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Viet Nam Industrial Investment Report 2011

Understanding the impact of foreign direct investment on industrial development

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

MINISTRY OF PLANNING
AND INVESTMENT

This document is the result of a collaborative effort between the Ministry of Planning and Investment Viet Nam (MPI) and the United Nations Industrial Development Organization (UNIDO).

All analysis, calculations and illustrations of results were prepared by UNIDO, unless otherwise noted.

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Preface

The development strategy of the United Nations Industrial Development Organization and the Ministry of Planning and Investment of Viet Nam is about the creation of prosperity through the expansion of productive capacity. Private direct investment, be it foreign or domestic, creates productive capacity and in turn generates employment and enables national economies to become active players in the global market. At the heart of Viet Nam's impressive industrial performance lies the unprecedented contribution of foreign direct investment (FDI). As the country continues to move forward with its ambitious development agenda, it becomes critical to reach a better understanding on the catalytic role that FDI can and has to play for industrial diversification and for achieving growth in industrial efficiency and competitiveness.

Good policies can accelerate and sustain the positive economic impact of different forms of investment on the host economy provided policy makers can tap into a relevant, accurate and comprehensive information repository. Developing countries require the means to monitor investment flows and trends in their economies, to assess the performance of such investment and ascertain the impact of different investor categories on key economic indicators.

The Viet Nam Industrial Investment Report 2011 is a timely publication since it addresses the important policy issues of the role and impact of FDI in the economy at this critical juncture in Viet Nam's industrial development process. The Report is the outcome of the successful collaboration between the Ministry of Planning and Investment (MPI), the Foreign Investment Agency (FIA) and UNIDO. It is based on data from the Viet Nam Industry Investor Survey conducted in 2011. Together with the Viet Nam Investment Monitoring Platform, where the data is posted on-line and publicly accessible for interactive research, the Report brings more clarity to the dialogue between the Government and the private sector to create a shared vision of how to foster prosperity in the country.

To this end, we sincerely hope that this Report will be deemed a useful document which supports policymakers in the formulation of industrial policies and investment promotion strategies in this milestone period of Viet Nam's industrial development and modernization process.

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Minister of Planning and Investment Viet Nam

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Director-General of UNIDO

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This publication has been prepared under the overall direction of Kandeh K. Yumkella, Director-General of UNIDO, Mohamed-Lamine Dhaoui, Director, Business, Investment, and Technology (BIT) Services Branch, and Mithat Külür, Chief of the Investment and Technology Unit (ITU). Ms. Nilgun Tas and Mr. Patrick Gilabert, former and current UNIDO representatives in Viet Nam, and Mr. Do Nhat Hoang and Mr. Nguyen Noi, respectively Director General and Deputy General Director of FIA, provided overall support, reference and guidance to the Project and to this Report.

Stefan Kratzsch, UNIDO staff and Project Manager was responsible for the project design, the overall project implementation and provided the conceptual framework and direction of this Report. Brian Portelli, UNIDO Advisor, provided technical and advisory support to the project and coordinated the Report preparation and drafting process.

The core research group of the VIIR 2011 was composed of Anders Isaksson (UNIDO staff member) and Michela Bello, Martin Ingvarsson, Nguyen Thi Tue Anh and Nguyen Thi Phuong Hoa (UNIDO Consultants). The core research group benefited from reviews, comments and support from Manuel Albaladejo (UNIDO staff member), Le Thi Van (Director Statistics and Information Division of FIA), Prof. John Henley (Professor Emeritus University of Edinburgh Business School), Bui Quang Tuan (Deputy Director General of the Viet Nam Institute of Economics) and Mai Thi Thu (General Director National Centre for Socio-Economic Information and Forecast, Ministry of Planning and Investment).

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Executive Summary

INTRODUCTION

Since the start of the *Doi Moi* (Renovation) policy in 1986, Viet Nam has attempted to promote a drastic and comprehensive transformation of its economy. This process has resulted in a number of socio-economic achievements. Real GDP growth has been constantly high, averaging nearly 7.1 per cent per annum in the 1990-2010 period, and has led to a sharp fall in poverty, from 58 per cent in 1990 to 10.6 per cent in 2010. GDP per capita, measured in current prices, exceeded USD 1,000 in 2010 (GSO 2012), allowing Viet Nam to reach lower middle-income status. Such a transformation was underpinned by three main pillars: (i) market-oriented reforms; (ii) stabilization of the macroeconomic environment; and (iii) Viet Nam's pro-active integration into the regional and world economy. A number of measures taken in accord with these policy objectives have significantly broadened Viet Nam's economic opportunities and enhanced its capacity to realize those opportunities.

Along with these policy directions that have accelerated its progress, economic growth in Viet Nam has been mainly driven by the expansion of trade and investment, including foreign direct investment (FDI). The huge increase in FDI inflows to Viet Nam in recent years has mainly reflected attempts by foreign investors to exploit the opportunities that were expanded by or newly introduced along with Viet Nam's growth. By joining the World Trade Organization (WTO) in December 2006, Viet Nam had, *de facto,* further opened its economy to be able to receive higher FDI inflows than ever before. By 2011, it had registered around USD 198 billion of total accumulated registered capital from over 13,600 FDI project, though the total implemented capital of these projects was lower, amounting to around USD 80 billion. Over the years, FDI has followed steady upward trends, except for peaks in 1996 and 2008. During the period 1988 to 2010, the annual rates of growth of registered FDI came to a staggering 34 per cent, greatly outweighing the growth rates of other developing country recipients of FDI. Registered FDI in the period 2000-2010 was four times what it had been in the previous decade. Despite the world financial crisis and economic recession, FDI registrations in 2009 and 2010 showed positive levels, approximating the FDI levels achieved in 2007 and indicating higher capital flows than in previous years. The similar trends achieved in growth rates for registered and implemented FDI have resulted in smaller gaps between registered and implemented FDI over time, indicating that in recent years the implementation of FDI in Viet Nam has been quite positive. The sectoral composition of FDI is mainly concentrated in manufacturing and real estate. At the end of 2011, these two sectors accounted for around 67 and 77 per cent of total FDI projects and registered capital, respectively. Most FDI in Viet Nam comes from Asian countries. As at the end of 2011, of the total accumulated capital of effective FDI projects in Viet Nam, seven of the ten largest foreign direct investors came from countries in this region, namely China (Taiwan Province), South Korea, Singapore, Japan, China (including Hong Kong), Malaysia and Thailand. The invested capital by these countries accounts for more than half of accumulated FDI in Viet Nam, with US and European investors playing a less important role. Foreign investment has, however, been established unevenly in the various cities and provinces of the country, the six biggest recipients of FDI being Ho Chi Minh City, Hanoi, Dong Nai, Baria-Vung Tau, and Binh Duong. These provinces account for nearly 60 per cent all foreign investment flows at the national level.

It is now recognised that Viet Nam needs to develop an investment promotion policy which emphasizes the shift from the focus on the volume of FDI to a focus on its quality as measured in terms of its impact on the Vietnamese economy and the growth of domestic

productive capacity. The development of such a policy is, however, challenged by the rather sketchy quality of much of the information publicly available on firm-level business activity. Data on the investment climate and business opportunities is usually fragmented and insufficient for informed decision-making. Although this deficiency is widely recognized by the donor community, and many initiatives have been launched to tackle the problem, the data produced is not yet accessible in consolidated form and through an easily searchable information platform. National institutions involved in various aspects of investment, primarily the Foreign Investment Agency (FIA), need to acquire new tools and to sharpen their skills to assess the changing contours and catch up with the developing trends in the country's investment topography, and institutional policy advisory and advocacy roles need to be supplemented and backed up by solid empirical evidence.

PROJECT BACKGROUND

UNIDO implemented the Project 'Platform for Investment Monitoring and Supplier Development Phase I' in Viet Nam between 2009 and June 2012. The Project aimed to enable better monitoring and management of investment flows by national institutions and private sector decision makers and to equip the domestic manufacturing sector to present itself as a viable and competitive supplier base for global enterprises. The Project was designed to facilitate the shift in investment promotion strategy from quantity to increased emphasis on the quality of investment, measured in terms of the impact of FDI on the domestic economy while maintaining volume momentum [1].

THE PROJECT CONSISTED OF THREE MAIN OUTPUTS:

- **Output I: Investment monitoring platform set up, based on a database of domestic and foreign enterprises:** The Viet Nam Investment Monitoring Platform (V-IMP) is based on a comprehensive UNIDO Viet Nam Industry Investor Survey undertaken by UNIDO in collaboration with the Foreign Investment Agency (FIA) in the Ministry of Planning and Investment (MPI), the Viet Nam Chamber of Commerce and Industry (VCCI), and the General Statistics Office (GSO). The Survey's extensive data collection exercise was carried out over a four-month period, beginning towards the end of 2010 and completed in the first months of 2011, among 1,493 foreign and domestic industrial enterprises within the manufacturing, construction and utilities sectors in nine principal provinces in the country: Ba Ria-Vung Tau, Bac Ninh, Binh Duong, Dong Nai, Vinh Phuc, Da Nang, Ha Noi, Hai Phong and Ho Chi Minh City (HCMC). The Viet Nam Industrial Investment Report 2011 (VIIR 2011), which analyses the findings of the survey, has been prepared by UNIDO staff and experts in collaboration with high-level Vietnamese government officials and national advisors. The V-IMP, available online at http://investment.unido.org/imp/, provides registered users with access to the data base and allows them to carry out interactive analyses that can be made visible to other platform users.

- **Output II: National institutions linked to the V-IMP and their capacities upgraded to carry out analyses and inputs to policy making:** Stakeholder staff have been trained to interrogate the Investor Survey database and interpret the results to identify the types of foreign investment that produce particular development impacts. Capacity building has also involved training programmes to formulate short, medium and long-term strategies for targeting investor groups identified in the Survey as having a potentially high impact on Viet Nam's economy. The objective of capacity building has been to enhance the skills to target identified investor groups and to address their particular needs in a more timely and customized manner. For example, the V-IMP allows potential investors to quickly and directly contact any investment agency through the V-IMP to receive further support in investment planning, decision making and execution.

- **Output III: Supplier benchmarking and subcontracting exchange (SPX) established:** The Subcontracting and Partnership Exchange Centre (SPX) in Viet Nam was set up within the Vietnam Chamber of Commerce and Industry (VCCI) [2] and aims to link domestic enterprises to the supply chains of large domestic or international companies. The main role of SPX Viet Nam is the assessment of buyer requirements by engaging

1 A detailed project description is contained in General Annex I.

2 http://spxvietnam.vn/en/vcci-spx-vietnam

them as strategic partners and determining the gap between those requirements and actual local capacities as determined through a supplier profiling and benchmarking process. The SPX employs benchmarking methodologies to assist local enterprises in understanding their competitive position by comparing their operational performance and managerial/operational practices against international competitors as well as against the requirements of buyers. Promotional and supplier-buyer match-making events and forums have been organized successfully.

MAIN FINDINGS FROM THE VIET NAM INDUSTRIAL INVESTMENT REPORT 2011

The UNIDO Industry Investor Survey 2011 and the resulting Viet Nam Industrial Investment Report 2011 constitute an integral part of the first output of the Project 'Platform for Investment Monitoring and Supplier Development Phase I'. These outputs have sought to unearth important aspects of the investment impact of FDI in Viet Nam's industry; they reveal an industrial sector which is striving to succeed in increasingly competitive global markets. The unprecedented inflows of FDI have had a positive impact on the economy in terms of growth in employment, exports, injection of capital and technology and the attainment of certain spillover effects. Simultaneously, however, increased FDI performance has also magnified the inherent structural economic challenges faced by the Vietnamese economy. The underlying fundamentals of an industrial sector based on labour-intensive, capital and material imports point to a need for a re-assessment of the FDI-led export growth model as well as to a heightened urgency to move the country up the industrial upgrading ladder through the based on the attainment of long term comparative advantages. Evolving comparative advantages have to be invariably based on a better skilled and adaptable labour force, an improved physical infrastructure and business environment conditions characterized by the availability of a thriving supporting industrial base.

