We subscribe to this research strand, and further argue that export diversification is also an important but neglected determinant in the extant literature.

Analysing a set of 61 countries from 2006 to 2014, we find that exporting to more destinations (export-extensive margins) is positively associated with national entrepreneurship density, while overall export diversification and export-intensive margins (higher values of existing exporting products) are associated with lower entrepreneurship activities. Moreover, the effects of export diversification on entrepreneurship are consistent in LMEs and the total new businesses in HIEs, while all dimensions of export diversification are found to have decreasing effects on entrepreneurship density (total new businesses per 1,000 people aged 15-64) in HIEs.

This study makes important contributions to the literature examining entrepreneurship from the macro-economic perspective. First, we demonstrate that besides institutional quality, global economic integration of a nation is also important in understanding entrepreneurship. In the last three decades, institutional economics has become an increasingly popular theoretical lens to explain national/regional differences in entrepreneurial activities ([Bruton et al., 2010](#)). Institutions, with the power to reward/punish human actions, strongly shape entrepreneur incentives and behaviours (towards productive actions (entrepreneurship) for being rewarded; and against unproductive actions (rent-seeking) for not being punished) ([Du and Mickiewicz, 2016](#)). However, institutions do not capture the interaction between economies, which is significant in this age of globalisation. As such, institutional settings, together with other conventional macro factors, are able to provide an understanding of the effects of the 'locally built-up' determinants of entrepreneurship. Export diversification, in contrast, captures the degree of inter-connection among economies, representing the 'external' determinant of entrepreneurship.

Second, this study shows that the effects of export diversification may vary significantly by diversification dimensions, nations, and measures of entrepreneurship. Specifically, overall export diversification and export-intensive margin may have an initial negative influence on entrepreneurship. This is likely because diversification is by nature a risky strategy that also requires substantial investment and learning ([Iacobucci and Rosa, 2005](#)), while the focus on export-intensive margin (or higher values of existing export products) would create more competition and risk for entrepreneurs in entering the market. In contrast, economic integration through diversification at exporting destinations or new products, generates benefits to local entrepreneurship. This positive effect is achieved by the stronger integration into the global value chains, which may bring about business opportunities, knowledge spillovers, and improvements in local institutional environments ([Meyer and Nguyen, 2005](#)).

Moreover, the results suggest that export diversification may not be as contributive to entrepreneurship in HIEs as it is in LMEs. This finding confirms our argument that the benefits of export diversification for entrepreneurship are only dominant for the economy at the initial stage of economic development. LMEs are mostly developing countries that may have less competition from domestic producers; thus, export diversification towards new destinations and new products creates more opportunities with less risk than low domestic competition, for entrepreneurs. As such, the increase of export-extensive diversification in LMEs may lead to positive effects on entrepreneurship as in our analysis. Meanwhile, HIEs, with high economic development already, face strong competition from domestic producers. Thus, increases in export-extensive margin may create competition, both external and internal, while entrepreneurs face more cost and risk for entrepreneurial activities.

This study has important implications for policymakers. Given the importance of export diversification in boosting national entrepreneurship (more entrepreneurs in particular), governments should pay more attention to the possibility that entrepreneurship is not completely a 'locally built-up' phenomenon, but that it may also be influenced by the interaction among economies. For this reason, authorities that aim to boost their national entrepreneurship should better position their economies in global value chains, through a strategy to boost the export-extensive margin of export dynamics. That is, there should be policies to support local firms and entrepreneurs in targeting new destinations and new products. The support from government to producing new products or exporting to new destinations would, in turn, support domestic entrepreneurial activities. By doing this, local entrepreneurs are exposed to larger business platforms

(both production and consuming markers), which provide the entrepreneurs with more business opportunities. Nonetheless, it is also observed that export diversification is accompanied by higher risk and cost, which may deter countries with lower levels of development from joining the game. As such, we suggest that export diversification must be closely monitored and supported by governments (e.g., by subsidies or policies). These support programmes may help entrepreneurs to overcome the initial difficulties, and rapidly reap the benefits of export diversification.

Alongside these contributions, the study faces some limitations. First, it is hard to find a good dataset for entrepreneurship. Therefore, the global sample includes 61 countries, which cannot account for all economies around the world. Second, it would be very helpful if the study could also include the characteristics of entrepreneurship activities. This may stimulate further studies on the impacts of export diversification on different kinds of entrepreneurship, such as productive versus non-productive entrepreneurship, and technological vs non-technological entrepreneurship.

To conclude; this study investigates the role played by export diversification in boosting national entrepreneurship. An analysis of a global sample indicates that export diversification is an important determinant of entrepreneurship. As such, this study calls for more research on the interaction between countries to better understand how global integration affects entrepreneurship.

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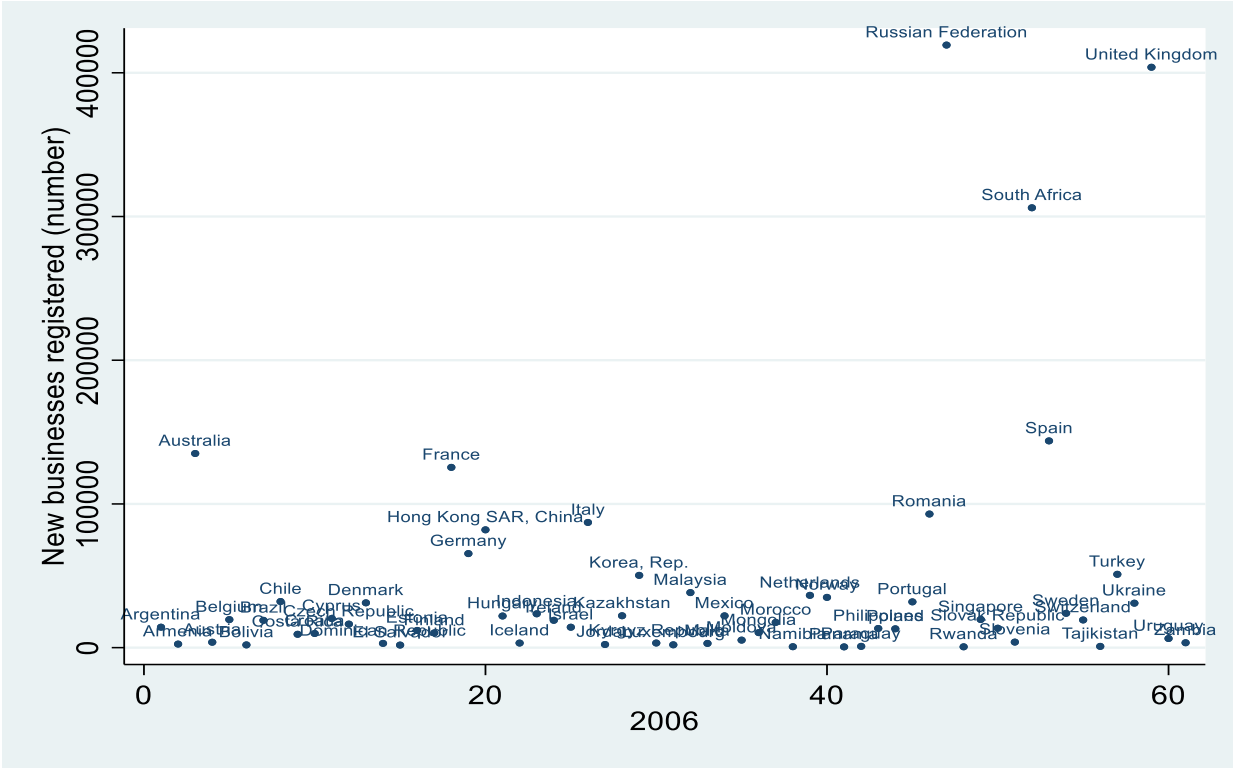
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Figure 1. Number of New business registered in 2006 and 2014



