

công nghệ hiện có trên thế giới vào quá trình sản xuất. Chính phủ có thể đóng vai trò chủ động hơn bằng cách giúp doanh nghiệp nhận dạng các công nghệ phù hợp hay hỗ trợ vốn đầu tư vào công nghệ (một lượng lớn các doanh nghiệp phải dùng vốn tự có để đầu tư vào công nghệ và lý do họ không mua các công nghệ đại trà là vì nó quá đắt).

Cuối cùng, sức ép với các doanh nghiệp ngày càng gia tăng khi nền kinh tế Việt Nam trở nên cạnh tranh hơn. Điều đó khiến doanh nghiệp cắt bớt những cam kết TNXH để tập trung theo đuổi lợi nhuận. Kết quả từ cuộc điều tra 2012 và những cuộc điều tra trước đó cho thấy các doanh nghiệp đang ngày càng tuân thủ tốt hơn các trách nhiệm pháp lý do luật pháp quy định, tuy nhiên có rất ít doanh nghiệp thực hiện các tiêu chuẩn ở mức cao hơn các tiêu chuẩn tối thiểu này. Do vậy, các nhà hoạch định chính sách cần đóng vai trò chủ động trong việc hình thành những chính sách khuyến khích các hoạt động TNXH trên mức tuân thủ của doanh nghiệp. Cách thức hiệu quả, công bằng nhất để làm điều đó có lẽ là cung cấp các hướng dẫn chi tiết, giúp doanh nghiệp tự bảo đảm điều kiện lao động, tiêu chuẩn cao hơn về xã hội và môi trường.

Nhìn chung, dự đoán về tăng trưởng của Việt Nam trong dài hạn vẫn là rất khả quan. Nguồn lao động dồi dào và nền chính trị ổn định sẽ tạo điều kiện tốt cho khu vực tư nhân phát triển, đóng góp vào tăng trưởng. Mặc dù vậy, một chính sách công nghiệp có mục tiêu cụ thể, rõ ràng sẽ giải quyết được vấn đề tăng trưởng chậm, tăng nhu cầu việc làm ở khu vực chính thức và cải thiện mức lương. Giúp đỡ doanh nghiệp tiếp cận và đầu tư vào công nghệ phù hợp là chính sách chi phí thấp nhưng có thể đem lại lợi ích to lớn. Dù đang tạo ra lượng việc làm rất lớn cho nền kinh tế, vốn đầu tư nước ngoài không phải là nguồn lan tỏa công nghệ duy nhất và rất không nên dựa vào một mình nó để tiếp cận công nghệ phù hợp. Số liệu tổng hợp từ báo cáo này cung cấp cho các nhà hoạch định chính sách những bằng chứng cụ thể về những gì thực sự hiệu quả, nên làm trong chính sách công nghiệp. Theo đó, nhà hoạch định chính sách Việt Nam không nên dựa vào những trường hợp đặc biệt trong quá khứ mà nên khuyến khích sự phát triển, chia sẻ lợi ích rộng, hài hòa hơn.

Firm-Level Technology and Competitiveness in Vietnam: Evidence from a Survey in 2012

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Preface

This report summarises information from the 2012 round of the Vietnam Technology and Competitiveness Survey (TCS), collaboratively developed by the Central Institute for Economic Management (CIEM), the General Statistics Office (GSO), and the Development Economics Research Group (DERG) of the Department of Economics (DoE), University of Copenhagen.

The data collected here supplement previous survey rounds, and future rounds of the survey will give researchers and policymakers a detailed understanding of the dynamics of technology, profitability, and productivity of Vietnam's growing private sector.

While every effort has been made to introduce readers to the main features of this data set, this is not an exhaustive description of the full range of information collected in 2012: researchers and interested readers are encouraged to review the survey questionnaire and explore the full survey data set.

Acknowledgements

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The report was prepared by Dr. Nguyen Thi Tue Anh, Ms. Hoang Thi Hai Yen and Mr. Le Phan of the Central Institute for Economic Management, and Dr. Theo Talbot and Professor John Rand of the University of Copenhagen. Dr. Carol Newman of Trinity College, Dublin provided valuable input to the preparation of the survey questionnaire and this report. All researchers are indebted to the principle investigator, Professor Finn Tarp, Coordinator of the Development Economics Research Group (DERG) at the University of Copenhagen, Denmark and Director of UNU-WIDER, Helsinki, Finland.

This series of on-going surveys would not be possible without the enduring professionalism and dedication of the enumerators and officials of the General Statistics Office (GSO).

While many commentators were responsible for improving the quality of this descriptive report, any remaining errors are the responsibility of the research team.

1 Introduction

As with previous survey rounds, the 2012 Vietnam TCS collects firm-level data about topics ranging from technology investment and innovation to corporate social responsibility. The survey is “backwards-looking,” so the 2012 round collects information about 2011.

