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Differentials in market constraints and value addition among micro, small, and medium enterprises in Viet Nam

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Abstract: This paper analyses the differentials of productive values in Vietnamese micro, small, and medium enterprises (MSMEs) and how market constraints have hindered their performance. Quantitative analyses suggest substantial differences in value addition among manufacturing MSMEs, and the crucial contribution of technology adoption to their development. We assess MSMEs' productive value, production organization and performance using qualitative analysis. Our case studies identify market failures hindering MSMEs' potential; explain their strengths and weaknesses; and assess how the market structure influences their production costs and business strategies. Drawing from these insights, we suggest policy options to strengthen capability and competitiveness of Vietnamese' MSMEs.

Keywords: Small and medium enterprise development, industrial policy, value addition, productivity growth, mixed research method, Viet Nam
JEL classification: D2, L11, L52, O14, O43, P23

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1 Introduction

Growth is more inclusive and sustainable if it creates opportunities for a wider group of entrepreneurs, a broader range of employment opportunities, and maximum positive spillovers and linkages with other industries. For developing countries that are still catching up technologically, the development of micro, small, and medium enterprises (MSMEs) provides such opportunities and benefits because MSMEs are drivers of growth and key builders of social infrastructure (Aremu and Adeyemi 2011; OECD 2004; Vives 2006). In 2012, Vietnamese MSMEs employed 98 per cent of the total labour force in Viet Nam, with micro enterprises employing approximately 68 per cent of that labour force (Agency for Enterprise Development 2015). However, MSMEs are most vulnerable to external shocks at home and abroad due to, among other factors, their inherent limitations in terms of firm size, capital stock, and technical capability. For example, the last global financial crisis partly contributed to the decrease in new business registrations in all sectors in Viet Nam, which dropped from 85,000 in 2009 to 70,000 in 2012 (Agency for Enterprise Development 2015). Weak market demands, as well as greater pressure from competition in domestic and global markets, also increased the number of failed start-up businesses, which either stopped operating or dissolved. In 2013, of the 723,000 established and registered enterprises in Viet Nam, more than half (376,223) were inactive (Agency for Enterprise Development 2015).

This paper analyzes the nuances of (1) how market failures, including volatility in market demand, information asymmetry, rent seeking, technical learning, and restriction on land access and financing, have impeded the development of MSMEs; (2) how such impediment varies among these three groups of firms; and (3) the varying degrees to which productive value is generated among MSMEs, given existing constraints. Our research questions are threefold. First, what are the major binding constraints faced by micro, small, and medium enterprises in Viet Nam? Second, what are the factors that create MSMEs' productive value and how do they affect MSMEs' capability and growth? Third, what are the practical and viable policy options that could support MSMEs' industrial capability given Viet Nam's political economy?

We define productive value as the advantages that firms gain through continuously improving their production, management, and business practices.[1] This is done through, for example, increasing product and service quality, reducing costs and reliance on intermediary goods, and improving firms' productivity by boosting technical learning, production organization, and managerial skills. The ability to generate productive value allows MSMEs to create various degrees of value addition in their production, and to impose a reasonable markup price for manufacturing goods. In this context, value added and markup prices are reflections of the strength of MSMEs' productive value. The concept of productive value is important for our qualitative analysis because it allows us to explore in depth the strengths and weaknesses of MSMEs beyond standard measurements used in quantitative analysis, such as profit, value addition, total factor productivities, etc. Indeed, productive value captures both these quantifiable factors and unquantifiable factors such as consumer loyalty, the benefits of after-sales services, and trust embedded in the supplier–buyer relationship.

We employ value addition as a proxy that measures the productive value of firms. This is because value addition is often used as an important measurement to evaluate MSMEs' productive strength, efficiency in converting inputs to outputs, and potentials. Value added is defined as a

[1] See Section 2 and Table 1 for detailed description of relevant business practices.

firm's contribution to the production of goods and services other than intermediate inputs by virtue of its productive activities. It is the difference between the value of output and the value of intermediate input. For instance, in most factories, careful management and arrangement of input/output inventory on the manufacturing floor allows for extra productive space and time, and thus leads to higher productivity of outputs per hour. This is the added value created by a firm's production organization that leads to higher output value and revenue.

This paper applies mixed research methods by incorporating both quantitative and qualitative analyses. First, we employ regression analysis to measure the differentials in value addition among micro, small, medium, and large manufacturing firms in Viet Nam. We utilize the 2015 enterprise survey data provided by the United Nations University World Institute for Development Economics Research (UNU-WIDER). Our quantitative data analyses suggest substantial differences in value addition among micro, small, medium, and large enterprises in Viet Nam. In addition, the adoption and adaptation of new technology make crucial contributions to the development of these enterprises.

Based on the findings in our regression analyses, our qualitative analyses provide in-depth explanations of the context and nuances of MSMEs' differentials in value addition, especially in the manufacturing sectors. The qualitative analyses are presented in two case studies. The first case study explains some major constraints faced by micro and small firms in the manufacturing sectors, such as accessing credit and technical know-how, identifying product trends, and improving managerial skills. The second case study illustrates the ways in which medium firms overcome these constraints in order to develop over time, as well as some new challenges that they face as their firm size increases.

The next section reviews the literature on the development of the firms, especially in terms of the perspectives and factors that influence firms' productivity, capability building, and growth. This is followed by our quantitative analysis of Vietnamese MSMEs' performance as measured by value addition. Next, we explain the findings in greater depth using qualitative analyses. The final section provides some comparative analyses among the three groups of firms and highlights some policy options both in the short term and the long term.

2 Conceptual framework of firms' productivity, and constraints to growth

The literature on small and medium enterprise development in recent years has primarily focused on improving MSMEs' competitiveness in order to enhance their ability to create jobs, knowledge spillovers, innovation, and transformation for industrial development (Aremu and Adeyemi 2011; International Labour Organization 2015; OECD 2004). This strand of literature argues convincingly that if MSMEs acquire stronger technological and production capability, then a country could hope to achieve rapid industrialization, higher growth, and enduring development. In this section, we provide a brief literature review on three important aspects of MSME development: (1) measurements of productivity and the contributing factors that affect MSMEs' development; (2) identifiable constraints that explain the bottlenecks that undermine MSMEs' efforts to grow and acquire more competitiveness; and (3) factors that could possibly explain differentials in firms' performance.

