economies

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Institutional Quality and Internationalization: Empirical Evidence from Manufacturing SMEs in Vietnam

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Abstract: This paper assesses how the local institutional environment affects the internationalization of manufacturing small- and medium-sized enterprises (SMEs) in Vietnam, exploiting a multi-dimensional institutional index and large-scale enterprise data. The authors find that the internationalization of manufacturing SMEs was influenced by several institutional aspects, such as the transparency of local authorities, access to land, informal charges, and local labor policies. Improvements in these institutional aspects can substantially enhance participation in international trade and its magnitude. This pattern diverges from their large and foreign counterparts, whose trade participation is primarily affected by land access and the transparency of local authorities. Additionally, the authors find heterogeneous effects of the institutional environment on SMEs in different manufacturing industries. Heavy industries rely more on the costs of entry and time costs, while land access is crucial for SMEs in manufacturing industries that require large-sized factories. Our findings suggest that the government should provide a supportive institutional environment to SMEs, which will lead to higher international participation and boost domestic economic growth.

Keywords: institutional quality; internationalization; manufacturing SMEs; Vietnam

Citation: Ho, Bao Dinh, and Tung Nguyen. 2024. Institutional Quality and Internationalization: Empirical Evidence from Manufacturing SMEs in Vietnam. *Economies* 12: 144. https://doi.org/10.3390/economies12060144

Academic Editor: Katarina Valaskova

Received: 9 May 2024
Revised: 4 June 2024
Accepted: 5 June 2024
Published: 11 June 2024

1. Introduction

Since the economic reform, *Doi Moi*, the Vietnamese economy has experienced rapid economic growth (on average, 7.4 percent per annum during the 1990s and 6.6 percent per annum during the 2000s and 2010s). The economy, especially the private sector, has participated actively in the global market since the World Trade Organization (WTO) accession in early 2007. The country's trade openness increased from 60–70% GDP in the early 1990s to around 180% in the late 2010s. However, growing international trade benefits mostly the foreign sector and domestic large firms, while domestic small- and medium-sized enterprises (SMEs) are often regarded as incompetent and lack competitiveness. In 2023, the domestic sector faced a trade deficit of USD 21.74 billion, while the foreign sector had a surplus of USD 49.74 billion; these data are from the Vietnam General Statistics Office (GSO).

The number of registered enterprises has increased dramatically over the last 20 years, from 56,500 in 2001 to over 683 thousand in 2020. Most of them are SMEs, which cannot grow and typically quit the market after few years. In 2010, the average age of micro-, small-, medium-, and large-sized enterprises was three, five, nine, and 12 years, respectively. While SMEs account for almost 98% of the total number of registered firms in Vietnam, they absorb only 50% of total employment. Additionally, the competence and competitiveness of SMEs have not improved much compared to their larger and foreign counterparts. Throughout the country's economic development, SMEs could not actively participate in international trade activities, even within the manufacturing sector. Only 2.3%, 23.7%, and 65.4% of micro-, small-, and medium-sized enterprises in the manufacturing sector exported and/or imported between 2010 and 2015, respectively (see Table 1). Nguyen et al. (2020) indicated that only 21% of Vietnam's SMEs participate in the global value chain, while this figure

for Thailand and Malaysia is 30% and 46%, respectively. Although Coldwell et al. (2022) raised concern over the sustainability of economic growth, successful internationalization of manufacturing SMEs is still one of key drivers for economic growth in Vietnam.

Table 1. Participation to International Trade of Manufacturing Firms by Size, 2010–2015.

	Having International Trade (%)			Trade-to-Sale Ratio (%)		
	Exports	**Imports**	**Int. Trade**	**Exports**	**Imports**	**Int. Trade**
Micro-sized	2.34	2.73	3.98	1.33	0.94	2.72
Small-sized	23.69	23.79	31.61	12.10	7.76	21.85
Medium-sized	65.39	63.02	75.17	38.97	24.16	71.45
Large-sized	78.17	79.55	87.01	45.41	30.78	82.81
All	22.97	23.09	29.11	12.54	8.16	22.95

NOTES—This table show the percentage of registered manufacturing firms engaging in international trade activities by size. Data are from the VES 2010–2015.

The institutional environment, regardless of theoretical approaches, plays an important role in the international business of firms (Jackson and Deeg 2008; Marquis and Raynard 2015; Peng et al. 2008). However, most studies in the literature focus on how host country institutions affect multinational enterprises (see, e.g., Aguilera and Grøgaard 2019; Jackson and Deeg 2008). One exception is Torkkeli et al. (2019), who examined the role of the institutional environment on the international performance of 119 Finnish SMEs. The authors found that better institutions improved the internationalization of SMEs, directly and indirectly through network competence.

The Vietnamese economy presents an interesting case study for examining the relationship between institutional environment and the internationalization of manufacturing SMEs. Over the last 15 years, Vietnam has improved its institutional quality significantly, especially in terms of government effectiveness and rule of law. Data from the World Bank's Worldwide Governance Indicators showed that the percentile ranks of the two indicators increased from around 35–40 in the mid-2000s to over 50 in the mid-2010s. Within the country, many provinces have tried to improve the institutional environment to attract and promote the development of enterprises. However, most local institutions favor large and foreign firms, which may result in lower competitiveness of domestic SMEs. Additionally, the availability of a detailed dataset that measure different aspects of the institutional environment at the provincial level allows us to carefully assess the effects of institutions on SMEs' international performance.

This paper contributes to the literature in several ways. First, it is the first study that utilizes a comprehensive and multi-dimensional index to examine the effects of the institutional environment on SMEs' internationalization. As will be explained in the data section, our data are unique and well-suited for analyzing the effects of institutions on the internationalization of SMEs because (a) they are constructed based on a large-scale survey at the firm level (i.e., the Vietnam Enterprise Survey—VES), and (b) they reflect several institutional aspects, which may have different effects on SMEs. Second, we exploit the regional variations in institutional quality to answer the question of whether the local environment can help domestic firms participate in international trade. In developing countries, local authorities often compete with each other in attracting investments, especially foreign direct investment (FDI), by improving their institutional environment. This creates variations in institutional environments across provinces and allows us to estimate the effects on SMEs. Finally, this paper provides empirical evidence from a developing country and adds to the growing literature on institutions and the internationalization of SMEs.

The rest of this paper is organized as follows. Section 2 reviews the literature on the effects of institutional factors on the internationalization of SMEs. Section 3 introduces the two main datasets used in this paper and discusses the country's background. Sections 4 and 5 provide empirical results at the province and firm level, respectively. Finally, Section 6 concludes the paper.