The TCS questionnaire was developed collaboratively by the Development Economics Research Group (DERG) of the University of Copenhagen, the GSO, and the Central Institute of Economic Management (CIEM) within the Ministry of Planning and Investment (MPI). With over 100 full-time research staff across seven research departments, CIEM is a leading producer of economic analysis and policy evaluation for the Government of Vietnam.

The Danida Business Sector Support Program (Danida BSPS) has generously committed funds that enabled the GSO to implement the survey as a module attached to the annual Enterprise Census in 2011, 2012, and 2013 (the 2010 survey was funded from other sources), and this report focuses on cross-sectional evidence generated by the 2012 survey round. (See CIEM, 2011 and 2012 for descriptive reports covering previous rounds).

A consistent cross-section of firms has been surveyed in each round, creating a unique and growing panel data set enabling researchers to study changes within individual firms over time. This survey’s focus, level of detail, and panel structure make it unique in Vietnam and rare amongst surveys currently implemented in any emerging economy.

1.1 Quantifying Innovation

One motivation for developing the TCS was the recognition by Vietnamese and international researchers that a large number of existing tools to evaluate national competitiveness may not be appropriate for studying innovation in the context of emerging economies. As Krugman (1996) observed, this is a relative concept that is often misunderstood and misused in policy discussions that emphasise “achieving competitiveness”. Simple economic theory suggests that firms that are a long way from the technological frontier can innovate and improve quality simply by adopting and integrating technologies that have already been developed and used elsewhere, so innovation in an emerging economy context may not be the same as pushing forward the technological frontier.

Table 1.1 shows selected indicators from some country-level and cross-country reports on competitiveness in Vietnam. The excerpts are not exhaustive, but suggest that existing measures emphasise variables (like research and development spending) that are more appropriate in the context of a high-income economy. While it is certainly true, for example, that the number of patents developed per year will be correlated with growth in real per-capita income, this does not mean that originating patents is the best way for a lower middle income economy to grow faster or become more competitive (see Lall, 2001, for an influential discussion of the problems associated with evaluating the competitiveness of emerging economies using aggregate indicators).

Table 1.1: Selected Innovation Indicators

Source	Selected Indicators
UNIDO: <i>Viet Nam Industrial Competitiveness Report 2010</i>	Manufacturing Value Added (MVA) per capita Manufactured export capacity Share in world manufactured exports Share of MVA in GDP Share of manufactured exports in total exports
European Commission: <i>Science and Technology Innovation in Europe 2013 Edition</i>	Research & Development Expenditure Science and technology workers Number & kind of innovative enterprises Number of patents Number of high-tech manufacturing / services enterprises
OECD: <i>Science, Technology and Industry Scoreboard</i>	Gross domestic expenditure on R&D Researchers (headcount) Government, Enterprise, and Higher Education R&D Personnel Patents Technology Balance of Payments
World Economic Forum: <i>Global Competitiveness Report 2012</i>	Environmental/social sustainability Internet Penetration Quality of scientific institutions Company spending on R&D Availability of scientists/engineers

Rather than focusing on aggregated variables, the TCS investigates firm-level investments in, and outcomes from, technology innovation and corporate social responsibility, focusing on the various channels identified in empirical and theoretical economic literature for how firms improve the methods, processes, and/or physical equipment involved in production. Because of its focus on firm-level information, the survey also examines how technologies diffuse through the productive economy, and whether productive technology used by other firms in the same sector or suppliers and customers creates “spillover effects” of improved, more appropriate or more efficient technology.

1.2 The Vietnam Technology and Competitiveness Survey

While the final questionnaire was mutually agreed in an English version, the survey was implemented in Vietnamese (a translation from the final Vietnamese version to English was performed to ensure consistency). The 2012 survey instrument studies technology development and adaptation along six dimensions summarised in Table 1.2.

Table 1.2: Structure of 2012 Survey Questionnaire

Section	Description	Questions
Taking stock of technologies and technological basis	Capturing the status-quo of the firm's level of technological investment and sophistication through questions about the age, cost, and type of current production technologies.	1.1 – 3.4
Input and supplier relations	The details of major suppliers' locations and the value of inputs obtained, differentiated across domestic and international suppliers.	4.1 – 6.1
Output and customer relations	The details of major customers' locations and value of outputs sold, differentiated between domestic and international customers.	7.1 – 9.2
Innovation and technology capacities	Diagnostic questions targeting the constraints affecting technology adaptation and level of the firms' investment in technology transfers or research and development.	10.1 – 15.4
Competitors	Number and location of competitors, and dimensions (cost / quality) along which competition occurs.	16.1 – 16.6
Corporate Social Responsibility (CSR)	Questions relating to formal and informal commitment to CSR practices.	17.1 – 20.8

It was implemented as a module attached to the General Statistics Office (GSO)'s annual Enterprise Survey (also referred to as the Enterprise Census), a short-form census of all registered firms of ten employees or larger (the minimum cut-off is 30 in the urban centres of Ha Noi and Ho Chi Minh City) implemented by the Government of Vietnam. The TCS was taken to the field by over 300 enumerators under the guidance of 75 supervisors, and data were collected through face-to-face interviews. Enumeration was done by hand and the data were digitised and extensively cleaned in Ha Noi.

