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Characteristics of the Vietnamese business environment

Evidence from a SME survey in 2015

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Evidence from a SME Survey in 2015

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Acronyms and abbreviations

BRC	Business Registration Certificate
BSPS	Business Sector Programme Support
CIEM	Central Institute for Economic Management
CPI	Consumer Price Index
DOLISA	Department of Labour, Invalids and Social Affairs
ESC	Environmental Standards Certificate
EIA	Environmental Impact Assessment
HCMC	Ho Chi Minh City
ILSSA	Institute for Labour Science and Social Affairs
ISIC	International Standard Industrial Classification
GSO	General Statistics Office
HH	Household
MOLISA	Ministry of Labour, Invalids and Social Affairs
MONRE	Ministry of Natural Resources and the Environment
MPI	Ministry of Planning and Investment
N	Number of Observations
OLS	Ordinary Least Squares
SD	Standard Deviation
SME	Small and Medium-Sized Enterprise
USD	United States Dollar
VHLSS	Viet Nam Household Living Standards Survey
VND	Vietnamese Dong

Preface

This is the sixth time that the collaborative small and medium enterprise (SME) panel survey has been conducted among formal and informal manufacturing firms in Viet Nam. The results of previous survey rounds, those of 2005, 2007, 2009, 2011, and 2013 were a motive for UNU-WIDER to approve and take the lead in collaboration with the Institute of Labour Science and Social Affairs (ILSSA) of the Ministry of Labour, Invalids and Social Affairs (MOLISA), the Department of Economics (DoE) of the University of Copenhagen, and the Central Institute of Economic Management (CIEM), to implement another survey in 2015.

The 2015 fieldwork behind this report consisted of face-to-face interviews that were implemented in June, July, and August. Just over 2,600 small and medium-sized non-state enterprises operating in the manufacturing sector were interviewed in ten provinces, namely the cities of Ha Noi, Hai Phong and Ho Chi Minh City (HCMC), and Ha Tay,[1] Phu Tho, Nghe An, Quang Nam, Khanh Hoa, Lam Dong and Long An provinces. The present report is based on the information about enterprises that were interviewed since 2005 and new enterprises that were added as a replacement for those that exited the survey.

The SME biannual surveys referred to above are a result of collaborative research efforts on collecting and analysing data representative of the private sector in Viet Nam. This means that not only large or formally registered enterprises are included in the survey. As such, the SME survey builds on the existing databases created through other initiatives in Viet Nam, aiming to collect data and gain an understanding of the SME dynamics in Viet Nam.

The present report aims to provide researchers and policy makers with an overview of key facts from the 2015 survey round, comparing as appropriate with data from 2013 and earlier years. The report does not contain a complete description of the full range of information available in the dataset. We encourage readers to explore the questionnaires that were used in the collection of data (available online) to see all the issues addressed.[2] Several in-depth studies of selected issues on the Vietnamese private sector economy, exploiting the database, are underway. Subsequent studies will make use of the fact that a sample of approximately 2,600 SMEs is available, including a representative panel dating back to 2005.

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[1] Ha Tay province was merged into Ha Noi at the beginning of 2009, but Ha Tay is maintained as a separate province in this report so that results can be compared with previous years.
[2] See the UNU-WIDER website https://www.wider.unu.edu/ for the relevant website links.

Acknowledgements

1 Introduction

Small and medium enterprises (SMEs) and the private sector continue to be a central force of growth of the Vietnamese economy. SMEs have seen exponential growth over the last decade. The General Statistics Office of Viet Nam reported 49,203 registered private enterprises in 2013, which is two times more than in 2003 when 25,653 firms were observed (GSO 2014; GSO 2007). The number of firms in the manufacturing sector grew three times in the same period: from 16,916 enterprises registered in 2003 to 58,688 in 2013 (GSO 2014; GSO 2007). Non-state enterprises employed 6.8 million employees in 2013, which is 59.3 per cent of the total enterprise workforce. This is three times more than in 2003 when non-state enterprises employed 2 million workers. The number of employees in manufacturing increased from 2.6 million in 2003 to 5.3 million in 2013. These numbers show a clear trend of consistent growth in the SME sector, but the process is taking place in a constrained environment often resulting in inefficient resource utilization. While some SMEs face credit and financial constraints, others are challenged by the rigidities of the regulatory environment. Understanding the circumstances under which SMEs operate, as well as the constraints and opportunities they face is increasingly important for policies conducive to sustaining economic growth.

1.1 Definitions

The business environment is understood as 'the nexus of policies, institutions, physical infrastructure, human resources and geographic features that influence the efficiency with which different firms operate' (Eifert et al. 2005). Firm entry, growth, investment, enterprise organisation, and the development of new industries are dependent on the quality of the business environment (Collier 2000; Bigsten & Söderbom 2006). At firm level, the business environment can affect the costs of production, while at the industry level, it can affect the market structure and competition (Eifert et al. 2005). We touch upon several dimensions of the business environment: regulatory framework (e.g., formalization and certification), informal payments, labour force and access to services, such as finance, which we put in relation to the key aspects of firm performance, such as investment, innovation, labour productivity, and sales. The report is in that sense not exhaustive of all the aspects of the business environment that matter for firms, policy-makers and the overall economy. For example, we do not attempt to capture the indicators of macroeconomic stability, the direct effect of specific government policies or compare competitiveness of the Vietnamese SME sector with neighbouring countries.

The report focuses on SMEs in the manufacturing sector. We classify enterprises by size in line with the current World Bank definition. The World Bank SME Department operates with three groups of enterprises: micro, small, and medium-scale. Micro enterprises have up to 10 employees, small-scale enterprises up to 50 employees, medium-sized enterprises up to 300 employees, while large enterprises have over 300 employees. Our size categories are based on the number of full-time, part-time and casual workers. This

definition was accepted by the Vietnamese Government, for example from publication of Government Decree No. 90/2001/ND-CP on 'Support for Development of Small and Medium Enterprises' to publication of Decree No. 56/2009/ND-CP in which enterprises are defined as small if they employ between 10 and 200 persons and medium if they employ between 200 and 300 persons in all sectors apart from trade and services in which the small category employs between 10 and 50 employees and the medium category employs up to 100 employees. The micro category is the same as in the definition we use. We have kept the classification of the enterprise categories the same as before to maintain the comparability with reports issued in previous years. It is beyond the scope of this report to investigate the impact of the changed SME size definition on the results.

The classification of firm legal ownership categories is in line with GSO (2015b; 2014). We focus on non-state enterprises, which do not have any registered capital from either local or central government. Non-state enterprises are enterprises set up by domestic capital, where the capital may be owned by a private individual or a group. We focus on the following types of formal non-state enterprises: private enterprises, cooperative name companies, private limited companies, and joint stock companies without capital from the state. We also include household enterprises, also called individual business establishments, that are defined as a privately owned economic organizations which are not registered and operational under the Enterprise Law, where a regular business operation takes place with a definite address and at least one full-time employee (GSO 2015b).

1.2   Structure of the report and overview of main findings

We start by describing the survey implementation and sampling procedure in Section 2. This section also presents some basic sample characteristics and a key to linking this year's data to earlier survey rounds. Section 3 presents enterprise growth and dynamics. We specifically look at firm turnover, measured as a rate of firm creation and destruction. The results show that firm dynamics are strongly influenced by: (i) firm size, (ii) formality status, (iii) location, and (iv) sector. Moreover, Section 3 highlights that, not only do informal household firms not bring much dynamics into the overall business environment. They also do not (any longer) create the jobs necessary for a continued vibrant business environment.

Section 4 explores whether the enterprise dynamics are influenced by the business environment, with a focus on informality and informal payments. We document a very rapid increase in formalization compared to 2013 and a decrease in informal payments on average. We find, however, an increase in the incidence of bribery among formal firms, though this does not appear to be stalling enterprise growth. Finally, we show that formalization positively affects employment growth, illustrating a clear benefit of current formalization policies.

Other important indicators of the influence of business environment on SME growth are access to finance and investment behaviour. We explore the influence of these factors in Section 5, where we find fewer credit-constrained enterprises compared to 2013, but the same rate compared to 2011. There was a slight decrease in formal credit access compared to 2013, compensated by, most likely, easy access to informal credit. The impressions of burdening credit market constraints are reinforced by the finding that, compared to 2013, fewer investments are financed from formal loans and more from retained earnings.

Section 6 focuses on characteristics of production and technology, labour productivity, diversification, and innovation. We find that the medium-sized firms diversify the most and observe an increase in innovation measured by the number of new products across all firm categories. The rate of innovation measured as the number of existing products that have been modified has declined. We also find improvements in labour productivity, use of new technology, and capacity utilization.

Several dimensions of employment conditions are the object of investigation in Section 7. We analysed workforce structure and stability, education, training, workplace conditions and hiring methods, as well as wage setting, social benefits, and employment contracts. The SME labour structure shows a slight increase in the rate of full-time employees and lower use of female labour, accompanied by higher average wages and improved composition of social contributions.

Section 8 explores the importance of personality traits and behavioural characteristics for business performance. We document substantial differences between men and women both in risk attitude and personality traits. Females display less willingness to take risks than males and in terms of the 'Big Five' (see Section 8) personality traits and have significantly higher scores on conscientiousness, agreeableness, and neuroticism. These factors could be behind the evident gender-based differences in firms' performance.

Certification of standards for quality, safety, or environment can arguably give sizeable market advantage to SMEs and improve firm performance in missing market settings. We focus on the use of domestic, international, and environmental certification in Section 9. The data indicate better performance of certified firms in terms of revenue, profit, average wage, and labour productivity, but the use of both international and environmental standards is in decline compared to 2013. In light of the positive effects attributed to standards in literature, this seems like a missed opportunity for faster sales and productivity growth, as well as improved foreign market access.

Finally, Section 10 shows trade and sales structures. Firms from the sample tend to sell at close proximity, with the majority of buyers being located in the same district. The results show an increase in the rate of

export compared to 2013, with the largest improvements happening among the medium-sized enterprises. The share of export is, however, at a very low level. Firms do not feel differently about competition on average compared to 2013, but the pressure is perceived to be higher for larger enterprises.

The report concludes by acknowledging that the Vietnamese business environment appears to have improved in several areas over the past two years. The report, however, also concludes that there are still several areas that require further action if the Vietnamese SMEs are to become an integral part of the global economy. Strengthening credit and foreign market access are a couple of obvious choices, as well as quality and environmental certification. Finally, policy efforts conducive to economic growth should not overlook the role played by the SMEs in product and labour markets.

2   Data description and sampling

2.1   Sampling

The enterprises are sampled from 10 selected provinces for the 2015 survey round following practices established in earlier survey rounds, which included between 2,500 and 2,800 enterprises. Surviving firms were re-interviewed each survey year, starting in 2005. The population of non-state manufacturing enterprises is based on two data sources from the General Statistics Office of Viet Nam (GSO): The Establishment Census from 2002 (GSO 2004) and the Industrial Survey 2004–06 (GSO 2007). The Establishment Census provided the number of individual business establishments that do not satisfy the conditions stated in the Law on Enterprises of Viet Nam. These are termed 'household enterprises'. We add the data on enterprises formally registered under the Law on Enterprises at the province level from the Industrial Survey (GSO 2004). This is required to increase the population with private, collectives, partnerships, private limited enterprises, and joint stock enterprises. Joint ventures have been excluded from the sampling framework due to the high and often unclear nature of government and foreign involvement. More information about sampling is available in previous reports (for example, CIEM et al. 2012).

Apart from enterprises registered with official institutions, the SME survey data also include unregistered (informal) household firms. These firms do not possess a Business Registration Licence or tax code and they are not registered with district authorities. The enumerators undertook on-site screening in which they identified unregistered enterprises to be included in the survey, which is an important contribution and unique in Viet Nam. As the sampling frame of the SME survey is based on the GSO business censuses and surveys, which cover only a part of the informal sector, our sample of informal firms is not representative of the informal sector as a whole in Viet Nam.

The 2015 sample is drawn from the same population identified in the 2005–13 surveys (CIEM et al. 2014; CIEM et al. 2012; CIEM et al. 2010; Rand et al. 2008; Rand & Tarp 2007). The tracer survey feature of the data

is able to capture legal structure changes and formalization of unregistered enterprises. Also, firms who cease operating were randomly replaced based on the following two criteria: (i) a constant level of household firms based on the information in GSO (2004) and (ii) the new 2014 population of firms registered under the Law on Enterprises obtained from the GSO (2015b).

Table 2.1 shows that 2,628 enterprises were interviewed in 2015. A small share of enterprises reported that they are not in manufacturing (33 in services) even though they are registered in official records as producers of manufacturing goods. Column 2 in Table 2.1 shows the number of enterprises interviewed in the 2013 survey in each province. The majority of enterprises were located in HCMC in both years. More firms were interviewed in 2015 in all provinces apart from Phu Tho, Nghe An, and Long An. Panel data information on 2,097 firms are available for analysis.

Table 2.1: Number of enterprises interviewed

	Interviewed in 2015	Interviewed in 2013
Ha Noi	296	285
Phu Tho	254	259
Ha Tay	371	347
Hai Phong	219	190
Nghe An	340	347
Quang Nam	171	167
Khanh Hoa	99	90
Lam Dong	92	88
HCMC	653	622
Long An	133	136
Total	2,628	2,531

Note: The balanced panel includes 2,097 firm observations each year.

Source: Authors' calculations based on SME data.

2.2 Implementation

As in earlier survey rounds, the sample was drawn randomly from a list of enterprises based on the population of non-state manufacturing firms. Stratified sampling was used to ensure an adequate number of enterprises with different ownership forms in each province. When the official household firm records were not valid any longer, the pre-selected formal and informal household firms were substituted through an on-site identification. The survey took place in specific confined areas in each province and/or city to ease implementation. Even though the enumerators had considerable earlier experience, they undertook enumerator training before the implementation of the survey in the summer of 2015. This was motivated by the introduction of new sections in the questionnaire. For example, the questionnaire asked about firm owner personality traits and behavioural characteristics for the first time. Possible ambiguities and sources of misinterpretation in the survey instrument were resolved on this occasion. The training allowed enough

space for discussions with enumerators, which resulted in variable feedback on the questionnaire design. This guarantees improved reliability of the data collected.

Ten teams of enumerators carried out the SME survey. The enumerator teams included researchers from the Institute for Labour Science and Social Affairs (ILSSA), staff from different departments of the Ministry of Labour, Invalids and Social Affairs (MOLISA), and ten representatives from the Department of Labour, Invalids and Social Affairs (DOLISA). Each team comprised one team leader (supervisor) and several enumerators. The number of enumerators in each team depended on the sample size in a specific area. The survey took place in two stages. The first stage involved enumerators visiting survey areas to identify the repeat enterprises and to obtain a complete list of enterprises from the local authorities. In some cases enterprises had changed location or owner(s) since the previous survey in 2013, so determining whether the enterprises were still in existence required considerable effort. These visits resulted in updated lists of the repeat enterprises, which enabled drawing up random samples of the new enterprises. The second stage of the survey was launched in the early autumn of 2015 and lasted for three months. This stage was based on surveying firms through personal visits and direct interviews. The data were checked for consistency already in the field, but the second round of data cleaning was required after the data entry. Final consistency checks were performed after merging the 2015 data with data files from the 2013.

2.3   Sample characteristics

As in the previous survey rounds, the sample was stratified by ownership type in all locations to include all categories of non-state enterprises: household, private, partnerships/collectives, limited liability, and joint stock companies. Table 2.2 shows the number of enterprises interviewed in each category of legal ownership. The largest share of the sample is comprised of household enterprises (63 per cent). As the census data reveal, they comprise approximately 90 per cent of the firm population, indicating that they are over-represented in this survey. Enterprise dynamics depend on a multitude of factors, in particular location, type of activity (sector), legal ownership, and firm size, which represent variations in market characteristics and/or enterprise organization. Tables 2.3 to 2.7 show information on the key determinants of enterprise dynamics.

Table 2.2: Number of interviewed enterprises by province and legal structure in 2015

	Household enterprises	Private/sole proprietorship	Partnership/ collective/ cooperative	Limited liability company	Joint stock company	Total
Ha Noi	121	19	17	104	35	296
Phu Tho	223	5	4	19	3	254
Ha Tay	307	7	2	44	11	371
Hai Phong	107	16	18	52	26	219
Nghe An	266	17	3	31	23	340
Quang Nam	130	10	2	28	1	171
Khanh Hoa	58	18	0	22	1	99
Lam Dong	65	11	0	15	1	92
HCMC	288	46	8	295	16	653
Long An	99	16	0	18	0	133
Sample total	1,664	165	54	628	117	2,628

Source: Authors' calculations based on SME data.

Table 2.3 shows sectors and location of enterprises. Sector codes are based on the International Standard Industrial Classification (ISIC) codes. It is immediately noticeable that the three largest sectors in terms of the number of enterprises are food and beverages (ISIC 15), fabricated metal products (ISIC 28), and manufacturing of wood products (ISIC 20). These sectors were also the most prevalent in the 2013 SME survey, which corresponds to the sector distribution reported by GSO (2004; 2007).

Table 2.4 shows locations and enterprise sizes. We see that micro firms with 1 to 9 employees comprise 72 per cent of the sample. Small firms comprise 22 per cent and medium-sized firms 6 per cent of the sample. Enterprises in larger urban areas (Ha Noi and HCMC) have a considerably smaller share of micro enterprises than rural provinces. An especially high prevalence of micro enterprises can be seen in Phu Tho.

Table 2.3: Number of enterprises by location and sector in 2015

ISIC code	Sector name	Ha Noi	Phu Tho	Ha Tay	Hai Phong	Nghe An	Quang Nam	Khanh Hoa	Lam Dong	HCMC	Long An	Total	Per cent
15	Food and beverages	72	124	110	49	142	68	34	31	153	52	835	(31.8)
17	Textiles	3	5	43	3	2	0	0	6	24	0	86	(3.3)
18	Wearing apparel etc.	25	0	7	11	17	4	1	0	69	3	137	(5.2)
19	Tanning and dressing leather	6	1	2	12	2	3	6	4	21	4	61	(2.3)
20	Wood and wood products	20	60	117	11	36	15	6	1	16	9	291	(11.1)
21	Paper and paper products	8	4	3	3	3	0	2	1	34	0	58	(2.2)
22	Publishing, printing etc.	24	0	1	11	1	4	3	1	38	3	86	(3.3)
23	Refined petroleum etc.	1	1	1	1	1	0	0	0	1	3	9	(0.3)
24	Chemical products etc.	14	1	3	2	5	0	1	0	23	1	50	(1.9)
25	Rubber and plastic products	33	1	6	14	5	3	5	1	85	4	157	(6.0)
26	Non-metallic mineral products	10	6	8	11	13	6	6	7	20	10	97	(3.7)
27	Basic metals	4	0	1	1	7	0	1	0	8	6	28	(1.1)
28	Fabricated metal products	56	41	31	68	50	43	24	23	84	28	448	(17.1)
29–32	Machinery	9	0	5	7	3	2	0	2	30	1	59	(2.2)
34	Motor vehicles etc.	1	0	0	1	0	0	0	1	9	0	12	(0.5)
35	Transport equipment	0	1	0	2	2	0	1	0	1	0	7	(0.3)
36	Furniture etc.	7	5	28	11	46	17	7	8	26	7	162	(6.2)
37	Recycling	0	2	0	0	2	1	0	2	3	0	10	(0.4)
SER	Services	3	2	5	1	3	5	1	3	8	2	33	(1.3)
Total		296	254	371	219	340	171	98	91	653	133	2,626	(100.0)
Per cent		(11.3)	(9.7)	(14.1)	(8.3)	(12.9)	(6.5)	(3.7)	(3.5)	(24.9)	(5.1)	(100.0)	

Note: Number of firms (group percentages in parentheses). Tobacco sector is excluded as only one firm was surveyed.

Source: Authors' calculations based on SME data.

Table 2.4: Number of enterprises by size and location

	Micro	Small	Medium	Total	Per cent
Ha Noi	166	111	19	296	(11.3)
	(56.1)	(37.5)	(6.4)	(100.0)	
Phu Tho	239	10	5	254	(9.7)
	(94.1)	(3.9)	(2.0)	(100.0)	
Ha Tay	274	80	17	371	(14.1)
	(73.9)	(21.6)	(4.6)	(100.0)	
Hai Phong	151	48	20	219	(8.3)
	(68.9)	(21.9)	(9.1)	(100.0)	
Nghe An	288	39	13	340	(12.9)
	(84.7)	(11.5)	(3.8)	(100.0)	
Quang Nam	146	20	5	171	(6.5)
	(85.4)	(11.7)	(2.9)	(100.0)	
Khanh Hoa	72	19	8	99	(3.8)
	(72.7)	(19.2)	(8.1)	(100.0)	
Lam Dong	69	20	3	92	(3.5)
	(75.0)	(21.7)	(3.3)	(100.0)	
HCMC	377	207	69	653	(24.8)
	(57.7)	(31.7)	(10.6)	(100.0)	
Long An	106	22	5	133	(5.1)
	(79.7)	(16.5)	(3.8)	(100.0)	
Total	1,888	576	164	2,628	(100.0)
Per cent	(71.9)	(21.9)	(6.2)	(100.0)	

Note: Figures show the number of firms and for each location the share of firms in each size category (group percentages in parenthesis).

Source: Authors' calculations based on SME data.

Table 2.5 shows that an above average percentage of firms in the food processing category are registered as household establishments (84 per cent). The same occurs in fabricated wood processing (ISIC 20) and metal products (ISIC 28), with the share of household firms at 74 and 63 per cent, respectively. Limited liability companies are most common in the manufacturing of fabricated metal (ISIC 28), food (ISIC 15), and rubber and plastic products (ISIC 25). Private enterprises and joint stock companies tend to produce fabricated metal products and food, while firms with cooperative agreements tend to concentrate in the wood (ISIC 20) and rubber and plastics (ISIC 25) sectors.

Table 2.5: Number of enterprises by ownership form and sector in 2015

ISIC	Sector name	Household establishment	Private/sole proprietorship	Partnership/ collective/ cooperative	Limited liability company	Joint stock company	Total	Per cent
15	Food products and beverages	698	27	5	88	17	835	(31.8)
17	Textiles	50	3	2	27	4	86	(3.3)
18	Wearing apparel	60	11	3	56	7	137	(5.2)
19	Tanning and dressing leather	38	6	0	16	1	61	(2.3)
20	Wood and wood products	215	16	10	38	12	291	(11.1)
21	Paper and paper products	10	7	0	32	9	58	(2.2)
22	Publishing, printing	16	11	2	53	4	86	(3.3)
23	Refined petroleum	6	1	0	2	0	9	(0.3)
24	Chemical products	14	2	3	26	5	50	(1.9)
25	Rubber and plastic products	48	16	10	73	10	157	(6.0)
26	Non-metallic mineral products	53	8	7	24	5	97	(3.7)
27	Basic metals	15	6	2	5	0	28	(1.1)
28	Fabricated metal products	282	35	7	101	23	448	(17.1)
29-32	Machinery (office and electr.)	14	4	0	32	9	59	(2.2)
34	Motor vehicles	5	1	0	6	0	12	(0.5)
35	Transport equipment	3	2	0	2	0	7	(0.3)
36	Furniture	116	6	2	31	7	162	(6.2)
37	Recycling	5	1	0	3	1	10	(0.4)
SER	Services	15	2	1	12	3	33	(1.3)
Total		1,663	165	54	627	117	2,626	(100.0)
Per cent		(63.3)	(6.3)	(2.1)	(23.9)	(4.5)	(100.0)	

Note: Number of firms (group percentages in parenthesis).

Source: Authors' calculations based on SME data.

As can be seen from Table 2.6, 72 per cent of medium-sized firms are registered as limited liability companies. By comparison, only 11 per cent of micro and around one-half of small firms are registered in this category. Small firms register as privately owned entities in 11 per cent of the cases and 5 per cent as a partnership or a cooperative. Around 15 per cent of medium-sized and around 10 per cent of small firms register as joint stock companies. A vast majority, 81 per cent, of all micro firms are household establishments, which is very important to note in the discussion of the growth contribution effects of switching from informal to formal firm status (see Rand & Tarp 2012; Rand & Torm 2012 for further discussion of this issue).

Table 2.6: Number of enterprises by legal ownership and size in 2015

	Micro	Small	Medium	Total	Per cent
Household establishment	1,537	125	2	1,664	(63.3)
Private/sole proprietorship	93	62	10	165	(6.3)
Partnership/collective/cooperative	16	29	9	54	(2.0)
Limited liability company	210	300	118	628	(23.9)
Joint stock company	32	60	25	117	(4.5)
Total	1,888	576	164	2,628	(100.0)
Per cent	(71.9)	(21.9)	(6.2)	(100.0)	

Source: Authors' calculations based on SME data.

Finally, Table 2.7 illustrates the dynamics of enterprise size across sectors. Around 85 per cent of enterprises in the food processing sector are micro-sized, as compared to 11 and 3 per cent of small and medium firms, respectively. Small firms surpass the number of micro firms only in the production of chemicals (ISIC 24) and paper products (ISIC 21). Recycling (ISIC 37) appears to be the domain of micro and small firms, as no medium-sized firms are observed in this sector. Medium-sized firms are most common in the rubber (ISIC 25), food (ISIC 15), and apparel (ISIC 18) sectors.

Table 2.7: Number of enterprises by sector and size in 2015

ISIC	Sector name	Micro	Small	Medium	Total	Per cent
15	Food products and beverages	715	96	24	835	(31.8)
17	Textiles	50	31	5	86	(3.3)
18	Wearing apparel	65	48	24	137	(5.2)
19	Tanning and dressing leather	41	12	8	61	(2.3)
20	Wood and wood products	216	63	12	291	(11.1)
21	Paper and paper products	23	26	9	58	(2.2)
22	Publishing, printing	60	22	4	86	(3.3)
23	Refined petroleum	6	2	1	9	(0.3)
24	Chemical products	21	24	5	50	(1.9)
25	Rubber and plastic products	80	51	26	157	(6.0)
26	Non-metallic mineral products	52	37	8	97	(3.7)
27	Basic metals	16	10	2	28	(1.1)
28	Fabricated metal products	358	75	15	448	(17.1)
29-32	Machinery (including office and electrical)	26	23	10	59	(2.2)
34	Motor vehicles	7	4	1	12	(0.5)
35	Transport equipment	4	2	1	7	(0.3)
36	Furniture	121	34	7	162	(6.2)
37	Recycling	7	3	0	10	(0.4)
SER	Services	19	12	2	33	(1.3)
Total		1,887	575	164	2,626	(100.0)
Per cent		(71.9)	(21.9)	(6.2)	(100.0)	

Note: Figures in number of firm (group percentages in parenthesis).

Source: Authors' calculations based on SME data.

2.4 Links to previous surveys

Table 2.8 documents the survival rate of previously surveyed firms. The same 2,145 enterprises were located and interviewed again in 2015, while exit was confirmed for 234 enterprises. Forty-four enterprises (11 per cent of potential exits) were lost during the sampling or declined to answer the questionnaire when approached, so they were excluded in both the 2013 and 2015 data. Using this information, an annual survival rate between 2013 and 2015 of 90.6 per cent, representing a small decrease from the figure of 91.3 per cent was observed between 2011 and 2013. This level is comparable to the 9 to 10 per cent average exit rate observed for a number of developing countries by Liedholm and Mead (1999). The re-interviewed enterprises that did not provide all the key information were excluded from the analysis. The enterprises that had become large (employing more than 300 employees) were also excluded from the analysis, along with the enterprises with any form of state ownership. This finally resulted in a balanced panel of 2,097 firms. In the following sections, we concentrate on the 2015 survey, which we link to the 2013 and 2011 surveys in order to follow enterprise development.

Table 2.8: Survival overview

		2013	2015
Surveyed in 2013	Survivors	2,531 (2,575)	2,145
	Exit confirmed		234
Survival rate			83.3
Annual survival rate			90.6
Newly surveyed			504
Total surveyed in 2015			2,649

Note: We had difficulties tracking down (previous) owners of closed enterprises. Some enterprises could not be found or owners declined to answer the questionnaire. A total of 54 per cent (234 out of 430) are confirmed exits.

Source: Authors' calculations based on SME data.

3 Enterprise growth and dynamics

The perceptions of enterprises of the problems faced when doing business and how these problems have changed over time are often used as an indicator of the current business environment. Overall, the proportion of Vietnamese SMEs that face important constraints to firm growth remains high. In 2015, 83 per cent of firms experienced some constraints, compared to 83 per cent in 2013 (CIEM et al. 2014). Figure 3.1 shows the perceptions of surveyed SMEs about the most important constraints to growth.

Figure 3.1: Most important constraints to growth as perceived by the enterprise
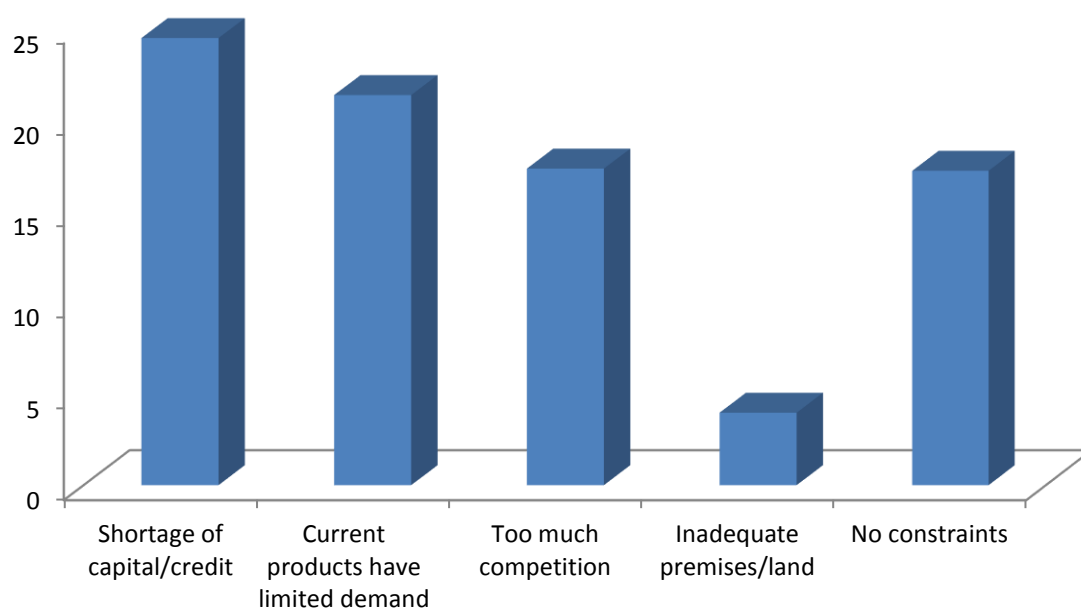
Source: Authors' calculations based on SME data.

Again a shortage of capital/access to finance is cited as the most serious problem for enterprises. But, compared to previous survey rounds, we see a decline in the proportion of firms experiencing this kind of challenge from 45 per cent in 2011, to 30 per cent in 2013, and to 24 per cent in 2015. The problems of limited demand for current products is the second largest constraint to doing business according to firm owners, although we observe a slight decline in this doing-business indicator from 2013 (27 per cent) to 2015 (21 per cent). The third largest constraint to growth is cited to be the competitive pressure facing SMEs (17 per cent), which is consistent with the results from the SME surveys in 2011 and 2013.

These characteristics of the SME business environment seem to signal that doing-business conditions have mildly improved, but that the ranking of the most severe constraints remain the same. It is therefore interesting to explore the factors driving the dynamic changes in the enterprise sector and its component parts. As in previous reports, we now turn attention to enterprise dynamics, focusing in particular on (i) employment growth and (ii) firm exit.

3.1   Employment growth

As in the previous reports we start out in Panel (a) in Table 3.1 documenting the mean and median estimates of the number of full-time regular employees in 2013 and 2015 by firm size. Panel (b) documents the share

of firms that have experienced changes in the number of full-time employees between 2013 and 2015. The total number of full-time workers employed by the 2,097 SMEs increased from 25,699 in 2013 to 27,032 in 2015, corresponding to an increase in total employment of 5.2 per cent over the two-year period. These figures are reflected in the increase in the average number of employees from 12.3 in 2013 to 12.9 in 2015. However, note that job generation is not equally distributed along the firm size dimension, as many small (47.5 per cent) and medium (53.5 per cent) enterprises were reducing the number of full-time employees between 2013 and 2015. Although these shares are quite high, they are significantly lower than equivalent shares observed between 2011 and 2013.

Table 3.1: Mean employment statistics by firm size

| | | (a) Number of full-time regular employees | | | | (b) Change from 2011 to 2013 (share of firms) | | |
| | | 2013 | | 2015 | | Employment change | | |
		Mean	Median	Mean	Median	Decrease	Constant	Increase
All	All	12.3	5.0	12.9	5.0	31.0	32.0	31.0
Size	Micro	3.8	3.0	3.9	4.0	24.2	37.2	38.6
	Small	19.6	17.0	19.1	15.0	47.5	20.9	31.7
	Medium	94.2	84.0	96.4	80.0	53.5	9.7	36.8

Note: Panel (a) shows the information for the balanced panel of 2,097 firms. Panel (b) shows the share of firms with changing number of employees.

Source: Authors' calculations based on SME data.

Another way to illustrate the dynamics of enterprises is to look at employment transition matrices, a tool often used to evaluate economic mobility. Table 3.2 gives employment transitions for micro, small and medium enterprises from 2013 to 2015. This table is consistent with previous survey rounds (CIEM et al. 2014) in that mobility across firm size groups is rather limited. Some 93 per cent of the micro enterprises with 1 to 9 employees in 2013 stayed in this category in 2015, and only a few micro enterprises transitioned to the medium (between 50 and 300 employees) category (2 in total).

The average annual employment growth rate (unweighted) was 6.4 per cent between 2013 and 2015, reversing the negative trend from the period 2011–13. In the following we look into whether this employment growth has been heterogeneous across (i) ownership type, (ii) location, and (iii) sector, controlling for firm size.

Table 3.2: Employment transition matrix

	Micro 15	Small 15	Medium 15	Total	Per cent
Micro 13	1,408	103	2	1,513	(72.2)
	(93.1)	(6.8)	(0.1)	(100.0)	
Small 13	90	345	35	470	(22.4)
	(19.1)	(73.4)	(7.4)	(100.0)	
Medium 13	1	23	90	114	(5.4)
	(0.9)	(20.2)	(78.9)	(100.0)	
Total	1,499	471	127	2,097	(100.0)
Per cent	(71.5)	(22.5)	(6.1)	(100.0)	

Note: Percentage in parenthesis.

Source: Authors' calculations based on SME data.

