

Modes of Globalization and Firm Performance: MSMEs in Vietnam*

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Deepening regional economic integration in East Asia through GVC linkages provides new opportunities for MSMEs in the region. However, it is difficult to remain complacent about MSME's ability to participate in the GVC effectively. Using a unique database on Vietnamese MSMEs, this paper examines MSME participation in global activities and its effect on firm performance, with a focus on discovering the differences between different modes of exporting. Results show that there is export premia in firm size and productivity, high sunk cost of exports and different firm characteristics between firms engaged in different modes of exporting. The size premium can be explained by the learning effect, especially by GVC trade. However, the productivity premium is weak and is not well explained by the selection effect nor the learning effect.

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1. INTRODUCTION

Deepening regional economic integration in East Asia has brought new opportunities for MSMEs (micro, small and medium enterprises) in the region. Participation in globalization through closer linkages with foreign direct investors and exports is expected to be an important source of technology spillovers and development, as the “learning by exporting” school would emphasize (see for example, World Bank, 1993; Harrison *et al.*, 2010). However, it is difficult for one to remain complacent about MSME’s capability to participate in the GVC effectively. World Trade Report (2016) claims that “trade participation of SMEs in developing countries is low, with exports accounting for 7.6 percent of manufacturing sales, compared to 14.1 percent for larger firms”. It further reports that in developing economies, “indirect exports in the manufacturing sector of SMEs were estimated, on average, at 2.4% of total sales, a level three times lower than the estimated share of direct exports. Most manufacturing SMEs in developing countries have low levels of integration in global value chains, with few backward and forward linkages in production”. According to the same report, it took an SME, which began with five employees or less, 17 years to begin to export compared to five years for those that began with 60-100 employees. Renewed concern with difficulties and barriers faced by MSMEs in penetrating world markets has led to a new initiative on MSMEs at the WTO, leading to the creation of an “Informal Working Group on MSMEs” to consider the urgent trade needs and challenges of MSMEs.

Given that MSMEs form more than 90% of total enterprises in many of the developing nations of the East Asian region, it is not surprising that MSMEs have once again become the focus of trade and development policy. Earlier studies examining the issue of export and productivity nexus have shown that exporting firms tend to be larger and more productive. Further, most of them show that the export premium is due to self-selection, rather than due to learning through exporting (Clerides *et al.*, 1998; Bernard and Jensen, 1999; Bernard and Jensen, 2004). However, these studies did not distinguish

participation in ordinary export activities from participation in GVC activities.

The more recent literature examines the interaction between global production fragmentation (offshoring) and productivity (Gorg *et al.*, 2005; Tomiura, 2007; Gorg *et al.*, 2008; Hijen *et al.*, 2010; Wagner, 2011; Hyun, 2015). These studies show that offshoring has a positive impact on productivity in general.¹⁾ These studies ignore the issue of firm size, except for Hyun (2015), who shows that offshoring to ASEAN has significant positive impacts on productivity of Korean SMEs. The conclusion that global production fragmentation can benefit SMEs is encouraging in the face of a large body of evidence that firms participating in global activities tend to be larger and more productive. This literature however, mainly focus on the productivity implications from the perspective of the outsourcers. That is, from the side that sends out the jobs rather than the side at the receiving end of the global value chain. Recent evidence suggests that for countries substantially engaged in GVC trade as processing exporters, specializing in the low wage processing stage of a value chain, exporters involved in processing trade significantly underperform those involved in ordinary trade as well as those serving the domestic market (Dai *et al.*, 2016; Vu *et al.*, 2017).

The focus of this paper is on MSMEs that participate in the global market in the capacity of undertaking the outsourced tasks. Despite deepening GVC linkages in the region, we still do not know much about participation of MSMEs in the developing countries of South East Asia. There are few firm level econometric studies of MSMEs, partly due to lack of sufficient data (Wignaraja, 2013). This study makes use of a rare firm level survey of MSMEs in Vietnam (the SME survey, hereafter).²⁾ Wignaraja (2013) notes that along with Malaysia and Singapore, Vietnam is noted for having higher

¹⁾ Tomiura (2007) is the only one that examines the reverse causality. Using Japanese firm level data, this study shows that foreign outsourcing firms tend to be less productive than those active in FDI or in multiple globalization modes, but are more productive than domestic firms.