TYPOLOGY AND CHARACTERISTICS OF INVESTMENT IN VIET NAM

The Report re-affirms some important stylized knowledge about FDI in Viet Nam. Based on a sample of 1,493 enterprises, its results reflect the investment concentration in some of the most prominent and economically active provinces in the country. The sample was compiled from the Business Register maintained by the General Statistical Office (GSO) Viet Nam. The majority of foreign enterprises in the sample, 51.6 per cent, are large sized, while around 28 percent are small, and around 20 percent are medium; almost 70 per cent are TNCs and only one third (31 per cent) are stand-alone enterprises. The database is quite balanced in terms of country of foreign investor origin: around 57 per cent originate from industrialized countries, whereas some 43 percent come from developing countries. Foreign enterprises are mainly located in the province of Binh Duong (33.5 per cent), Ho Chi Minh City (22.4 per cent) and Dong Nai (21.5 per cent) and Hanoi (around 10 per cent). In terms of sectoral distribution, three sectors – fabricated metal products (except machinery and equipment), wearing apparel, and plastics products – constitute approximately one quarter of the sample, with a high presence by the furniture, textiles and computer, electronic and optical products industries Categorization according to technology level (following OECD 2005), shows that most enterprises in the sample fall into the low-technology level (47 per cent). Around 28 per cent of foreign firms are located in the high-technology industries and 22 per cent in medium-technology manufacturing activities.

There are large differences in this sample between foreign invested enterprises (FIEs), non state-owned enterprises (NSOEs) and state owned enterprises (SOEs), which constitute 57 per cent, 33 per cent and 10 per cent of the Survey sample respectively. In line with expectations, on average FIEs invest, employ and contribute more to exports than domestic enterprises. They also pay more taxes, operate at higher capacity utilization and are generally more profitable. The average FIE in the sample is represented as a wholly-owned enterprise, investing through the greenfield investment mode with its main motive being to gain access to the Vietnamese market or to improve its operational efficiency. FIEs are typically large in size, aged 6 to 20 years old and have a global market orientation exporting beyond ASEAN countries. In their regional and global market orientation, they distinguish themselves significantly from domestic private enterprises and SOEs, who primarily have a local market orientation. They also seem to have established themselves both in high and low technology manufacturing industries and are typically

subsidiaries of transnational corporations (TNCs) from industrialized countries with the top-three investor country origins being South Korea, China (Taiwan Province) and Japan.

FIEs in Viet Nam are by no means a homogeneous group, which is a relevant finding, not least in relation to the need to formulate more targeted investment promotion strategies. Those from industrialized countries seems to be driven primarily by efficiency-seeking investment motives, with efficiency gains being sought mainly by accessing lower production costs and rather than by tapping into natural resources and other inputs. This is in contrast to FIEs from developing countries, which seem to be more driven by market-seeking motives, especially with regard to accessing not only the Vietnamese but also the ASEAN market. The majority of TNC subsidiaries (primarily from industrialized countries) in the sample have invested in Viet Nam in order to achieve efficiency gains, whereas the majority of stand-alone foreign entrepreneurs (FEs) have invested to access the Vietnamese market. On the other hand, the average wholly-owned-enterprise is, in most cases, a TNC which was established as an efficiency-seeking enterprise gradually developing its global market orientation.

EMPLOYMENT GENERATION AND SKILL FORMATION

The Report re-affirms the established notion that the majority of manufacturing firms in Viet Nam are labour-intensive and that FDI has an important positive impact on employment generation. Most employment opportunities generated by this sector refer to labour engagement in direct production, which in turn includes a substantially large proportion of female employment. This result mirrors the need to examine the social and economic implications of wide-scale female employment in specific low-wage and low-skill sectors of Vietnamese industry, notably the manufacture of wearing apparel and textiles. The majority of FIEs are heavily dependent on capital and imported inputs whilst at the same time are engaged in the production of low-value-added manufacturing activities. In turn, these characteristics undermine average employee productivity and tend to bring down manufacturing value added. As FIEs are more likely to engage unskilled labour, these firms are more disposed to counter this skill gap by increasing expenditure on employee training initiatives, through both internal and external training programmes.

TRADE AND INTERNATIONAL MARKET INTEGRATION

The export activities of enterprises participating in the Viet Nam Industry Investor Survey 2011 generally reflect the overall trends in the increasing international market integration of Viet Nam's manufacturing sector. WTO accession is considered to have had the most important impact on enterprises' international trade patterns, particularly in diversifying export products and expanding export markets. Survey findings suggest that, while the majority of export firms are global exporters (i.e. export beyond the ASEAN regional markets), most import activities are concentrated in the regional markets, implying a negative trade balance at the regional level. Export growth remains high in nominal terms but it seems to be on a downward trend in key export sectors compared to growth levels in previous years. This result may be more attributable to lower export revenues resulting from more intensively competitive international markets than to lower volumes. The FIE sector leads Viet Nam's exports but is highly concentrated in a number of labour-intensive manufacturing sectors. The great majority of export firms are still heavily dependent on imported inputs, especially in the FIE sector, though this pattern is by no means notable only among FIEs: domestic enterprises face the same challenges and the general lack of local supporting industries or the lack of competitive products offered by these industries attests to a structural weakness in the Vietnamese economy. In the perceived knowledge that FDI export-led growth might have an impact on overall labour productivity, results suggest that that this may not be the case for some FIEs in Viet Nam, where indeed export-oriented firms determine low labour productivity as heavily underpinned by the skill base of the engaged labour force.

PRODUCTIVITY AND TECHNICAL EFFICIENCY

The Report analysed relative productivity and efficiency performance across groups of firms, sectors and provinces in Viet Nam. An important Survey finding from the descriptive analyses is the relatively small difference in performance between FIEs, NSOEs and SOEs. For some measures of performance, and contrary to prior beliefs, SOEs appear to have the highest relative productivity performance and technical efficiency. Apart from this, FIEs are shown, based on a regression analysis, to be significantly better performers than both NSOEs and SOEs, especially in relative labour productivity and total factor productivity (TFP), and these results are underpinned by firms that

hold abundant human capital and are more capital intensive. It does not seem to matter significantly if the investor is a TNC or a stand-alone foreign enterprise, nor whether the country of origin is in the North or in the South. In this context, a policy that seeks to attract capital intensive FDI with high level of physical and human capital is likely to alter the composition of firms in the country in favour of more productive and more technically efficient firms. In short, in spite of there being little difference in performance between enterprises, labour productivity and TFP appear to be higher in the FIE sector.

Another factor that seems to matter for productivity and technical efficiency is whether the firm is a joint venture or a wholly-owned enterprise. The analysis of the effect of joint-venture ownership on performance shows that foreign firms that have decided to join forces with Vietnamese firms have higher total factor productivity (TFP) and technical efficiency compared to wholly-owned enterprises. It is therefore important that the Vietnamese industrial landscape consists of not only wholly-owned FIEs but also more joint ventures as the principal entry mode. The results suggest that joint ventures with a high level of physical and human capital are the absolute top performers and could constitute a more narrowed-down target for investment promotion. This is an important finding, especially in the situation where there are fewer joint ventures than wholly-owned enterprises and given the relatively recent favourable environment for joint ventures following Viet Nam's 2007 Foreign Investment Law's lifting of restrictions.

The Report shows that, at the province-level, operating within industrial zones is indeed important for the productivity performance and technical efficiency of firms in Viet Nam. This seems to be especially important for the relative TFP and the technical efficiency of firms but not necessarily for relative labour productivity. Results highlight that both FIEs and NSOEs benefit from operating in industrial zones. Results also seem to indicate that foreign firms may not necessarily be more labour productive as a result of operating within industrial zones but certainly do operate with greater technical efficiency.

FDI SPILLOVER EFFECTS

The Report sought to further analyze the impact of FIEs in Viet Nam by examining the presence of forward and backward linkages between foreign and domestic companies. Results confirm that foreign firms have a low level of local sourcing of intermediate production inputs as they import most of their inputs. Only 25 per cent, approximately, of inputs, by total input value, are procured from local manufacturers. Among foreign companies, stand-alone FIEs are more vertically integrated than TNCs in the host economy and purchase a higher share of their production inputs locally, most likely because they are generally more focused on local market opportunities than TNCs operating in industrial zones and primarily for global exports. The analysis also shows that the country of origin of the foreign investors has an impact on their sourcing patterns. Japanese investors are less likely to procure locally, while European and other Asian investors are more integrated with local suppliers. Similarly, investors from the USA establish more long-term relationships with local suppliers than do others. Differences are also found across sectors: firms operating in low-tech manufacturing are more likely to source locally. Their export orientation also seems to influence firms' degree of contact with domestic firms: domestic-market-oriented foreign firms tend to purchase more locally than do export-orientated firms. In terms of forward linkages, TNC subsidiaries in Viet Nam tend to sell their goods mostly to foreign buyers based outside Viet Nam. This behaviour is particularly evident in the case of Japanese investors, who sell only 14 per cent of their sales to local buyers.

The results of the regression analysis indicate crowding-out effects of domestic firms upon the entry of foreign firms in the same sector. This means that the potential technology transfer between foreign firms and their local counterparts in the same sector is more than offset by the competition created by the entry of the foreign firms. Thus the resultant net effect of the horizontal presence of foreign firms on domestic sales comes out as negative. On the other hand, the presence of foreign firms in the same province impacts positively on domestic enterprise performance as a result of demonstration effects. most likely occurring because of physical proximity within the same province. This effect seems to be driven by both the backward and forward linkages that domestic firms have with the foreign firms. In particular, results suggest that, when domestic enterprises purchase their inputs from foreign firms (forward linkages from the FIE perspective, backward linkages from the domestic

firm perspective), they may benefit from the advanced know-how and technology embedded in these inputs. Backward linkages between foreign and domestic firms, however, have an insignificant impact on domestic enterprises'sales. Given that foreign manufacturing firms in Viet Nam prefer to import their intermediate inputs and as, consequently, the share of local inputs is low, spillovers from backward linkages are weak or do not occur at all. The analysis also supports the hypothesis that the country of origin of foreign investment influences the degree of spillover. The sales of domestic firms are positively correlated with the presence of European firms in the same sector, but negatively with the presence of American and Asian investors. Conversely, within the provinces the impact of the presence of European firms is negatively correlated with the sales of domestic firms in the same province, while the presence of American investors is positively correlated. The effect of Asian investors on domestic sales within the provinces is insignificant.

BUSINESS CLIMATE IN VIET NAM AND INVESTMENT SUPPORT SERVICES

The Report analysed foreign investors' responses to a series of questions aimed at understanding what influences the investment decisions of foreign companies and their perceptions of Viet Nam's business climate and business support services. It transpires that FIEs are mostly influenced by political and economic stability, taxation, labour costs and the legal framework of the country. These factors do not differ among investors from different countries of origin, although Asian investors seem to worry relatively more about personal security than do those from other countries. Korean investors emerge as clearly interested in the quality of the infrastructure provided. European investors, on the other hand, consider government agency support services highly important. Small differences in perceptions of the business climate are registered according to whether an investor is an exporter or not, or a subsidiary of a TNC or a stand-alone foreign entrepreneur. One notable result is that foreign investors find that Viet Nam's location factors have improved in the last three years, in particular in government support services, the general quality of life, political stability and the country's legal framework. More specifically, investors from the South are, on average, more positive than those from the North about the changes in Viet Nam's investment climate.

A further important finding from the analysis is that potential investors become aware of the investment opportunities in Viet Nam mainly through the existing investor community. This clearly indicates that, while maintaining their current efforts to have direct contact with prospective investors, investment promotion actors in Viet Nam should extend their efforts towards post-licensing services to establish or enhance their relationships with the existing investor community in the country, since these act as investment advocates in their own right. Headquarters and parent enterprise channels are also an important source of information for many investors in the Survey, while, for US and Japanese investors, direct contact with the Foreign Investment Agency (FIA) or provincial offices of the Department of Planning and Investment (DPI) is a primary source. Business support services are provided through government agencies or mobilized from within the firm's internal resources. These services are considered highly important by the foreign respondents; those that need to be improved are support for finding suitable operational sites and for sourcing human resources. Stand alone FIEs seem to receive more services in the pre-investment, entry and implementation stages, whereas TNC subsidiaries tend to receive more services in the aftercare stage. Overall, the quality of services is regarded as quite high at all stages of the investment cycle, the only exception being the implementation stage (finding suitable sites, facilitating building construction and finding human resources) where the quality is rated somewhat lower.

Foreign investors in Viet Nam seem to have received mainly fiscal incentives and they consider these highly critical. The highest share of incentives was received in the form of dedicated physical infrastructure, primarily in industrial zone locations, the predominant beneficiaries being Japanese investors.

The Report suggests that obstacles to their operations perceived by FIEs are different from those perceived by NSOEs and SOEs. Amongst those enterprises that did not operate at full capacity, a much larger proportion of FIEs indicated that the lack of skilled human resources and an unreliable electricity supply are the most important reasons for under-capacity utilisation and that these factors impact negatively on value added and productivity generation. The perceived obstacles reported by FIEs are not only likely to affect

foreign investors' performance but also to determine the longevity and embededdness of FIE operations in the host economy. Some FIEs are also concerned with the rising labour costs and the potential impact this will have on their competitiveness.

