Private equity as a booster to industry internationalization

Evidence from emerging markets

Author: Miguel Angel Ortiz Hernandez

Thesis Director: Diego Tellez

Thesis Joint Director and Reader: Gonzague Vannoorenberghe and Hernan Herrera

Academic Year 2023-2024

In order to obtain the Double Degree

Master 120 en Sciences économiques, Orientation générale, Finalité spécialisée (UCL/UNamur)

and

Master of Science in Finance (Universidad EAFIT)

Université Catholique de Louvain – Economics School of Louvain – Place Montesquieu 3, 1348 Louvain-La-Neuve
Université de Namur – Economics School of Namur – Rempart de la Vierge 8, 5000 Namur
Universidad EAFIT – School of Economics and Finance – Carrera 49 N° 7 sur – 50, Bloque 26, Oficina 613, Medellín, Colombia

Private equity as a booster to industry internationalization: Evidence from emerging markets

Presented by Miguel Angel Ortiz Hernandez

Double Degree Master Thesis
Master of Science in Finance
Universidad EAFIT
Master of Science in Economics
Université Catholique de Louvain

Acknowledgments

This research paper was developed within the framework of the research projects entitled: The Effect of Foreign Direct Investment on Export: An Analysis of Developing Countries for the Research Group on Finance and Banking of Universidad EAFIT.

I am grateful for the hard work and constant support of the research team led by PhD. Hernán Herrera, PhD. Diego Tellez and PhD. Gonzague Vannoorenberghe. Also, I extend my heartfelt gratitude to each individual and institution that has played a role, in particular to my family and, Ximena, the love of my life, in this profound journey of discovery because your support has not only enriched this research agenda but has also left an indelible mark on my academic and personal journey.

Table of contents

Acknowledgments 2
Abstract 3
Introduction 4
Motivation and literature review 7
Data description and sources 11
Empirical strategy 16
Analysis of private equity on industry internationalization 18
  Endogeneity issues 21
  Fund investor type and industry internationalization 25
  Fund headquarter location and industry internationalization 27
Conclusions 30
References 32
Annexes 39

Abstract

Global trade and financial capital flows across countries have undergone significant transformations throughout history. Extensive literature supports the assertion that the presence of private equity influences economic development through various channels, including new business creation, firm performance, innovation, and export performance. By estimating a panel data model with fixed effects using a comprehensive database spanning 45 developed and emerging markets and 15 aggregated industries from 1995 to 2021, our analysis reveals significant evidence of how PE investment stimulates industries' internationalization by differentiating its influence on emerging and developed markets. Furthermore, we demonstrate varied effects on industry trade flows based on PE fund type (buyout or venture capital) and foreign versus local investment, underscoring the nuanced effects of PE presence on global economic integration. The international trade theory and the agency theory support this effect. Our results offer insights into how PE presence stimulates internationalization processes and engagement with the global value chain.

Keywords: Private equity, international trade, and productive sectors

JEL Classification: F14, F65, and G24

Introduction

The relevance of private equity (PE) on economic indicators is remarkable; in fact, the literature is extensive and supports the view of how PE presence influences economic development via new business creation (Berger & Udell, 1998; Kortum & Lerner, 2001; Hellmann & Puri, 2002; Popov & Roosenboom, 2013) firms' performance and innovation (Gam-bardella et al., 2008; Lerner et al., 2011), and exports performance (Herrera-Echeverri et al., 2022), among other market competitiveness indicators (Kaplan & Stromberg, 2009; Samila & Sorenson, 2011).

In finance literature, the prevailing hypothesis regarding the significant presence of private equity (PE), including venture capital (VC), posits that PE-backed firms experience enhanced industry value added through effective screening and monitoring (Chemmanur et al., 2011; Cohn et al., 2014; Chemmanur et al., 2021). This hypothesis further suggests that the benefits extend beyond PE-backed firms, as spillover effects—through linkages, competition, and imitation—promote improved performance across the industry (Marshall, 1890; Jensen, 1989; Kaplan & Stromberg, 2009; Bernstein et al., 2016; Aldatmaz & Brown, 2016).

Concerning the influence of PE on exports, there is not much evidence in literature such as the findings of Lockett et al. (2008) where they show that companies backed by VC funds increase their export volume because of the external capabilities added by the VC investors such as connections, management skills, and capital structure. Additionally, Herrera-Echeverri et al. (2022) analyze the effect of PE and VC presence on industry export performance in OECD countries. After controlling for country and industry characteristics, they find that PE investment positively influences export density and export market share by industry. However, the magnitude of this impact depends not only on each country's trade freedom level and institutional quality but also on the industry's productivity and infrastructure (Grosse & Fonseca, 2012).

This relationship between PE and exports is intrinsically linked to the broader concept of internationalization. Internationalization refers to the process by which firms, industries, or economies increase their involvement in international trade and investment activities, leading to a deepening integration into the global marketplace. This process involves various dimensions, including the expansion of cross-border

trade flows, the establishment of international production networks, and the penetration of foreign markets by domestic firms. Internationalization is driven by factors such as economies of scale, product differentiation, comparative advantage, and trade liberalization (Mussa, 1974; Krugman, 1979; Krugman, 1980; Kovak, 2013), which influence the pattern and intensity of international economic interactions. Additionally, internationalization entails adjustments in intra-industry reallocations and aggregate industry productivity (Grubel et al., 1975; Anderson, 1979; Melitz, 2003; Anderson & Van Wincoop, 2003), with the value of exports often serving as the primary indicator to study this phenomenon (Armington, 1969; Dornbusch et al., 1977; Krugman, 1980), reflecting the dynamic nature of global economic integration. However, in international trade disciplines and also in international business research, there are many ways to measure internationalization dynamic.[1]

As internationalization continues to shape the global economy, understanding its dynamics through trade flows becomes increasingly crucial for economic development. The literature consistently shows that not only does export value growth play a significant role, but also the increase of trade partners or the number of tariff items traded, among others, contribute to GDP dynamic of economies (Krueger, 1985; Rodrik, 1988; Ghirmay, Grabowski, & Sharma, 2001). Some other approaches to the internationalization process suggest that in emerging markets (EM) the small and medium companies' managers will be motivated to internationalize their business every time the managers have increased knowledge and understanding of a foreign market. In other words, PE investment in a specific sector not only provides capital flow to the industry but also knowledge and experience from foreign markers which motivates managers of linked firms through the spillover effect (Welch & Luostarinen, 1988; Johanson & Vahlne, 2009; Fletcher et al., 2013).

Recent advancements in the understanding of internationalization processes further underscore the importance of networks and relational dynamics. Johanson & Vahlne (2015) revisited the Uppsala internationalization process model, shifting the focus from the liability of foreignness to the liability of outsidership. This updated model highlights

[1] For example, Mitchell et al. (1994) analyze the international success; Autio et al. (2000) measure the international sales growth; Reuber & Fischer (2002) explore the intensity, or percentage of international sales; Kuemmerle (2002) study the scope and the type of internationalization.

that the key challenge for firms is not merely their foreign status, but their position outside critical business networks in foreign markets. By emphasizing the importance of building and nurturing relationships within these networks, the authors provide a nuanced perspective on how firms can overcome barriers to international expansion through network positions and relational capabilities, like via international financing.

This research paper explores the intersection of international trade and global financing flows by evaluating the influence of private equity investment on industries through exports and imports. By doing so, it contributes to the discourse on international public policies aimed at promoting regional development through enhanced international trade and financial development.

To collect the information on PE transactions, we took the value invested by the PE funds in a specific industry-country couple and we also counted the number of transactions that took place in that couple between 1995 and 2021.[2] For the trade flows measures, we took the value of exports and imports for each industry from BACI (Gaulier & Zignago, 2010). As it is usual in this type of study, variables that describe the characteristics of the countries are required; the information comes from the databases of the World Bank and Business Freedom Index, among others. Then the panel data build to this study contributes to the financial literature to measure the influence of PE on the dynamics of internationalization via trade flows with a high degree of detail, even allowing us to differentiate the influence between emerging and developed markets at industry level.

The rest of the paper is organized as follows. In the next section we review the literature about private equity and internationalization. Next, we present the data and research methodology. Then, we comment the results, confirming that there is significant evidence of how PE investment stimulates industries' internationalization by differencing influence on emerging and developed markets. Furthermore, we demonstrate a differentiated influence of PE presence on specific industry trade flows depending on whether the fund type is Buyout (BO) or VC. But also, we show that there is a differentiated influence on international trade between foreign and local PE investment. Finally, we conclude the findings and suggest not only policy actions to

[2] The data was collected from Refinitiv Thomson Reuters.

take advantage of PE investment in industries across emerging and developed markets but also potentially rewarding areas for further research in international finance and trade.

Motivation and literature review

There seems to be a consensus in the traditional view on international trade markets, that companies that have expanded into foreign markets are promptly to display superior performance because of their innovative culture, as well as managerial knowledge and capabilities (Madsen & Servais, 1997; Knight & Cavusgil, 2004; Eurofound, 2012). Also, the international financing impacts on industry internationalization has been gaining popularity since globalization became an unstoppable phenomenon carried by the cross-border integration of financial systems (McDougall et al., 1994; Cavusgil & Knight, 2009). It is mandatory to mention that industry internationalization process is strongly influenced by foreign investors, but there are many constraints like insufficient scale economies, inexperience in international business, poor managerial practices in international terms, and financial resources (Freeman, et al., 2006; Harding & Javorcik, 2012).

To have an idea of the relevance of the PE sector around world, in 1994 VC and PE funds managed approximately USD 100 billion (Metrick & Yasuda, 2011) while in June of 2020 Preqin (2021) estimated USD 4.74 trillion managed by PE funds worldwide (yearly growth of 6.1% from 2019 despite de COVID-19 pandemic situation). In few words, the PE investment definition in literature refers to the investment in firms by professional investors of long-term who take as a reward the capital gain and give in repayment dividends (Wright & Robbie, 1998).

Many authors like Chemmanur et al. (2021), Boucly et al. (2008) and Bergström et al. (2007) confirm that PE presence in a firm can impact economic development indicators via market competitiveness (Kaplan & Stromberg, 2009; Cohn et al., 2014). According to industry level, Herrera-Echeverri et al. (2022) show that for panel data with 22 OCDE countries' exports and PE deals value information, the impact of PE presence is positive on industrial exports density but also in export market share. Authors suggest that the PE influence is higher where the country industry registers better productivity, higher value-added, and better infrastructure availability. In other words, PE

investments also influences the industry's export performance, and the literature about this implication aligns with the sectoral spillover effects derived from Foreign Direct Investment (Aitken et al., 1997; Barry et al., 2003; Herrera-Echeverri et al., 2014).

The literature emphasizes that private equity significantly impacts industry performance indicators through spillover effects such as imitation, demonstration, and competition. Görg & Greenaway (2004) argue that this impact extends beyond PE-backed firms to involve non-PE-backed firms as well (Kaplan & Schoar, 2005; Kaplan & Stromberg, 2009). Financial literature highlights that injecting PE capital into a firm introduces new capabilities, enhancing competitiveness and market access, thereby benefiting the entire industry. However, the positive effects are contingent upon active participation by PE funds in their portfolio firms, involving the implementation of management culture and ownership structure (Jensen, 1989; Jensen & Meckling, 2019; Chemmanur et al., 2021).

Furthermore, the transfer of knowledge from private equity funds to their portfolio firms contributes to an information spillover. This occurs as non-private equity-backed firms imitate the international behavior of PE-backed firms, enhancing industry exports and imports through a learning process from PE companies' foreign market access and managerial skills. The demonstration effect suggests that non-PE-backed firms adopt new technologies or management practices when successful innovations are implemented by similar PE-backed firms, mitigating associated risks. However, the competition effect arises as PE-backed firms, guided by fund managers, incorporate new technologies to enhance competitiveness, potentially resulting in a loss of market share for non-PE-backed firms (Modigliani & Miller, 1958; Jensen 1993; Wood & Wright, 2009). This negative competitive pressure may force non-PE-backed firms to respond or face potential disappearance, ultimately contributing to the industry dynamics (Blomstrom & Kokko, 1998; Lockett et al., 2008; Franco, 2013; Demena, & Murshed, 2018; Liang & Lin, 2022).

It should also be mentioned that few studies compare the influence of private equity investments between emerging and developed markets. For example, Nahata et al. (2014) suggest that high economic growth and high development markets provide better capacities to push VC investments into firms. Castellaneta & Gottschalg (2016) compares the PE investments' value added in economies between developing and

developed economies, the authors conclude that the value added by PE investment in developed markets is higher than in emerging economies. Furthermore, Aldatmaz & Brown (2020) confirm that there are positive sectoral externalities in industry performance indicators but that this effect can be differentiated across countries depending on their level of competitiveness, institutional development, and technological progress (La Porta et al., 2000; Gordon & Roe, 2003). In a few words, the institutions provide incentives as well as interact with investors and firms (Goergen et al., 2006; Brewster, et al., 2007; Goergen, Brewster, & Wood, 2009).

For this reason, in this research paper we evaluate if the presence of private capital in a certain industry in a given country effectively boosts not only exports but also imports in that sector in the years following the arrival of private investment.