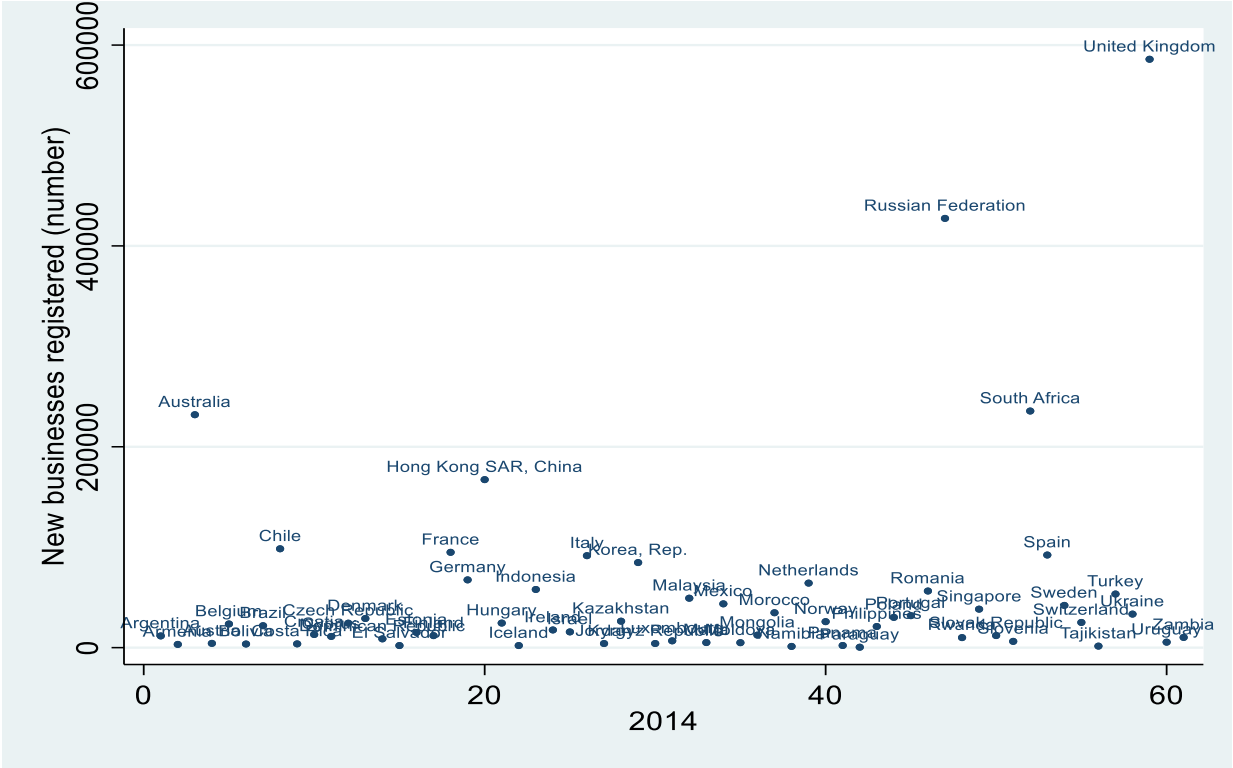
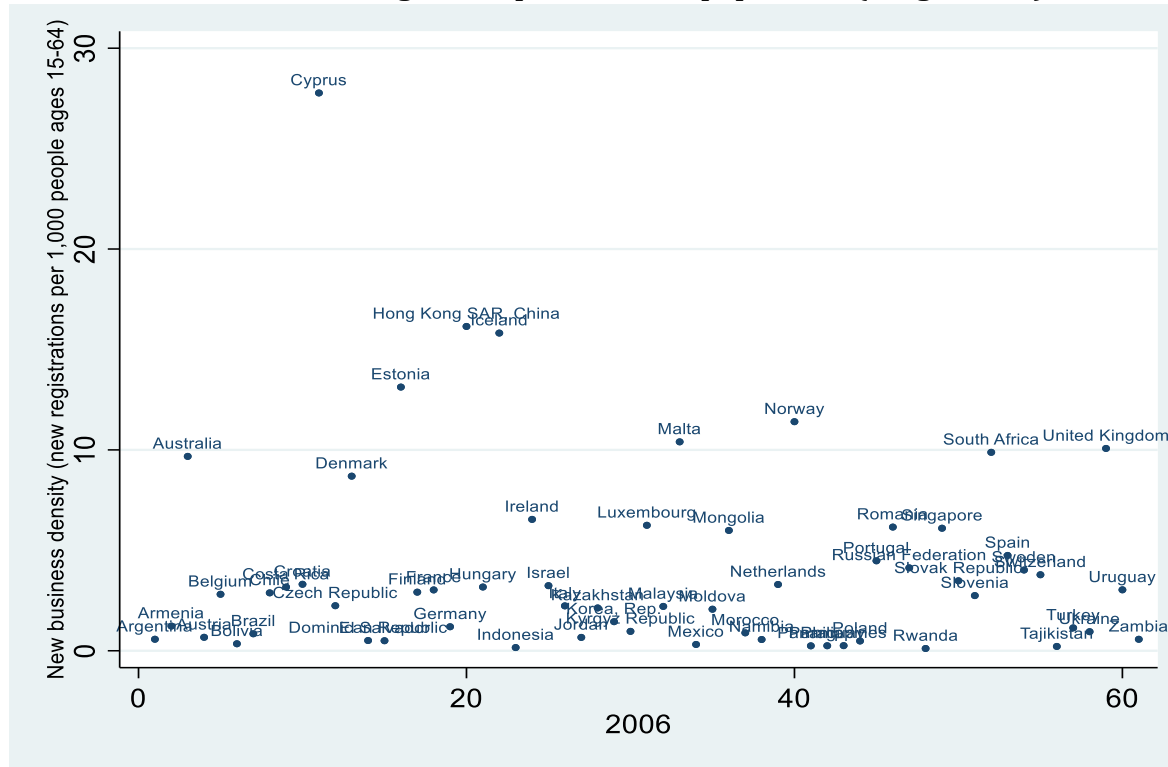


Figure 2. Number of New business registered per thousand population (in age 15-64) in 2006 and 2014