FDI ACTIVITY IN INDUSTRIAL ZONES

The Report examined the characteristics of FIEs located and operating in industrial zones. From the Survey it emerges that the industrial zones in Vietnam are an efficient and productive way of absorbing surplus labour and attracting FDI, but their ability to stimulate long term economic growth may not be as strong as originally intended – their contribution to technology transfer, in particular, is expected to be low. Survey evidence seems to confirm that FIE manufacturing activity in industrial zones is mainly labour-intensive and characterized by low-technology manufacturing operations, which in turn is mainly export-oriented and global-market seeking. A concentration of female employment seems to characterize the overall industrial zone manufacturing activity. More than half of the total employment generated in sampled enterprises operating in industrial zones is of women. FIEs operating in industrial zones seem to be engaged in less subcontracting activity compared to enterprises operating outside these zones. They operate at a more technically efficient level, due to the favourable infrastructure conditions and as a result of the incentive framework associated with the industrial zone policy. However they may not necessarily be more labour-productive nor be better able to generate more value added than other foreign enterprises located outside such zones.

RECOMMENDATIONS AND WAY FORWARD

The findings presented in this Report provide a significant empirical foundation for government agencies dealing directly and indirectly with FDI as well as for a multitude of other stakeholders, including the private sector, engaged in the industrial development process. As Viet Nam continues to move forward with its ambitious development agenda, it becomes critical for policy makers to draw upon recommendations with which to leverage the catalytic role that FDI can and must play in industrial diversification and in achieving growth in industrial efficiency and competitiveness. Recommendations fall in two categories: (I) Recommendations for institutional decision-making, and (II) Recommendations for policy actions.

RECOMMENDATIONS FOR INSTITUTIONAL DECISION-MAKING

- **The investment promotion framework and MPI/FIA's advocacy function:** In recent years, FIA has had a central role in the investment promotion process, reaching out to potential investors and putting the country firmly on the international investment map. FIA needs to be further empowered and supported in developing investment promotion policies to determine business support services that concretize the much vaunted emphasis on the quality of FDI as measured by its impact in the economy. The VIIR 2011 re-affirms the imperative for Viet Nam to bring a sharper focus to its approach to foreign investment promotion and management since those policies and factor conditions that have served it well in promoting direct investment in the country, enabling it to reach middle income status, might be neither sufficient nor adequate to sustain the attainment of industrial development objectives and economic transformation in the medium and long term. There is an urgent need to support the central monitoring and policy-driving role of the MPI and the FIA, not only in terms of investment management and monitoring but also in their outward investment promotion efforts to increase awareness of business and investment opportunities in Viet Nam. UNIDO's Viet Nam Industry Investor Survey 2011, this Report and the Viet Nam Investment Monitoring Platform (V-IMP) have helped kick-start a process of improving the availability and quality of firm-level data to support the FIA's central policy advisory and advocacy role and investment promotion and its monitoring efforts in Viet Nam in general. Added emphasis needs to be placed on investment aftercare services. As highlighted in a main Report finding, existing investors are crucial in promoting new FDI in Viet Nam. Continuous aftercare support services therefore serve a dual objective – they trigger re-investment by existing investors in the country and they take advantage of their role as ambassadors to promote new FDI in Viet Nam.

- **Place investment promotion at the core of inter-ministerial dialogue:** The present economic challenges faced by Viet Nam, among which is the

need to leverage the role of FDI in the country's industrial upgrading process, require the building of consensus at the policy level to include productive investment as a central part of Viet Nam's socio-economic development process. This development agenda should not be seen as the monopoly of one particular ministry or government agency, but should encompass a widened group of government and institutional stakeholders that, through their formal mandates and execution of the same, have a bearing on foreign investor perception and actions that can foster the industrial transformation process the country requires. There is therefore a need to promote investment within a broad ministerial stakeholder policy cooperation and coordination framework. Since they stand out at the forefront of the foreign investment promotion effort in the country, the MPI and the FIA should lead the process of collecting, monitoring and processing investor information and should subsequently coordinate results-oriented discussions and information exchange at the national and at the provincial levels.

RECOMMENDATIONS FOR POLICY ACTIONS

- **Assess the FDI-led export growth model based on firm-level evidence:** It is fundamentally important that a thorough analysis is undertaken on a periodic and systematic basis of the relationship between export orientation, employment creation, value addition and productive efficiency among manufacturing sectors engaged in low, medium and high technology manufacturing. Macro-economic studies should be complemented and validated through timely and accurate firm-level panel-data as provided by further iterations of the UNIDO Investor Survey and the continuous updating of the Viet Nam Investment Monitoring Platform. The Government must put in place evidence-based policy mechanisms over the longer term to validate policy actions and initiatives aimed at facilitating the transition to higher-value-added activities across diverse manufacturing value chains.

- **Focus on human capital development and skill formation initiatives:** To stimulate the transition to high value added activities, the country needs to steer away from promoting itself as an investment location solely based on generic location factors and, more particularly, it needs to replace a cheap labour force as the main factor of attraction with new comparative advantages. The key determinant factor is the skill levels of employed human capital, which at the outset would need to be aligned with the relative skill requirements of different manufacturing sectors. There is a strong need for continuous support to assist the skill formation and vocational training mechanisms to become increasingly responsive to the fast-changing labour market needs in industry, especially in the higher wage and medium to high-tech industrial segments. It is important that skill formation mechanisms are in place and implemented by national institutions as part of a general policy framework encompassing education, industry and investment promotion. The impetus to vocational training and skills formation and upgrading can also come from enterprises' internal and external training programmes, and these initiatives should continue to be assisted through dedicated incentives and targeted support services.

- **Address business environment shortcomings:** In addition to some deficiencies in human capital, the Report has highlighted investors' perceptions of a number of important inherent structural weaknesses of the Vietnamese economy, primarily the physical infrastructure and the regulatory environment. Investors have singled out electricity and power utility as the foremost business environment factor impinging negatively on enterprise capacity utilization and performance. Concerted efforts need to be put in place to overcome these infrastructural bottlenecks so as to meet and even surpass investors' expectations. This applies particularly to the provision of infrastructure external to industrial zones that can also have positive spillovers for the economy by facilitating the transportation and communications infrastructure (e.g. telephones, roads, ports). Viet Nam also needs to strengthen its regulatory environment by further streamlining burdensome and unclear regulations. Investors indicate that the time required to start a business is still quite long; policy makers should, through the different ministries and public agencies, continue ongoing efforts to further speed up the investment process.

- **Evaluate investment incentives and policies for industrial zones:** There is a need to evaluate

and streamline the present investment incentive framework and assess the economic benefits resulting from the application of investment incentives to benefiting FIEs. This is especially important in the context of those enterprises operating in manufacturing sectors with high value addition potential and characterized by heavy export orientation. It is crucial that policy actions are put in place to make sure that FDI activity delivers according to prescribed plans and objectives. Action in this regard would also serve to aid understanding of the reasons for and to address the current gap between registered and implemented FDI capital. The stimulation of a combination of foreign investors in both high-tech and high-value addition sectors through specialized incentives may improve the role that these zones can play through demonstration effects that benefit domestic firms.

- **Counter FIEs' enclave operations through the development of supporting industries:** Even though the foreign investment presence has had a positive impact on the Vietnamese economy, large segments of FIEs seem to operate in enclave sectors. This phenomenon is further exacerbated by the proliferation of industrial zones in many provinces across the country. The vast majority of domestic enterprises are not yet in a position to be integrated into the global value chains of FIEs, especially those of TNCs. Specific policies and targeted incentives – within the limits of international trade rules – should be implemented and promulgated to promote domestic supporting industries. In this respect, investment promotion efforts directed at both foreign and domestic investor categories should focus on attracting more supporting industries to Viet Nam in a bid to enable more industrial subcontracting and to increase the local content of FIEs.

- **Facilitate more joint ventures:** A direct way to ensure that the domestic industrial sector is adequately supported to operate side-by-side with FIEs is through better facilitation of joint-venture agreements between FIEs and domestic enterprises and/or investors. Through such policy emphasis, domestic enterprises would be better able to link and absorb the economic benefits emerging from FDI activity. Viet Nam's investment promotion efforts by ministries and governmental institutions should be complemented by the promotion of viable, joint-venture project proposals which are also vetted by stakeholder private sector associations and are in line with the country's natural and factor endowments.

- **Target FDI through mergers and acquisitions (M&As):** An assessment of the costs and benefits of promoting inward FDI through M&As is best done at the individual project level, which points to the need to stimulate a more wide-spread use of existing tools, including UNIDO's tools, for project and industrial feasibility analyses. From the policy perspective, it should be noted that the largest shares in global FDI flows take the form of M&As and if Viet Nam wants to remain a valid contender in the FDI attraction game, then it has to be able to tap this FDI market through the implementation of adequate and appropriate policies, yet keeping in mind that it is less the establishment mode per se which is a predictor of positive spillovers effects but rather the foreign investor's commitment to transfer technologies and invest in the human capacities of the firm to be acquired.

THE WAY FORWARD

Good policy frameworks and actions can accelerate and sustain the positive economic impact that different forms of investments have on the host economy, provided policy makers can tap into a relevant, accurate and comprehensive information repository. Viet Nam has long recognized the importance of having the means to monitor investment flows and trends in the economy, as well as to be able to assess the performance of such investment and ascertain the impact of investor categories on key economic indicators. The Viet Nam industrial Investment Report 2011, the UNIDO Industry Investor Survey 2011 and the Viet Nam Investment Monitoring Platform serve to reinforce this recognition and policy stance based on the 'collective voice' of nearly 1,500 enterprises in the country. It is UNIDO's hope that the findings and recommendations emanating from the Report as well as the utility of the Viet Nam Investment Monitoring Platform (available at *"http://investment.unido.org/imp/")* will trigger a process of successive industry investor surveys to continuously update the information and data base available for evidence-based policy making. The availability of up-to-date infor-

mation facilitates the process of consensus building among the relevant stakeholders in the country; this should be a continuous and dynamic process if it is to drive the requisite changes. Policy-making based on such empirical evidence from the private sector will be more meaningful and it will create a virtuous cycle whereby the efficacy of policies is assessed against the feedback provided by enterprises through subsequent surveys or directly through their input to the Investment Monitoring Platform. This will serve to further assist the MPI and the FIA in their respective coordinating roles of speeding up foreign investment inflows in Viet Nam and, particularly, securing a much needed inflow of capital and managerial and technological know-how through targeting successful and balanced combinations of investor types rather than specific individual investor groups per se.

This process has to create the fundamentals for crowding-in effects to mobilize further domestic direct investment activity and ensure the wider spread of economic benefits in the country. This objective is corroborated in the Report findings which present multiple evidence of the need to continue encouraging economic sectors and enterprises to develop their productive activities and business so as to generate more employment opportunities and achieve productivity gains. More programmes are therefore required to support domestic enterprises in overcoming technical and capacity constraints in becoming full members of international supply chains and in proposing themselves as credible joint venture partners.

The promotion and formulation of enabling policies for foreign direct investment does not run in contradiction to efforts to promote domestic direct investment. On the contrary, both objectives can be mutually pursued provided that the traditional separation between domestic enterprise development and the attraction of inward foreign investment is replaced by an integrated policy and an accommodating institutional framework in which the two processes reinforce one another.

Chapter 1:

Introduction

Chapter 1: **Introduction**

THE 2011 UNIDO VIET NAM INDUSTRIAL INVESTMENT REPORT

The 2011 UNIDO Viet Nam Industrial Investment Report is primarily intended to contribute to the discussion of the impact of foreign direct investment (FDI) in the Vietnamese economy and to substantiate its implications for industrial development. This is a timely publication, coming soon after another important UNIDO publication for Viet Nam: The 2011 Viet Nam Industrial Competitiveness Report, which was launched with the Ministry of Industry and Trade in December 2011. The Competitiveness Report provides an important context for this report in that it re-affirms that industrialization is at the core of Viet Nam's economic growth prospects, that further industrial upgrading through a competitive manufacturing sector is crucial if Viet Nam is to create more wealth and employment, and that foreign direct investment is at the core of a competitive manufacturing sector.