> **H1**: *Private equity investments influence positively the internationalization process at industry level*.
>
> **H2**: *Private equity Investments influence positively the industry internationalization differently across emerging and developed markets.*

The influence of PE on industry internationalization progress looks to be stronger each time. Literature mentions that PE supports the creation of new businesses (Berger & Udell, 1998) but also achieving better industrial performance and innovation indicators (Lerner et al., 2011). PE presence had shown to increase the firm's quality of management and productivity (Jensen, 1989; Kaplan & Stromberg, 2009). The idea planted by Kaplan & Schoar (2005) is that PE funds bring new capabilities to their portfolio firms via managerial culture, financing and ownership structure modifications leading to better monitoring strategies in the search to overcome agency problems (Tykvová, 2017).

However, Cumming et al. (2007) argue that the higher leverage of the PE transaction, the higher the pressure for the firm's manager to get better financial indicators limiting the agency's problems and nudging to reach international markets. Wilson et al. (2022) highlight that the type of the PE investment has a differentiated effect on the industry performance, specifically whether the investment was by a Venture Capital (VC) fund

or a Buyout (BO) fund;[3] by studying the relationships between PE-backed companies' performance and PE transactions, estimating panel data between 1998 and 2013 with more than 2.6 million companies; and they concluded that post-Buyout companies are more propensity to be internationalized by exports than entire controlled companies (Kaplan, 1989; Wright, 2009; Schertler & Tykvová, 2011).

> **H3**: *Venture Capital or Buyout investments influence positively industry internationalization.*

In addition to the past hypothesis structured, Cumming et al. (2016) find that the nationality of the fund matters when comparing firm performance after the PE investment, they conclude that companies backed by foreign investors registered better performance indicators than local backed investors companies. On the other side of the balance, some authors argue that local funds have additional incentives to promote the internationalization of the companies in their portfolios to increase the value of the firms and guarantee a successful investment exit strategy (Cumming et al., 2017; Herrera-Echeverri et al., 2022).

Also Girma, et al. (2004) showed that retrospective costs tend to be lower for firms with international PE and VC presence since foreign funds may be able to help their portfolio firms with international affairs, but also the investors bring recommendations for foreign market entrance increasing the enhance of successfully firm's exports (Bernard & Jensen, 2004; Girma et al., 2005; Girma & Maemir, 2022).

> **H4**: *Foreign or Local PE funds influence positively industry internationalization.*

Until now, we have identified the PE and internationalization literature gap since these two phenomena had been studied in one way: exports dynamic due to the PE investment presence. However, according to internationalization literature, there are many ways to engage firms and industries with international value chains. We chose the export and import values to capture the internationalization dynamic by the productive sector in each economy. Therefore, in this research, we focus on measuring the influence of PE investment (value and count of deals) in internationalization

[3] In general, Venture Capital fund invest equity in startups, despite risks, the potential for substantial returns makes it attractive. Instead, Buyout funds invest in mature companies in which they hold the majority controlling shares (Barry, 1994; Tykvová, 2017; Cote, 2021).

dynamics by the industry as well as between emerging and developed markets. To go further, we analyze the differenced influence of a local and foreign PE investment, and we identify whether the presence of BO or VC funds investment motivates the most to increase the trade flows depending on the market development stage.

In a few words, the papers analyzed above help us to understand that PE presence influence internationalization indicators dynamic. However, we go deeper, analyzing industry aggregated trade flows and investment data to confirm some of the leading hypotheses analyzed by the literature and proposing a couple of new ones. First, we corroborate that PE presence boost export at industry level but then we expand the scope of how the PE investment presence motivates international trade dynamic in the industry differentiating by exports and imports (Aldatmaz & Brown, 2016; Demena, & Murshed, 2018); Also, we analyze the differentiated effect in emerging and developed economies of PE investment controlling by industry effect (Cumming et al., 2007; Wilson et al., 2022); Finally, we evaluate how the fund type and nationality influence the industry's network with international markets (Cumming et al., 2016; Herrera-Echeverri et al., 2022).

Data description and sources

This research paper explores the intersection of international trade and global financing flows by evaluating the influence of private equity investment on industries through exports and imports. By doing so, it contributes to the discourse on international public policies aimed at promoting regional development through enhanced international trade and financial growth. We target the economies followed by MSCI World and MSCI Emerging Markets Indices (2023 reviewed) recognized as widely used benchmarks for portfolio investments in the private equity world, providing a comprehensive representation of developed and emerging markets, respectively. Our research period spans from 1995 to 2021, leveraging the highest quality data available up to date, and exploring the most comprehensive and up-to-date information found in the literature review.[4]

[4] Taiwan and Hong Kong were excluded from the dataset because of inconsistent and incomplete data reporting, despite being recognized as separate entities in the MSCI World and MSCI Emerging Markets Indices. This exclusion helps ensure the integrity and reliability of our analysis.

The main variables are both the number of private equity deals and the amount invested in each industry for a given country and year, measured in real USD (2010) and provided by Refinitiv Thomson Reuters database.[5] The PE deal detail provides The North American Industry Classification System (NAICS) description of the company's sector that received the investment. However, the majority of NAIC descriptions are given as reported in regulatory filings, so we match their description by text processing with NAICS' codes correspondences helped by the NAICS Official Manual from U.S. Census Bureau starting with the six-digit NAICS codes and then consolidating them to the two-digit level to match with the Harmonized System (HS) codes. To link the NAIC code to the HS code, we used the Reference And Management Of Nomenclatures (RAMON) database from EUROSTAT. Our analysis covers the period from 1995 to 2021 to ensure high-quality data, primarily from the PE investment database.

As it is shown in the Table 1 the summary of PE investments by sector in real USD (2010) and the count of deals during 1995-2021. We report that PE activity varies markedly across sectors. For example, there is evidence for most of the activity in traditional industries such as the Machinery & Electrical, Wood & Wood Products, and Chemicals & Allied Industries over the whole period. Also, for EM, the distribution of the total investment value over the industries is slightly less concentrated in the mentioned industry. Table 2 shows the PE deals aggregated by year, indicating a higher dynamic in the growth rate of PE investment value but also PE investment count in EM (67% and 33%, respectively, yearly growth average). Also, we record in Table 3 sizeable variation not only in PE amount but also in PE deals count, noticing a great activity in the United States, Canada, and China.

Regarding sector trade information for each country, we used the BACI database reported in HS92 for each year from 1995 to 2021 (Gaulier & Zignago, 2010). This classification helps to match the trade data with the PE deals data depending on the country-industry-year level. So, in summary, to match both datasets (trade flows and PE investment), we use the HS code by finding the NAICS code correspondence for each PE transaction and then using the RAMON concordance database to take them

[5] The Private Equity Deal Detail Database reports information from private equity and venture capital firms, banking and legal contributors, firm websites, news publications, and regulatory filings, compiled by the LSEG team. It is reported in a daily basis dating back to the 1970s.

from NAIC to HS to make them comparable with the trade flows database.

Table 1. Private equity deals distribution by industry. This table summarizes the data on PE deals aggregated over the period 1995–2021 and countries by industry. Columns 1 and 4 contain the total deals count and value (millions of 2010 USD) made in DM, respectively. Columns 2 and 5 show the deals count and value (millions of 2010 USD) made in EM. Moreover, columns 3 and 6 contain the deals count and value (millions of 2010 USD) made in all the economies studied in every industry. Data comes from Refinitiv Thomson Reuters database.

	PE amount (million)			PE count		
Industry	**DM**	**EM**	**Total**	**DM**	**EM**	**Total**
Animal & Animal Products	8,089	2,070	10,159	365	52	417
Chemicals & Allied Industries	1,033,386	159,481	1,192,868	41,751	4,211	45,962
Foodstuffs	205,386	27,774	233,159	6,016	1,088	7,104
Footwear / Headgear	817	17	833	50	3	53
Machinery / Electrical	5,551,967	836,333	6,388,300	198,523	23,780	222,303
Metals	230,086	13,552	243,639	7,448	811	8,259
Mineral Products	91,065	28,280	119,345	2,074	276	2,350
Miscellaneous	421,192	34,163	455,355	24,129	1,435	25,564
Plastics / Rubbers	87,410	11,539	98,948	1,986	267	2,253
Raw Hides, Skins, Leather, & Furs	364	0.1	364	49	4	53
Stone / Glass	99,314	13,935	113,249	1,818	375	2,193
Textiles	105,575	6,896	112,470	3,105	293	3,398
Transportation	300,522	124,271	424,793	3,741	865	4,606
Vegetable Products	41,728	9,964	51,692	1,549	349	1,898
Wood & Wood Products	1,231,829	380,025	1,611,854	50,197	10,206	60,403

Table 2. Private equity deals distribution by year. This table summarizes the data on PE deals aggregated over the industries and countries by year. Columns 1 and 4 contain the total deals count and value (millions of 2010 USD) made in DM, respectively. Columns 2 and 5 shows the deals count and value (millions of 2010 USD) made in EM. Moreover, columns 3 and 6 contain the deals count and value (millions of 2010 USD) made in all the economies studied in every year. Data comes from Refinitiv Thomson Reuters database.

Year	PE amount (million)			PE count		
	DM	**EM**	**Total**	**DM**	**EM**	**Total**
1995	24,851	525	25,375	2,525	41	2,566
1996	47,981	450	48,431	3,644	77	3,721
1997	57,866	438	58,304	4,821	62	4,883
1998	88,792	1,142	89,935	6,059	102	6,161
1999	195,063	5,097	200,160	8,880	298	9,178
2000	540,465	21,160	561,625	14,474	915	15,389
2001	226,915	5,912	232,827	10,667	448	11,115
2002	238,339	1,760	240,099	8,730	314	9,044
2003	192,491	3,751	196,241	9,339	349	9,688
2004	189,872	8,626	198,498	11,069	479	11,548
2005	259,520	9,630	269,150	11,636	551	12,187
2006	728,040	18,566	746,606	13,302	865	14,167
2007	460,203	19,491	479,694	14,010	993	15,003
2008	254,463	27,678	282,141	13,887	1,063	14,950
2009	135,812	20,995	156,807	9,590	847	10,437
2010	177,230	30,659	207,889	11,650	1,240	12,890
2011	228,721	60,135	288,856	13,016	1,435	14,451
2012	178,210	43,360	221,571	13,293	1,075	14,368
2013	179,544	11,822	191,365	13,858	861	14,719
2014	304,198	44,825	349,023	15,455	1,437	16,892
2015	312,991	115,830	428,821	15,525	2,589	18,114
2016	386,277	199,626	585,903	14,673	2,669	17,342
2017	289,655	143,054	432,709	14,656	2,464	17,120
2018	567,367	177,941	745,308	16,721	3,523	20,244
2019	583,488	89,303	672,791	18,315	3,558	21,873
2020	679,530	181,840	861,369	20,467	5,385	25,852
2021	1,880,846	404,685	2,285,531	32,539	10,375	42,914

In Table 4, we report the total international trade per industry aggregated by all countries in the analyzed period. We noticed that more than 60% of the total trade is in industries such as Machinery / Electrical, Mineral Products, Transportation, and Chemicals & Allied Industries. For emerging markets, the industry distribution remains concentrated in the mentioned sectors. In Table 5 the total international trade, exports, and imports amounts aggregated by year show that since 1995 the participation of EM in international trade had been increasing until 2021, but 2010 was the best year for international trade around the world after the Great Recession (Gertler & Simon, 2018). Also, it is shown that the Pandemic due COVID-19 had a strong negative impact on international trade flows for both markets analyzed in this paper (Hayakawa & Mukunoki, 2021). According to country aggregated information we report in Table 6 significant parity between all countries in international trade flows being United States, China, and Germany who registered higher value traded.

Table 3. Private equity deals distribution by country. This table summarizes the data on PE deals aggregated over the period 1995–2021 and industry by country. Columns 1 contain the total deals value (millions of 2010 USD) made in that country during the whole period analyzed. Moreover, column 2 shows the deals' count. Data comes from Refinitiv Thomson Reuters database.

Country	PE amount (million)	PE count
Australia	46.058	3,010
Austria	5.056	701
Belgium	33.162	1,373
Brazil	29.790	888
Canada	251.244	26,980
Chile	0.778	104
China	1,292.596	26,879
Colombia	6.284	134
Czech Rep.	4.430	173
Denmark	22.449	1,598
Egypt	2.402	202
Finland	25.848	2,116
France	284.144	14,173
Germany	352.461	9,764
Greece	5.669	48
Hungary	1.725	120
India	168.049	8,788
Indonesia	22.678	744
Ireland	77.200	1,747
Israel	130.855	5,050
Italy	97.358	1,523
Japan	213.140	3,963
Kuwait	0.026	13

Country	PE amount (million)	PE count
Malaysia	6.931	226
Mexico	12.263	255
Netherlands	175.478	2,256
New Zealand	4.834	463
Norway	21.323	898
Peru	0.326	16
Philippines	3.090	166
Poland	3.024	415
Portugal	2.141	398
Qatar	0.013	6
Rep. of Korea	66.090	3,610
Saudi Arabia	0.724	88
Singapore	69.835	2,271
South Africa	14.382	358
Spain	59.857	2,049
Sweden	117.012	3,205
Switzerland	135.544	2,146
Thailand	2.663	163
Turkey	1.434	259
United Arab Em.	2.932	360
United Kingdom	485.165	16,942
United States	6,798.566	240,175

Table 4. International trade distribution by industry. This table summarizes the data on export and imports aggregated for the 15 selected industries and countries over the period 1995–2021. Column 1 and 2 contain the DM's export and import volume in billions of 2010 USD, Column 2 and 4 show the EM's exports and imports value in billions of 2010 USD, the Column 3 and 6 show the sum of the exports and imports represented as the total trade for both markets (DM and EM) in billions of 2010 USD. Moreover, columns 7, 8 and 9 contains the total trade by DM and EM, respectively, in billions of 2010 USD by industry. Data comes from BACI.