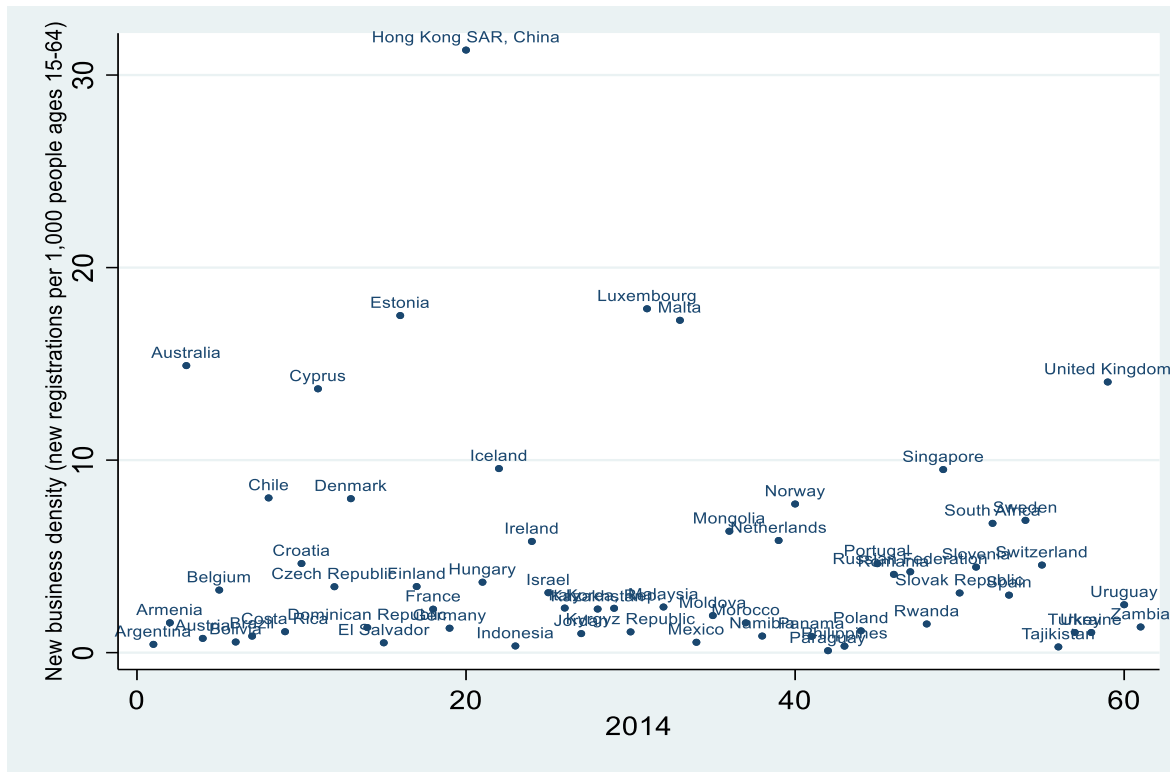


Figure 3. Log of New business registered and Social-Economic factors

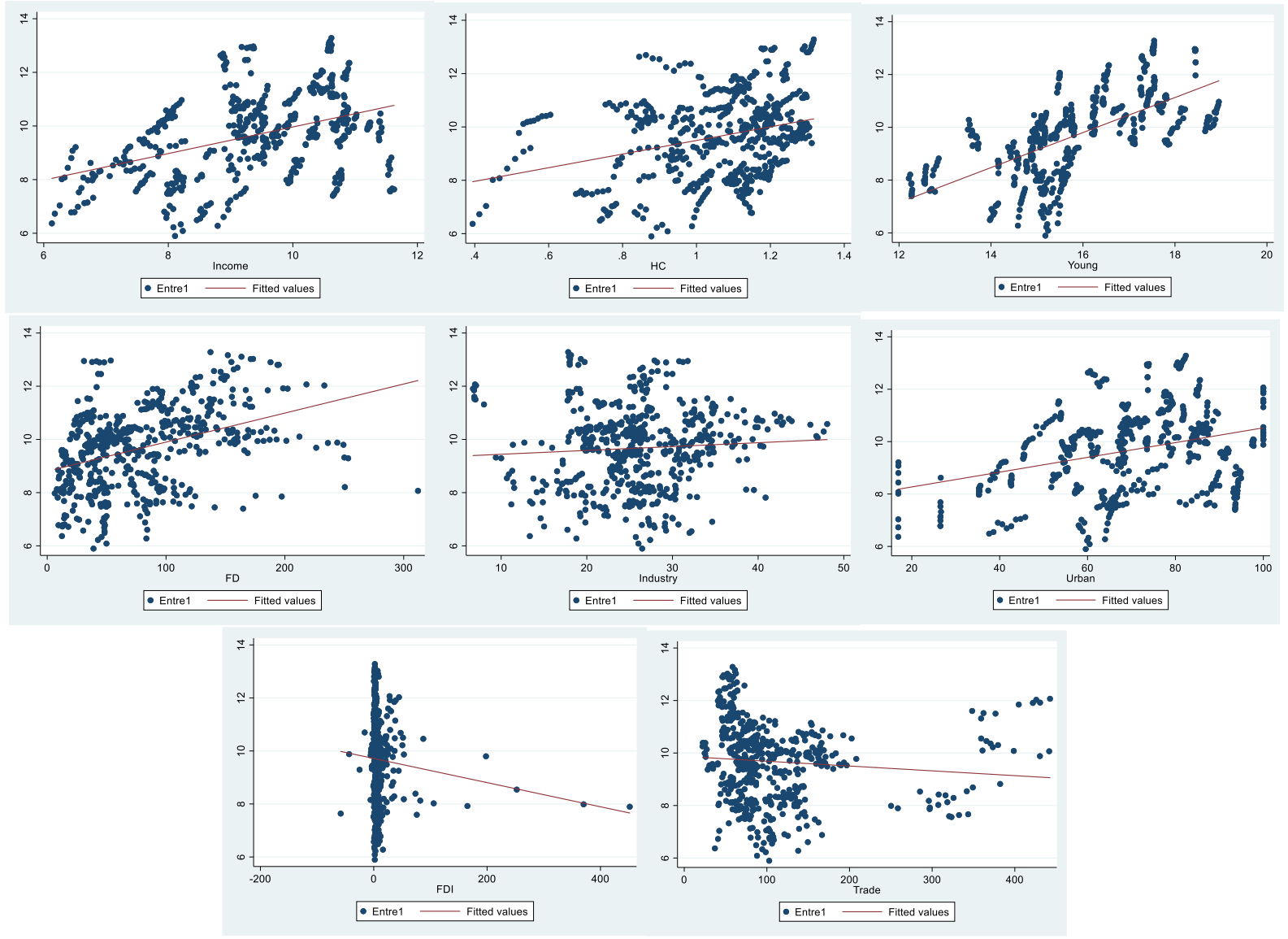


Figure 4. Log of New business density and Social-Economic factors

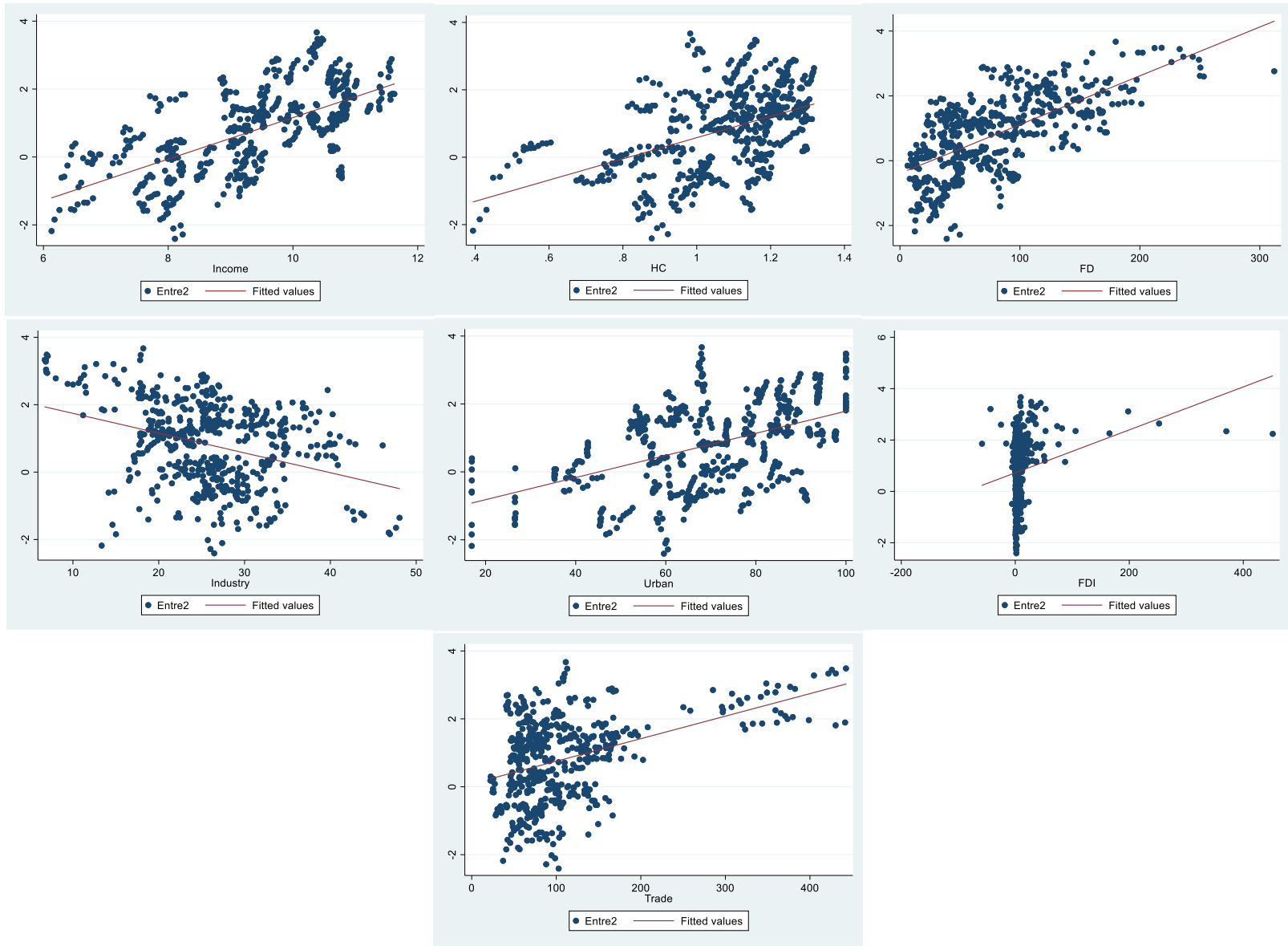


Table 1. Variables, Definitions, and Description

Variables	Denotes	Calculations	Obs.	Mean	Std. Dev.	Min	Max
Dependent variables	Entre1	Log of New businesses registered (number)	549	9.674	1.489	5.897	13.281
	Entre2	Log of New business density (new registrations per 1,000 people ages 15-64)	549	0.803	1.196	-2.409	3.671
	Income	Log of GDP per capita (constant 2010 US\$)	549	9.417	1.274	6.130	11.626
Control variables	HC	Log of Human capital index	549	1.071	0.179	0.394	1.318
	Workpop	Log of Total Population ages 15-64	549	15.81	1.46	12.21	18.95
	FD	Domestic credit to private sector (% of GDP)	549	79.41	52.54	6.35	312.03
	Industry	Industry (including construction), value added (% of GDP)	549	26.02	6.975	6.717	48.061
	Urban	Urban population (% of total)	549	69.78	17.97	16.92	100.00
	FDI	Foreign direct investment, net inflows (% of GDP)	549	9.421	31.02	-58.32	451.72
	Trade	Trade (% of GDP)	549	107.57	75.77	22.11	442.62
Export diversification	EXDiv1	Export Diversification Index	549	2.685	0.866	1.425	4.999
	EXDiv2	Export-Extensive Margin index	549	0.148	0.184	-0.043	1.063
	EXDiv3	Export-Intensive Margin index	549	2.537	0.851	1.377	4.928
Institutional quality	INST1	The average of six institutional indicators	549	0.549	0.841	-1.223	1.889
	INST2	Control of Corruption	549	0.546	1.077	-1.320	2.470
	INST3	Government Effectiveness	549	0.650	0.920	-1.111	2.437
	INST4	Political Stability and Absence of Violence/Terrorism	549	0.335	0.769	-2.021	1.512
	INST5	Regulatory Quality	549	0.675	0.830	-1.129	2.233
	INST6	Rule of Law	549	0.548	0.994	-1.372	2.100
	INST7	Voice and Accountability	549	0.542	0.818	-1.504	1.738

Table 2. Correlation matrix

Correlation	Entre1	Entre2	Income	HC	Workpop	FD	Industry	Urban	FDI	Trade
Entre2	0.46***									
Income	0.42***	0.65***								
HC	0.31***	0.47***	0.59***							
Workpop	0.65***	-0.36***	-0.10***	-0.09**						
FD	0.39***	0.66***	0.66***	0.32***	-0.16***					
Industry	0.07	-0.34***	-0.23***	0.01	0.34***	-0.36***				
Urban	0.34***	0.49***	0.70***	0.39***	-0.04	0.45***	-0.23***			
FDI	-0.09**	0.22***	0.11***	0.04	-0.28***	0.12***	-0.20***	0.18***		
Trade	-0.09**	0.42***	0.28***	0.23***	-0.46***	0.25***	-0.33***	0.30***	0.35***	1.00