1.3 Sampling and Cleaning

In addition to the standard tests for duplicate entries and missing data, the data were cleaned to exclude those firms whose figures for assets and / or revenue were recorded as zero or missing. Firms were excluded if the recorded percentage change from the end of 2012 relative to the end of 2011 in reported assets, revenue, or number of employees was lower than 20% or greater than 500%. Finally, the ratio of firm revenue to firm size (in terms of employment) was calculated, and our final study sample excludes observations in the first and 99th percentiles. Combining the TCS module with data from the Vietnam Enterprise Survey and removing duplicate entries and those firms with inconsistent asset or revenue figures delivers a cross-section of 8,107 firms.

Survey data are organised hierarchically, with firms located in sectors and sectors located in 58 provinces and five major municipalities (63 geographic units in total). Firms are uniquely identified in

the data by a combination of the province in which they operate and a tax code that specifies firms within each province.

While firms vary along many dimensions, we simplify the analysis presented here by grouping firms together according to size, classified as in Table 1.3, below.

Table 1.3: Size Categories

Size category	Number of employees
Micro	0 – 10
Small	10 – 50
Medium	50 – 300
Large	300 or more

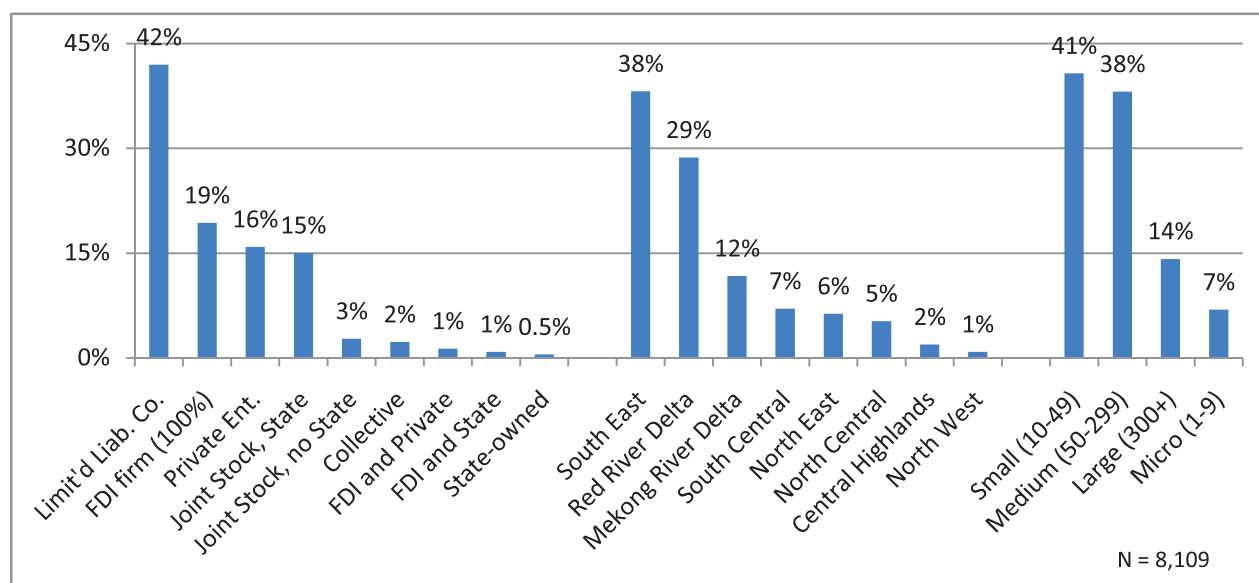
We also disaggregate firms by their equity structure because this summarises a large amount of information about firms’ incentives and cost structures. Table 1.4 below lists the categories of “legal structure” into which firms can select in response to the GSO’s enterprise questionnaire. We use these categories throughout our analysis of the TCS data.

To summarise data by region, we pool provinces into eight regional groupings. The economic geography of Vietnam is highly uneven, with economic activity concentrated in specific areas of the North and South. Figure 1.1 below summarises our underlying sample. Consistent with the density of economic activity in the country, the largest share of firms included here is based in the South East, over 40% are limited liability companies, and small- and medium-sized firms make up 79% of the sample.