The aims of the Industrial Investment Report are: (i) to contribute to the current policy debate in Viet Nam by providing a conceptual framework for a better understanding of the impact of investment activity in the economy, primarily investment emanating from foreign invested enterprises (FIEs); (ii) to provide an overview of investor perceptions of the country's business climate and its investment location conditions; and to (iii) present a number of policy development recommendations derived from the analysis of empirical evidence.

Foreign direct investment has been an important driver of recent economic growth in Viet Nam and is an integral part of the important economic liberalization process that is emerging from the country's ongoing transition from being a planned economy, a process that was initiated in 1986 with the *Doi Moi* reform. Viet Nam has adopted a somewhat hybrid development trajectory (e.g., Beresford 2001, Fforde and Vylder 1996), often referred to as a "socialist-oriented market economy" (Le 2008), which in recent years has been heavily characterized by a marked process of trade liberalization that culminated in Viet Nam's accession to the WTO in 2007. This process of economic reform and trade liberalization has today become a main issue of concern for Vietnamese policy makers. Indeed the evaluation of the role of trade liberalization for economic and productive restructuring and the resultant impact of the recent aggressive and highly successful foreign investment liberalization policy, take a prominent place in the ongoing policy debate. It is in this context that this Report seeks to contribute to an evaluation of the micro-economic impact of investment activity in the industrial sector, with a particular focus on the manufacturing sector.

The Report presents the key findings of the MPI-UNIDO Viet Nam Industry Investor Survey undertaken by UNIDO in collaboration with Foreign Investment Agency (FIA) in the Ministry of Planning and Investment (MPI), the Viet Nam Chamber of Commerce and Industry (VCCI), and the General Statistics Office (GSO) in the context of the MPI-VCCI-UNIDO Project "Platform for Investment Monitoring and Supplier Development in Viet Nam - Phase I" which started in 2009[1]. The Report is based on and follows the Survey's extensive data collection exercise, carried out over a four-month period, beginning towards the end of 2010 and completed in the first months of 2011, among 1,493 foreign and domestic industrial enterprises within the manufacturing, construction and utilities sectors in nine principal provinces in the country: Ba Ria-Vung Tau, Bac Ninh, Binh Duong, Dong Nai, Vinh Phuc, Da Nang, Ha Noi, Hai Phong and Ho Chi Minh City (HCMC). The Report has been prepared by UNIDO staff and experts in collaboration with high-level Vietnamese government officials and national advisors.

BACKGROUND

In the emerging international economic conditions, the Vietnamese economy is currently facing a number of economic issues at both the macro- and micro-economic levels. The Government's tightening of monetary policy in response to high inflation has weakened private consumption and investment growth, and as a result it is estimated that real GDP growth slowed

1 Results to be achieved by this project are an integral part of the One UN Plan 2006-2011 which has been funded by the One Plan Fund II. This project contributes to the achievement of One Plan Result 1.18.1, "investment policy assessment and formulation capacity enhanced at the national level", leading to production of Output 1.18 "Improved investment environment", under Outcome 1 "Social and economic development policies, plans and laws support equitable and inclusive growth and conform to the values and goals of the Millenium Declaration and other relevant international agreements and conventions". A detailed project description is included in General Annex I.

to a relatively sluggish 6 per cent in 2011. A subdued year for the global economy in 2012 is expected to put further pressure on Viet Nam's economic growth, but more benign international economic conditions commencing in 2013 are expected to bring the country a healthy average growth rate of 7.5 per cent per annum over the 2013-16 period[2], with its trade account deficit expected to improve in the wake of an upward trend in export revenue that will partly offset increases in the cost of raw material and machinery imports.

Vietnamese policy makers are, however, wary of the possibility that foreign investor perceptions of ambiguous policymaking, coupled with rapid inflation and a depreciating currency, are very likely to dent investor sentiment. To safeguard foreign investment as a main driver of economic growth, Viet Nam must continue to ensure that its macro-economic fundamentals are set on the right path and that the economy will be able to grasp the opportunities that emerge from improving global economic conditions. It is recognized that investors may be deterred by Viet Nam's current general economic woes, and specifically the difficulties facing many of its state-owned enterprises (SOEs); the latter are a major headache for the country's policymakers. The task of the policy maker in stabilising the economy is thus made harder by uncertain global economic environment and drops in confidence among foreign investors[3]. The pressure is thus on the policy makers to decide how best to steer the economy along a path of high but sustainable growth. The Vietnamese economy is indeed at a cross-road: the country needs to achieve higher middle income status, and it is resolved to do so. Viet Nam now sees itself as moving from being a recipient of development aid to becoming itself an important outward investor and economic player in neighbouring countries.

To summarise, the main issues in the ongoing policy debate are:

i. How is economic stability, and not just economic growth, to be achieved amid economic volatility caused by both external and internal factors? There is an important and determined policy consensus on the need to ensure stable economic growth (and not just economic growth *per se*) and improve the quality of industrial development. More specifically, the critical question posed is how the economy and industry are to be made more competitive and innovative. It is recognized that the source of Viet Nam's industrial competitiveness must be better understood, and policies implemented to improve it[4];

ii. Since the economic reform process was initiated, a major resultant effect of liberalization has been increased inward FDI flows[5]. Consequently, there are important *a priori* expectations and/or perceptions that FDI in Viet Nam is an important positive determinant and driver of industrial competitiveness. There is therefore an ongoing need to evaluate ways and means of securing new and expanded direct investment and improve the development impact this has on the economy in terms of achieving industrial development and improved industrial competitiveness.

Overall, there is a general consensus that 2012 is an important transitional year for Viet Nam in the implementation of its planned restructuring of the economy. The pressing need to evaluate the impact of FDI on the economy, to better understand where Viet Nam's industrial competitiveness lies and how best to enact and implement policies that will support it, urgently require factual data at the enterprise level for both foreign and domestic investment[6]. The 2011 UNIDO Viet Nam Industrial Investment Report is therefore a timely publication that aims to provide the necessary evidence, analysis and recommendations to support policy makers in the ongoing economic reform process.

REPORT SCOPE

The impressive economic growth trajectory achieved by Viet Nam in the last decade has been due, in part,

2 The Economic Intelligence Unit (2011).

3 For example, government authorities have signalled that ensuring a sufficient supply of energy will be the country's biggest challenge over the next few years. Moreover, the recent international legal challenges concerning the debt-laden Viet Nam Shipping Industry Group (Vinashin) may compound the current challenges in safeguarding business sentiment.

4 For a more detailed discussion, refer to 2011 UNIDO Viet Nam Competitiveness Report.

5 Overall, WTO accession has changed the 'rules of the game'. The Vietnamese economy has benefited from attracting valuable FDI as well as investing outwardly in countries such as Laos, Cambodia.

6 FDI has an important role to play in the implementation of Viet Nam's Socio Economic Development Strategy 2011-2020 and the Socio Economic Development Plan 2011-2015.

to significant FDI activity[7]. It therefore comes as no surprise that the country is seeking to harness the considerable inputs that FDI can bring as part of its own economic development drive and to emulate other economies in their FDI-driven development paths. Viet Nam, like all other emerging and developing countries, has clear *a priori* expectations from FDI. Active promotion of FDI flows, particularly those from developed countries with high technology levels, has proven crucial to countries' achievement of economic development. This has been encouraged by the *ex ante* preferences for the benefits accruing to Vietnamese enterprises that may accompany such FDI flows. The desired benefits include, but are not limited to:

- The provision of new capital resources that are much needed if an economy like Viet Nam's is to leapfrog successive stages of development;
- The upgrading of industrial and export capacity through transfer of new and environmentally friendly technologies;
- The generation of the kind of employment that is associated with human capital development;
- The creation of an ongoing ethos that will improve the business and investment environment including good practices of corporate social responsibility (CSR);
- The generation of positive externalities which are expected to improve the labour productivity of the domestic sector and improve the state budget through increased tax revenue and macroeconomic balances.

All these desired benefits are of crucial importance for Viet Nam since these will provide benchmarks for the assessment of how effective the policy on FDI attraction is and for ascertaining and estimating the impact of FDI in the Vietnamese economy[8]. Positive externalities can be realized through various channels, such as technology diffusion and the transfer from foreign-invested enterprises (FIEs) to domestic counterparts (the so-called demonstration effects); backward and forward linkages; knowledge and labour skill diffusion; and competition promotion on the domestic markets in the long-term.

The expected benefits from FDI in the Vietnamese economy are countered and offset by perceived shortcomings. These perceptions generally include:

- A difference between registered and disbursed/implemented capital, with consequent implications for the economy. There is therefore a need to examine why this is so and how to narrow this gap;
- A perceived slow and ineffective technology transfer process which is not conducive to FDI spillover effects. There is an urgent requirement to understand what are the determinants and factors at play in such process;
- FDI may bring an incidence of transfer pricing activities. What are the indications of this occurring following increased investment activity?
- Over the years, sectors already overflowing with investment have received FDI whereas other sectors which need investment have not received any (e.g., agriculture, infrastructure and high technology). In this sense, what are the specific sector location factors attracting FDI in Viet Nam?
- There is a clear tendency towards intra-country investment promotion competition with, *de facto,* provincial investment promotion bodies competing for the same FDI sources. This may be harming rather than supporting Viet Nam's long-term economic objectives. What does empirical evidence say about FIE performance across different provinces?

7 For a comprehensive overview of the FDI impact on economic growth in Viet Nam, refer to Anh et al (2006). Nguyen Phi Lan (2006) examines the relationship between FDI and economic growth in Viet Nam, and indicates that there is a two-way linkage between FDI and economic growth and that FDI and economic growth are important determinants of each other. Ngoc and Ramstetter (2006) suggest that an MNC presence is positively and significantly correlated with per capita growth. An MNC presence has also been found to determine convergence in per capita growth among the provinces of Viet Nam.

8 In addition, FDI is acknowledged as a driver in enhancing domestic investment and incorporating domestic enterprises into regional and international production networks. With large FDI inflows and associated economic progress, Viet Nam presents an excellent case study for those wishing to explore the impact that FDI may have on a host country.

The main objective of this Report is therefore to shed light on the investment impact of different investment categories, whether these are foreign invested enterprises (FIEs), state owned enterprises (SOEs) or private enterprises/non-state owned enterprises (PEs, NSOEs)[9], and to assess the implications that emerge for Viet Nam's economic development. Its analysis of the Investor Survey data seeks to address some of the main concerns of national stakeholders in their quest to better understand the impact of investment as well as to capture the perceptions that domestic and foreign investors have of the prevailing business and operating environment in the country. The impact of investment is analyzed in terms of its contribution to employment and skill formation; to industrial output and productivity and technical efficiency gains (also through the formation of backward and forward linkages); and to trade capacity building and to Viet Nam's integration in international markets. The Report also seeks to contribute to the ongoing debate on measuring the extent of implemented capital from FDI projects in Viet Nam, as well as reveal the extent that FDI contributes to the upgrading of industrial and export capacity, the creation of jobs associated with human capital development, and the emergence of positive externalities and impact on trade capacity. The Report assumes even more importance with the constant focus of the Government's policy references on the need to better understand the impact of FDI in the economy and to reinforce linkages with domestic enterprises and lure more investment to selected targeted sectors[10].

The Report is structured in five Chapters as follows:

- Chapter 1 introduces the Report.

- Chapter 2 looks at the background and characteristics of investment in Viet Nam. Chapter 2.1 provides a general empirical background to the Report with an overview of FDI trends and of pertinent empirical studies about FDI in Viet Nam; and Chapter 2.2 gives a general presentation of the Survey sample and introduces some broad, general FDI impact indicators in Viet Nam.

- Chapter 3 is the core of the Report, with a comprehensive and specific analysis of the impact of foreign direct investment in Viet Nam. It consists of 4 parts: Chapter 3.1 deals with the impact of FDI on employment generation and skill formation; Chapter 3.2 deals with the impact of FDI on foreign trade patterns and international economic integration; Chapter 3.3 covers aspects of productivity and technical efficiency and analyses firm performance across the nine provinces; and Chapter 3.4 covers FDI spillover effects on productivity and growth of domestic firms.

- Chapter 4 analyzes the investment climate conditions in Viet Nam: Chapter 4.1 deals with the business climate and support services provided to foreign investors in Viet Nam; and Chapter 4.2 examines the patterns of foreign investment activity in industrial zones.

- Chapter 5 completes the Report with a summary of main conclusions and policy recommendations.

9 The terms PEs and NSOEs are used interchangeably throughout the Report to refer to private domestic enterprises.

10 It is government policy to improve the quality and efficiency of FDI projects in accordance with the Socio-Economic Development Strategy for 2011-2020 and to prioritise projects which apply state-of-the-art and environmentally-friendly technologies.