Figure 3.2: Firm growth by ownership type and formality status
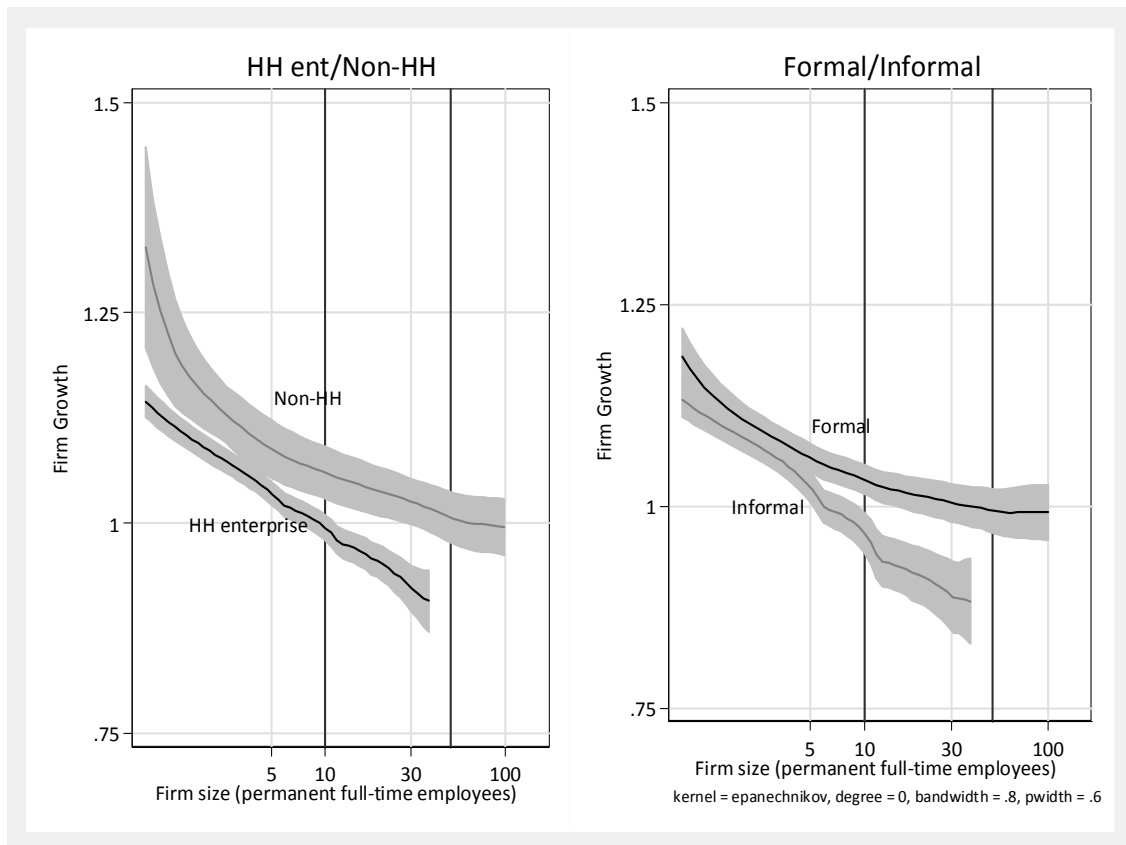
Note: Kernel weighed local mean smoothing using the Epanechnikov kernel and a bandwidth of 0.8. Black curves are for formal firms; grey curves are for informal firms. Shaded areas are point-wise 95 per cent confidence intervals. The two vertical lines are at 2.30 and 3.91 and indicate the upper limits on the size of micro (up to 10 employees) and small (up to 50 employees) enterprises using the standard World Bank definition.

Source: Authors' calculations based on SME data.

In Figure 3.2 we show average annual employment growth rates (defined as the square root of the number of full-time regular employees in 2015 divided by that in 2013) along the firm size dimension, by ownership category (household versus non-HH enterprise and formal versus informal enterprise, respectively). The

Figure shows the association between firm size and the average employment growth, split by ownership or formality status (a formal firm is classified as one having an official tax code document). In the first panel the black curve is the average employment growth of household enterprises while the grey curve is the average employment growth of non-household enterprises. The shaded area indicates the point-wise 95 per cent confidence interval. We clearly see that the growth rates are decreasing in firm size and that the employment growth of non-household firms stochastically dominates household firms throughout the firm size distribution. In the second panel of Figure 3.2 we look at growth differences between formal and informal firms, and here employment growth by formal firms stochastically dominates that of informal firms (at a 10% significance level). As such, Figure 3.2 shows that formal non-household firms are larger contributors to the overall positive employment growth trend experienced between 2013 and 2015 than informal household enterprises.

Figure 3.3: Jobs generated (on average) by formality status
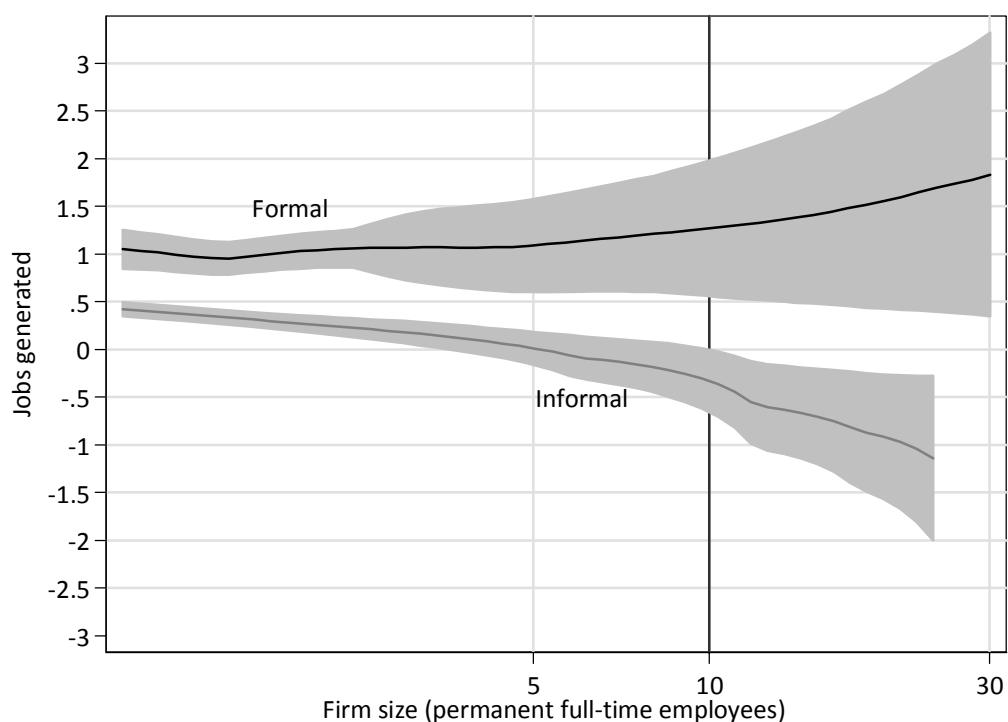
Note: See Figure 3.2 for details.

Source: Authors' calculations based on SME data.

Figure 3.3 follows up on the previous result by showing the number of jobs created on average by a firm in a given size category. Throughout the firm size distribution we see an increasing job-creating trend among

formal firms (on average above 1 extra job generated), whereas informal firms from 5 employees and upwards show a negative job-contributing trend.

Figure 3.4: Employment growth by location
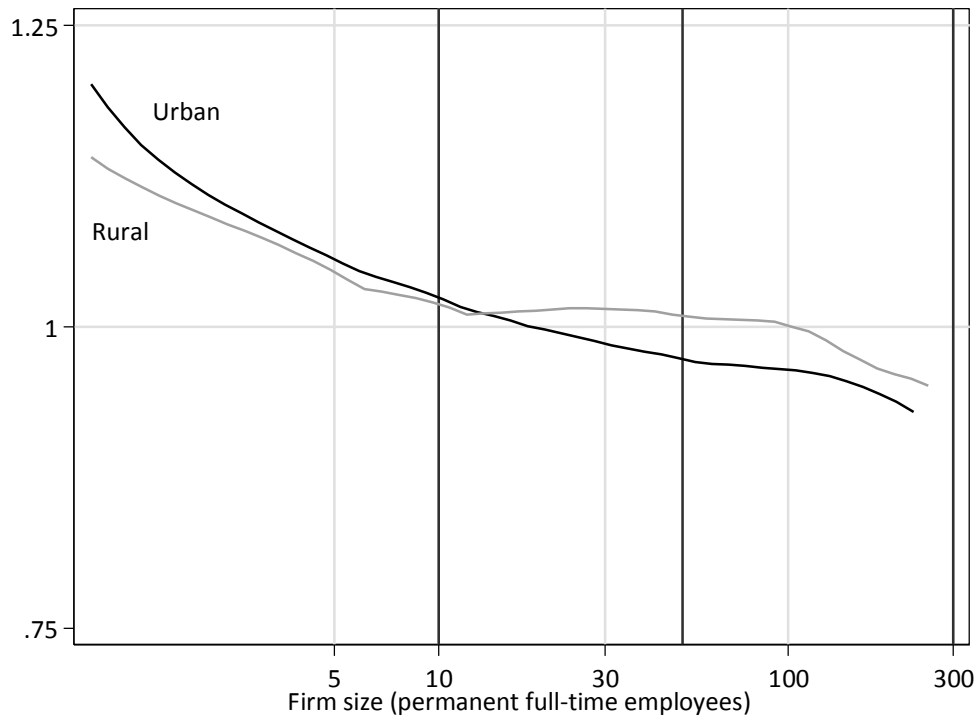
Note: See Figure 3.2 for details.

Source: Authors' calculations based on SME data.

There are not huge differences in average employment growth rates across the 10 provinces. Figure 3.4 shows the employment growth differences (unweighted) along the firm size dimension, and it is clear that no significant growth differences are found along the rural/urban split (controlling for firm size). However, especially among the smaller firms, average growth rates tend to be larger in urban areas, although in a simple regression focusing on smaller firms (below 50 employees) the urban dummy remains insignificant when adding sector and ownership controls. We therefore turn to a focus on creation of jobs by location and in Figure 3.5 it becomes clear that the urban employment growth rates on average translate into fewer jobs generated compared with rural areas (especially for larger firms). Zooming in, as an example, on firms with 30 employees, we see that firms in rural areas generated on average more than 3 new jobs as compared to on average only 0.6 new jobs in urban areas. Although a lot of variation exists around the point estimate, this

signals that job creation efforts have been no less successful in 'rural' provinces compared to urban centres like HCMC and Ha Noi (all else equal).

Figure 3.5: Jobs generated (on average) by location
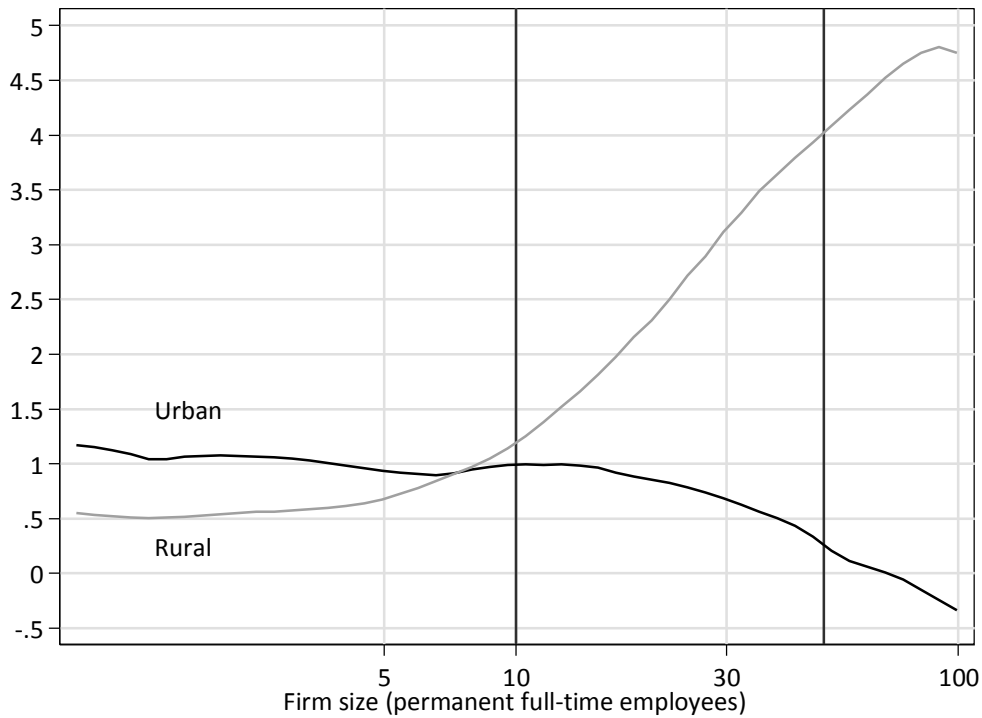
Finally, looking in Figure 3.6 at employment growth differences by sector, most sectors have reversed the negative growth trend observed between 2011 and 2013 (CIEM et al. 2014). In the Figure we have selected the four largest sectors: food processing, wood processing, fabricated metals, and furniture production, as an illustration. Again, the declining growth pattern along the firm size dimension is observed, but sector differences exist in relation to the firm size cut-off where employment growth stays significantly positive. For food and wood processing this threshold is reached at around 7 to 9 employees, whereas this is already reached at as low as 3 to 5 employees for other categories.

Figure 3.6: Employment growth by sector
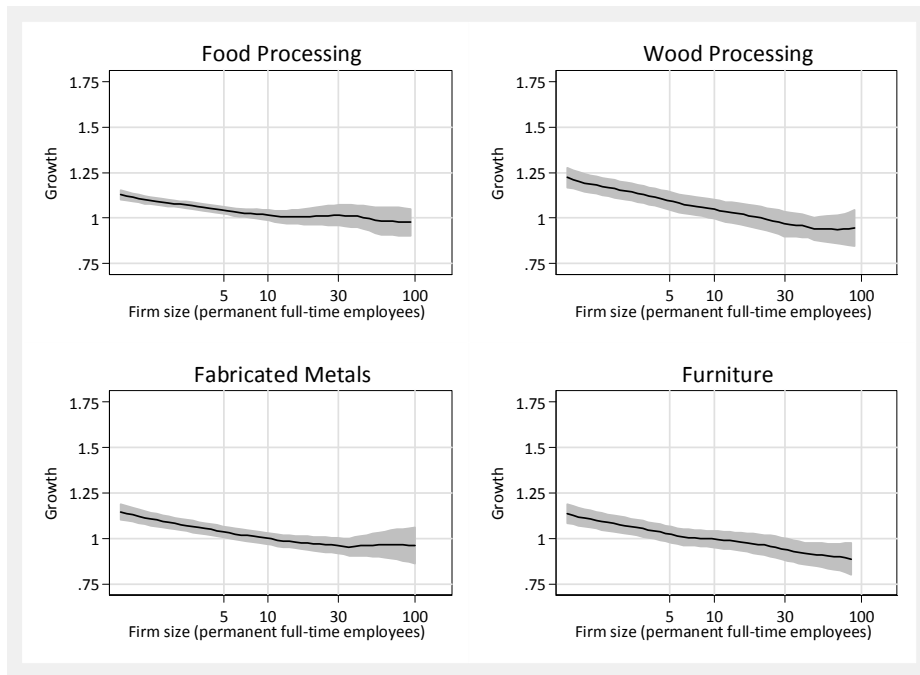
Note: See Figure 3.2 for details.

Source: Authors' calculations based on SME data.

Figure 3.7: Job generation (on average) by sector
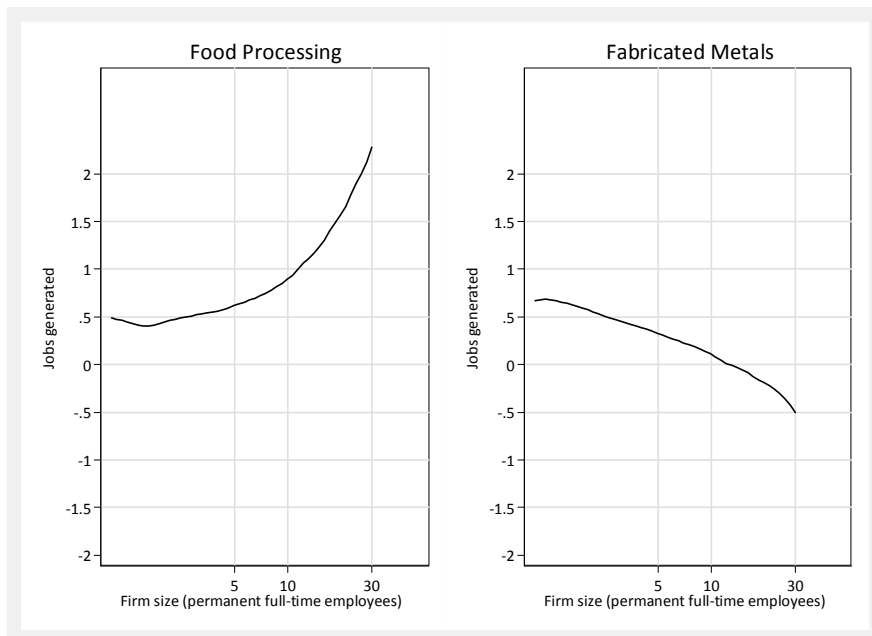
Note: See Figure 3.2 for details.

Source: Authors' calculations based on SME data.

These patterns are recognized in the job generation illustration in Figure 3.7, where we compare average job generation by firm size for food processing and fabricated metals, respectively. Here we see that firms in food processing with less than 30 employees on average have generated between 0.5 to 2 jobs between 2013 and 2015, whereas firms in fabricated metals have had job generation effects closer to zero during the same period.

3.2 Firm exit

In this sub-section, we investigate how traditional determinants (location, sector, and form of ownership) affect firm exit probabilities along the firm size dimension. Around 17.1 per cent of the 2,419 firms surveyed in 2011 closed their business by 2013. This translates to a yearly exit rate of 8.2 per cent, which is lower than the exit rates observed between 2009 and 2013.

Figure 3.8: Exit probabilities by ownership type
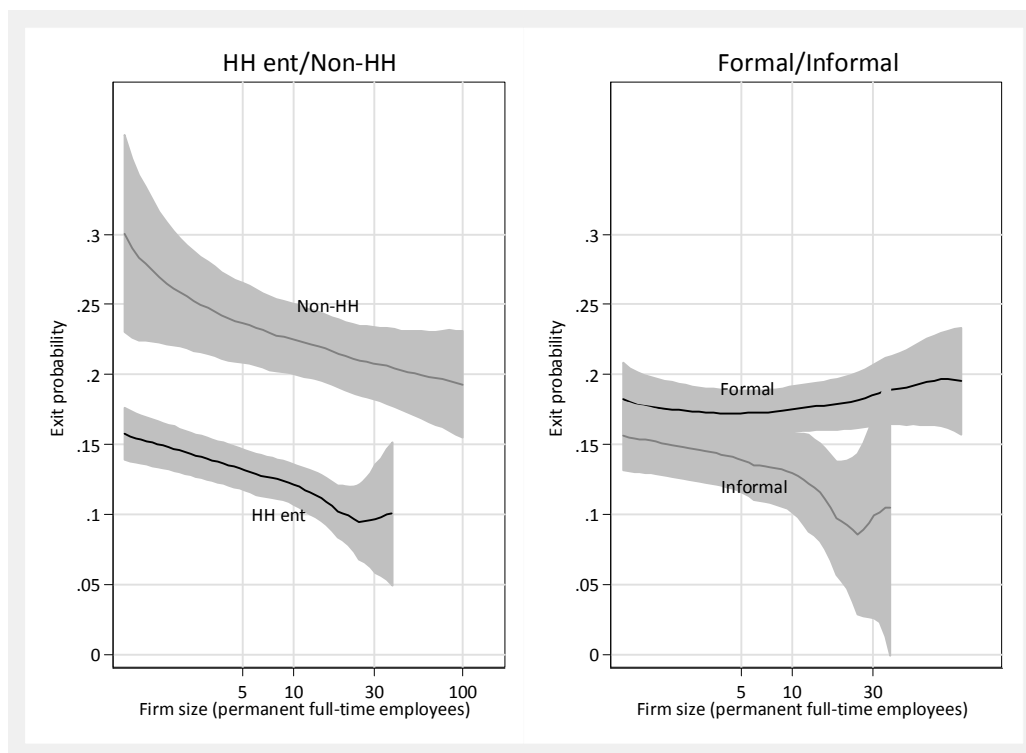
Note: Kernel weighed local mean smoothing using the Epanechnikov kernel and a bandwidth of 0.8. Black curves are for formal firms; grey curves are for informal firms. Shaded areas are point-wise 95 per cent confidence intervals. The two vertical lines are at 2.30 and 3.91 and indicate the upper limits on the size of micro (up to 10 employees) and small (up to 50 employees) enterprises using the standard World Bank definition.

Source: Authors' calculations based on SME data.

Above average exit probabilities are observed for non-HH enterprises and formal enterprises along the firm size dimension (see Figure 3.8). Disaggregation by firm size shows that medium firms are less likely to exit than their micro and small counterparts, but this negative relationship is dependent on firms' formality status. If formal, then firms have identical exit probabilities controlling for firm size. It should be noted that although informal household firms have lower exit probabilities, results from the previous section illustrated that dynamics and job creation among these firms are very limited, questioning whether low exit probabilities should be interpreted positively.

Figure 3.9: Exit probabilities by location

Turning, in Figure 3.9, to exit probabilities by location, results from previous survey rounds are confirmed; exit rates are generally higher (although not significantly so) in 'urban' centres (Ha Noi, Hai Phong, and HCMC) conceivably due to high competitive pressures. Higher competition in urban areas was found in previous studies on SMEs in Viet Nam (Hansen et al. 2009). However, it should be mentioned that firms in Nghe An during the 2013–15 period also exhibit above average exit probability).

Finally, Figure 3.10 shows variation in exit rates by sector along the firm size dimension, focusing on the four largest sectors. As Table 3.10 illustrates, there are sizeable differences between sectors in our sample. Within food processing we observe above average exit rates for most firm size categories, whereas exit probabilities are relatively low within food processing. The exit patterns along the firm size dimension also differ by sector; whereas food processing exit rates are rather constant across firm size categories, firms' exit pattern within fabricated metals are like a 'V'-shaped form with firms between 10 and 30 employees exhibiting the lowest exit probabilities.

Figure 3.10: Exit probabilities by sector
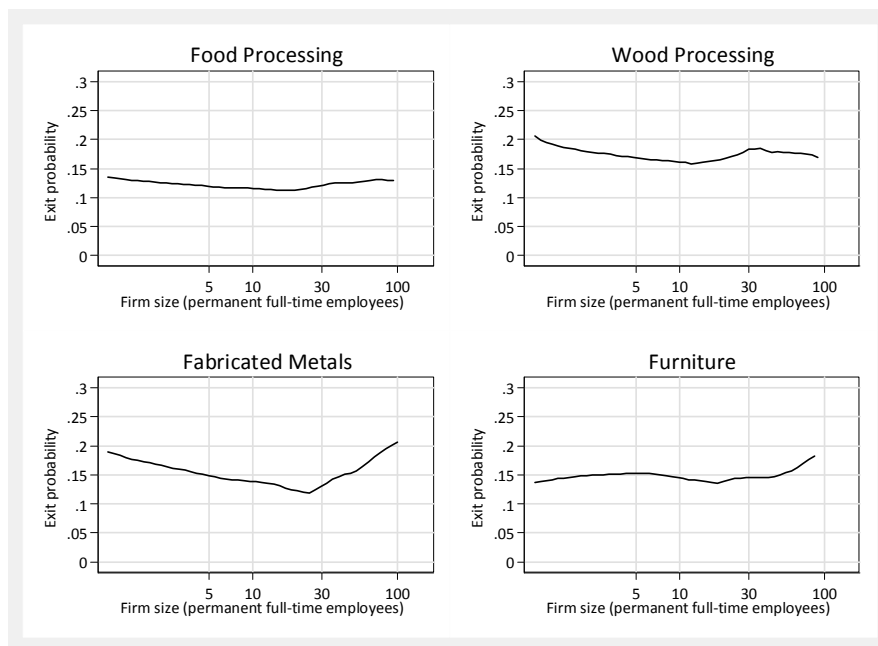
Note: See Figure 3.8 for details.

Source: Authors' calculations based on SME data.

It should also be noted that the highest exit occurrences are found within apparel and paper processing industries (not reported). All in all, this highlights the importance of sector information when analysing firm level exit. However, it should be noted that all the traditional determinants (firm size, location, ownership type, and sector) explain only 11 per cent of the variation in exit probabilities. We turn therefore in subsequent sections to different types of firm level heterogeneity to explain differences in firm level dynamics.

4 Informality and informal payments

A critical issue to consider in the discussion of micro, small and medium enterprises in a developing country context is that of formality and bureaucratic processes with the latter topic being intricately linked with practice of making informal payments. Section 4.1 discusses informality and its evolution over the two rounds and how that correlates with firm growth while Section 4.2 discusses the incidence of informal payments and whether that imposes a cost on firm performance.

4.1 Informality and growth

The reasons for remaining informal span the spectrum ranging from exclusion to exit as highlighted by Perry et al. (2007). The *exclusion view* advocated in de Soto (1989) contends that arduous entry regulations – in the form of administrative processes, high monetary and time cost – prohibit small firms from entering the formal sector. The *exit view*, on the other hand, posits that the decision to remain informal is a deliberate one as a result of cost-benefit accounting by firm owners in that they are willing to forego legal recognition that can accrue pecuniary benefits, in order to avoid incurring costs and paying taxes. Empirical studies using micro data from different countries frequently report that transitioning to formality results in significant and large benefits for firms in terms of profitability, investments, and access to credit, that tend to be heterogeneous depending on firm characteristics. It also tends to result in greater compliance with regulations (Rand & Torm 2012; McKenzie & Sakho 2010; Sharma 2014).

Firms are defined as being formal if they have an Enterprise Code Number (ECN) or if they have a Business Registration Certificate (BRC) and a tax code.[3] According to this definition, using the balanced sample, 70 per cent of firms were formal in 2013 (see Table 4.1). However, between the two rounds, there has been an astronomical increase in the rates of formality and in 2015, 97 per cent of firms were formal. In both 2013 and 2015, of the informal firms, 97 per cent and 92 per cent respectively are micro firms (i.e., those with less than 10 employees).

Table 4.1: Distribution of formal firms

	2013		2015	
	Percent	Number	Percent	Number
Formal (Total)	71.3	1,804	89.99	2,365
Formal (Balanced)	70.5	1,479	97.09	2,036

Note: Formal firms are those that have an ECN or a BRC and a tax code.

Source: Authors' calculations based on SME data.

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[3] Following Decree No. 43 issued in 2010, the ECN will be unique to each company and will be used as both its business registration code and tax code.

In Table 4.2, the dynamics of firms moving in and out of formality are reported. Almost 98 per cent of firms that were formal in 2013 maintained their formal status even in 2015 and only a small number of firms moved to an informal status. In contrast to changes across previous consecutive rounds of this data, we find a large move out of informality between 2013 and 2015 such that 96 per cent of previously informal firms are now formalized. This improvement is substantial compared to the change between 2011 and 2013 where 10 per cent of firms transitioned from informality to formality. This could potentially be explained by the Law on Investment and the Law on Enterprises passed in November 2014 that supersede the Enterprise Law and Investment Law enacted in 2005. These laws clearly establish the need, and streamline the steps towards business registration, which could plausibly lead to an increase in registration.

Table 4.2: Formality transition matrix

	Informal 2015	Formal 2015	Total
Informal 2013	27	591	618
	(4.4)	(95.6)	(100)
Formal 2013	34	1,445	1,479
	(2.3)	(97.7)	(100)
Total	1,201	896	2,097

Note: Formal firms are those that have an ECN or a BRC and a tax code. Entries are the numbers of enterprises. Percentages in parentheses.

Source: Authors' calculations based on SME data.

Table 4.3 examines how formality is correlated with firm growth (i.e., growth measured in terms of employee size) and firm exit. The main variable of interest is being formal that takes the value 1 if formal as per the definition mentioned above; 0 otherwise. Firm size as measured by log of number of employees is also controlled for, as are province and sector controls to account for location-specific and industry-specific factors that may influence firm growth and exit. Column 1 shows that firm growth is positively and significantly associated with formal status. Being formal is not significantly correlated with firm exit as noted in column 2. While the previous survey in 2013 found a significant positive relationship between firm exit and formal status, all surveys prior to that have not documented such a significant relationship (CIEM et al. 2012). Further, larger firms experience lower rates of growth and are also more likely to survive.

Table 4.3: Firm dynamics and formality

	Firm growth Col. 1	Firm exit Col. 2
Firm size	-0.098***	-0.020**
	(0.008)	(0.008)
Formal	0.096***	0.032
	(0.018)	(0.020)
Location dummies	Yes	Yes
Sector dummies	Yes	Yes
Observations	2,087	2,466
Pseudo R-squared	0.094	0.03

Note: Columns 1 and 2 report marginal effects from OLS and probit regressions respectively. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: Authors' calculations based on SME data.

4.2 Informal payments

The relationship between informal payments/bribes and firm performance remains equivocal: while the 'greasing the wheels' hypothesis argues that bribery facilitates trade and transactions and helps to promote efficiency in poor institutional settings, the 'sand in the wheels' premise posits that such informal costs impose a cost on firms and the economy, thereby lowering productivity. Fisman and Svensson (2007) find a negative association between corruption and sales growth in Ugandan firms. Using firm-level data from World Bank Enterprise Surveys from 48 developing and transition economies for the period 2007-11, Paunov (2016) finds that corruption has a negative impact on innovation as measured by firms' ownership of quality certificates. Moreover, this effect is stronger for smaller firms. In a similar vein, O'Toole and Tarp (2014) using enterprise surveys of 90 developing countries, find that investment efficiency is negatively associated with bribe payments. On the contrary, Vial and Hanoteau (2010) find a positive effect of corruption on productivity across firms in Indonesia.

Using the balanced panel of firms in 2013 and 2015, the statistics in Table 4.4 indicate that 44.6 per cent of firms made informal payments in 2013. The figure for 2015 is marginally smaller at 42.7 per cent and this decline is not statistically significant. In the lower panel of Table 4.4 we see that, of the total number of firms making informal payments in the balanced panel, an overwhelming majority belongs to the formal sector (85 per cent in 2013 and 98 per cent in 2015). This is in accordance with the finding in Rand and Tarp (2012) that the 'bribes to hide' hypothesis is not confirmed in the Vietnamese context. The frequency of informal payments was also fairly similar across the two rounds with approximately 70 per cent of firms stating that they made such payments 2-5 times in the past year. Of the firms making informal payments, 40 per cent perceived that such payments would increase in the future, while in 2013, 49 per cent of firms had concurred with that view.

Table 4.4: How many enterprises made informal payments?

	2013	2015
All firms	936	896
	(44.6)	(42.7)
By formality status:		
Formal firms	792	877
	(84.6)	(97.9)
Informal firms	144	19
	(15.4)	(2.1)

Note: Entries are the numbers of enterprises that made informal payments. Percentages of firms in parentheses. Formal firms are those that have an ECN or a BRC and a tax code.

Source: Authors' calculations based on SME data.

Table 4.5 reports the temporal changes in informal payment across the two rounds. 58 per cent of firms that made an informal payment in 2013 continued to do so in 2015. Additionally, 30 per cent of firms that did not make such a payment in 2013 became started paying in 2015. This highlights that a very significant share of firms have at some point found it necessary to engage in such behaviour.

Table 4.5: Temporal changes in informal payment

	No payment 2015	Yes payment 2015	Total
No payment 2013	810	351	1,161
	(69.8)	(30.2)	(100)
Yes payment 2013	391	545	936
	(41.8)	(58.2)	(100)
Total	1,201	896	2,097

Note: Entries are the numbers of enterprises. Percentages in parentheses.
Source: Authors' calculations based on SME data.

Figure 4.1 below depicts the reasons for making informal payments as stated by firm owners or managers. While the proportion that incurred informal payments to 'gain access to public services' declined from 28.4 per cent to 18.75 per cent between 2013 and 2015, the fraction making payments to 'deal with tax and tax collectors' increased from 17.6 per cent to 24.1 per cent. 'Other reasons' comprises another important category and accounts for 35-38 per cent of reasons. In other categories such as 'to deal with customs', 'to get licenses and permits' and 'to gain government contracts', the changes in proportions appear to be marginal.

Figure 4.1: Reasons for making informal payments
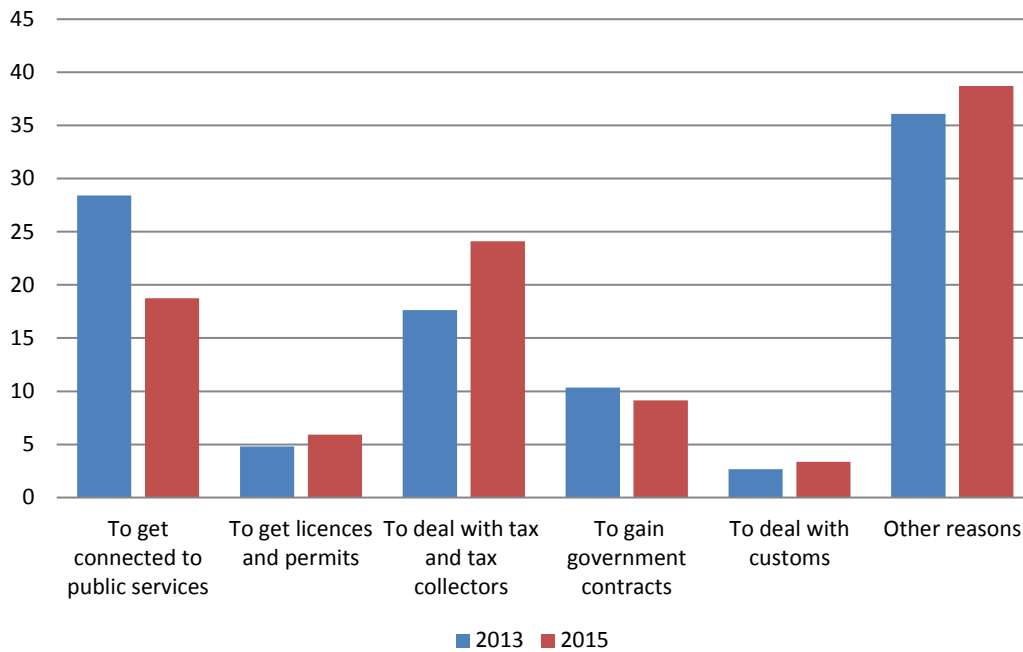
Source: Authors' calculations based on SME data.

Turning the attention towards examining the determinants of informal payment, Table 4.6 reports results of regressions where the outcome is the informal payment variable (takes value 1 if firm incurs informal costs, 0 otherwise). The key variables of interest are characteristics such as firm size (i.e., log of number of employees) and a formal status dummy. We further add year, sector and location dummies. In column 1, a pooled probit model is estimated on the balanced panel. Column 2 reports marginal effects from a linear probability model using firm fixed effects. While larger firms are significantly more likely to make informal payments across both specifications, the relationship between formality and informal payments is dependent on specification. While in the balanced sample, the formal dummy is insignificant, in the fixed effects model in column 2, the formal dummy coefficient is negative and significant, indicating that formal firms are 10 percentage points less likely to make informal payments. However, on account of firm fixed effects that allow controlling for firm-level time-invariant unobservable factors, the specification in column 2 may be deemed desirable.

Table 4.6: Determinants of informal payments

	Balanced	Fixed effects
	Col. 1	Col. 2
Firm size	0.175***	0.056**
	(0.010)	(0.024)
Formal firm	0.021	-0.102***
	(0.027)	(0.027)
Location dummies	Yes	
Sector dummies	Yes	
Observations	4,198	4,200
R-squared		0.645

Note: Pooled probit + Fixed effects (LPM). Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations based on SME data.

Table 4.7 reports the association between informal payments and chosen indicators of firm performance: firm growth and firm exit. Like in the previous report emerging from the 2013 data, it is visible that firms making informal payments are not expanding their labour force as compared to firms that do not make such payments. However, unlike the results from the 2013 survey, the latest data indicate that informal payment is not associated with exit either.