2. Literature Review

A strand of the literature considers theoretical frameworks under which emerging market firms can engage in international trade, such as the linkage–leverage–learning approach (Mathews 2006), the springboard perspective (Luo and Tung 2007, 2018), and the institutional fragility perspective (Shi et al. 2017). Wu and Deng (2020) argued that these frameworks rely on the assumption that internationalized firms are big with sufficient capacity and particularly state-owned enterprises (SOEs), and thus they cannot explain the internationalization of SMEs in emerging market economies. Wu and Deng (2020) developed an institutional escape model to explain how Chinese SMEs internationalize. Under this setting, SMEs choose their location (target market) and entry mode (low- and high-resource commitment) based on institutional arbitrage. However, this model only compares the institutional environment of the home and targeted countries. It does not consider the regional variation of institutional environments, which may also influence the international trade participation of SMEs within developing countries.

As opposed to the "escape" view, the "fostering" one suggests that advanced domestic institutions enable the internationalization of firms in emerging markets (Luo et al. 2010; Sun et al. 2015). Deng and Zhang (2018) argued that both views should be examined together as domestic institutional quality can influence both the decision to relocate (escape) and to sell (foster) overseas. They found that institutional quality, a perceptual measurement taken from the World Bank's *Enterprise Survey*, negatively affected the decision of Chinese SMEs to operate overseas and positively affected their sales growth. Although Deng and Zhang (2018) and other studies that used this measure can take into account the heterogeneity of domestic institutional environments (see, e.g., Bianchi and Wickramasekera 2016; Deng and Yang 2015), it is subjective and does not reflect a specific aspect of the institutional environment.

In Vietnam, SMEs are usually considered as incompetent and lack competitiveness. This implies that these firms cannot relocate abroad, and the "foster" view can better explain the internationalization behaviors of SMEs in Vietnam. Therefore, we expect a better institutional environment to improve the international activities of manufacturing SMEs in Vietnam.

Since 2005, the Vietnam Chamber of Commerce and Industry (VCCI) has collaborated with the United States Agency for International Development (USAID) to construct the Provincial Competitiveness Index (PCI), which measures various aspects of institutional environments at the province level. This allows us to track the variations in the institutional environment, from different angles, within one country. Nguyen et al. (2013) used an early round of the PCI to assess how local institutions affect export strategies and the performance of private manufacturing firms in Vietnam. However, due to data limitations, the authors restricted their analysis to a single sub-index (transparency) on a small sample (578 firms). By utilizing the PCI data, this study examines how different institutional factors at the province level affect the participation of SMEs in international trade.

3. Data and Country Background

3.1. The Provincial Competitiveness Index

The PCI is a flagship index that assesses the business environment and ranks economic governance quality of provincial authorities in creating a favorable environment for the development of the private sector. It comprises nine components (sub-indices) that reflect different aspects of the institutional environment at the provincial level. Each PCI component, scaled from 0 to 10 points, is constructed using survey data from more than 10,000 domestic and 1500 foreign firms. The PCI and its components are well-suited for this study because they measure the variations in institutional environment across provinces and time. This paper uses the provincial-level PCI data from 2010 to 2015.

Figure 1 illustrates the distributions of PCI sub-indices during the period 2010–2015. Among nine sub-indices, the *Entry cost*, which measures the low entry costs for business start-up, is relatively high compared to other aspects. The transparent business environment

and equitable business information, reflected by the *Transparency* sub-index, concentrate around six points. This implies that most provinces (in most years) do not have improvement in transparency. Overall, all other sub-indices vary significantly across provinces, which allows us to examine the effects of the institutional environment.

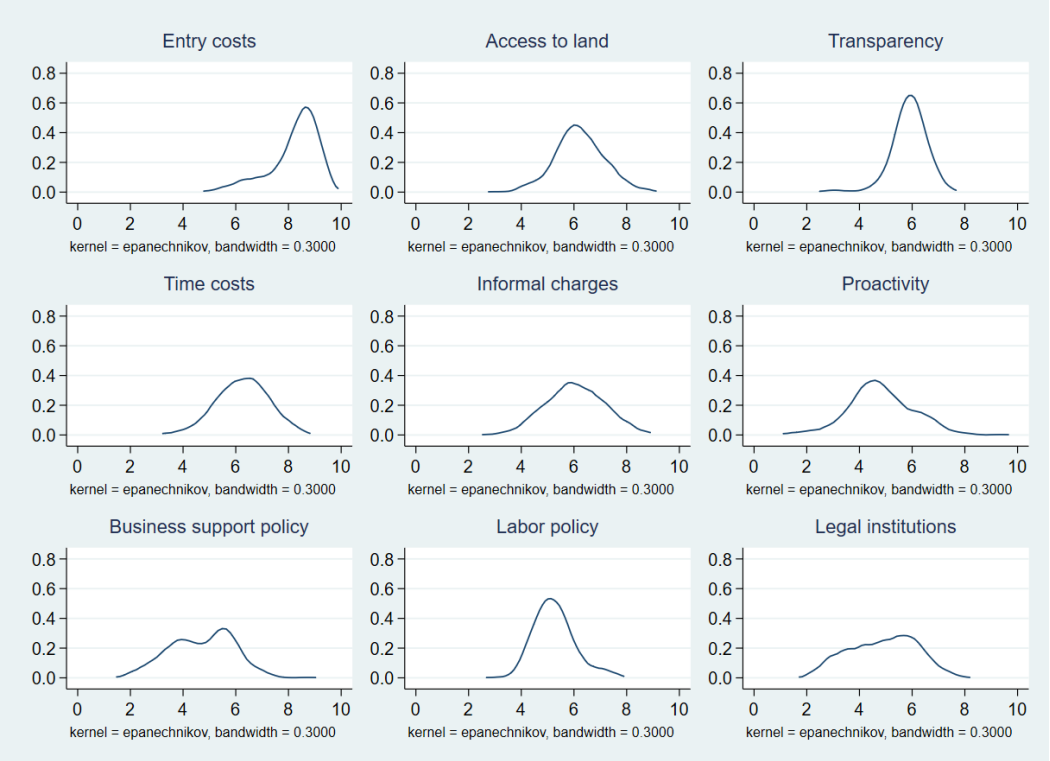


Figure 1. Distributions of PCI sub-indices. NOTES—This figure plots the Kernel density estimations of nine PCI sub-indices. The data cover 63 provinces between 2010 and 2015. Data obtained from VCCI.

3.2. Vietnam Enterprise Survey

The VES, conducted annually by the GSO, is a large-scale establishment survey. The VES covers all registered firms with employment size above a certain threshold, which varies across provinces and generally increases over time. For smaller enterprises, a sample of 10–20% of firms was chosen for the survey. For the rest of the registered firms, the GSO creates a list and collects basic information such as legal type, total employment, and industry. In this study, we specifically focus on the period from 2010 to 2015 for two reasons. First, this was the period after Vietnam fully joined the WTO in 2007 and recovered from the decline in international trade during the global financial crisis. As presented in Figure 2, Vietnam's international trade rose rapidly between 2010 and 2015. Second, the availability of firm-level data in VES data during this period allows us to examine the institutional effects on international trade participation (including intensive and extensive margins). Unfortunately, the GSO stopped tracking data on exports and imports of firms in VES after 2015.