²⁾ CIEM, ILSSA, UCPH, and UNU-WIDER (2011-2015). Vietnam SME Survey. Data is collected biennially since 2005, in a survey carried out in nine provinces, based on face-to-face interviews. For more information on the database, refer to the UNU-WIDER site at <https://www.wider.unu.edu/database/viet-nam-sme-database>.

SME export share than other developing countries. This makes it a fertile ground on which to study the impact of global activities of MSMEs.

While not exclusively focused on MSMEs or GVC trading, a growing body of firm level analysis in recent years provide some important insights on firm level effects of trade and FDI in East Asia and in Vietnam. Wiganaraja (2013) examines factors affecting SME participation in global production networks in five ASEAN economies, including Vietnam, using the World Bank multi-country enterprise data set. The research concludes that large firms are the leading players in production networks in ASEAN economies in the 2000s, although there is a modest increase in the participation of SMEs. The most interesting aspect of this study is that firm heterogeneity is great even among SMEs. SMEs in production networks are larger than other SMEs, tend to have greater foreign equity, have better educated labor force, and have installed internationally recognized quality certificate to a greater extent. In addition, experience of CEOs, building technological capabilities and access to commercial bank credit positively affect the probability of SME participation in production networks. On the other hand, age has a negative relationship, except in Vietnam. This analysis is mainly cross-sectional, and does not examine if exporting firms show productivity gains over time.

Using an extensive firm-level panel data set for the period 2005-2012 from Vietnam, Newman *et al.* (2017) suggest that private domestic firms learn and accumulate knowledge from export markets, aided partly by within firm innovation. However, among foreign owned firms, productivity gains are associated with moving to a larger scale with little evidence of subsequent learning from exporting activity. On the other hand, Ni *et al.* (2017) show that there is vertical technological spillovers from foreign investment, using firm level data from Vietnam in 2002-2011. However, the positive effect is limited to Asian investors, especially from China and Taiwan, possibly due to distance, preferential trade agreements, and institutional or levels of technological differences. Further, based on Vietnam Annual Survey of Enterprises undertaken by the Government Statistical Office of Vietnam covering all registered firms in 2000-2013, Vu *et al.* (2017) show that

distribution of export intensity in Vietnam differs from developed countries, with more than half of exporters exporting more than 50% of their output. The high export intensity suggests strong participation in global value chains. At the same time, in contrast to the findings by Wignaraja (2013), the study shows that export premia, in terms of both productivity and wage indices, are positive only for exporters in ordinary trade. Those that are involved in processing exports (partaking in GVC trade) exhibit even lower levels of productivity and wage compared to non-exporting counterparts. This pattern is stronger among foreign owned firms compared to domestic firms.

Making use of a unique sample survey of MSMEs in Vietnam, this paper examines MSME participation in global activities and its effect on firm performance, with a focus on discovering the differences between different modes of exporting. The next section provides an overview of global activities of MSMEs based on the SME survey. Section 3, 4 and 5 estimate export premia and the interaction between exporting and firm performance by export modes. Section 6 concludes.

2. MSME PARTICIPATION IN GLOBAL ACTIVITIES

This paper undertakes an analysis of global activities of manufacturing MSMEs based on the Vietnam SME Survey of 2011, 2013, and 2015.³⁾ The years covered by the survey correspond to a period of rapid export expansion and deepening linkages with global value chains for Vietnam.⁴⁾ Vietnam's export has increased rapidly in the last ten years, at a rate of 18% per year on average since 2010 to 2017. In particular, it grew at more than 26% and 34% in 2010 and 2011 respectively. At the same time, Vietnam is increasingly

³⁾ Decree No. 56/2018/ND-CP 2018 defines enterprises with employees less than 10 as micro, between 10 to 100 as small, and between 100 to 200 as medium.

⁴⁾ Global value chain trade go by many names, including global production networks, global production fragmentation, global production sharing or offshoring (sometimes outsourcing). These terms are used interchangeably in this paper. They involve vertically (and geographically) fragmented production processes, with trade in intermediate goods (or trade in tasks, such as processing).

involved in GVC participation, with the proportion of exports and imports taken up by FDI firms being more than 55.92% and 59% respectively in 2012.⁵⁾ The recently published GVC indicators by the Asian Development Bank (2018) shows that foreign value added form more than 30% of Vietnam's total exports, while use of Vietnam's value added in other country's exports form more than 59% of Vietnam's total exports in 2017. All of this testify that processing trade is a predominant feature of Vietnam's rapid export expansion.