The first strand of literature on the development of firms pays particular attention to measurements and factors influencing firms' capability, most notably the measurement of productivity—a factor indicating the strength, capability, and survivability of businesses. As firms' productivity improves and industries develop, economic growth occurs and in turn stimulates

further development of firms and industries. Researchers have constructed various measurements to evaluate firms' productivity, including most notably labour productivity (Akkemik 2009), total factor productivity (Balakrishnan and Pushpangadan 1994), cost-share-based total factor productivity index (Syverson 2011), and value added production function (Lieberman and Kang 2008; UNIDO 2016).[2] There are some major factors contributing to productivity improvement explained in the literature. First, research findings stress the importance of learning-by-doing in the production improvement of enterprises (Arrow 1962; Khan and Blankenburg 2009; Lall 1992; Levitt et al. 2013; Rodrik 2004; Tybout 2000). In their in-depth research into an auto assembly plant over a one-year period, Levitt et. al. (2013: 635) find 'considerable evidence of learning by doing in quality and quantity productivity performance, particularly early in the production year'. In addition, 'most of the knowledge stock built by learning does not stay with the plant's line workers. Instead, it quickly becomes embodied in the physical or broader organizational capital of the plant' (645), allowing for tacit knowledge to be permanently integrated into the production processes of the firm.

Second, government and its institutions can also support firms' growth (Chang and Cheema 2002; Deraniyagala 2000; Fine 1997; Lall 2004; Masina 2006; Ngo 2016a; Ngo 2016b). Hansen et. al. (2009) utilize survey data in Viet Nam during the 1990–2000 period to analyse the effects of government assistance. Their research finds that 'initial government support to enterprise has been a statistically significant determinant of firms' growth and this is the case even when controlling for relations with the state' (Hansen et al. 2009: 1064). For example, 'receivers of temporary tax exemptions in the group of non-household enterprises have grown faster compared to their non-receiving counterparts' (1064). Finally, the availability and the use of capital and labour are also important components. Tran et al. (2009) develop an indexing method that 'decomposes the contribution of productivity, prices and firm size to the firm's value added'. Using survey data from between 1996 and 2001, the authors find that in Viet Nam, 'large firms use capital more efficiently than smaller firms, while labour productivity is somewhat similar among different firm sizes' (Tran et al. 2999: 283).

The second important strand of literature analyses potential market and institutions that constrain firms' productivity and growth. For instance, Khan (2015) points out that the absences of (1) investments in formal skills, (2) advanced technology, (3) co-ordination among state agencies and firms, and (4) learning and organizational capability on the manufacturing floor can severely hinder firms' ability to develop their competitiveness. Uncertain business environments such as input or demand shocks can discourage firms from making a long-term investment in new technologies and thus force them to rely heavily on existing competitive advantage (Lambson 1991; Tybout 2000). In the context of pervasive low levels of labour skills and training in developing countries, firms can be locked into low-cost and low-skill production, thus preventing them from gaining a new competitive advantage. Finally, the lack of information—changes in market demand, inputs, new technologies, credit, consumer tastes, and preferences—can also severely impair firms, particularly small and micro enterprises, in finding clients and cheaper inputs, and in making informed investment decisions (Sengupta 2012).

Third, empirical researchers have noted substantial differentials in firms' performance—measured either by productivity or by value addition—among groups of firms either in the same industry or in general. One important finding in the research by Syverson (2011: 326) is the recognition of 'enormous and persistent measured productivity differences across producers even within narrowly defined industries'. Similarly, Aw et al. (2001: 80) find that 'there are significant

[2] In this paper, we use value addition as a measurement of firms' productivity.

differences in total factor productivity across firms'. In particular, 'new firms have lower average productivity than incumbents', although productive new firms that survive 'converge to the productivity level of incumbents' (Aw et al. 2001: 80). Syverson (2011) explains the differences by looking at internal and external factors contributing to the differences in MSMEs' performance. Internally, a firm can improve its productivity using (1) good managerial practices or the talents of managers, (2) higher-quality general labour and capital inputs, (3) information technology and research and development, (4) learning-by-doing, (5) product innovation, and (6) firm-structured decisions. Implicitly, the lack of one or more of these factors can impose constraints and thus prevent firms from being more productive.

Firms' operating environment can also influence their productivity levels and growth, either directly or indirectly. For instance, external factors such as market volatility can affect firms' performance and influence investment decisions such as choice of product and technology. Tybout (2000) points out:

> [V]olatility in the business environment – both regulatory and macro economic – can discourage mass production techniques. Investments in fixed capital involve long-term commitment to particular products and production volumes. If there is substantial uncertainty about future demand conditions of these products, it often makes sense to choose production techniques that do not lock one in; that is, to rely more heavily on labor. (Lambson 1991, quoted in Tybout 2000)

Syverson (2011) lists four major external factors that could explain the differentials in firms' productivity level: (1) productivity spillovers, (2) competition, including intra-market competition and trade competition, (3) deregulation and proper regulation, and (4) flexible input markets. For example, producers operating in a limited geographical area will often benefit from knowledge spillovers among a pool of educated workers[3] compared to those who operate from far away (Moretti 2004). This, in turn, allows for higher productivity growth among firms that experience the agglomeration effects (Moretti 2004; Syverson 2011). In another example, a flexible input market could raise firms' productivity level (Syverson 2011), especially where inputs such as skilled labour can be easily acquired in order to adjust production operation or to design and test a new product. Table 1 sets up a broad conceptual framework for the development of small and medium enterprises. It combines all the factors discussed above that influence firms' capability building and productivity level. Similarly to Syverson (2011), we categorize all the factors into two groups: internal and externals. The table provides a rough guideline and checklist for the analysis of firms' differentials in value addition, as well as productive value, as discussed in our quantitative and qualitative analyses. These factors are also important considerations that guide our policy suggestions to support MSME development in Viet Nam.

[3] Moretti (2004) defines this as workers who have completed high school and have some college education.

Table 1: Factors that enhance or constrain MSMEs' development

Internal factors	External factors
Managerial practices	Productivity spillovers
Quality of general labour and capital inputs	Competition: intra-market competition and trade competition
Adoption of technology, and R&D	Quality of institutions and regulations: investment law, labour law, and industrial policies
Learning-by-doing	Stable and/or flexible input market
Product innovation	Co-ordination between state agencies and firms, as well as among firms within the supply network
Decision-making structure	Weak labour supply that lacks skills and training
Production organization	Demand volatility in the global, regional, and domestic markets
Access to market, input, and consumer information	

Source: authors.