Table 1 presents the share of enterprises having international trade between 2010 and 2015 by firm size. As shown, the participation in international trade was extremely limited among micro- and small-sized enterprises. In the manufacturing sector, 29.1% of registered enterprises exported and/or imported during this period. The average trade-to-sale ratio was 12.5% and 8.2% for exports and imports (including firms without international trade), respectively. However, international trade activities were concentrated among medium- and large-sized firms, while less than 3% of micro-sized ones could join international markets. This implies that manufacturing SMEs, especially domestic ones, have not benefited from globalization after the WTO accession.

Figure 2. Vietnam GDP Growth and Trade Openness (% GDP). NOTES—This figure plots the economic growth rate (%, left scale) and trade openness (% of GDP, right scale) between 1990 and 2019. Data are from the World Bank.

4. Province-Level Evidence

As the PCI measures the institutional environment at the provincial level in Vietnam, this subsection provides province-level evidence using balanced panel data between 2010 and 2015. We apply the two-way fixed effects estimators with the following specification:

$$y_{rt} = \alpha + IEV_{rt} \cdot \beta' + P_{rt} \cdot \delta' + u_r + v_t + \varepsilon_{rt} \quad (1)$$

where r and t denote the province and time, respectively. y_{rt} represents the outcome variable for province r at time t. We estimate the institutional effects on two outcomes at the provincial level: the share of manufacturing firms participating in international trade and the trade value as percentage of total sales revenue. The vector of institutional environment variables, IEV_{rt}, includes nine components from the PCI data of province r at time t. The vector P_{rt} controls for province-specific time-variant characteristics. The province and time fixed effects are denoted by u_r and v_t, respectively.

Tables 2 and 3 report our results using two-way fixed effects estimators. Columns (1)–(3) show the results for manufacturing firms of all sizes, while columns (4)–(6) show those of SMEs. At the provincial level, we do not find significant evidence that a better institutional environment leads to higher participation of manufacturing firms in international trade (Table 2). As the PCI measures many aspects of the institutional environment, it usually covers a broader set of policies related to each component. For example, the first component of the PCI indicates how easily a firm can register to enter the market. Therefore, lower entry costs lead to a higher number of registered firms, but these young firms may not necessarily participate in international trade. This feature of the PCI explains why we do not find any significant evidence at the provincial level.

In terms of the degree of trade, we found significant effects of certain institutional aspects on the trade-to-sale ratio, especially among manufacturing SMEs. First, we observed that better labor policies and time cost savings resulted in a higher trade-to-sale ratio (Table 3, columns 4–6). A one-standard-deviation increase in time costs resulted in a 0.8 percentage point increase in the export-to-sale ratio. Meanwhile, better labor policies led to a 0.5 percentage point higher share of imports. Second, entry costs, business support policy, and legal institutions are three components that are negatively correlated with the share of exports in total sales revenue. A one-standard-deviation improvement in the entry costs reduces the share of exports and international trade of SMEs by 1.3 points as a percentage of total sales revenue. The effect of better business support policies has a magnitude of roughly 1.7 and 1.9 percentage points, respectively (Table 3). However, this finding does not imply that a better environment leads to lower outcomes for manufacturing

SMEs in Vietnam. In many provinces, current policies and institutions are usually in higher favor of foreign and/or large firms, thereby suppressing the relative performance of SMEs.

Table 2. Effects on Participation in International Trade: Province-level Evidence.

	All Manufacturing Firms			Manufacturing SMEs		
	Export (1)	**Import (2)**	**Int. Trade (3)**	**Export (4)**	**Import (5)**	**Int. Trade (6)**
Entry costs	−0.001	−0.001	−0.000	−0.001	0.001	−0.000
	(0.004)	(0.003)	(0.004)	(0.004)	(0.002)	(0.003)
Access to land	−0.002	0.002	−0.004	−0.001	0.002	−0.003
	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)	(0.002)
Transparency	0.003	−0.001	0.002	0.002	−0.000	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Time costs	0.002	0.005	0.004	0.003	0.003	0.004
	(0.003)	(0.005)	(0.004)	(0.003)	(0.004)	(0.004)
Informal charges	−0.001	0.000	−0.001	−0.001	0.000	−0.001
	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
Proactivity	0.001	0.003	0.004	0.001	0.002	0.004
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
Business support policy	−0.004	−0.003	−0.003	−0.005	−0.002	−0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Labor policy	0.001	−0.005	−0.002	0.001	−0.004	−0.001
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
Legal institutions	0.003	0.001	0.001	0.002	0.000	0.000
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
R-squared	0.918	0.928	0.930	0.905	0.919	0.922
Observations	378	378	378	378	378	378
Control variable	YES	YES	YES	YES	YES	YES

NOTES—*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Dependent variable is the share of registered firms that participated in international trade between 2010 and 2015. Two-way fixed effects estimators are used. Standard errors in parentheses, clustered at the fixed effects level. Control variables include the shares of employment in industrial zones and in the manufacturing sector; the provincial labor force; the labor intensity and capital deepening ratio at the provincial level.

Table 3. Effects on Degree of International Trade: Province-level Evidence.

	All Manufacturing Firms			Manufacturing SMEs		
	Export (1)	**Import (2)**	**Int. Trade (3)**	**Export (4)**	**Import (5)**	**Int. Trade (6)**
Entry costs	−0.007	0.003	−0.003	−0.013 **	0.000	−0.013 **
	(0.008)	(0.006)	(0.013)	(0.004)	(0.002)	(0.005)
Access to land	−0.003	0.009 *	0.006	−0.006	−0.002	−0.008
	(0.007)	(0.004)	(0.010)	(0.007)	(0.003)	(0.010)
Transparency	−0.002	−0.005	−0.007	0.001	−0.001	−0.000
	(0.006)	(0.006)	(0.011)	(0.005)	(0.002)	(0.004)
Time costs	0.005	−0.002	0.003	0.008	0.002	0.009 *
	(0.009)	(0.004)	(0.011)	(0.004)	(0.002)	(0.004)
Informal charges	−0.004	−0.009	−0.013	−0.002	−0.003	−0.005
	(0.011)	(0.007)	(0.018)	(0.004)	(0.002)	(0.005)
Proactivity	0.005	0.011	0.016	−0.001	−0.002	−0.002
	(0.006)	(0.006)	(0.009)	(0.004)	(0.002)	(0.004)
Business support policy	−0.010	−0.004	−0.014	−0.017 *	−0.002	−0.019
	(0.007)	(0.005)	(0.009)	(0.008)	(0.003)	(0.010)
Labor policy	0.015	0.007	0.022	0.006	0.005 **	0.010
	(0.010)	(0.008)	(0.017)	(0.006)	(0.002)	(0.007)
Legal institutions	0.010	0.007	0.017	−0.005 *	−0.004	−0.009
	(0.012)	(0.010)	(0.020)	(0.002)	(0.004)	(0.005)
R-squared	0.761	0.834	0.776	0.739	0.729	0.731
Observations	378	378	378	378	378	378
Control variable	YES	YES	YES	YES	YES	YES

NOTES—*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Dependent variable is the ratio of international trade to total sales revenue of registered firms within each province. Two-way fixed effects estimators are used. Standard errors in parentheses, clustered at the fixed effects level. Control variables include the shares of employment in industrial zones and in the manufacturing sector; the provincial labor force; the labor intensity and capital deepening ratio at the provincial level.