To what extent are MSMEs able to take the opportunity of such trade expansion to participate in global activities? Table 1 shows that only a fraction of sample firms participated in global activities. This is expected, given that many of them are very small firms. The average size of the firms measured by total number of employees are around 14 workers on average. The biggest firms range from 300-1,700 over the 2011-2015 period, but more than 99% of the sample firms constitute of MSMEs.⁶⁾ On average, less than 10% of the sample firms exported during the 2011-2015 period. Still, this is a higher proportion than values reported for SMEs in the World Trade Report (2016). None of the firms had foreign equity participation.

Table 1 Number of Firms by Different Export Mode

	Firm size (person/firm)	No. of firms	Export	Ordinary	GVC	Export Intensity	Sub- contract	Sales to Foreign Firms
2011	13.97 (0-321)*	2,489 (2,476)**	149	109	40	44	22	16
2013	13.52 (0-1,700)*	2,503 (2,494)**	157	114	43	23	27	117
2015	14.06 (3-700)*	2,613 (2,591)**	184	131	55	93	27	120

Notes: 1) * Range of number of employees. 2) Firms with "0" employees refer to household enterprises with no outside employees. 3) ** Numbers in () are number of firms with employees less than 200 employees.

⁵⁾ Export statistics are calculated based on WTO Commodity Trade data.

⁶⁾ This compares with Vu *et al.* (2017)'s sample which excludes microenterprises. In that study, non-exporters had 61 employees, ordinary exporters 346 employees and process exporters had 915 employees on average.

Source: Author's calculations using the Vietnam SME Survey data.

Vu *et al.* (2017) suggest that export premium may differ depending on the mode of export, with those firms engaged in processing trade underperforming ordinary traders. They define processing trade as “trade in goods that have been processed but not manufactured by the local firm. Processed products are supplied directly by the principal company, or imported by the principal company and re-exported under a specific trade regime which exempts the exporting firm from tariffs”. That is, processing traders are those that undertake the outsourced tasks from developed country firms under global production networks.

It is not easy to distinguish processing trade from ordinary trade based on the SME survey information. It can only be indirectly inferred. Vu *et al.* (2017) has used export intensity as the criterion to distinguish processing trade from ordinary trade. The rationale is that in Vietnam, accounting rules require earnings from processing to be reported as turnover and only sale values of the processed goods to be reported as exports. Therefore, firms that report large export values relative to their turnover values are likely to be predominantly engaged in processing trade. They used the cut-off of export to sales ratio greater than 90% as the defining characteristic of processing trade. In addition to export intensity, this paper uses an additional criterion to distinguish processing trade or GVC activity in general, making use of the sales structure information available from the SME survey. The SME survey provides information on whether the firms produce for intermediate input use in manufacturing. However, how much of such intermediate input production is exported is unknown. Here, intermediate input production is interacted with the export dummy variable is taken to represent GVC trade, which can encompass parts suppliers under production networks as well as processing traders. Such an indicator may reflect more accurately the nature of GVCs based on trade of intermediate goods and services. The survey also contain information about subcontracting with foreign invested firms and sales to foreign invested firms. These activities also imply likelihood of undertaking processing services for multinationals using Vietnam as their export platforms.

Of the exporting firms, those that are likely to be involved in processing trade (GVC and Export Intensity) formed around 28-32% on average (see table 1). Fewer firms engaged in subcontracting with foreign firms. Sales to foreign invested firms were limited in 2011 but rapidly grew since 2013, reaching almost 5% of total sample firms in 2015. This shows that despite the prevalence of process trade in Vietnam, only a small proportion of MSMEs have taken up the opportunity to participate, although the proportion is clearly growing from 2011 to 2015. The next sections estimate whether export premium, if it does exist, differ by the mode of export, and whether different modes of export have differential effects on firm performance among MSMEs of Vietnam.