By inference, the lack of one or more of these factors can impose constraints on MSMEs and hinder their growth potential. For example, if a manager of a medium-sized firm lacks sufficient experience in managing more than 50 employees and the scale of operation which accommodates them, he could undermine the production capacity of the labour, other inputs, and the machines, and thus operate at lower productivity level. Based on this conceptual framework, we ask to what extent these factors play a role in the creation of productive value, and whether their roles vary depending on firm size. For instance, product innovation may play a larger role in creating extra value in the niche market for small firms than for medium firms that largely rely on mass production of basic components for global buyers. Our qualitative analyses provide nuances to this important aspect of the research paper.

3 Quantitative analysis: technology adoption and differentials in value addition among MSMEs

3.1 Descriptive statistics

Our data for the quantitative analysis are from the Viet Nam 2015 Enterprise Survey, which was conducted by UNU-WIDER and Vietnam's Central Institute for Economic Management.[4] The enterprise survey was conducted in June and July 2015, and was administered to 2,648 formal and informal micro, small, medium, and large enterprises engaged in the private manufacturing sector in nine provinces of Viet Nam. The enterprises are distributed across approximately 18 manufacturing sectors. In our analyses, we use the World Bank classification of enterprises that splits Vietnamese enterprises into four groups of firms. Micro enterprises are those which have up to ten employees, small-scale enterprises up to 50 employees, medium-sized enterprises up to 300 employees, and large enterprises over 300 employees. The wide range of detailed questions in the survey enables us to unveil important patterns in the manufacturing industries and the factors that influence MSMEs' productivity and growth potential. This section provides descriptive statistics on three important issues: (1) current performance of firms by size and sector; (2) MSMEs' current major constraints and barriers to growth; and (3) the role of the government in helping to expand and increase MSMEs' profits.

[4] Unpublished data collected as part of the project 'The small and medium enterprise (SME) survey', available at: www.wider.unu.edu/project/small-and-medium-enterprise-sme-survey (accessed 3 April 2007).

Table 2 provides summary statistics. Given the diversity of firms in the survey, we further examine their features by size and sector. Among the 2,648 firms surveyed in 2015, there were 2,018 micro-sized enterprises, 469 small firms, 149 medium-sized firms, and 12 large firms. Large firms had the highest total value added (revenues from sales minus total costs of intermediate, indirect, and raw materials) of 2014, while medium-sized firms had the highest total gross profit (total value added minus total labour costs).

Table 2: Summary statistics

	Value-added, 2014 (million VND)	Profit (million VND)	Tech (%)	Internet (%)	Difficulties in recruiting (%)	Red tape (%)	Informal/ bribe (%)	Constraints to growth (%)	Obs.
By size:									
Micro	415.9	265.6	3.0	26.9	15.0	1.6	33.9	90.3	2,018
Small	2,947.0	1,632.2	9.0	84.0	27.0	2.6	69.9	96.8	469
Medium	15,177.8	9,085.7	17.4	99.3	36.7	3.2	83.9	99.3	149
Large	21,455.9	7,709.6	7.1	66.7	28.6	2.0	33.3	64.3	12
By sectors:									
Food and beverages	865.2	558.5	4.8	21.0	11.4	1.5	29.8	87.5	838
Textiles	1588.3	874.9	4.7	60.0	37.0	1.9	38.4	94.2	86
Apparel	3638.5	1471.5	4.3	66.0	26.6	2.6	61.0	94.3	141
Fabricated metal products	1178.2	634.1	4.7	38.9	28.4	1.7	39.3	92.4	450
Electronics	2694.6	1389.2	6.8	81.4	28.6	2.8	72.9	94.9	59
Motor vehicles	3099.1	950.0	0.0	66.7	33.3	1.9	66.7	100.0	12
Other transport equipment	1195.7	362.3	0.0	57.1	0.0	1.0	28.6	100.0	7
Services	-	-	0.0	58.8	26.7	1.7	50.0	91.2	34

Source: authors' analysis based on SME survey (see footnote 2).

Medium-sized firms also ranked the highest in terms of the following features: 17.4 per cent had introduced new production processes/new technology since 2013 (almost double the share of small firms adopting new technology); 99.3 per cent had internet access; 36.7 per cent experienced difficulties in recruiting workers with the required/appropriate skill level in 2014; 3.2 per cent of management's working time was spent each month dealing with government regulations and officials (including taxes, permits, licences, businesses, and trade regulations); 83.9 per cent had to pay informal/communication fees; and 99.3 per cent faced major constraints on growth as of 2015. Micro firms had the worst performance compared to other firm sizes: their average value added in 2014 was only 14 per cent of that of small firms, only 3 per cent of micro firms had adopted new technology since 2013, and only 26.9 per cent had internet access. But despite having the lowest value added and profits, micro firms were the least likely to have difficulties in recruiting

labour, were second lowest in paying informal fees, spent the least time dealing with red tape, and were less likely to face major constraints to growth compared to small and medium-sized firms.

To draw a comparison with the qualitative analysis, summary statistics are reported for the following sectors: food and beverages, textiles, apparel, fabricated metal products, electronics, motor vehicles, other transport equipment, and services. Raw data reveal that the apparel sector had the highest value addition and profit, while the food and beverages sector had the lowest value addition and the other transport equipment sector received the lowest profit. In the electronics sector, 6.8 per cent of firms adopted new technology, while the motor vehicles, other transport equipment, and services sectors did not adopt any new technology. Again in the electronics sector, 81.4 per cent of firms had internet access; the percentage drops to 21.0 per cent in the food and beverages sector. Among firms that recruited workers in 2014, 37.0 per cent of those in the textiles sector reported having difficulties recruiting skilled labour, while none of the seven firms in the other transport equipment sector reported such difficulties. In terms of time spent dealing with red tape and the need to pay bribes, the electronics sector had the highest percentages and the other transport equipment sector had the lowest. All of the firms in the motor vehicles and other transport equipment sectors reported facing major constraints to growth, while the percentage drops to 87.5 per cent in the food and beverages sector.

Table 3: Major constraints on growth

	Most important	%	Second most important	%	Third most important	%	Obs.
Firm size:							
Micro	Too much competition/ unfair competition	43.8	Current products/ services have limited/ reduced demand	19.8	Shortage of capital/ credit	17.8	1,823
Small		33.5	Shortage of capital/ credit	27.1	Current products/ services have limited/ reduced demand	16.1	454
Medium		31.1	Shortage of capital/ credit	25.0	Current products/ services have limited/ reduced demand	14.9	148
Large		22.2			Lack of skilled workers in the local job market	11.1	9
	Current products/ services have limited/ reduced demand	22.2			Lack marketing services or transport facilities	11.1	
					Inadequate premises/ land	11.1	

Source: authors' analysis based on SME survey (see footnote 2).