Industry	Exports (Billion)			Imports (Billion)			Total trade (Billion)		
	DM	EM	Total	DM	EM	Total	DM	EM	Total
Animal & Animal Products	4,298	1,521	5,819	4,027	1,465	5,492	8,325	2,986	11,310
Chemicals & Allied Industries	22,711	5,572	28,283	18,611	8,177	26,788	41,322	13,749	55,071
Foodstuffs	6,241	3,212	9,452	6,549	2,005	8,554	12,790	5,217	18,006
Footwear / Headgear	850	1,505	2,356	1,932	388	2,320	2,782	1,893	4,675
Machinery / Electrical	45,604	33,202	78,806	46,708	25,431	72,139	92,312	58,633	150,944
Metals	12,747	8,429	21,176	13,298	8,092	21,389	26,045	16,521	42,565
Mineral Products	15,388	16,202	31,590	25,763	15,863	41,626	41,150	32,066	73,216
Miscellaneous	11,485	6,557	18,042	12,450	4,488	16,937	23,935	11,045	34,979
Plastics / Rubbers	8,558	4,822	13,380	7,890	4,578	12,468	16,447	9,400	25,847
Raw Hides, Skins, Leather, & Furs	909	1,021	1,930	1,203	602	1,805	2,111	1,623	3,735
Stone / Glass	7,545	4,409	11,954	7,962	3,912	11,874	15,507	8,321	23,829
Textiles	5,059	9,304	14,363	9,651	3,764	13,416	14,711	13,068	27,779
Transportation	25,549	8,496	34,045	23,410	7,866	31,277	48,959	16,362	65,322
Vegetable Products	5,080	3,928	9,009	5,352	3,352	8,704	10,433	7,281	17,713
Wood & Wood Products	5,946	2,391	8,338	5,768	2,331	8,099	11,714	4,723	16,437

Table 5. International trade distribution by year. This table summarizes the data on export and imports aggregated by countries and industry over the period 1995–2021. Column 1 and 4 contain the developed market's export and import volume in billions of 2010 USD, Column 2 and 5 show the emerging market's export and import value in billions of 2010 USD, the Column 3 and 6 show the sum of the exports and imports for both markets (DM and EM) in billions of 2010 USD. Moreover, columns 7 and 8 contain the total trade by market (DM and EM), respectively, in billions of 2010 USD by year. Data comes from BACI.

Year	Exports (Billion)			Imports (Billion)			Total trade (Billion)	
	DM	EM	Total	DM	EM	Total	DM	EM
1995	4,328	3,644	7,972	4,310	4,516	8,826	8,638	8,160
1996	4,422	2,866	7,288	4,403	3,579	7,982	8,825	6,445
1997	4,459	2,461	6,920	4,452	2,820	7,273	8,911	5,282
1998	4,421	1,952	6,373	4,490	1,934	6,424	8,911	3,886
1999	4,647	1,875	6,523	4,861	1,660	6,521	9,508	3,536
2005	5,073	2,240	7,313	5,393	1,923	7,316	10,466	4,163
2006	4,818	2,082	6,901	5,108	1,681	6,790	9,927	3,764
2007	4,730	2,112	6,842	5,018	1,664	6,682	9,747	3,776
2008	5,269	2,454	7,722	5,606	1,927	7,533	10,875	4,381
2009	6,065	2,995	9,060	6,513	2,330	8,843	12,578	5,325
2010	6,508	3,426	9,934	7,147	2,622	9,769	13,655	6,048
2005	7,207	4,004	11,210	7,940	3,054	10,995	15,147	7,058
2006	7,987	4,719	12,707	8,677	3,716	12,393	16,665	8,435
2007	8,601	5,211	13,812	9,335	4,225	13,560	17,935	9,436
2008	6,622	4,048	10,670	7,040	3,274	10,314	13,661	7,322
2010	7,455	4,991	12,445	8,011	4,061	12,071	15,465	9,051
2011	8,487	5,762	14,249	9,148	4,734	13,882	17,634	10,496
2012	8,138	5,779	13,917	8,831	4,694	13,525	16,970	10,472
2013	8,149	5,714	13,863	8,658	4,702	13,361	16,808	10,416
2014	8,107	5,707	13,814	8,742	4,583	13,325	16,849	10,290
2015	7,117	4,996	12,113	7,639	3,867	11,506	14,756	8,863
2016	7,012	4,692	11,703	7,528	3,625	11,153	14,539	8,317
2017	7,569	5,156	12,725	8,099	4,073	12,172	15,667	9,230
2018	7,950	5,501	13,451	8,624	4,370	12,994	16,574	9,871
2019	7,612	5,228	12,840	8,267	4,168	12,434	15,878	9,396
2020	6,946	4,882	11,828	7,647	3,771	11,418	14,593	8,653
2021	8,273	6,074	14,347	9,085	4,742	13,827	17,359	10,816

Table 6. International trade distribution by country. This table summarizes the data on export and imports aggregated for industries over the period 1995–2021. Column 1 contains the exports' volume, columns 2 and 3 contains the imports and the total trade (sum of exports and imports value), respectively, all in billions of 2010 USD by country. Data comes from BACI.

Country	Exports	Imports (Billion)	Trade
Australia	4,433	4,017	8,450
Austria	3,316	3,430	6,746
Belgium	6,855	7,226	14,081
Brazil	4,147	3,643	7,790
Canada	9,501	8,988	18,489
Chile	1,356	1,154	2,509
China	35,915	20,782	56,697
Colombia	900	967	1,867
Czech Rep.	2,942	2,719	5,661
Denmark	2,276	2,125	4,401
Egypt	596	1,331	1,927
Finland	1,773	1,634	3,407
France	12,468	13,999	26,466
Germany	28,123	22,461	50,584
Greece	762	1,619	2,380
Hungary	2,190	2,142	4,333
India	4,605	6,094	10,699
Indonesia	4,421	3,439	7,860
Ireland	3,557	2,061	5,619
Israel	1,396	1,492	2,888
Italy	11,126	10,878	22,004
Japan	15,901	13,746	29,646
Kuwait	1,236	539	1,775

Country	Exports	Imports (Billion)	Trade
Malaysia	4,992	3,792	8,784
Mexico	7,899	7,076	14,976
Netherlands	10,175	11,242	21,417
New Zealand	796	759	1,555
Norway	2,850	1,794	4,645
Peru	688	619	1,307
Philippines	1,738	2,096	3,834
Poland	3,674	4,195	7,869
Portugal	1,308	1,837	3,145
Qatar	1,317	498	1,814
Rep. of Korea	10,478	8,820	19,297
Saudi Arabia	5,072	2,525	7,597
Singapore	5,895	6,146	12,041
South Africa	1,785	1,638	3,423
Spain	6,241	7,771	14,012
Sweden	3,631	3,197	6,828
Switzerland	5,747	5,410	11,158
Thailand	4,433	3,819	8,252
Turkey	6,472	9,802	16,274
United Arab Emirates	2,953	3,006	5,959
United Kingdom	10,299	14,114	24,412
United States	30,304	46,245	76,549

In addition, country-level variables are provided by World Development Indicators (GDP growth, Domestic Credit to the private sector, Real Effective Exchange rate, Arable land, Capital formation, Direct Ocean exit, Common language, and Labor force), Worldwide Governance Indicators (Government Effectiveness Indicator, and Property Rights Index), and Business Freedom Index database (Labor Freedom Index, Trade Freedom Index, Investment Freedom Index, see Annex A). So, the final dataset registers 18,225 country-industry-year observations covering 45 countries, 15 industries during 27 years. An example of observations is the real USD amount and count of PE capital investment in Brazil's Machinery & Electrical industry during 2020 (USD 283 million and 31 PE deals, respectively).

Empirical strategy

To analyze the private equity influences on the internationalization dynamic via trade flows at the industry level on EM and DM we estimate a panel data model with fixed effects specifying the main aggregation at the country-industry-year level:

$$Y_{ijt} = \beta_0 + \beta_1 X_{ijt} + \beta_2 \mathbb{I}_{ijt} + \beta_3 \mathbb{C}_{it} + \mu_{ij} + \eta_t + \varepsilon_{ijt} \qquad (1)$$

In equation (1) the subscripts i and j denote country and industry, and t represents

year. The endogenous variable Y_{ijt} represents the sector (j) internationalization proxy (export value, imports values, or sum of trade flows) from a specific country in a given year); X_{ijt} represents private equity activity (value traded and number of deals) in country i in an industry j for a year t. $\mathbb{I}_{ijt}$ represents a vector of country-industry (i and j) control variables; $\mathbb{C}_{it}$ represents a vector of country control variables (i) including the market development stage taken from the MSCI Index 2023. η_t represents time fixed effects. ε_{ijt} is the residual error term.

In the panel model estimation, we use the 3-previous year average lagged value and count of PE activity as explanatory variables to measure the effect of PE investments on the internationalization dynamic. According to Herrera-Echeverri et al. (2022) using the lagged value of PE activity reduces the risk of simultaneous errors between independent and dependent variables.

Additionally, we performed a Hausman specification test which indicated a preference for fixed effects as supported by the literature. We also performed modified Wald and Wooldridge tests, confirming heteroscedasticity and autocorrelation (see Annex C). For this reason, we use Feasible Generalized Leas Squares correcting for the presence of autocorrelation, cross-sectional correlation, and heteroskedasticity. To analyze the effect of PE presence on industry internationalization by market development stage effect, we estimated a model where interactions replace the independent variable of PE with dummies for the PE market development stage. We generated these dummy variables according to the MSCI Index markets category (EM and DM).

Table 7. Internationalization measures descriptions. EX_{ijt} represents the industry j exports values of a country i in the year t. IM_{ijt} represents the industry j imports values of a country i in the year t.

Internationalization measure	Formula	Description
Exports volume	EX_{ijt}	Internationalization measured by exports value
Imports volume	IM_{ijt}	Internationalization measured by imports value
Trade volume	$EX_{ijt} + IM_{ijt}$	Internationalization measured by total trade value

Analysis of private equity on industry internationalization

In this section, we show the estimation of the models proposed in the Empirical strategy section. The main variable to be analyzed are: 3-year value which indicates the natural logarithm of one plus average deal value for industry in the country across the past 3 years. Count represents the natural logarithm of one plus the count of PE investment for the industry in the respective country in each year. 3-year count is the natural logarithm of one plus the ratio of average PE investment for the industry in the country over the past 3 years in each industry-country-year. MDS is a dummy variable that takes the value of 1 when the market is considered as developed according to the MSCI Index 2021. All regressions include year dummies not reported. Also, it is mandatory to mention that the model's parameters were obtained using Generalized Least Squares (GLS) correcting for heteroskedasticity and autocorrelation structure. Data sources can be seen in Annex A.

In the Table 8 we show the panel data model regression by country-industry-year observations. In the panel A we noticed that the coefficient for value of the natural logarithm of one plus 3-year average PE in each industry-country-year being the main explanatory variable (column 1) is significant and positive which implies that the dynamic of the industry internationalization in terms of exports is positive influenced by previous PE investment (H1), in other words, the previous 1% increase of the PE investment value will boost the industrial international sales volume on average on 0.003%. It illustrates the positive impact of PE investment on export growth, highlighting the importance of such investments in driving economic activity at the industry level.

When we control for the market development stage (Panel A column 2) being the EM the base group, we find that the industry internationalization in terms of exports remains positively influenced by previous PE activity. However, in a lower level, for example, in column 3 of Panel A, we replaced the PE activity variable for the interaction with dummies for DM and EM stages. We find that a 1% increase in private investment over the past three years boosts the average volume of industry internationalization via exports by 0.003% in emerging markets but in the developed market by 0.004%.

We also use the suggested alternative proxy for PE activity by Herrera-Echeverri et al.

(2022) which measures the number of PE deals done by industry in each country (treated as the natural logarithm of one plus the ratio of a three-previous year moving average). When taking the count of PE deals, we find that even the influence on internationalization measured by exports is mainly influenced in both types of markets (models 4 and 5). However, when disaggregating the influence depending on the market development stage, previous investment of PE in industry generates a more significant influence on export dynamics in developed markets. For example, the model 6 suggests a 1% growth in private investment motivates the average volume of exports by 0.04% in emerging markets but in the developed market by 0.08%.

Having said that, we also analyze imports volume (Panel B) and we find that the influence of PE investments' coefficients keeps positive and significant (H1). In this case, models 3 and 6 are consistent with the previous analysis showing that what matters the most in the influence of internationalization measured by imports at the industry level is the prior existence of PE deals, leaving apart the value of the deals, and this influence will be even more remarkable when it takes place in DM. However, when comparing the coefficients obtained in Panel B and Panel C desegregating by market development stage influence (model 5), we find that import dynamic increases when controlling for the effect of PE investments in emerging markets. In contrast, exports register a higher coefficient when controlling for the effect of developed markets.

In line with the models analyzed above, we show that private capital investments influence the industry's internationalization dynamics regardless of the market's development stage, which goes in line with the Görg & Greenaway (2004) and Herrera-Echeverri et al. (2022) conclusions. However, it is mandatory to mention that in this research, our dataset comprises a broader period of analysis and a greater sample of markets. To better understand this phenomenon, we analyze the two ways internationalization by trade (exports and imports), and we find that exports have the most significant influence in developed markets. But, when analyzing the dynamics in emerging economies, imports are the most influenced by PE previous presence. In summary, we confirm not only the hypothesis 1 but also the hypothesis 2 confirming that the influence of private equity investments is differentiated via exports or imports and on market conditions.