Note: *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table 3. Cross-sectional dependence tests and Stationary tests

Test	CD test	CIPS test	Im-Pesaran-Shin test		Fisher unit root test		Levin-Lin-Chu unit-root test		Harris-Tzavalis unit-root test	
			Z-t-tilde-bar Statistic	p-value	Inverse chi-squared	p-value	Adjusted t*	p-value	Z-statistic	p-value
Full sample										
Entre1	18.54***	-1.780	0.275	0.608	239.2***	0.000	-7.469***	0.000	-1.430*	0.076
Entre2	14.20***	-1.734	-0.178	0.429	259.8***	0.000	-9.919***	0.000	-2.346***	0.009
Income	44.66***	-1.258	2.140	0.983	163.0***	0.007	-4.999***	0.000	3.958	1.000
HC	104.3***	-1.806	20.05	1.000	434.3***	0.000	6.175	1.000	8.393	1.000
Workpop	47.49***	-1.059	5.710	1.000	1101***	0.000	-15.55***	0.000	7.081	1.000
FD	21.04***	-1.231	0.917	0.820	407.4***	0.000	-12.25***	0.000	2.055	0.980
Industry	36.50***	-1.762	-0.237	0.406	261.8***	0.000	-10.51***	0.000	-0.720	0.235
Urban	60.59***	0.030	n/a	n/a	1350***	0.000	-20.81***	0.000	6.759	1.000
FDI	21.85***	-2.450***	-4.859***	0.000	402.4***	0.000	-21.25***	0.000	-9.807***	0.000
Trade	29.94***	-0.706	-1.099	0.135	155.8**	0.021	-8.772***	0.000	-3.312***	0.000
EXDiv1	20.42***	-2.620***	-2.145**	0.016	338.9***	0.000	-12.90***	0.000	-4.218***	0.000
EXDiv2	2.261**	-2.047*	-2.479***	0.006	213.6***	0.000	-2.0e+4***	0.000	-4.992***	0.000
EXDiv3	19.56***	-2.552***	-1.892**	0.029	321.8***	0.000	-11.91***	0.000	-4.491***	0.000
INST1	1.741*	-1.165	1.453	0.926	189.0***	0.000	-11.04***	0.000	-0.524	0.300
INST2	0.571	-1.128	1.532	0.937	121.5	0.495	-4.515***	0.000	-0.884	0.188
INST3	0.987	-1.859	-2.248**	0.012	248.6***	0.000	-4.735***	0.000	-7.005***	0.000
INST4	0.428	-1.626	-1.826**	0.033	230.7***	0.000	-7.272***	0.000	-3.709***	0.000
INST5	2.96***	-1.274	1.182	0.881	247.0***	0.000	-5.086***	0.000	-0.670	0.251
INST6	20.82***	-1.964	3.712	0.999	123.1	0.454	-5.786***	0.000	0.816	0.792
INST7	0.162	-1.051	2.118	0.983	128.8	0.318	-6.023***	0.000	1.419	0.922

Note: In CD test: the null hypothesis of cross-section independence, $CD \sim N(0,1)$, P-values close to zero indicate data are correlated across panel groups; In Pesaran Panel Unit Root Test: H_0 (homogeneous non-stationary): $bi = 0$ for all i ; In Im-Pesaran-Shin unit-root test: H_0 : All panels contain unit roots, H_a : Some panels are stationary; In Fisher-type unit-root test: H_0 : All panels contain unit roots, H_a : At least one panel is stationary; In Levin-Lin-Chu unit-root test: H_0 : Panels contain unit roots, H_a : Panels are stationary; In Harris-Tzavalis unit-root test: H_0 : Panels contain unit roots, H_a : Panels are stationary; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table 4. Granger causality tests

X	X does not Granger-cause Entre1		Entre1 does not Granger-cause X		X does not Granger-cause Entre2		Entre2 does not Granger-cause X	
	Z-bar	p-value	Z-bar	p-value	Z-bar	p-value	Z-bar	p-value
Income	13.59***	0.000	11.20***	0.000	10.92***	0.000	9.026***	0.000
HC	15.69***	0.000	10.74***	0.000	12.83***	0.000	10.58***	0.000
Workpop	18.11***	0.000	14.51***	0.000	n/a	n/a	n/a	n/a
FD	15.48***	0.000	25.32***	0.000	12.08***	0.000	28.35***	0.000
Industry	8.713***	0.000	6.872***	0.000	8.401***	0.000	6.271***	0.000
Urban	n/a		n/a		n/a		n/a	
FDI	4.079***	0.000	10.29***	0.000	4.889***	0.000	10.27***	0.000
Trade	10.26***	0.000	18.06***	0.000	12.66***	0.000	13.74***	0.000
EXDiv1	4.773***	0.000	6.369***	0.000	5.290***	0.000	6.830***	0.000
EXDiv2	5.733***	0.000	13.48***	0.000	6.560***	0.000	12.41***	0.000
EXDiv3	3.788***	0.000	5.578***	0.000	4.538***	0.000	6.065***	0.000
INST1	17.34***	0.000	9.981***	0.000	17.92***	0.000	10.12***	0.000

Note: The Granger non-causality test of Dumitrescu & Hurlin (2012) is used, H_0 : X does not Granger-cause Y, H_1 : X does Granger-cause Y for at least one panel-var (country). *, **, *** are significance levels at 10%, 5%, 1%, respectively.

Table 5. Institutional quality, Export diversification and Entrepreneurship

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.0511	-0.0069	0.0521	0.0300	-0.0774**	0.0276

	[0.0389]	[0.0406]	[0.0405]	[0.0389]	[0.0387]	[0.0408]
L.HC	1.2754***	1.1832***	1.2781***	1.2619***	1.1741***	1.2502***
	[0.0746]	[0.0719]	[0.0734]	[0.0801]	[0.0784]	[0.0791]
L.Workpop	0.8597***	0.8306***	0.8676***			
	[0.0105]	[0.0071]	[0.0097]			
L.FD	0.0076***	0.0080***	0.0076***	0.0070***	0.0074***	0.0070***
	[0.0006]	[0.0006]	[0.0006]	[0.0006]	[0.0005]	[0.0006]
L.Industry	-0.0069***	-0.0016	-0.0074***	-0.0182***	-0.0125***	-0.0180***
	[0.0022]	[0.0019]	[0.0022]	[0.0021]	[0.0021]	[0.0021]
L.Urban	0.0018*	0.0044***	0.0021**	0.0026***	0.0049***	0.0033***
	[0.0009]	[0.0008]	[0.0009]	[0.0009]	[0.0008]	[0.0009]
L.FDI	0.0007	0.0015*	0.0008	0.0012	0.0022**	0.0014*
	[0.0006]	[0.0009]	[0.0007]	[0.0008]	[0.0011]	[0.0009]
L.Trade	0.0018***	0.0019***	0.0018***	0.0020***	0.0024***	0.0019***
	[0.0002]	[0.0002]	[0.0002]	[0.0002]	[0.0002]	[0.0002]
L.EXDiv1	0.1108***			0.1882***		
	[0.0287]			[0.0219]		
L.EXDiv2		-0.4282***			-0.3202***	
		[0.0965]			[0.1067]	
L.EXDiv3			0.1423***			0.2098***
			[0.0251]			[0.0195]
L.INST1	0.3252***	0.3187***	0.3391***	0.4208***	0.4512***	0.4290***
	[0.0728]	[0.0685]	[0.0722]	[0.0653]	[0.0603]	[0.0655]
Constant	-6.9624***	-5.8553***	-7.1710***	-2.0304***	-0.7863**	-2.0777***
	[0.2858]	[0.2547]	[0.3020]	[0.3387]	[0.3114]	[0.3585]
N	488	488	488	488	488	488
R-squared	0.7457	0.7457	0.7472	0.6160	0.6050	0.6189
Countries	61	61	61	61	61	61

Note: PCSE estimators; Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table 6. Institutional quality, Export diversification and Entrepreneurship - LMEs