3. EXPORT PREMIA

Following Bernard and Jensen (1999), export premium is estimated by regressing performance variables of interest on export status:

$$\ln X_i = a + b\text{Export}_i + c\text{Industry}_i + e_i, \quad (1)$$

where X_i represent performance variables, Export_i is a dummy variable taking a value of 1 for exporting firms and 0 otherwise, and Industry_i represents industry dummies. Mode of export can be distinguished into three distinct groups following the discussion in section 2. Export includes all modes of exporters. Ordinary only includes exporters that do not produce intermediate inputs for manufacturing and represent ordinary trade. GVC includes only those exporters that produce intermediate inputs, and represent GVC trade. Export intensity (EI) and sales to foreign invested enterprises (SFE) are used as auxiliary measures for GVC (including processing trade). Subcontracting was not used as a measure of processing trade since it had too many missing observations.

Variables for firm performance include productivity, size, wage, and capital intensity. Labor productivity is measured by value added per employee.

Table 2 Summary Statistics

Year	Variable	Obs	Mean	Std.	Min	Max
2010	Total sales (Million VND)	1,692	10.6×10^6	20.8×10^7	7,250	8.3×10^9
	Total employment (persons)	1,692	14.29	29.64	0.00	321.00
	Value added/worker (Million VND/worker)	1,686	73,152.60	142,724.00	1,800.00	4,932,596
	Capital intensity (Million VND/worker)	1,686	465,523.60	805,058.60	2,000.00	9,856,000
	Average wage (Million VND/worker)	1,686	21,876.91	23,929.71	0.00	350,000
	Npw-share*	1,690	0.38	0.21	0.03	1
2014	Total sales	1,693	10.3×10^6	12×10^7	5,000	46.1×10^8
	Total employment	1,693	13.42	34.16	0	700
	Value added/worker	1,691	105,992.40	283,327.20	-54,000.00	9×10^6
	Capital intensity	1,691	435,282.80	653,384.80	4,500.00	8,297,340
	Average wage	1,691	34,894.36	38,324.58	0	594,000
	Npw-share*	1,690	0.42	0.24	0.02	1

Note: * Non-production worker share.

Share of non-production workers, which can represent skill intensity of the firm is also included. Skill intensity is associated with production of higher value added products, and can be taken as an attribute of highly productive firms. Firm size is measured by number of total employees and sales. Capital intensity is measured by fixed asset per employee. Greater capital input is expected to boost labor productivity. Regressions are run separately for each performance variables, both with and without employment as a control variable. Industry dummies are included at the two-digit level, based on VSIC (Vietnamese Standard Industry Classification) 2007. The sample includes only manufacturing firms. Table 2 gives the summary statistics for the dependent variables.

Table 3 reports estimated export premia by different modes of exporting. In 2011, quite large exporter premia, comparable to levels reported in earlier studies, seem to exist with regard to employment, sales, labor productivity, and wage for both ordinary and GVC trade. Exporters showed no difference from non-exporters regarding capital intensity. Exporters were generally less skill intensive than non-exporters (GVC shows no significant difference while EI

Table 3 Export Premia by Mode of Exporting

		Export (1)	Ordinary (2)	GVC (3)	EI (4)	SFE (5)	Export (6)	Ordinary (7)	GVC (8)	EI (9)	SFE (10)
2011	Total employment	1.614*	1.602*	1.512*	1.264*	0.834*					
	Sales	2.108*	1.971*	2.286*	1.569*	1.296*	0.192*	0.049	0.487*	0.047	0.301*
	Value added per worker	0.563*	0.5097*	0.657*	0.517*	0.397*	0.222*	0.157*	0.320*	0.231	0.210*
	Wage (labor cost/worker)	0.294*	0.234*	0.414*	0.055	0.233*	0.023	-0.032	0.148	-0.174	0.095*
	Capital intensity (asset/worker)	-0.06	-0.066	-0.04	-0.376	0.313*	-0.032	-0.037	-0.011*	-0.357	0.337*
	Non-production worker share	-0.241*	-0.3295*	0.011	-0.327*	-0.013	0.193*	0.079	0.423*	-0.007	0.194*
2013	Total employment	1.516*	1.414*	1.634*	2.248*	1.096*					
	Sales	2.088*	1.903*	2.363*	2.616*	1.647*	0.278*	0.198*	0.394*	-0.077	0.310*
	Value added per worker	0.486*	0.4197*	0.608*	0.385*	0.427*	0.175*	0.120*	0.259*	-0.105	0.194*
	Wage (labor cost/worker)	0.298*	0.297*	0.27*	0.445*	0.255*	0.067	0.0895*	-0.007	0.067	0.078*
	Capital intensity (asset/worker)	0.113	0.119	0.086	-0.499*	0.158	0.127	0.029	0.089	-0.521*	0.166
	Non-production worker share	-0.275*	-0.326*	-0.119*	-0.514*	-0.053	0.125*	0.041	0.030*	-0.700	0.194*
2015	Total employment	1.808*	1.717*	1.823*	2.111*	1.111*					
	Sales	2.353*	2.205*	2.439*	2.895*	1.563*	0.189*	0.133	0.246*	0.246*	0.220*
	Value added per worker	0.404*	0.422*	0.32*	0.530*	0.28*	0.055	0.094	-0.042	0.110	0.064
	(labor cost/worker)	0.339*	0.317*	0.347*	0.437*	0.284*	0.057	0.053	0.046	0.086	0.106*
	Capital intensity (asset/worker)	0.024	-0.019	0.119	0.018	0.364*	-0.092	0.133	0.026	-0.118	0.316*
	Non-production worker share	-0.433	-0.497	-0.239*	-0.053*	-0.081*	0.1096*	-0.0002	0.303*	0.129*	0.246*