Chapter 2:

Background and characteristics of investment in Viet Nam

Chapter 2.1: Empirical background to the Report

INTRODUCTION

This Chapter discusses the general background for investment activities in Viet Nam over recent years, with a particular focus on FDI. It covers changes in Viet Nam's macroeconomic environment and the improvement of its foreign-investment-related policies, gives a general overview of the economic contribution made by FDI, outlines some of the recent literature on FDI in Viet Nam, and gives an analysis of FDI trends and operations in the country over the past two decades.

Since the start of *Doi Moi* (Renovation)[1] in 1986, Viet Nam has attempted to promote a drastic and comprehensive transformation of its economy. This process has resulted in a number of socio-economic achievements. Real GDP growth has been constantly high, averaging nearly 7.1 per cent per annum in the 1990-2010 period, and has led to a sharp fall in poverty, from 58.0 per cent in 1990 to 10.6 per cent in 2010[2]. GDP per capita, measured in current prices, exceeded USD 1,000 in 2010, allowing Viet Nam to reach lower middle-income status. Such a transformation was underpinned by three main pillars: (i) market-oriented reforms; (ii) stabilization of the macroeconomic environment; and (iii) Viet Nam's pro-active integration into the regional and world economy. A number of measures taken in accord with these policy objectives have significantly broadened Viet Nam's economic opportunities and enhanced its capacity to realize those opportunities.

Most notably, the way in which Viet Nam has become more integrated into the regional and world economy has changed fundamentally since 2000. In the 1990s, Viet Nam focused mainly on achieving most favoured nation (MFN) status in trade and investment with numerous partner countries and territories. It became a signatory to bilateral trade agreements (BTAs) with more than 90 of over 200 countries and territories that it had trade relations with. The most important of these agreements were with the European Union (EU) and the United States of America (USA) in 1995 and 2000, respectively. In 2000-2010, however, Viet Nam's economic integration came to rely more heavily on free trade agreements (FTAs). The source of this trend was, to a significant degree, already rooted in the country's joining the Association of South East Asian Nations (ASEAN) and the associated ASEAN Free Trade Area (AFTA) in 1995. Within the ASEAN framework, Viet Nam signed various multilateral FTAs, such as the ASEAN-China FTA, the ASEAN-Korea FTA, the ASEAN-Australia-New Zealand FTA, the ASEAN-Japan Comprehensive Economic Partnership, and the ASEAN-India FTA. The country is now considering and negotiating various FTAs at both multilateral and bilateral levels. While the BTAs in the 1990s focused almost solely on improving market access and national trade capacity, the key feature of the FTA trend since 2000 has been that Viet Nam has undertaken more comprehensive economic cooperation with other countries, including trade and investment facilitation as well as capacity building for development cooperation (Vo Tri Thanh and Nguyen Anh Duong 2010a).

Along with these policy directions that have accelerated its progress, economic growth in Viet Nam has been mainly driven by the expansion of trade and investment, including foreign direct investment (FDI). Trade has expanded gradually, with the ratio of exports plus imports over GDP rising from 15 per cent in 1988 to 66 per cent in 1995 to 133 per cent in 2005 (Pham Thi Hong Hanh and Nguyen Duc Thinh 2009), and currently reaching almost 152 per cent in 2010. FDI inflows have also seen a surge, particularly since 2000. More importantly, while the past decades have seen Viet Nam's attempts at international economic integration move at different paces, trade and FDI flows have tended to accelerate in the periods when bolder and more comprehensive efforts were made at achieving integration. At the same time, Viet Nam's socio-economic achievements were better facilitated by increasingly globalized corporate activities, trade liberalization, and technological advances in line with the more rapid expansion of cross-border investment at the global level.

The huge increase in FDI inflows to Viet Nam in recent years has mainly reflected attempts by foreign inves-

1 *Doi Moi* is the name given to the economic reforms initiated in Viet Nam in 1986.

2 As measured by the percentage of people living on less than one dollar a day.

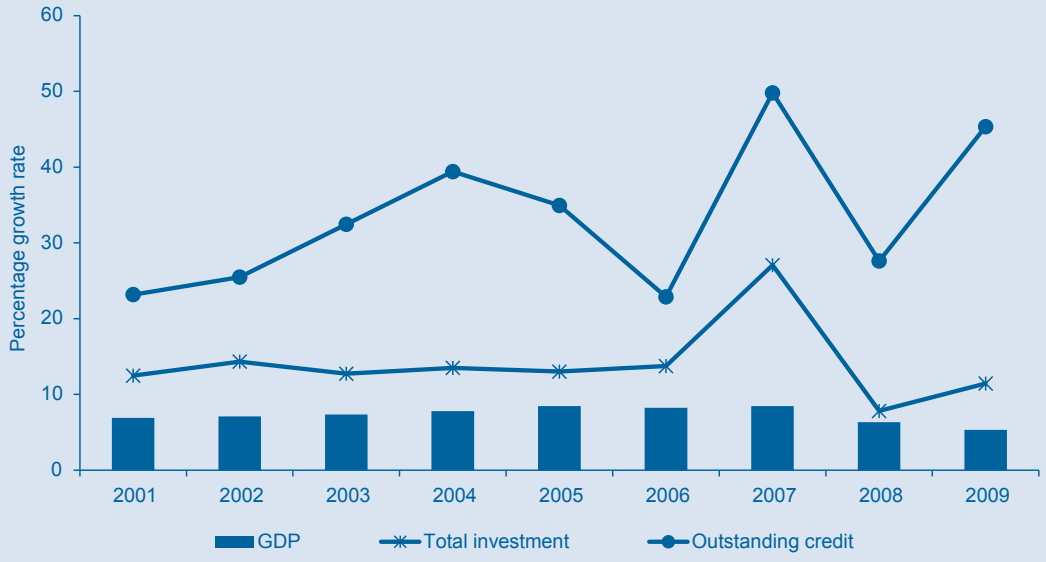
tors to exploit the opportunities that were expanded by or newly introduced along with Viet Nam's growth. As indicated by the survey by the United Nations Conference on Trade and Development (UNCTAD 2009), Viet Nam's appeal to foreign investors has been due more to the growth of its market and the facilitation of its access to the regional market. In other words, the country is growing fast by itself while at the same time becoming integrated into a larger, dynamic East Asian market.

THE MACRO-ECONOMIC ENVIRONMENT

Since *Doi Moi* (Renovation), Viet Nam's economic policies have sought to promote high economic growth while sustaining macroeconomic stability. The years since 2000 have seen these policy objectives take on even greater importance. Until 2007, GDP growth appeared to accelerate, reaching 8.4 per cent in 2005 and 8.5 per cent in 2007 as compared to 6.9 per cent in 2001. Until 2007, nonetheless, the promotion of high economic growth relied to a large extent upon expanding investment and credit (Vo Tri Thanh and Nguyen Anh Duong 2010). For instance, total investment at comparable prices went up by 15.2 per cent p.a. on average in the years 2000-07, while the 2007 rate of growth in investment alone was 27.0 per cent. Similarly, outstanding credit reached an average annual growth rate of 32.3 per cent in 2000-2007 period, with a peak of almost 49.8 per cent in 2007. In line with these developments, inflation also went up from 0.8 per cent in 2001 to almost 9.5 per cent in 2004, before cooling down to 6.6 per cent in 2006. Figure 2.1 highlights some of the main macroeconomic trends during the 2001 to 2009 period.

In 2007, following its WTO, Viet Nam's appeal to foreign investors was further increased by its development prospects. The increase in FDI that followed has led to a further dramatic surge in the capital inflows that had begun even prior to WTO accession. However, after a short period of overly optimistic expectations in the first half of 2007, Viet Nam found it had to take a serious look at its worrisome economic situation. Since such an inflow of foreign capital had been largely absent in the preceding period, Viet Nam now suffered from the inappropriateness of its policies in dealing with such larger capital inflows. Specifically, as capital inflows increased considerably while Viet Nam retained its crawling-peg exchange rate regime to promote export growth, the country had to supply more domestic currency (VND) to purchase foreign currencies. This process led to a dramatic increase in money supply. In 2007 alone, M2 rose by almost 49.1 per cent, as compared with only 29.7 per cent in 2006 (Economist Intelligence Unit 2011). At the same time, Viet Nam seemed to have placed too much emphasis on large economic scale – the country was encouraging mere mergers of general corporations into business groups, whilst failing to effectively control expansion of investment by such groups.

Figure 2.1: *Selected macro-economic indicators*



Source: General Statistics Office, Viet Nam

Together with the rising energy and rice prices in international markets and the inflationary pressures built up after a long period of investment- and credit-led growth, the huge increase in money supply triggered serious macroeconomic turbulence. Inflation accelerated to double-digit figures just within the first 8 months of 2008, and, as of August 2008, year-on-year inflation peaked at 28.3 per cent; even after excluding food and food products prices, the figure still reached approximately 16.5 per cent (Vo Tri Thanh and Nguyen Anh Duong 2009). Bold and comprehensive measures were needed to control inflation and stabilize the macro-economy. These measures took the form of a policy package that has been implemented since 2008.

In the fourth quarter of 2008, Viet Nam started to experience significant negative impacts from the global financial crisis and economic downturn. Exports grew more slowly and even decreased as the major importers of Viet Nam's products, e.g. the US, Japan experienced respective economic downturns, while foreign investors feared a rapid spread of the global financial crisis and opted to move away from Viet Nam. Accordingly, Viet Nam reversed its economic policies towards stimulating economic activity and ensuring social security (See Box 2.1). As a consequence, outstanding credit growth increased again to 45.3 per cent in 2009, but in spite of this Viet Nam's GDP growth fell from its peak in 2007 to just 6.3 per cent in 2008 and 5.3 per cent in 2009.

In 2010, Viet Nam experienced signs of economic recovery. GDP growth in that year reached nearly 6.8 per cent, while the year-on-year figure tended to increase throughout the year. This was largely the result of the improvement in the business and investment environment, as demonstrated by the increase in its ranking from 88th to 78th (out of 183 ranked countries) in this area (World Bank and International Financial Corporation 2010). From a policy perspective, the Government played an important role by addressing policy constraints, administrative procedures, and access to capital. Nevertheless, it seems that the policy approach failed to achieve a timely and proper reversion to macroeconomic stabilization, reflecting an inadequate retreat from the policy of economic stimulus, leaving the fundamental causes of macroeconomic instability from previous years yet to be completely resolved.

Box 2.1: *Viet Nam's policies in response to the economic downturn in 2008*

In the face of the evident economic downturn, the Government of Viet Nam issued Resolution No. 30/2008/NQ-CP, which set out the following key measures to prevent an economic downturn:

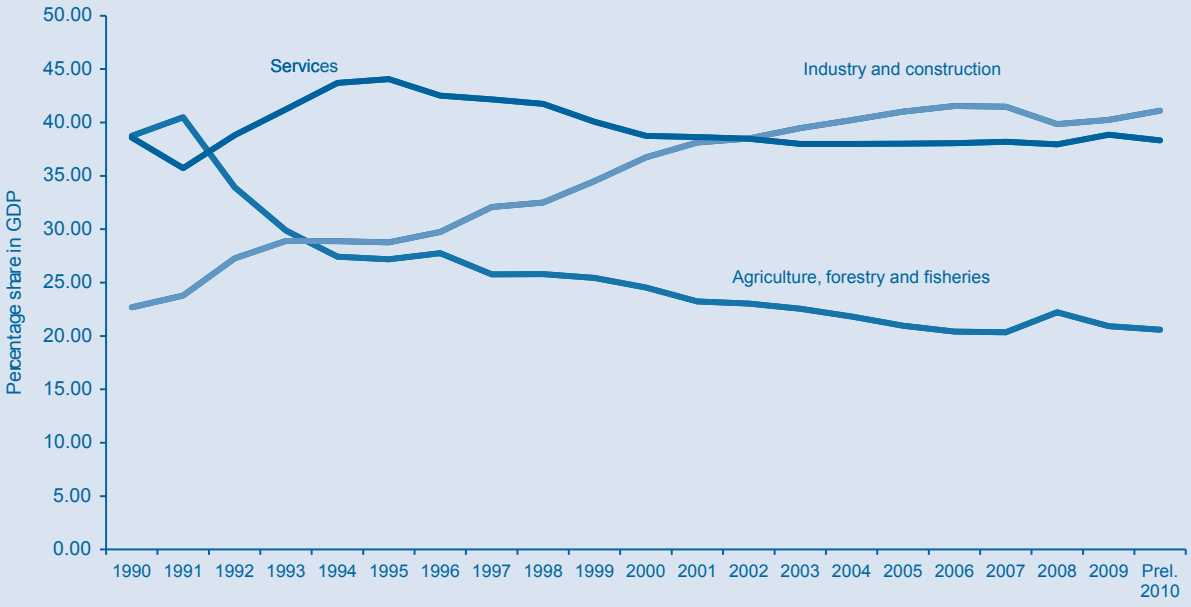
- Fiscal policy: measures included reduction, exemption and rescheduling of tax payment; extension of loans and rescheduling of debt payment; and an increase in infrastructure investment.
- Monetary policy: provision of interest rate subsidy for enterprises and households (valued at roughly USD 1 billion); nominal depreciation of the Vietnamese dong (VND) against the US dollar (USD) to promote exports; support to small- and medium-sized enterprises (SMEs) in accessing formal credits; and a gradual and prudent reduction of the policy interest rate.
- Social security: enforcement of unemployment insurance from 1 January 2009; preferential social treatment for vulnerable groups, particularly the poor, low-income earners, school pupils and job seekers, etc.; and social relief. This protective social policy aimed at providing basic social relief, in cash and/or in kind, for those who cannot afford the minimum necessities of life.