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.2018***	0.0955**	0.2058***	0.1537***	0.0502	0.1723***
	[0.0400]	[0.0385]	[0.0417]	[0.0378]	[0.0361]	[0.0392]
L.HC	1.8359***	1.8660***	1.8755***	1.9389***	1.9258***	1.9623***
	[0.1429]	[0.1601]	[0.1390]	[0.1353]	[0.1579]	[0.1351]
L.Young	0.8105***	0.8640***	0.8417***			
	[0.0187]	[0.0194]	[0.0189]			
L.FD	0.0111***	0.0111***	0.0109***	0.0098***	0.0104***	0.0100***
	[0.0010]	[0.0010]	[0.0010]	[0.0009]	[0.0010]	[0.0009]
L.Industry	0.0065**	0.0095***	0.0035	-0.0151***	-0.0068**	-0.0158***
	[0.0030]	[0.0029]	[0.0030]	[0.0028]	[0.0028]	[0.0027]
L.Urban	-0.0131***	-0.0112***	-0.0126***	-0.0098***	-0.0082***	-0.0094***
	[0.0018]	[0.0021]	[0.0018]	[0.0019]	[0.0022]	[0.0019]
L.FDI	0.0208**	0.0264**	0.0196**	0.0256***	0.0318***	0.0238**
	[0.0089]	[0.0109]	[0.0084]	[0.0099]	[0.0121]	[0.0093]
L.Trade	-0.0043***	-0.0051***	-0.0039***	-0.0033***	-0.0051***	-0.0033***
	[0.0010]	[0.0011]	[0.0010]	[0.0009]	[0.0011]	[0.0009]
L.EXDiv1	0.0621**			0.1346***		
	[0.0243]			[0.0249]		
L.EXDiv2		-1.1980***			-1.3240***	
		[0.0844]			[0.0882]	
L.EXDiv3			0.1379***			0.1993***
			[0.0249]			[0.0254]
L.INST1	0.6153***	0.7849***	0.6706***	0.7900***	0.9020***	0.8129***
	[0.0750]	[0.0730]	[0.0733]	[0.0603]	[0.0611]	[0.0584]
Constant	-6.9959***	-6.7727***	-7.7413***	-2.6365***	-1.3815***	-2.9794***
	[0.3845]	[0.3161]	[0.4140]	[0.4011]	[0.2801]	[0.4190]
N	288	288	288	288	288	288

R-squared	0.7352	0.7514	0.7380	0.5382	0.5745	0.5484
Countries	36	36	36	36	36	36

Note: PCSE estimators; Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table 7. Institutional quality, Export diversification and Entrepreneurship - HIEs

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.0746 [0.0590]	-0.1078* [0.0603]	-0.0441 [0.0520]	0.0785 [0.0591]	0.1665** [0.0676]	-0.0586 [0.0518]
L.HC	-0.0548 [0.2213]	0.3290 [0.2021]	-0.1096 [0.2335]	-0.2024 [0.2254]	-0.1813 [0.1872]	-0.2509 [0.2369]
L.Young	0.9381*** [0.0143]	0.7822*** [0.0125]	0.9426*** [0.0145]			
L.FD	0.0061*** [0.0009]	0.0079*** [0.0008]	0.0054*** [0.0009]	0.0059*** [0.0009]	0.0085*** [0.0008]	0.0052*** [0.0009]
L.Industry	-0.0515*** [0.0046]	-0.0273*** [0.0036]	-0.0576*** [0.0055]	-0.0562*** [0.0044]	-0.0310*** [0.0038]	-0.0620*** [0.0051]
L.Urban	0.0068*** [0.0015]	0.0194*** [0.0010]	0.0063*** [0.0015]	0.0043*** [0.0013]	0.0123*** [0.0013]	0.0042*** [0.0014]
L.FDI	-0.0007 [0.0006]	0.0001 [0.0005]	-0.0004 [0.0006]	-0.0005 [0.0006]	0.0004 [0.0006]	-0.0002 [0.0006]
L.Trade	0.0005*** [0.0001]	0.0009*** [0.0002]	0.0002 [0.0002]	0.0006*** [0.0002]	0.0019*** [0.0001]	0.0003 [0.0002]
L.EXDiv1	0.3924*** [0.0449]			0.4724*** [0.0355]		
L.EXDiv2		-0.6422*** [0.1260]			0.3731*** [0.0986]	
L.EXDiv3			0.5346*** [0.0577]			0.6124*** [0.0473]
L.INST1	0.1177** [0.0462]	-0.0214 [0.0419]	0.1821*** [0.0476]	0.1934*** [0.0471]	0.0966* [0.0527]	0.2596*** [0.0474]
Constant	-6.3566*** [0.7966]	-3.0862*** [0.8697]	-5.1287*** [0.6914]	-0.2482 [0.7305]	-1.7563** [0.8068]	1.2078* [0.6535]
N	200	200	200	200	200	200
R-squared	0.8580	0.8429	0.8678	0.6539	0.5535	0.6779
Countries	25	25	25	25	25	25

Note: PCSE estimators; Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table A1. List of Countries

25 HIEs				
Australia	Finland	Ireland	Netherlands	Korea, Rep.
Austria	France	Israel	Norway	Spain
Belgium	Germany	Italy	Portugal	Sweden
Cyprus	Hong Kong SAR, China	Luxembourg	Singapore	Switzerland
Denmark	Iceland	Malta	Slovenia	United Kingdom
36 LMEs				
Argentina	Dominican Republic	Kyrgyz Republic	Panama	Slovak Republic
Armenia	El Salvador	Malaysia	Paraguay	South Africa
Bolivia	Estonia	Mexico	Philippines	Tajikistan
Brazil	Hungary	Moldova	Poland	Turkey
Chile	Indonesia	Mongolia	Romania	Ukraine
Costa Rica	Jordan	Morocco	Russian Federation	Uruguay
Croatia	Kazakhstan	Namibia	Rwanda	Zambia
Czech Republic				

Note: Income classification is followed the new classification in 2006 from World Bank (see: <http://documents.worldbank.org/curated/en/918311468316164759/World-development-indicators-2006>)

Table A2. Institutions, Export diversification and Entrepreneurship (*Entre1*)

Dep.var: <i>Entre1</i>	(1)	(2)	(3)	(4)	(5)	(6)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.1606*** [0.0317]	0.1607*** [0.0349]	0.0904*** [0.0225]	-0.0095 [0.0249]	0.0877** [0.0391]	0.2552*** [0.0207]
L.HC	1.2707*** [0.0794]	1.2266*** [0.0746]	1.2807*** [0.0860]	1.1728*** [0.0877]	1.2306*** [0.0759]	1.1932*** [0.0801]
L.Young	0.8364*** [0.0093]	0.8317*** [0.0085]	0.8825*** [0.0103]	0.8476*** [0.0084]	0.8467*** [0.0092]	0.8180*** [0.0088]
L.FD	0.0081*** [0.0006]	0.0079*** [0.0007]	0.0084*** [0.0006]	0.0069*** [0.0006]	0.0075*** [0.0007]	0.0084*** [0.0006]
L.Industry	-0.0055** [0.0022]	-0.0070*** [0.0022]	-0.0107*** [0.0023]	-0.0068*** [0.0021]	-0.0066*** [0.0022]	-0.0067*** [0.0022]
L.Urban	0.0010 [0.0010]	0.0011 [0.0009]	0.0030*** [0.0010]	0.0026** [0.0010]	0.0017* [0.0009]	0.0009 [0.0010]
L.FDI	0.0008 [0.0006]	0.0008 [0.0006]	0.0006 [0.0006]	0.0008 [0.0007]	0.0005 [0.0006]	0.0007 [0.0006]
L.Trade	0.0019*** [0.0002]	0.0018*** [0.0002]	0.0016*** [0.0002]	0.0011*** [0.0002]	0.0018*** [0.0002]	0.0018*** [0.0002]
L.EXDiv1	0.0903*** [0.0267]	0.0987*** [0.0288]	0.1012*** [0.0285]	0.1414*** [0.0266]	0.0997*** [0.0285]	0.0841*** [0.0287]
L.INST	0.0980** [0.0484]	0.1235* [0.0671]	0.2840*** [0.0348]	0.5174*** [0.0496]	0.2302*** [0.0615]	-0.0579** [0.0251]
Cons.	-7.4677*** [0.2484]	-7.3346*** [0.3283]	-7.6166*** [0.1991]	-6.2667*** [0.2802]	-6.9650*** [0.3280]	-7.8611*** [0.2032]
R-squared	0.7421	0.7420	0.7489	0.7555	0.7449	0.7413
Model	(7)	(8)	(9)	(10)	(11)	(12)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.1066*** [0.0354]	0.0996*** [0.0365]	0.0497* [0.0260]	-0.0851*** [0.0250]	0.0229 [0.0403]	0.2077*** [0.0209]
L.HC	1.1973*** [0.0821]	1.1446*** [0.0714]	1.2053*** [0.0800]	1.0579*** [0.0840]	1.1453*** [0.0715]	1.1224*** [0.0758]
L.Young	0.8135*** [0.0063]	0.8064*** [0.0048]	0.8529*** [0.0080]	0.8112*** [0.0048]	0.8218*** [0.0056]	0.7963*** [0.0058]