Table 4.7: Informal payments, firm growth and firm exit

	Firm growth	Firm exit
	Col. 1	Col. 2
Firm size	-0.102***	-0.020**
	(0.009)	(0.008)
Formal firm	0.090***	0.028
	(0.018)	(0.020)
Informal payment	0.022	-0.011
	(0.016)	(0.016)
Location dummies	Yes	Yes
Sector dummies	Yes	Yes
Observations	2,087	2,466
R-squared	0.092	

Note: Columns 1 and 2 report marginal effects from OLS and probit regressions respectively. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' calculations based on SME data.

The key findings of this chapter are: (i) between 2013 and 2015, there has been an enormous increase in formalization; (ii) between 2013 and 2015, the decline in incidence of informal payments has been marginal; (iii) formality is positively associated with firm growth but does not matter for firm exit; and (iv) informal payment is not significantly associated with either firm growth or firm exit.

5 Investment and access to finance

Financial market constraints are often mentioned as one of the most important obstacles for future growth of SMEs in Viet Nam. This section shows the investment behaviour of surveyed firms, as well as the formal and informal access to credit. The dynamic aspects of the process are illustrated using the panel data from 2013 and 2015.

5.1 Investments

Table 5.1 shows the percentage of enterprises that made investments in the past two years, according to firm size, legal structure, and location. In 2013, 47 per cent of 2,530 enterprises reported new investments. This number rose to 49 per cent in 2015, illustrating a positive investment trend over the observed period. Tendencies to engage in new investments have been positive only for micro firms. While 39 per cent of micro enterprises made investments in 2013, 43 per cent of them did so in 2015. Both small and medium enterprises decreased the rate of investments since 2013. Small firms slowed investments by 1.4 percentage points and medium firms by 4 percentage points. Non-household firms made more investments than their household counterparts in both years. The rate of investment increase has, however, been very similar for both firm categories. Firms located in rural and Northern provinces invested more frequently than enterprises in urban and southern areas. Moreover, the investment trend has been slightly negative for firms in the south. Different sectors have been investing at different rates in the considered two-year period. The largest share of investments occurred in the petroleum and furniture sectors both in 2013 and 2015.[4]

Table 5.1: New investments

	2013		2015	
	Obs.	%	Obs.	%
All	2,530	46.7	2,628	48.7
Micro	1,812	39.1	1,888	42.6
Small	579	62.9	576	61.5
Medium	139	78.4	164	74.4
Household firm	1,591	40.1	1,664	42.1
Non-household firm	939	57.9	964	60.3
Urban	1,096	37.2	1,168	38.5
Rural	1,434	54.0	1,460	56.9
South	1,103	40.8	1,148	40.2
North	1,427	51.3	1,480	55.4

Source: Authors' calculations based on SME data.

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[4] We do not report these findings, but they are available from the authors upon request.

Table 5.2 looks at investment persistence among the SMEs. Around 65 per cent of enterprises made new investments in both 2013 and 2015, marking a 5 percentage point increase compared to the 2011–13 period. The number of firms not investing in the past four years (725 firms) is 13 per cent higher than the number of firms that invested both in 2013 and 2015 (643 firms). The proportion of firms starting to invest (34 per cent) is similar to the number of firms stopping investing (36 per cent) in the observed period. The share of micro firms investing in both years (56.7 per cent) is smaller than the share of micro firms not investing in the past four years (69.2 per cent). The opposite holds for small and medium firms, where the share of firms making repeated investments is on the rise.

Table 5.2: Investment persistence (investment transition matrix)

| | | Investment Transition | | | |
		No 2015	Yes 2015	Total	Per cent
Micro	No 2013	610	272	882	(58.8)
		(69.2)	(30.8)	(100.0)	
	Yes 2013	267	350	617	(41.2)
		(43.3)	(56.7)	(100.0)	
Small	No 2013	103	85	188	(39.9)
		(54.8)	(45.2)	(100.0)	
	Yes 2013	72	211	283	(60.1)
		(25.4)	(74.6)	(100.0)	
Medium	No 2013	12	14	26	(20.5)
		(46.2)	(53.8)	(100.0)	
	Yes 2013	19	82	101	(79.5)
		(18.8)	(81.2)	(100.0)	
All	No 2013	725	371	1,096	(22.3)
		(66.1)	(33.9)	(100.0)	
	Yes 2013	358	643	1,001	(47.7)
		(35.9)	(64.2)	(100.0)	
Total		1,083	1,014	2,097	(100.0)
Per cent		(51.6)	(48.4)	(100.0)	

Source: Authors' calculations based on SME data.

Table 5.3 shows that probability to invest changes with firm characteristics. As expected, larger firms are more likely to invest than smaller firms after controlling for the influence of legal structure, location, and sector. The size of the coefficient is reduced by half when unobserved firm characteristics are controlled for, with the coefficient remaining statistically significant. Household firms are less likely to make new investments than other legal enterprise forms. Urban firms and firms located in southern provinces also have a significantly lower probability of investing than comparable northern and rural firms. This confirms the initial observation made in Table 5.1 and it could be explained by a higher reliance on informal loans with

lower interest rates in Northern provinces (see Table 5.4 for investment financing).[5] Throughout the table, the time dummy is positive, but well-determined only in the estimation using unbalanced sample, indicating that new firms added to the sample in 2015 have a higher level of investment than the firms present in the sample in both years. Among the firms surveyed in both years, the rate of new investments in 2015 is not higher than in 2013 at the standard levels of statistical significance.

Table 5.3: Investment determinants

	All		Balanced		FE	
	Coef	t-stat	Coef	t-stat	Coef	t-stat
Firm size (log number of employees)	0.152***	(15.55)	0.158***	(14.31)	0.081***	(3.10)
Household firm (Yes=1)	-0.101***	(-4.75)	-0.108***	(-4.57)		
Urban (Yes=1)	-0.296***	(-17.66)	-0.307***	(-16.59)		
South (Yes=1)	-0.144***	(-9.34)	-0.150***	(-8.80)		
Year dummy	0.025*	(1.68)	0.003	(0.19)	0.006	(0.49)
Sector dummies	Yes		Yes		Yes	
Observations	5,138		4,198		4,198	
Pseudo R-squared	0.13		0.14		0.01	

Note: Probit and fixed effects (linear probability model). Robust standard errors. *, ** and *** indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Base: Food processing (ISIC 15).

Source: Authors' calculations based on SME data.

Figure 5.1 shows the sources of finance for new investments. The most important sources of finance for new investments are formal loans from banks or other official institutions. The source of finance is, however, in decline compared to 2013 by 4 per cent, which comes as a surprise considering several active government programmes for investment support. For example, the Five-Year SME Development Plan 2011–15 has set a target that the SME investments represent 35 per cent of total investment (ADB 2015). The slight mismatch between the increased policy attention to investment support and actual borrowing from official institutions may be slow implementation or the fact that the types of investments supported by government programmes are not particularly well-targeted to the needs of SMEs. Figure 5.2 shows that the large part of SME investment is poorly understood. The data show a slight increase in the value of investments in land, equipment and machinery, and buildings as a share of total enterprise investments. Around 58 per cent of the firms made investments in category 'other', with only 3 per cent of the enterprises investing in research and development, human capital upgrading and patents. This leaves 55 per cent of the investment portfolio unexplained. An improvement over the current situation could be observed after two new programs on innovation and technology investment get implemented. First, the SME Development Fund has been designed with the aim to support SMEs that have feasible business plans or projects in the government's

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[5] The average interest rate for informal loans was 0.31 per cent in the north and 0.68 per cent in the south in 2015. The average interest rate for informal loans was 0.61 per cent in rural areas and 0.66 per cent in urban areas in 2013.

priority sectors (Prime Minister Decision No. 601/QD-TTg). Second, the National Foundation for Science and Technology has been designed with the aim to provide loans of up to 10 billion VND with a zero interest rate for technology-oriented projects (ADB 2015).

Figure 5.1: How was the investment financed?
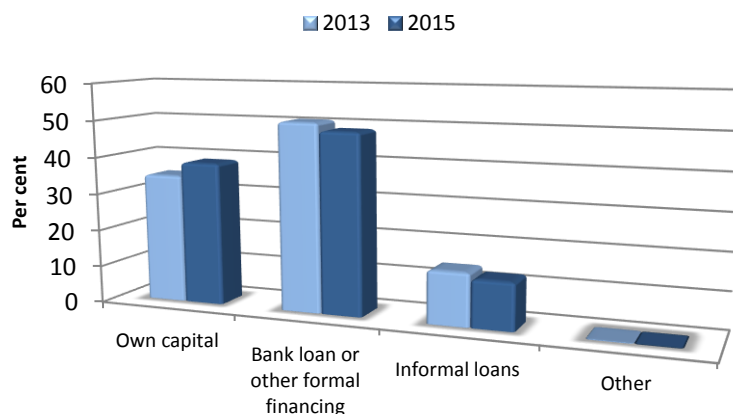
Source: Authors' calculations based on SME data.

Unlike in the previous report (CIEM et al. 2014), the importance of retained earnings for investment financing is on the rise. The 2013 survey data reveal that retained earnings were the main source of finance for 35 per cent of new investments in the 2011–13 period. In contrast, 39 per cent of new investments have been financed by own capital during the past two years. The share of investments financed through informal sources (for example, friends and family without interest payments) decreased from 14.2 per cent in 2013 to 12.7 per cent in 2015.

Figure 5.2: Investment details 2013–15 (per cent)
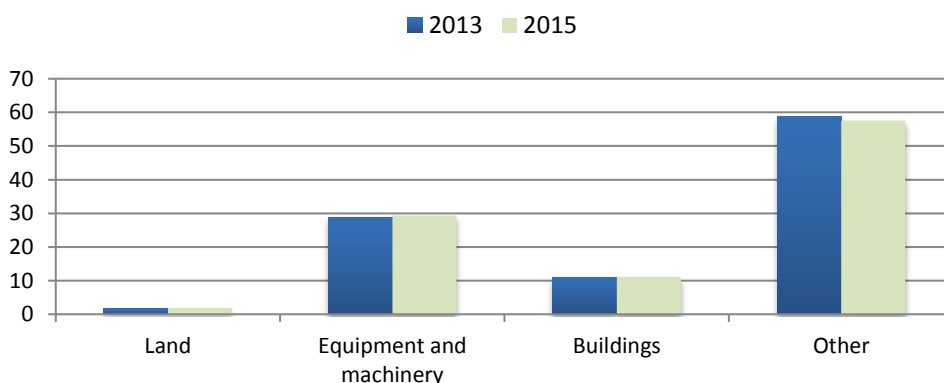
Source: Authors' calculations based on SME data.

Table 5.4 considers the set of firms surveyed in 2015, who have made investments in the past two years. The numbers are slightly higher than in Figure 5.1, which considers the balanced panel. Micro firms are more likely to finance investments using retained earnings or informal financing than larger enterprises, which decisively prefer formal loan sources. Household-owned firms resemble the micro firms, while non-household firms do as larger enterprises. Firms located in rural areas and in the south resort to formal borrowing for investment financing. Urban enterprises show higher use of informal loans than other firm categories. This could be explained by urban firms' higher demand for credit, where they turn to informal borrowing when the formal sources have not met their demand.

Table 5.4: Investment financing, by firm size and location

	Retained earnings Per cent	Formal loans Per cent	Informal loans Per cent
All	39.7	47.2	13.1
Micro	44.1	40.2	15.6
Small	33.9	55.6	10.5
Medium	26.9	68.7	4.3
Household firm	47.1	37.9	15.0
Non-household firm	30.7	58.4	10.8
Urban	36.1	43.7	20.1
Rural	41.6	49.1	9.3
South	44.3	50.4	5.2
North	37.1	45.3	17.6

Note: Full 2015 sample with 1,275 firm observations. Formal financial loans are calculated as the residual.

Source: Authors' calculations based on SME data.

Figure 5.3 compares the investment purpose of enterprises in 2013 and 2015. Investments were primarily made in order to increase production capacity. While this is not different from 2013, it shows a 9 percentage point increase compared to 2011. The second most important reason to invest was to replace old equipment, but this was less important in 2015 than in 2013. Firms have invested more in 2015 to increase productivity, but less to improve quality, produce new output, and meet environmental requirements.

The investment profile of SMEs will be better understood with the information about credit market conditions and interest rate levels. Thus, the following section describes the borrowing behaviour of firms from the sample.

Figure 5.3: Investment purpose 2013–15 (per cent)
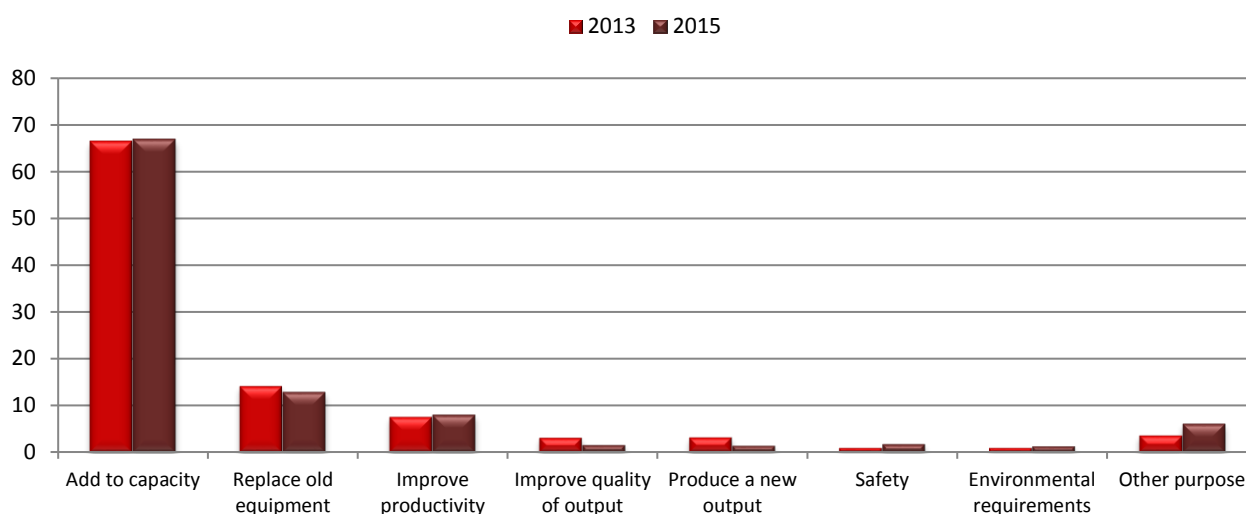
Source: Authors' calculations based on SME data.

5.2 Credit

Table 5.5 shows the number of enterprises that applied for bank loans or credit from formal institutions in the past two years. In 2015, 25 per cent applied for a formal loan and 15 per cent had problems getting the loan. These results are independent of whether we focus on the full or the balanced sample. Previous SME sector analyses report very low debt shares of Vietnamese enterprises (CIEM et al. 2014; CIEM et al. 2012; CIEM et al. 2010; Rand et al. 2008). The main reason is likely traceable to liquidity constraints and financial access barriers (Rand 2007). The low debt-to-asset share is, however, consistent with the result that investments are, to a large extent, financed through retained earnings. Compared to 2013, the average credit access has declined by 1.2 percentage points, but only by 0.2 points in the balanced sample. A much lower number of firms report having problems with getting loans compared to 2013.

Table 5.5: Access to credit in 2015

		2013 (Full sample)		2013 (Balanced sample)		2015 (Full sample)		2015 (Balanced sample)	
		Yes	No	Yes	No	Yes	No	Yes	No
Enterprise applied for formal loan	%	25.8	74.2	25.3	74.7	24.6	75.4	25.1	74.9
	Obs.	652	1,878	530	1,567	646	1,982	527	1,570
Problems getting loan	%	23.9	76.1	23.5	76.5	15.0	85.0	14.6	85.4
	Obs.	155	495	124	404	97	549	77	450

Source: Authors' calculations based on SME data.

Table 5.6 shows access to credit for different groups of enterprises on the unbalanced panel. While larger firms have better access to credit, all enterprise categories have experienced a credit access decline.

Household firms have twice as low credit access as non-household firms, which are the only category with a virtually unchanged credit access rate. A similar trend appears for the rural–urban and north–south distinction of firms, where rural and northern firms have a better position in accessing credit.

Table 5.6: Credit access by enterprise category

| | 2013 | | 2015 | |
	Obs.	%	Obs.	%
All	2,530	25.8	2,628	24.6
Micro	1,812	18.0	1,888	17.3
Small	579	40.8	576	38.9
Medium	139	64.0	164	57.9
Non-household firm	939	39.1	964	39.2
Household firm	1,591	17.9	1,664	16.1
Rural	1,434	31.1	1,460	29.7
Urban	1,096	18.8	1,168	18.2
North	1,427	27.7	1,480	26.6
South	1,103	23.3	1,148	22.0

Source: Authors' calculations based on SME data.

The majority of enterprises are not in need of loans (54 per cent) or do not want to incur debt (23 per cent), as shown in Figure 5.4. These firms cannot be considered as credit constrained, but out of the non-applicant group (1,982 firms) around one-half may potentially be classified as credit constrained. Figure 5.4 shows that this may be due to high interest rates or a difficult application process (each at 7 per cent). We identify in this way 905 enterprises with limited access to credit, corresponding to 34 per cent of the sample. Adding rationed firms (97 firms with problems in getting loans) means that 38 per cent of firms are credit rationed or constrained. This number has decreased slightly since the survey in 2013, when the share of credit rationed or constrained enterprises was 43 per cent. The number is, however, similar to 39 per cent of credit rationed or constrained firms identified in 2011 (CIEM et al. 2014).

Figure 5.4: Why enterprises do not apply for loans?
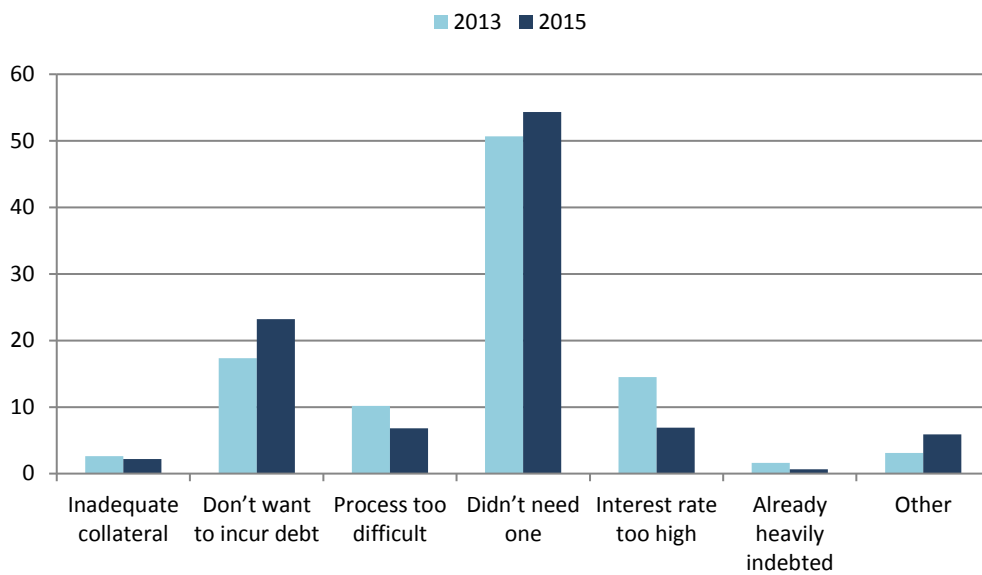
Source: Authors' calculations based on SME data.

We now focus on the characteristics of credit-constrained enterprises. Table 5.6 has identified that enterprises located in urban areas are more likely to be credit constrained than their counterparts in rural areas. Table 5.7 confirms that enterprises in urban areas are more credit constrained irrespective of the legal ownership form, which could be occurring because of the higher demand for loans by urban firms.

Table 5.7: Which enterprises are credit constrained?

Legal status	Observations	Credit constrained (%)		
		Rural	Urban	Total
Households	1,148	54.4	48.4	52.5
Private/sole proprietorship	84	69.0	60.5	64.8
Partnership/collective/cooperative	11	72.7	62.8	64.8
Limited liability company	177	72.3	69.4	70.2
Joint stock company	40	90.0	75.3	80.3

Source: Authors' calculations based on SME data.

Some of the explanations for not getting a loan are shown in Figure 5.5. We see that difficulties in obtaining bank clearance are the most constraining. This holds for 30 per cent of the enterprises that reported problems in loan access. Lack of available collateral for a loan is challenging for 27 per cent of firms. Both of these categories are less important in 2015 than they were in 2013, but the administrative and procedural

difficulties are becoming more relevant for just below 20 per cent of firms.[6] This suggests that loan access could be improved with a re-design of loan application procedures and better guidance given to SMEs. Indeed, when asked about the way in which the authorities could help the enterprise expand and increase its profits, 20 per cent of firms replied that providing easier credit access is the most important way. Similarly, 17 per cent of enterprises replied that further removing bureaucratic requirements or restrictions matters the most.[7]

Figure 5.5: Causes of problems for getting the loan
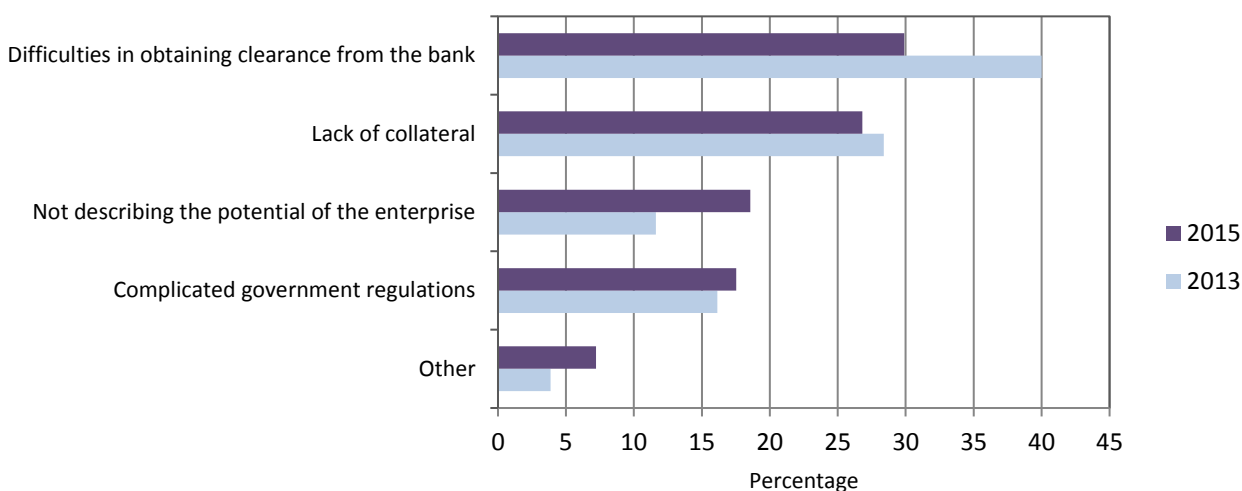
Source: Authors' calculations based on SME data.

A part of the explanation for not getting a loan could also be related to interest rates. The average monthly interest rate was 1.20 per cent for formal loans and 0.63 per cent for informal loans in 2013. This interest rate has decreased to 0.90 per cent for formal loans and to 0.39 for informal loans in 2015. The average monthly interest rate on formal loans was higher in urban areas in 2015: 0.93 per cent compared to 0.87 per cent in rural areas. The situation was opposite for informal loans: enterprises in rural areas paid 0.45 per cent on average for informal loans, while those in urban areas paid 0.32 per cent in interest in 2015. The informal loan market in 2013 was more advantageous for rural firms that faced 0.61 per cent interest rate on average, while urban firms paid on average 0.66 per cent in interest for informal loans. The interest rates on formal loans were not very different between regions in 2015 (0.90 per cent in the north and 0.88 per cent in the

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[6] The question on the causes of problems for getting a loan was answered by 155 enterprises in 2013 and 97 enterprises in 2015.
[7] Providing better access to credit was seen as the most important way of helping enterprises both in 2013 and 2015. Other important ways of helping in 2015 include: better private sector policies (13 per cent), assistance with premises/land (12 per cent) and assistance with marketing (9 per cent).

south), but they were twice lower for informal loans in the north than in the south (0.31 compared to 0.68 per cent). The formal loan interest rates were also similar in different regions in 2013 (1.18 per cent in the north and 1.25 in the south), but the difference between regions in terms of informal loans was smaller than in 2015 (0.60 per cent in the north compared to 0.68 in the south).[8]

Table 5.8 looks at the relationship between formal and informal financing. First, we see that 25 per cent of firms obtain formal loans as compared to 35 per cent of firms with informal loans. Second, 275 firms out of 2,628 have both informal and formal loans and 70 per cent of firms not having formal credit access use informal loans. The rate is unchanged compared to 2013. This fact, combined with the information from Table 5.4, that informal loans only finance 13 per cent of total investments, shows that informal loans are a small but frequent part of the SMEs financing. The frequently mentioned advantage of informal borrowing is that it occurs at a zero interest rate within the closest social circles. Our sample shows that 65 per cent of all informal loans are advanced with a zero interest rate. This is more common among firms in urban areas, 72 compared to 58 per cent of informal loans, respectively.

Table 5.8: Formal and informal loans in 2015

| | | Formal loan | | | |
		No	Yes	Total	Per cent
Informal loan	No	1,342	371	1,713	(65.2)
		(78.3)	(21.7)	(100.0)	
	Yes	640	275	915	(34.8)
		(70.0)	(30.0)	(100.0)	
	Total	1,982	646	2,628	(100.0)
	Per cent	(75.4)	(24.6)	(100.0)	

Source: Authors' calculations based on SME data.

Informal loans mostly come from relatives and friends (67 per cent in 2013 and 56 per cent in 2015), which could explain such a high share of loans with zero interest rate. The reliance on relatives and friend is, however, slightly declining in favour of private moneylenders (28 per cent in 2015, compared to 20 per cent in 2013). Enterprises that borrow from private moneylenders pay in fact substantially higher than average monthly interest rate for informal loans (66 per cent compared to 39 per cent on average in 2015).

Finally, Table 5.9 looks at the determinants of formal and informal borrowing for all firms and a subsample of firms who need credit. The general picture is that larger firms are more likely to obtain both formal and

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[8] The question about the formal loan interest rates was answered by around 600 enterprises and the question about the informal loan interest rates was answered by around 400 enterprises in 2013 and 325 enterprises in 2015.

informal credit, but the firm size stops being important for informal loans when firms without credit demand are excluded from the sample. Household firms are, depending on the specification, 13 to 17 per cent less likely to obtain any form of credit. This indicates that formal enterprises have a high demand not only for formal, but also for the informal sources of financing. Urban firms are between 25 and 43 per cent less likely to obtain formal credit than rural firms, depending on the sample chosen. They are, however, more likely to obtain informal credit in the specification excluding firms without demand for credit, with the joint measure for credit access for these firms still remaining negative. This confirms the findings in Table 5.6 of rural firms having better credit access. Firms in the south also have lower chances of obtaining credit from all sources.

Table 5.9: Credit access characteristics

	(a) All firms			(b) Excluding firms without credit demand		
	(1) Formal credit	(2) Informal credit	(3) Credit (formal and informal)	(4) Formal credit	(5) Informal credit	(6) Credit (formal and informal)
Firm size (log number of employees)	0.105***	0.035***	0.106***	0.113***	0.015	0.074***
	(10.44)	(3.03)	(8.02)	(7.01)	(1.01)	(4.82)
Household firm (Yes=1)	-0.169***	-0.041	-0.132***	-0.289***	-0.019	-0.168***
	(-6.42)	(-1.48)	(-4.50)	(-7.68)	(-0.52)	(-4.88)
Urban (Yes=1)	-0.244***	0.005	-0.174***	-0.431***	0.065**	-0.236***
	(-13.10)	(0.24)	(-7.31)	(-14.21)	(2.08)	(-7.86)
South (Yes=1)	-0.056***	-0.210***	-0.194***	0.009	-0.249***	-0.136***
	(-3.18)	(-11.11)	(-9.20)	(0.31)	(-9.60)	(-4.92)
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,626	2,626	2,626	1,549	1,549	1,549
Pseudo R-squared	0.18	0.05	0.10	0.18	0.06	0.11

Note: Probit, marginal effects. z-statistics in parentheses. Robust standard errors. *, ** and *** indicate significance at a 10%, 5% and 1% level, respectively. Base: Food processing (ISIC 15).

Source: Authors' calculations based on SME data.

Taken together, this section has identified challenges of small firms to repeatedly invest in their business. On the one hand, enterprises show a strong tendency for investing from retained earnings and on the other hand, they face more affordable terms in the informal loan market. A part of the explanation for the modest investment rates likely pertains to credit market constraints, which could be improved with more affordable credit lines designed to better suit SME needs, as well as a re-design of loan application procedures and better guidance.

6 Production, technology, and labour productivity

This section examines the characteristics of production and technology as well as labour productivity for SME's in 2015 and compares the results to 2013. As such, this section is comparable to earlier reports including CIEM et al. (2014); CIEM et al. (2012); CIEM et al. (2010).

6.1 Diversification and innovation

Diversification is, for the purpose of this report, defined at the enterprise level as a production of more than one 4-digit ISIC product. Diversifying production can decrease enterprise vulnerability to shocks, thus increasing the probability of survival, but it may also decrease productivity in the short-run. A closer look at innovation levels is also important as innovation remains one of the driving forces of enterprise dynamics. We consider an enterprise to be innovating if it started producing a new product (at the 4-digit ISIC level) during the past two years (denoted 'Innovation 1') or if it made significant improvements of existing products (denoted 'Innovation 2').

Table 6.1 shows that an average Vietnamese enterprise is relatively specialized. In 2013, 11.1 per cent of enterprises produced more than one product defined per 4-digit ISIC category. This number is higher by only 0.5 percentage points in 2015. The largest level of diversification among Vietnamese SMEs has been identified as being in 2009 when 15 per cent of the surveyed firms produced more than one product (CIEM et al. 2012; CIEM et al. 2010). The latest survey round thus confirms the downward sloping trend in diversification detected in 2011. Larger enterprises had a higher rate of diversification in 2015, which indicates that specialization is declining in enterprise size. Lower levels of diversification among micro enterprises could point to less competition among firms in this size category or a lack of capacity to produce several goods at the same time. The latest survey data show a decline in diversification among urban enterprises. In line with the pattern observed in the previous report (CIEM et al. 2014), firms in the north appear more likely to diversify than firms in the south. Firms located in industrial zones show above average rates of diversification, with 15.2 per cent of firms in 2015 producing more than one product. This is, however, a decline compared to 2013.

Viet Nam's science, technology, and innovation system is only emerging, with research and development both in the public and private sectors characterized as under-developed (OECD 2014). We show the enterprise level of innovation rates in Table 6.1. It is visible that the proportion of enterprises introducing a new product rose sharply between 2011 and 2015. The innovation rate was around four per cent in 2011 and 23.8 per cent in 2015. Such an increase could be due to the more innovation-focused policy instruments that currently operate in Viet Nam. One such initiative is the establishment of the National Technology Innovation

Fund in the Inter-Ministerial Circular No. 120/2014/TTLT-BTC-BKHCN from 25/08/2014 issued by the Ministry of Finance and the Ministry of Science and Technology. The Fund is endowed with 1 trillion VND for financing scientific and technological research conducted by enterprises. Approximately one-half of total funds should be used for guaranteeing loans or lending with the goal of contributing to enhancing innovation among Vietnamese businesses. Second, the Viet Nam Inclusive Innovation Project worth 55 million VND started in 2013 with the aim of improving technological and innovative capacity of SMEs by helping development, acquisition, adoption, and use of technology and innovations (World Bank 2013). Another line of support for innovation comes from the Viet Nam Business Challenge Fund. The Fund supports the private sector in developing innovative business models by proving non-reimbursable funding of up to 49 per cent of the total investment in selected projects (DFID 2015).

Table 6.1: Diversification and innovation rates (per cent)

	Diversification (More than one 4-digit ISIC)		Innovation 1 (New product development)		Innovation 2 (Improvement of existing product)	
	2013	2015	2011	2015	2013	2015
All	11.1	11.6	3.96	23.8	16.4	13.2
Micro	9.1	10.1	3.19	23.9	12.9	10.0
Small	16.4	14.6	4.71	22.0	24.0	19.4
Medium	15.8	18.3	8.00	28.0	30.2	28.7
Urban	9.9	8.3	5.14	18.8	19.0	15.1
Rural	12.1	14.2	3.07	27.7	14.4	11.8
South	9.8	9.0	3.19	24.7	15.4	16.7
North	12.2	13.6	4.51	23.0	17.2	10.5
Industrial zone	18.2	15.1	12.07	24.5	30.3	24.5
Not in the industrial zone	10.8	11.5	3.55	23.8	15.6	12.8

Note: Numbers in percentages. The new product development is compared to 2011 due to unexpectedly low values in 2013.

Source: Authors' calculations based on SME data.

Larger firms are more likely to introduce new products, as are firms in the south. In 2015, firms from rural areas showed a considerably higher tendency to innovate than urban firms. It appears that being located in an industrial zone is not a decisive factor for being more innovative. This is seen in the lower part of Table 6.1, which shows that the level of new product development is at around 24 per cent for both enterprises located in an industrial zone and those located outside. The proportion of enterprises improving existing products declined from 16 per cent to 13 per cent between 2013 and 2015. This finding may point to a large burden of accumulated goods, whereby the firms tend to focus on selling the stock instead of changing products or technology. In particular, firms in the small group are the most prevalent contributors to the observed decline in this type of innovation. Urban and enterprises in the south are more likely to improve existing products than enterprises located in rural northern areas. Enterprises located in an industrial zone are twice as likely to innovate in this way as the enterprises located outside a zone. This is line with research

evidence on the positive effects of geographical proximity of firms for innovation (Audretsch & Feldman 1996; Howard et al. 2014). However, the trend for improving existing products has declined much faster since 2013 for enterprises within industrial zones.

Figure 6.1 shows that specialization and innovation are characteristics of larger firms. A lack of innovation reflects negatively on firm profits and revenue, but only for larger firms. Smaller firms do not appear to be set back by the lack of innovation, while diversification appears to be beneficial mostly for the medium-sized firms, both in terms of revenue and profits. There could be other factors causing the observed differences between firms. For example, more productive firms could also be the ones more likely to diversify and innovate, so the higher revenue and profits we observe may be due to initially higher productivity levels, not innovation or diversification. Uncovering the causal effect of diversification and innovation on firm performance is not within the scope of this report, but a task for carefully executed in-depth studies.