The economic stimulus and social security package in 2009 was approximately VND 100.6 trillion, including: (i) interest rate subsidies of about VND 10 trillion; (ii) development investment by the state of about VND 60.8 trillion; (iii) tax reduction and exemptions of around VND 20 trillion; and (iv) other expenditures of almost VND 9.8 trillion to prevent an economic downturn and ensure social security.

Source: Central Institute for Economic Management (2010)

The years 2000-2010 also saw a drastic shift in Viet Nam's economic structure away from agriculture, forestry and fishery towards industry and construction. As can be seen in Figure 2.2, the share of agriculture, forestry and fishery in GDP (at current prices) fell from over 24.5 per cent in 2000 to 20.3 per cent in 2007, before recovering slightly to nearly 20.6 per cent in 2010. Conversely, the figure for industry and

Figure 2.2: *Changes in sector share in GDP, 1990-2010, in percentage terms*



Source: General Statistics Office, Viet Nam

construction reached almost 41.5 per cent in 2007 and 41.1 per cent in 2010, significantly higher than the 36.7 per cent in 2000. Meanwhile, the services sector's share fluctuated in the range from 38.0 to 38.7 per cent throughout the period. Since 2002, industry and construction have therefore become the largest contributors to Viet Nam's GDP. Economic structural transformation reflects changes in investment patterns, including FDI and has also strong implications for potential foreign investment inflows.

Looking forward, Viet Nam has already started to implement its Socio-Economic Development Strategy for the years 2011-2020. In the next decade, the country will strive to address the key bottlenecks in the current development paradigm, namely the inadequacies in institutions, infrastructure and the quality of human resources. At the same time, it will consider bold and comprehensive measures to restructure the economy, together with formulating new plans for effectively advancing further economic integration by 2020. These measures will, to a significant extent, affect Viet Nam's approach to FDI attraction and facilitation and, ultimately, the actual flows of foreign investment. Even with such a long-term view, though, Viet Nam has to continue to pay attention and address the current macroeconomic instability. In fact, the early months of 2011 have already witnessed a rapid deterioration of the macroeconomic environment. Facing such a situation, the Government decided to implement Resolution No. 11/NQ-CP from February 2011, with drastic and comprehensive measures to stabilize the macroeconomic environment. The measures set out in the Resolution included: (i) a tight and prudent monetary policy; (ii) a tight fiscal policy, with a reduction of public investment and the state budget deficit; (iii) promoting economic activities, including production and exports, to control the trade deficit, and to economize on energy; (iv) adjust the prices of electricity, oil and petroleum products as well as provide support for the poor; (v) ensure better social security; and (vi) carry out a propaganda campaign to raise people's awareness of the measures undertaken. Unlike previous efforts, the key message underlying the Resolution 11 is that the Government assigns the highest priority to stabilizing the macroeconomic environment while accepting slower economic growth.

Various specific measures have already been undertaken in line with Resolution 11. Monetary policy has been tightened, with the target for credit growth decreasing to 20 per cent (from the 23 per cent set out the beginning of 2011). More importantly, foreign currencies have been channeled to the banks, rather than to a parallel market, and USD-denominated loans restricted, improving liquidity in foreign currency for the banks. Other measures undertaken refer to the promotion of production and business activities, as well as social security for the people; the rescheduling of corporate income tax payable by SMEs for one year

from April 2011 and the raising of minimum wages for all employees in both the public and business sectors. By June 2011, inflation had already decelerated, although remaining high in absolute terms. Overall the implementation of Resolution No. 11 has indeed made a first positive contribution towards the stabilization of the macroeconomic environment,[3] but more time should be allowed for a more thorough assessment of the full impact of these policies. Nevertheless, these measures aim to contribute to overall macroeconomic stability, thereby enhancing the long-term confidence of investors, particularly foreign ones.

In summary, the years from 2000 to 2011 have witnessed major changes in Viet Nam's economy. Economic growth has been continuous, driven largely by investment and exports, and has been accompanied by a shift in economic structure away from agriculture, forestry and fisheries towards industry and construction. Nonetheless, the pattern of growth has been far from uniform over time: it accelerated to a rather high level in 2000-2007, until Viet Nam became a member of the WTO, but has been slower since 2008 in the face of macroeconomic instability. Subsequently there has been an economic downturn. The years since 2008 have also seen significant switches in policy approaches between promoting economic growth (by expanding investment) and stabilizing the macroeconomic environment. These developments have had significant implications for the evolution of FDI performance in Viet Nam.

THE POLICY FRAMEWORK FOR FOREIGN DIRECT INVESTMENT

Since the start of its economic reforms and of the beginning of its integration into the regional and world economy, Viet Nam has made continuous and dramatic policy efforts to attract FDI[4]. The cornerstone of this wide-ranging set of foreign investment policies was laid in the Law on Foreign Investment, first promulgated in 1987. To date, this law has gone through five amendments: in 1990, 1992, 1996, 2000 and 2005, with the scope and extent of the revised contents differing from one amendment to another. As discussed in Nguyen Thi Tue Anh et al (2005), such amendments were mainly driven by: (i) the impressive performance of FIEs relative to their domestic counterparts; (ii) the changes in policymakers' awareness of and attitude towards foreign investment; (iii) competition pressures in attracting FDI; and (iv) Viet Nam's commitments in various foreign investment agreements. These amendments sought to enhance the rights of foreign investors, and to make the investment environment more favourable and more equitable for foreign and domestic investors. Most notably, the views of the Communist Party and the Government of Viet Nam towards the foreign-invested sector in general and FDI in particular have changed considerably. The Party Congresses in 1991 and 1996 affirmed that the FDI sector "has a vital role in the mobilization of capital, technology, organizational and managerial skills…"[5], thereby necessitating cooperation and the undertaking of joint ventures between state enterprises and foreign partners. Nonetheless, prior to the year 2000, FDI enterprises were not considered independent entities. FDI policy therefore focused on encouraging joint ventures between state and foreign enterprises. Along with these changes, preferential treatment was increasingly given to FDI projects to encourage investment in Viet Nam through a number of policy initiatives, including: simplified registration procedures, granting greater flexibility to foreign investors and further decentralization of the process to local governments; facilitated access to land with further permissions given for leasing and mortgaging the land and for associated construction; relaxation of foreign exchange regulations with the surrender rate for export FIEs being gradually reduced to zero; the enhancement of trading rights with easier requirements for export proportions and the granting of preferential tax treatment. In 2001, the IX Party Congress brought a major breakthrough, with official recognition of the FDI sector as one of the country's six formal sectors. Subsequent amendments to the Law on Foreign Investment incorporated more preferential treatment based on this recognition. The Law on Foreign Investment was unified with the Law on Domestic Investment into the (common) Investment Law in 2005. With the unified Enterprise Law in the same year, the key message was that Viet Nam would treat foreign and domestic investors more equally. Apart from other considerations, this policy development has greatly contributed to enhancing the country's attractiveness to foreign investors.

TRENDS IN FDI FLOWS AND STOCKS

By joining the World Trade Organization (WTO) in December 2006, *de facto* Viet Nam had further opened

3 See Le Xuan Ba (2011) for a discussion.

4 For a detailed discussion, see Nguyen Thi Tue Anh et al (2005), UNCTAD (2009).

5 Document of the 8th National Party Congress, 1996.

its economy to be able to receive higher FDI inflows than ever before. By 2011, Viet Nam registered around USD 198 billion of total registered capital from over 13,600 FDI projects. The total implemented capital of these projects amounted to around USD 80 billion. Except for the peaks in 1996 and 2008, FDI in Viet Nam has followed steady upward trends as illustrated in Figures 2.3 and 2.4. During the period 1988 to 2010, the annual rates of growth of registered and implemented FDI came to a staggering 34.0 per cent, greatly outweighing the growth rates of other developing country recipients of FDI. Registered FDI in the period 2000-2010 was four times what it had been in the previous decade. Despite the world financial crisis and economic recession, FDI registrations in 2009 and 2010 showed positive levels, approximating the FDI levels achieved in 2007 and indicating higher capital flows than in previous years. The similar trends achieved in growth rates for registered and implemented FDI have resulted in smaller gaps between registered and implemented FDI over time, indicating that in recent years the implementation of FDI in Viet Nam has been quite positive[6].

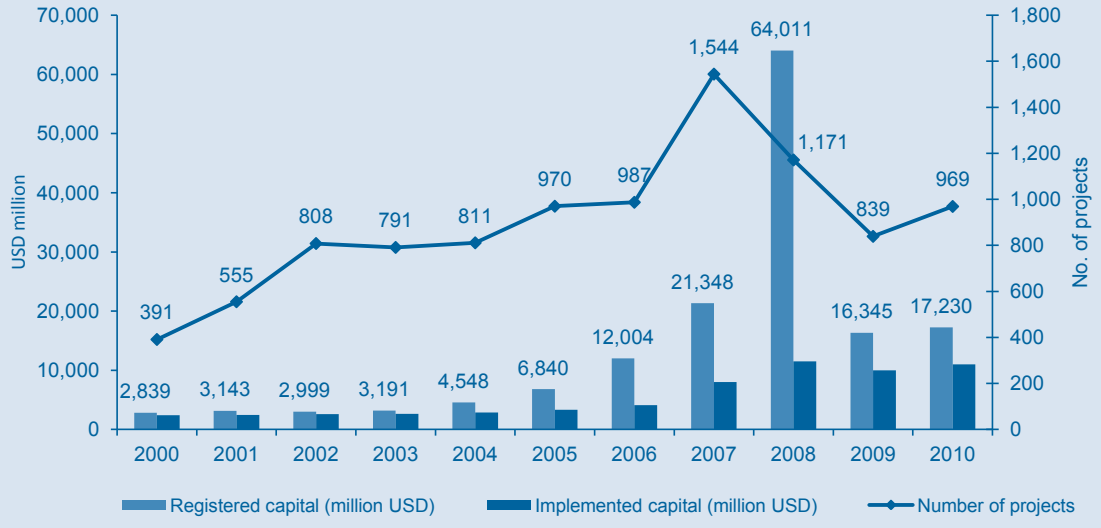
As illustrated in Figures 2.3 and 2.4, 2008 showed a record peak in the level of FDI in the country. This sharp increase was mainly underpinned by the strong world economic growth in 2007, foreign investors increasing their investment volumes, and Viet Nam joining the World Trade Organization in 2007. In 2008, FDI was concentrated on capital-intensive sectors, namely industry, construction and services, with the average investment being 52.0 USD millions per project, signifying a much stronger level of FDI activity than that registered in previous years.

FDI data includes the capital of newly registered projects and the increased capital of existing projects, so the increasing trend in FDI implies that foreign investors continue to believe in the country and that the efforts of the Vietnamese authorities to improve the investment environment are reaping the desired results. FDI in Viet Nam is primarily green-field investment, largely for one principal historical reason: when the law on foreign investment was enacted, FDI could only be established under the sole mode of green-field investment. Over recent years, the form of FDI has changed remarkably. In the period 1988 to 2001, joint ventures were the dominant form of foreign investment, with wholly owned-foreign enterprises played a much less important role. Analysis of the accumulated FDI data for the period 1988-2011 shows that more than 60.0 per cent of accumulated implemented FDI stock is now in the form of wholly owned mode. The changing relative importance of joint ventures and wholly-owned foreign enterprises resulted from Viet Nam's commitment upon joining the WTO that the use of the joint venture form is no longer stipulated when foreign investors apply for an investment license[7].