When asked what the bribe payment/communication fee was mainly used for, 24.5 per cent of the firms responded 'to deal with tax and tax collectors', 19.0 per cent used the fee to get connected to public services, and 36.6 per cent mentioned 'other reasons' (apart from the above-mentioned two and the following: to gain government contracts, to get licences and permits, and to deal with customs). Table 3 lists the top three most important constraints on growth, sorted by the shares of firms identifying each. Firms consistently singled out the following three constraints: too much competition/unfair competition, current products/services have limited/reduced demand, and shortage of capital/credit.

Table 4: Government support

Firm size:	Most important	%	Second most important	%	Third most important	%	Obs.
Micro	By providing easier access to credit	17.3	Through better private sector policies	12.8	Through better private sector policies	21.3	447
Small	By providing easier access to credit	23.3	Through better private sector policies	13.1	Through better private sector policies	24.4	1,794
Medium	By further removing bureaucratic requirements/ restrictions	22.9	Through better private sector policies	14.1	Through better private sector policies	25.5	144
Large	Assistance with premises/ land	30.0	Through assistance with marketing	33.3	Through better private sector policies	40.0	10
					By restricting competition from (illegally) imported goods	40.0	

Source: authors' analysis based on SME survey (see footnote 2).

Table 4 reports the shares of firms identifying how the authorities could best help to expand and increase the enterprise's profits. The top three answers were: by providing easier access to credit, by further removing bureaucratic requirements/restrictions, and through better private sector policies.

3.2 Regression analysis

In this section, we conduct multivariate regression analyses to formally evaluate the following research questions. First, does technology adoption improve value addition among Vietnamese MSMEs? The current literature suggests a strong relationship between technology adoption and productivity growth among firms (Bartelsman et al. 1998; Benhabib et al. 2017; Syverson 2011). In this regression, we will specifically examine if there was indeed a relationship between technology adoption and improvement in value addition occurring among Vietnamese MSMEs in the manufacturing sector. Second, what were the differentials in MSMEs' ability to generate value addition in 2014? Given the established literature on firms' differentials in productivity (Bartelsman and Doms 2000; Syverson 2011), we assess whether such differences exist among MSMEs in Viet Nam. If they do, we measure the extent that value addition varies among four groups of firms. The following baseline model is used for the estimation:

$$Y_i = X_i'\beta_1 + T_i\gamma + \varepsilon_i$$

In this equation, Y_i is the log of value added for firm *i*. X_i is a vector of firm characteristics, including: (1) firm size; (2) experience of the firm and its squared term (i.e., how long the firm has operated as the current firm); (3) professional education category of the manager/owner; (4) development level of infrastructure (which incorporates the following infrastructure categories: main (paved) road leading to the firm, easy access to rail, easy access to port, access to public electricity grid, and access to publicly provided water system); and (5) an indicator of internet access. T_i is the indicator for new technology adoption, which equals 1 if the firm has introduced

new production processes and/or new technology since 2013, and 0 if otherwise. The coefficient γ reflects the effect of technology adoption on a firm's value added.

According to Miller (1978) and Syverson (2011), larger firms have a productivity advantage due to scale efficiency and are expected to earn higher profits. We include the experience of the firm to capture the 'learning-by-doing' aspect of business, which helps improve a firm's productivity. The professional education of the manager/owner is included because Bloom (2007) and Syverson (2011) find that well-educated managers are more likely to hire well-educated workers, which could affect firm performance. As pointed out by Bartelsman and Doms (2000), Nelson (1981), and Newman et al. (2015), access to infrastructure is an important determinant of firm performance due to its impact on both production technique and the costs of servicing distant markets. We construct a variable indicating the level of infrastructure access and also include an indicator of internet access.

Table 5 reports selected Ordinary Least Squares (OLS) estimates. Results show that technology adoption increases total value added by 45.4 per cent, and internet access is associated with an 86.9 per cent increase in value added; both are statistically significant at the 1 per cent level. Development level of infrastructure also has a statistically significant effect on total value added: compared with firms that have access to only one of the five categories, firms with access to all five infrastructure categories have 77.8 per cent higher value added. After controlling for firm characteristics, medium firms on average have 242.8 per cent higher value added than micro firms, outperforming both small and large firms. The difference in the effect of firm size on value added is also statistically significant.

Table 5: Selected OLS estimates, dependent variable: ln (value added)

	Est.	SE
Tech	0.454**	0.115
Internet	0.869**	0.064
Small	1.501**	0.074
Medium	2.428**	0.120
Large	1.377**	0.376
Infrustructure_2	0.179	0.193
Infrustructure_3	0.403*	0.189
Infrustructure_4	0.534**	0.192
Infrustructure_5	0.778**	0.188
Constant	4.635**	0.237
R^2	0.503	
N	2,601	

Notes: Control variables included but not reported: experience and its squared term, professional education categories of the owner/manager; * $p < 0.05$, ** $p < 0.01$.

Source: authors.

Estimation results lead to some important observations. First, technology adoption, internet access, and development level of infrastructure are associated with higher total value added. Secondly, medium-sized enterprises outperform micro, small, and large firms in terms of total value added, while micro firms have the weakest performance.

Combined with summary statistics on current constraints and obstacles, results show that the high-performing medium-sized enterprises benefit from technology adoption and internet access, but also face the most barriers in terms of red tape, informal communication fees/bribe, and difficulties in recruiting skilled labour. In addition, access to infrastructure increases value added for MSMEs. In the next section, our qualitative analysis provides valuable insights into what prevents firms from achieving higher value added, and offers potential policy options.

4 Qualitative analysis: market constraints and productive values of MSMEs

In this section, we explain how the productive value is generated in two major groups of firms: (1) micro and small, and (2) medium firms. Our qualitative analyses describe the differentials shown in our quantitative analysis and the specific constraints that firms face in the context of regional and global integration. The qualitative data are primarily based on our fieldwork trips conducted in June, July, and November 2016, with 34 in-depth semi-structured interviews with firms' owners and/or managers, government officials, bank managers, and experts in five provinces of Viet Nam. We interviewed a total of 22 local firms—nine small enterprises, seven medium enterprises, and six large enterprises—as well as four large foreign companies that source component manufacturing from Vietnamese producers. During the interviews, we identified key factors which either enhance the productive value of the firm's output or impede the firm's performance. The interviews were 1–3 hours in length. Thirty interviews were conducted in Vietnamese. The remaining four that involved foreign investors were in English. Most interviews were recorded with the permission of the interviewees and later transcribed into text. If we could not obtain permission to record the interview, notes were taken and a detailed summary of the interview was done afterward.