Figure 6.1: Firm revenue and profits by diversification and innovation status
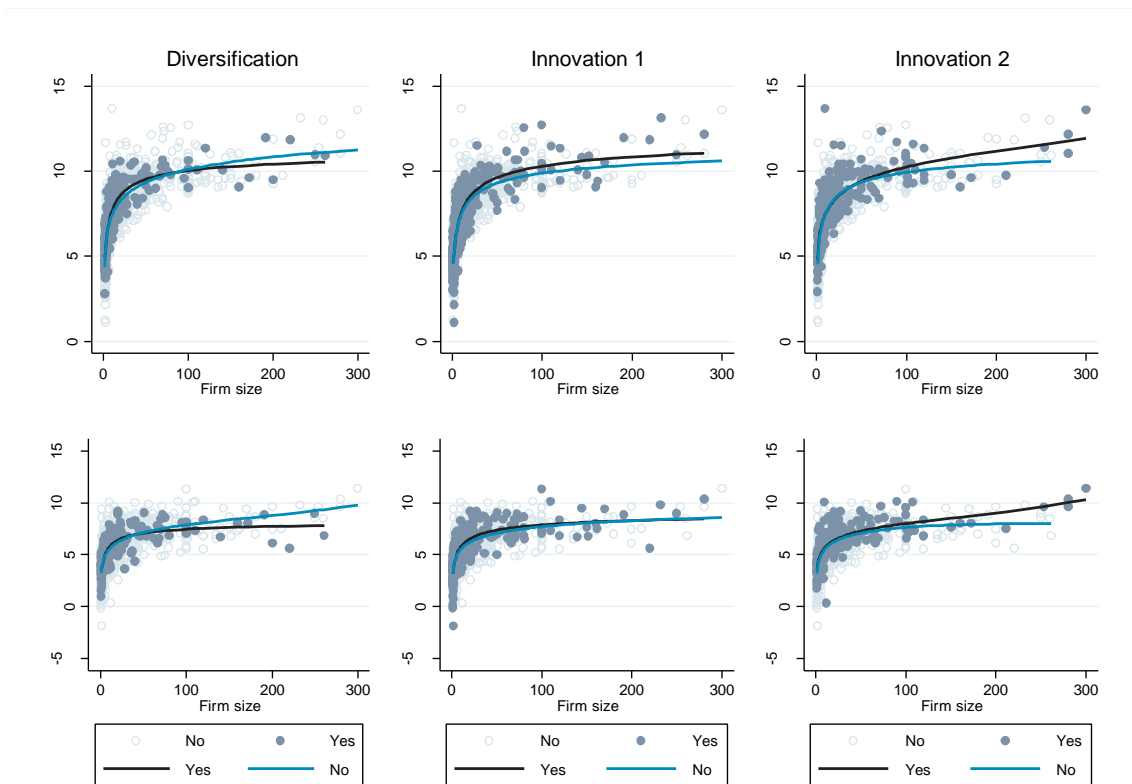
Note: Based on 2015 data.

Source: Authors' calculations based on SME data.

Table 6.2 looks at the prevalence of diversification and innovation in selected manufacturing sectors. Firms in the food industry appear to be most likely to diversify their product portfolio, which contrasts with findings not only in 2013, but also in earlier survey rounds. Enterprises from the fabricated metals sector had a higher degree of diversification than food firms in 2013, but that has reversed in 2015. Firms from the food and fabricated metal sectors also tend to innovate more than other sectors. These sectors have, however, experienced contrasting trends between 2013 and 2015. While diversification and innovation have increased in the food sector, they have declined in fabricated metal production. New product development and improvements of existing products have increased in the apparel and wood sectors, but declined in rubber and furniture manufacturing.

Table 6.2: Diversification and innovation by sector (per cent)

		Diversification		Innovation (new product development)		Innovation (improvement of existing product)	
ISIC (4-digit)		2013	2015	2013	2015	2013	2015
15	Food and beverages	15.7	25.3	0.0	27.8	14.7	19.8
18	Apparel	1.1	3.0	0.0	3.8	7.5	10.3
20	Wood products	13.2	15.1	6.3	14.7	11.8	12.1
25	Rubber	5.7	5.3	6.3	2.7	8.5	7.8
28	Fabricated metal	23.2	19.1	25.0	20.3	17.4	16.1
36	Furniture	6.8	5.9	18.8	4.8	11.6	7.8

Note: Only sectors with more than 100 observations per year included. Numbers in percentages.

Source: Authors' calculations based on SME data.

Table 6.3 shows the diversification and innovation transition matrices for the balanced panel. Panel (a) shows the data on product diversification. Only 7.2 per cent of firms not diversifying in 2013 managed to create a more diversified production profile in 2015. Around one-half of enterprises with diversified production in 2013 specialized to single 4-digit ISIC products in 2015. Panel (b) shows firms' tendencies for introducing new products over the observed two-year period. Innovation by this standard is rare and we see that only three enterprises introduced a new product in both 2013 and 2015. As many as 71 per cent of firms did not introduce any new products during the period considered. This is an improvement over the 2011–13 period when 99 per cent of firms were in the same situation. Panel (c) shows firm dynamics in improving existing products. Improvements happened for 11 per cent of firms who report that they modified their existing products between 2013 and 2015. We further see that 24 per cent of the firms who changed product lines in 2013 also made changes during 2015. Most firms, however, (89 per cent) did not improved their existing products either in 2013 or in 2015.

Table 6.3: Diversification and innovation transition matrices

(a) Diversification

	No 2015	Yes 2015	Total	Per cent
No 2013	1,736	135	1,871	(89.2)
	(92.8)	(7.2)	(100.0)	
Yes 2013	120	106	226	(10.8)
	(53.1)	(46.9)	(100.0)	
Total	1,856	241	2,097	(100.0)
Per cent	(88.5)	(11.5)	(100.0)	

(b) Innovation 1

	No 2015	Yes 2015	Total	Per cent
No 2013	1,469	615	2,084	(99.4)
	(70.5)	(29.51)	(100.0)	
Yes 2013	10	3	13	(0.6)
	(76.9)	(23.1)	(100.0)	
Total	1,479	618	2,097	(100.0)
Per cent	(70.5)	(29.5)	(100.0)	

(c) Innovation 2

	No 2015	Yes 2015	Total	Per cent
No 2013	1,541	193	1,734	(82.7)
	(88.9)	(11.1)	(100.0)	
Yes 2013	277	86	777	(17.3)
	(76.3)	(23.7)	(100.0)	
Total	1, 818	279	2,097	(100.0)
Per cent	(86.7)	(13.3)	(100.0)	

Source: Authors' calculations based on SME data.

Next, we describe diversification and innovation characteristics using firm size, location, ownership type, and sector. Results of pooled probit estimations are reported with robust t-statistics in Table 6.4. First, the size-effect reported in Table 6.1 is confirmed, and larger enterprises are shown to be more likely to diversify and modify existing products. Second, household and urban firms are less likely than other firm categories to diversify and introduce new products. Third, firms in the south tend to diversify less than firms in the north, but they do not differ significantly in terms of innovation. A possible explanation for the observed differences in diversification depending on firm location may be that competition is fiercer in the southern urban areas (HCMC) relative to other locations in the sample. This result confirms the findings in previous reports (CIEM et al. 2012; CIEM et al. 2010). Finally, the time controls confirm that diversification has not changed in 2015 compared to 2013 and that firms tended to introduce more new products in 2015, while not making as many improvements to existing products.

Table 6.4: Diversification and innovation characteristics

	Diversification		Innovation	
	Coef	z-stat	Coef	z-stat
Firm size (log number of employees)	0.010*	(1.84)	0.043***	(6.69)
Household firm (Yes=1)	-0.085***	(-5.62)	-0.020	(-1.25)
Urban (Yes=1)	-0.063***	(-6.24)	-0.011	(-0.89)
South (Yes=1)	-0.020**	(-2.14)	0.003	(0.24)
Year dummy	0.008	(0.82)	-0.039***	(-3.59)
Sector dummies	Yes		Yes	
Observation	4,147		4,151	
Pseudo R-squared	0.064		0.063	

Note: Innovation is defined as improvement of existing product. Probit, marginal effects. Robust standard errors. *, ** and *** indicate significance at a 10 per cent, 5 per cent and 1 per cent level, respectively. Base: Food processing (ISIC 15).

Source: Authors' calculations based on SME data.

Table 6.5 looks at the relationship between diversification, innovation, and employment growth in Panel (a) and firm exit in Panel (b). Panel (a) reveals that only innovation is positive and well determined in the employment growth equation. Firms improving existing products experienced 5 per cent higher employment growth than non-innovating firms between 2013 and 2015. This is in line with the situation between 2009 and 2011 when firms' tendencies to innovate resulted in 3 per cent employment growth (CIEM et al. 2012). Moreover, Panel (b) shows that firms improving existing products were 6 per cent less likely to exit. Just as in Panel (a), indicator for diversification is not well-determined in the firm exit specification.

Table 6.5: Diversification, innovation, and firm dynamics

	(a) Dependent variable: Employment growth (OLS)		(b) Dependent variable: Exit (Probit)	
	(1)	(2)	(3)	(4)
Diversification	-0.011		0.017	
	(-0.59)		(0.71)	
Innovation		0.050**		-0.060***
		(2.44)		(-3.47)
Firm size (log number of employees)	-0.129***	-0.132***	-0.038***	-0.035***
	(-13.11)	(-13.13)	(-4.35)	(-3.98)
Household firm (Yes=1)	-0.177***	-0.176***	-0.090***	-0.091***
	(-7.59)	(-7.60)	(-4.05)	(-4.11)
Urban (Yes=1)	0.005	0.005	0.014	0.014
	(0.29)	(0.33)	(0.84)	(0.85)
South (Yes=1)	0.030**	0.033**	-0.010	-0.012
	(2.06)	(2.25)	(-0.71)	(-0.80)
Sector dummies	Yes	Yes	Yes	Yes
Observations	2,087	2,087	2,465	2,465
Pseudo R-squared	0.12	0.12	0.02	0.03

Note: Innovation is defined as improvement of existing product. OLS and Probit estimates, marginal effects. Robust standard errors. *, ** and *** indicate significance at a 10%, 5% and 1% level, respectively. Base: Food processing (ISIC 15).

Source: Authors' calculations based on SME data.

Figure 6.2 illustrates a range of problems firms face when introducing new products. The lack of capital is considered the main obstacle to introducing new products. This holds for 45 per cent of enterprises from the

sample in 2015, which is a small improvement over 2013 when 49 per cent of firms identified this reason as the main contributor to the lack of innovation. Enterprises are more affected by the problems with identifying new market outlets for products in 2015 than in 2013. Problems with finding suitable machinery are identified by 10 per cent of firms as a major challenge for introducing new products and this problem is slightly on the rise. The innovation constraints in other categories, such as finding suitable premises and skilled labour are becoming less prominent in 2015.

Figure 6.2: The most important problem of introducing a new product (per cent)
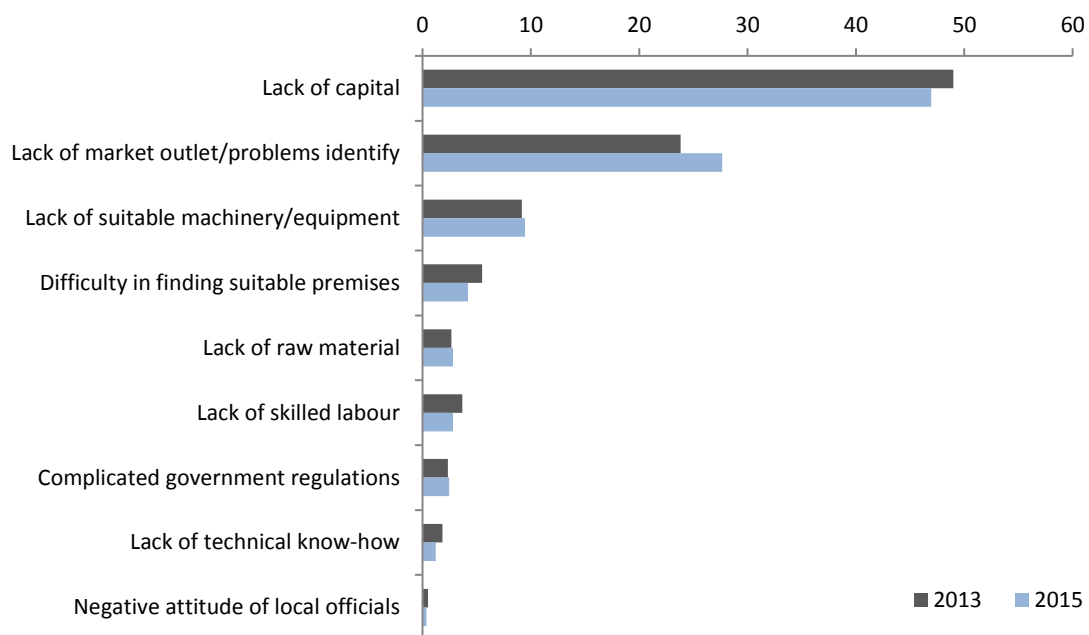
Source: Authors' calculations based on SME data.

6.2 Labour productivity characteristics

Using the balanced panel data with 2,097 observations, this sub-section investigates two different measures of labour productivity: (i) real revenue per full-time employee and (ii) real value added per full-time employee. Table 6.6 shows that the average real revenue per full-time employee was 200 million VND in 2015, whereas real value added per full-time employee was 55.7 million VND. Both figures reflect a real labour productivity growth compared not only to 2013, but also to previous years (CIEM et al. 2014; CIEM et al. 2012; CIEM et al. 2010). Larger enterprises show advantages over smaller ones again, with higher values of both real revenue and value added per employee. Urban enterprises have comparatively higher revenue and value added per employee than rural enterprises. The same is observed for enterprises in the south.

Table 6.6: Labour productivity by firm size and location

	Labour Productivity 1 (Million real VND)			Labour Productivity 2 (Million real VND)		
	2013	2015	Growth	2013	2015	Growth
All	184.7	200.0	1.10 [1.02]	53.1	55.7	1.08 [1.04]
Micro	163.4	171.1	1.09	47.8	50.3	1.08
Small	242.7	261.8	1.11	66.9	70.0	1.09
Medium	245.5	338.5	1.20	71.2	70.8	1.03
Urban	211.8	227.4	1.10	62.7	68.1	1.09
Rural	165.2	180.2	1.10	46.2	46.8	1.08
South	191.3	224.3	1.13	56.8	64.5	1.11
North	179.7	181.8	1.08	50.3	49.1	1.06

Note: Mean labour productivity (LP) growth is defined as LP_{2015}/LP_{2013}. Median LP growth in brackets. Real values in terms of 2010 VND.

Source: Authors' calculations based on SME data.

Table 6.7 shows labour productivity indicators for sectors with more than 100 observations in 2013 and 2015. Rubber production (ISIC 25) is the sector with the highest real revenue and value added per employee. While the real value added per employee has increased since 2013, the revenue has declined. In fact, the average real revenue per full-time employee has increased in all sectors except processing of wood products (ISIC 20) and rubber (ISIC 25). The highest increase in real revenue per employee was in the fabricated metals sector (ISIC 28). In terms of the second labour productivity measure, the real value added per full-time employee, all sectors apart from wood processing are showing higher values than in 2013. The highest increase in real value added per employee was in the apparel sector (ISIC 18). The average labour productivity growth rates are over 1 in all sectors, highlighting the positive developments in labour productivity among Vietnamese SMEs in the 2013 to 2015 period. However, the variation across firms is large, with around 80 per cent of firms experiencing negative labour productivity growth between 2013 and 2015.

Finally, Table 6.8 shows the results of the estimations of labour productivity growth in the period 2013–15 against a set of common explanatory variables such as location, ownership form, sector, and firm size to which we have added indicator variables for diversification and innovation measured at the 2013 level. In addition, we control for the 2013 labour productivity level and report robust standard errors in parentheses next to the estimation results. What emerges is the usual decreasing pattern of returns, i.e. a highly significant negative coefficient estimate on the 2013 productivity level, which indicates that firms with initially high levels of labour productivity experience lower growth over time. This finding is akin to earlier analyses of the Vietnamese SMEs (CIEM et al. 2014; CIEM et al. 2012). Also, labour productivity increases with firm size, independent of the way in which labour productivity is measured. This confirms the observations in Table 6.6. Neither diversified production nor new product introduction affect labour productivity growth. Improving existing products is positively correlated with labour productivity growth in

terms of value added per employee, meaning that enterprises can increase productivity by changing existing product lines. Further, labour productivity growth is not likely to happen to household firms but to enterprises located in urban areas, at least in terms of value added. Lastly, enterprises located in the south experience higher labour productivity growth than enterprises located in rural provinces.

Table 6.7: Labour productivity by sector

		LP 1		LP 2		LP 1	LP 2
ISIC (4-digit)		2013	2015	2013	2015	Growth	Growth
15	Food and beverages	170.3	180.5	46.0	48.1	1.07	1.07
18	Apparel	143.5	174.8	50.9	60.0	1.18	1.10
20	Wood products	176.3	169.4	52.7	48.1	1.06	1.05
25	Rubber	262.9	242.8	66.0	69.8	1.07	1.10
28	Fabricated metals	179.5	215.1	53.9	60.5	1.15	1.11
36	Furniture	172.9	206.6	53.9	61.6	1.12	1.12
Share of firms with negative LP growth (LP growth<1)						0.81	0.80

Note: LP stands for labour productivity. Only sectors with more than 100 observations per year included. Real values in terms of 2010 VND.

Source: Authors' calculations based on SME data.

Table 6.8: Labour productivity characteristics

	Labour Productivity Growth (2013 to 2015)			
	dln(LP1)		dln(LP2)	
	Coef	t-stat	Coef	t-stat
Labour productivity level (log)	-0.472***	(-19.52)	-0.613***	(-25.73)
Firm size (log number of employees)	0.102***	(5.46)	0.077***	(4.75)
Diversification (Yes=1)	-0.041	(-0.84)	0.029	(0.68)
Innovation 1 (Yes=1)	0.090	(0.73)	0.022	(0.13)
Innovation 2 (Yes=1)	0.034	(0.85)	0.063*	(1.88)
Household firm (Yes=1)	-0.161***	(-3.79)	-0.130***	(-3.52)
Urban (Yes=1)	-0.024	(-0.75)	0.154***	(5.33)
South (Yes=1)	0.109***	(3.81)	0.173***	(6.73)
Sector dummies	Yes		Yes	
Observation	1,921		1,921	
Pseudo R-squared	0.265		0.330	

Note: OLS. Robust standard errors. *, ** and *** indicate significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. Base: Food processing (ISIC 15).

Source: Authors' calculations based on SME data.

6.3   Technology

Table 6.9 shows the technology used by the surveyed firms in terms of level, age, and purchase condition. It is visible that 5 per cent of enterprises use only hand tools in their production. The use of hand tools has been at this level since 2011 and this is an important change compared to 2007 when 8 per cent of enterprises used only hand tools (CIEM et al. 2014). The number of enterprises using only manually operated machinery declined from 2.2 per cent in 2013 to 0.9 per cent in 2015, and the use of only power driven machinery

declined from 29 per cent to 20 per cent in the same period. The decline in the use of specific tools only is being replaced by the use of a combination of the tools. Enterprises have increased the use of all types of tools from 64 to 74 per cent.

Table 6.9: Technology characteristics (per cent)

		2013	2015
Level of technology	Hand tools only	5.2	5.1
	Manually operated machinery only	2.2	0.9
	Power driven machinery only	29.0	19.6
	All of the above	63.8	74.4
Age of technology	Under 3 years old	15.2	14.3
	Between 3 and 5 years old	33.5	32.6
	Between 6 and 10 years old	35.7	36.4
	Between 11 and 20 years old	13.1	14.2
	More than 20 years old	2.4	2.3
New or second hand	New	73.5	83.0
	Used	23.6	15.7
	Self-constructed	2.9	1.4

Source: Authors' calculations based on SME data.

Equipment and machinery are, for the most part, fairly new with 83 per cent being in use for less than 10 years. This figure has been around this level since 2011. The rate at which enterprises use machinery and equipment older than 10 years has increased by 1 percentage point in the past two years. The final section of the table shows a large increase (from 73.5 to 83 per cent) in purchased new technology in 2015. Correspondingly, the purchase of second-hand technology declined by eight percentage points and the use of self-constructed technology declined by 1.5 percentage points. These trends could be indicative of a declining number of credit-constrained enterprises in the considered period. The findings persist when the balanced panel is considered, suggesting that the new group of enterprises sampled in 2015 do not differ a lot in equipment and machinery use.

Figure 6.3 shows the prevalence of enterprises with the new technology by location and size. The share of enterprises adopting new technology decreased slightly, from 6.4 per cent in 2013 to 4.7 per cent in 2015. This is the lowest rate of new technology adoption since 2005 (CIEM et al. 2010; Rand et al. 2008), but the decline has slowed down considerably compared to the 6.6 percentage point drop in new technology use between 2011 and 2013. The decrease in the adoption of new technology happened in both urban and rural areas, especially among micro firms. This could substantiate views that a decline in new technology use comes mainly from credit constraints. Small firms show a below average rate of decline (0.5 percentage points), while larger enterprises have an upward trend in new technology adoption (1.5 percentage points

increase). This could be a consequence of higher innovation and diversification rates generally found among larger firms.

Figure 6.3: New technology
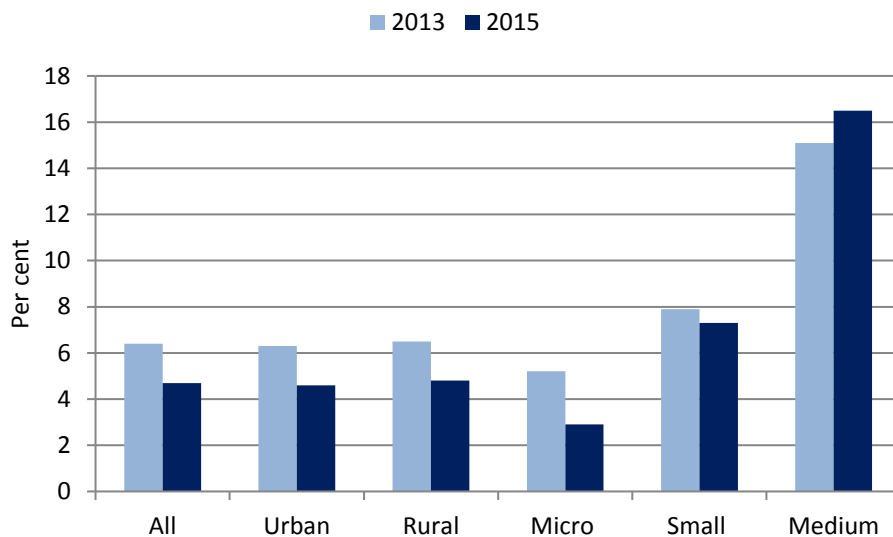
Source: Authors' calculations based on SME data.

We now compare the performance of technology upgraders with other enterprises. Table 6.10 contains the results of OLS and probit estimations that show association between firm growth and exit, and the indicator variable for the adoption of new technology. The use of new technology is significant in both the employment growth and firm survival regressions. Introducing new technology positively affects firm growth and decreases the probability of firm exit. The positive association between new technology and firm employment growth indicates that new technologies may not necessarily be less labour intensive compared to older ones. Whether this is a causal effect of new technology is left to be explored in future research. The results on control variables suggest that larger enterprises grow more slowly[9] but they have higher chances of survival.

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[9] This supports the evolutionary theory put forward by Jovanovic (1982).

Table 6.10: Effects of introducing a new technology

	Employment growth		Exit (Probit)	
	Coefficient	t-stats	Marginal effects	t-stats
New technology introduced (Yes = 1)	0.051**	(2.44)	-0.067***	(-2.81)
Firm size (log number of employees)	-0.131***	(-13.27)	-0.037***	(-4.15)
Household firm (Yes=1)	-0.177***	(-7.64)	-0.089***	(-4.04)
Urban (Yes=1)	0.006	(0.39)	0.014	(0.82)
South (Yes=1)	0.030**	(2.08)	-0.011	(-0.76)
Sector dummies	Yes		Yes	
Observations	2,087		2,466	
Pseudo R-squared	0.118		0.024	

Note: OLS and Probit, marginal effects. Robust standard errors. *, ** and *** indicate significance at a 10 per cent, 5 per cent and 1 per cent level, respectively. Base: HCMC, household firm, food processing (ISIC 15).

Source: Authors' calculations based on SME data.

6.4   Details on production inputs and business services

This sub-section investigates capacity utilization and key inputs in manufacturing. Capacity utilization relates current production levels to the maximum possible production level that can be achieved using the existing equipment. The information about capacity utilization is obtained by asking enterprises if they could increase production without purchasing new machinery or equipment.

Table 6.11 shows the results by enterprise size, age, and location. The majority of enterprises (40 per cent) believe they could increase capacity by mostly 10 per cent, while 36 per cent believe they could increase by 25 per cent. Only 5 per cent of enterprises think about increasing capacity by between 50 and 100 per cent. None of the enterprises believes they need to double capacity, which is an improvement over the last survey round (CIEM et al. 2014). Around 40 per cent of both new and existing firms count on increasing capacity by no more than 10 per cent, resembling the sample average. There is, however, a higher tendency among new firms to seek capacity improvement in the range of 25 to 50 per cent. While smaller enterprises appear less confident about increasing production by more than 10 per cent, larger firms focus on 10 to 25 per cent capacity improvements. This is likely to suggest that smaller enterprises operate closer to full capacity. Urban enterprises run closer to their full capacity than rural firms, with around 45 per cent disagreeing that they could increase capacity by more than 10 per cent. This is an improvement of capacity utilization among urban firms compared to 2013 (CIEM et al. 2014). Rural enterprises have a sizeably higher need to increase capacity by more than 25 per cent.

Table 6.11: Capacity utilization in 2015 (per cent)

		No more than 10%	Between 10 and 25%	Between 25 and 50%	Between 50 and 100%
Total	All	40.1	36.0	18.7	5.2
Age	New entrant	38.5	30.8	25.6	5.1
	Incumbent	40.1	36.1	18.6	5.2
Size	Micro	39.9	35.9	18.6	5.5
	Small	42.3	34.9	18.1	4.7
	Medium	33.5	41.5	21.3	3.7
Location	Urban	44.8	35.2	16.3	3.6
	Rural	36.0	36.8	20.7	6.6

Note: Question asked: By how much would you be able to increase your production from the present level using existing equipment/machinery only? n.a. indicates no observations in a given category.

Source: Authors' calculations based on SME data.

Day to day business operations can hardly go without inventory considerations, such as access to raw materials, intermediate goods, and energy and transport facilities, so we focus on the ease of access to business inputs and services. The average distance to the main supplier was 64 kilometres in 2013, but it decreased to 41 kilometres in 2015. It is, therefore, interesting to explore the distribution of distances to suppliers of inputs and we do that in Figure 6.4. Raw materials and intermediate inputs were purchased from the same province in 86 per cent of cases, whereas in 2013 this number was 83 per cent. The greatest increase involved purchasing inputs in the same commune—2.7 percentage points. At the same time, there was a decrease in sourcing inputs from neighbouring provinces compared to 2013, while sourcing from other provinces and importing remained stable. Factors such as a rise in transportation costs or higher availability of inputs locally could motivate more local sourcing as shown in Figure 6.4.

The changes in sourcing location could be a consequence of specific criteria for selecting suppliers, which we explore in Figure 6.5. Around 98 per cent of the enterprises report that suppliers can freely be selected in the market, marking a 3 percentage point increase compared to 2013 (CIEM et al. 2014). Suppliers are mainly chosen through own search process based on price competition. Finding suppliers through personal contacts is not as significant as in 2013, when marketing efforts by suppliers became more relevant. This change could indicate the development of formal institutions that need to replace informal ones as markets develop further in the process of transition (McMillan & Woodruff 1999). Apart from selecting suppliers based on price, firms also care about the quality standards of inputs, and to a greater extent than in 2013. Security of supply is important to 10 per cent of enterprises, while knowing the supplier personally and terms of credit matter marginally when selecting input suppliers.

Figure 6.4: Characteristics of raw material suppliers
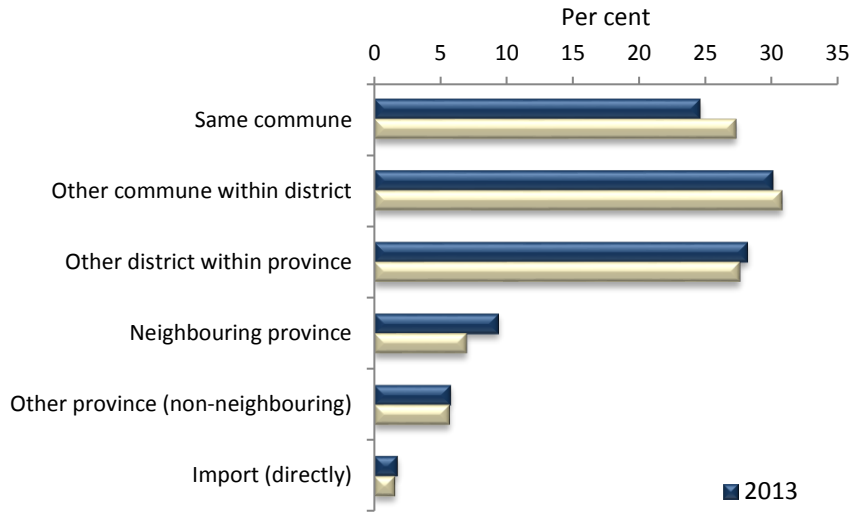
Source: Authors' calculations based on SME data.

Figure 6.5: Identification and main criteria for selecting suppliers
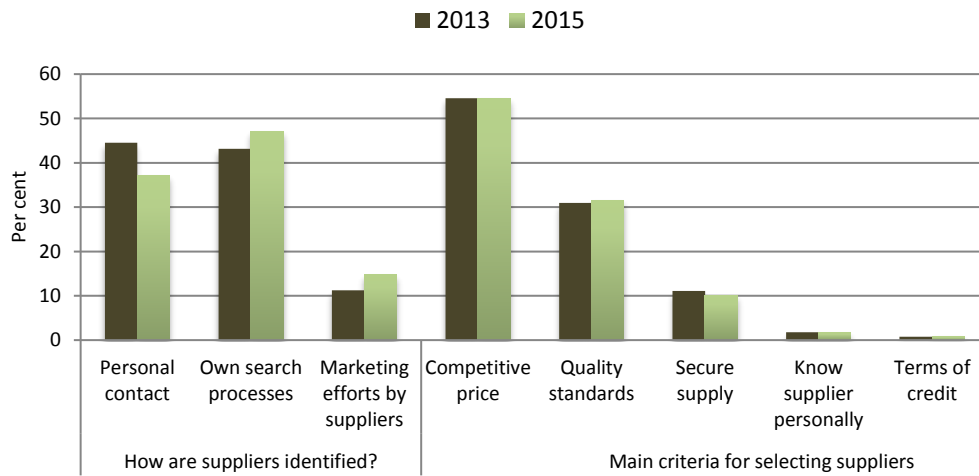
Source: Authors' calculations based on SME data.

Figure 6.6 shows a range of services most commonly used by the SMEs. Clear favourites are transportation services with 16 per cent of firms using them in 2015. The use is in slight decline compared to 2013 when 18 per cent of firms reported using transportation services. The use of tax, audit, and accounting services is on the rise with micro and small firms increasing use in the past two years. The same holds for market information and advertising. Services are obtained from the state for the most part: 70 per cent of enterprises report using services provided by the state. Moreover, the use of non-state services declined from 25.6 to

23.2 per cent and the use of services from private individuals declined from 10 per cent to 7 per cent between 2013 and 2015.

Figure 6.6: Most important business service used
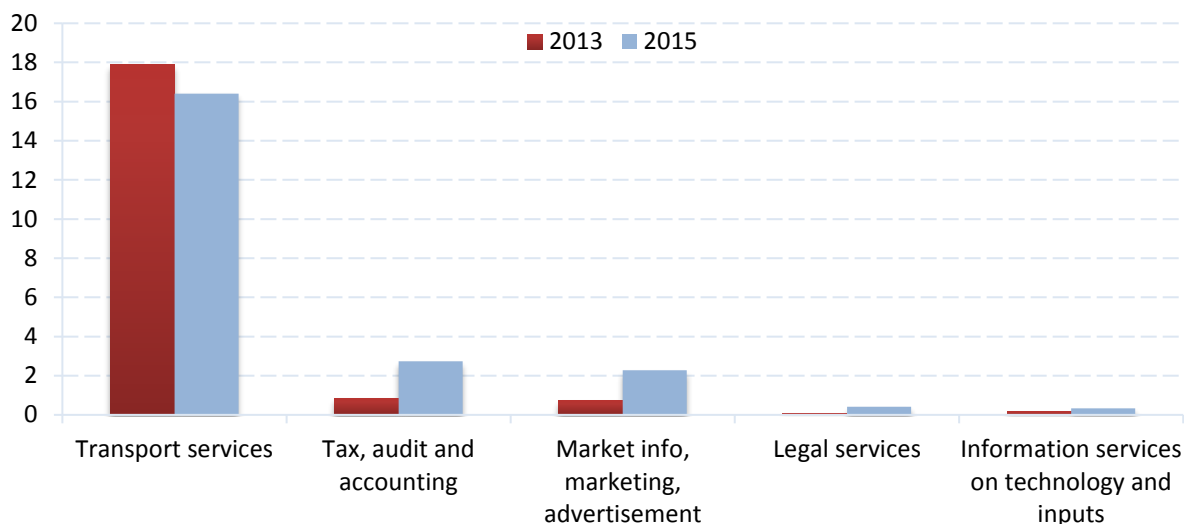
Source: Authors' calculations based on SME data.

This section has identified a high degree of specialization among the SMEs. An increase in new product development was accompanied by a decline in innovation by improving existing product lines and new technology adoption. Taken together, these findings indicate that a greater policy focus should be directed towards improving the conditions for innovation, diversification and new technology adoption, as the results show that these reflect positively on firm profits, revenue and growth. SMEs should be made aware of the existing (and future) funds for support of innovation and technology. The conditions and the procedures for accessing these funds or commercial credit lines should not be prohibitive for the smallest enterprises, irrespective of location. Adequate guidance through the application procedures and decreased bureaucratic burden would also be beneficial.

7   Employment

This section considers the labour market structure in the Vietnamese SME manufacturing sector based on a matched employer-employee dataset. The section considers various aspects of the labour market including workforce and occupation composition, hiring methods, social benefits, education, and training of the workforce, in addition to wage level and wage determinants. Combining the enterprise-level data and employee-level data brings additional knowledge and makes the analysis more insightful.

7.1   Demographic structure

To give an overview of the demographics of owners and managers of the surveyed enterprises, Figure 7.1 illustrates the share of owners and managers in different age groups and disaggregates these figures by size of the enterprise. This is interesting as young and old entrepreneurs tend to deviate in their characteristics. As an example, young entrepreneurs are in general more innovative (Avermaete et al. 2004; Gebreeyesus 2011), while older entrepreneurs tend to have better access to credit (Le & Nguyen 2009).

Overall, we see from Figure 7.1 that managers are on average younger than owners independent of enterprise size. For the owner respondents there is no clear difference in age between micro enterprises and small enterprises. Owners of medium-sized enterprises are on average slightly older compared to owners of micro and small enterprises. However, for managers the difference is more substantial between micro and small enterprises as the shares of managers in the age groups 36-45, 46-55, and 56-65 are all larger for micro enterprises compared to small enterprises. There is no clear difference in age between male and female owners. However, for managers of small and medium-sized enterprises, females are much more likely to be 25-35 years old (51.8 per cent for small enterprises and 54.3 per cent for medium-sized enterprises) compared to male managers (22.6 per cent for small enterprises and 31.9 for medium-sized enterprises).

Literature has shown that female entrepreneurs face additional challenges compared to male entrepreneurs, and these are often related to access to finance and education (Harvie & Vo 2009). Harvie and Vo (2009) state the following: '*Although the Land Law does not discriminate against women and allows joint land titling between husbands and wives, most people simply follow the tradition, and it is common for titling to be solely in the husband's name*' (p. 243). When the assets of the land are assigned to the husband, the wife has no collateral when applying for a loan. However, as these circumstances are based on traditions it is fair to believe that older people are more likely to follow them compared to younger people. Therefore, one explanation for a large share of female managers being young is that they have collateral and do not follow traditions as stringently as older people. Another explanation is education. According to a 15 per cent sample of the 2009 population census, the share of females having more than primary education as their highest grade has increased substantially for younger females.