Table 1.4: Legal Structure Categories

Legal structure	Description
State-owned	Wholly state-owned
Collective	Cooperatively-owned and managed
Private Ent.	Domestically-owned private
Limited Liab. Co.	Domestically-owned, incorporated
Joint Stock, no State	Publicly-held firm, without government ownership
Joint Stock, State	Publicly-held firm, with government ownership
FDI (100%)	Wholly foreign-owned
FDI and State	Joint government and FDI ownership
FDI and Private	Joint private and FDI ownership

Figure 1.1: Sample Distribution by Firm Characteristics



While small and medium firms make up most of the firms in the sample, the 14% of firms classified as “Large” account for over 70% of the workers reported. The figure is 28% for the medium and small companies combined. This does not mean that smaller firms do not deliver growth and employment, but it does caution against confusing the distribution of firm sizes with the distribution of employment by firm size.

In addition to differences in legal structure and workforce size, the TCS collects data about which industry the firm operates in at a high-level of resolution (the six-digit ISIC level, a standard industrial classification system). Table 1.5 below summarises these classifications at the two digit-level for reference.

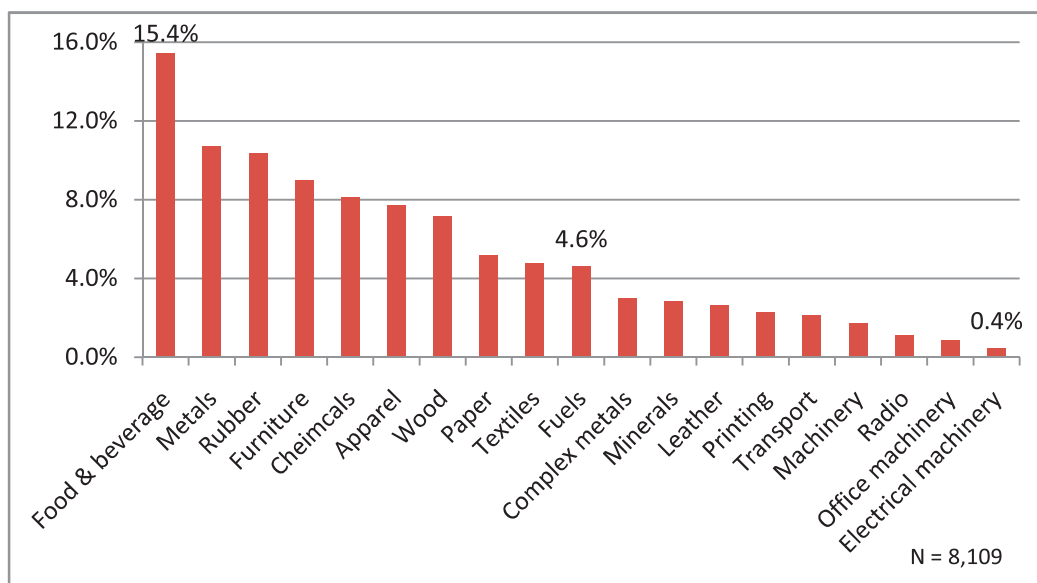
Table 1.5: ISIC 2-Digit Sector Code and Description

ISIC 2-digit Code & Description: Manufacture of...
15 - Food products and beverages
17 - Textiles
18 - Wearing apparel
19 - Tanning and dressing of leather
20 - Wood and of products of wood and cork
21 - Paper and paper products
22 - Publishing, printing and reproduction of recorded media
23 - Coke, refined petroleum products and nuclear fuel
24 - Chemicals and chemical products
25 - Rubber and plastics products
26 - Non-metallic mineral products
27 - Basic metals

28 - Fabricated metal products
29 - Machinery and equipment
30 - Office, accounting and computing machinery
31 - Electrical machinery and apparatus
32 - Radio, television and communication equipment
33 - Medical, precision instruments, watches and clocks
34 - Motor vehicles, trailers and semi-trailers
35 - Other transport equipment
36 - Furniture
37 - Basic metal industries

Figure 1.2 below shows that the majority of the manufacturing firms operate in the food and beverage sector, but this sector (ISIC 15) does not dominate the sample; the overall dataset includes firms in each sector. The sample therefore captures information about firms across size categories, main sectors of operation, and region.

Figure 1.2: Sample Distribution by Sector



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Central Institute for Economic Management (CIEM) and University of Copenhagen. Technology and Competitiveness in Vietnam: Evidence from a Survey in 2010. Ha Noi: CIEM, 2011.

Central Institute for Economic Management (CIEM) and University of Copenhagen. Technology and Competitiveness in Vietnam: Evidence from a Survey in 2011. Ha Noi: CIEM, 2012.