Our qualitative data for small and micro firms are similar; both groups exhibit similar characteristics and constraints. Also, firms frequently move between the two size groups—micro and small—every few years depending on the market demand for their goods. Hence, the qualitative data do not warrant separate treatment for these two groups of firms. On the other hand, our qualitative data suggest that small and micro enterprises are substantially different from medium enterprises. Therefore, we develop the two case studies based on these differences.

4.1 Micro and small manufacturing firms

Micro and small firms display some common characteristics. First of all, the barriers to entry for many firms in the manufacturing industry are low, as the fixed costs and start-up costs are relatively small due to the size of the firms and the scale of their operation. As a consequence, there is high turnover among these firms (interviews with manufacturing firms, June and July 2016; see also Tybout 2000). This is especially the case among enterprises engaged in food and beverage industries, but it also holds true in component manufacturing. In the latter industry, small and micro component suppliers need only to buy second-hand machines, hire some workers, and purchase inputs in the local market, and they can already begin to produce in small quantities, especially for aftermarket products and simple components that do not require complex technical skills (interviews with managers of micro firms, June, July, and November 2016). Because of low barriers to entry, profitable manufacturing industry tends to consist of a high number of firms competing in a small domestic market (Table 6). Consequently, micro and small firms tend to face fierce competition, which sometimes ends with a price war, low profit margin, and low value addition (interviews with managers of micro firms, June, July, and November, 2016). This observation is consistent with the descriptive statistics shown in Table 2—micro firms exhibit the

lowest value addition, followed by small firms. More specifically, compared to micro firms, medium firms generate 36 times higher value addition, and small firms generate seven times higher value addition. Table 6 provides the number of active enterprises in Viet Nam in 2012 categorized by the size of the firms.

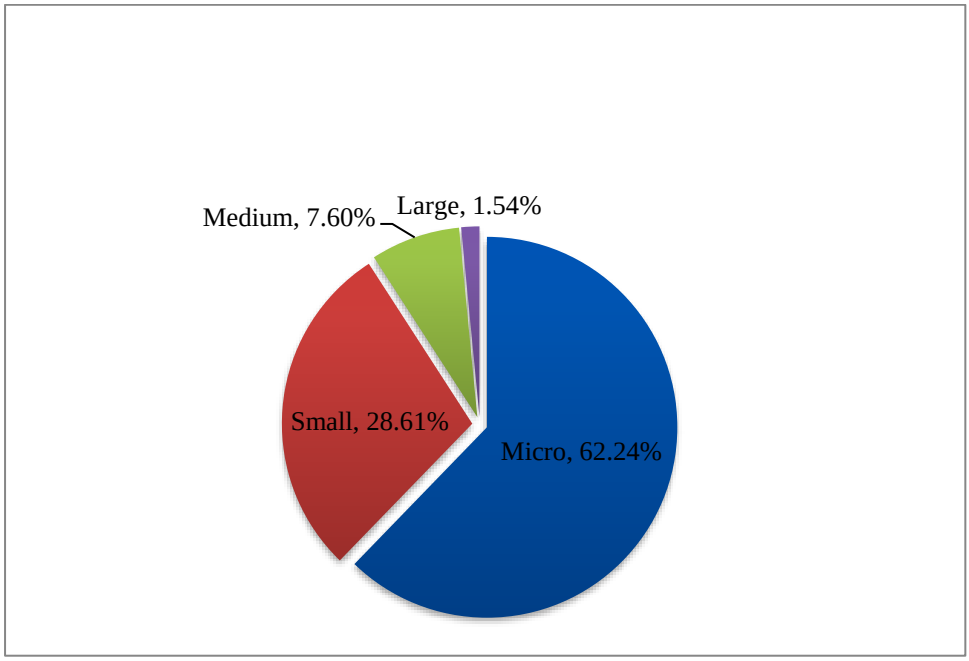
Table 6: Number of active micro, small, medium, and large enterprises in 2012

	Micro	Small	Medium	Large	Total
No. of enterprises	202,090	92,912	24,694	4,995	324,691
%	62.24	28.61	7.6	1.538	100

Source: authors' calculation based on Agency for Enterprise Development (2015).

Figure 1 illustrates that, in 2012, almost 91 per cent of active enterprises in Viet Nam were micro and small enterprises, while only 7.6 per cent of all enterprises were medium-sized. Large firms only made up 1.5 per cent of all enterprises in 2012.

Figure 1: Percentage of micro, small, medium, and large enterprises in 2012



Source: authors' calculation based on Agency for Enterprise Development (2015).

Another common characteristic of small firms that engage in component and garment manufacturing is that they experience frequent fluctuations in market demand and thus are susceptible to shocks. For instance, orders are often unpredictable for micro and small firms, as not all customers repeat the order: orders are frequently a one-time deal (interviews, two small firms, Ho Chi Minh City, 9 June 2016; Ha Noi, 23 June 2016). One of our interviewees explained that it is easy for his business to acquire new customers, but they are not loyal, and buyers change suppliers frequently on the basis of price (interview, micro firm, Ha Noi, 23 June 2016). This is different from the situation of medium and large firms, which often enjoy repeat customers and orders that are placed far in advance. This is even more the case for large firms. A large garment manufacturing firm in Ho Chi Minh City told us that the company had filled its work schedule with foreign buyers' orders twelve months in advance, until June 2017 (interview, 9 June 2016). One small garment manufacturer that we interviewed explained that other than taking orders directly from buyers, the company often received orders from medium and large firms that would

subcontract the job to them, since the order was either too small for these firms or they had reached maximum production capacity (interview, small firm, Ho Chi Minh City, 9 June 2016). Such scenarios are unpredictable and often require small and micro firms to be extremely flexible with their production capacity given the volatile demand for their goods. Because of the uncertain nature of the buyer–seller relationship, micro and small firms are more vulnerable to market conditions and demand shocks, which prevents them from undertaking advanced planning for investment expansion or upgrading (interviews with managers of micro firms, June, July, and November, 2016). As a consequence, many of the small firms frequently rely on their existing comparative advantage in low-cost labour, land, and other inputs. Thus, they only engage in relatively low-tech and low-skilled production.