Figure 7.1: Demographic structure of enterprise owners and managers (per cent)
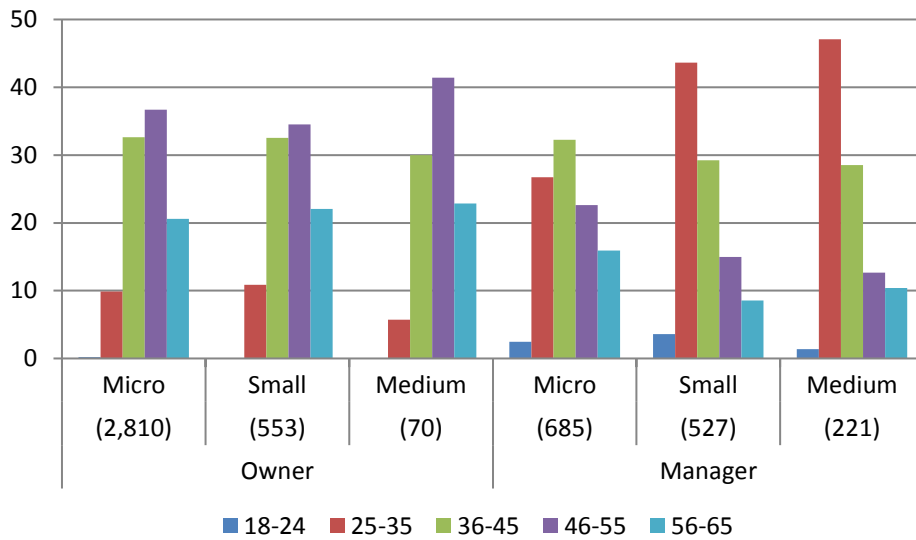
Figure 7.2 shows that for females born around 1980 (29 in 2009) the share of those who will get more than a primary education is approximately the same as the share for females born around 1960 (49 in 2009). However, for females born after 1980 the share begins to increase remarkably. The females who were 25-35 years old in the 2015 SME database were 19-29 years old in the 2009 population census. This age group is, according to Figure 7.2, clearly better educated than older age groups, and this could be an explanatory factor for why female managers are more likely to be between 25 and 35 years as compared to older age groups.[10]

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[10] Males experienced a sharp increase at the same time as females. However, the share used to be higher for males, meaning that the increase for males born after 1980 just made them more equal to males born around 1960 (and eventually surpass them).

Figure 7.2: Percentage of females having more than primary education
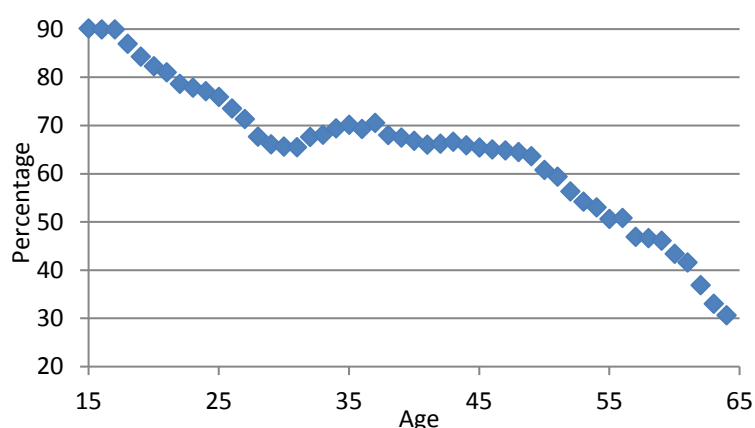
Note: Data are from 15 per cent sample of 2009 population census.

Source: Authors' calculations based on SME data.

7.2 Workforce structure and stability

Table 7.1 presents the shares of regular workers, full-time workers, female workers and unpaid workers in comparison to the total workforce. The table only examines the balanced panel of enterprises being present in both the 2013 and the 2015 survey round. Changing the data to also include the enterprises exiting after 2013 and entering in 2015 (unbalanced panel) does not change the overall results. Between 2013 and 2015 the shares of regular employed labour and unpaid labour remained approximately the same. The share of full-time employees increased by 1.7 percentage points, whereas the share of females decreased slightly by 1.1 percentage points. We notice that enterprises rely heavily on unpaid labour (almost 40 per cent of labour is unpaid), which indicates that many of the enterprises are household enterprises absorbing unpaid household members into the activity of the enterprise.

Table 7.1: Labour force composition (per cent of total workforce)

	All		Micro		Small		Medium		Urban		Rural		South		North	
	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015
Regular	96.0	95.6	96.2	95.6	95.1	95.1	95.9	97.3	96.9	97.7	95.3	94.0	96.4	97.2	95.6	94.3
Full-time	88.0	89.7	86.3	89.1	92.1	90.8	93.4	93.1	92.3	93.4	84.8	87.0	90.2	92.0	86.3	88.0
Female	38.8	37.7	37.2	36.6	42.1	39.2	45.9	44.3	37.1	36.6	40.1	38.5	36.2	35.7	40.8	39.2
Unpaid	39.6	39.6	53.1	53.9	5.3	4.4	0.7	0.1	22.7	22.6	52.3	52.3	31.3	30.8	46.1	46.5
Observations	2,066	2,066	1,494	1,481	460	460	112	125	882	882	1,184	1,184	905	905	1,161	1,161

Note: Percentages of total workforce, balanced panel. The difference between 100 per cent and the share of regular workers is casual workers, whereas the difference between the share of regular workers and full-time workers is part-time regular workers.

Source: Authors' calculations based on SME data.

Digging deeper into Table 7.1, the shares are disaggregated by size and location. The share of full-time employed labour is higher for larger enterprises, although the gap has narrowed. This narrowing is caused by an increase in the share of full-time employees in micro enterprises and a reduction of the same for small and medium-sized enterprises. The drop in the share of female labour is in particular prevalent in small enterprises, and enterprises in rural areas and in the North. The use of unpaid workers is almost exclusively a phenomenon taking place in micro enterprises. Although the use of unpaid workers in general has not changed between 2013 and 2015, it has slightly increased in micro enterprises and dropped in small and medium-sized enterprises.

Disaggregating the share of unpaid workers by incidence of informality shows that informal enterprises are much more likely to have unpaid labour, which should not come as a surprise as informal enterprises tend to be micro and household enterprises.[11] There was a drop from 77 per cent of the workforce being unpaid in informal enterprises in 2013 to 70 per cent in 2015. It should be emphasized that between 2011 and 2013 the share increased from 71 to 77 per cent (CIEM et al. 2014). Unpaid workers as a share of total workforce increased considerably in the formal enterprises from 2013 to 2015 (an increase from 24 to 35.8 per cent).[12] One explanation for this sudden increase could be that many enterprises became formal between 2013 and 2015. The share of formal enterprises increased from 71 per cent to 90 per cent in the two years period. Therefore, the former informal enterprises might still have had a large fraction of unpaid labour and thereby pulling up the share of unpaid workers for formal enterprises in 2015.

Whereas Table 7.1 examined rather aggregated employment groups, Table 7.2 investigates more disaggregated occupations. Production workers and managers are by far the most frequent types of workers with 57.7 and 34.8 per cent of the workforce being production workers and managers, respectively. The shares of professionals, office workers, and production workers in comparison to the total workforce is higher for larger enterprises, enterprises located in urban areas and enterprises located in the South. Sales workers are most likely to be found in small enterprises, while managers are mostly found in micro enterprises. It should be emphasized that in micro and small enterprises, workers are likely to perform various tasks. As a consequence, one should be careful when interpreting the results.

Between 2013 and 2015 the share of managers increased, which was mainly driven by an increase of managers in micro enterprises and enterprises in the north. Overall, the share of professionals decreased

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[11] Informal enterprises are thought of as having neither an Enterprise Code Number (ECN) nor a tax code. Therefore, an enterprise is considered formal if it has either the ECN or a tax code.
[12] Only examining the balanced panel suggests an increase from 24.5 per cent to 39.3 per cent.

between 2013 and 2015, but the changes varied between enterprise groups. Micro and small enterprises experienced a reduction in the share of professionals, whereas medium-sized enterprises increased their share of professionals. Further, the share of the workforce being production workers decreased from 59.8 per cent to 57.7 per cent, which was caused by a reduction in the share of production workers in micro and medium-sized enterprises. The share of production workers decreased independently of enterprise location.

Table 7.2: Labour force composition by occupation (per cent)

	All		Micro		Small		Medium		Urban		Rural		South		North	
	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015
Manager	32.0	34.8	39.9	44.0	12.2	12.7	6.3	6.3	24.7	26.8	37.4	40.7	28.2	30.1	34.9	38.4
Professional	3.3	2.7	1.6	1.1	8.1	6.1	7.7	8.7	5.1	4.3	2.0	1.5	3.8	3.0	3.0	2.4
Office	1.5	1.8	0.6	0.5	3.8	4.8	5.4	6.1	2.5	2.9	0.8	0.9	2.0	2.3	1.2	1.4
Sales	2.3	2.5	1.6	1.7	4.2	4.6	3.3	3.6	3.4	3.9	1.4	1.4	3.0	3.9	1.7	1.3
Service	0.8	0.6	0.5	0.2	1.6	1.4	2.3	1.5	1.1	0.7	0.6	0.5	1.0	0.8	0.7	0.4
Production	59.8	57.7	55.7	52.5	69.9	70.3	74.5	73.1	63.0	61.4	57.4	54.9	61.8	59.8	58.3	56.0
Apprentice	0.2	0.1	0.2	0.0	0.3	0.2	0.5	0.5	0.2	0.0	0.2	0.1	0.2	0.1	0.2	0.1
Observations	2,060	2,062	1,493	1,480	458	459	109	123	882	880	1,178	1,182	904	904	1,156	1,158

Note: Percentages of total workforce, balanced panel. Four enterprises did not answer the question in 2015 and six enterprises did not answer in 2013.

Source: Authors' calculations based on SME data.

The employee survey based on 1,342 respondents contains information on their current and previous job functions. Table 7.3 shows that approximately ten per cent of the sample are managers, 8.6 per cent are professionals, 9.2 per cent are office workers, 6.6 per cent are in sales, 3.1 per cent are in services, and 62.3 per cent are production workers. These figures indicate that the sample of employees is not in perfect accordance with the shares of worker types stated by owners and managers. Further, the transition matrix illustrates that occupation shifts do indeed occur. Of the 136 currently employed managers, 21.3 per cent were managers in the previous job, whereas 33.8 per cent were production workers, 14 per cent were professionals and 14.7 did not work. At the same time, the probability of holding a position as a manager in the previous job and then have a different job function in the current period is very low. This suggests that people advance to the position of being a manager, and that there might be considerable heterogeneity in the skills as managers have very different occupational backgrounds. In addition, Table 7.3 indicates that professionals and office workers are most likely to stay in the same line of work when shifting between jobs.

Table 7.3: Occupation transition matrix (percentages of current job function)

Previous job	Current job function					
	Manager	Professional	Office	Sales	Service	Production
Manager	21.3	0.9	0.8	0.0	0.0	0.4
Professional	14.0	41.4	9.7	6.8	2.4	0.8
Office	4.4	17.2	43.5	8.0	11.9	1.2
Sales	7.3	4.3	7.3	30.7	2.4	0.7
Service	4.4	1.7	3.2	6.8	26.2	1.6
Production	33.8	3.5	9.7	14.8	30.9	70.1
Did not work	14.7	31.0	25.8	33.0	26.2	25.2
Total percentage	100	100	100	100	100	100
Number of observations	136	116	124	88	42	836
- Per cent of total sample	10.1	8.6	9.2	6.6	3.1	62.3

Note: Based on the employee survey. Total number of observations is 1,342. Percentages sum to 100 in columns.

Source: Authors' calculations based on SME data.

Table 7.4 presents the shares of employees that were hired and left the workplace in 2015. Seven per cent of the total workforce got a new job in 2015, whereas 5.9 per cent left their workplace. This development indicates that there was a positive net job creation in 2015. However, the positive net job creation was mainly driven by medium-sized enterprises, and there even was a negative net job creation in micro enterprises. The net job creation was more positive in urban enterprises, which is in accordance with larger enterprises creating more jobs as they have a tendency to be located in urban areas. In informal enterprises the rates of hiring and employees leaving were very low, indicating that the informal labour market was rather stationary. The enterprises in the south created net jobs of two per cent of the workforce, whereas the enterprises in the north had a net job increase of merely 0.1 per cent of the workforce.

Examining the reasons for leaving the enterprises, we see that 43.2 per cent left voluntarily, 30.6 per cent were fired and the rest were due to retirement, illness, death, redundancy or other reasons. There are no clear enterprise size effects on the reason for leaving, although we do see that employees in micro enterprises have not been retiring nearly as much as employees in small and medium-sized enterprises. Employees in urban and informal enterprises are more likely to voluntarily leave the enterprise, whereas employees in rural and formal enterprises are more likely to be fired.

Table 7.4: Stability of workforce in 2015 (per cent)

	All	Micro	Small	Medium	Urban	Rural	Formal	Informal	South	North
Hired	7.0	4.0	7.8	7.8	7.4	6.3	7.1	1.9	8.3	5.5
Left	5.9	4.9	7.1	5.4	6.0	5.7	6.0	1.6	6.3	5.4
of which										
Left voluntarily	43.2	49.5	38.3	45.5	48.2	35.4	43.0	78.2	41.8	44.7
Were fired	30.6	29.4	34.1	28.5	23.3	41.9	30.7	14.8	29.2	32.1
Retired	6.4	0.7	7.6	6.4	6.2	6.7	6.4	0.0	5.4	7.5
Illness	1.8	2.0	2.0	1.7	2.6	0.6	1.8	0.0	2.8	0.8
Died	0.1	0.4	0.2	0.0	0.1	0.1	0.1	0.0	0.1	0.2
Redundancy	0.9	3.6	1.1	0.5	0.9	0.9	0.9	0.0	0.7	1.2
Other reasons	14.6	11.9	14.8	14.8	14.9	14.0	14.6	7.0	20.0	8.8
Observations	2,594	1,869	563	162	1,156	1,438	2,331	263	1,127	1,467

Note: Per cent of total workforce. This table cannot be compared to Table 8.4 from CIEM et al. (2014) as that table does not weight enterprises by the number of employees. Instead, Table 8.4 from CIEM et al. (2014) takes the average of enterprise shares within each enterprise category.
Source: Authors' calculations based on SME data.

As the workforce stability numbers were not weighted by the number of employees in previous report (CIEM et al. 2014), Table 7.5 reports the same figures as Table 7.4 for 2013. In contrast to 2015, in 2013 there was a net loss of jobs, though medium-sized enterprises had a slight increase in jobs. The loss of jobs were mainly driven by urban, formal and northern enterprises losing jobs. The main reason for losing a job was to be fired followed by voluntarily leaving the enterprise. Compared to 2015, we notice that in 2013 employees were more likely to lose or leave their job, and the ones actually leaving were more likely to be fired compared to leaving voluntarily. In particular, employees in medium-sized, urban and Southern enterprises have become more likely to leave voluntarily and less likely to be fired.

Table 7.5: Stability of workforce in 2013 (per cent)

	All	Micro	Small	Medium	Urban	Rural	Formal	Informal	South	North
Hired	7.5	5.4	7.7	8.5	7.8	7.1	7.8	3.6	7.7	7.3
Left	8.7	8.4	9.3	8.2	9.5	7.5	9.0	4.0	8.0	9.2
of which										
Left voluntarily	30.7	35.0	35.7	27.0	26.6	38.4	30.5	36.8	23.2	36.4
Were fired	37.3	35.6	38.2	37.1	33.3	44.9	37.2	41.6	44.8	31.6
Retired	7.2	1.2	4.0	10.0	10.4	1.1	7.3	1.7	4.2	9.4
Illness	2.2	0.7	1.9	2.7	2.5	1.8	2.1	6.6	2.5	2.0
Died	0.6	0.6	0.8	0.4	0.7	0.2	0.6	1.1	0.6	0.5
Redundancy	0.4	2.0	0.3	0.1	0.3	0.6	0.4	0.8	0.4	0.4
Other reasons	19.6	21.4	15.9	21.5	25.2	9.1	19.9	10.1	23.3	16.8
Observations	2,458	1,771	552	135	1,064	1,394	1,749	709	1,070	1,388

Source: Authors' calculations based on SME data.

7.3 Education, training, workplace conditions, and hiring methods

A basic law of economics says that whenever there is a demand there will be supply. This, however, is not always true in the real world. In the labour market, enterprises are sometimes not able to find the skills they are looking for. This phenomenon is also evident in the 2015 SME survey, which can be seen from Table 7.6, where it is shown that 7.9 per cent of enterprises report that they have experienced difficulties with recruiting workers with the required skills. In the majority of cases (69 per cent), the recruitment difficulties are caused by lack of skilled labour. Other causes include too low wage offers and unattractive working conditions. Comparing to 2013, the share of enterprises experiencing recruitment difficulties has fallen by 1.2 percentage points. At the same time, fewer enterprises were trying to recruit, leaving the share of enterprises *not* experiencing difficulties falling as well. The share of enterprises that did *not* experience difficulties recruiting fell from 34.1 per cent in 2013 to 29.7 per cent in 2015.

Table 7.6: Difficulties in hiring workers (per cent)

	All	Micro	Small	Medium	Urban	Rural
Difficulties with recruiting workers with required skills						
Yes	7.9	3.8	15.6	28.4	10.7	5.6
Did not recruit	62.4	72.8	40.9	17.9	55.7	67.8
Reason for recruitment difficulties						
Lack of skilled labour	69.3	70.4	69.3	67.4	69.4	70.4
Cannot provide sufficient wage offer	18.0	18.3	15.9	21.7	16.9	18.3
Working conditions not attractive	9.3	9.9	10.2	6.5	11.3	9.9
Other	3.4	1.4	4.5	4.3	2.4	1.4
No. of enterprises	2,594	1,869	563	162	1,156	1,438
	(205)	(71)	(88)	(46)	(124)	(81)

Note: Number of enterprises with recruiting difficulties in parentheses. 2015 survey.

Source: Authors' calculations based on SME data.

From Table 7.6 we notice a clear size effect. Only 3.8 per cent of micro enterprises report that they experienced recruitment difficulties which is substantially less compared to 15.6 per cent of small enterprises and 28.4 per cent of medium-sized enterprises. In addition, the share of urban enterprises experiencing recruitment difficulties is almost twice as large compared to the same share for rural enterprises. The fact that urban and larger enterprises are more likely to experience difficulties in recruiting skilled workers is in line with Table 7.2, showing that larger and urban enterprises employ more professional staff. As most enterprises report lack of skilled labour to be the main reason for recruitment difficulties, one could get the idea that the skill level of the workers do not match enterprise demand. However, as is shown in Table 7.9, the educational level of workers is actually relatively high. This indicates that: i) there is excess demand for even more well-educated labour; ii) teaching at higher educational institutions does not reflect what is

needed in the labour market; or iii) there is an information problem in matching well-educated workers with the demanding enterprises. Finding out which channels drive the recruitment difficulties is beyond the scope of this report.

Table 7.7 provides information on how enterprises recruit new employees. Summing the two categories *Recommended by friends/relatives or other workers* and *Personal contacts*, we get a category understood as *Informal contacts*. The category *Informal contacts* is clearly the most important way through which enterprises recruit new employees. Although there has been a small drop since 2013 in the share of enterprises mainly using *Informal contacts*, it is still a relatively large share of just above 57 per cent that mostly use *Informal contacts*. This channel of recruiting is important regardless of the size of the enterprise. It should, however, be mentioned that the importance is higher in micro and small enterprises, where 57 and 62 per cent, respectively, are mainly using *Informal contacts* as their recruiting method. In medium-sized enterprises the same figure is 43 per cent. Further, urban enterprises are more likely to report that they mainly use *Informal contacts* to recruit new employees. It should be emphasised, however, that one third of the respondents report themselves to be *Not applicable*. If we only observe relevant cases then the share of enterprises that mainly use *Informal contacts* is around 86 per cent for rural enterprises, which is substantially more than urban enterprises where the same figure is 70 per cent. A second important recruiting method is newspaper advertisement. Although not widely applied by micro enterprises, it is an important recruiting channel for small and medium-sized enterprises. Some implications of recruiting methods have been shown to matter for firm performance both theoretically (Montgomery 1991) and empirically (Larsen et al. 2011) in the literature.

Table 7.7: Recruitment methods in 2015

Recruitment methods	All	Micro	Small	Medium	Urban	Rural
Newspaper advertisement	9.8	3.9	19.9	42.0	17.3	3.7
Labour exchange	1.9	1.6	2.8	1.9	1.9	1.9
Recommended by friends/relatives or other workers	38.4	36.8	44.0	37.7	38.5	38.3
Recommended/allocated by local authorities	0.5	0.6	0.4	0.0	0.7	0.3
Personal contacts	18.9	20.3	18.3	5.6	24.4	14.5
Through employment service centres	2.2	0.9	5.7	6.2	3.5	1.2
Other	4.3	3.4	6.9	5.6	3.3	5.1
Not applicable	24.0	32.6	2.0	1.2	10.4	35.0
Observations	2,594	1,869	563	162	1,156	1,438

Source: Authors' calculations based on SME data.

Table 7.6 showed that the majority of enterprises which reported difficulties in recruiting blamed lack of skilled labour as the cause. If labour force lacks required skills, enterprises have an incentive to train the

workers themselves. Table 7.8 presents information on the share of enterprises that hire workers with insufficient skills, the share of enterprises that provide training for new workers and the share of enterprises that provide training for existing workers. The share of enterprises that hire new workers who lack the required skills is around 48 per cent in 2015, and only 23 per cent of enterprises provide training for new workers. Although not reported in Table 7.8, enterprises that hire workers without the required skills are considerably more likely to provide training for new workers. Still, however, around 60 per cent of enterprises that hire workers without the required skills do not provide training of new workers. This could indicate that a large share of enterprises simply accept that the required skills are not accessible to them. Although larger enterprises are more likely to hire workers without the required skills, these enterprises are also more likely to provide training for new and existing workers. This could indicate that larger enterprises have more specialized needs, and that they solve these issues by themselves. Further, Table 7.8 suggests that for all sub-groups considered, the share of enterprises that provide training for new workers is larger than the share of enterprises that provide training for existing workers. This may be explained by existing workers having obtained the required skills from experience in the job.

Table 7.8: New workers without required skills and training of workforce (per cent)

	All		Micro		Small		Medium		Urban		Rural	
	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015	2013	2015
New workers *without* required skills	45.4	47.8	44.1	44.4	47.3	52.8	52.6	58	47.9	55.7	43.3	38.9
Provides training for new workers	19.4	22.9	13.3	17.2	32.1	30.7	41.5	43.2	18.6	24.2	20	21.6
Provides training for existing workers	4.1	6.1	1.7	3.0	8.4	9.8	16.3	27.8	5.0	8.7	3.3	4.0

Note: All enterprises that did not answer were removed. 2,298 and 2,041 enterprises in 2013 and 2015, respectively, responded to the question asking if workers normally have required skills when hired. 2,323 and 2,076 enterprises in 2013 and 2015, respectively, responded to the question asking if the enterprise normally provides training for new workers. 2,362 and 2,594 enterprises in 2013 and 2015, respectively, responded to the question asking if the enterprise normally provides training for existing workers.

Source: Authors' calculations based on SME data.

Since 2013, there has been a slight increase in the share of enterprises that hire workers without the required skills. One possible implication of this development is an increase in the share of enterprises that provide training for new and existing workers. Although micro enterprises have the lowest share of enterprises that provide training for new employees, these micro enterprises have increased the share the most between 2013 and 2015. On the other hand, the share of enterprises that are providing training for existing workers have increased substantially more for medium-sized enterprises. Urban enterprises have also increased the share of enterprises that hire workers without the required skills. The only sub-group considered in Table 7.8 to have decreased the share of enterprises hiring workers without the required skills are rural enterprises.

At the same time, urban enterprises have to a much larger extent increased the share of enterprises that provide training for new and existing workers compared to rural enterprises.

Table 7.9 provides information on more formal education of the workforce. The most common education is high school (26 per cent), followed by secondary school (19.2 per cent) and technical level without a certificate (14.8 per cent). Other groups of particular interest are the highly educated workers. Approximately 10 per cent of the workforce hold a college degree or vocational college degree as their highest completed education. Further, slightly more than 13 per cent in the survey hold a university degree. No substantial changes have happened between the 2013 SME survey and the current 2015 SME survey. Worth mentioning, however, is that in the 2013 survey only 5.6 per cent were holding a college degree, which corresponds to an increase between 2013 and 2015 of 2.8 percentage points (CIEM et al. 2014). Further, in the 2013 survey more workers had high school as their highest completed education and less workers had secondary school as their highest completed education (CIEM et al. 2014).

Examining the differences between females and males it is clearly seen from Table 7.9 that females are more likely to hold a college or university degree compared to males. It seems, however, as if the university gap between females and males has narrowed since the 2013 survey. In the 2013 survey, 18.2 per cent of females held a university degree whereas the same figure for males was 9.6 per cent (CIEM et al. 2014). This means there has been a decline in the share of females holding a university degree and an increase in the share of males holding a university degree. Of other significant differences between males and females, it is worth mentioning workers with a technical level without a certificate. Here, males are highly represented with almost 19 per cent of the workforce belonging to this educational group. The same figure for females is just above nine per cent.

The workers surveyed in the 2015 SME survey are much better educated compared to the general employed population of Vietnam. According to the *Report on Labour Force Survey 2014*, only 7.6 per cent of the employed population had a university degree (GSO 2015a). In the general employed population of Vietnam, males are more likely to hold a university degree compared to females which is in contrast to the 2015 SME survey. One explanation for this might be that the SME surveys only examine private manufacturing enterprises of a certain size. It is likely that males with a university degree are underrepresented in the 2015 SME survey because they are hired in state-owned enterprises or larger private enterprises. Females may further be overrepresented in private SMEs if they get excluded from high-positioned jobs in state-owned enterprises. As the focus of the report is the SME sector in Vietnam, any conclusions on the educational level of the workforce in general would be erroneous, as the educational levels for females and males may deviate substantially between sectors.

Table 7.9: Education attainment

Highest level of education	Women	Men	Total
None	6	5	11
	(1.1)	(0.6)	(0.8)
Primary school	25	33	58
	(4.5)	(4.2)	(4.3)
Secondary school	104	153	257
	(18.8)	(19.4)	(19.2)
High school	128	221	349
	(23.2)	(28.0)	(26.0)
Technical level without certificate	51	148	199
	(9.2)	(18.7)	(14.8)
Vocational elementary	11	24	35
	(2.0)	(3.0)	(2.6)
Vocational secondary	16	43	59
	(2.9)	(5.4)	(4.4)
Professional secondary	39	17	56
	(7.1)	(2.2)	(4.2)
Vocational college	8	19	27
	(1.4)	(2.4)	(2.0)
College	78	35	113
	(14.1)	(4.4)	(8.4)
University and higher	86	92	178
	(15.6)	(11.6)	(13.3)
Observations	552	790	1,342

Note: Employee module of the survey. Percentages in parentheses.

Source: Authors' calculations based on SME data.

7.4   Wage setting, social benefits, and contracts

This section shows wage levels for the workers surveyed in the employee sample in 2015. The average nominal monthly wage was 4.4 million VND. According to the Decree No. 103/2014/ND-CP, the minimum wage in Vietnam was 3.1 million VND in 2015 in region I that comprises urban and rural districts of Hanoi, Hai Phong and HCMC, illustrating that the surveyed SMEs on average pay higher than minimum wage.[13] The average nominal wage for men was 4.5 million VND and an average wage for women amounted to 4.2 million VND.[14] This wage gap is persistent across all occupations apart from office jobs, as shown in Figure 7.3. The wage difference in favour of men is particularly high among production workers, followed by service and sales personnel. Women in production and service sectors tend to earn the least. Coupled with a slight

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[13] The minimum wage is set by region, the highest being in region I. It was 2.75 million VND in region II, 2.4 million VND in region III and 2.15 million VND in region IV. Region II comprises remaining rural districts of Hanoi, Hai Phong, Hai Duong City and Hung Yen City and some rural districts of Hung Yen province. Region III covers remaining provincial cities (except those of regions I and II), while region IV comprises remaining localities. The minimum wage for all regions was 2.6 million VND in 2015. Only 49 out of 1,081 employees (4.5 per cent) reported receiving monthly wage lower than 2.6 million VND in 2015.
[14] Observations above the 99 percentile have been removed to take account of outliers. All tables and figures show monthly wage.

decrease in the female labour share, this indicates worsening conditions for the female labour force. Finally, we note a positive wage gradient for all occupation categories compared to production and services.

Figure 7.3: Average monthly wage in 2015 (in 1,000 VND)
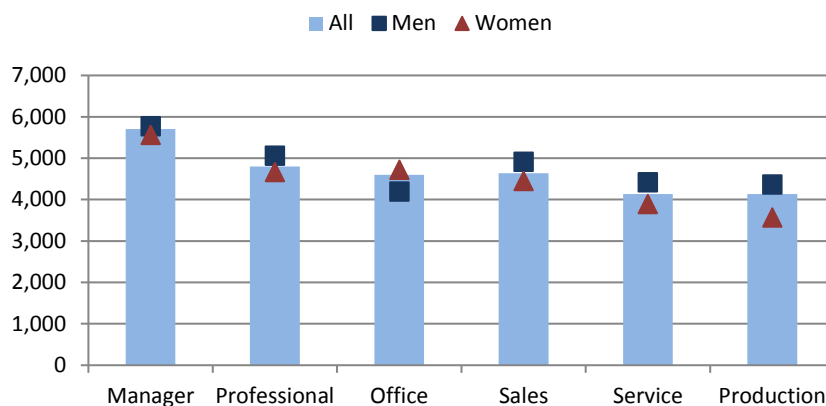
Note: Observations above the 99 percentile have been removed to take account of outliers. Data are from the employee module for 2015.

Source: Authors' calculations based on SME data.

Figure 7.4 shows the average real monthly wage by occupation in 2013 and 2015. The average real monthly wage was 2.52 million VND in 2013 and 2.89 million VND in 2015.[15] Hence, real wages have increased by almost 15 per cent during the considered two-year period. This means that real wages on average have increased by around 7 per cent per year between 2013 and 2015. All occupation categories have benefited from wage increases. The largest wage increase was experienced by sales personnel and managers, whose wages increased by 31 and 20 per cent, respectively. The smallest wage increase occurred for production and professional workers (14 and 13 per cent increase, respectively).

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[15] Note that these numbers are not directly comparable to previous report (CIEM et al. 2014) due to different normalisation base. Current normalisation approach deflates nominal to 2010 values, so the average real wage was 2,823 in 2011. Compared to 2011, the real wage level in 2015 has increased by 2.7 per cent.

Figure 7.4: Average monthly real wage by occupation (in 1,000 VND)
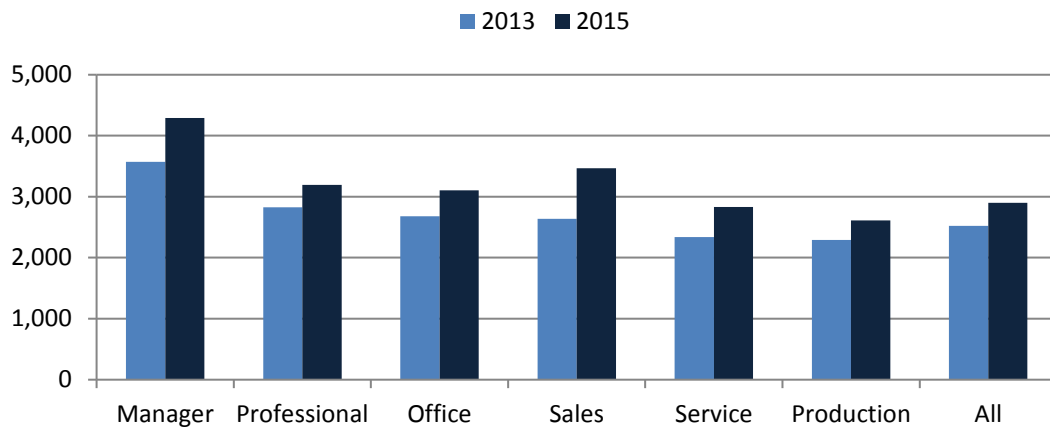
Note: Monthly wage has been normalized using 2010 VND as base.

Source: Authors' calculations based on SME data.

Table 7.10 shows the traditional wage determinants in a typical wage regression with employee and firm characteristics. The results confirm earlier descriptive results that male workers receive higher wages. We also see that wages increase with age, but only until around 40, after which the wage is likely to start declining. This is supported by the negative and significant coefficient for age squared, which illustrates that wages peak in middle age and decline shortly after. Also, the number of years spent working for the firm is a significantly positive determinant of the wage level. The benefits of additional experience also start declining after the optimal period, which is in the case of this sample around 10 years. Columns 1 and 2 also show wage premium for all occupation categories over the production workers, which is in accordance with previous findings (Larsen et al. 2011). Only service workers have significantly lower wage than production workers when differences in firm characteristics and sectors are accounted for. The indicator for the level of education, *high school and above*, is significant in both specifications. This clearly indicates positive returns to education, which is in accordance with earlier findings (Hering & Poncet 2010). The results do not show significant relationship between wages and additional training nor between wages and informal recruitment (by personal contacts or recommendations from friends and relatives).

In terms of firm-specific control variables, firm size has a significant and positive association with wages. This is in line with the general finding that larger firms tend to pay higher salaries (Soderbom et al. 2005). Formality of firms is negatively related to the wage level, which could point to a trade-off between regulatory and labour obligations. Male ownership and larger female workforce relate negatively with wages. Finally, we find a positive correlation between export and wages. This is in line with previous findings of significant

export wage premium in both developed and developing countries (Bernard et al. 1995; Brambilla et al. 2016).

Table 7.10: Wage determinants

Dependent variable: ln(real wage)	(1)		(2)	
Gender of worker (male=1)	0.128***	(9.11)	0.093***	(6.47)
Age of worker	0.016***	(3.06)	0.014***	(2.98)
Age squared/1000	-0.200***	(-2.93)	-0.167***	(-2.79)
Worker's number of years in firm	0.016***	(3.99)	0.018***	(4.54)
Years in firm squared/1000	-0.556***	(-3.00)	-0.559***	(-3.30)
Manager	0.286***	(10.26)	0.253***	(9.43)
Professional worker	0.145***	(6.11)	0.114***	(5.15)
Office worker	0.110***	(4.85)	0.071***	(3.39)
Sales worker	0.083***	(3.36)	0.051**	(2.20)
Service worker	-0.007	(-0.24)	-0.048*	(-1.66)
High school and above (yes=1)	0.075***	(4.44)	0.051***	(2.97)
Technical worker (yes=1)	0.016	(0.69)	0.001	(0.06)
On-the-job training (yes=1)	-0.002	(-0.13)	0.010	(0.75)
Recruited by informal methods (yes=1)	-0.040**	(-2.46)	-0.017	(-1.00)
Tax code (yes=1)			-0.075*	(-1.93)
Gender of owner or manager (male=1)			-0.050***	(-3.70)
Firm size (log)			0.062***	(8.23)
Share of female workforce			-0.002***	(-6.25)
Exporting			0.054***	(2.68)
R-squared	0.134		0.253	
Number of observations	2,315		2,315	
Year dummy	Yes		Yes	
Sector dummies	No		Yes	
Legal structure dummies	No		Yes	
Province dummies	No		Yes	

Note: OLS estimates. Wages deflated using 2010 VND as base. Estimation based on monthly wage. Observations above the 99 percentile have been removed to take account of outliers. For education and occupation, the reference categories are secondary education and below and production worker, respectively. *, ** and *** denote significance at a 10 per cent, 5 per cent, and 1 per cent level, respectively. t-statistics based on robust standard errors are reported in parentheses.