Notes: 1) All estimations include industry dummies with robust errors. 2) Reported values are estimated coefficients on export. 3) * indicate significance at 1%, 5%, or 10%. 4) Full regression results are available on request.

shows significant lower skill intensity). Sales to foreign enterprises outperformed all other modes, except for skill intensity, for which there was no statistical difference. In most cases, exporter premia, where they exist, is higher for the GVC mode compared to the Ordinary mode (see table 3, columns (1)-(5)).

When controlled for by employment, much of the premia disappear. Exporter premia are shown to exist in sales, productivity and skill intensity. EI is not significant with regard to any performance variables, while SFE is significantly positive with respect to all performance variables. GVC exporters are shown to be significantly less capital intensive than other modes. Again, where exporter premia exist, the GVC mode premia is greater than that of the Ordinary mode. The 2013 picture is broadly similar to that of 2011. However, exporter premia falls substantially in 2015, when export growth slows down compared to early 2010s. The ordinary mode is not significant for any of the performance variables, except for employment. For GVC and EI, representing GVC trade, there are exporter premia for employment, sales and skill intensity. The SFE mode is significant in all cases except for labor productivity. One can conclude then, that some export premia exist, especially for employment (151.6-180.8%), sales (18.9-27.8%) and productivity (17.5-22.2%), that the premia are greater for GVC trade (especially when measured by sales to foreign invested enterprises) and that the premia wear off substantially by 2015 (see table 3, columns (6)-(10)).

4. EXPORT DECISION

This section further explores the firm characteristics that may lead some of these firms to export. To explore the export decision, a probit model of the following form is estimated:⁷⁾

⁷⁾ The model derives from the dynamic export decision model with entry costs of Roberts and Tybut (1997), where the firm exports if export profit is greater than the cost of exporting such

$$Y_{it} = a_i + bX_{it-1} + nY_{t-1} + e_{it}. \quad (2)$$

Y_{it} is a binary dependent variable that takes the value of 1 if the firm i exports in year t and 0 otherwise. The independent variables X_i represent various firm characteristics that may affect firm i 's export decision. Here, they include the same variables representing firm performance discussed in section 2. An additional variable, product change is included in this estimation following prior literature which suggest that product attributes are important to the decision to export. The product change is a dummy variable taking a value of one if the firm introduced a new product in the year before it exports. The dependent variable Y_{t-1} represent export status in the previous year. The coefficient n on Y_{t-1} therefore represents the degree of sunk cost in exporting. All the dependent variables are lagged by one year to represent firm status before exporting. To eliminate possible bias and inconsistency arising from lagged endogenous variables, and avoid problems with unobserved heterogeneity, the model is estimated in first differences.

$$\Delta Y_{it} = b\Delta X_{it-1} + n\Delta Y_{t-1} + \Delta e_{it}. \quad (3)$$

The estimation is undertaken on a sample of firms that have been surveyed for all three years of 2011, 2013 and 2015. The survey provides financial data on two previous years. This gives a balanced panel of 1,693 manufacturing firms for 6 years of financial data and three years of data on other information such as exporter type and product change.