In manufacturing, micro and small firms are heterogeneous, dynamic, and adaptive. Their regular entry into and exit from an industry create a competitive environment, which forces surviving firms to put in real efforts to generate higher value and productivity in order to stay competitive (interviews, three small firms, Ho Chi Minh City, 9 June and 17 November 2016; Ha Noi, 23 June 2016). They also act as buffers or lower-tier suppliers for medium and large firms in local supply chains. They often work hard, such that they save costs in management and labour. Table 7 lists the internal and external factors affecting the productive value of micro and small firms based on the interviews that we conducted.

Table 7: Factors affecting productive value of micro and small firms

	Internal factors	External factors
Strengths that create productive value	Flexible and dynamic Low management cost	Investment law framework allows for business freedom in starting a new enterprise, obtaining a business licence, and securing financing.
Constraints that hinder development	Severe lack of information on market, technology, domestic suppliers, and consumer preferences Weak cash flow and difficulty in accessing formal loans Weak or inconsistent management and production capability	Low barriers to entry, leading to intensive competition in low-tech, low-volume manufacturing Fragmented and weak institutional supports for MSMEs

Source: authors.

Due to the lack of initial capacity, as well as the pervasiveness of competition and market constraints, micro and small firms create less value addition than medium firms. First, small firms lack capacity particularly in production management, information on market trends, knowledge of input sources, and managerial practices. Not coincidentally, they are also the group of firms that pay the least for management costs, as the owners tend to run the business by themselves. Two of the managers of the small firms we interviewed explained that they lack information to help them identify or predict market changes, technology, and global shocks (interviews, two small firms, Ha Noi, 23 June 2016; Ho Chi Minh City, 19 November 2016). Micro and small firms tend to have weak networks and relationships with suppliers within the industry. Most of the firms that we interviewed do not take part in their industry association and/or information-sharing events with the managing ministry. In addition, micro and small firms often do not have spare financial and human capacity to improve product management or to invest in marketing and branding (interviews, two small firms, Ha Noi, 19 June and 23 June 2016). Those that are more successful

seem to be those that either have worked for a foreign company before or have been working abroad as exported workers.

Although micro and small enterprises save costs in management, they incur higher average costs. Because micro and small firms' orders and customers frequently change, small firms tend to experience long downtime and thus they often do not use up their production capacity, which results in high average costs. The manager of a medium-sized firm that often sources its orders from smaller component manufacturing firms explained in an interview that there are over 100 smaller firms in his industry, mechanical and precision manufacturing, from which his company could source orders. However, reliable small firms that are capable of providing consistent quality products are few. The same manager said that there are about five small companies that his company often uses to source orders from when his firm is not willing to fulfil the order itself given the high costs of production for small-volume orders (interview, medium firm, Binh Duong, 28 June 2016).

Finally, micro and small firms appear to have extremely limited access to the formal credit market. The six small firms we interviewed explained that the majority of their investment in the business was from retained earnings and informal sources such as their own savings and borrowings from their family or friends (interviews, six small firms, Ha Noi and Ho Chi Minh City, June and November 2016). This observation is also consistent with the 2015 Enterprise Survey. Based on the data, 69 per cent of large firms disclosed that their main source of finance for new investment is formal loans. None of our interviewees mentioned banks as their main source of borrowing. We asked why they did not leverage their investment through bank loans; they explained that commercial and state banks have strict requirements for lending. For instance, firms need to use land and/or machines as collateral, neither of which the firms have in sufficient quantities, if at all. In addition, there are requirements for tax filings and income statements for the last 3–5 years, which micro and small firms normally do not have either (interviews, five small firms, Ha Noi and Ho Chi Minh City, June and November 2016). We interviewed a branch manager at ACB Bank, a large private joint stock bank in Ho Chi Minh City, who made similar remarks about lending requirements for small and micro firms (interview, 15 November 2016). The severe constraint in financing explains the responses from these firms which think that the government could best help them by providing easier access to credit (Table 4). The lack of access to credit and finance partly explains the low level of new technology adoption among micro and small firms. The Enterprise Survey conducted in 2015 shows that the percentage of micro and small firms that adopted new technology (roughly 3 per cent and 9 per cent, respectively) is much lower than the percentage of medium firms (17.4 per cent) that did so (Table 2).

4.2 Medium manufacturing firms

Compared to small and micro firms, medium firms appear to have a better understanding of market information, and of their own strengths and weaknesses. Yet, our analysis suggests that their constraints are harder to resolve and require more thoughtful and effective government support. In general, medium firms make up a much smaller percentage (approximately 7.6 per cent) of the total number of enterprises in Viet Nam (Figure 1). Within the Vietnamese market, local medium-sized firms compete quite intensively among themselves, and also with foreign firms that came to Viet Nam to supply components and intermediary goods for major multi-national corporations (MNCs). Most Vietnamese medium firms are lower-tier suppliers for many foreign firms which are looking to reduce costs by importing and to take advantage of the cheaper components produced by Vietnamese suppliers.

Our interviews with government offices that are supporting MSMEs suggest that many government policies and subsidies have (intentionally or not) benefited medium and large firms rather than micro or small firms (interviews, government officials, Ha Noi, 17 June and 21 June 2016). One director of a research institute that is part of the Ministry of Industry argued that it is better that government policies focus on medium and large firms, since the strength of this group will create higher spillovers to other groups. For small and micro firms, it is unclear how they would make the best use of the subsidies, since a number of them lack the productive capability and may exit the market. On the other hand, medium firms seem to have proven their ability to develop capability, and many of them have survived numerous shocks in a very uncertain market environment (interview, government official, Ha Noi, 26 June 2016). In Table 8, we summarize the factors that affect medium firms' productive value which are discussed throughout this section. Many of the constraints suggested by our interviewees are consistent with the descriptive statistics shown in Table 3.

Table 8: Factors affecting the productive value of medium firms

	Internal factors	External factors
Strengths that create productive value	Flexible and dynamic Very market-oriented and constantly looking to improve their competitive advantage and capacity Capable management; some firms employ good business practices such as frequent labour training, continuous improvement in production organization, and upgrade of machinery	Investment law framework allows for business freedom in starting a new enterprise, obtaining a business licence and securing financing
Constraints that hinder development	Severe competition among local firms, and between local and foreign firms Lack of information and training to broaden market access in regional and global markets High-cost access to finance Weak labour market that results in high cost of training Some firms have experienced high cost of land in recent years Heavy reliance on inputs from abroad while lacking information on local suppliers	Low barrier to entry leading to lots of competition Fragmented regulations and weak institutional support for MSMEs

Source: authors.