Source: Authors' calculations based on SME data.

Table 7.11 shows the types of social benefits paid to workers. The information is provided for 10 different kinds of contributions, from social and health insurance to survival benefits. Compared to 2013, the rate of paying any type of social benefits decreased by 6 percentage points. The share of firms providing social benefits was 56 per cent in 2013, which decreased to 49 per cent in 2015. The most commonly provided benefit is sick leave, provided by 42 per cent of all firms. The second most commonly provided benefit is annual leave, which is followed closely by paid maternity leave. Even though the overall prevalence of social

benefits is lower in 2015, the figures show a positive development in the quality of care for workers compared to 2013, when the most common type of social benefit was unpaid maternity leave. In fact, the share of firms offering unpaid maternity leave dropped from 52 to 36 per cent between 2013 and 2015. All other types of social benefits have increased and the huge drop in unpaid maternity leave rates is responsible for the observed average decline. The types of benefits with the highest growth in the rate of payment were sick leave and annual leave with pay, which both increased by 11.3 per cent. Vietnamese SMEs were least likely to provide unemployment insurance in 2015, but the overall situation shows that work conditions in private enterprises are improving.

Table 7.11: Social benefits (per cent)

	All firms	Micro	Small	Medium	Rural	Urban	North	South
Social insurance contribution	28.3	9.7	60.9	98.2	16.2	40.9	22.8	34.5
Health insurance contribution	28.1	9.9	59.8	97.0	16.6	40.1	22.1	34.8
Unemployment insurance	25.7	8.1	56.3	92.7	14.6	37.3	20.0	32.1
Compensates directly for accidents or professional illness	28.7	13.2	56.3	85.4	15.2	42.8	22.7	35.4
Sick leave	41.9	22.6	66.7	92.0	26.4	54.5	31.8	51.6
Paid maternity leave	36.6	16.6	60.9	91.4	23.0	47.7	28.9	44.0
Unpaid maternity leave	35.8	36.3	33.7	39.3	28.7	41.6	39.1	32.7
Annual leave with pay	38.3	19.8	61.8	87.1	22.9	50.7	29.5	46.7
Retirement lump-sum	26.3	10.4	44.8	74.2	17.1	33.7	23.9	28.6
Survival benefits	37.2	20.4	57.8	84.0	19.0	51.9	28.2	45.8
Any social benefit in 2015	49.4	34.9	82.5	99.4	28.5	75.4	39.5	62.1
Any social benefit in 2013	55.7	43.4	83.8	100.0	37.7	79.4	39.7	76.4

Note: The share of observations with missing information is quite common for these questions. The firms with missing information have been omitted in each category.

Source: Authors' calculations based on SME data.

Differences in the rate of payment of social benefits are apparent by firm size and location. A higher rate of payment of social benefits is observed among larger enterprises. Medium-sized firms pay all types of benefits at a very high rate, greatly surpassing the average values. They most commonly provide social insurance contributions. There is a large increase in the rate of payments when moving from micro to small firms, which prefer providing for sick and annual leave. Micro firms are most likely to offer unpaid maternity leave. Urban firms and firms in the south on average provide contributions more frequently than rural firms and firms in the north.

Provision of social benefits differs by gender of the firm owner or manager. Figure 7.5 shows that firms with women as owners or managers have a stronger tendency to provide all kinds of social benefits. Female-headed enterprises are especially more inclined to pay social and health insurance than male-headed

enterprises. Where these two types of firms come close is in the rate of providing unpaid maternity leave. This is line with Rand and Tarp (2011) who conclude that female-owned SMEs are more likely than male-owned firms to provide employees with fringe benefits.

Figure 7.5: Social benefits by gender of owner or manager (per cent)
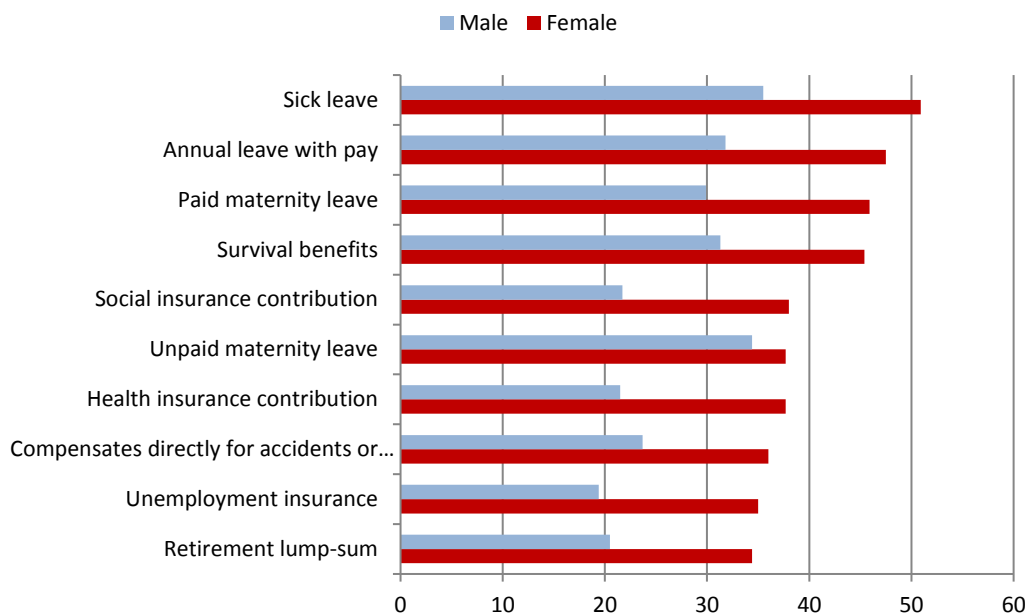
The prevalence of formal contracts among the surveyed Vietnamese SMEs is shown in Figure 7.6. We see that the average share of regular full-time workers with formal written contracts was 26 per cent in 2015. This is a 1 percentage point decrease compared to 2013, when 27 per cent of firms had formal labour contracts. The use of formal written contracts differs a lot by firm size and location. Around 85 per cent of workers in medium-sized firms have formal contracts, but this is only 10 per cent in micro firms. Compared to 2013, both medium-sized and small firms have, however, decreased the use of labour contracts. Formal labour contracts are more common in urban areas: 41 per cent of urban firms use formal contracts, but only 14 per cent of rural firms do the same. The growth of labour contracts by 1 percentage point is observed in urban areas since 2013. The use of labour contracts is almost double in the south compared to the north (35 and 19 per cent of workers with formal contracts, respectively).

We finally look at how gender of owners or managers affects the labour contracts statistics. Female-headed enterprises have a more formalized workforce on average. These enterprises provide contracts to 34 per cent of their workers, which is considerably larger than in male-headed firms, where contracts are signed only in

20 per cent of cases. As contracts are important for securing social benefits, these findings correspond well with the results that female owners and managers are more likely to provide social benefits. This points to slightly better work conditions in female-headed firms.

Figure 7.6: Formal contracts by gender of owner or manager
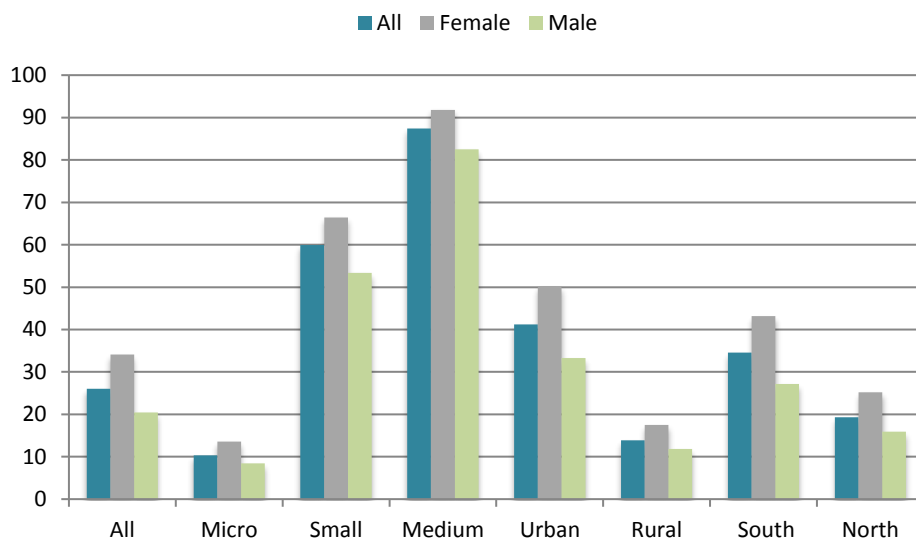
Note: 2015 survey. Firms with missing observations are excluded.

Source: Authors' calculations based on SME data.

This section has presented the key characteristics of the SME labour force and work conditions, including the demographic structure of enterprise owners and managers, recruitment practices, wages, formal contracts and social benefits. The wages have increased in real terms in the past two years, but proportionally more for better educated workers, management and sales personnel than the production workers. Larger firms show advantage in fulfilling the requirements of labour laws, which is seen in more wide-spread provision of all types of social benefits apart from unpaid maternity leave. Taken together, these indicators could point to a possible rise in workforce inequality. Based on the results in this section, we recommend policy makers to be aware of the typical decision makers in enterprises as the behaviour and attitude towards e.g. implementation of new technologies may differ depending on the type of the decision maker. Although micro enterprises employ a substantial part of the workforce, the new jobs are likely to be found in small and medium-sized enterprises. This indicates that future workforce policies could be twofold, supporting the survival and growth of micro firms on the one hand and enabling the larger firms to recruit more skilled labour on the other hand. One way of increasing the workforce skills could be through after-school or off-the-job training programs, which can be formulated in collaboration with the enterprises in order to make the workforce as suited for work as possible.

8 Personality and behaviour

There now exists a small but rapidly growing field at the intersection of psychology and economics that explores the importance of personality traits and behavioural characteristics for determining occupational choice and labour market success as measured by wages and employment prospects (Borghans et al. 2008). In order to improve the knowledge base on how behavioural and personality traits matter for enterprise performance in a developing country like Vietnam, in the 2015 wave of the Vietnam SME survey, a module was added in the enterprise questionnaire to elicit data on personality traits of firm owners and managers. This chapter provides a brief overview of the related literature, discusses the various measures used in the survey, and documents the distributions of personality traits and behavioural measures in the sample at hand.

Risk attitudes and preferences matter for entry into entrepreneurship, business performance, and also business survival (Cramer et al. 2002). Further, the relationship is not necessarily linear. There is also theoretical and empirical evidence that those with a higher need for autonomy are more likely to choose self-employment over wage employment (Croson & Minniti 2012; Carter et al. 2003). In a cross-country analysis, Koellinger et al. (2007) find confidence in one's own skills and knowledge to be an important determinant of new business creation and business survival. In a meta-analytic study, Zhao and Seibert (2006) find entrepreneurial entry to be positively correlated with the Big Five traits of conscientiousness, extraversion and openness to experience, and negatively correlated with neuroticism and agreeableness.

8.1 Measurement of personality traits

Firstly, risk attitudes were assessed by using the experimentally-validated willingness to take risk questions from the large scale German Socio-Economic Panel (hereafter referred to as SOEP). These are elicited for risk taking in general ('Would you describe yourself as someone who tries to avoid risks (risk-averse) or as someone who is willing to take risks (risk-loving)?') with respondents being asked to answer on an 11-point scale ranging from 0-10 where 0 means 'risk averse' and 10 means 'risk loving'. While the general risk question provides a global measure of one's overall willingness to take risks, the proclivity to do so can vary depending on the domain under consideration (Weber et al. 2002). Therefore, questions on willingness to take risks in the following six contexts were also included: financial matters, occupation, health, leisure and sports, driving, and faith in other people. Responses were elicited on a similar 11-point scale.

Next, data were elicited for the Big Five personality traits that are assumed to be a parsimonious yet comprehensive taxonomy of one's personality. The five traits or factors are defined as follows: Openness to Experience is a personality dimension that characterizes someone who is intellectually curious and tends to

seek new experiences and explore novel ideas. Conscientiousness indicates an individual's degree of organization, persistence, hard work, and motivation in the pursuit of goal accomplishment. Extraversion describes the extent to which people are assertive, dominant, energetic, active, talkative, and enthusiastic. Individuals high on Agreeableness can be characterized as trusting, forgiving, caring, altruistic, and gullible. Neuroticism (opposite of Emotional stability) is the tendency to experience unpleasant emotions easily, including anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability. These were measured using a battery of fifteen questions – with three questions per trait - as also used in the SOEP that has been well-validated over time. For each question/statement, respondents had to answer on a scale of 1 to 7 where 1 means 'does not apply to me at all' and 7 indicates 'applies to me perfectly'.

This was followed by the Locus of Control which measures whether one believes one can control the important outcomes in one's life. An individual with an internal locus of control tends to believe that they can control and are responsible for their own outcomes whereas those with an external locus of control attribute their outcomes to luck and to others. We use an inventory of ten questions from the SOEP that allows us to measure internal and external control separately. For each question/statement, respondents had to answer on a scale of 1 to 7 where 1 means 'disagree completely' and 7 indicates 'agree completely'.

Finally, an innovation index was constructed by combining the responses over three questions where participants are asked to rate how much they agree with each statement on a scale of 1-5 where a 1 denotes 'being very untrue' and a 5 denotes 'being very true'. This index attempts to gauge the innovativeness and ability to think of multiple ideas and solutions if faced with a problem.

For each of the abovementioned traits, the score is calculated as the average of scores on all questions corresponding to each trait.

8.2   Distribution of risk preferences and personality traits

As can be seen in Figure 8.1, which plots the responses to the general willingness to take risk question, the modal response is 5 and it accounts for one-fifth of all responses. Most of the responses lie in the 2-7 value range with the mean value being 3.82. This is largely in line with the distribution reported in Dohmen et al. (2011) who experimentally validate this risk scale using a sample of German respondents by showing that this can predict fairly well the choices made in an incentivized risk elicitation task involving monetary stakes and also other cases of risky behaviour such as smoking, investment in stocks etc. This pattern is also in line with the one observed for a sample from rural Thailand in Hardeweg et al. (2013).

Figure 8.1: Willingness to take risks
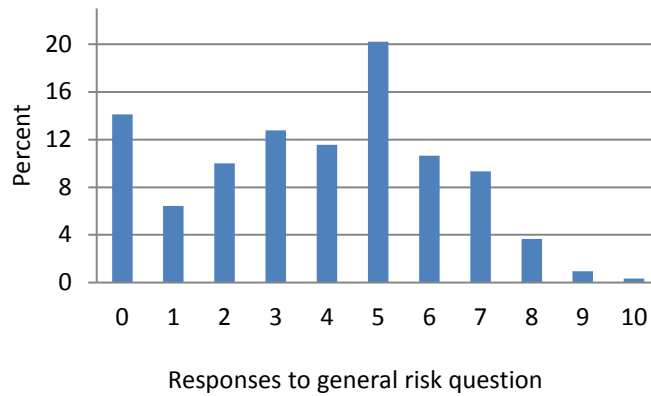
Source: Authors' calculations based on SME data.

Column 1 in Table 8.1 lists the means and standard deviations for the six questions measuring context-specific risk attitudes. In general, willingness to take risks appears to be quite low with an average value of 2.4-3.8 (with maximum possible being 10) across all the listed domains. Table 8.2 reports Spearman rank correlations between the overall and context-specific willingness to take risks. As is evident, while risk attitudes are not perfectly correlated across contexts, the coefficients are in the range of 0.4-0.75 indicating medium to high levels of correlation across the different contexts.

Table 8.1: Context-specific willingness to take risks

Context	(1) Overall	(2) Males	(3) Females	(4) p-value
Driving	2.406	2.604	2.119	0.00
	(2.32)	(2.3)	(2.32)	
Financial matters	3.082	3.215	2.889	0.00
	(2.19)	(2.16)	(2.22)	
Recreational hobbies & sports	3.748	3.955	3.45	0.00
	(2.45)	(2.38)	(2.52)	
Occupation/running enterprise	3.376	3.481	3.223	0.003
	(2.21)	(2.18)	(2.25)	
Health	2.407	2.533	2.224	0.00
	(2.258)	(2.24)	(2.27)	
Faith in other people	3.805	3.884	3.692	0.036
	(2.31)	(2.26)	(2.36)	
Number of observations	2,648	1,564	1,084	

Note: Responses for each of these are on a scale from 0–10. Standard deviations in parentheses. p-values in Column 4 is based on two-sided t-tests.

Source: Authors' calculations based on SME data.

Table 8.2: Correlations between risk attitudes in different contexts

	Overall	Driving	Financial	Recreational	Occupational	Health	Faith in other people
Overall	1.0000						
Driving	0.6124	1.0000					
Financial	0.6862	0.6414	1.0000				
Recreational	0.5823	0.5890	0.5886	1.0000			
Occupational	0.6383	0.5318	0.7526	0.5799	1.0000		
Health	0.5033	0.6771	0.6192	0.5182	0.6052	1.0000	
Faith in other people	0.4530	0.4107	0.5335	0.4974	0.5975	0.5074	1.0000

Note: Figures are Spearman rank correlations.

Source: Authors' calculations based on SME data.

Table 8.3 reports the summary statistics for the personality traits measured by the Big Five (i.e. openness to experience, conscientiousness, extroversion, agreeableness and neuroticism), internal and external locus of control and innovativeness. A visual inspection indicates higher scores on conscientiousness, internal locus of control, and agreeableness while the lowest scores on the negatively perceived traits of neuroticism and external locus of control.

Table 8.3: Personality traits

Trait	(1) Overall	(2) Males	(3) Females	(4) p-value
Big Five: Openness to experience	3.882	3.92	3.827	0.10
	(1.44)	(1.43)	(1.47)	
Big Five: Conscientiousness	5.535	5.479	5.616	0.00
	(1.04)	(1.03)	(1.04)	
Big Five: Extroversion	4.31	4.328	4.284	0.26
	(0.99)	(0.98)	(0.99)	
Big Five: Agreeableness	4.559	4.456	4.708	0.00
	(0.90)	(0.9)	(0.88)	
Big Five: Neuroticism	3.037	2.996	3.095	0.011
	(0.99)	(1.00)	(0.97)	
Internal locus of control	5.115	5.151	5.063	0.009
	(0.85)	(0.84)	(0.88)	
External locus of control	3.005	2.981	3.039	0.185
	(1.1)	(1.11)	(1.10)	
Innovativeness	3.613	3.6	3.62	0.53
	(0.85)	(0.87)	(0.83)	
Number of observations	2,648	1,564	1,084	

Note: Scores range from 1-7 for Big Five and locus of control and from 1.5 for innovativeness. Standard deviations in parentheses. P-values in Column 4 based on two-sided t-tests.

Source: Authors' calculations based on SME data.

Table 8.4 reports the rank correlations between the various measured personality traits. As documented in previous literature, neuroticism is negatively correlated with most other personality traits, notably internal locus of control, conscientiousness and agreeableness. Conscientiousness and internal locus of control, as

expected, also share a fairly high correlation compared to other pair-wise correlations. Interestingly, being open to new ideas and experiences is also highly correlated with one's innovativeness.

Table 8.4: Correlations between personality traits

	Open	Conscientious	Extrovert	Agreeable	Neurotic	Internal locus	External locus	Innovative
Open	1.0000							
Conscientious	0.1961	1.0000						
Extrovert	0.1722	0.1583	1.0000					
Agreeable	0.1321	0.3239	0.2745	1.0000				
Neurotic	-0.0847	-0.3358	-0.1170	-0.3295	1.0000			
Internal locus	0.1691	0.4047	0.1535	0.2349	-0.2667	1.0000		
External locus	0.1304	-0.1647	0.0749	0.0092	0.2943	-0.2057	1.0000	
Innovative	0.5385	0.2632	0.1284	0.1351	-0.1569	0.2815	0.0062	1.0000

Source: Authors' calculations based on SME data.

8.3   Gender differences in personality and behaviour

As Figure 8.2 indicates, female respondents are more risk averse than their male counterparts. While the modal response for both males and females is 5, there are substantially more women than men in the 0-3 response categories. This is line with evidence from the behavioural economics literature which shows that females are significantly more risk averse than males (e.g., Croson & Gneezy 2009; Charness & Gneezy 2012). In columns 2 and 3 of Table 8.2, the average values of context-specific risk taking are listed for males and females. Following the trend as above, in all six contexts, there is a statistically significant gender difference with females displaying lower willingness to take risks than males. A similar result is also documented in Dohmen et al. (2011). This could be a mediating factor explaining some of the generally observed lower entry into self-employment, and lesser success of female-owned or female-run enterprises as compared to those run/owned by males.[16]

In Table 8.3, columns 2 and 3 report the average values of personality traits for males and females respectively. In accordance with previous literature documenting gender differences in personality traits (e.g., Feingold 1994; Costa et al. 2001), females report significantly higher scores on conscientiousness, agreeableness and neuroticism and score significantly lower on the internal locus of control. Females also score lower on openness to experience and extroversion, and higher on external locus of control and innovativeness but these gender differences fail to reach significance at conventional levels.

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[16] The fact that gender-specific obstacles exist in setting up and running a business is well-known.

Summing up, the objective of this chapter has been to document the distributions of personality traits and behavioural measures in this sample of Vietnamese small business owners/managers and to validate it against knowledge based on existing literature. We find that females are significantly more risk averse than males across all contexts. Further, gender-based personality differences exist in line with existing literature.

Figure 8.2: Willingness to take risk by gender
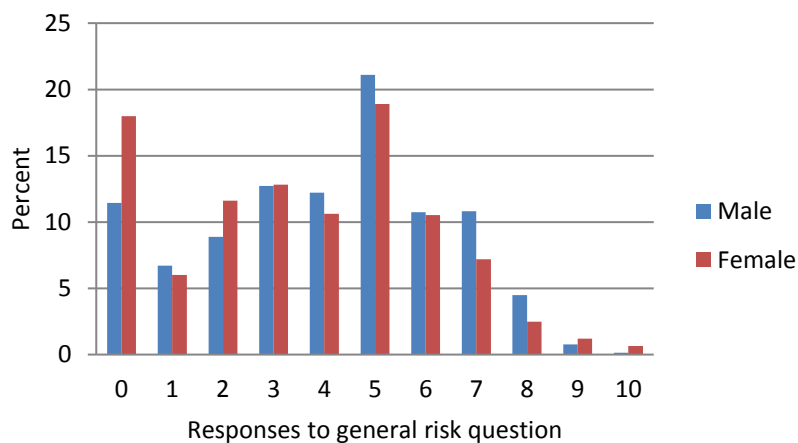
Source: Authors' calculations based on SME data.

9   Certification

A growing body of literature has contributed evidence on the importance of standards certification for firm performance (Beghin et al. 2015; Martincus et al. 2010). The benefits appear to be greater in environments with weak regulatory enforcement where standards substitute for some missing institutions (Goedhuys & Sleuwaegen 2013). It is only natural that this section documents the use of international and domestic quality standards and certification of domestic environmental standards among the sampled SMEs.

9.1   Quality

Certification of quality standards facilitates activities between different economic agents (e.g. suppliers and buyers) by transferring non-market information about product and process characteristics, for example quality, safety, environmental, and work conditions. This report considers only third-party certification in which a certificate is awarded after a product or production process is checked by authorized independent domestic or international persons or organizations.

Firms can thus use certified standards to improve consumers' information about product quality and in that way increase firms' reputations (Fulponi 2006), as well as consumer loyalty and trust (Raynolds 2002). The incentives to implement standards can come from the regulatory side in the form of public regulation for

quality and safety, both in the domestic and foreign markets. These factors are crucial in gaining and keeping market access, especially for producers from developing countries (Henson & Humphrey 2010). Adoption of standards can decrease price competition and increase profits through product differentiation (e.g. Spence 1976; Tirole 1988). Direct positive externalities of applying standards, such as improved control and increased efficiency can create competitive advantage (Henson & Caswell 1999). Standards are associated with price premium and better performance of firms in export markets (Henson et al. 2011), but they also carry high compliance costs. These costs vary across products, firms, sectors, and geographical location due to economies of scale and location-specific factors.

Enterprises in Viet Nam can opt for domestic or internationally recognized quality certification. The Law on Standards and Technical Regulations that took effect in 2007 stipulates three levels of standards and technical regulations: (i) national standards (TCVNs) and organization standards (TCCSs), (ii) national technical regulations (QCVNs), and (iii) local technical regulations (QCDPs). While standards are applied voluntarily, technical regulations are mandatory. The Ministry of Science and Technology is responsible for issuing and managing national standards, while line ministries take responsibility for developing national technical regulations. Some line ministries are also responsible for verifying compliance with regulation and issuing certificates. For example, the Decree No: 163/2004/ND-CP specifies that the Health Ministry grants food hygiene and safety certificates to high-risk food-producing or trading establishments and the Law on Environmental Protection from 2005 specifies that the Ministry of Natural Resources and Environment provides guidelines for inspection and certification of satisfaction of environmental standards. Among the internationally recognized standards, the most frequently applied are: ISO 9001, ISO 14001, ISO 22000, and Hazard Analysis and Critical Control Points (HACCP). Some are applicable across different industries, such as ISO 9001 and ISO 14001, but some are industry-specific, such as ISO 22000, which is exclusively applied in the food industry.

The ISO Survey shows that 3,786 ISO 9001 certificates were issued in Viet Nam in 2014 (ISO 2014). The number includes all manufacturing and service enterprises and organizations. The rate of certification is not only much lower than in developed countries, but also considerably lower than in neighbouring countries, such as Thailand, where 9,017 ISO 9001 certificates were issued in 2014. Certification of standards is overall scarce among the Vietnamese SMEs. Table 9.1 shows a clear dominance of domestic standards, among which the most frequent is the Certificate of Food Hygiene and Safety. While 12.6 per cent of the interviewed firms apply domestic standards, only 3.7 per cent apply international standards. Note that 7.3 per cent of firms responded positively to the question about the application of international standards in 2013. The observed

decline follows the pattern of decline in the total number of ISO certificates in Viet Nam between 2012 and 2014 reported in the ISO Survey (ISO 2014).

Table 9.1: Internationally recognized and domestic quality certification

| | International | | | | Domestic | |
| | 2015 | | 2013 | | 2015 | |
	Count	Per cent	Count	Per cent	Count	Per cent
No	2,532	96.3	2,346	92.7	2,297	87.4
Yes	96	3.7	185	7.3	331	12.6
Total	2,628	100.0	2,531	100.0	2,628	100.0

Source: Authors' calculations based on SME data.

Table 9.2 shows the prevalence of quality certification by province, legal structure, size, and export status. The highest rate of application of both domestic and international standards is in HCMC, followed by Ha Noi and Hai Phong. International standards are twice as common in Hai Phong as domestic. Domestic standards clearly dominate in Quang Nam province, where there are almost no international standards. Limited liability companies are the most likely adopters of standards, followed by joint stock companies. Household firms primarily certify domestic standards, while joint stock companies predominantly care about international standards. In terms of firm size, the application of international standards is shared almost equally between small and medium-sized firms, while micro firms prefer domestic standards.

Consistent with foreign market access literature, around 40 per cent of enterprises who export have some international quality certification, while only 9 per cent have some domestic certification. Finally, the lower part of the table shows that the destination markets for final products of firms with international standards tend to be more distant than for the firms without standards. Certified firms mostly sell at the level of the same province (29 per cent). They sell only 5 per cent of their final products in the same commune where their premises are located. This is in contrast to firms without international standards who mainly sell in the same commune (30 per cent). Firms with domestic standards mainly sell at the level of the same district in which they are located. They sell less at the level of the same commune than firms without domestic standards (26 per cent compared to 29 per cent of non-certified firms).

Table 9.2: International quality certification by province, legal structure, size, and market (per cent)

| | | International certificate | | | Domestic certificate |
		2013	2015	Both years	2015
All		7.3	3.7	5.5	12.6
Province	Ha Noi	23.8	15.6	21.0	11.5
	Phu Tho	3.2	3.1	3.2	2.4
	Ha Tay	7.6	7.3	7.5	10.0
	Hai Phong	14.1	15.6	14.6	4.5
	Nghe An	5.9	9.4	7.1	8.8
	Quang Nam	0.5	0.0	0.4	9.7
	Khanh Hoa	1.1	4.2	2.1	6.6
	Lam Dong	1.1	4.2	2.1	9.7
	HCMC	41.6	38.5	40.6	28.7
	Long An	1.1	2.1	1.4	8.2
Legal	Household establishment	0.5	0.0	0.4	57.7
	Private/sole proprietorship	11.4	8.3	10.3	6.0
	Partnership/collective/cooperative	5.4	2.1	4.3	1.2
	Limited liability company	63.8	66.7	64.8	28.1
	Joint stock company	18.9	22.9	20.3	6.9
Size	Micro	14.1	9.4	12.5	62.5
	Small	51.4	43.8	48.8	25.4
	Medium	34.6	46.9	38.8	12.1
Export	Exporting	40.0	38.9	39.6	9.4
	Not exporting	60.0	61.1	60.4	90.6
Customer location	Same commune	5.4	6.6	5.8	25.5
	Same district	12.7	17.5	14.3	30.1
	Same province	30.3	26.4	29.0	23.1
	Other province	18.7	12.1	25.0	18.3
Observations		2,531	2,628	5,159	2,628

Source: Authors' calculations based on SME data.

Table 9.3 documents an increase in requirements by customers for certification of both domestic and international standards. While 6.4 per cent of SMEs faced such requirements in 2013, 8 per cent of them were asked by customers to obtain certificates in 2015. The requests for certification are higher for international standards. Out of all firms with international certificates, 64 per cent faced customer requests, compared to 43 per cent of firms with domestic certification.

Table 9.3: Do customers require that enterprises certify standards?

| | International | | | | Domestic | | Both | | | |
| | 2013 | | 2015 | | 2015 | | 2013 | | 2015 | |
	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent
No	67	36.2	42	43.8	189	57.1	2,370	93.6	2,420	92.1
Yes	118	63.8	54	56.3	142	42.9	161	6.4	208	7.9
Total	185	100.0	96	100.0	331	100.0	2,531	100.0	2,628	100.0

Source: Authors' calculations based on SME data.

Table 9.4 shows that a firm's decision to certify international standards is most strongly influenced by buyers and/or customers, consistent with the high rate of customer requests for standards shown in Table 98.3. Suppliers of raw materials or intermediate products are the second most relevant influencers of international standards, while politicians and civil servants play a substantial role in influencing domestic certification.

Table 9.4: How important were the following contacts for your decision to certify standards?

	Average score	
	International	Domestic
Buyers/customers	5.6	5.6
Suppliers of raw materials or intermediate products	4.3	3.0
Other business people in the same sector	3.9	2.9
Other business people in a different sector	3.1	1.8
Business associations	3.6	1.8
Politicians and civil servants	3.4	4.1
Bank officials	2.6	1.5
Other	2.3	1.4
Observations	96	331

Note: The question is based on a 7-point scale, from very little (1) to very much (7)

Source: Authors' calculations based on SME data.

9.2   Environment

Responsible environmental management is an important part of sustainable development that is increasingly seen not only as a business responsibility but also as a business opportunity (OECD 2005). With this in mind, this section considers the environmental performance of Vietnamese SMEs, which is still a relatively unexplored topic in Viet Nam. Legislation guiding and enforcing environmental conditions and obligations of SMEs has been introduced only recently, so knowledge of relevant laws and corresponding responsibilities is still being formed. According to the 2014 Environmental Performance Index, Viet Nam places 136 out of 178 countries assessed on the ability to protect environment (EPI 2014). It has the lowest rank of all Association of South East Asian Nations (ASEAN) countries. The Environmental Performance Index benchmarks the capacity of countries to protect human health from environmental harm, as well as the capacity to protect its ecosystem and natural resources. The parameters taken into assessment are: air quality, climate change, water resources, agriculture, fisheries, forests, biodiversity, and habitat.

This section provides a firm-level assessment of environmental performance in Viet Nam by looking at the use of Environmental Standards Certificates (ESCs). The use of ESCs is postulated under: (i) the Law on Environmental Protection from 2005; (ii) Decree 80/2006 guiding the implementation of the above law; and (iii) Decree 29/2011 detailing and guiding the implementation of a number of articles of the Law on Environment Protection. These documents stipulate that ESCs are issued to enterprises with specified (polluting) activities. Regardless of the legal status of the enterprise, they must prepare an Environmental

Impact Assessment (EIA) report, which should be appraised by a committee and approved by relevant state authorities (MONRE or provincial People's Party Committee, depending on the nature of the project). Enterprises are awarded an ESC if they successfully comply with the pollution control requirements specified in the EIA report. The ESCs are applicable only to enterprises operating in certain sectors. Decree 29/2011 specifies 144 types of activities liable to environmental regulation. Enterprises operating in sectors that are not on the list of liable activities are not obliged to obtain EIA or ESC, but they are still required to sign an environmental protection commitment letter. Based on the list of activities liable for EIA in the Decree 29/2011, we are not considering firms from the service and recycling sector (ISIC 37) in this section.

With 13.2 per cent of enterprises reporting having an ESC in 2015, applying environmental standards is more popular than applying international standards. As shown in Table 9.5, this represents a 3 percentage point decline relative to 2013 when the ESC ownership rate was 16.4 per cent. There are notable differences in certification rate between provinces. HCMC has the highest proportion of enterprises with an ESC (23.3 per cent), followed by Lam Dong and Khanh Hoa. The decline in environmental certification was notable in almost all provinces. The highest decline occurred in Long An where the rate of ESC ownership fell from 22.8 to 10.5 per cent. The decline was 7.2 percentage points in Ha Noi and 4.8 percentage points in HCMC. Lam Dong is the only province with an increase in environmental certification, marking 13.7 percentage points growth in ESCs between 2013 and 2015.

The majority of our sample is made up of household enterprises, and these firms remain least likely to possess an ESC in 2015 just as in previous years because enforcement of environmental regulations has yet to target smaller enterprises to the same extent as larger entities. The share of household-owned firms with an ESC has declined to just below 3 per cent in 2015. Joint stock companies tend to have the highest proportion of enterprises with an ESC, while the limited liability companies have the least negative trend in certification compared to 2013. The rate of ESCs has declined across all ownership categories, but private firms have experienced the largest decline in the rate of environmental certification between 2013 and 2015.