Table 4 reports estimation results for various modes of export. In general, the less productive firms with higher wage, greater capital intensity, prior

that $Y_{it} = \begin{cases} 1 & \text{if } \hat{\pi}_{it} > c_{it} + N(1 - Y_{it-1}) \\ 0 & \text{otherwise} \end{cases}$, where $\hat{\pi}_{it}$ is the expected export profit, c_{it} marginal cost and N , the entry cost. Here, following Bernard and Jensen (1997), a binary choice non-structural approach of the form $Y_{it} = \begin{cases} 1 & \text{if } bX_{it-1} + n(1 - Y_{t-1}) + e_{it} > 0 \\ 0 & \text{otherwise} \end{cases}$ is fitted.

For details on the methodological issues, see Bernard and Jensen (1999) and Roberts and Tybut (1997).

Table 4 Firm Characteristics and Export Decision

	Export (1)	Ordinary (2)	GVC (3)	Export Intensity (4)	SFE (5)
Value added per worker	-4.62×10^{-6} (1.55×10^{-6})***	-1.51×10^{-6} (1.64×10^{-6})	-7.33×10^{-6} (2.24×10^{-6})***	1.04×10^{-5} (3.45×10^{-6})**	-3.93×10^{-6} (2.29×10^{-6})*
Total employment	-0.009 (0.008)	0.011 (0.011)	-0.009 (-0.011)	0.001 (0.022)	0.002 (0.017)
Wage (labor cost/worker)	1.62×10^{-6} (8.31×10^{-7})**	1.09×10^{-6} (6.49×10^{-7})*	-6.66×10^{-7} (7.43×10^{-6})	-7.83×10^{-6} (5.71×10^{-6})*	5.62×10^{-6} (2.86×10^{-6})**
Capital intensity (asset/worker)	2.97×10^{-7} (1.67×10^{-7})*	1.92×10^{-8} (1.16×10^{-7})*	8.32×10^{-7} (2.92×10^{-7})***	-6.85×10^{-8} (4.77×10^{-8})*	-5.09×10^{-7} (3.00×10^{-7})*
Sales	-2.36×10^{-9} ($1.02e \times 10^{-8}$)	-1.04×10^{-8} (1.41×10^{-8})	-2.93×10^{-8} (1.52×10^{-8})*	-1.55×10^{-7} (5.85×10^{-8})***	2.66×10^{-8} (1.39×10^{-8})*
Non-production worker share	-0.018 (0.1096)	0.118 (0.110)	-0.304 (0.164)*	0.039 (0.282)	-0.253 (0.153)**
Prior export experience	3.021 (0.189)***	2.743 (0.206)***	2.435 (0.316)***	3.23 (0.534)***	2.442 (0.561)***
Product change	0.472 (0.266)*	-2.378 (0.491)**	0.8496 (0.254)***	-	0.3597 (0.234)
	N = 1,644 Wald Chi ² (24) = 881.21	N = 1,596 Wald Chi ² (22) = 695.81	N = 1,578 Wald Chi ² (21) = 732.85	N = 1,015 Wald Chi ² (14) = 326.7	N = 1,534 Wald Chi ² (21) = 815.17

Notes: 1) Prior export experience for export intensity mode is omitted due to multicollinearity. 2) * Significant at 10%, ** significant at 5%, *** significant at 1%.

export experience and product changes are shown to be more likely to export. For GVC traders (GVC and EI), smaller firms (measured by sales) and the less skill intensive (for GVC and SFE) were more likely to export. However, the extent of the impact is very small, except for prior export experience. The strongest factor affecting the decision to export is prior export experience, which is significant across all modes. This dwarfs all other effects, implying that large sunk cost is involved in export activities. Another common result across all modes is that employment has no impact on the likelihood to export. This may be because the sample consists of very small firms to begin with.

Some differences emerge when the Ordinary and GVC modes are compared. For the Ordinary mode, firms with higher wage are more likely to export. On the other hand, for the GVC mode, wage did not have an impact on the likelihood to export. Instead, firms that are less productive, smaller (less sales), but with the agility to change products are likely to export. This suggests that firms that engage in Ordinary and GVC modes of export may have quite different firm characteristics. However, it is difficult to be certain, since other measures of GVC trade do not always match with the results for the GVC mode. The SFE measure shows the same pattern as GVC mode with respect to productivity and share of non-production workers, but not with respect to capital intensity or sales. The difference may arise due to some of the sales to foreign invested enterprises being destined to the domestic market rather than the export market. Export intensity measure shows the same pattern with respect to sales and, while wage is negative but not significant for GVC, it shows up as negative significant for EI. So, with some caution, one can say that MSMEs that are smaller, less productive, less skill intensive, and paying lower wage, but with the agility to change products choose to engage in processing trade rather than ordinary trade.