5. Firm-Level Evidence

In this subsection, we provide empirical evidence at the firm level. We pool all manufacturing SMEs that were surveyed between 2010 and 2015 and estimate the effects of the institutional environment using the following specification:

$$y_{irt} = \alpha + IEV_{rt} \cdot \beta' + X_{irt} \cdot \gamma' + P_{rt} \cdot \delta' + \varepsilon_{irt} \quad (2)$$

where y_{it} represents the outcome variable for firm i located in province r at time t. We estimate the effects on (i) the probability of export/import; and (ii) the value of exports/imports as a percentage of total sales revenue. The vectors of institutional environment variables (IEV_{rt}) and province characteristics (P_{rt}) remain the same as in Equation (1). District and two-digit industry fixed effects are included. Standard errors are clustered at the fixed effects level.

Besides institutional quality, several papers pointed out that firms' characteristics also influence the internationalization or participation in global value chain/production networks of SMEs (Harvie et al. 2010; Lu et al. 2018; Urata and Baek 2020; Wignaraja 2013). Therefore, we also control for firm characteristics (X_{irt}) such as age, employment size, legal type, industrial zone dummy, and capital-to-labor ratio. X_{irt} also includes industry-level characteristics such as trade openness, labor intensity, and labor concentration (HHI).

Due to the sampling stratification, our final dataset consists of unbalanced panel data for manufacturing firms between 2010 and 2015. For the first outcome (probability of international trade), we employ a linear probability model to capture fixed effects and estimate Equation (2) using Pooled OLS. As a substantial number of firms did not participate in international trade, we estimate the effects on the trade-to-revenue ratio using Tobit regression with a left-censored threshold of 0. Table 4 reports our estimates on the probability and the degree of international trade among manufacturing SMEs, respectively.

Table 4. The Effects of Institutional Quality on International Trade: Manufacturing SMEs in Vietnam.

	Probability of Trade			**Trade-to-Sale Ratio**		
	Export (1)	**Import (2)**	**Int. Trade (3)**	**Export (4)**	**Import (5)**	**Int. Trade** (6)
Entry costs	−0.023 ***	−0.017 ***	−0.024 **	−0.066 ***	−0.023 *	−0.057 ***
	(0.008)	(0.006)	(0.009)	(0.018)	(0.013)	(0.019)
Access to land	0.014 ***	0.001	0.006	0.050 ***	0.008	0.026
	(0.004)	(0.004)	(0.005)	(0.014)	(0.011)	(0.016)
Transparency	0.014 ***	0.007	0.015 ***	0.031 *	0.006	0.020
	(0.005)	(0.005)	(0.005)	(0.016)	(0.012)	(0.018)
Time costs	−0.003	−0.008 **	−0.007	−0.019	−0.023 ***	−0.030 **
	(0.005)	(0.004)	(0.006)	(0.013)	(0.008)	(0.014)
Informal charges	0.006	0.009 **	0.008 *	0.034 ***	0.022 ***	0.036 ***
	(0.004)	(0.004)	(0.005)	(0.011)	(0.008)	(0.012)
Proactivity	0.003	0.007 *	0.010 *	0.011	0.025 ***	0.030 **
	(0.005)	(0.004)	(0.005)	(0.013)	(0.008)	(0.013)
Business support policy	0.000	−0.009 **	−0.004	0.023 *	−0.011	0.007
	(0.007)	(0.004)	(0.007)	(0.014)	(0.010)	(0.015)
Labor policy	0.012 **	0.018 ***	0.018 **	0.028 **	0.040 ***	0.053 ***
	(0.006)	(0.006)	(0.007)	(0.012)	(0.012)	(0.015)
Legal institutions	−0.004	−0.011 **	−0.011 *	−0.004	−0.030 ***	−0.024 *
	(0.004)	(0.004)	(0.006)	(0.013)	(0.011)	(0.014)
R-squared	0.359	0.398	0.417			
Pseudo R-squared				0.304	0.384	0.310
Control variables	YES	YES	YES	YES	YES	YES
Observations	133,632	133,632	133,632	133,632	133,632	133,632

NOTES—*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Sample includes only manufacturing SMEs that were surveyed in the VES between 2010 and 2015. Control variables include the following: (i) firm characteristics: age, age square, employment size, legal type, industrial zone dummy, and capital-to-labor ratio; (ii) industry-level characteristics such as trade openness, labor intensity, and labor concentration; and (iii) macroeconomic conditions at the provincial level: regional GDP growth rate, inflation, and the size of labor force. Time dummies, and district and 2-digit industry fixed effects are included, standard errors are clustered at the fixed effect level. Linear probability model is used in columns (1)–(3) to capture two-way fixed effects. Tobit model is used in columns (4)–(6) to capture the left-censored threshold among firms without international trade.

5.1. Institutional Environment Effects

To measure the effects of the institutional environment, we standardize all components of the PCI (z-score). The coefficients reported in Table 4 reflect the institutional environment effect when each component increases by one standard deviation. Columns (1)–(3) show the extensive margins (decision to export/import), and columns (4)–(6) present the intensive margins (value of trade as a percentage to total sales revenue). Our baseline results suggest strong effects of institutions on the participation of manufacturing SMEs in international trade. This is consistent with the "foster" view and empirical evidence found by Deng and Zhang (2018); Luo et al. (2010); Sun et al. (2015)

Entry costs. Our estimates show that reducing entry costs (such as the length of business registration, the number of licenses/permits required, etc.) resulted in a lower probability and degree of international trade. As entry costs decline, SMEs can register more easily, but the number of firms with sufficient capacity to export does not increase proportionally. Over the period from 2010 to 2015, the number of registered SMEs in the manufacturing industry increased from 43,000 to 65,500. However, the average firm sized declined from 34 to 27 workers. Consequently, this leads to a lower share of SMEs participating in international trade as well as a lower trade-to-sale ratio.

Access to land. Land serves as an essential input for manufacturing firms, particularly those producing export-oriented products. Table 4 indicates significant effects of improved access to land on the probability of SMEs engaging in exports and their export-to-sale ratio. A one-standard-deviation increase in the *Access to land* component leads to a 1.3 percentage point increase in export probability and a 4.9 percentage point increase in the export-to-sale ratio. This highlights the importance of land-related policies in Vietnam. However, land access does not affect the import decisions of manufacturing SMEs.