6 Recently, Vietnamese authorities in some provinces have been more determined in withdrawing the investment licenses of late disbursed projects.

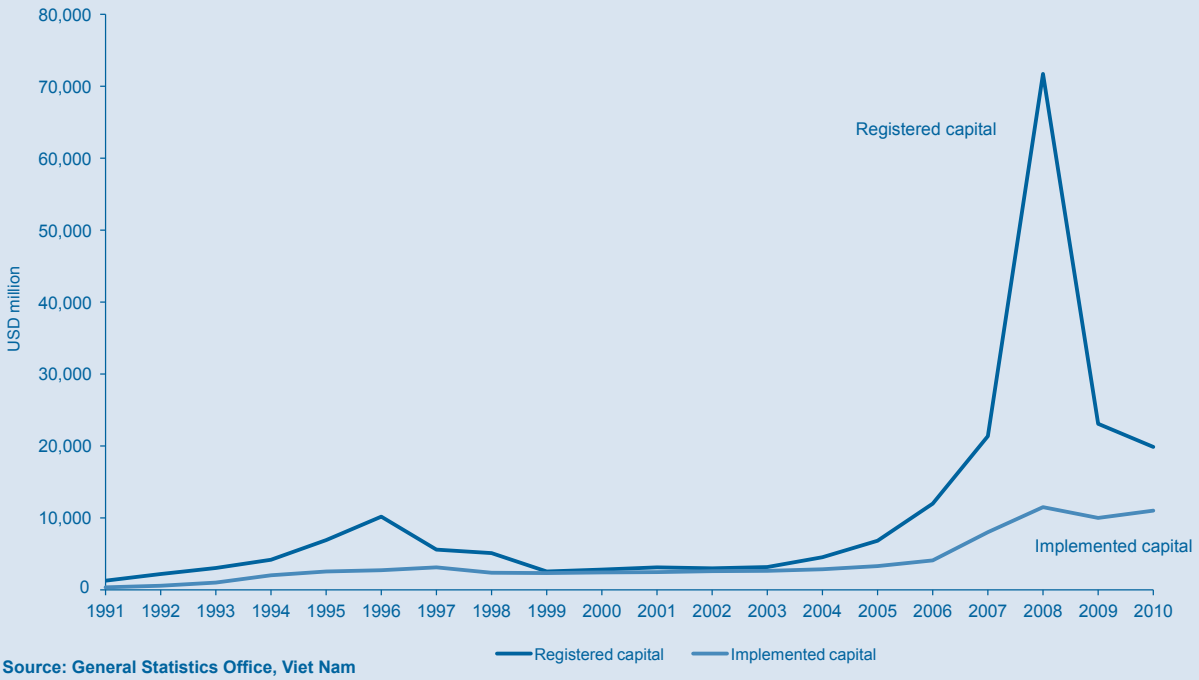
7 According to Bui and Thanh Lam (2008), FDI in the mergers and acquisitions (M&A) mode remains quite rare.

Figure 2.3 *Trend in the number of FDI projects and capital flows*



Source: General Statistics Office, Viet Nam

Figure 2.4: *Trend in FDI registered and implemented capital over the past two decades, 1991-2010*



Source: General Statistics Office, Viet Nam

Table 2.1: *Foreign direct investment by economic sector, cumulative as at end of 2011*

Sector	Number of valid projects	Total registered capital (USD)
Manufacturing	7,987	93,053,036,629
Real estate activities	373	47,002,093,570
Construction	839	12,499,828,279
Accomodation and food service activities	314	11,830,450,512
Electricity, gas, stream and air conditioning supply	68	7,397,576,933
Information and communication	713	5,697,348,354
Art, entertainment and recreation	134	3,636,188,809
Transportation and storage	318	3,261,787,463
Agricuture, forestry and fishing	496	3,218,267,739
Mining and quarrying	70	2,974,765,137
Wholesale and retail trade, repair of motor vehicles and motorcycles	669	2,066,900,735
Financial, banking and insurance activities	75	1,321,550,673
Human health and social work activities	73	1,015,496,074
Professional, scientific and technical activities	1,137	982,999,594
Other service activities	115	716,481,106
Water supply, sewerage, waste management and remediation activities	27	709,884,540
Education and training	152	354,721,448
Administrative and support service activities	104	187,693,821
Total	13,664	197,927,071,416

The sectoral composition of FDI in Viet Nam is mainly concentrated in manufacturing, and real estate. As highlighted in Table 2.1, at the end of 2011 combined these sectors accounted for around 67.0 and 77.0 per cent of total FDI projects and registered capital, respectively. But, despite the encouragement of the Vietnamese authorities, FDI in the agriculture sector remains insignificant. Manufacturing alone

Table 2.2: *FDI projects licensed and registered capital, by country of origin*

(Accumulation of projects having effect as of 31/12/2010)

	Number of projects	Total registered capital *in USD million**
Total	**12,463**	**194,572**
Of which:		
China (Taiwan Province)	2,171	22,981
South Korea	2,699	22,389
Singapore	895	21,890
Japan	1,425	20,960
Malaysia	376	18,417
British Virgin Islands	487	14,514
United States	568	13,104
Hong Kong SAR (China)	622	7,846
Cayman Islands	52	7,432
Thailand	240	5,843
Netherlands	145	5,481
Brunei	114	4,745
Canada	102	4,618
China	770	3,680
France	321	2,954
Samoa	85	2,695
United Kingdom	137	2,222
Cyprus	9	2,213
Switzerland	78	1,725
Australia	240	1,174
Luxembourg	19	1,097
British West Indies	6	987
Russian Fed.	71	895
Germany	162	811
Denmark	91	594
The Philippines	52	276
Mauritius	33	222
India	50	214
Bermuda	5	212
Indonesia	26	204
Italy	39	188
Cook Islands	3	142
United Arab Emirates	3	128
Channel Islands	14	114
Bahama	3	109
Slovakia	3	102
Poland	9	99
Lao PDR	9	91
Norway	25	84
New Zealand	18	76
Belgium	38	76

(*) Including supplementary capital to licensed projects in previous years.

Source: General Statistics Office, Viet Nam

accounts for the largest share of the number of FDI projects (58.0 per cent of the total) and this volume highlights some potential for intra and inter-sectoral linkages and spillovers[8]. In the continuously changing economic context, at both the national and the international levels and the rapidly changing FDI global market, the sectoral structure of FDI in Viet Nam has, in recent years, been gradually changing. By 2011, FDI in manufacturing, though the highest in terms of volume of projects was not highest in terms of value of registered capital per project. The construction and real estate sector now ranks as one of the highest registered capital per FDI project, largely due to extensive foreign investment in the tourism sector.

Most FDI in Viet Nam comes from Asian countries. As at the end of 2011, of the total accumulated capital of effective FDI projects in Viet Nam, seven of the ten largest foreign direct investors came from Asian countries, namely China (Taiwan Province), South Korea, Singapore, Japan, China (including Hong Kong), Malaysia and Thailand (See Table 2.2). The invested capital by these countries accounts for more than half of accumulated FDI in Viet Nam, with US and European investors playing a less important role. On aggregate, foreign direct investors in Viet Nam come from more than 90 countries and territories around the world. With this pattern of diversification of investors, Viet Nam is reducing the risk of depending on particular countries for FDI. Foreign investment has been established unevenly in the various cities and provinces of the country, the six biggest recipients of FDI being Ho Chi Minh City, Hanoi, Dong Nai, Baria-Vung Tau, and Binh Duong; these provinces account for nearly 60 per cent all foreign investment flows at the national level.

AGGREGATE ECONOMIC CONTRIBUTION OF FDI

Viet Nam's success in attracting FDI has had a positive impact on the country's economic growth performance. Country estimates suggest that in 2010 the foreign invested sector contributed around 20 per cent of GDP (at current prices), compared to just under 16 per cent in 2005. FIEs also contribute significantly to Viet Nam's exports, their share jumping from 47.0 per cent in 2005 to 57.2

8 This discussion will be analyzed in subsequent chapters of this Report.

per cent in 2007 and then decreasing to 54.2 per cent in 2010[9].

These increased FIE contributions may be largely attributed to the deeper involvement of FDI in the country's economic activities. As illustrated in Table 2.3, FIEs directly accounted for 3.4 per cent (or over 1 million) of Viet Nam's employed labour in 2009, an increase from 2.6 per cent in 2005[10]. When the additional employment generated indirectly by FDI in domestic firms is included, it is proposed that FIEs show an even greater contribution to total employment. The share of FIEs in total investment also rose from 14.9 per cent in 2005 to 25.5 per cent in 2009 and 25.8 per cent in 2010. This was contrary to the downward trend in the state sector's share, partly due to the reforms of state-owned enterprises in recent years. This larger contribution by FDI was among the key underlying reasons for Viet Nam's economic structure shifting towards a larger share for industry, and a significant increase in the proportion of manufactured products in total exports. As Figure 2.5 highlights, when taken at constant prices, in 2007, for the first time ever, investment by FIEs surpassed investment by the non-state-owned enterprise sector.

Besides the capital investment effect that FIEs may have on Viet Nam's economic growth, there is also the expected positive impact on tax and other revenue generated from FDI activity. It is estimated that in 2010, income tax from FIEs amounted to USD 3.1 billion, representing an increase of 26.0 per cent compared to a year earlier and accounting for approximately 18.4 per cent of total Government domestic revenue. Nevertheless, tax generated from FDI activity falls below expectations since it is low when compared to actual operational performance[11]. Approximately 20 to 30 per cent of FIEs have reported losses in two to three consecutive years, though still expanding their operations in the country (Pham, Tien Dat, 2011)[12].

Table 2.3: *Direct contribution of foreign invested enterprises (FIEs) to selected indicators, 2005-2010*

in percentage terms	2005	2007	2009	2010
Gross Domestic Product				
State	38.4	35.9	34.2	34.0
Non-State	45.6	46.1	46.5	46.1
FIEs	16.0	18.0	19.3	19.9
Total	100.0	100.0	100.0	100.0
Employment				
State	11.6	11.0	10.5	…
Non-State	85.8	85.5	86.1	…
FIEs	2.6	3.5	3.4	…
Total	100.0	100.0	100.0	…
Investment				
State	47.1	37.2	40.6	38.1
Non-State	38.0	38.5	33.9	36.1
FIEs	14.9	24.3	25.5	25.8
Total	100.0	100.0	100.0	100.0

Source: General Statistics Office, Viet Nam

FDI in Viet Nam also makes a significant contribution to export revenue. In 2010, FIE exports were USD 38.8 billion, accounting for 53.1 per cent of the country's total exports. Figure 2.6 illustrates trends in FDI trade over the period 1995 to 2010. It is indicative that exports and imports – whether these are taken at the most aggregate level or at the level generated by FIEs – follow a distinct trend which reflects the gradual increase in FDI flow since the mid-1990s and the peak registered in 2008. These trends highlight the fact that FDI activity is a crucial determinant factor for exports and imports in the Vietnamese economy[13].

Overall, Viet Nam's economic development in the past two decades, but particularly since 2000, has interacted closely with the evolution of FDI in the country. The bold and drastic market-oriented reforms, together with a clearly affirmed commitment to future reforms and development, have enhanced the country's growth potential – and this definite general policy stance has largely appealed to foreign investors. Furthermore, in recognition of how important the improved legal framework and related liberalization policies have been in attracting further FDI inflows, Viet Nam has continued to gradually improve its investment climate. With its increasing presence, FDI has therefore a

9 Vo Tri Thanh and Nguyen Anh Duong (2011) suggest that a 1 per cent rise in FDI disbursement tends to increase exports by 0.14 per cent in the short-term and by 0.99 per cent in the longer term.