Table 9.5: Environmental Standards Certificate (ESC) by province, legal structure, and size (per cent)

		Enterprise has ESC		
		2013	2015	Both years
All		16.4	13.2	14.8
Province	Ha Noi	22.1	14.9	18.4
	Phu Tho	6.9	5.1	6.0
	Ha Tay	7.5	4.0	5.7
	Hai Phong	17.9	15.5	16.6
	Nghe An	9.2	8.8	9.0
	Quang Nam	8.4	5.3	6.8
	Khanh Hoa	17.8	16.2	16.9
	Lam Dong	8.0	21.7	15.0
	HCMC	28.1	23.3	25.6
	Long An	22.8	10.5	16.7
Legal	Household establishment	6.0	2.9	4.4
	Private/sole proprietorship	30.2	23.0	27.0
	Partnership/collective/cooperative	32.8	29.6	31.3
	Limited liability company	34.3	32.5	33.4
	Joint stock company	40.5	35.0	37.7
Size	Micro	7.8	4.4	6.1
	Small	33.7	31.6	32.6
	Medium	57.6	50.0	53.5
Formality	Formal	98.1	99.7	98.8
	Informal	1.9	0.3	1.2
Export	Exporting	15.6	22.5	18.7
	Not exporting	84.4	77.5	81.3
Customer location	Same commune	13.7	11.4	12.7
	Same district	21.3	22.3	21.8
	Same province	32.3	30.9	31.7
	Other province	5.3	28.8	15.8
Observations		2,531	2,628	5,159

Source: Authors' calculations based on SME data.

One-half of medium-sized firms are ESC holders, but there was a negative trend compared to 2013 when the certification rate decreased from 58 to 50 per cent for medium-sized firms. The drop in ESC ownership for micro firms was from 7.8 to 4.4 per cent, while small firms faced a 2 percentage points decline since 2013. The latest data confirm a continuation in the decline in environmental certification among micro firms, a trend already noted in 2011.

As enterprises can obtain ESCs irrespective of their formal registration status, we compare the prevalence of ESCs among formal and informal firms. Table 9.5 shows that ESCs are more frequent among formally registered enterprises than firms that do not possess a Business Registration Licence or a tax code. The meagre certification rate among informal enterprises in 2013 became almost non-existent in 2015. Finally, non-exporters and firms who manly sell at the level of the same province tend to possess ESCs. The distance to the main market is increasing for ESC owner, as a higher share of firms with ESC sells outside the province in which they are located (5 per cent in 2013 compared to 29 per cent in 2015).

Table 9.6 disaggregates ESC owners by sector of operation (at the two-digit ISIC level). The highest prevalence of ESCs is observed among enterprises in the transport equipment (ISIC 35), chemical (ISIC 24), and paper (ISIC 21) sectors, with 46.9 per cent, 42 per cent and 34.5 per cent of certified enterprises, respectively. The transport equipment sector (ISIC 35) also had one of the highest rates of growth in ESC ownership (9.6 percentage points). The most notable increase in obtaining ESCs appeared in the paper (ISIC 21) and the basic metals (ISIC 27) sectors, where the rate of ESCs increased by 10.2 percentage points. The highest decline in ESCs was observed in the petroleum sector (ISIC 23), followed by food (ISIC 15) and rubber (ISIC 25) manufacturing with decline rates of 13.9, 8.5, and 6.7 percentage points, respectively. This illustrates that the overall decline in the ESC rates between 2013 and 2015 can most likely be attributed to the changes in these sectors.

Table 9.6: Environmental Standards Certificate (ESC) by sector

| | | Enterprise has ESC | | | | | | | | | |
| | | 2013 | | | | | 2015 | | | | |
ISIC code	Sector	Yes	(%)	No	(%)	Total	Yes	(%)	No	(%)	Total
15	Food products and beverages	145	(18.7)	629	(81.3)	734	85	(10.2)	750	(89.8)	835
17	Textiles	12	(12.1)	87	(87.9)	104	12	(14.0)	74	(86.0)	86
18	Wearing apparel etc.	24	(19.8)	97	(80.2)	121	19	(13.9)	118	(86.1)	137
19	Tanning and dressing leather	5	(9.4)	48	(90.6)	47	7	(11.5)	54	(88.5)	61
20	Wood and wood products	15	(5.9)	239	(94.1)	248	13	(4.5)	278	(95.5)	291
21	Paper and paper products	18	(24.3)	56	(75.7)	67	20	(34.5)	38	(65.5)	58
22	Publishing, printing etc.	5	(7.7)	60	(92.3)	59	14	(16.3)	72	(83.7)	86
23	Refined petroleum etc.	2	(25.0)	6	(75.0)	7	1	(11.1)	8	(88.9)	9
24	Chemical products etc.	24	(46.2)	28	(53.8)	39	21	(42.0)	29	(58.0)	50
25	Rubber and plastic products	47	(34.1)	91	(65.9)	114	43	(27.4)	114	(72.6)	157
26	Non-metallic mineral products	26	(25.2)	77	(74.8)	114	22	(22.7)	75	(77.3)	97
27	Basic metals	4	(14.8)	23	(85.2)	35	7	(25.0)	21	(75.0)	28
28	Fabricated metal products	36	(8.4)	391	(91.6)	431	38	(8.5)	410	(91.5)	448
29-32	Machinery (office + electrical)	15	(23.1)	50	(76.9)	74	11	(18.6)	48	(81.4)	59
34	Motor vehicles etc.	3	(25.0)	9	(75.0)	17	3	(25.0)	9	(75.0)	12
35	Transport equipment	3	(33.3)	6	(66.7)	8	3	(42.9)	4	(57.1)	7
36	Furniture etc.	20	(9.9)	182	(90.1)	194	17	(10.5)	145	(89.5)	162
	Total	404	(16.3)	2,079	(83.7)	2,413	336	(13.0)	2,247	(87.0)	2,583

Note: Based on a panel data. 31 firms from the service sector and 8 firms from the recycling sector were excluded. Percentages in parentheses.

Source: Authors' calculations based on SME data.

High compliance with environmental regulation in some sectors may not mean better environmental performance altogether, as sectors with a high prevalence of ESCs are likely to be the sectors with the official requirement to possess an ESC due to the nature of production. This is illustrated in Figure 9.1, which shows that 44 per cent of enterprises pursued environmental certification because of government requirements in

2015. In that regard, SMEs in Viet Nam resemble other countries, where legitimation appears a dominant motive for environmental actions (Gadenne et al. 2009).

Further on, Figure 9.1 shows a rising influence of social responsibility in obtaining an ESC, illustrated by almost equal importance being given to the need to improve working conditions as to the legal requirements. Obtaining an ESC for official regulation on environmental certification has in fact declined by 15 percentage points compared to 2013 and by 20 percentage points compared to 2011. Certification in order to attract more customers has declined compared to 2013. Finding that concern for customers does not motivate ESC ownership strongly is in contrast with evidence from other countries where commercial pressures act as the main drivers of environmental certification (Porter & van der Linde 1995; Psomas et al. 2011; Zhu et al. 2007). Compared to 2013, there is a 5 percentage points decline in the share of enterprises that have obtained an ESC for personal reasons, that is, their belief in the obligation to protect the environment. Thinking about potential cost reduction when deciding to obtain an ESC became more common in this survey round, but, overall, the Vietnamese SMEs do not behave differently from SMEs in other countries in showing little awareness of cost reductions from environment-friendly practices (Gadenne et al. 2009).

Figure 9.1: Reason to get Environmental Standards Certificate (per cent)
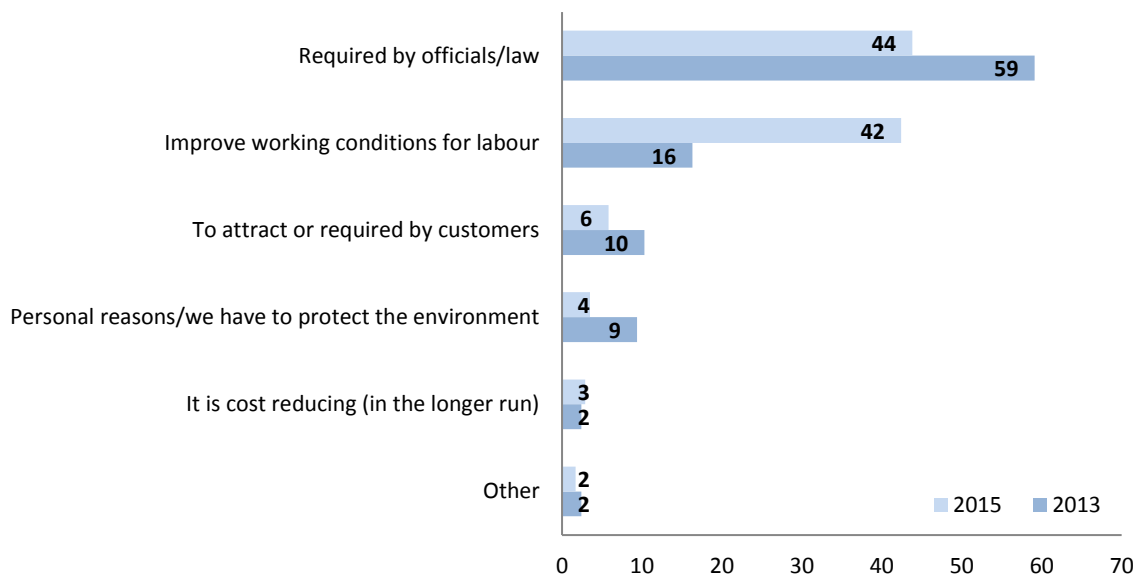
Note: Personal reasons include the belief that we need to protect the environment. Unbalanced panel.

Source: Authors' calculations based on SME data.

Low prevalence of ESCs could be caused by limited knowledge about official legal requirements, so we show in Figure 9.2 how much SMEs know about the Environmental Law. The most common response was negative with around half of enterprises responding that they do not have any knowledge about the Environmental

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Law. One-third of the sample stated that their knowledge is poor while only 16 per cent of respondents replied that their knowledge is good or average. Compared to 2013, a smaller share of SMEs find that their knowledge of Environmental Law is good or average. These findings confirm a trend of limited knowledge about environmental regulation observed as early as 2007 (CIEM et al. 2010). Some of the factors that could be behind these findings are the fact that environmental certification is not required in all sectors, and a limited spread of information about environmental regulation among SMEs. There is clearly a lot of room for improvement in terms of awareness about environmental regulation among the SMEs, which could subsequently boost the overall environmental performance of Viet Nam. Findings in previous studies have shown that making SME owners/managers aware of the benefits associated with environmental practices (by, for example, means of government campaigns and advertising) makes them more likely to embrace environment-friendly activities (Gadenne et al. 2009).

Figure 9.2: Knowledge about environmental law (per cent)
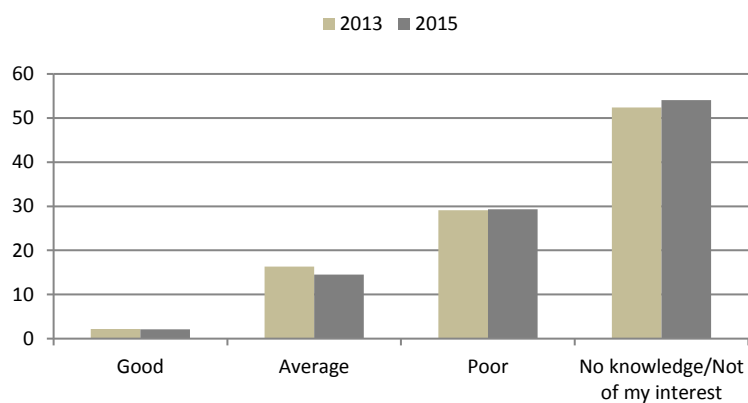
Source: Authors' calculations based on SME data.

The limited use of ESCs could be a consequence of constraints and obstacles enterprises face with environmental regulation. Table 9.7 shows how enterprises responded to questions about difficulties and costs of compliance with environmental regulation. The table compares enterprises with and without an ESC in Panels (a) and (b), respectively. Fire and air quality requirements appear to be the two most difficult and costly conditions to meet, judging by the latest survey round. Less difficult and costly requirements are other requirements such as heat, water, and waste disposal. Different from previous surveys, the 2015 data show a substantial increase in challenges related to meeting heat and soil degradation requirements and a decrease in how difficult it is to comply with air quality and fire requirements. Complying with most of the environmental requirements became more costly in 2015. Only air quality requirements became cheaper to address between 2013 and 2015. The trends between difficulties and costs of specific requirements of

environmental regulation have not been parallel in the observed two-year period. For example, meeting fire requirements became easier in 2015 than in 2013, but compliance became more costly.

Table 9.7: Difficulty and cost of Environment Standards Certificate (ESC) compliance

| Requirement	Most difficult (per cent)			Most costly (per cent)		
	2013	2015	All	2013	2015	All
Panel (a) Enterprises with the ESC						
Air quality	27.5	24.6	26.1	32.1	18.5	25.5
Fire	33.5	31.8	32.7	27.6	30.9	29.2
Heat	12.0	15.3	13.6	11.1	15.6	13.3
Lighting	2.7	1.6	2.1	3.0	4.5	3.7
Noise	8.7	9.0	8.9	7.5	8.3	7.9
Waste disposal	5.7	6.2	6.0	7.5	7.6	7.6
Water pollution	9.0	9.0	9.0	10.5	10.8	10.7
Soil degradation/pollution	0.6	2.5	1.5	0.6	3.8	2.2
Total number	334	321	655	333	314	647
Panel (b) Enterprises without the ESC						
Air quality	27.4	22.7	25.2	31.6	22.2	27.3
Fire	26.7	30.5	28.5	26.0	26.2	26.1
Heat	18.5	20.5	19.5	15.9	17.1	16.5
Lighting	2.2	2.6	2.4	2.1	4.7	3.3
Noise	16.0	11.5	13.9	14.0	12.9	13.5
Waste disposal	3.5	3.8	3.6	4.1	4.5	4.3
Water pollution	4.7	4.5	4.6	5.2	8.3	6.6
Soil degradation/pollution	0.9	3.8	2.2	1.0	3.4	2.1
Total number	1,474	1,295	2,769	1,455	1,219	2,674

Source: Authors' calculations based on SME data.

In terms of perceived difficulties and costs expressed by enterprises that do not have ESCs, fire regulations seem to be the most challenging requirement in 2015. Air quality and heat requirements are perceived as similarly challenging. Compared to 2013, the trend in perceptions of both difficulties and costs is negative for air quality and positive for heat requirements, while the perceptions about the costs of fire requirements have remained unchanged. Furthermore, perceptions about costs and difficulties are not parallel. For example, managing air quality and keeping water pollution in check is perceived as being much less difficult but more costly than it actually is. Thanks to Table 9.7 we can see that the perceived and actual difficulties and costs of environmental requirements are not the same. Note that the requirements about heat, noise, and soil degradation are perceived to be more difficult than they actually are according to the enterprises that own ESCs. Also, managing air quality, heat and noise comes off as more costly than it really is. This tells that on average, non-compliant firms tend to overestimate both difficulties and costs associated with ESC compliance.

To measure the ease of obtaining an ESC, we consider how many days it takes to obtain the document. The average time was around 21 days in 2015, marking a slow-down compared to 2013 when it took on average 19 days to obtain an ESC. We note even a greater slow-down compared to 2011 when it took 18 days to obtain the ESC. Obtaining other legal documents for doing business, such as a Business Registration Certificate, takes 42 days so the time it takes to obtain ESC does not seem long. However, compared to other legal documents, such as the Social Insurance Registration Certificate or Fire Prevention Certificate that take around 15 days to get, obtaining an ESC seems a fairly slow process.

Figure 9.3 shows which environmental requirements are most frequently met. Just as in 2013, the SMEs focus mostly on responsible fire management. Around 35 per cent of enterprises with an ESC in 2013 and 37 per cent in 2015 reported fulfilling this requirement. Lighting and heat are treated by approximately a quarter of surveyed enterprises with an ESC but with a lower effort in 2015 than in 2013. All other environmental requirements are performing worse than in 2013 with the exceptions of fire management and waste disposal.

Figure 9.3: Which environmental factors do the enterprises treat? (per cent)
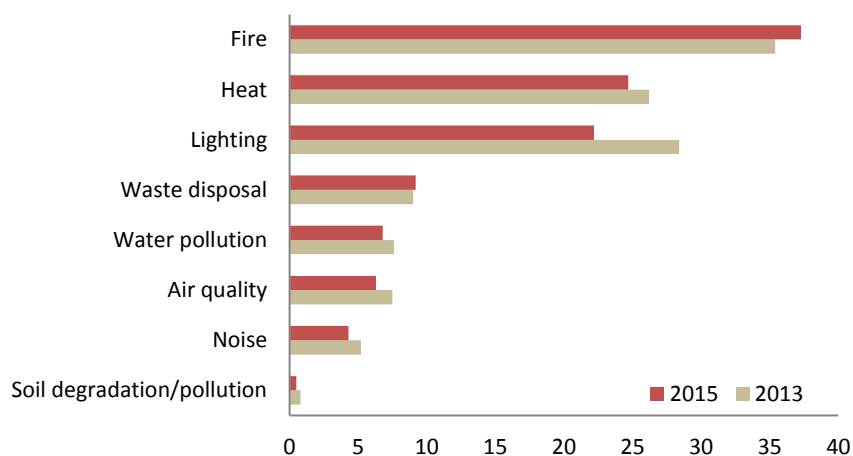
Source: Authors' calculations based on SME data.

We now focus on the investments in equipment for environmental standards. Figure 9.4 contains information about the investments in equipment in 2013 and 2015, with all values adjusted for inflation. On average, there were more investments in environmental equipment in 2015 than in 2013. The total amount invested increased by around 30 per cent, from 163 billion VND in 2013 to 214 billion VND in 2015. The SMEs invested the most in equipment for waste disposal (around 130 million VND). This is the most remarkable increase as the investment in this equipment was only 21 million VND in 2013. Investments in equipment for treating water pollution and air quality were at around 25 million VND in 2015, substantially declining from 47 and 36 million VND, respectively, since 2013.

The investments in environmental equipment are more recent—the most intensive ones being made in 2012, right after the Environmental Law came to force. On average, environmental equipment is 7 years old, with soil degradation equipment being slightly older than other types of equipment (8.6 years old on average).

Figure 9.4: Investments in equipment for environmental standards (million VND, real values)
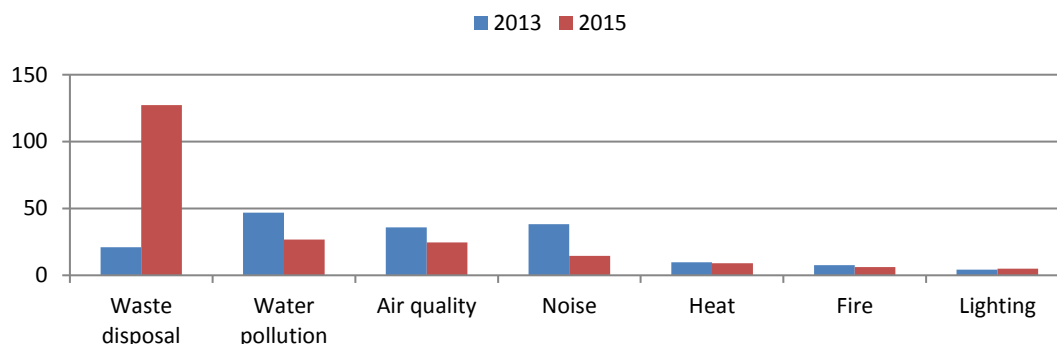
Source: Authors' calculations based on SME data.

9.3   Differences between firms related to compliance with standards

Finally, Figures 9.5 to 9.8 show the difference between firms by compliance with international and domestic quality standards and at the differences between firms by ESC ownership. We look at four indicators of firm performance: real revenue, real profit per employee, real labour costs, and labour productivity measured as real value added per employee. All indicators are shown with respect to firm size. First, we see that firms applying international standards perform better in terms of all four indicators. They have higher revenue and profits per employee. Their total wage bill is higher, meaning that employee remuneration is likely higher on average than in firms who do not apply international private standards. The advantages are more visible for larger firms, starting at around 200 employees for revenue, profit, and labour productivity, while the clear advantage in terms of wages starts at around 100 employees. Second, we also observe higher revenue, average wages, and labour productivity among firms who apply domestic standards. The differences in terms of profit per employee are not obvious. Third, firms who own ESC do not appear to be much different from firms without the ESC. Slight advantages could perhaps be claimed in terms of average wages and labour productivity, but none could be observed for revenue or profit. Finally, zooming in on micro and small firms (Figure 9.6), we can see that the international standards relate positively with all four indicators (revenue,

profit, wages and labour productivity) and that the ESC relates positively with revenue, while domestic standards do not appear to be beneficial to smaller firms.[17]

Figure 9.5: Differences between firms by application of international standards
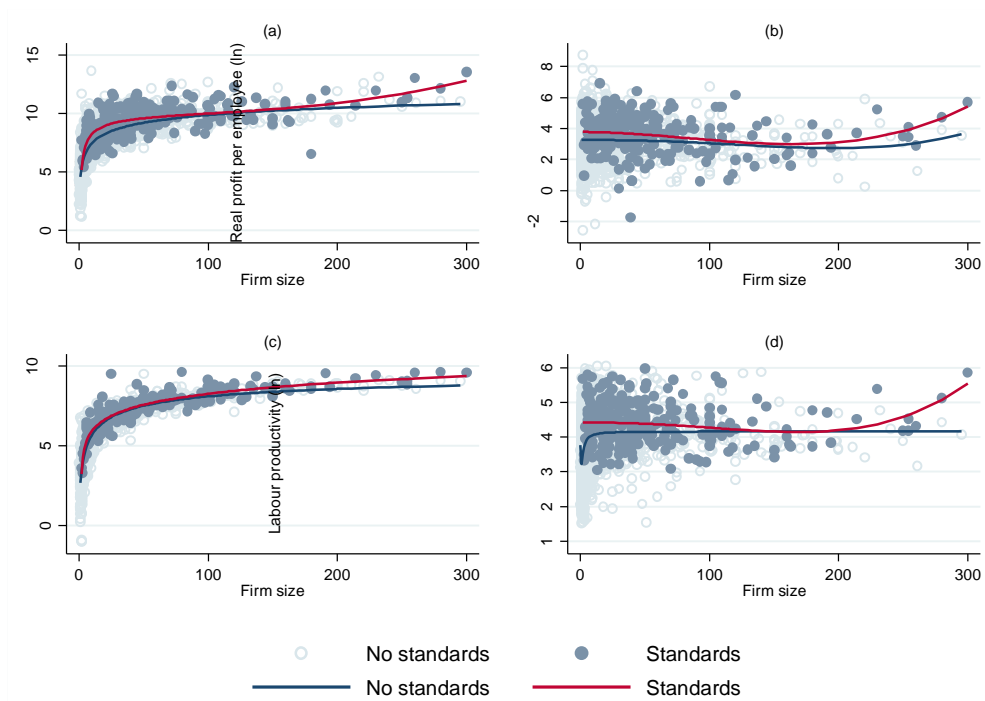
Note: Unbalanced panel data. Labour productivity is measured as real value added per employee. Values are normalized using 2010 VND as base.

Source: Authors' calculations based on SME data.

Differences presented in this sub-section may not be caused by standards alone. There could be other factors at play, such as better management quality or access to information. It may also be that firms with initially better performance decide to implement standards. Disentangling the direction of the relationship is beyond the scope of this report, but several attempts at in-depth studies are underway. For example, recent studies have found that higher labour productivity, wages and social benefits can be attributed to compliance with international standards (Trifkovic 2016; Trifkovic 2015).

This section has identified a mild engagement of the SMEs with international and domestic quality or environmental standards. Considering that standards correlate positively with firm revenue and labour productivity, greater policy support in this area could be beneficial for the SME sector performance. SMEs

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[17] We only show the difference by application of international standards for the micro- and small-firms sample. The graphs that show differences due to domestic standards and ESC are available from authors upon request.

are likely to benefit from the awareness campaigns about standards and better conditions for financing the adoption.

Figure 9.6: Differences due to international standards (micro- and small-firms sample)

Note: Unbalanced panel data. Labour productivity is measured as real value added per employee. Values are normalized using 2010 VND as base.

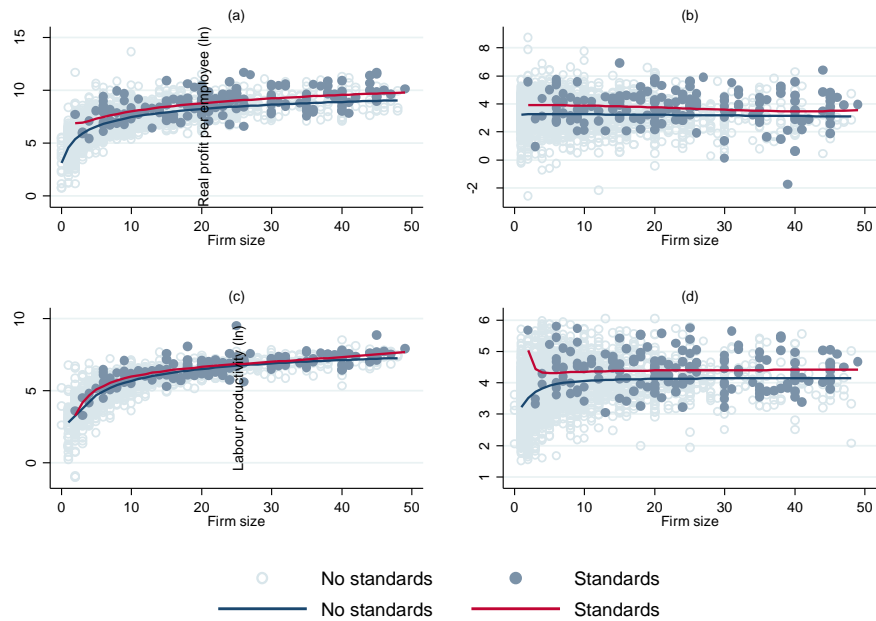Source: Authors' calculations based on SME data.

Figure 9.7: Differences between firms by application of domestic standards
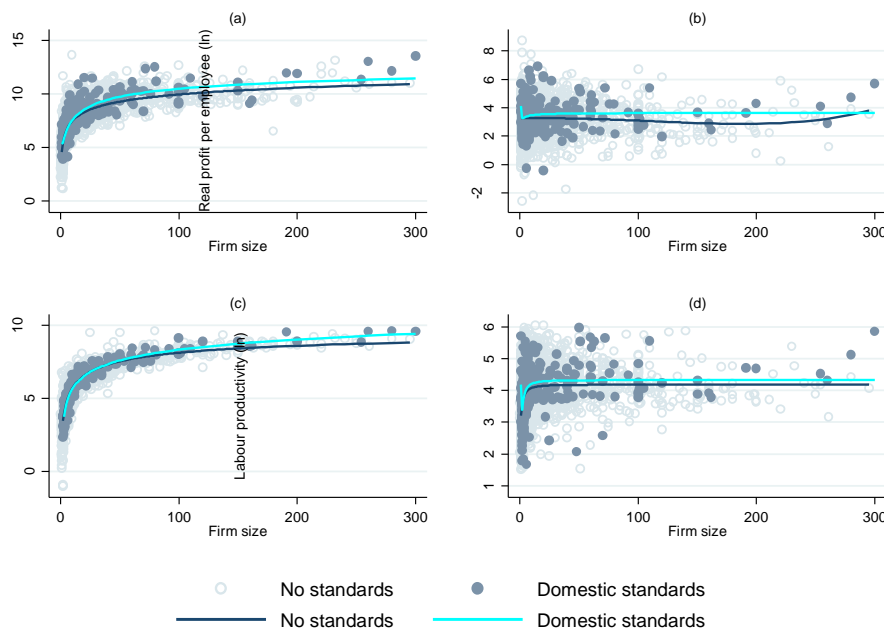
Note: Data from 2015. Labour productivity is measured as real value added per employee. Values are normalized using 2010 VND as base.
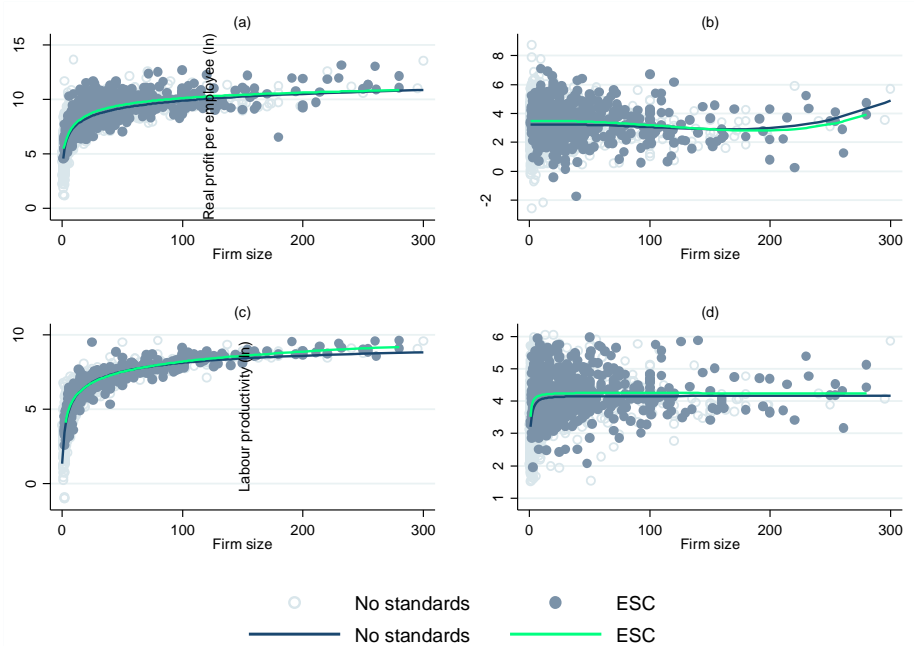
Source: Authors' calculations based on SME data.

Figure 9.8: Differences between firms by Environmental Standards Certificate

Note: Unbalanced panel data. Labour productivity is measured as real value added per employee. Values are normalized using 2010 VND as base.

Source: Authors' calculations based on SME data.

10   Trade and sales structures

The decision on whether or not to encourage an exporting behaviour ought to be based on solid evidence from how exporting enterprises perform compared to non-exporting enterprises. The government would also want to understand the general sales structures of enterprises in order to develop sensible and useful industrial policies. This section provides an overview of enterprises' export behaviour and several general sales structures for micro, small and medium-sized enterprises. The insights from this section are based on the 2015 SME survey.

10.1   Export behaviour

Table 10.1 states the share of enterprises exporting disaggregated by size, location, and ownership type. In 2015, 175 out of 2,583 enterprises were engaged in exporting activities, which corresponds to 6.8 per cent. Out of these 175 enterprises, 108 are exporting directly while 67 are exporting indirectly through intermediaries. In 2013, 153 enterprises were exporting, which corresponds to 6.2 per cent of the 2013 survey (CIEM et al., 2014). Medium-sized enterprises have the largest share of exporters compared to non-exporters. The share of exporters is 48.2 per cent for medium-sized enterprises, which is substantially larger than the share of exporters for micro and small enterprises. Only 1 per cent of microenterprises are exporting, which is a decline from 1.8 per cent in 2013. It ought, however, to be mentioned that some micro

and small enterprises could be subcontractors for larger enterprises that will export their products. The share of exporters for small enterprises is relatively constant between 2013 and 2015. In contrast, the share of exporting medium-sized enterprises has risen 13.4 percentage points – corresponding to an increase from 47 to 78 enterprises exporting. Therefore, according to Table 10.1 we may confidently claim that a size-effect exists, so that the probability of exporting increases as the size of the enterprise grows. Only looking at the balanced panel, 125 out of 2,055 enterprises exported in 2013 (6.1 per cent). This number increased to 143 in 2015 (7 per cent). Out of the balanced sample of 2,055 enterprises, 23 (1.1 per cent) stopped exporting between 2013 and 2015, while 41 (2 per cent) began exporting between 2013 and 2015.

Further, we see from Table 10.1 that urban enterprises are more likely to export than rural enterprises. The share of urban enterprises exporting is approximately twice the size of the share of rural enterprises exporting. Since 2013 the share of rural enterprises exporting has declined marginally, whereas the share of urban enterprises exporting has increased. Ownership type also seems to be correlated with export behaviour. Household enterprises are very unlikely to export with only 0.9 per cent of these enterprises exporting. Joint stock companies, partnerships/collectives/cooperatives and limited liability companies are more alike with shares of export enterprises varying between 15.8 and 19.3 per cent. Private/sole proprietorships are in between with 9.9 per cent of the enterprises exporting.

Table 10.1: Exporting enterprises (per cent)

		2013	2015
All		6.2	6.8
Size	Micro	1.8	1.0
	Small	13.6	13.9
	Medium	34.8	48.2
Location	Rural	4.6	4.5
	Urban	8.4	9.6
Ownership type	Households	1.8	0.9
	Private/sole proprietorship	7.4	9.9
	Partnership/collective/cooperative	15.4	17.0
	Limited liability company	16.5	19.3
	Joint stock company	13.7	15.8

Source: Authors' calculations based on SME data.

Table 10.2 presents further information on the enterprises in the 2015 survey, and for some characteristics the table compares non-exporters with exporters. The share of revenues that stem from exporting was on average 30.8 per cent for exporting enterprises in 2015. This is an increase of four percentage points compared to the year before, and especially rural exporters have increased the share of revenues stemming

from exports. In 2015, the share of customers being foreign was 27.7 per cent, indicating that the exporters were selling larger volumes to the foreign customers compared to domestic customers as the share of revenues from exports is higher than the share of customers being foreign. Although non-exporters do not sell to foreign markets it is still possible that they buy from foreign markets. However, as we see from Table 10.2, only 1.9 per cent of non-exporters import inputs from foreign markets, whereas the same number for exporters is 20 per cent. Although the exporting characteristics of urban and rural exporters are similar, the import characteristics differ substantially. Urban exporters have a larger tendency to import inputs and raw materials compared to rural exporters.

Further, Table 10.2 provides us with information on informal payments. The share of enterprises engaging in informal payments is almost twice as large for exporters compared to non-exporters, and the extent of informal payments is larger in urban areas compared to rural areas. Part of the difference in informal payments between exporters and non-exporters can be explained by exporters being motivated to engage in informal payments when dealing with customs. For the non-exporters, only 1.6 per cent of the enterprises offering informal payments say the main reason is to deal with customs. This number is 20 per cent for exporters, and we observe that this motivation is much larger for urban exporters compared to rural exporters. Table 10.2 also states if enterprises consider legal consultation/advice to be of significant importance. Legal advice is considered much more important for exporting enterprises, though this characteristic almost exclusively stems from urban exporters. Finally, Table 10.2 presents information on new products, improvements of existing products and introduction of new production processes and technology. We notice that exporters are more likely to engage in all of the three mentioned activities compared to non-exporters. Rural exporters have to a larger extent introduced new products and production processes, while urban exporters have been more likely to improve existing products.

Table 10.2: Details on exporting versus non-exporting enterprises (per cent)

	Non-exporting	Exporting all	Exporting urban	Exporting rural
Observations	(2,422)	(175)	(111)	(64)
Share of revenue from exports in 2015	-	30.8	30.2	31.8
- Change from 2013 to 2014 (percentage points)	-	4.0	2.9	5.9
Share of customers being foreign	-	27.7	27.8	27.4
Enterprises importing inputs	1.9	20.0	27.0	7.8
Informal payments	40.0	79.4	91.9	57.8
- Main motivation is to deal with customs	1.6	20.1	23.5	10.8
Legal advice as first, second, or third most important service purchase	2.5	11.4	16.2	3.1
Introduced new products within last two years	22.8	29.1	22.5	40.6
Improved existing products within last two years	12.6	24.0	26.1	20.3
Introduced new production processes within last two years	4.0	16.0	11.7	23.4

Note: One enterprise did not respond to where revenues stem from, and we therefore have 175 enterprises out of the original 176 enterprises exporting.

Source: Authors' calculations based on SME data.