Transparency. Our empirical results in Table 4 show that transparency is a critical factor influencing exports of manufacturing SMEs. Specifically, firms located in provinces one standard deviation higher in this PCI component were 1.4 and 3.2 percentage points higher in the export probability and export-to-sale ratio, respectively. This finding suggests that promoting transparency at the local level, through access to planning and legal documents, bidding information, etc., helps improve the competitiveness of SMEs against larger and foreign competitors.

Time costs. Reducing time costs has a similar effect to reducing entry costs because it removes barriers to entry caused by administrative procedures. However, time costs only impact the imports of manufacturing SMEs, with no discernible effect on exports.

Business support policy. Our estimates indicate no statistic or economic effect of better business support policy on trade participation of SMEs. This may imply that policies aimed at supporting business did not enhance the competitiveness of manufacturing SMEs relative to larger firms in terms of international trade participation. However, we should note that the measure of this sub-index underwent considerable changes between 2010 and 2015. The number of criteria to construct the *Business support policy* sub-index increased from 16 to 24 during this period. This sub-index, therefore, covers various aspects of business support policies beyond the specific focus on international trade promotion.

Informal charges. We found limited evidence that improvements in the informal charge indicator raise the probabilities of trade (columns 1–3, Table 4). However, reducing informal charges significantly raises the magnitude of trade relative to sales revenue. A one-standard-deviation increase in this component is associated with 3.6 and 2.3 percentage points increases in export- and import-to-sale ratios, respectively. This implies that existing informal costs have a limited impact on the decision to engage in international trade. However, these costs substantially affect the value of trade. Therefore, eliminating informal charges would facilitate SMEs in expanding their export/import activities.

Proactivity. Similar to *Informal charges*, we found significant intensive but not extensive margins of the proactivity of local authorities. The more active local authorities are (creative, clever, and knowledgeable when working with national laws to solve problems of private sector firms), the higher the share of imports in total sales revenue. SMEs in

provinces with a one-standard-deviation increase in this sub-index have 2.6 percentage points higher imports relative to total sales revenue.

Labor policy. Our results indicate that labor institutions play a pivotal role in shaping the internationalization of manufacturing in Vietnam. Improvements in the labor institutional environment significantly enhance the competitiveness of manufacturing SMEs in expanding to the international market. Given that most firms in the manufacturing sector are labor-intensive, firms with better access to high-quality workers can improve their ability to trade and the degree of trade. As shown in Table 4, a one-standard-deviation increase in *Labor policy* sub-index corresponds to a 1.7 and 5.2 percentage point increases in the probability of trade and trade-to-sale ratio, respectively. The effect magnitude tends to be higher for imports than that for exports.

Legal institutions. Surprisingly, We found that a higher score of the *Legal institution* sub-index is associated with a lower probability of import and a lower import-to-sale ratio. This may be attributed to the fact that the *Legal institutions* sub-index primarily assesses court-related issues, which only a few registered enterprises have encountered. Therefore, this sub-index reflects perceptions of firms and depends on the number of firms involved in legal proceedings. In their 2011 Report, the PCI research team also noted that one should interpret this sub-index with caution (Malesky 2011, p. 30). Better legal institutions might correlate with a higher incidence of court-related issues, potentially leading SMEs to be reluctant to participate in international trade.

Although the existing literature raises concerns about the SOE bias (see, e.g., Deng and Zhang 2018; Nguyen et al. 2013; Wu and Deng 2020), our study does not find significant differences in the estimated effects of the institutional environment on the internationalization of private and state-owned SMEs. Estimations in Table 4 include all types of SMEs, and the results remain consistent even when we separate SOEs from private SMEs. In Appendix A, we further explore the effects of the institutional environment on large domestic and foreign manufacturing firms. Our findings reveal that land access and transparency are crucial for large-sized enterprises in terms of their participation in international trade (Table A2). Meanwhile, the results of the main analysis suggest that the internationalization of SMEs relies more on other institutional aspects, such as informal charges and labor policy factors.

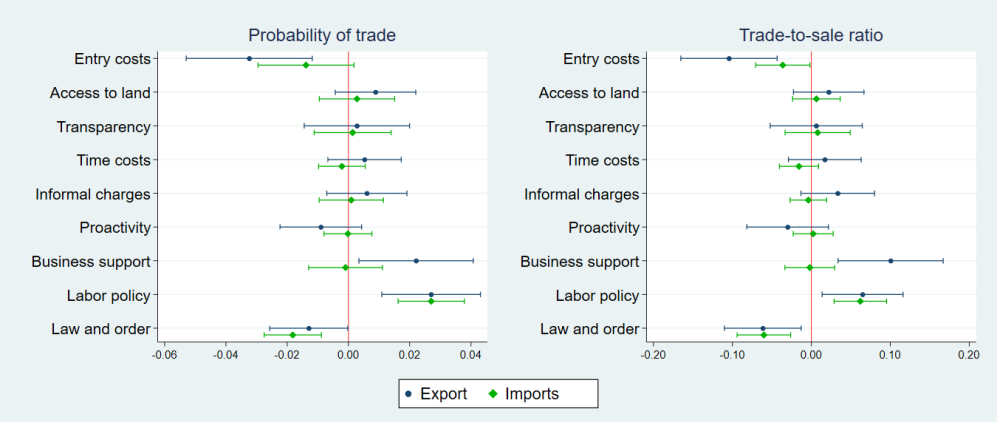
5.2. Heterogeneous Effects by Sub-Industry

This subsection explores the heterogeneous effects of the institutional environment by manufacturing sub-sectors. We categorize all two-digit Vietnam Standard Industrial Classification (VSIC) manufacturing industries into nine groups presented in Table A3. Overall, we found heterogeneous effects of each institutional aspect by manufacturing industry. For example, *Entry costs* and *Time costs* tend to affect firms in heavy industries like metallic and non-metallic products; computers, electric and electronic products; and machinery and motor vehicles. *Access to land* is more important to SMEs in manufacturing industries that require large-sized factories/warehouses like furniture, and metallic and non-metallic products.

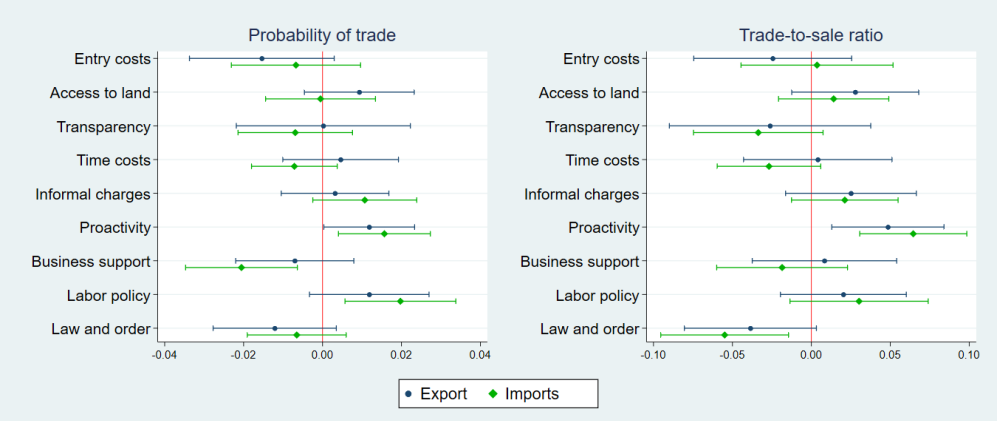
Food, beverages, and tobacco products. While Table 4 indicates no effect of business support policy, we found that better a business environment significantly raises the probability and degree of exports among SMEs in this sub-sector (Figure 3a). Labor policy significantly and substantially improves the participation in international trade of these firms (both imports and exports).