5. EFFECT OF EXPORT ON FIRM PERFORMANCE

Analysis from the previous two sections show that there is export premia,

especially with respect to employment, sales and productivity, but that these three characteristics do not have a great impact on the probability to export, lending support to “learning by exporting” effect rather than the self-selection effect to explain the positive association between export and performance variables. This section tests the “learning through export” effect more explicitly. Again, following Bernard and Jensen (1999), the effect of export on firm performance is estimated by regressing percentage change in performance measure X_{it} on initial export status and other control variables, including initial firm characteristics.

$$\Delta X_{iT} = a + b_1 \text{Export}_{i0} + b_2 X_{i0} + e_{iT}. \quad (4)$$

The time subscript T stands for the last year covered in the survey (i.e., 2014), and 0 for the first year of export (i.e., 2011 for estimating the short run effect, and 2012 for estimating the medium run effect). The percentage change in firm performance is measured by average annual growth, $\frac{1}{T}(\ln X_{iT} + \ln X_{i0})$. Initial firm characteristics included as controls are labor productivity, total employment, wage, capital intensity, sales and share of non-production workers. Log values are used for all variables. Industry dummies are included, which take a value of 1 for the industry in which the firm belongs to in 2011, and 0 otherwise.

Table 5 reports estimated results by various modes of export. Panel a) shows the short run effect over two years from 2012 to 2014, and panel b) shows the medium run effect over four years, from 2010 to 2014. In both the short and the medium term, export in general has a significantly negative effect on productivity growth, while a significantly positive effect on employment growth. The increase in employment is mostly for production workers, since exporting has a significantly negative effect on the growth of non-production worker share. At the same time, export also has a significantly negative effect on capital intensity. These effects become weaker in the medium term, and wear off for changes in capital intensity. Export does not have any significant effect on the growth of wage or sales, but the negative signs disappear in the medium run. From this, one may conclude that exporting

Table 5 Effect of Export on Firm Performance by Mode of Export

Dependent Variable	Export	Ordinary	GVC	EI	SFE
a) Short run effect (2 year interval)					
Value added per worker	-0.094 (0.042)**	-0.075 (0.043)*	-0.113 (0.087)	-0.097 (0.077)	0.040 (0.128)
Total employment	0.093 (0.034)***	0.082 (0.039)**	0.092 (0.054)*	0.053 (0.046)	0.069 (0.115)
Wage (labor cost/worker)	-0.006 (0.028)	-0.014 (0.029)	0.017 (0.066)	-0.095 (0.041)**	0.038 (0.055)
Capital intensity (asset/worker)	-0.081 (0.046)*	-0.093 (0.050)*	-0.020 (0.080)	-0.161 (0.104)	0.017 (0.123)
Sales	-0.003 (0.046)	-0.019 (0.050)	0.0398 (0.076)	-0.077 (0.074)	0.105 (0.123)
Non-production worker share	-0.072 (0.029)*	-0.104 (0.033)***	0.040 (0.053)	0.028 (0.077)	-0.037 (0.097)
b) Medium run effect (4 year interval)					
Value added per worker	-0.049 (0.025)*	-0.023 (0.027)	-0.012 (0.014)	-0.049 (0.039)	0.135 (0.065)**
Total employment (control size by sales)	0.062 (0.022)***	0.031 (0.021)	0.021 (0.012)*	0.046 (0.038)	-0.097 (0.141)
Wage (labor cost/worker)	0.008 (0.015)	0.013 (0.019)	0.014 (0.008)	-0.006 (0.01998)	0.026 (0.032)
Capital intensity (asset/worker)	-0.035 (0.025)	-0.013 (0.029)	0.026 (0.017)	-0.079 (0.085)	0.047 (0.074)
Sales	0.056 (0.036)	0.060 (0.035)*	0.001 (0.0198)	0.3197 (0.062)	-0.011 (0.133)
Non-production worker share	-0.041 (0.015)**	-0.041 (0.018)**	0.001 (0.009)	-0.007 (0.027)	0.078 (0.050)