Table 8. PE on Internationalization estimations from the panel data grouping by country-industry-year. The dependent variable are the two main types of measuring internationalization treated as natural logarithm of one plus exports, and imports for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - PE on Exports					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables	**Exports Density**					
3-year PE value	0.004***	0.003***				
	0.000	0.000				
3-year PE value EM			0.003***			
			0.001			
3-year PE value DM			0.004***			
			0.001			
3-year PE count				0.073***	0.067***	
				0.006	0.006	
3-year PE count EM						0.040***
						0.011
3-year PE count DM						0.088***
						0.006
MDS		0.580***			0.472***	
		0.035			0.038	
Intercept	19.757***	18.888***	19.758***	20.870***	20.247***	20.813***
	0.272	0.281	0.272	0.291	0.298	0.293
Observations	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540
Fixed Effects	Country-Industry					
Year dummy	Yes					
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII					
Model	GLS					
Wald chi^2	3,342	3,634	3,314	3,747	3,965	3,716
Prob > Wald chi^2	0.000	0.000	0.000	0.000	0.000	0.000
	Panel B - PE on Imports					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables	**Imports Density**					
3-year PE value	0.004***	0.004***				
	0.000	0.000				
3-year PE value EM			0.002**			
			0.001			
3-year PE value DM			0.005***			
			0.000			
3-year PE count				0.107***	0.095***	
				0.005	0.005	
3-year PE count EM						0.060***
						0.011
3-year PE count DM						0.124***
						0.006
MDS		0.666***			0.553***	
		0.028			0.032	
Intercept	19.684***	18.647***	19.605***	19.727***	18.954***	19.633***
	0.209	0.210	0.208	0.228	0.232	0.228
Observations	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540
Fixed Effects	Country-Industry					
Year dummy	Yes					
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII					
Model	GLS					
Wald chi^2	4,049	4,977	4,081	4,689	5,152	4,707
Prob > Wald chi^2	0.000	0.000	0.000	0.000	0.000	0.000

In the same way, we find that in all estimations (Panel A, and B), the coefficients of the control variables obtain the expected signs as mentioned in the description of the variables (see Annex C). For example, in the Panel C of Annex C, we find that both the coefficients accompanying the GPG or the REER variable are positive and significant in each model and the coefficient accompanying the GEI. Following the

approach of Herrera-Echeverri et al. (2017), the sign of REE confirms that the depreciation of the local currency generates a favorable competitiveness effect for domestic exports. As Chemmanur et al. (2021) argue, it is not only the dynamics of macroeconomic variables that are relevant to boost the internationalization of the sectors but also the quality of their institutions, as Gordon & Roe (2003) suggest is a determining factor for the arrival of private capital investors.

In Annex C Panel C, we replaced the dependent variable for total trade volume (H1). The results of models 1 and 2 confirm the robustness of the previous analysis, suggesting that PE investment positively influences total trade at the industry level. When we compare the differentiated effect between emerging and developed markets, we find that total trade from the second group continue to be more positively influenced. Also in columns 4, 5, and 6, we noticed that the coefficients remain positively significant, confirming the persistent effect on industry internationalization with the previous presence of PE. The models analyzed confirmed not only the hypothesis 1 suggesting that no matter the amount previously invested in the industry, the most influence on industry internationalization comes from the number of previous PE deals. But also, regarding hypothesis 2 we confirm that private equity investments influence positively industry internationalization in different ways, also taking the differentiation of market from an investment perspective like emerging or developed markets.

Endogeneity issues

In this section, we discuss the possible endogeneity issues that may be experienced in the previous estimations to corroborate that the relationships analyzed above remain once the problems caused by endogeneity are controlled. An endogeneity problem in this study may arise since PE investments are made exclusively in industries with an outstanding internationalization dynamic. As suggested by Herrera-Echeverry et al. (2022) , a simple way to test the relationship in the models is by using the moving average of PE investments over the last 3 years. This relationship is explained because those lagged variables are less correlated with the current period. In this specific case, it is expected that either import or export activity at the industry level will react later to the arrival of new PE investments.

However, as mentioned by Herrera-Echeverry et al. (2022) more than the average

value of PE investments is needed to solve the possible endogeneity problems in the model due to the strong correlation between the industry internationalization dynamic through international trade and the financial capital flows between countries.

For this reason, we use the instrumental variable (IV) approach applying as an instrument the value of domestic pension funds and insurance companies' investments following the recommendations of Popov & Roosenboom (2013). The explanation behind the instrument is based on the recent changes in local pension fund investment regulations to encourage an increase in PE investments at the national level. This instrument is ideal since the regulation of investments is external to the dynamics of companies' internationalization strategies (Kortum & Lerner, 2001; Bernstein et al., 2016; Herrera-Echeverry et al., 2022).[6]

For this reason, we use the instrumental variable (IV) approach applying as an instrument the value of domestic pension funds and insurance companies' investments following the recommendations of Popov & Roosenboom (2013). The explanation behind the instrument is based on the recent changes in local pension fund investment regulations to encourage an increase in PE investments at the national level. This instrument is ideal since the regulation of investments is external to the dynamics of companies' internationalization strategies (Kortum & Lerner, 2001; Bernstein et al., 2016; Herrera-Echeverry et al., 2022). The IV is built with OECD's Annual Statistics on Institutional Investors database information taking the Funded Pension Indicator for every country during the period analyzed in this research.

In Table 9, we report the estimates of the 2SLS but also the Arellano-Bond estimations. For models 1 and 2 in each panel, we use the natural logarithm of one plus the real value of the investments of the Local Pension Funds (LPF) as the instrumental variable. In contrast, in models 3, 4, 5, and 6, we use the moving average of the last 3-years of the LPF. For models 7 and 8 of each panel, the estimates proposed by Arellano & Bond (1991) are used, with the instrumental variable being the lag of the explained variable (exports, imports, and total trade).

In Panel A of Table 9 we use as a dependent variable the internationalization via export

[6] The IV was built with OECD's Annual Statistics on Institutional Investors database information taking the Funded Pension Indicator for every country during the period analyzed in this research.

volume at the industry level; in models 1 and 2, using the 2SLS estimator, we instrument the value and the deal count in the previous period with the previous LPF value finding that for both estimations the instrument turns out to be significant. When analyzing models 3 and 4, we find similar results, but for these cases, we instrument the 3-year moving average of the amount and the PE investment count with the 3-year moving average of the investments of the local pension funds. Models 5 and 6 use the 3-year moving average of LPF as an instrument, replacing the value and number of previous PE investments. In these estimations, we obtain results showing that the instrument is appropriate to explain the relationship between internationalization volume and the previous PE presence.

To finish the robustness tests, we use the Arellano-Bond estimators (models 7 and 8), showing that internationalization in terms of trade is determined by its previous behavior and the presence of PE investments. This analysis also applies to the results obtained when the dependent variable is imports volume (Panel B) and total trade volume (Annex D Panel C) with just some changes in the PE variable magnitude.

Across all estimations, we notice that the positive relationship between the PE investments remains significant for exports and imports volume, even for the total trade volume. This conclusion confirms that our previous analyses are accurate in the relevance of the previous presence of PE in the industry internationalization dynamic. After robustness checks and controlling for endogeneity issues, we register a statistical relevance of PE investment in the internationalizing dynamic at the industry level.

Table 9. PE on Internationalization estimations from 2SLS regressions grouping by country-industry-year. The dependent variable are the two main types of measuring internationalization treated as natural logarithm of one plus exports, imports for a respective industry. The 2SLS specifications comprehended the models 1 to 6 and the Arellano-Bond are the models 7 and 8. Models 1 and 2 use as IV the LPF value, models 3 to 6 use the 3 years average mean of LPF value. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - PE on Exports							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Exports	**Density**						
Previous PE value	0.081**				0.119***			
	0.028				0.003			
Previous PE count		0.442**				0.606***		
		0.153				0.013		
3-year PE value			0.097**				0.001**	
			0.033				0.000	
3-year PE count				0.511**				0.015**
				0.174				0.007
Internationalization $_{t-1}$							0.420***	0.419***
							0.012	0.012
Intercept	16.437***	16.266***	16.845***	16.241***	17.870***	17.961***	12.875***	12.875***
	0.534	0.528	0.543	0.520	0.514	0.499	0.299	0.300
Observations	7,935	7,935	7,935	7,935	8,700	8,700	8,160	8,160
Number of groups							540	540
Fixed Effects	Country-Industry							
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
R^2	0.319	0.337	0.354	0.359	0.322	0.361		
Wald chi2	904	929	954	961	3,016	3,199	2,397	2,395
Prob > Wald chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Panel B - PE on Imports							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Imports	**Density**						
Previous PE value	0.025				0.091***			
	0.022				0.002			
Previous PE count		0.136				0.464***		
		0.120				0.010		
3-year PE value			0.000				0.001**	
			0.028				0.000	
3-year PE count				-0.002				0.039***
				0.146				0.006
Internationalization $_{t-1}$							0.418***	0.411***
							0.011	0.011
Intercept	15.714***	15.662***	15.695***	15.698***	18.092***	18.161***	11.627***	11.755***
	0.413	0.414	0.454	0.435	0.406	0.393	0.238	0.238
Observations	7,935	7,935	7,935	7,935	8,700	8,700	8,160	8,160
Number of groups							540	540
Fixed Effects	Country-Industry							
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
R^2	0.367	0.367	0.302	0.302	0.369	0.408		
Wald chi2	886	886	803	803	2,840	3,026	4,864	4,920
Prob > Wald chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Fund investor type and industry internationalization

Furthermore, with the high level of disaggregation of the Private Equity database provided by PE Deal Detail from Refinitiv Thomson Reuters database, we were able to identify the Buyout (BO) and Venture Capital (VC) nature of the investor fund in many deals (337,821 out of 386,816). To discriminate the investments' value depending on the fund nature, the value invested (and the deals count) was grouped by fund investor type in each industry for the countries and years of study. Also, we build a dummy variable to identify the market development stage (DM and EM); this allows us to catch the interaction effect in all the estimations.

In Table 10, we report the estimations with the GLS method, disaggregating not only by the three measures of industrial internationalization but also capturing the interaction effect between market type (DM and EM) and fund type (VC and BO) investments. In Panel A, the independent variable is the export volume; in models 1 and 2, we show that BO investments influence international trade via exports (H3). Now, when the influence of VC investments is analyzed (models 3 and 4), it is found that investments of this nature promote the internationalization of productive sectors, being developed markets the most benefited, but also emerging markets are also positively influenced (H2).

Models 5 to 8 in Panel A replicate the exercises mentioned above considering the 3-year moving average of the count of deals by fund investor type, all the estimations show statistical evidence reinforcing the importance of VC or BO investments. For example, model 8 shows that increasing the 3-year moving average of VC deals count by 1% influence positively the current industrial exports' volume from developed markets on an average of 0.05%.

These findings align with the conclusions of Castellaneta & Gottschalg (2016) who claim that venture capital investments significantly impact firms' exports. However, we find that this occurs even at the industry level and that the developed economies benefit the most from this type of investment (Wilson et al., 2022).

Table 10. VC and BO on Internationalization estimations from the panel data grouping by country-industry-year. The dependent variable are the two main types of measuring internationalization treated as natural logarithm of one plus exports, imports for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - VC/BO on Exports							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Exports Density							
3-year BO value	0.002***							
	0.000							
3-year BO value for EM		0.001						
		0.001						
3-year BO value for DM		0.002***						
		0.000						
3-year VC value			0.003***					
			0.000					
3-year VC value for EM				0.002**				
				0.001				
3-year VC value for DM				0.003***				
				0.001				
3-year BO count					0.065***			
					0.008			
3-year BO count for EM						0.018		
						0.017		
3-year BO count for DM						0.082***		
						0.008		
3-year VC count							0.048***	
							0.006	
3-year VC count for EM								0.036**
								0.013
3-year VC count for DM								0.053***
								0.006
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry							
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Model	GLS							
Wald chi²	3,378	3,353	3,379	3,357	3,576	3,493	4,101	4,070
Prob > Wald chi²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Panel B - VC/BO on Imports							
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Imports Density							
3-year BO value	0.002***							
	0.000							
3-year BO value for EM		0.001						
		0.001						
3-year BO value for DM		0.003***						
		0.000						
3-year VC value			0.004***					
			0.000					
3-year VC value for EM				0.003**				
				0.001				
3-year VC value for DM				0.005***				
				0.001				
3-year BO count					0.092***			
					0.007			
3-year BO count for EM						0.030*		
						0.016		
3-year BO count for DM						0.112***		
						0.008		
3-year VC count							0.086***	
							0.006	
3-year VC count for EM								0.060***
								0.013
3-year VC count for DM								0.093***
								0.006
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry							
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Model	GLS							
Wald chi²	4,146	4,144	4,109	4,112	4,414	4,393	4,674	4,680
Prob > Wald chi²	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

It is noteworthy that not only in Panel A but also in Panel B, the presence of BO and VC investments already implies a boost even greater than the amount invested, as can be deduced after comparing the magnitudes of the coefficients between models 1 to 4 with models 5 to 8. For example, checking models 4 and 8 in Panel A, we find that when taking the three-year moving average of the invested value (model 4) in developed markets, the average effect on productive sectors' total trade is smaller than when taking the moving average of the deals count (model 8) in developed markets. We highlight that in models 4 and 8 of Panel B, we register that the effect on imports from emerging markets is strongly influenced, mainly by venture capital investments. Thus, hypotheses 2 and 3 are confirmed (See Annex E).