Textiles, wearing apparel, leather, and related products. Surprisingly, we found no evidence that better labor institutions improve the internationalization of SMEs in the textiles, apparel, and leather industries. This may suggest that SMEs in these industries did not rely on training programs or job services provided by local governments. Among nine PCI sub-indices, only the proactivity of local authorities raised the probabilities and degrees of international trade of SMEs in the textiles, apparel, and leather industries.

(**a**) Food, beverages, and tobacco products



(**b**) Textiles, wearing apparel, leather, and related products



(**c**) Wood, paper, and related products, and reproduction of recorded media

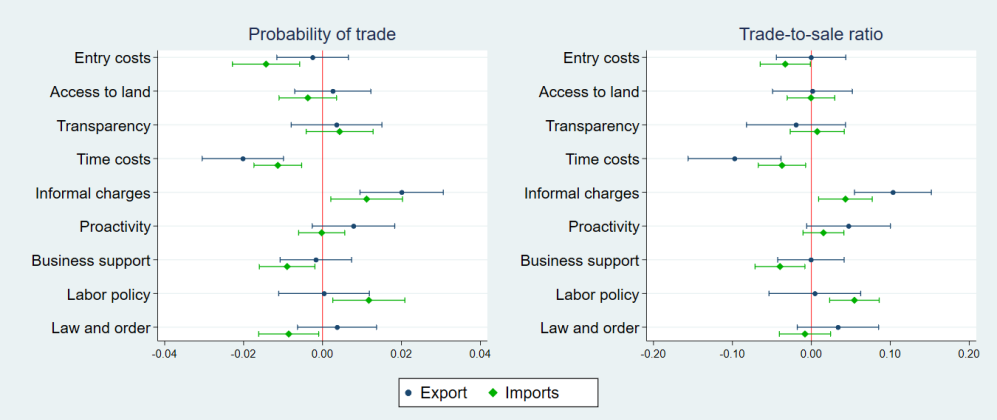
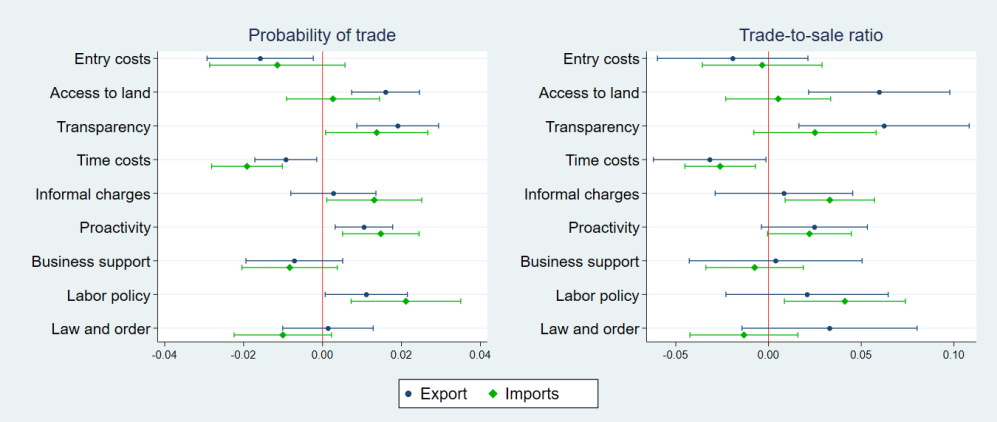
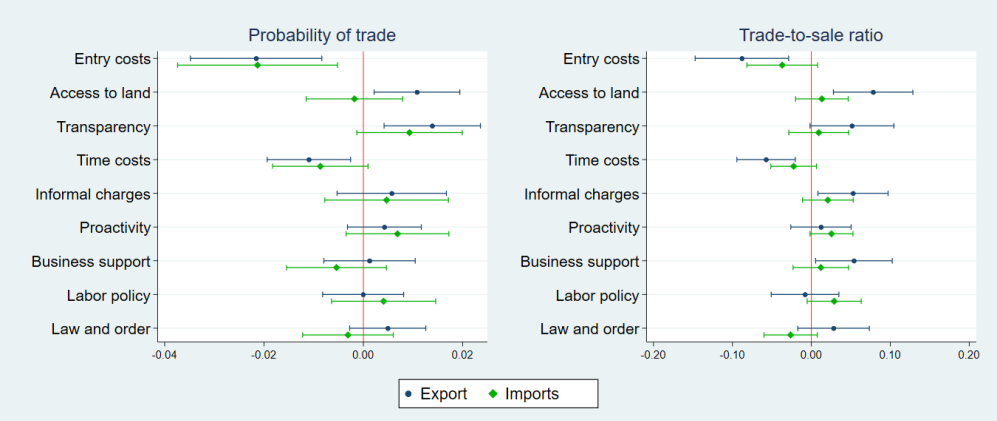


Figure 3. *Cont.*

(**d**) Botanical, rubber, plastic, and other non-metallic products



(**e**) Metal and fabricated metal products (except machinery)