L.FD	0.0083*** [0.0006]	0.0082*** [0.0007]	0.0087*** [0.0006]	0.0074*** [0.0006]	0.0078*** [0.0006]	0.0087*** [0.0006]
L.Industry	-0.0010 [0.0019]	-0.0022 [0.0019]	-0.0060*** [0.0020]	-0.0000 [0.0018]	-0.0016 [0.0019]	-0.0026 [0.0019]
L.Urban	0.0032*** [0.0009]	0.0035*** [0.0008]	0.0047*** [0.0009]	0.0058*** [0.0010]	0.0043*** [0.0008]	0.0030*** [0.0010]
L.FDI	0.0015* [0.0009]	0.0015* [0.0009]	0.0011 [0.0007]	0.0018* [0.0010]	0.0013 [0.0008]	0.0014* [0.0008]
L.Trade	0.0020*** [0.0002]	0.0018*** [0.0002]	0.0017*** [0.0002]	0.0012*** [0.0002]	0.0019*** [0.0002]	0.0019*** [0.0002]
L.EXDiv2	-0.3772*** [0.1033]	-0.4134*** [0.0897]	-0.2515** [0.1055]	-0.5415*** [0.1090]	-0.4387*** [0.0932]	-0.3438*** [0.1050]
L.INST	0.1024** [0.0487]	0.1328** [0.0609]	0.2617*** [0.0401]	0.5116*** [0.0459]	0.2427*** [0.0582]	-0.0575** [0.0258]
Cons.	-6.5280*** [0.2083]	-6.2835*** [0.3082]	-6.6437*** [0.1144]	-4.8525*** [0.1785]	-5.8891*** [0.2910]	-7.0004*** [0.0877]
R-squared	0.7424	0.7423	0.7476	0.7554	0.7454	0.7414
Model	(13)	(14)	(15)	(16)	(17)	(18)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.1694*** [0.0341]	0.1633*** [0.0369]	0.0976*** [0.0228]	-0.0114 [0.0259]	0.0918** [0.0412]	0.2509*** [0.0208]
L.HC	1.2694*** [0.0769]	1.2292*** [0.0735]	1.2747*** [0.0847]	1.1704*** [0.0881]	1.2323*** [0.0750]	1.1944*** [0.0797]
L.Young	0.8419*** [0.0085]	0.8384*** [0.0081]	0.8847*** [0.0097]	0.8570*** [0.0081]	0.8540*** [0.0085]	0.8267*** [0.0090]
L.FD	0.0081*** [0.0006]	0.0079*** [0.0007]	0.0084*** [0.0006]	0.0068*** [0.0006]	0.0075*** [0.0006]	0.0084*** [0.0006]
L.Industry	-0.0060*** [0.0022]	-0.0076*** [0.0022]	-0.0108*** [0.0023]	-0.0075*** [0.0021]	-0.0072*** [0.0022]	-0.0071*** [0.0022]
L.Urban	0.0011 [0.0009]	0.0013 [0.0009]	0.0032*** [0.0009]	0.0030*** [0.0010]	0.0020** [0.0008]	0.0011 [0.0009]
L.FDI	0.0009 [0.0007]	0.0009 [0.0006]	0.0007 [0.0006]	0.0010 [0.0007]	0.0007 [0.0006]	0.0008 [0.0006]
L.Trade	0.0019*** [0.0002]	0.0017*** [0.0002]	0.0016*** [0.0002]	0.0010*** [0.0002]	0.0018*** [0.0002]	0.0019*** [0.0002]
L.EXDiv3	0.1172*** [0.0238]	0.1286*** [0.0256]	0.1190*** [0.0250]	0.1833*** [0.0231]	0.1309*** [0.0253]	0.1133*** [0.0258]
L.INST	0.0963** [0.0486]	0.1343** [0.0677]	0.2771*** [0.0339]	0.5452*** [0.0493]	0.2384*** [0.0618]	-0.0343 [0.0253]
Cons.	-7.6882*** [0.2757]	-7.5293*** [0.3469]	-7.7543*** [0.1915]	-6.4969*** [0.2884]	-7.1849*** [0.3507]	-8.0395*** [0.1928]
R-squared	0.7432	0.7433	0.7496	0.7579	0.7462	0.7422
N	488	488	488	488	488	488
Countries	61	61	61	61	61	61

Note: Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table A3. Institutions, Export diversification and Entrepreneurship intensity (*Entre2*)

Dep. var: <i>Entre2</i>	(1)	(2)	(3)	(4)	(5)	(6)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.1755*** [0.0338]	0.2178*** [0.0389]	0.0576** [0.0225]	0.0269 [0.0275]	0.0940** [0.0429]	0.2191*** [0.0207]
L.HC	1.2814*** [0.0818]	1.2095*** [0.0811]	1.2532*** [0.0936]	1.1506*** [0.0941]	1.2136*** [0.0825]	1.1855*** [0.0860]
L.FD	0.0075*** [0.0006]	0.0075*** [0.0007]	0.0080*** [0.0005]	0.0065*** [0.0005]	0.0069*** [0.0006]	0.0079*** [0.0005]
L.Industry	-0.0181*** [0.0022]	-0.0205*** [0.0021]	-0.0214*** [0.0021]	-0.0193*** [0.0020]	-0.0190*** [0.0021]	-0.0194*** [0.0022]
L.Urban	0.0010 [0.0009]	0.0009 [0.0009]	0.0051*** [0.0009]	0.0027*** [0.0010]	0.0021** [0.0009]	0.0010 [0.0010]
L.FDI	0.0015* [0.0008]	0.0014* [0.0008]	0.0009 [0.0007]	0.0014* [0.0008]	0.0011 [0.0008]	0.0012* [0.0007]

L.Trade	0.0023*** [0.0002]	0.0022*** [0.0002]	0.0015*** [0.0002]	0.0014*** [0.0002]	0.0021*** [0.0002]	0.0026*** [0.0002]
L.EXDiv1	0.1814*** [0.0207]	0.1966*** [0.0224]	0.1527*** [0.0239]	0.2288*** [0.0208]	0.1859*** [0.0221]	0.2021*** [0.0225]
L.INST	0.1348*** [0.0460]	0.0967 [0.0694]	0.3934*** [0.0270]	0.5195*** [0.0521]	0.2799*** [0.0618]	0.0970*** [0.0233]
Cons.	-3.2122*** [0.2819]	-3.4906*** [0.3634]	-2.2032*** [0.1793]	-1.9886*** [0.2553]	-2.4479*** [0.3788]	-3.5784*** [0.1575]
R-squared	0.6054	0.6029	0.6310	0.6251	0.6114	0.6032
Model	(7)	(8)	(9)	(10)	(11)	(12)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.0663* [0.0353]	0.1222*** [0.0389]	-0.0236 [0.0260]	-0.0671** [0.0273]	-0.0167 [0.0421]	0.1289*** [0.0199]
L.HC	1.2245*** [0.0889]	1.1201*** [0.0784]	1.2032*** [0.0903]	1.0396*** [0.0881]	1.1242*** [0.0773]	1.0907*** [0.0800]
L.FD	0.0078*** [0.0006]	0.0080*** [0.0006]	0.0083*** [0.0005]	0.0071*** [0.0005]	0.0072*** [0.0006]	0.0084*** [0.0005]
L.Industry	-0.0125*** [0.0021]	-0.0150*** [0.0020]	-0.0178*** [0.0021]	-0.0127*** [0.0021]	-0.0133*** [0.0021]	-0.0137*** [0.0022]
L.Urban	0.0029*** [0.0009]	0.0029*** [0.0008]	0.0064*** [0.0008]	0.0052*** [0.0010]	0.0045*** [0.0008]	0.0031*** [0.0010]
L.FDI	0.0024** [0.0012]	0.0024** [0.0011]	0.0015 [0.0009]	0.0027** [0.0012]	0.0021* [0.0011]	0.0022** [0.0011]
L.Trade	0.0027*** [0.0002]	0.0027*** [0.0002]	0.0018*** [0.0002]	0.0020*** [0.0003]	0.0025*** [0.0002]	0.0030*** [0.0002]
L.EXDiv2	-0.2415** [0.1152]	-0.2665*** [0.0995]	-0.0563 [0.1078]	-0.3962*** [0.1183]	-0.3236*** [0.1029]	-0.2943** [0.1158]
L.INST	0.1716*** [0.0449]	0.1033* [0.0613]	0.4230*** [0.0334]	0.4876*** [0.0442]	0.3146*** [0.0577]	0.0880*** [0.0236]
Cons.	-1.9782*** [0.2695]	-2.3130*** [0.3474]	-1.2266*** [0.1883]	-0.7703*** [0.2181]	-1.1731*** [0.3544]	-2.4332*** [0.1324]
R-squared	0.5946	0.5900	0.6225	0.6092	0.6007	0.5899
Model	(13)	(14)	(15)	(16)	(17)	(18)
Indep. Var:	Inst2	Inst3	Inst4	Inst5	Inst6	Inst7
L.Income	0.1786*** [0.0365]	0.2119*** [0.0410]	0.0604*** [0.0229]	0.0172 [0.0287]	0.0918** [0.0452]	0.2069*** [0.0207]
L.HC	1.2657*** [0.0805]	1.1976*** [0.0802]	1.2385*** [0.0922]	1.1328*** [0.0941]	1.2013*** [0.0815]	1.1699*** [0.0853]
L.FD	0.0075*** [0.0006]	0.0075*** [0.0006]	0.0080*** [0.0005]	0.0064*** [0.0005]	0.0069*** [0.0006]	0.0079*** [0.0005]
L.Industry	-0.0179*** [0.0022]	-0.0203*** [0.0020]	-0.0210*** [0.0021]	-0.0191*** [0.0020]	-0.0187*** [0.0021]	-0.0189*** [0.0022]
L.Urban	0.0016* [0.0009]	0.0016* [0.0009]	0.0055*** [0.0009]	0.0036*** [0.0010]	0.0028*** [0.0008]	0.0018* [0.0010]
L.FDI	0.0017* [0.0009]	0.0017** [0.0009]	0.0012 [0.0008]	0.0017* [0.0009]	0.0013 [0.0008]	0.0014* [0.0008]
L.Trade	0.0023*** [0.0002]	0.0022*** [0.0002]	0.0015*** [0.0002]	0.0013*** [0.0002]	0.0021*** [0.0002]	0.0026*** [0.0002]
L.EXDiv3	0.1991*** [0.0194]	0.2159*** [0.0199]	0.1610*** [0.0213]	0.2588*** [0.0183]	0.2073*** [0.0201]	0.2259*** [0.0200]
L.INST	0.1316*** [0.0467]	0.1094 [0.0697]	0.3842*** [0.0271]	0.5476*** [0.0516]	0.2873*** [0.0626]	0.1236*** [0.0227]
Cons.	-3.2907*** [0.3114]	-3.5006*** [0.3832]	-2.2557*** [0.1858]	-1.9951*** [0.2711]	-2.4932*** [0.4041]	-3.5634*** [0.1602]
R-squared	0.6076	0.6055	0.6316	0.6297	0.6142	0.6063
N	488	488	488	488	488	488
Countries	61	61	61	61	61	61