Fund headquarter location and industry internationalization

One of the most relevant findings that have been studied in the literature of PE investment's influence in terms of foreign trade indicates that thanks to the connections provided by new investors, the sectors are driven to reach new markets, as pointed out by Herrera-Echeverri et al. (2022) among others (Lockett et al., 2008; Cumming, Knill & Syvrud, 2016; Anwar & Sun, 2017). For that reason, we seek to keep developing this hypothesis by contrasting our database to identify the differentiated influence of PE investors depending not only on the market development stage but also on the fund nationality.

Using the extensive information available for each transaction provided by the Refinitiv Thomson Reuters database of PE investments and following the Herrera-Echeverri et al. (2022)'s recommendations, we constructed dummy variables to distinguish between investment funds categorized as Foreign (FO) or Local (LO). For example, to build the dummy variable FO we grouped by industry, country, and year the transactions that reported an investment coming from a fund with a different company headquarters' location. This process is analogous to the construction of the LO dummy variable with the condition that the investor fund must report the same headquarter location as the company receiving the investment.

To observe the influence that investors must depend on their nationality in emerging and developed markets, we estimate the models shown in Table 11, where we control for differential effects by using interaction variables. In Panel A, the dependent variable

is the sum of exports' value for each sector. Models 1 and 2 show that foreign funds' investments positively influence productive sectors' internationalization, suggesting that the influence is even greater in developed markets (H4 and H2). A 1% increase in the average amount invested previously by foreign funds promotes total industry exports by 0.003%.

In synthesis, both FO and LO boots industries internationalization via exports and imports value. However, FO does have a greater influence than LO. For developed markets, the effect of FO and LO is greater than in emerging markets. Thus, it is alos observed that for emerging markets FO has a stronger effect than LO for the internationalization of industries in terms of exports and imports (see panel A and B). A possible explanation for the above findings is that developed markets are more open to foreign investment and there is no crowding out between foreign and local investment (Kletzer & Bardhan, 1987; Amiti & Weinstein, 2011). But also, another perspective to explain this situation relies on the increased capabilities of emerging economies to innovate in products thanks to an increased offer of imported inputs or better international networking (Reuber & Fischer, 2002; Bos & Vannoorenberghe, 2019).

In models 3 and 4 (Table 11 Panel B) we find that local funds boost sectoral foreign buys and purchases; however, it is worth pointing out that foreign investments drive internationalization with the greatest preponderance. In line with previous analyses, in models 5 to 8, we find that the greatest influence of local or foreign investments is given by the number of past investments rather than by the value. We highlight that a 1% increase in the average number of contracts closed by local investors increases by 0.109% in the total external buys of the industry.

Now, when analyzing the different effects on exports and imports (see Annex F Panel C), we find that investments by foreign funds drive total trade to a greater extent (models 5 and 6) in developed markets; however, foreign funds' investment boots the most imports in emerging markets (models 7 and 8). Thus, hypotheses 4 is confirmed.

Table 11. Fund nationality on Internationalization estimations from the panel data grouping by country-industry-year. The dependent variable are the three types of measuring internationalization treated as natural logarithm of one plus exports, imports, and the sum of both for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - FO/LO on Exports							
Variables	**(1) Exports**	**(2) Density**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
3-year FO value	0.003***							
	0.000							
3-year FO value for EM		0.003***						
		0.001						
3-year FO value for DM		0.004***						
		0.001						
3-year LO value			0.003***					
			0.000					
3-year LO value for EM				0.003**				
				0.001				
3-year LO value for DM				0.004***				
				0.001				
3-year FO count					0.069***			
					0.007			
3-year FO count for EM						0.043**		
						0.014		
3-year FO count for DM						0.078***		
						0.007		
3-year LO count							0.064***	
							0.006	
3-year LO count for EM								0.032**
								0.013
3-year LO count for DM								0.078***
								0.007
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Model	GLS							
Wald chi^2	3,341	3,317	3,145	3,113	3,794	3,772	3,842	3,786
Prob > Wald chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Panel B - FO/LO on Imports							
Variables	**(1) Imports**	**(2) Density**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
3-year FO value	0.003***							
	0.000							
3-year FO value for EM		0.002**						
		0.001						
3-year FO value for DM		0.003***						
		0.001						
3-year LO value			0.004***					
			0.000					
3-year LO value for EM				0.003***				
				0.001				
3-year LO value for DM				0.005***				
				0.001				
3-year FO count					0.087***			
					0.006			
3-year FO count for EM						0.050***		
						0.014		
3-year FO count for DM						0.099***		
						0.007		
3-year LO count							0.109***	
							0.006	
3-year LO count for EM								0.064***
								0.013
3-year LO count for DM								0.124***
								0.006
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry							
Year dummy	Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Model	GLS							
Wald chi^2	4,084	4,090	3,920	3,922	4,570	4,562	4,639	4,630
Prob > Wald chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conclusions

In synthesis, we confirm the positive influence of previous PE investments in industry internationalization dynamic. We also catch the differentiated effect of this type of investment in emerging and developed markets by controlling for country, industry, year, and fund partner characteristics. For that reason, we built a vast panel of data from 45 countries with information about 15 aggregated industries for 27 years. Therefore, we worked with two primary PE investment and international Trade literature datasets, Thomson Reuters, and BACI databases.

The results confirm that thanks to the spillover effect, industries' internationalization dynamic is positively influenced by previous PE investments. However, developed markets register to be more benefited in export dynamics and emerging markets in import dynamics after controlling by country-industry characteristics and correcting endogeneity issues.

Furthermore, one of the main contributions of this research is to measure the differentiated effect of PE investment in internationalization between developed and emerging markets. We find that PE previous presence in a particular industry influences the most developed markets exports volume but emerging market in imports density. As Cumming et al. (2007), Chemmanur et al. (2021) and Herrera-Echeverri et al. (2022) suggest, the PE investment brings new capabilities to firms which boots by imitation, demonstration, or competition influences better industry performance. In this case, we also find that not only exports are influenced in this way but also imports and the total international trade flow by industry.

When we evaluate the investment effect by type of fund, we find that venture capital investments have a greater influence on internationalization dynamics by productive sectors. However, we also highlight that buyout investments boost the most international trade in developed countries. The models show that in terms of imports, VC investments benefit the most developed and emerging markets.

Finally, we analyzed the effect of investments when controlling for the fund nationality, finding that foreign funds register the greatest influence on the internationalization dynamics in both types of markets. Developed markets benefit the most from foreign investments in exports and emerging markets most in imports. All the relationships

mentioned before suggests that even the spillover effect could differ depending on market conditions, fund type, and fund's headquarter location.

This contribution is relevant to the literature due to the current international trade and financial situation. We find evidence confirming the relevance of PE presence in emerging and developed markets because of the increasing financial interdependency between developed and emerging markets and the recent supply chain reallocation phenomenon worldwide. Also, we contribute to the current discussion about the formulation of new modern financial-trade integration agreements, especially to steer the policymakers to generate the right stimulus to PE investors in the search for better development indicators via trade flows (Da Rin et al., 2006; Cumming & Li, 2013).

Despite the significant contribution of this research to the literature on private equity investment and international trade, some questions arise to complement the research agenda in this area. First, we identified that imports are strongly influenced in emerging markets. However, the question remains whether the more specialized industries generate this effect or, on the contrary, intermediate goods are imported for transformation into emerging economies.

Second, the need arises to evaluate the strength of bilateral financial-commercial relations by questioning whether private capital investments generate greater bilateral commercial flows, for example, if investments by a US fund in a Colombian company promote exports from Colombia to the US.

In third place, one of the significant challenges arising from this research relays on the quality of information on private equity investments, mainly from emerging markets. We noticed that despite having daily information extracted from the Refinitiv Thomson Reuters database, for example, there are still several contracts in which the value transferred needed to be disclosed for each fund exposed in the transaction. Answering these questions complements well the research agenda of this analysis.

References

Aitken, B., Hanson, G.H., Harrison, A.E. (1997). Spillovers, foreign investment, and export behavior. J. Int. Econ. 43 (1–2), 103–132.

Aldatmaz, S., & Brown, G. (2016). Private equity in the global economy: Evidence on industry spillovers.

Aldatmaz, S., & Brown, G. W. (2020). Private equity in the global economy: Evidence on industry spillovers. Journal of corporate finance, 60, 101524.

Amiti, M., & Weinstein, D. E. (2011). Exports and financial shocks. The Quarterly Journal of Economics, 126(4), 1841-1877.

Anderson, J. E. (1979). A Theoretical Foundation for the Gravity Equation. American Economic Review, 69(1), 106–116.

Anderson, J. E., and E. Van Wincoop (2003). Gravity with Gravitas: A Solution to the Border Puzzle. American Economic Review, 93(1), 170–192.

Anwar, S., Sun, S. (2017). Foreign direct investment and export quality upgrading in China's manufacturing sector. Int. Rev. Econ. Financ.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297.

Armington, P. S. (1969). A Theory of Demand for Products Distinguished by Place of Production. International Monetary Fund Staff Papers, 16, 159–178.

Autio, E., Sapienza, H. J., & Almeida, J. G. (2000). Effects of age at entry, knowledge intensity, and imitability on international growth. Academy of management journal, 43(5), 909-924.

Barry, C. B. (1994). New directions in research on venture capital finance. Financial management, 3-15.

Barry, F., Görg, H., & Strobl, E. (2003). Foreign direct investment, agglomerations, and demonstration effects: An empirical investigation. Review of world economics, 139(4), 583-600.

Berger, A. N., & Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. Journal of banking & finance, 22 (6-8), 613–673.

Bergström, C., Grubb, M., & Jonsson, S. (2007). The operating impact of buyouts in Sweden: A study of value creation. The journal of Private equity, 11(1), 22-39.

Bernard, A. B., & Jensen, J. B. (2004). Exporting and Productivity in the USA. Oxford Review of Economic Policy, 20(3), 343-357.

Bernstein, S., Lerner, J., Sorensen, M., & Strömberg, P. (2016). Private equity and industry performance. Management Science, 63 (4), 1198–1213.

Blomström, M., & Kokko, A. (1998). Multinational corporations and spillovers. Journal of Economic surveys, 12 (3), 247–277.

Bos, M. J., & Vannoorenberghe, G. (2019). Imported input varieties and product innovation: Evidence from five developing countries. Review of International Economics, 27(2), 520-548.

Boucly, Q., Sraer, D., Thesmar, D. (2008). Do Leveraged Buyouts Appropriate Worker Rents? Evidence from French Data. Unpublished Working Paper, HEC Paris

Brewster, C., Wood, G., Croucher, R. and Brookes, M. (2007). Collective and individual voice: convergence in Europe?. International Journal of Human Resource Management, 18, 1246–1262

Castellaneta, F., & Gottschalg, O. (2016). Does ownership matter in private equity? The sources of variance in buyouts' performance. Strategic Management Journal, 37(2), 330-348.

Cavusgil, S. T., & Knight, G. (2009). Born global firms: A new international enterprise. Business expert press.

Chemmanur, T. J., Hull, T. J., & Krishnan, K. (2021). Cross-Border LBOs, Human Capital, and Proximity: Value Addition through Monitoring in Private Equity Investments. Journal of Financial and Quantitative Analysis, 56(3), 1023-1063.

Chemmanur, T.J., Krishnan, K., Nandy, D. (2011). How does venture capital financing improve efficiency in private firms? A look beneath the surface. Rev. Financ. Stud. 24 (12), 4037–4090."

Cohn, J. B., Mills, L. F., & Towery, E. M. (2014). The evolution of capital structure and operating performance after leveraged buyouts: Evidence from US corporate tax returns. Journal of Financial Economics, 111(2), 469-494.

Cote, C. (2021). 3 Key Types Of Private Equity Strategies. https://online.hbs.edu/blog/post/types-of-private-equity. Accessed 1st Dec 2023

Cumming D, Grilli L, Murtinu S (2017) Governmental and independent venture capital investments in Europe a firm-level performance analysis. J Corp Financ 42:439–459

Cumming D, Knill A, Syvrud K (2016) Do international investors enhance private firm value: evidence from venture capital. J Int Bus Stud 47:347–373

Cumming, D., & Li, D. (2013). Public Policy, Entrepreneurship, and Venture Capital in the United States. Journal of Corporate Finance 23, 345–367.

Cumming, D., Siegel, D. S., & Wright, M. (2007). Private equity, leveraged buyouts and governance. Journal of corporate finance, 13(4), 439-460.

Da Rin, M., Nicodano, G., & Sembenelli, A. (2006). Public policy and the creation of active venture capital markets. J. Public Econ. 90 (8–9), 1699–1723.

Demena, B. A., & Murshed, S. M. (2018). Transmission channels matter: Identifying spillovers from FDI. The Journal of International Trade & Economic Development, 27(7), 701-728.

Dornbusch, R., Fischer, S., Samuelson, P. (1977). Comparative advantage, trade, and payments in a Ricardian models with a continuum of goods. American Economic Review 67 (5), 823-839.

Eurofound (2012). Born global: The potential of job creation in new international businesses. Luxembourg: Publications Office of the European Union.

Fletcher, M., Harris, S., & Richey Jr, R. G. (2013). Internationalization knowledge: what, why, where, and when?. Journal of International Marketing, 21(3), 47-71.

Franco, C. (2013). Exports and FDI motivations: Empirical evidence from us foreign sub-sidiaries. International Business Review, 22 (1), 47–62.