(**f**) Computers, electric products, and electronic equipment

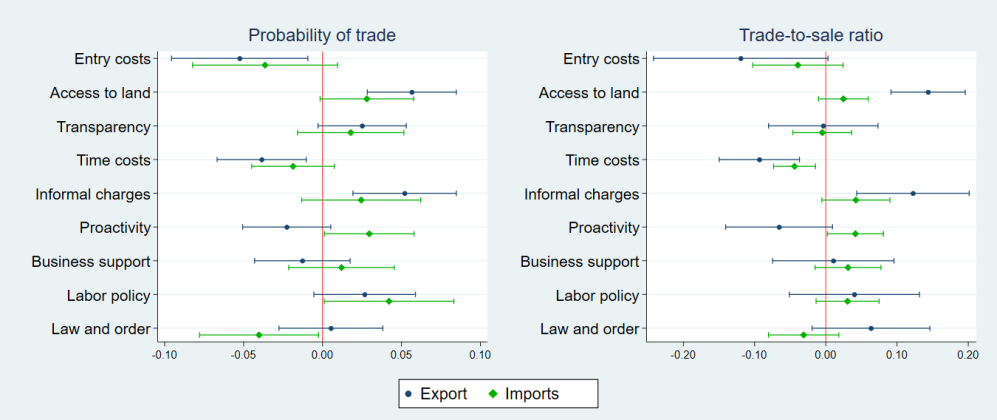
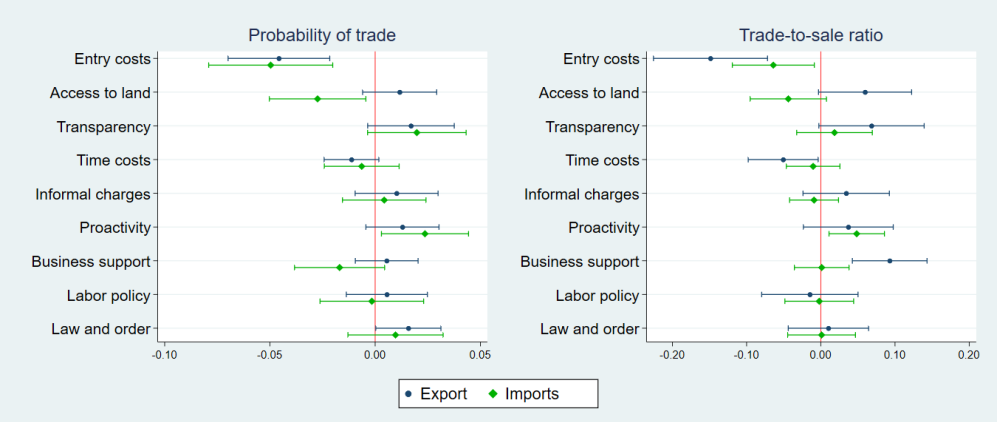


Figure 3. *Cont.*

(**g**) Machinery, motor vehicles, and other transportation means



(**h**) Furniture

(**i**) Other manufacturing products and related services

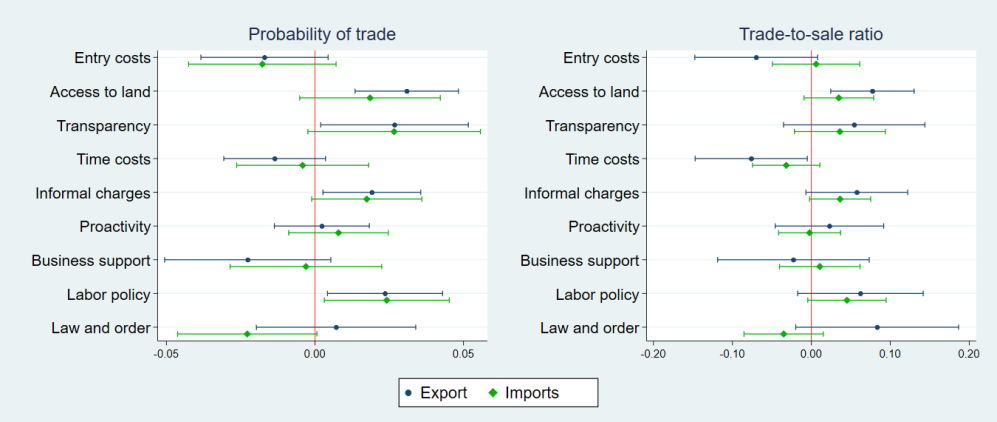


Figure 3. Heterogeneous Effects of Institutional Quality. NOTES—This figure plots the coefficients and 95 percent confidence intervals of each PCI component obtained from regressing Equation (2) for SMEs in each manufacturing sub-sector.

Wood, paper, and related products, and reproduction of recorded media. Informal charges were a significant burden to firms in these sub-industries. Figure 3c shows that better *Informal charges* (i.e., lower cost) results in higher probabilities and volumes of trade, especially exports. Labor policies also influence exports of SMEs in this sub-sector.

Botanical, rubber, plastic, and other non-metallic products. Exports and imports of firms in this sub-sector were affected by different institutional factors. While better labor institutions and informal charges improved exports, easier access to land and better transparency raised the probability and magnitude of imports (Figure 3d).

Metal and fabricated metal products (except machinery). Figure 3e shows that almost none of the institutional factors affect exports of SMEs in these industries. Meanwhile, imports of these firms were heavily influenced by the *Land access* and *Transparency* PCI sub-indices. This is consistent with the fact that the proportion of SMEs exported in this sub-sector was lower compared to that in other sub-sectors and to the proportion of SMEs imported in this sub-sector.

Computer, electric products, and electronic equipment. Similar to firms that produced wood, paper, and related products, firms in this sub-industry also faced the informal charges issue. Reducing informal charges significantly increased exports of these firms, in both intensive and extensive margins. Additionally, land access heavily influenced the probability and magnitude of exporting (Figure 3f). On the imports side, we do not find any significant evidence that the institutional environment affects the imports of SMEs in this sub-industry.

Machinery, motor vehicles, and other transportation means. Easier entry to this subsector reduced the share of SMEs participating in international trade, which was consistent with the findings in the previous subsection. However, we did not find clear evidence that the institutional environment improves the internationalization of SMEs in this sub-sector. We only found that the proactivity of local authorities slightly increases the probability and magnitude of exports.

Furniture. Unlike other sub-industries, we found that the internationalization of SMEs in the furniture industry was affected by the land access and transparency factors. Better access to land and a more transparent environment were important.

6. Conclusions

Despite the increasing trade openness, manufacturing SMEs in Vietnam have not actively participated in international trade. This paper assesses how the local institutional environment affects the internationalization of manufacturing SMEs during the period from 2010 to 2015. *At the provincial level*, we do not find any evidence that local institutions significantly impact provinces' international trade. Better institutions facilitate the registration of new firms, which are usually small and incapable of exporting/importing at the beginning. Therefore, it may not improve the overall performance at the province level. *At the firm level*, we found that the internationalization of manufacturing SMEs was heavily affected by several institutional aspects, such as the transparency of local authorities, access to land, informal charges, and local labor policies. Improvements in these institutional aspects can substantially enhance the participation of manufacturing SMEs in international trade and its magnitude. This finding is consistent with the "foster" view in the literature (see, e.g., Deng and Zhang 2018; Luo et al. 2010; Sun et al. 2015). This pattern diverges from their large and foreign counterparts, whose trade participation is primarily affected by land access and the transparency of local authorities.

Additionally, we found heterogeneous effects of the institutional environment on SMEs in different manufacturing industries. Heavy industries (e.g., non-metallic products, basic metals, metal products, motor vehicles, etc.) rely more on the costs of entry and time costs. Land access is crucial for SMEs in manufacturing industries that require large-sized factories or warehouses, such as furniture, metal and non-metallic products, computers, electric products, and electronic equipment. Surprisingly, we found that the local labor environment only affects SMEs that produce foods and beverages. This may reflect the fact that manual workers are concentrated in other labor-intensive industries (e.g., textiles, wearing apparel, computers), where large and foreign companies have invested. Therefore, SMEs in these industries benefit from better quality workers and are not affected by local labor institutions.