Having grown from smaller-sized and low-capacity production to become medium-sized firms, this group of enterprises acquires basic strength in production, management, and servicing foreign buyers in the domestic market. They often have longer tenure in the industry. Some medium firms described to us how they overcame the major demand shock in 2008–2009 and a minor shock in 2012 when the global market slowed. Vietnamese medium firms also have a clear competitive advantage in (low) price compared to their Chinese, Thai, and Malaysian counterparts, especially when taking into account after-sale service and product quality. In our interviews, three foreign purchasers in Ha Noi and Ho Chi Minh City observed that Vietnamese producers offer cheaper pricing than their competitors in China, Thailand, or Malaysia. They explained that the price difference varies from 10 per cent to 30 per cent (interviews, three foreign companies, Ha Noi and Ho Chi Minh City, June and July 2016). Vietnamese MSMEs' competitive advantage in pricing, particularly among medium enterprises, suggests that Vietnamese firms have a window of opportunity to exploit international market demand in order to improve learning, upgrade their capacity, and advance their competitiveness.

Among the medium firms that we interviewed, some are more active than others in improving their productive value and competitiveness, and this is visible in their production plants. These

firms pay more attention to improvements to their production process, maintenance of machines, inventory of intermediary goods, and the discipline of the workers. The firms that are more competitive are also more proactive in developing their own brands, training their workers on a regular basis, and seeking to gradually gain higher levels of international certification. They also maintain contact with supervising government agencies for information on foreign buyers and on government policies which may provide them with support. They try to seek out new markets and buyers both locally and abroad. The differences between high-value firms and lower-value ones are visible both at the production plant and in discussions of their business plans and production strategies. Low-value medium firms tend to be more passive in seeking new businesses, employ older technology and equipment, and utilize lower-skilled workers. Their production plants are less organized, and it was noticeable that their machines are older, some of them second-hand equipment made in China.

When we asked medium firms about their constraints, the interviewees tended to answer in two parts—internal and external constraints. Internally, medium firms can often access the credit market through bank loans, although the cost of credit and conditions required to access loans are high, varying between 4 and 17 per cent. Two mechanical parts manufacturing firms in the Binh Duong and Dong Nai provinces explained to us that, to grow bigger, they need lower lending rates so that they can make new long-term investments in machinery, technology, and labour training. At the moment, given the high rates of interest, the interviewed firms only borrow when their clients require new investment or to cover input costs incurred between production and payment, a period which can vary from three to six months (interviews, two medium firms, Binh Duong and Dong Nai, 28 June and 1 July 2016).

The 2015 Enterprise Survey by WIDER suggests that medium firms are more likely to export. The data shows that 42 per cent of medium firms export, compared to 13 per cent of small firms and 1 per cent of micro firms. To grow larger and stronger and achieve higher productive value, medium firms are aware that they need to expand their customer base and access the international market. However, interviewed firms admitted that they lack the information and capacity to participate in international and regional markets (interviews, three medium firms, Ha Noi, Binh Duong, and Hai Duong, June and July 2016). The same medium firms said that they would like to supply parts and components to international buyers, effectively to integrate deeper into the higher-value segment of the global value chain. However, they simply do not know how to approach new clients and are often quite passive in marketing, branding, or acquiring higher, international-standard certification to meet buyers' needs. Medium firms also need support for the optimization of production and labour management that could improve the overall level of their competitiveness. In sum, having access to capital and new markets, and improvement in production management, are key for the medium enterprise group to become more competitive and to develop.

In the context of severe competition with other domestic firms (which tend to compete in price), and foreign firms (which offer high-tech and high-quality products), the mid-range medium-sized firms are under tremendous pressure, and yet they are highly dynamic in seeking to stay competitive in the market. They work hard to improve the quality of their products, while still keeping prices low. A manager of a medium firm in Binh Duong province told us that, in order to add extra value to its sales, his company also offers after-sale services, which includes fixing defective products, modifying them, or ensuring that the delivery meets all requirements in the contract. He explained that it is extremely important that his company is honest with foreign buyers about possible product defects, provides accurate information regarding the causes, and works with buyers to remedy any problems with products after sale. In addition, his company maintains close communication with buyers to understand and satisfy their demands, such as

delivery time and payment schedule. The firm also stays flexible by accepting delayed payment (up to three months) after the delivery (interview, medium firm, Binh Duong, 28 June 2016).

Because medium firms often receive larger orders (in terms of quantity) than small firms, the profit margin is lower for medium firms. However, as a result of high revenue levels, their overall value added is comparatively higher than that of small and micro firms. Generally, medium firms make up for the loss in profit per output by increasing the volume of production, and thus they earn higher revenue. Medium firms appear to have a stable and repeat set of customers. They are not constantly worried about changes in orders and customers, and are able to focus more on production and quality improvements. The same manager of a medium-sized firm that we interviewed in Binh Duong explained that, in a given year, he meets with over 100 potential customers but only seals contracts with roughly five new clients. However, his clients tend to be loyal, and the company has a strong client retention rate. The same manager explained that he works hard to develop a strong relationship with customers over the years, whether through technology/expertise transfer, communication regarding product requirements and quality, or just overall trying to meet the quality requirements while staying flexible with regard to buyers' demands (interview, medium firm, Binh Duong, 28 June 2016).

5 Observations and policy options

The micro, small, and medium enterprises that we interviewed remarked that to increase investment and productive capability, they need to make extra investments in labour, technology, machinery, and even the organization of their production. However, they normally do not look to expand until demand for their products comes close to or exceeds their capacity, or until new customers require higher-quality products, which requires additional investment in technology and/or machinery (interviews, MSMEs, June and July 2016). Thus, accessing capital is an important requirement of their business strategy and industrial upgrading. Nonetheless, our analysis suggests that the effects of financial constraints imposed on small and medium firms vary greatly between the two groups. It is difficult for small firms to obtain bank loans because of their lack of sources of collateral. On the other hand, medium firms find it much easier to borrow because they can use their land, machinery, or a valid contract with foreign buyers against which to borrow credit from banks for new investment and upgrading. Yet, the rates of interest in traditional borrowing options are too high and thus impose extra investment risks. In this context, policies intended to correct market failure in financing should be more targeted towards the critical differentials in the constraints that market failure imposes on each enterprise group. Lending from development funds should focus on not only providing easier access to credit but also low-cost lending for qualified small and medium firms, such that they can truly benefit from government policies.