Freeman, S., Edwards, R., & Schroder, B. (2006). How smaller born-global firms use networks and alliances to overcome constraints to rapid internationalization. Journal of international Marketing, 14(3), 33-63.

Gam-bardella, A., Harhoff, D., & Verspagen, B. (2008). The value of european patents. European Management Review, 5 (2), 69–84.

Gaulier, G. & Zignago, S. (2010). BACI: International Trade Database at the Product-Level. The 1994-2007 Version. CEPII Working Paper, N°2010-23.

Gertler, M., and Simon, G. (2018). What Happened: Financial Factors in the Great Recession. Journal of Economic Perspectives, 32 (3): 3-30. DOI: 10.1257/jep.32.3.3

Ghirmay, T., Grabowski, R., & Sharma, S. C. (2001). Exports, investment, efficiency and economic growth in LDC: an empirical investigation. Applied Economics, 33(6), 689-700.

Girma, S. and Maemir, H. (2022). Joint effects of exporting and outward FDI on firm-level capital investment in India. Review of Development Economics, 26, 606–624. doi: 10.1111

Girma, S., Gorg, H., & Strobl, E. (2004). Exports, international investment, and plant performance: Evidence from a non- parametric test. Economics Letters, 83(3), 317–324.

Girma, S., Kneller, R., & Pisu, M. (2005). Exports versus FDI: An empirical test. Review of World Economics (Weltwirtschaftliches Archiv), 141(2), 193– 218.

Goergen, M., Brewster, C. and Wood, G. (2006). The boundaries of governance: the effects of the national setting and ownership changes on employment practice. ECGI Finance Working Paper, 136/2006

Goergen, M., Brewster, C. and Wood, G. (2009). Corporate governance and training. Journal of Industrial Relations (in press).

Gordon, J. and Roe, M. (2003). Convergence and Persistence in Corporate Governance. Cambridge: Cambridge University Press.

Görg, H., & Greenaway, D. (2004). Much ado about nothing? Do domestic firms really benefit from foreign direct investment?. The World Bank Research Observer, 19(2), 171-197.

Grosse, R., & Fonseca, A. (2012). Learning through imports in the internationalization process. Journal of International Management, 18(4), 366-378. https://doi.org/10.1016/j.intman.2012.08.003

Grubel, Herbert G. & Peter J. Lloyd (1975) Intra Industry trade: The Theory and Measurement OF internationally trade in Differentiated Products. Wiley: Nueva York

Harding, T., Javorcik, B.S. (2012). Foreign direct investment and export upgrading. Rev. Econ. Stat. 94 (4), 964–980.

Hayakawa, K., & Mukunoki, H. (2021). The impact of COVID-19 on international trade: Evidence from the first shock. Journal of the Japanese and International Economies, 60, 101135. https://doi.org/10.1016/j.jjie.2021.101135.

Hellmann, T., & Puri, M. (2002). Venture capital and the professionalization of start-up firms: Empirical evidence. The journal of finance, 57(1), 169-197.

Herrera-Echeverri, H., Haar, J., & Estévez-Bretón, J. B. (2014). Foreign direct investment, institutional quality, economic freedom and entrepreneurship in emerging markets. Journal of Business Research, 67(9), 1921-1932.

Herrera-Echeverri, H., Haar, J., Salazar-Duque, J.G. (2017). Private equity and devaluation in emerging countries. Glob. Econ. J. 17 (1).

Herrera-Echeverri, H., Nandy, D. K., & Fragua, D. (2022). The role of private equity investments on exports: Evidence from OECD countries. Journal of Multinational Financial Management, 100739.

Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure. In Corporate governance (pp. 77-132). Gower.

Jensen, M. C. (1989). Active investors, LBOs, and the privatization of bankruptcy. Journal of applied corporate finance, 2(1), 35-44.

Johanson, J., & Vahlne, J. E. (2009). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. Journal of international business studies, 40(9), 1411-1431.

Johanson, J., & Vahlne, J. E. (2015). The Uppsala internationalization process model revisited: From liability of foreignness to liability of outsidership. In International Business Strategy (pp. 33-59). Routledge.

Kaplan, S. (1989). The effects of management buyouts on operating performance and value. Journal of financial economics, 24 (2), 217–254.

Kaplan, S. N., & Stromberg, P. (2009). Leveraged buyouts and private equity. Journal of economic perspectives, 23(1), 121-46.

Kaplan, S., & Schoar, A. (2005). Private equity performance: Returns, persistence, and capital flows. The Journal of Finance, 60 (4), 1791–1823.

Kletzer, K., & Bardhan, P. (1987). Credit markets and patterns of international trade. Journal of Development Economics, 27(1-2), 57-70.

Knight, G. A., & Cavusgil, S. T. (2004). Innovation, organizational capabilities, and the born-global firm. Journal of international business studies, 35(2), 124-141.

Kortum, S., & Lerner, J. (2001). Does venture capital spur innovation?. In Entrepreneurial inputs and outcomes: New studies of entrepreneurship in the United States. Emerald Group Publishing Limited.

Kovak, B. (2013). Regional effects of trade reform: what is the correct measure of liberalization? American Economic Review 103(5), 1960-1976.

Krueger, A. O. (1985). The experience and lessons of Asia's super exporters. Export-oriented development strategies: the success of five newly industrializing countries, 187-212.

Krugman, P. (1979). Increasing returns, monopolistic competition and international trade. Journal of International Economics vol.9, 469-479.

Krugman, P. (1980). Scale Economies, Product Differentiation, and the Pattern of Trade, en American Economic Review, Vol 70, pp: 950-959.

Kuemmerle, W. (2002). Home base and knowledge management in international ventures. Journal of Business venturing, 17(2), 99-122.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (2000). Investor protection and corporate governance. Journal of Financial Economics, 58, 3–27.

Lerner, J., Sorensen, M., & Strömberg, P. (2011). Private equity and long-run investment: The case of innovation. The Journal of Finance, 66 (2), 445–477.

Liang, C. Y., & Lin, P. C. (2022). Financial integration and the comparative advantage of exports. The Journal of International Trade & Economic Development, 1-22.

Lockett, A., Wright, M., Burrows, A., Scholes, L., & Paton, D. (2008). The export intensity of venture capital backed companies. Small Business Economics, 31 (1), 39–58.

Madsen, T. K., & Servais, P. (1997). The internationalization of born globals: an evolutionary process?. International business review, 6(6), 561-583.

Marshall, A. (1890). Principles of economics Macmillan. London (8th ed. Published in 1920).

McDougall, P. P., Shane, S., & Oviatt, B. M. (1994). Explaining the formation of international new ventures: The limits of theories from international business research. Journal of business venturing, 9(6), 469-487.

Melitz, M. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. Econometrica 71 (6), 1695-1725.

Metrick, A., & Yasuda, A. (2011). Venture capital and other private equity: a survey. European Financial Management, 17(4), 619-654.

Mitchell, W., Shaver, J. M., & Yeung, B. (1994). Foreign entrant survival and foreign market share: Canadian companies' experience in United States medical sector markets. Strategic Management Journal, 15(7), 555-567.

Modigliani, F. & Miller. M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. American Economic Review 48(3), June, 261-297.

Mussa, M. (1974). Tariffs and the distribution of income: the importance of factor specificity, substitutability, and intensity in the short and long run. Journal of Political Economy 82(6), 1191-1203.

Nahata, R., Hazarika, S., & Tandon, K. (2014). Success in global venture capital investing: do institutional and cultural differences matter? J Financ Quant Anal 49:1039–1070

Popov, A., & Roosenboom, P. (2013). Venture capital and new business creation. Journal of banking & finance, 37 (12), 4695–4710.

Preqin (2021). 2021 Preqin global private equity and venture capital report. https://www.preqin.com/insights/global-reports/2021-preqin-global-private-equity-and-venture-capital-report. Accessed 19th May 2022

Reuber, A. R., & Fischer, E. (2002). Foreign sales and small firm growth: The moderating role of the management team. Entrepreneurship Theory and Practice, 27(1), 29-45.

Rodrik, D. (1988). Closing the Technology Gap: Does Trade Liberalization Really Help? National Bureau of Economic Research Cambridge, Mass., USA.

Samila, S., & Sorenson, O. (2011). Venture capital, entrepreneurship, and economic growth. The Review of Economics and Statistics, 93(1), 338-349.

Schertler, A., & Tykvová, T. (2011). Venture capital and internationalization. International Business Review, 20(4), 423-439.

Tykvová, T. (2017). Venture capital and private equity financing: an overview of recent literature and an agenda for future research. Journal of Business Economics, 88(3-4), 325–362. doi:10.1007/s11573-017-0874-4

Welch, L. S., & Luostarinen, R. (1988). Internationalization: Evolution of a concept. Journal of general management, 14(2), 34-55.

Wilson, N., Uddin, M., & Wright, M. (2022). Exporting by Private Equity-Backed Portfolio Companies. British Journal of Management, 33(1), 266-285.

Wood, G., & Wright, M. (2009). Private equity: A review and synthesis. International Journal of Management Reviews, 11(4), 361–380. doi:10.1111/j.1468-2370.2009.00264.x

Wright Robbie, M. K. (1998). Venture capital and private equity: A review and synthesis. Journal of Business Finance & Accounting, 25(5-6), 521-570.

Wright, M., Gilligan, J., & Amess, K. (2009). The economic impact of private equity: what we know and what we would like to know. Venture Capital, 11(1), 1-21.

Annex A. Variables glossary

Short name	Variable group	Description	Source
3-year PE value	PE activity	The natural logarithm of one plus average deal value for the respective industry in the respective country over the past 3 years	Thomson Reuters
3-year PE count		The natural logarithm of one plus average deal counts for the respective industry in the respective country over the past 3 years	Thomson Reuters
3-year LPF		The natural logarithm of one plus average financial asset held by domestic pensions funds in the respective country over the past 3 years	OECD's ASI
Exports	Internationalization	Real (2010 USD) exports value	BACI
Imports		Real (2010 USD) imports value	BACI
MDS	Market development stage	Dummy variable that takes the value of 1 when the market is developed according to the MSCI Index 2024	MSCI Index 2023
LFI	Business Freedom	Labor Freedom Index (lagged) evaluates legal and regulatory framework of a country's labor market, including regulations concerning minimum wages, laws inhibiting layoffs, severance requirements, and measurable regulatory restraints on hiring and hours worked	Business Freedom Index
TFI		Trade Freedom Index (lagged) composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. The trade freedom score is based on two inputs: The trade-weighted average tariff rate and Non-tariff barriers (NTBs)	Business Freedom Index
IFI		Investment Freedom Index (lagged) evaluates a variety of restrictions that are typically imposed on investment such as national treatment of foreign investment or restrictions on land ownership controls among others	Business Freedom Index
GEI	Government Effectiveness	The index captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies	Worldwide Governance Indicators
PRI		Property Rights Index (lagged) measures the degree to which a country's laws protect private property rights and the degree to which its government enforces those laws	Business Freedom Index
REE	Country characteristics	Real Effective Exchange rate (lagged) measures the nominal effective exchange rate (Base 2010) divided by a price deflator or index of costs	World Development Indicators
SEA		Direct exit to the sea (1 if yes or 0 if not)	World Development Indicators
DCP		Domestic Credit to Private Sector as percentage of the GDP (lagged) refers to financial resources provided to the private sector by financial corporations	World Development Indicators
ALA		Arable Land Area as percentage of the total country land area (lagged)	World Development Indicators
LAF		Labor Force, population between 15-64 years old as percentage of the total country population (lagged)	World Development Indicators
GCF		Gross Capital Formation as percentage of the GDP (lagged) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories	World Development Indicators
FIO		Foreign Direct Investment Outflows as percentage of the GDP (lagged) shows net outflows of investment from the reporting economy to the rest of the world	World Development Indicators
FII		Foreign Direct Investment Inflows as percentage of the GDP (lagged) and it shows net inflows of investment in the reporting economy from foreign investors	World Development Indicators

Annex B. Variables correlation matrix

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1)	**Internationalization volume**	1																		
(2)	**Exports volume**	0.937*	1																	
(3)	**Imports volume**	0.939*	0.802*	1																
(4)	**3-year PE value**	0.549*	0.517*	0.544*	1															
(5)	**3-year PE count**	0.561*	0.514*	0.564*	0.768*	1														
(6)	**SEA**	0.035*	-0.002	0.026*	0.085*	0.081*	1													
(7)	**GPG**	0.436*	0.359*	0.444*	0.356*	0.499*	0.114*	1												
(8)	**REE**	0.165*	0.114*	0.196*	0.122*	0.139*	0.110*	0.241*	1											
(9)	**GEI**	0.198*	0.188*	0.232*	0.277*	0.289*	-0.144*	0.111*	0.184*	1										
(10)	**LFI**	0.037*	0.003	0.051*	0.058*	0.097*	-0.163*	0.210*	0.037*	0.374*	1									
(11)	**TFI**	0.116*	0.086*	0.171*	0.079*	0.131*	-0.123*	0.054*	0.084*	0.549*	0.190*	1								
(12)	**IFI**	0.079*	0.109*	0.108*	0.137*	0.148*	-0.174*	-0.022*	-0.005	0.592*	0.184*	0.474*	1							
(13)	**PRI**	0.120*	0.108*	0.151*	0.226*	0.243*	-0.142*	0.078*	0.123*	0.862*	0.358*	0.452*	0.617*	1						
(14)	**DCP**	0.343*	0.297*	0.363*	0.310*	0.342*	0.065*	0.449*	0.209*	0.584*	0.318*	0.354*	0.262*	0.485*	1					
(15)	**ALA**	0.238*	0.285*	0.225*	0.137*	0.113*	-0.240*	0.069*	0.001	0.044*	-0.105*	-0.073*	0.139*	0.033*	-0.017*	1				
(16)	**LAF**	-0.025*	-0.078*	-0.018*	-0.061*	-0.078*	-0.050*	-0.042*	0.058*	0.051*	0.218*	0.189*	-0.210*	0.019*	0.078*	-0.168*	1			
(17)	**GCF**	0.061*	0.043*	0.031*	0.065*	0.029*	-0.118*	0.080*	0.187*	-0.018*	0.037*	-0.154*	-0.200*	-0.085*	0.049*	0.027*	0.337*	1		
(18)	**FIO**	0.069*	0.072*	0.079*	0.061*	0.040*	-0.097*	-0.051*	0.040*	0.247*	0.102*	0.173*	0.218*	0.214*	0.105*	0.068*	0.075*	-0.021*	1	
(19)	**FII**	0.011	0.032*	0.013	0.019*	-0.007	-0.081*	-0.088*	-0.026*	0.168*	0.121*	0.117*	0.211*	0.156*	-0.017*	0.037*	0.078*	0.022*	0.895*	1