Notes: 1) a) Dependent variables are changes in performance variables. 2) All the regressions include initial firm performance (employment, wage, capital intensity, and non-production worker share) and dummy variables as controls. 3) Separate regressions are undertaken for each different export modes. 4) Sales is used as the control variable when the dependent variable is the change in employment. 5) Log values are used for initial firm performance. 6) The table reports only the coefficients on the initial export. 7) Full regression results are available on request. 8) * Significant at 10%, ** significant at 5%, *** significant at 1%.

has a negative effect on productivity growth but positive effect on employment of production workers, and the potentially negative effect on slow wage or sales growth may be mitigated in the medium-run.

Firms engaged in ordinary trade show similar results as export in general for the short run, but the significance wears off in two years. The positive effect on employment growth for GVC firms is significant for both short and the medium term, indicating that employment growth effect is particularly strong for GVC activities. Export intensity has a negative effect on wage growth in the short run, but the effect disappears in the medium term.

In the short run, sales to foreign invested firms have no significant effect on any of the performance variables. However, in the medium run, it shows a positive significant effect on productivity growth. It is interesting to note that coefficients for total employment and sales were positive in the short run but become negative in the medium run. This implies that working intensively with foreign invested firms may result in higher productivity growth, but slower growth in firm size in the medium run.

The preceding discussion reveals that the export premia in firm size which could not be explained by the selection effect can be explained by the learning effect, and that such an effect is greater for GVC traders than ordinary traders. The negative effect of export on productivity growth is however, more difficult to explain. Although labor productivity premium seems to exist, neither did productivity affect the probability to export, nor did export stimulate productivity growth. It should be noted however that the productivity premium only exist for the years 2011 and 2013. It turns negative in 2015. That is, the productivity premium may have been a short lived event at the start of the export boom. The more productive MSMEs that started to export then, however did not seem to have experienced productivity growth over the period 2011-2015.

The sales to foreign invested enterprises (SFE) mode shows a different pattern from other modes of globalization in many respects. This may be because not all of supplies to these enterprises are destined to the export market, and may face different competition dynamics. For the SFE mode,

“exporter” premia exist for all the performance variables, especially during 2011-2013, which is retained in 2015 except for labor productivity. The export decision estimation shows that such premia can be explained by the selection effect for wage and sales. Productivity premium can be explained not by the selection effect, but by the learning effect. However, the positive effect of export on productivity shows up only in the medium run. Employment, capital intensity and skill intensity cannot be explained by the selection effect, since these variables turn out to be negative in the export decision estimation.

6. CONCLUSION

This paper addresses the issue of MSME participation in the deepening regional integration in East Asia, by focusing on Vietnam. Based on a unique survey of MSMEs for 2011-2015, this paper adopted standard analytical methods in the literature to explore the existence of export premium, the selection effect and the learning effect to explain the premium if any. The contribution of the study is that it provides new information on MSMEs of developing countries undertaking GVC trade, study on which has been few to date.

The results from the analysis show that there is significant export premia with respect to firm size, and that the effect is greater for GVC traders than ordinary traders. This is a different finding from Vu *et al.* (2017) using export intensity as the main measure of processing trade. Since both export intensity and intermediate input exports used here are inferred, and not direct measures of GVC or processing trade, it is difficult to judge which measure is the better one. What has been shown here is that there are a variety of ways in which developing country MSMEs can serve the global market, and that firms with different characteristics choose different export mode. Further, the different modes of participation in the global production network affect firm performance differently. This can be most clearly be seen by the different

patterns shown by sales to foreign invested enterprises. Productivity improvement can be expected more from interacting with foreign companies closely, whether they serve the domestic or the global market, rather than engaging in exporting per se. GVC trade, however seems to help the firm to scale up.

The productivity premium could not be explained either by the selection or by the learning effect, but noting that the productivity premium disappears in 2015, one may conclude that such premium may have been a short-lived event at the time of the export boom in early 2010s. One strong result from the study is that there is large sunk cost in exports. That is, the traditional policy recommendation of reducing trade cost and providing trade finance would still be relevant for MSMEs, if the purpose of promoting export is to absorb unskilled labor. As to raise productivity of firms, more direct and aggressive efforts are necessary than to expect learning just from exporting, whichever mode of exporting is involved.

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