Note: Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table A4. Institutions, Export diversification and Entrepreneurship: other definitions (summary)

Model(FGLS)		Dep. Var: Entre3 (Log of Perceived opportunities)																		
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19	
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv 1	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+b
L.INST	+a	+a	+a	+b	+	+	+	+a	+a	+a	+	+a	-	+	+	+b	+a	+	+a	
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv 2	-	-	-	+	-	-	-	+	-	-	-	+	-	+	+	-	+	-	-	
L.INST	+a	+a	+b	+b	+	+	+	+b	+b	+a	+	+a	-	+	+	+b	+b	+	+a	
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv 3	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+b
L.INST	+a	+a	+a	+c	+c	+	+c	+a	+a	+a	+	+a	-	+	+	+b	+b	+	+a	
Model(FGLS)		Dep. Var: Entre4 (Log of Perceived capabilities)																		
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19	
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv 1	+b	+b	+b	+b	+b	+b	+a	+	+	+	+c	+	+	+	+	+c	+	+c	+	
L.INST	+b	+b	-	+	+	+	+c	-a	-	+	+b	-a	+	+	-a	-a	-	+	-	
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv 2	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+b	+a	-	+b	-	+	+a	-a	-	+	+a	-a	+	-	-a	-a	+	+	-	
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv 3	+	+	+	+	+	+	+b	-	+	+	+	+	+	+	+	+	+	+	+	
L.INST	+b	+b	-	+	+	+	+a	-a	-	+	+b	-a	+	-	-a	-a	-	+	-	
Model(FGLS)		Dep. Var: Entre5 (Log of Fear of failure rate)																		
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19	
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv 1	-c	-	-c	-c	-c	-c	-c	-	-c	-c	-c	-c	-c	-c	-c	-b	-c	-c	-b	
L.INST	-	-	-	-	+	-	-	+	-	-c	-	+	+	-	+	+a	-	-	+	
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv 2	_b	_b	_b	_b	_b	_b	_b	_b	-	-	-	-	-	-	-	-	-	-	-	
L.INST	+	-	-	-	-c	+	-	-	+	-	-c	-	+	+	-	+	+a	-	-	
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv 3	-	-	-	-	-	-	-	-c	-c	-	-c	-c	-c	-c	-c	-b	-c	-c	-b	
L.INST	-	-	-	-	+	-	-	+	-	-b	-	+	+	-	+	+a	-	-	+	
(FGLS)		Dep. Var: Entre6 (Log of Entrepreneurial intentions)																		
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19	
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv 1	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+b	+b	+	+	+b	+b	+b	-	+	+	+	-a	+	-	-a	+	-a	+a	-	
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv 2	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+c	+a	-	+b	+	+b	+	-	-	+	+	-	+	+	-c	+b	-c	+c	+	
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv 3	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+b	+b	+	+	+b	+b	+b	-	+	+	-	-a	+	-	-a	+	-a	+a	-	
Model(FGLS)		Dep. Var: Entre7 (Log of Total early-stage Entrepreneurial Activity (TEA))																		

Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv 1	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+a	+a	-	+a	+	+c	+a	-	+c	+a	+c	-	-	+	-c	-	-	+a	+
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv 2	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+c	+a	-	+a	-	+	+c	-	+	+a	+	+	+	+	-	+	+	+	+b
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv 3	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST	+a	+a	-	+a	+	+c	+a	-c	+	+a	+	-	-	-	-b	-	-	+a	+
Model(FGLS)										Dep. Var: Entre8 (Log of Established Business Ownership)									
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv 1	+c	+c	+	+c	+c	+c	+c	+c	+c	+c	+b	+b	+b	+b	+b	+c	+b	+b	+
L.INST	+	+c	-	+b	-	+	+	-	-	+	+	+	+	+	+	+b	+b	+c	+c
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv 2	+	+	+	+	+	+	+	+	+	+	+	+	+	+c	+	+	+c	+	+
L.INST	+	+c	-	+b	-c	+	+	-	-	+	+	+	+	+	+	+b	+b	+	+b
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv 3	+	+	+	+	+	+	+c	+	+	+c	+c	+c	+c	+c	+c	+	+c	+b	+
L.INST	+	+c	-	+b	-	+	+	-	-	+	+	+	+	+	+	+b	+b	+c	+b
Model(FGLS)										Dep. Var: Entre9 (Log of Entrepreneurial Employee Activity)									
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv 1	-	-b	-c	-	-c	-c	-	+	+	+	+	+	+	+	+	+	+	+	+
L.INST	+a	+a	+	+a	+b	+a	+a	-	-	-	-	+	+	-	+	-	+	+	-
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv 2	-	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+
L.INST	+a	+a	+	+a	+b	+a	+b	-	-	-	-	+	+	-	+	-	+	+	-
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv 3	-	-c	-	-c	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+
L.INST	+a	+a	+	+a	+b	+a	+c	-	-	-	-	+	+	-	+	-	+	+	-
Model(FGLS)										Dep. Var: Entre10 (Log of Motivational Index)									
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv 1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST	+	+	+c	-	-	-	-	+a	+	+c	+	+b	+c	+	+	+b	-	+a	+a
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv 2	-b	-b	-b	-b	-b	-b	-b	-	-	-	-	-	-	-	-	-	-	-	-
L.INST	+	+	+c	-	+	-	-	+b	+	+c	+	+b	+c	+	+	+b	-	+a	+b
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv 3	+b	+c	+b	+b	+b	+b	+c	+	+	+	+	+	+	+	+	+	+	+b	+
L.INST	+	+	+c	-	-	-	-	+a	+	+c	+	+b	+c	+	+	+b	-	+a	+c
Model(FGLS)										Dep. Var: Entre11 (Log of Female/Male TEA)									
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			

L.Exdiv	1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	-	+	+
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv	2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	-	+	+
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv	3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		+	+	+	+	-	-	+	+	+	+	+	+	+	+	+	-	+	+
Model(FGLS) Dep. Var: Entre12 (Log of Female/Male Opportunity-Driven TEA)																			
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		-	-	+	-	+	-	-	-	+	+	+	-	+	-	+	+	+	+
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		-	-	+	-	+	-	-	-	+	+	+	-	+	-	-	-	-	-
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		-	-	+	-	+	-	-	-	+	+	+	-	+	-	+	+	+	+
Model(FGLS) Dep. Var: Entre13 (Log of High Job Creation Expectation)																			
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv	2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Model(FGLS) Dep. Var: Entre14 (Log of Innovation)																			
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Part B: Export-Extensive diversification as independent variable (EXDiv2)																			
L.Exdiv	2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Part C: Export-Intensive diversification as independent variable (EXDiv3)																			
L.Exdiv	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+
Model(FGLS) Dep. Var: Entre15 (Log of Business Services Sector)																			
Indep. Var:	Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																			
L.Exdiv	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.INST		+	+	-c	+	+	+	+c	-a	-a	-a	-a	-a	-a	-a	-b	+	-b	-b	-a
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv	3	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a	-a
L.INST		+	+	-a	+	-	+	+	-a	-a	-a	-a	-b	-	-a	-b	+	-c	-a	-a
Model(FGLS)		Dep. Var: Entre16 (Log of High Status to Successful Entrepreneurs)																		
Indep. Var:		Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv	1		+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST		+a	+a	+c	+	+b	+a	+b	+	+	+	-a	+c	-	-	+b	-	+a	-	+c
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv	2	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a	+a
L.INST		+a	+a	+	+	+	+a	+	+	+	+c	-b	+a	-	+	+a	-	+a	-	+b
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv	3	+a	+a	+a	+a	+a	+a	+a	+a		+b	+b	+b	+a	+b	+b	+b	+b	+b	+b
L.INST		+a	+a	+c	+	+b	+a	+b	+	+	+	-a	+	-	-	+c	-	+b	-	+c
Model(FGLS)		Dep. Var: Entre17 (Log of Entrepreneurship as a Good Career Choice)																		
Indep. Var:		Ins t1	Ins t2	Ins t3	Ins t4	Ins t5	Ins t6	Ins t7	Ins t8	Ins t9	Inst 10	Inst 11	Inst 12	Inst 13	Inst 14	Inst 15	Inst 16	Inst 17	Inst 18	Inst 19
Part A: Overall export diversification as independent variable (EXDiv1)																				
L.Exdiv	1	+c	+b	+	+c	+c	+c	+c	+	+	+	+	+	+	+	+	+	+	+	+c
L.INST		-b	-b	-a	-	-	-b	-	-c	-a	-a	-a	-	-	-a	-a	+c	-a	-b	-
Part B: Export-Extensive diversification as independent variable (EXDiv2)																				
L.Exdiv	2	+c	+c	+b	+	+c	+c	+c	+	+b	+c	+	+c	+c	+	+	+c	+	+c	+c
L.INST		-b	-b	-a	-	-	-a	-	-	-a	-a	-a	-	-	-a	-a	+c	-a	-a	-
Part C: Export-Intensive diversification as independent variable (EXDiv3)																				
L.Exdiv	3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
L.INST		-b	-b	-a	-	-	-b	-	-c	-a	-a	-a	-	-	-a	-a	+c	-a	-b	-

Note: "+" means positive coefficients, "-" is negative coefficients; a, b, and c denote significant levels at 1%, 5%, and 10%, respectively.