**** p<0.01, ** p<0.05, * p<0.1*

Annex C. PE on Internationalization estimations from the panel data grouping by country-industry and year. The dependent variable are the three types of measuring internationalization treated as natural logarithm of one plus exports, imports, and the sum of both for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel B - PE on Exports						Panel C - PE on Imports						Panel A - PE on Internationalization					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**Exports Density**						**Imports Density**	**Imports Density**					**Internationalization Density**					
3-year PE value	0.004***	0.003***					0.004***	0.004***					0.004***	0.003***				
	0.000	0.000					0.000	0.000					0.000	0.000				
3-year PE value EM			0.003***						0.002**						0.003***			
			0.001						0.001						0.001			
3-year PE value DM			0.004***						0.005***						0.005***			
			0.001						0.000						0.000			
3-year PE count				0.073***	0.067***					0.107***	0.095***					0.081***	0.077***	
				0.006	0.006					0.005	0.005					0.005	0.005	
3-year PE count EM						0.040***						0.060***						0.043***
						0.011						0.011						0.010
3-year PE count DM						0.088***						0.124***						0.097***
						0.006						0.006						0.006
MDS		0.580***			0.472***			0.666***			0.553***			0.625***			0.544***	
		0.035			0.038			0.028			0.032			0.027			0.031	
Intercept	19.757***	18.888***	19.758***	20.870***	20.247***	20.813***	19.684***	18.647***	19.605***	19.727***	18.954***	19.633***	20.284***	19.349***	20.254***	20.780***	20.015***	20.695***
	0.272	0.281	0.272	0.291	0.298	0.293	0.209	0.210	0.208	0.228	0.232	0.228	0.209	0.211	0.209	0.232	0.232	0.233
SEA	0.440***	0.329***	0.445***	0.376***	0.305***	0.373***	0.382***	0.277***	0.385***	0.364***	0.282***	0.359***	0.423***	0.304***	0.429***	0.398***	0.305***	0.397***
	0.035	0.035	0.035	0.042	0.041	0.043	0.031	0.029	0.032	0.037	0.036	0.037	0.031	0.030	0.031	0.038	0.036	0.038
GPG	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REE	0.001	0.000	0.001	0.001**	0.001	0.001**	0.003***	0.002***	0.003***	0.003***	0.003***	0.003***	0.001***	0.001**	0.001***	0.002***	0.001***	0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GEI	0.076***	-0.004	0.076***	0.052***	0.009	0.050***	0.104***	-0.011	0.100***	0.069***	-0.006	0.065***	0.105***	0.001	0.101***	0.064***	0.002	0.061***
	0.014	0.016	0.015	0.013	0.014	0.013	0.013	0.014	0.013	0.012	0.013	0.012	0.012	0.013	0.012	0.011	0.012	0.012
LFI	-0.003***	-0.003***	-0.003***	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	0.000	0.000	0.000	-0.002***	-0.002***	-0.002***	-0.001	-0.001*	-0.001
	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TFI	0.001	0.000	0.001	0.001	0.000	0.001	0.002**	0.000	0.002**	0.001**	0.001	0.001*	0.001*	-0.001	0.001*	0.001	0.000	0.001
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
IFI	0.002***	0.001*	0.002***	0.002***	0.001**	0.002***	0.001**	0.000	0.001**	0.001**	0.000	0.001**	0.002***	0.000	0.002***	0.001***	0.000	0.001***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRI	0.001	-0.001**	0.001	0.000	0.000	0.000	0.001**	-0.001**	0.001**	0.001*	-0.001*	0.000	0.001	-0.001***	0.001	0.000	-0.001**	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DCP	-0.001**	-0.002***	-0.001**	-0.001**	-0.001***	-0.001**	0.000	-0.001***	-0.000*	-0.000*	-0.001***	-0.000**	-0.001**	-0.002***	-0.001**	-0.000**	-0.001***	-0.000**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALA	0.024***	0.023***	0.024***	0.020***	0.019***	0.020***	0.022***	0.021***	0.022***	0.020***	0.019***	0.020***	0.020***	0.019***	0.020***	0.018***	0.018***	0.018***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
LAF	2.064***	3.851***	2.050***	0.580	1.665***	0.705*	1.884***	4.084***	2.046***	1.982***	3.465***	2.194***	2.373***	4.432***	2.441***	1.689***	3.154***	1.865***
	0.377	0.403	0.380	0.409	0.425	0.413	0.292	0.305	0.293	0.322	0.336	0.325	0.290	0.303	0.292	0.326	0.333	0.328
GCF	0.003**	0.002**	0.003**	0.002**	0.002**	0.003**	0.003**	0.002*	0.003**	0.002**	0.002**	0.002**	0.003***	0.002**	0.003***	0.003***	0.002**	0.003***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FIO	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.001***	0.001***	0.002***	0.001***	0.001***	0.001***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FII	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001***	-0.001***	-0.001***	-0.001**	-0.001**	-0.001***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry						Country-Industry						Country-Industry					
Year dummy	Yes						Yes						Yes					
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII						SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII						SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII					
Model	GLS						GLS						GLS					
Test	P-value						P-value						P-value					
Hausman	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Modified Wald het.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooldrige	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pesaran CSD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Annex D. PE on Internationalization estimations from 2SLS regressions grouping by country-industry-year. The dependent variable are the three types of measuring internationalization treated as natural logarithm of one plus exports, imports, and the sum of both for a respective industry. The 2SLS specifications comprehended the models 1 to 6 and the Arellano-Bond are the models 7 and 8. Models 1 and 2 use as IV the LPF value, models 3 to 6 use the 3 years average mean of LPF value. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - PE on Exports								Panel B - PE on Imports								Panel C - PE on Internationalization							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	**Exports**	**Density**							**Imports**	**Density**							**Internationalization**	**Density**						
Previous PE value	0.081**				0.119***				0.025				0.091***				0.019				0.098***			
	0.028				0.003				0.022				0.002				0.024				0.002			
Previous PE count		0.442**				0.606***				0.136				0.464***				0.102				0.501***		
		0.153				0.013				0.120				0.010				0.129				0.011		
3-year PE value			0.097**				0.001**				0.000				0.001**				0.009				0.001**	
			0.033				0.000				0.028				0.000				0.029				0.000	
3-year PE count				0.511**				0.015**				-0.002				0.039***				0.046				0.029***
				0.174				0.007				0.146				0.006				0.152				0.006
Internationalization $_{t-1}$							0.420***	0.419***							0.418***	0.411***							0.412***	0.407***
							0.012	0.012							0.011	0.011							0.011	0.011
Intercept	16.437***	16.266***	16.845***	16.241***	17.870***	17.961***	12.875***	12.875***	15.714***	15.662***	15.695***	15.698***	18.092***	18.161***	11.627***	11.755***	16.823***	16.784***	16.851***	16.797***	18.917***	18.991***	12.883***	12.996***
	0.534	0.528	0.543	0.520	0.514	0.499	0.299	0.300	0.413	0.414	0.454	0.435	0.406	0.393	0.238	0.238	0.444	0.445	0.470	0.454	0.422	0.410	0.251	0.251
SEA	-0.069	-0.054	-0.160	-0.078	0.047	0.117**	0.000	0.000	0.141**	0.145**	0.187**	0.187**	0.212***	0.266***	0.000	0.000	0.154**	0.157**	0.166*	0.174**	0.207***	0.265***	0.000	0.000
	0.078	0.074	0.099	0.078	0.060	0.058	0.000	0.000	0.061	0.058	0.083	0.065	0.047	0.046	0.000	0.000	0.065	0.062	0.086	0.068	0.049	0.048	0.000	0.000
GPG	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REE	0.003*	0.004**	0.002	0.004**	-0.003*	-0.003	0.005***	0.005***	0.009***	0.010***	0.010***	0.010***	0.004**	0.004**	0.006***	0.006***	0.007***	0.007***	0.007***	0.007***	0.000	0.000	0.006***	0.006***
	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.001	0.000	0.000	0.002	0.001	0.002	0.002	0.001	0.001	0.000	0.000
GEI	0.047	0.068	-0.022	0.039	-0.010	0.038	0.083***	0.085***	0.076	0.083	0.115	0.114*	-0.048	-0.010	0.018	0.025*	0.041	0.046	0.052	0.057	-0.088*	-0.048	0.057***	0.062***
	0.071	0.066	0.086	0.071	0.056	0.054	0.016	0.016	0.055	0.052	0.072	0.059	0.044	0.043	0.014	0.014	0.059	0.056	0.074	0.062	0.046	0.044	0.014	0.014
LFI	-0.008***	-0.007***	-0.005**	-0.007***	-0.011***	-0.011***	-0.002***	-0.002***	-0.005***	-0.005***	-0.006**	-0.006***	-0.005***	-0.006***	-0.002***	-0.002***	-0.006***	-0.006***	-0.006**	-0.006***	-0.007***	-0.007***	-0.002***	-0.002***
	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.001	0.001	0.000	0.000
TFI	0.002	0.002	0.003	0.003	-0.006	-0.009**	0.003***	0.003***	0.021***	0.022***	0.020***	0.020***	0.010**	0.009**	0.003***	0.003***	0.011**	0.011**	0.011**	0.011**	0.002	0.000	0.003***	0.003***
	0.004	0.004	0.005	0.004	0.004	0.004	0.001	0.001	0.003	0.004	0.004	0.004	0.003	0.003	0.001	0.001	0.004	0.004	0.004	0.004	0.003	0.003	0.001	0.001
IFI	0.006**	0.007***	0.004**	0.007***	0.002	0.004**	-0.001***	-0.001***	0.003**	0.004**	0.004**	0.004**	0.001	0.002*	0.002***	0.002***	0.004**	0.004**	0.004**	0.004**	0.001	0.002	0.000	0.001*
	0.002	0.002	0.002	0.002	0.002	0.002	0.000	0.000	0.001	0.001	0.002	0.001	0.001	0.001	0.000	0.000	0.002	0.002	0.002	0.002	0.001	0.001	0.000	0.000
PRI	0.000	-0.003	0.001	-0.003	0.001	-0.002	-0.001**	-0.001**	-0.002	-0.003	-0.001	-0.001	0.002	0.000	0.002***	0.002***	0.002	0.001	0.002	0.002	0.004**	0.001	0.001***	0.001**
	0.003	0.003	0.003	0.003	0.002	0.002	0.000	0.000	0.002	0.003	0.002	0.003	0.002	0.002	0.000	0.000	0.002	0.003	0.002	0.003	0.002	0.002	0.000	0.000
DCP	-0.004***	-0.004***	-0.005***	-0.004***	-0.003***	-0.002***	-0.001***	-0.001***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001**	-0.001***	-0.001***	-0.003***	-0.003***	-0.003***	-0.003***	-0.002***	-0.001**	-0.001***	-0.001***
	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALA	0.018***	0.017***	0.016***	0.016***	0.023***	0.023***	-0.008**	-0.008**	0.012***	0.012***	0.013***	0.013***	0.015***	0.015***	-0.031***	-0.031***	0.013***	0.013***	0.013***	0.013***	0.016***	0.016***	-0.027***	-0.027***
	0.002	0.002	0.002	0.002	0.001	0.001	0.004	0.004	0.001	0.001	0.002	0.002	0.001	0.001	0.003	0.003	0.001	0.001	0.002	0.002	0.001	0.001	0.003	0.003
LAF	7.836***	7.818***	7.008***	7.784***	7.081***	6.932***	-0.757***	-0.758***	5.407***	5.402***	5.383***	5.380***	3.766***	3.652***	1.150***	1.107***	6.174***	6.170***	6.088***	6.157***	4.912***	4.789***	0.195	0.157
	0.586	0.578	0.623	0.568	0.567	0.550	0.206	0.206	0.454	0.454	0.520	0.476	0.447	0.433	0.183	0.183	0.487	0.488	0.539	0.496	0.466	0.452	0.169	0.168
GCF	-0.018***	-0.013**	-0.017***	-0.013**	0.006*	0.015***	0.011***	0.011***	0.002	0.004	0.002	0.002	0.006**	0.013***	0.017***	0.017***	-0.001	0.000	-0.001	-0.001	0.013***	0.020***	0.013***	0.013***
	0.004	0.005	0.004	0.005	0.004	0.003	0.001	0.001	0.003	0.004	0.004	0.004	0.003	0.003	0.001	0.001	0.004	0.004	0.004	0.004	0.003	0.003	0.001	0.001
FIO	0.023***	0.022***	0.020***	0.021***	0.027***	0.026***	0.003***	0.003***	0.023***	0.023***	0.022***	0.022***	0.030***	0.029***	0.004***	0.004***	0.023***	0.022***	0.022***	0.022***	0.029***	0.028***	0.004***	0.004***
	0.004	0.004	0.004	0.004	0.004	0.004	0.001	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.000	0.000	0.004	0.004	0.004	0.004	0.003	0.003	0.000	0.000
FII	-0.022***	-0.020***	-0.018***	-0.019***	-0.027***	-0.025***	-0.002**	-0.002**	-0.021***	-0.021***	-0.020***	-0.020***	-0.031***	-0.029***	-0.004***	-0.004***	-0.021***	-0.021***	-0.020***	-0.021***	-0.030***	-0.028***	-0.003***	-0.003***
	0.004	0.004	0.004	0.004	0.004	0.004	0.001	0.001	0.003	0.003	0.003	0.003	0.003	0.003	0.000	0.000	0.004	0.004	0.004	0.004	0.004	0.004	0.000	0.000
Observations	7,935	7,935	7,935	7,935	8,700	8,700	8,160	8,160	7,935	7,935	7,935	7,935	8,700	8,700	8,160	8,160	7,935	7,935	7,935	7,935	8,700	8,700	8,160	8,160
Number of groups							540	540							540	540							540	540
Fixed Effects	Country-Industry								Country-Industry								Country-Industry							
Year dummy	Yes								Yes								Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
R^2	0.319	0.337	0.354	0.359	0.322	0.361			0.367	0.367	0.302	0.302	0.369	0.408			0.327	0.324	0.307	0.299	0.365	0.403		
Test	P-value								P-value								P-value							
Hausman	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Modified Wald het.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooldrige	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pesaran CSD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Annex E. VC and BO on Internationalization estimations from the panel data grouping by country-industry-year. The dependent variable are the three types of measuring internationalization treated as natural logarithm of one plus exports, imports for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A - VC/BO on Exports								Panel B - VC/BO on Imports								Panel C - VC/BO on Internationalization							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	**Exports**	**Density**							**Imports**	**Density**							**Internationalization**	**Density**						
3-year BO value	0.002***								0.002***								0.002***							
	0.000								0.000								0.000							
3-year BO value for EM		0.001								0.001								0.001						
		0.001								0.001								0.001						
3-year BO value for DM		0.002***								0.003***								0.002***						
		0.000								0.000								0.000						
3-year VC value			0.003***								0.004***								0.003***					
			0.000								0.000								0.000					
3-year VC value for EM				0.002**								0.003**								0.002**				
				0.001								0.001								0.001				
3-year VC value for DM				0.003***								0.005***								0.004***				
				0.001								0.001								0.001				
3-year BO count					0.065***								0.092***								0.076***			
					0.008								0.007								0.007			
3-year BO count for EM						0.018								0.030*								0.017		
						0.017								0.016								0.016		
3-year BO count for DM						0.082***								0.112***								0.094***		
						0.008								0.008								0.008		
3-year VC count							0.048***								0.086***								0.064***	
							0.006								0.006								0.005	
3-year VC count for EM								0.036**								0.060***								0.046***
								0.013								0.013								0.012
3-year VC count for DM								0.053***								0.093***								0.071***
								0.006								0.006								0.006
Intercept	19.959***	19.980***	20.150***	20.196***	20.118***	19.363***	20.600***	20.530***	19.803***	19.789***	19.679***	19.658***	19.882***	19.842***	19.710***	19.686***	20.468***	20.461***	20.458***	20.466***	20.670***	20.618***	20.820***	20.789***
	0.268	0.269	0.275	0.276	0.276	0.286	0.281	0.281	0.204	0.204	0.210	0.211	0.217	0.215	0.230	0.231	0.207	0.208	0.214	0.215	0.219	0.218	0.232	0.233
SEA	0.421***	0.421***	0.419***	0.422***	0.407***	0.320***	0.389***	0.382***	0.390***	0.390***	0.384***	0.385***	0.372***	0.365***	0.390***	0.387***	0.411***	0.411***	0.418***	0.422***	0.397***	0.394***	0.413***	0.412***
	0.033	0.034	0.036	0.037	0.036	0.035	0.039	0.039	0.031	0.031	0.032	0.032	0.034	0.034	0.037	0.038	0.031	0.031	0.032	0.032	0.034	0.034	0.038	0.039
GPG	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REE	0.001	0.001	0.001	0.001	0.001*	0.000	0.001**	0.001**	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GEI	0.073***	0.073***	0.069***	0.070***	0.070***	0.004	0.061***	0.061***	0.096***	0.095***	0.091***	0.090***	0.081***	0.081***	0.067***	0.065***	0.093***	0.091***	0.089***	0.088***	0.078***	0.077***	0.061***	0.060***
	0.014	0.014	0.014	0.014	0.014	0.015	0.013	0.013	0.012	0.012	0.012	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011
LFI	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002**	-0.002**	-0.001**	-0.001**	-0.001	-0.001	0.000	-0.001	0.000	0.000	-0.002***	-0.002***	-0.001**	-0.001**	-0.001**	-0.001**	0.000	0.000
	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TFI	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*	0.001*
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
IFI	0.002***	0.002***	0.002***	0.002***	0.002***	0.001**	0.002***	0.002***	0.002***	0.002***	0.001***	0.001***	0.001**	0.001**	0.001**	0.001**	0.002***	0.002***	0.002***	0.002***	0.001***	0.001***	0.001***	0.001***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRI	0.001	0.001	0.001	0.001	0.001	-0.001	0.000	0.000	0.001**	0.001**	0.001**	0.001**	0.001**	0.001**	0.001*	0.001	0.001*	0.001*	0.001	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DCP	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.002***	-0.001**	-0.001**	0.000	0.000	0.000	0.000	-0.000*	-0.000*	-0.000**	-0.000**	-0.000**	-0.000*	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALA	0.023***	0.023***	0.023***	0.023***	0.023***	0.022***	0.021***	0.021***	0.022***	0.022***	0.022***	0.022***	0.021***	0.020***	0.021***	0.021***	0.020***	0.020***	0.020***	0.020***	0.019***	0.019***	0.018***	0.018***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
LAF	1.806***	1.774***	1.554***	1.479***	1.611***	3.078***	0.951**	1.069**	1.715***	1.744***	1.950***	1.986***	1.695***	1.772***	1.994***	2.061***	2.093***	2.103***	2.128***	2.116***	1.846***	1.942***	1.622***	1.689***
	0.374	0.375	0.383	0.385	0.384	0.409	0.393	0.393	0.288	0.288	0.296	0.298	0.306	0.304	0.325	0.328	0.288	0.289	0.298	0.300	0.307	0.306	0.326	0.329
GCF	0.003**	0.003**	0.003**	0.003**	0.003**	0.002**	0.003**	0.003**	0.003***	0.003***	0.003**	0.003**	0.003***	0.003***	0.002**	0.002**	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FIO	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.001**	0.001**	0.001***	0.001***	0.001**	0.001***	0.001***	0.001***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FII	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry								Country-Industry								Country-Industry							
Year dummy	Yes								Yes								Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Test	P-value								P-value								P-value							
Hausman	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Modified Wald het.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooldrige	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pesaran CSD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Annex F. Fund nationality on Internationalization estimations from the panel data grouping by country-industry-year. The dependent variable are the three types of measuring internationalization treated as natural logarithm of one plus exports, imports, and the sum of both for a respective industry. ***, **, and * represents statistical significance at the 1%, 5%, and 10% levels, respectively.