In addition, both groups of enterprises need new markets to develop. Vietnamese MSMEs possess the competitive advantage that allows them to become global suppliers, by taking part in the global production chain and supplying components to foreign MNCs. However, both enterprise groups are at a loss as to what to do to access the international market. They also seem passive in the domestic market—waiting for potential customers to contact them instead of approaching buyers directly. Here, the government could take the lead in attracting foreign buyers, matching interested ones with local firms, and providing training for MSMEs on going to international supplier fairs, bidding for contracts, or making contact with foreign buyers that have yet to come to Viet Nam. The Vietnamese embassies, the Viet Nam Chamber of Commerce, and industry associations should be more actively engaged with MSMEs and act as intermediaries between foreign buyers and local enterprises. Information sharing and networking between input suppliers and

manufacturing firms are weak among MSMEs, and could certainly improve with local and central government agencies acting as channels of information and opportunities among firms.

One important nuance of our qualitative analysis is that small firms generate higher value addition per unit than medium firms. This is because they are able to raise the per-unit price because of the low volume of the order or because their outputs are often more customized. However, small and micro firms fall far behind the absolute value addition generated by medium firms. This is due to economies of scale in production, specialization, and high volumes of repeated orders, which together help medium firms earn substantially larger total revenue and, hence, higher value addition than that of small and micro firms. This observation implies that if market demand for the products of micro and small firms becomes more stable and consistent, and even expands, there is a real chance that a large number of Vietnamese micro and small enterprises could grow over time and thus add jobs, outputs, and spillovers to the Vietnamese economy. However, this requires a stable demand for manufacturing goods either through greater access to the regional and international markets or through reducing reliance on intermediate imports from foreign markets, especially from China. On this latter point, the government should play a more active role in connecting local input suppliers with manufacturers within the local and global value chains, as well as promoting the use of local products.

One important issue that we found in our fieldwork is that micro, small, and medium firms are not actively looking for local suppliers since many of them have customarily sourced inputs from China. This is due to the lack of information available to firms, especially in the northern and southern regions where firms are clustered but not well connected. It is also due to cheap Chinese imports. We suggest that if Vietnamese firms can produce inputs of equal quality and price to foreign inputs, the government should encourage local manufacturers to buy from local firms rather than from abroad. In addition, government agencies should actively provide information and connect suppliers and buyers of input. Many countries promote the principle of 'buy locally' to ensure strong demand in the domestic market. This practice would help Vietnamese suppliers gain more market demand from within the domestic economy. Providing input locally would be the first step in allowing MSMEs to learn and improve over time, to the point where they can become globally competitive and enter the global value chain.

In the short term, government policies supporting micro and small firms should focus on improving their access to information: domestic and foreign market opportunities, suppliers, technology, and regulations. The policy benefits could be substantial, especially if the local value chain is strengthened and further developed. To the extent that training is available from various government agencies, the training should aim to provide micro and small firms with the information listed above. Having a directory that lists names of products and the capacity of each domestic supplier could be extremely useful, especially for firms looking to find cheaper and closer suppliers in the domestic market. Micro and small firms also urgently need access to the credit market at lower borrowing costs so that they can make long-term investments to improve their production capability, labour training, and management skills. Unfortunately, the application process continues to be cumbersome and time consuming, such that small and micro firms are discouraged from formal borrowing. In this context, Vietnamese state banks should relax their application requirements and collateral demands for these firms. They should also give preference to micro and small firms that demonstrate sound plans for business development.

With regards to medium firms, first, having access to cheaper credit is crucial for the upgrading of these firms. Second, medium firms could benefit from the government's assistance in market information and consultation in order to access international markets. More specifically, training could focus on how medium firms could present their products and production capacity in regional and international market fairs, how to make contact with foreign buyers, and how to prepare and

market their companies abroad. Third, medium firms also require better access to skilled labour, as this would reduce the cost of on-the-job training and allow the firms to build capacity and productive value over time. Vietnamese universities should devise programmes that encourage university students to participate in summer internships which allow them to acquire hands-on experience on the manufacturing floor and to learn more about the production and management of the business. Although the issue of capability building, particularly in production organization and management among medium firms, is not as urgent as it is for micro and small firms, the medium firms that we interviewed are aware that their capability is not up to international standards and there is much room for improvement.

Some medium firms have benefited from technology spillovers resulting from working with foreign partners, and the improvement has been notable. Others seem to have learnt more from their training while obtaining international certificates such as ISO 9000. In the past, the Vietnamese government has successfully subsidized some of this training, allowing for local firms to learn and upgrade. Nonetheless, a more long-term trajectory is needed. The government could think more carefully about designing a national system of innovation that also has a focus on the development of MSMEs. Viet Nam could learn from Germany's national systems of innovation, especially in its use of a non-profit research think tank such as the Fraunhofer Society. This research institute is tasked, among other objectives, with providing direct applied research and development that supports small and medium enterprises in Germany. The Fraunhofer Society's research labs frequently work with individual companies on short-term projects, either to improve their production processes or to boost their products' features and quality, so that they can stay competitive in global manufacturing. Although the Fraunhofer Society was only established in 1949, it has been central in boosting the strengths of German MSMEs in the global market. Vietnamese MSMEs could truly benefit from such an R&D institute that is designed to support MSMEs on product development and/or production improvement.

6 Conclusion

This paper employs mixed research methods to measure and analyse the differentials in Vietnamese MSMEs' value addition, and the extent to which important market constraints have hindered MSMEs' performance in recent decades. Our quantitative data analyses suggest substantial differences in value addition among micro, small, medium, and large enterprises in Viet Nam. The analysis also demonstrates the crucial contribution of technology adoption to the development of these enterprises. We subsequently employ qualitative analysis to explain how such differentials take place among MSMEs, by assessing their productive value and the impact of certain constraints on their production and performance in two case studies of (1) micro and small enterprises, and (2) medium firms.

This research paper not only substantiates the existing literature on the development of firms, but also adds to the literature important clarifications and details of the mechanisms that have led to significant differences in firms' performance in the context of Viet Nam's industrial development. It is beyond the scope of this paper to suggest policy priority. However, our quantitative analyses and case studies inform policy options for the broad-based and inclusive development of MSMEs in Viet Nam in significant ways. First, our research findings identify the critical market failures that hinder the business potential of MSMEs in Viet Nam. Second, findings from our regression analysis verify that, in the case of Vietnamese MSMEs, technology adoption and improvements in the production process are associated with enhanced value addition. Third, our research identifies the strengths and weaknesses of Vietnamese MSMEs and how they help to explain MSMEs' ability, or inability, to create high productive value in their production. Finally, our research clarifies and

explains the types of government support that MSMEs consider important for their business expansion and profits.

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