Table A5. The robustness checks for full sample with fixed effects

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.0457 [0.0428]	-0.0050 [0.0444]	0.0362 [0.0445]	-0.0217 [0.0395]	-0.1129*** [0.0412]	-0.0335 [0.0408]
L.HC	1.3565*** [0.0730]	1.2204*** [0.0676]	1.3357*** [0.0730]	1.4404*** [0.0804]	1.3521*** [0.0735]	1.3943*** [0.0794]
L.Workpop	0.8574*** [0.0122]	0.8298*** [0.0077]	0.8668*** [0.0122]			
L.FD	0.0076*** [0.0006]	0.0080*** [0.0006]	0.0076*** [0.0006]	0.0069*** [0.0005]	0.0073*** [0.0005]	0.0070*** [0.0005]
L.Industry	-0.0084*** [0.0023]	-0.0023 [0.0021]	-0.0085*** [0.0023]	-0.0221*** [0.0023]	-0.0166*** [0.0023]	-0.0210*** [0.0023]
L.Urban	0.0016* [0.0009]	0.0040*** [0.0008]	0.0018** [0.0008]	0.0019** [0.0009]	0.0036*** [0.0008]	0.0026*** [0.0008]
L.FDI	0.0006	0.0014	0.0007	0.0011	0.0020*	0.0013

	[0.0006]	[0.0009]	[0.0007]	[0.0008]	[0.0011]	[0.0009]
L.Trade	0.0018***	0.0019***	0.0018***	0.0020***	0.0024***	0.0020***
	[0.0002]	[0.0002]	[0.0002]	[0.0002]	[0.0002]	[0.0002]
L.EXDiv1	0.1026***			0.1825***		
	[0.0313]			[0.0221]		
L.EXDiv2		-0.3903***			-0.1967**	
		[0.0848]			[0.0915]	
L.EXDiv3			0.1349***			0.2012***
			[0.0300]			[0.0208]
L.INST1	0.3761***	0.3474***	0.3784***	0.5341***	0.5603***	0.5248***
	[0.0571]	[0.0587]	[0.0567]	[0.0469]	[0.0483]	[0.0475]
Constant	-6.8007***	-5.7985***	-6.9632***	-1.5774***	-0.4672	-1.5549***
	[0.2779]	[0.2689]	[0.2832]	[0.3413]	[0.3304]	[0.3515]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Income-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	488	488	488	488	488	488
R-squared	0.7476	0.7474	0.7488	0.6227	0.6114	0.6247
Countries	61	61	61	61	61	61

Notes:

- PCSE estimators with year-fixed effects and income level-fixed effects; there are three income levels in our sample: Low income, middle income, and high income.
- Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table A6. The robustness checks for low and middle income economies with fixed effects

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.2015***	0.0968**	0.2062***	0.1538***	0.0514	0.1728***
	[0.0398]	[0.0385]	[0.0415]	[0.0377]	[0.0370]	[0.0391]
L.HC	1.8084***	1.8387***	1.8591***	1.9315***	1.9083***	1.9662***
	[0.1501]	[0.1675]	[0.1457]	[0.1412]	[0.1645]	[0.1405]
L.Young	0.8075***	0.8640***	0.8393***			
	[0.0188]	[0.0203]	[0.0189]			
L.FD	0.0111***	0.0110***	0.0109***	0.0099***	0.0104***	0.0101***
	[0.0010]	[0.0010]	[0.0010]	[0.0009]	[0.0010]	[0.0009]
L.Industry	0.0075**	0.0102***	0.0041	-0.0149***	-0.0063**	-0.0159***
	[0.0029]	[0.0028]	[0.0029]	[0.0027]	[0.0028]	[0.0027]
L.Urban	-0.0132***	-0.0113***	-0.0127***	-0.0099***	-0.0082***	-0.0094***
	[0.0018]	[0.0021]	[0.0018]	[0.0019]	[0.0022]	[0.0019]
L.FDI	0.0218**	0.0274**	0.0202**	0.0259**	0.0326***	0.0237**
	[0.0094]	[0.0113]	[0.0089]	[0.0105]	[0.0125]	[0.0099]
L.Trade	-0.0044***	-0.0051***	-0.0039***	-0.0033***	-0.0051***	-0.0034***
	[0.0011]	[0.0011]	[0.0010]	[0.0009]	[0.0011]	[0.0008]
L.EXDiv1	0.0534**			0.1324***		
	[0.0245]			[0.0258]		
L.EXDiv2		-1.2028***			-1.3301***	
		[0.0850]			[0.0879]	
L.EXDiv3			0.1329***			0.2001***
			[0.0253]			[0.0262]
L.INST1	0.6104***	0.7842***	0.6666***	0.7887***	0.9012***	0.8125***
	[0.0749]	[0.0733]	[0.0731]	[0.0605]	[0.0616]	[0.0585]

Constant	-6.8869*** [0.3784]	-6.7425*** [0.3341]	-7.6509*** [0.4102]	-2.5724*** [0.4008]	-1.3306*** [0.2905]	-2.9192*** [0.4209]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	288	288	288	288	288	288
R-squared	0.7367	0.7532	0.7393	0.5403	0.5775	0.5506
Countries	36	36	36	36	36	36

Notes:

- PCSE estimators with year-fixed effects and income level-fixed effects;
- Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.

Table A7. The robustness checks for high income economies with fixed effects

Model (PCSE)	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var:	Entre1	Entre1	Entre1	Entre2	Entre2	Entre2
L.Income	0.0756 [0.0629]	-0.1017* [0.0612]	-0.0510 [0.0547]	0.0786 [0.0629]	0.1740** [0.0681]	-0.0658 [0.0545]
L.HC	0.1161 [0.1913]	0.3754** [0.1846]	0.0868 [0.2048]	-0.0125 [0.1877]	-0.1401 [0.1661]	-0.0358 [0.1987]
L.Young	0.9418*** [0.0135]	0.7817*** [0.0124]	0.9471*** [0.0134]			
L.FD	0.0062*** [0.0009]	0.0080*** [0.0008]	0.0054*** [0.0009]	0.0059*** [0.0009]	0.0086*** [0.0008]	0.0051*** [0.0009]
L.Industry	-0.0555*** [0.0038]	-0.0280*** [0.0033]	-0.0626*** [0.0045]	-0.0601*** [0.0037]	-0.0316*** [0.0036]	-0.0668*** [0.0042]
L.Urban	0.0060*** [0.0014]	0.0193*** [0.0010]	0.0053*** [0.0014]	0.0035*** [0.0012]	0.0122*** [0.0013]	0.0033*** [0.0013]
L.FDI	-0.0009 [0.0006]	-0.0000 [0.0005]	-0.0007 [0.0006]	-0.0008 [0.0006]	0.0002 [0.0006]	-0.0005 [0.0006]
L.Trade	0.0005*** [0.0001]	0.0009*** [0.0002]	0.0002 [0.0001]	0.0006*** [0.0002]	0.0019*** [0.0001]	0.0002 [0.0002]
L.EXDiv1	0.4143*** [0.0423]			0.4916*** [0.0336]		
L.EXDiv2		-0.6295*** [0.1238]			0.3871*** [0.0957]	
L.EXDiv3			0.5680*** [0.0532]			0.6418*** [0.0435]
L.INST1	0.1012** [0.0461]	-0.0345 [0.0404]	0.1682*** [0.0484]	0.1728*** [0.0468]	0.0838 [0.0513]	0.2406*** [0.0481]
Constant	-6.2981*** [0.8220]	-3.0222*** [0.8866]	-5.0061*** [0.7110]	-0.1401 [0.7551]	-1.7101** [0.8170]	1.3838** [0.6740]
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	200	200	200	200	200	200
R-squared	0.8627	0.8468	0.8730	0.6655	0.5625	0.6907
Countries	25	25	25	25	25	25

Note: PCSE estimators; Standard errors are in []; *, **, *** are significant levels at 10%, 5%, and 1%, respectively.