	Panel A- FO/LO on Exports								Panel B - FO/LO on Imports								Panel C - FO/LO on Internationalization							
Variables	(1) Exports	(2) Density	(3)	(4)	(5)	(6)	(7)	(8)	(1) Imports	(2) Density	(3)	(4)	(5)	(6)	(7)	(8)	(1) Internationalization	(2) Density	(3)	(4)	(5)	(6)	(7)	(8)
3-year FO value	0.003***								0.003***								0.003***							
	0.000								0.000								0.000							
3-year FO value for EM		0.003***								0.002**								0.002***						
		0.001								0.001								0.001						
3-year FO value for DM		0.004***								0.003***								0.003***						
		0.001								0.000								0.000						
3-year LO value			0.003***								0.004***								0.004***					
			0.000								0.000								0.000					
3-year LO value for EM				0.003**								0.003***								0.003***				
				0.001								0.001								0.001				
3-year LO value for DM				0.004***								0.005***								0.004***				
				0.001								0.001								0.000				
3-year FO count					0.069***								0.087***								0.073***			
					0.007								0.006								0.006			
3-year FO count for EM						0.043**								0.050***								0.039**		
						0.014								0.014								0.013		
3-year FO count for DM						0.078***								0.099***								0.085***		
						0.007								0.007								0.007		
3-year LO count							0.064***								0.109***								0.080***	
							0.006								0.006								0.005	
3-year LO count for EM								0.032**								0.064***								0.045***
								0.013								0.013								0.011
3-year LO count for DM								0.078***								0.124***								0.093***
								0.007								0.006								0.006
Intercept	19.845***	19.850***	19.790***	19.819***	20.932***	20.914***	20.922***	20.869***	19.714***	19.696***	19.606***	19.571***	19.845***	19.797***	19.671***	19.604***	20.401***	20.396***	20.254***	20.263***	20.861***	20.815***	20.764***	20.698***
	0.266	0.266	0.268	0.270	0.289	0.290	0.289	0.290	0.209	0.209	0.205	0.205	0.229	0.229	0.223	0.224	0.208	0.209	0.207	0.208	0.230	0.231	0.229	0.230
SEA	0.427***	0.429***	0.417***	0.420***	0.396***	0.394***	0.372***	0.368***	0.384***	0.385***	0.387***	0.390***	0.375***	0.375***	0.371***	0.364***	0.418***	0.421***	0.416***	0.421***	0.408***	0.408***	0.395***	0.391***
	0.035	0.035	0.035	0.035	0.043	0.043	0.042	0.042	0.031	0.032	0.031	0.031	0.037	0.038	0.035	0.036	0.031	0.031	0.031	0.031	0.038	0.038	0.037	0.037
GPG	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REE	0.001	0.001	0.001	0.001	0.001**	0.001**	0.001**	0.001**	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GEI	0.079***	0.079***	0.074***	0.074***	0.052***	0.051***	0.051***	0.050***	0.095***	0.095***	0.096***	0.094***	0.071***	0.069***	0.070***	0.067***	0.098***	0.096***	0.098***	0.096***	0.064***	0.062***	0.063***	0.061***
	0.014	0.014	0.015	0.015	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.011	0.011	0.011
LFI	-0.003***	-0.003***	-0.003***	-0.003***	-0.001**	-0.001**	-0.001**	-0.001**	-0.001*	-0.001*	-0.001*	-0.001*	0.000	0.000	0.000	0.000	-0.002***	-0.002***	-0.002***	-0.002***	-0.001	-0.001*	-0.001	-0.001
	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TFI	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.002**	0.001**	0.001	0.001	0.001	0.001	0.001*	0.001*	0.001*	0.001*
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
IFI	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.001***	0.002***	0.002***	0.001***	0.001***	0.001**	0.001**	0.001**	0.001**	0.002***	0.002***	0.002***	0.002***	0.001***	0.001***	0.001***	0.001***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRI	0.001*	0.001*	0.001*	0.001*	0.000	0.000	0.000	0.000	0.001**	0.001**	0.001**	0.001**	0.001*	0.001*	0.001*	0.001	0.001*	0.001	0.001*	0.001	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DCP	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	0.000	0.000	0.000	0.000	0.000	-0.000*	-0.000**	-0.001**	-0.000**	-0.000*	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALA	0.023***	0.023***	0.024***	0.023***	0.020***	0.020***	0.019***	0.019***	0.022***	0.022***	0.022***	0.022***	0.020***	0.020***	0.020***	0.020***	0.020***	0.020***	0.020***	0.020***	0.018***	0.018***	0.018***	0.018***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
LAF	1.964***	1.955***	2.065***	2.016***	0.494	0.542	0.531	0.644	1.866***	1.900***	1.988***	2.056***	1.819***	1.922***	2.022***	2.177***	2.209***	2.220***	2.427***	2.421***	1.591***	1.684***	1.709***	1.842***
	0.369	0.371	0.373	0.376	0.406	0.408	0.406	0.409	0.293	0.295	0.287	0.289	0.324	0.326	0.316	0.319	0.290	0.291	0.288	0.290	0.323	0.325	0.321	0.324
GCF	0.003**	0.003**	0.003**	0.003**	0.003**	0.003**	0.002**	0.003**	0.003**	0.003**	0.003**	0.003**	0.002**	0.002**	0.002**	0.002**	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***	0.003***
	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
FIO	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.001**	0.001**	0.002***	0.002***	0.001**	0.001**	0.001**	0.001**	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FII	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001**	-0.001***	-0.002***	-0.001***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
Number of groups	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540	540
Fixed Effects	Country-Industry								Country-Industry								Country-Industry							
Year dummy	Yes								Yes								Yes							
Control variables	SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII								SEA, GPG, REE, GEI, LFI, TFI, IFI, PRI, DCP, ALA, LAF, GCF, FIO, and FII							
Test	P-value								P-value								P-value							
Hausman	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Modified Wald het.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Wooldrige	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pesaran CSD	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000