An additional interesting feature of exporters versus non-exporters is earnings. Table 10.3 presents total revenue per full-time employee and total net profit per full-time employee disaggregated by exporting status, size and location. The figures are stated in million 2010 VND. On average, exporting enterprises earn 355.4 million VND per full-time employee compared to 277.9 million VND in non-exporting enterprises. However, the higher revenues per employee in exporting enterprises are only apparent for micro enterprises. Small and medium-sized enterprises that do not export have, on average, higher revenues per full-time employee compared to exporters of the same size. In addition, rural exporting enterprises have around 53 per cent higher revenues per full-time employees compared to rural non-exporting enterprises. For urban exporting enterprises, revenues per full-time employee is a mere 4 per cent higher than urban non-exporting enterprises. Further, Table 10.3 compares profits per full-time employee between exporters and non-exporters. On average, exporters earn profits of 30.4 million VND, which is 6.5 million VND lower than the profits for non-exporters. For every subgroup considered we see that non-exporters tend to perform better than exporters. The gap is wider for urban enterprises compared to rural enterprises and wider for small enterprises compared to micro and medium-sized enterprises. Looking only at the level of profit per employee, we notice that urban enterprises tend to be more profitable than rural enterprises. In addition, medium-sized enterprises are less profitable than both micro and small enterprises, indicating that there might be an inverse relationship between size and productivity. However, a more formal econometric analysis is required to conclude on real correlations.

Table 10.3: Average revenue and net profit per full-time employee

	Total revenue per full-time employee		Total net profit per full-time employee	
	Exporting	Non-exporting	Exporting	Non-exporting
All	355.4	277.9	30.4	36.9
Micro	276.0	209.5	33.1	36.3
Small	386.0	496.9	32.9	39.6
Medium	344.2	513.1	27.2	32.3
Urban	360.6	345.4	31.9	42.6
Rural	346.5	226.5	27.6	32.3

Note: Numbers in million 2010 VND.

Source: Authors' calculations based on SME data.

Without examining causality, Table 10.4 reports the results from a probit model with an export dummy as the dependent binary variable. The variables included in the model are age and size of the enterprise, the logarithm of total real revenue, the average real wage rate per employee, and indicators for whether the enterprise introduced a new product or improved an existing product. In addition, province dummies, ownership types and sector dummies are included, though the estimates on the sector dummies are not reported. The estimates reported are marginal effects at the mean of the covariates. Five interesting results emerge from this probit model. First, total real revenue is positively correlated with exporting behaviour. An increase in total real revenues of 100 million VND is associated with a two per cent increase in the probability of exporting. One explanation for this relationship is that large enterprises cannot grow more on the domestic market and they are therefore compelled to export if they want to grow. Secondly, a higher wage mean is positively correlated with the likelihood of exporting, indicating that workers in exporting enterprises on average receive a larger wage payment compared to workers in non-exporting enterprises. Thirdly, exporting enterprises are more likely to introduce new products, suggesting that exporters are more dynamic, the competition is fiercer or that their customers have more rapid changing preferences compared to the customers of non-exporters. Fourth, enterprises are more likely to export if they are located in HCMC compared to Ha Noi, Hai Phong, Nghe An, Quang Nam or Long An. On the other hand, enterprises are less likely to export if they are located in HCMC compared to Ha Tay. Fifthly, household enterprises are less likely to export compared to all other ownership types. The likelihood of exporting is similar for private/sole proprietorships, limited liability companies and joint stock companies. The probability of exporting is highest for partnerships/collectives/cooperatives. Looking at an enterprise at the mean of the covariates, we notice that the probability of exporting is 14.4 per cent higher for partnerships/collectives/cooperatives compared to household enterprises.

Table 10.4: Export determinants

		Coefficient	z-stats
Total revenue	log (x100)	2.068***	(5.03)
Wage mean	Million VND per employee	0.111***	(4.07)
Introduced new product	Yes = 1	0.016*	(1.86)
Improved existing product	Yes = 1	0.006	(0.83)
Age	No. of year (x1,000)	0.118	(1.06)
Size	No. of employees (x1,000)	0.456	(1.29)
Location	Ha Noi	-0.011*	(-1.67)
	Phu Tho	-0.010	(-1.02)
	Ha Tay	0.028*	(1.81)
	Hai Phong	-0.016**	(-2.57)
	Nghe An	-0.023***	(-4.22)
	Quang Nam	-0.014*	(-1.67)
	Khanh Hoa	-0.006	(-0.53)
	Lam Dong	0.031	(1.13)
	Long An	-0.017**	(-2.30)
Ownership	Private/sole proprietorship	0.089**	(2.57)
	Partnership/collective/cooperative	0.144**	(2.24)
	Limited liability company	0.081***	(4.27)
	Joint stock company	0.086**	(2.35)
Sector dummies included		Yes	
Observation		1,921	
Pseudo R-squared		0.351	

Note: Probit, marginal effects at the mean of covariates. Unweighted robust standard errors. *, ** and *** indicate significance at 10 per cent, 5 per cent, and 1 per cent level, respectively. Base: HCMC, Household enterprise, food processing (ISIC 15).

Source: Authors' calculations based on SME data.

10.2 Perceived competition and sales structures

The second part of this section focuses on enterprise sales structures and the enterprise's perception of the level of competition in their line of activity. In regards to perceived competition, various topics will be commented upon like the severity of competition, sources of competition, and responses to competition. For the part concerned with sales structures, emphasis will be on what enterprises sell and who they sell to.

Figure 10.1 gives an indication of the perceived competition faced by urban and rural enterprises. On average, around 88 per cent of the enterprises state that they face some competition in their line of activity. This is independent of whether we consider the 2013 survey round or the 2015 survey round. In general, urban enterprises are more likely to report that they face competition compared to rural enterprises. Between 2013 and 2015 we notice that the gap between urban enterprises reporting competition and rural enterprises reporting competition has widened. This is due to a decline in the fraction of rural enterprises reporting they

face competition, while the fraction of urban enterprises reporting competition has increased. In 2015, 83.5 per cent of rural enterprises reported they face some degree of competition. The same figure for urban enterprises is 92.6 per cent. Disaggregating by size, Figure 10.1 illustrates that the larger the enterprise the more likely the enterprise is to feel a competitive pressure. However, the frequency of small and medium-sized enterprises stating they face competition is very similar in 2015, while micro enterprises to a lesser degree state they face competition. Of the 2,271 enterprises stating they face competition, 1,385 enterprises (61 per cent) feel that the degree of competition has increased during the last two years. 825 enterprises (36.3 per cent) report that competition is the same as two years ago, while only 61 (2.7 per cent) report the degree of competition to have decreased. These figures are similar whether examining urban or rural enterprises.

Figure 10.1: Perceived competition and accumulated goods (per cent)

Source: Authors' calculations based on SME data.

In addition, Figure 10.1 also shows the share of enterprises that have accumulated goods which are difficult to sell. Overall, some 33.7 per cent of all the enterprises in the 2015 survey report that they have accumulated goods which are difficult to sell. This is a decline of 3.8 percentage points compared to the 2013 survey. Urban enterprises are more likely to accumulate goods compared to rural enterprises, and the overall decline in enterprises accumulating goods is mainly driven by a decline for rural enterprises. This development further widens the gap between urban and rural enterprises. Micro enterprises tend to be less likely to accumulate goods which are difficult to sell compared to small and medium-sized enterprises. For both micro, small and medium-sized enterprises we notice a decline in the share of enterprises accumulating goods. The average

decline is larger in magnitude the larger the enterprise. For medium-sized enterprises the share has dropped by nine percentage points.

Next, we wish to examine from which sources the perceived competition originates. Enterprises were asked to give an estimate of the severity of each competition source. The sources for competition could be reported as either being severe (the value 4), moderate (the value 3), insignificant (the value 2), or no competition from this source (the value 1). The overall picture in Table 10.5 clearly illustrates that competition is not very fierce for the enterprises in the 2015 survey. The degree of competition from state enterprises, legal imports, smuggling and other source is on average insignificant or less. The degree of competition from private formal enterprises and private informal enterprises is on average close to moderate. Of the 2,263 enterprises reporting they face competition, 1,299 (57.4 per cent) report that they do not face severe competition from any of the six sources of competition. This measure indicates that a large fraction of the surveyed enterprises have found market niches where they can flourish without fearing severe competition of any kind.

Digging deeper into Table 10.5, it is noticed that rural enterprises report milder competition than urban enterprises, indicating that the density of enterprises might be higher in urban areas. Further, household enterprises report significantly lower degree of competition compared to the other ownership types. A reasonable explanation for this is that household enterprises correlate with rural status compared to the four other ownership types. Therefore, we need a more sophisticated econometric analysis to find the correlation between ownership types and competition (see Table 10.7). Table 10.5 also reveals that private enterprises (formal and informal) are the main source of competition. For household enterprises the highest level of competition is perceived to be coming from informal enterprises. For the four other ownership types the perceived competition from formal and informal enterprises are similar with a slight tendency to feel more competition from formal enterprises.

Table 10.5: Perceived competition from various sources

	Observations	Perceived competition from:					
		State enterprises	Private formal enterprises	Private informal enterprises	Legal imports	Smuggling	Other sources
Total sample	(2,294)	2.0	2.7	2.9	1.7	1.6	1.6
Urban	(1,078)	2.2	2.9	3.0	2.0	1.8	1.8
Rural	(1,216)	1.8	2.5	2.9	1.5	1.4	1.5
Households	(1,411)	1.8	2.4	2.9	1.6	1.5	1.5
Private/sole proprietorship	(151)	2.2	2.9	2.9	1.9	1.7	1.7
Partnership/collective/cooperative	(43)	2.4	3.1	2.9	2.0	1.9	1.7
Limited liability company	(580)	2.3	3.1	3.0	2.0	1.8	1.7
Joint stock company	(109)	2.5	3.1	3.0	2.2	1.8	1.7

Note: The level of competition was ranked as follows: 4 = severe competition, 3 = Moderate competition, 2 = Insignificant competition, 1 = No competition, so the higher the number the higher the level of competition perceived. Only examining enterprises reporting they face competition.

Source: Authors' calculations based on SME data.

To respond to competitive pressures, enterprises can among other options introduce new products, improve existing products or introduce new technology to the production process. In 35 to 40 per cent of the cases, the motivation behind these innovative actions is increased competition. This relationship can also be found by dividing enterprises into three groups based on their perceived level of competition: i) enterprises that face severe competition from at least one source; ii) enterprises that at most face moderate competition from at least one source; iii) enterprises that at most face insignificant competition from at least one source. Table 10.6 presents the shares of enterprises that have introduced new products, improved existing products and introduced new technology to the production process since 2013, and the share of enterprises that plan to introduce new projects or product lines within the near future. These figures are disaggregated by the level of perceived competition that the enterprise faces. Table 10.6 suggests that the higher the degree of competition the higher is the probability of introducing new products, improving existing products and introducing new technology. In addition, another potential outcome from competition is increased informal payments. In 2015, 42.7 per cent of the enterprises report that they pay informal fees. Out of these enterprises, 41.2 per cent state that they believe that informal payments will increase in the future. The main reason for this believe is increased difficulty in complying with the government regulation (stated by 48.7 per cent) followed by the belief that increased competition will make it necessary to increase informal payments in order to stay in the market (stated by 39.9 per cent).

Table 10.6: Innovation and new technology by level of competition

| | Highest degree of competition from any source | | |
	Severe	Moderate	Insignificant
Observations	964	1,115	174
Per cent introduced new products	24.2	21.3	20.1
Per cent improved existing products	18.7	11.9	6.3
Per cent introduced new technology	6.2	4.5	2.3
Per cent planning new product lines	28.6	20.9	15.5

Source: Authors' calculations based on SME data.

As illustrated in Figure 10.1, some 34 per cent of enterprises have accumulated goods. Figure 10.2 shows why enterprises find it difficult to sell the accumulated goods in inventory. The single-handed most important reason is that there is too much of the same product on the market. The second most important reason for why enterprises find it difficult to sell accumulated goods is that they do not have access to adequate sales channels. Other reasons include too low quality of accumulated goods, transportation problems, and too high a price. This pattern holds for both urban and rural enterprises. However, the problem with too much of the same product in the market is relatively more serious for urban enterprises, while the problem with access to good sales channels is relatively more pressing for rural enterprises.

Figure 10.2: Main difficulties in selling accumulated goods (per cent)
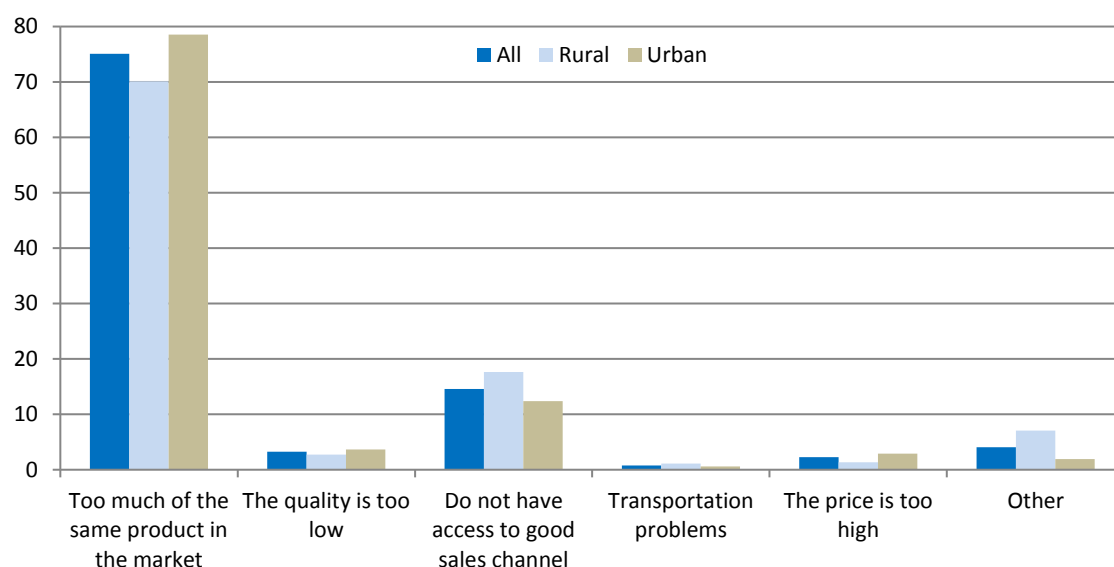
Source: Authors' calculations based on SME data.

One solution for bringing down the level of accumulated goods is to produce more in advance. However, between the 2013 survey and the 2015 survey the share of enterprises that almost always produce on advance orders have declined for micro, small and medium-sized enterprises. For micro enterprises the share

of enterprises almost always producing on advance order has declined from 53 per cent to 48.5 per cent, while the share for small enterprises has declined from 70.7 per cent to 65.7 per cent. For medium-sized enterprises the share has declined from 87.4 per cent to 75.9 per cent.

In order to take various characteristics into account, Table 10.7 presents a probit estimation model with perceived competition being severe as the dependent variable. The alternative to severe competition is that all sources of competition constitute either an insignificant threat or no threat at all. It is important to emphasize that this table says nothing about causality, but focuses on the correlations between competition and several characteristics of enterprises. The probit estimation indicates that larger enterprises are associated with higher probability of facing severe competition compared to no competition at all or insignificant competition. This relationship can be seen by the coefficient to the variables '*No. of employees (x1,000)*' and ownership variables, which is in accordance with the descriptive results in Table 10.5.

Further, Table 10.7 suggests that the number of customers correlates positively with the probability of facing competition. One explanation for this relationship might be that enterprises facing severe competition want to diversify their income streams, because putting all one's eggs into one basket is too risky when competition is fierce. Figure 10.1 suggested that larger enterprises are more likely to accumulate goods which are difficult to sell. However, the figure did not tell us about the relationship between competition and accumulation of goods. The probit estimation in Table 10.7 indicates that there is a positive correlation between accumulation of goods and competition. Figure 10.2 illustrated that the main reason for accumulating goods is that too much of the same product is supplied to the market. Without concluding on causality, the combination of the estimation result in Table 10.7 and the reasons for accumulating goods in Figure 10.2, might suggest that increased competition leads to accumulation of goods. In addition, Table 10.7 states that enterprises in HCMC are more likely to face severe competition compared to all other provinces.

Table 10.7: Determinants of perceived competition

		Coefficient	z-stats
Enterprise Size	No. of employees (x1,000)	1.263*	(1.65)
Customer base	No. of customers	0.084***	(5.94)
Accumulated goods	Yes = 1, No = 0	0.260***	(10.27)
Export	Yes = 1, No = 0	-0.045	(-0.65)
Location	Ha Noi	-0.291***	(-5.24)
	Phu Tho	-0.348***	(-6.42)
	Ha Tay	-0.371***	(-6.77)
	Hai Phong	-0.413***	(-7.33)
	Nghe An	-0.245***	(-4.94)
	Quang Nam	-0.168**	(-2.53)
	Khanh Hoa	-0.262***	(-3.51)
	Lam Dong	-0.298***	(-4.19)
	Long An	-0.211***	(-3.02)
Ownership	Private/sole proprietorship	0.122***	(2.74)
	Partnership/collective/cooperative	-0.088	(-0.92)
	Limited liability company	0.126***	(3.55)
	Joint stock company	0.174***	(3.35)
Sector dummies included		Yes	
Observation		1,470	
Pseudo R-squared		0.167	

Note: Probit, marginal effects at the mean of covariates. Unweighted robust standard errors. *, ** and *** indicate significance at 10 per cent, 5 per cent, and 1 per cent level, respectively. Base: HCMC, Household enterprise, food processing (ISIC 15). Similar results apply if we: 1) compare enterprises facing moderate competition to enterprises facing insignificant or no competition, or 2) compare enterprises facing severe competition to enterprises facing moderate competition. However, the magnitude of the results is smaller and some variables become insignificant.

Source: Authors' calculations based on SME data.

We now turn to the use of production and characteristics of the customer base. Table 10.8 looks at the use of enterprise output. Approximately 46 per cent of the produced output is used for final consumption, whereas slightly more than 41 per cent is used as an intermediate input in services. Intermediate inputs to manufacturing make up 10 per cent of the produced output, and only 1.5 per cent of the produced output goes to intermediate inputs in agriculture. In rural enterprises, a larger share of the produced output is used in final consumption. The share of produced output ending up as inputs in manufacturing and services is higher for urban enterprises. Further, the size of the enterprise is highly correlated with how the produced output is used. Larger enterprises are more likely to produce intermediate inputs to manufacturing and services, and they are less likely to produce for final consumption.

The share of produced output being used as final consumption has increased remarkably during the latest six years. In the 2009 survey, the share of produced output for final consumption was 32 per cent, which increased to 42 per cent in 2013, and now in the 2015 survey the share is 46 per cent (CIEM et al. 2014; CIEM

et al. 2010). While the share for final consumption has increased, the shares for intermediate inputs in services and manufacturing have decreased. The share of produced output being used as intermediate inputs in services has decreased from 48.5 per cent in 2009 to 42.0 per cent in 2013, and further decreased to 41.5 per cent in 2015 (CIEM et al. 2014; CIEM et al. 2010). The same share for intermediate inputs in manufacturing has decreased from 17.6 per cent in 2009 to 12.7 per cent in 2013, and further decreased to 10.2 per cent in 2015 (CIEM et al. 2014; CIEM et al. 2010).

Table 10.8: Use of production (per cent)

	All	Urban	Rural	Micro	Small	Medium
Observations	(2,579)	(1,153)	(1,426)	(1,857)	(561)	(161)
Final consumption	46.1	36.3	54.1	53.5	29.6	17.8
Intermediate inputs in agriculture	1.5	1.6	1.3	1.2	2.0	2.7
Intermediate inputs in manufacturing	10.2	14.3	6.9	6.6	18.3	23.7
Intermediate inputs in services	41.5	46.7	37.3	38.1	49.1	54.8
Don't know	0.7	1.1	0.4	0.6	1.0	1.1

Source: Authors' calculations based on SME data.

Diversifying the customer base is one way in which income stream vulnerability can be mitigated. As commented upon in regards to Table 10.7, enterprises facing severe competition are more likely to diversify their customer base which might be a response to increased vulnerability from competition. Table 10.9 says that around 72 per cent of all enterprises have more than 20 customers, while less than 15 per cent of the enterprises have ten or fewer customers. Substantial changes have occurred since the 2013 survey, where less than half of the enterprises had more than 20 customers. Although the differences are not large, urban enterprises are more likely to have between six and 20 customers, while rural enterprises are more likely to have both very few customers and more than 20 customers. Looking at the size dimension, it is noticed that larger enterprises tend to have few customers compared to micro and small enterprises.

Table 10.9: Customer base (per cent)

	All	Urban	Rural	Micro	Small	Medium
Exclusively one customer	0.9	0.6	1.2	0.9	0.4	3.1
2–5 customers	5.4	4.6	6.0	5.2	5.0	8.6
6–10 customers	8.6	10.2	7.4	8.6	7.8	11.7
11–20 customers	13.3	16.6	10.7	11.0	19.7	17.9
Over 20 customers	71.7	68.1	74.7	74.3	67.1	58.6
Observations	(2,583)	(1,153)	(1,430)	(1,858)	(563)	(162)

Source: Authors' calculations based on SME data.

On average, the distance to the main customer for enterprises in the 2015 survey is 38 kilometres. However, removing outliers with more than 1,000 kilometres (less than 0.5 per cent of the sample) the average distance drops to 29 kilometres. Figure 10.3 illustrates where the customers are located compared to the enterprise location. Most customers (58.5 per cent) are located within the same district as the enterprise, and approximately half of these customers within the same district are also located within the same commune as the enterprise. Further, 25 per cent of the customers are located within another district, though still in the same province. Slightly less than 15 per cent of customers are located within other provinces, while only two per cent of customers are located abroad.

Figure 10.3 also reveals that rural enterprises have a larger share of customers located within the same district (68.6 per cent) compared to urban enterprises (45.9 per cent). On the other hand, customers of urban enterprises are far more likely to be located within other districts but in the same province compared to customers of rural enterprises. One explanation might be that the distances between districts in urban areas are smaller compared to distances between districts in rural areas. Therefore, we cannot conclude that rural enterprises are more likely to supply nearby customers, while urban enterprises explore new markets. It might simply be due to different sizes of communes, districts and provinces. In fact, rural enterprises have on average a longer distance to their most important customer compared to urban enterprises.[18] The development since 2013 has been relatively stable and no differences are worth mentioning.

Figure 10.3: Location of customers (per cent)
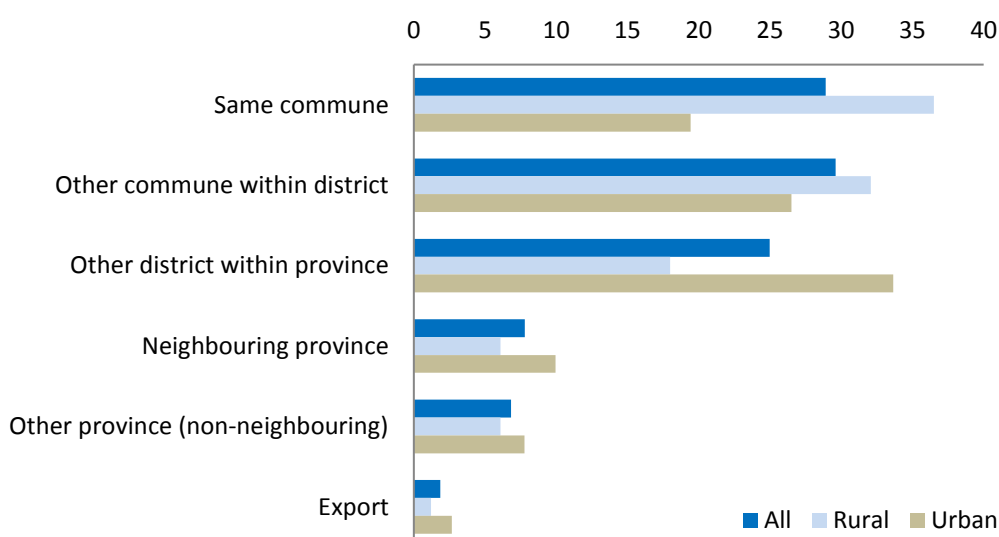
Source: Authors' calculations based on SME data.

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[18] Table 10.10 will present evidence on the types of customers enterprises sell to.

Table 10.10 provides information on who buys the most important product or service in the sampled enterprises. More than half of the most important product/service is bought by domestic non-state enterprises, and 41 per cent is bought by individual local people. Tourists, non-commercial government authorities, state enterprises, foreign invested companies and export contribute very little to the sale of the most important product/service. Disaggregating by location of enterprise, we notice that rural enterprises sell more to individual local people compared to urban enterprises, whereas urban enterprises sell more to domestic non-state enterprises, state enterprises and foreign companies. Larger enterprises sell less to individual local people and substantially more to both state enterprises and export. More than 19 per cent of sales of the most important product/service for medium-sized enterprises goes to export compared to 0.1 per cent for micro enterprises and 2.7 per cent for small enterprises. This indicates that it takes fewer resources to sell to local people, while contracts with state enterprises and export are confined to larger enterprises. Compared to the 2013 survey round there has been a slight decrease in the importance of domestic non-state enterprises, while the share being sold to individual local people has increased by just less than three percentage points. This development is present for both urban and rural enterprises, though changes have been larger in magnitude for rural enterprises.

Table 10.10: Sales structure (per cent)

	All	Urban	Rural	Micro	Small	Medium
Individual local people	41.0	30.8	49.2	49.2	22.6	10.5
Tourists	0.6	0.5	0.6	0.5	0.8	0.1
Non-commercial government authorities	0.8	0.7	0.8	0.5	1.5	1.6
Domestic non-state enterprises	50.9	57.3	45.8	47.0	63.1	52.9
State enterprises	3.7	5.8	2.0	2.3	6.6	9.6
Foreign invested companies	1.2	2.2	0.4	0.4	2.6	5.7
Export	1.9	2.7	1.2	0.1	2.7	19.5

Source: Authors' calculations based on SME data.

This section investigated the export behaviour, competition and sales structures of the SME enterprises. The question on whether to encourage enterprises to export is ambiguous as enterprise performance based on revenue and profits per full-time employee seems to be higher in non-exporting enterprises. In a regression framework, however, the correlation between wage per employee and exporting status is positive, suggesting that a more thorough analysis of exporting enterprises is needed to come up with solid recommendations on whether or how to support export enterprises. This section recommends policy makers to encourage competition in the sectors and areas where competition is low or non-existing as the degree of competition has a clear correlation with innovation.

11 Conclusion and policy implications

The 2015 SME data confirm that a general improvement has taken place in several important dimensions in the business environment in Viet Nam. Comparing 2015 and 2013, formalization of business entities has increased significantly. The results also show that informal household firms do not bring the needed dynamics into the overall business environment, and the data suggests that job creation in a continuously vibrant business environment will have to come from formalized SMEs in the future. To illustrate, compared to the previous report that covered the period between 2011 and 2013 (CIEM et al. 2014), there was a rapid increase in the rate of firms moving into the formal sector between 2013 and 2015. Around 96 per cent of the firms not formally registered in 2013 had obtained a Business Registration Licence (and a tax code) by 2015. This number was 8 per cent in the previous report (CIEM et al. 2014). This is a formidable achievement, and the data again point as well to the positive employment growth effect of formalization. The government is therefore advised to continue and to the extent possible even intensify current formalization policies.

Fewer SMEs resort to informal payments, but 30 per cent of firms that were not paying bribes in 2013 started doing so in 2015. More frequent bribing is observed among formal firms, which use bribes to deal with taxes and tax collectors, as well as to obtain connections to public services. A large share of the reasons for informal payments remains undisclosed. Firms believe they will continue using bribes in the future to deal with difficulties in complying with government regulation and to keep up with competition. The clear benefits of bribes are, however, not obvious, as bribe-paying businesses do not have higher rates of growth than non-paying firms. This implies that government in collaboration with business associations have a key role to play in "breaking the vicious cycle". Information campaigns and other concrete steps to combat existing bribe-paying practices are needed. They are neither productive at the individual firm-level nor for society as a whole.

The share of enterprises that undertake investments has increased since 2013. This is especially due to higher investment rates among micro firms. Both small and medium firms have slowed their investments. Investments are mostly financed by formal loans; but compared to 2013 we observe an increased importance of own capital in financing investments. So access to formal credit remains challenging, especially for household enterprises. Overall, 70 per cent of the firms that do not have formal credit access resort to informal borrowing. In sum, the results confirm that differential and limited credit access continue to pose difficulties for inclusive growth and sustained by investment in the SME sector. The government needs on this basis to contribute to and deepen access to credit, on the one hand, and to intensify efforts to assist firms in generating bankable projects throughout the country, on the other hand. Both supply and demand matter.

SMEs are on average specialized, with only around 11 per cent producing more than one product. Firms located in industrial zones have an above average rate of diversification, which is increasing in enterprise size. This suggests that product diversification does not per se represent a tool for risk reduction among the surveyed firms. It is, however, critically important that enterprises do not get trapped into uncompetitive activities and products that are not developed; and here there is cause for concern. While we observe a sharp increase in new product development in 2015 compared to 2013, we also see a decline in innovation by improving existing product lines. The policy implication is that government needs to revisit existing technology initiatives and consider how they can be strengthened.

The above observations are underpinned by the finding that firms which do innovate appear to have higher profits and revenue. In other words, furthering innovation is important for firm performance. As expected, this mostly holds for larger firms. Diversification suits medium-sized firms, both in terms of revenue and profits, while innovation through the improvement of existing products could also be beneficial for firm growth. Moreover, the rate of new technology adoption has declined since 2013. This is an additional cause of concern, as the use of new technology relates positively to enterprise growth and negatively to exit. Taken together, the technology findings indicate that government must aim to help strengthen the innovative capacity of SMEs, both in terms of product and process (new technology) innovation.

Employment growth has generally picked up to pre-crisis levels and firm exit rates have gone down as compared to the 2009–13 period. This is encouraging and is testament to the sensible macroeconomic policy stance Viet Nam has taken in response to the global financial crisis. Labour productivity, measured as both revenue per worker and value added per worker, also increased between 2013 and 2015. Importantly, the rise in per-worker revenue can be attributed to larger firms, while small firms showed the highest growth rate in terms of per-worker value added.

The apparel and fabricated metals sectors experienced the highest growth in per-worker revenue, while the furniture sector underwent rapid growth in terms of per-worker value added. Labour productivity growth is often found among urban firms that modify and develop existing product lines. The demonstrated link between innovation and labour productivity is a further justification for pointing to the need for increased policy attention directed to innovation. Viet Nam has so far done well in reaping growth from capital investment. In the years to come technology upgrading and improvement are going to be key if Viet Nam is to avoid being caught in what is sometimes referred to as a growth trap.

Compared to 2013, we observe an increase in the number of full-time employees and a decline in the female labour force share of regular workers. Net job creation was positive on average, mainly coming from medium-

sized enterprises. Micro enterprises have seen a negative net job creation. The use of a casual work force has remained unchanged in the past two years, but increased among the micro and formal enterprises. As noted, a large number of firms have formalized in the observed period, but the increased use of casual labour tells that formalization does not affect prevailing relationships with labour. This is a finding that should attract attention.

It is positive that job creation is taking place but increased inequality is looming to the extent this reflects a process where full-time employees (insiders) gain while outsider (especially casual labour in smaller enterprises) are left behind. And the gender finding is particularly worrisome given the well-recognized equity and productivity effects arising from greater gender balance. Government should pay particular attention here both in its labour market policies in general and in more specific and targeted initiatives such as information campaigns and government recruitment policies.

Real wages have increased by almost 15 per cent during the two-year period considered in this report, with larger increases experienced among managers. Generally, the job market seems to be relatively vibrant and switching between occupations is not uncommon and advancements to management happen across all occupations. The data also demonstrate clear positive returns to education and reaffirm a significant and positive association between firm size and wages. This highlights that government must continue to take an active stance in the education and training sectors in collaboration with the private sector in public-private-partnerships (PPPs) whenever feasible, and cognisant of the need for technology upgrading and development of firm capabilities.

The data show a negative trend in the use of formal contracts for regular full-time employees and a positive development in the quality of care for workers compared to 2013. Providing sick leave payments and annual leave with pay became much more common. Overall, all types of social benefits apart from paid maternity leave have increased, illustrating general improvements in work conditions in the private sector. The size gradient is at play again, with larger firms providing formal contracts and social benefits at much higher rates than smaller firms, stressing the need to be alert to the insider-outsider challenge already referred to above. Increasing inequality may have many roots and it is critical to take the necessary policy measures to avoid deepening market based causes beyond reasonable limits.

Vietnamese SMEs do not appear to be very active in foreign markets. This is not only illustrated by low export rates, but also by a low prevalence of internationally recognized standards. The share of exporting enterprises was just below 7 per cent in 2015, which is not a lot, but nevertheless an increase compared to previous years. A positive development is that export firms have increased the share of revenue from export in the

observed period. This was especially true for micro firms, indicating the need for increased support to SMEs to enter and remain in foreign markets. A large proportion of SMEs do not have quality or environmental certificates and we have even observed a negative trend in certification of both international and environmental standards. As the data show an indication of better performance in terms of revenue and labour productivity among certified firms, this is a missed opportunity not only in terms of firm performance, but also in terms of foreign market access.

Existing literature and experiences elsewhere in Asia points to strong development benefits from increased exports – in combination with agglomeration and the development of firm capabilities. Firms learn by exporting, and increased learning is an essential element of efficiency, technological upgrading and growth. Government must therefore pay increased attention to the need for further developing enterprise access to export markets, both directly and, maybe even more importantly, indirectly as suppliers of inputs to larger enterprises that export. This will have to involve both the provision of information and specific clauses in for example agreements with foreign companies that can play a key role in furthering access to global markets. Another area that is calling for attention is standards and quality control, which has a proven impact on firms' abilities to export to demanding global markets.

Almost 90 per cent of enterprises reported that they face severe competition in their line of activity. The competitive pressure increases with firm size. Moreover, enterprises feel that the degree of competition has increased during the past two years. Increasing competitive pressure is an integral characteristic of the transition to a market economy. It is, however, important that institutional frameworks are developed to deal with destructive market based practices, such as collusion, monopolisation and inability to reap reasonable benefits (profits) from new discoveries and technology through patents. The legal framework is in other words in need of development. As most enterprises at this point primarily sell goods in the same district in which they are located, a strategy to deal with competition could be customer diversification, calling attention again to the need for looking beyond narrow local, provincial, and country boundaries.

The present report has provided insights into the current circumstances under which SMEs operate, as well as the constraints and opportunities they face. The conclusions on several issues, such as investment rate, job creation, wages, labour productivity, formalization, and the use of informal payments, are certainly more positive than two years ago. At the same time, many challenges remain. These are illustrated in limited credit and foreign market access. They are observed across all firm size categories as is the limited compliance with international and environmental standards. These may not only have potentially worrying consequences for the natural environment, but also for persistently low access to lucrative foreign markets.

Moreover, and importantly, significant gender differences in both risk attitude and personality traits are found resulting in females displaying lesser willingness to take risks. This could explain the documented differences in investment behaviour and performance of firms owned by females and males and is a wake-up call that a gender balanced development path will not come about without decisive policy measures to help modify and change existing behaviour and practices. Summing-up, the findings presented in this report point to the critical importance of continuing to develop effective policy measures that are not only conducive to furthering productivity, employment and economic growth in the SME sector but also underpins an inclusive growth pattern.

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