This paper provides clear evidence that different aspects of the institutional environment affect manufacturing SMEs in different ways. Using a single index of institution may not fully reflect the effects on SMEs' internationalization. However, we acknowledge several limitations of this paper. First, as the effects of local institutions vary across manu-

facturing industries, a further investigation using province-industry-specific institutions will provide more insightful implications. Because of data limitations, this paper cannot track the effects of institutional environments at the province-industry level. Second, local authorities that prioritize international trade may try to create an environment that is more friendly to export-oriented enterprises. This brings up the endogeneity issue. However, the goal of this paper is to identify the effects of different institutional aspects, using a multi-dimensional measure. Identifying export-oriented institutions and instrumentalizing them are out of the scope of this paper. We leave this for future studies. Finally, there are several aspects of SMEs that we do not consider in this paper, such as the application of social media (Qalati et al. 2022), or the adoption of technology, innovation, and lean tools (Battistella et al. 2023; Pessot et al. 2021) may help SMEs improve their outcomes.

Author Contributions: Software, T.N.; Formal analysis, B.D.H. and T.N.; Investigation, T.N.; Resources, B.D.H.; Writing—original draft, B.D.H. and T.N.; Writing—review & editing, B.D.H. and T.N.; Supervision, B.D.H. All authors have read and agreed to the published version of the manuscript.

Funding: This paper is one product of the Ministerial-level Scientific Research Project ID: B2022.KHA.05, funded by the Ministry of Education and Training of Vietnam.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: All data are included in the article.

Conflicts of Interest: The authors report there are no competing interests to declare.

Appendix A

Table A1. Criteria to Define Micro-, Small-, and Medium-sized Enterprises.

	Micro-Sized	Small-Sized		Medium-Size	
	Employment (Workers)	**Capital (bil. VND)**	**Employment (Workers)**	**Capital (bil. VND)**	**Employment (Workers)**
Agriculture, forestry and fishery	1–10	0–20	11-200	21–100	201–300
Manufacturing and construction	1–10	0–20	11-200	21–100	201–300
Trade and services	1–10	0–10	11-50	11–50	51–100

Source—Decree No. 56/2009/ND-CP of 30 June 2009, on assistance to the development of small- and medium-sized enterprises.

Table A2. The Effects of Institutional Quality on International Trade: Manufacturing Large-sized Enterprises in Vietnam.

	Probability of Trade			Trade-to-Sale Ratio		
	Export (1)	**Import (2)**	**Int. Trade (3)**	**Export (4)**	**Import (5)**	**Int. Trade (6)**
Entry costs	−0.012	−0.025 *	−0.007	0.001	−0.014	−0.004
	(0.015)	(0.014)	(0.013)	(0.017)	(0.013)	(0.022)
Access to land	0.024 **	−0.009	−0.001	0.035 ***	0.002	0.028 *
	(0.009)	(0.011)	(0.009)	(0.012)	(0.009)	(0.015)
Transparency	0.029 **	0.018 *	0.021 **	0.022	−0.002	0.011
	(0.012)	(0.010)	(0.010)	(0.015)	(0.011)	(0.020)
Time costs	0.010	0.008	0.015 *	0.003	−0.005	−0.003
	(0.009)	(0.012)	(0.008)	(0.012)	(0.010)	(0.016)

Table A2. *Cont.*

	Probability of Trade			Trade-to-Sale Ratio		
	Export (1)	**Import (2)**	**Int. Trade (3)**	**Export (4)**	**Import (5)**	**Int. Trade (6)**
Informal charges	0.011	0.011	−0.002	−0.003	−0.003	−0.008
	(0.011)	(0.010)	(0.009)	(0.013)	(0.009)	(0.016)
Proactivity	−0.007	0.012	0.012	−0.022	0.006	−0.012
	(0.008)	(0.008)	(0.009)	(0.015)	(0.009)	(0.018)
Business support policy	−0.012	−0.028 *	−0.017	0.015	0.002	0.019
	(0.012)	(0.015)	(0.012)	(0.015)	(0.011)	(0.020)
Labor policy	0.002	0.010	−0.003	−0.013	0.020 *	0.005
	(0.012)	(0.013)	(0.008)	(0.017)	(0.011)	(0.021)
Legal institutions	0.011	0.001	0.005	0.020	−0.008	0.013
	(0.013)	(0.015)	(0.012)	(0.019)	(0.013)	(0.025)
R-squared	0.203	0.165	0.135			
Pseudo R-squared				0.248	0.243	0.188
Control variables	YES	YES	YES	YES	YES	YES
Number of observations	10,494	10,494	10,494	10,494	10,494	10,494

NOTES—*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Sample includes only manufacturing SMEs that were surveyed in the VES between 2010 and 2015. Control variables include: (i) firm characteristics: age, age square, employment size, legal type, industrial zone dummy, and capital-to-labor ratio; (ii) industry-level characteristics such as trade openness, labor intensity, and labor concentration; and (iii) macroeconomic conditions at the provincial level: regional GDP growth rate, inflation, and the size of labor force. Time dummies, and district and 2-digit industry fixed effects are included, standard errors are clustered at the fixed effect level. Linear probability model is used in columns (1)–(3) to capture two-way fixed effects. Tobit model is used in columns (4)–(6) to capture the left-censored threshold among firms without international trade.

Table A3. Manufacturing Industry Categorization.

VSIC 2007	**Manufacturing Sub-Sector**
Group A	Food, beverages, and tobacco products
10	Manufacture of food products
11	Manufacture of beverages
12	Manufacture of tobacco products
Group B	Textiles, wearing apparel, leather, and related products
13	Manufacture of textiles
14	Manufacture of wearing apparel
15	Manufacture of leather and related products
Group C	Wood, paper, and related products, and reproduction of recorded media
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17	Manufacture of paper and paper products
18	Printing and reproduction of recorded media
Group D	Botanical, rubber, plastic, and other non-metallic products
19	Manufacture of coke and refined petroleum products
20	Manufacture of chemicals and chemical products
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
22	Manufacture of rubber and plastics products
23	Manufacture of other non-metallic mineral products
Group E	Metal and fabricated metal products (except machinery)
24	Manufacture of basic metals
25	Manufacture of fabricated metal products, except machinery and equipment
Group F	Computers, electric products, and electronic equipment
26	Manufacture of computer, electronic and optical products
27	Manufacture of electrical equipment

Table A3. *Cont.*

VSIC 2007	Manufacturing Sub-Sector
Group G	Machinery, motor vehicles, and other transportation means
28	Manufacture of machinery and equipment n.e.c.
29	Manufacture of motor vehicles, trailers and semi-trailers
30	Manufacture of other transport equipment
Group H	Furniture
30	Manufacture of furniture
Group I	Other manufacturing products and related services
32	Other manufacturing
33	Repair and installation of machinery and equipment

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