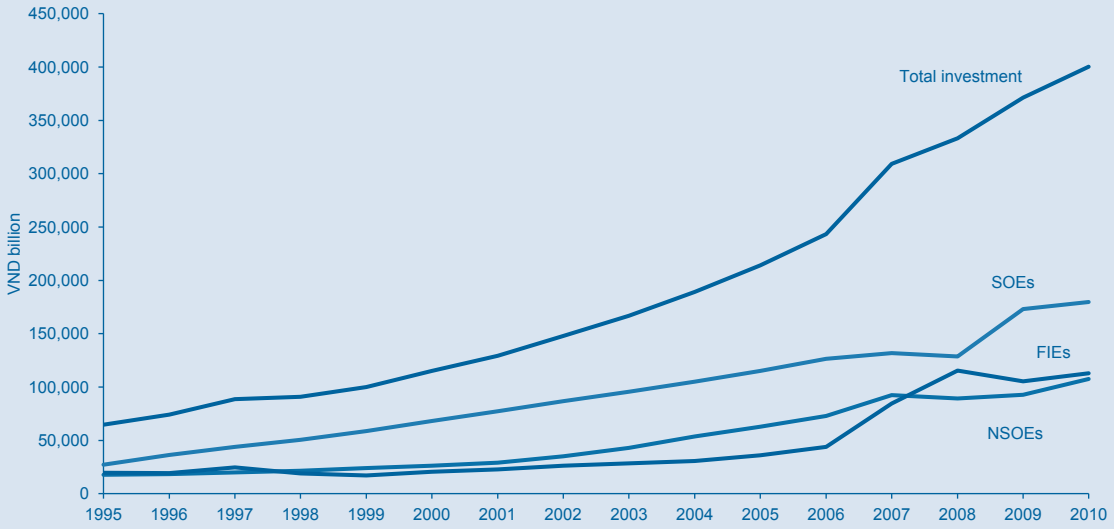
10 When the additional employment generated indirectly by FDI in domestic firms is included, it is proposed that FIEs show an even greater contribution to total employment.

11 This may be due to transfer pricing mechanisms in view of the large numbers of FIEs reporting losses.

12 In Ho Chi Minh City, 40 per cent FIEs reported losses, and some reported losses greater than their registered capital (Dang, Thi Han Ni, 2011) – and this despite the fact that these enterprises have high revenues and some decide to increase their registered capital.

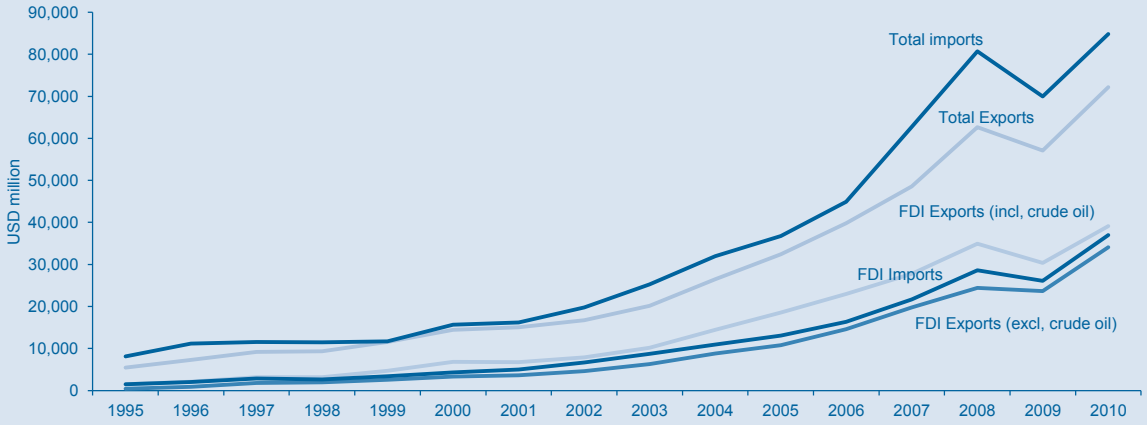
13 Further in this Report, especially in Chapter 3.4, Survey evidence will provide additional analysis of these FDI-induced trade performance.

Figure 2.5: *Investment by type of ownership, 1995 - 2010 in constant market prices*



Source: General Statistics Office, Viet Nam

Figure 2.6: *FDI trade patterns, 1995 - 2010*



Source: General Statistics Office, Viet Nam

great potential to contribute to the country's economic growth and industrial development process. For this to materialize, the qualitative aspects of FDI activity must be further promoted and enhanced; further efforts are therefore required to deepen the understanding of FDI impact in Viet Nam.

LITERATURE REVIEW ON FDI IMPACT

With mounting recognition of the importance of FDI in Viet Nam, the literature on the impact of FDI activity in the country has expanded rapidly. This literature focuses mainly on two areas: (i) quantification of the impact of FDI at both macro and micro levels; and (ii) the impact of FDI policy adjustment on FDI activities in Viet Nam. The following sub-Section provides a summary of some of the main studies undertaken in recent years.

The number of quantitative studies on the impact of FDI on aspects of economic development at both macro and micro levels has increased significantly since 2005. Until 2005, however, the literature on this topic is limited. Freeman (2002) and Nguyen Thi Lien Hoa (2002) and Nguyen Mai (2003), made early efforts to look into FDI activities in Viet Nam at the national level and all find that FDI induced more rapid economic growth by increasing investment and improving human resources. The spillover impacts of FDI were also evident in the manufacturing sectors in

the movement of labour and competition pressures. Nguyen Thi Huong and Bui Huy Nhuong (2003) compare FDI policies in China and Viet Nam over the period 1979-2002, and draw out some lessons for Viet Nam. Phuc D.N (2004) investigates the patterns of FDI in the years 1988-2003 and concludes that economic growth in Viet Nam depends significantly upon the foreign-invested sector. The majority of studies on FDI in Viet Nam before 2003 employ a qualitative approach, analyzing FDI inflows to Viet Nam on the basis of available statistics. Their conclusions on the impact of FDI on economic growth are mainly drawn from the relative importance of FDI in total investment, and the contribution of the foreign-invested sector to GDP or to sectoral growth. As of 2003, quantitative studies on the spillover impacts of FDI remain rare. As suggested by Nguyen Thi Tue Anh et al (2005), this may stem from the lack of necessary data and/or the credibility of existing data.

One of the first comprehensive quantitative studies on the impact of FDI in Viet Nam was conducted by Nguyen Thi Phuong Hoa (2004), and it analyzed the trends and motives of FDI and its contribution to economic growth and poverty reduction in Viet Nam. Nguyen also analyzed FDI impact with a specific focus on estimated spillover and capital effects of FDI on economic growth. To estimate the spillover effect, Hoa (2004) used business entity surveys conducted by the General Statistics Office of Viet Nam in 1995, 1998 and 2001, which provide information about the performance of manufacturing enterprises in 1994, 1997, and 2000. According to Hoa (2004), FDI in the 1994-2000 period exerted a positive and significant intra-industry spillover, and a positive but insignificant intra-province spillover. In the 1994-1997 period, FDI had no statistically significant intra-industry effect, while FDI generate a negative and significant influence on Vietnamese manufacturing enterprises, both state-owned and private in different industries of the same province. This may be due to the fact that FIEs rely heavily on imports, which in turn creates pressure for less competitive local suppliers in vertically related sectors. In the 1997-2000 period, there was a positive and significant intra-industry spillover, from FIE to private enterprises, while intra-province spillover were statistically insignificant.

SOEs were not influenced significantly by FIEs in all statistical regressions, possibly due to the fact that they were protected by different means (credit, land access, etc.). Private enterprises were affected adversely during 1994-1997 but positively during 1997-2000. Hence, the influence of FIEs over their indigenous counterparts improved over time. These results reflect dynamic features of the Vietnamese private manufacturing sector. A notable point is also that the spillover effects of FDI on Vietnamese enterprises were greater than that in other countries. A one percentage-point increase in foreign share in a given industry would, all other things being equal, raise value added in each Vietnamese enterprise in the same industry by about 13 per cent during 1994-2000 and 7.68 per cent during 1997-2000. The annual increase was therefore around 2.1 per cent for the 1994-2000 period and 2.5 per cent during 1997-2000. During the same period, the spillover was estimated to be 0.5 per cent in Indonesia (Sjoeholm, 1999) and 0.05 per cent in the UK (Haskel et al., 2002).

With regard to the capital effect of FIEs on Vietnamese industries, Hoa (2004) uses the panel data of Vietnamese provinces for the period 1991-2001. The estimated results show that FDI affected provincial real growth positively and significantly. Moreover, there is a positive interaction between FDI and local human capital within the same period. The higher the level of provincial human capital, the higher the impact of FDI on provincial economic growth.

The study by Nguyen Thi Tue Anh et al (2005) is the first to try to quantify FDI impacts. Using the panel data of Vietnamese firms in different industries from 2000 to 2004 provided by the GSO, Le Quoc Hoi (2007) examined spillovers in terms of wage levels from foreign-invested enterprises (FIEs) to domestic counterparts. In doing so, the author considered both horizontal (intra-industry) and vertical (inter-industry) spillovers.

Nguyen Dinh Chuc et al. (2008) is another study on the impact of FDI on the technical efficiency of local firms. The authors defined horizontal spillover effects through imitation, competition and the movement of labour. At the same time, vertical spillover impacts through backward and forward linkages on technical efficiency were analyzed. In doing so, the authors relied on panel data for 2002 and 2004 from the Productivity and Investment Climate Enterprise Survey conducted by the World Bank in 2005 and Viet Nam´s

industrial input-output table in 2000. The authors employ a stochastic frontier analysis approach, based on the premise that the production output of enterprises is either on or under the optimal production frontier. It was found that labour movements from FIEs to local enterprises in the same industry are no relevant channel for improving the technical efficiency of domestic enterprises. Yet, there are positive competition and demonstration effects in the relationship between FIEs and local enterprises in the manufacturing sector. The authors conclude that FDI presence in terms of output helps to improve the production efficiency of domestic manufacturing enterprises. More specifically, the evidence acquired showed that improved production efficiency of domestic enterprises results from increased access to new, improved or less costly intermediate inputs supplied by FIEs. At the same time, the production efficiency of local manufacturing enterprises was found to increase over time.

Pham Xuan Kien (2008) advocates that the Government give further attention to improving labour skills through vocational colleges and training programs and, at the same time, support the development of domestic enterprises, particularly SMEs, by providing more training on new technologies. In line with this, the Government should also take measures to help enterprises to renew their technologies, machines, etc., to compete with both FIEs in the domestic market and foreign enterprises in the international market. Pham Xuan Kien (2008) also shares the finding of Nguyen Phi Lan (2008) that FDI generates different spillover impacts in different locations. As shown by official statistics, FDI flows are mainly concentrated in the two largest cities of Viet Nam, i.e. Ha Noi and Ho Chi Minh City as well as their surrounding cities such as Hai Duong, Bac Ninh or Ba Ria-Vung Tau, Binh Duong, and Dong Nai. Thus, to harmonize development across geographical regions and ensure sustainable economic development, the Government should encourage investors, both domestic and foreign, to invest in disadvantaged regions such as the mountainous provinces in the north or remote areas in the middle of the country. Such encouragement may take the form of preferential tax policies and investment incentives. The Government could also draw on the national budget to develop infrastructure systems, including roads, markets and schools. This would help reduce the cost of doing business and in turn improve the attractiveness of these areas to investors.

Pham Xuan Kien (2008) analyses the data of the Enterprise Survey 2005 by GSO in four sub-industries: food processing, textiles, garments and footwear, and electronics and mechanics. Spillovers are measured in terms of labour productivity and the dependent variables are ownership structure, skills level, firm size and capital intensity gaps between domestic enterprises and FIEs. In terms of ownership structure, the author presents evidence that joint ventures impact positively on labor productivity because local workers have better opportunities to acquire knowledge, management and marketing skills than those working in wholly-foreign-owned enterprises where most of the senior positions are occupied by foreign experts.

Pham Thien Hoang (2009) surveys the studies on the impact of globalization on Vietnamese enterprises. His survey gives special emphasis to empirical studies on spillover impacts generated by FDI on domestic enterprises, and points out the aspects that are not covered in the existing literature on this topic. These empirical studies mainly employ panel data from annual enterprise surveys for 2000-2005 and take various approaches to research to present vast evidence of the spillover impacts of FDI on domestic enterprises. However, the findings are somewhat differential and more comprehensive studies are needed to gain an in-depth understanding of the process and mechanism of FDI spillover impacts. Pham Thien Hoang (2009) then proposes several directions for subsequent research, including a deeper analysis of the underlying reasons for positive and negative impacts generated by FDI on the production and productivity of domestic enterprises, a study of the extent of FDI presence and spillover impacts and potential impacts on market shares, and an investigation of the crowding-out/crowding-in effects of FDI on domestic investment.

Nguyen Thi Tue Anh (2009) provides an overview of FDI in Viet Nam in the past two decades and analyzes technology transfer through the case study of Que Vo industrial zone, Bac Ninh city. Since the start of economic integration, Viet Nam has made several attempts to amend FDI policies seeking to attract FDI projects with high technology. Que Vo industrial zone is a striking example of success in attracting such projects. The local government effectively encouraged MNCs with a reputation and trademarks to invest in the area, and supported them by developing the infrastructure. However, in spite of this success,

the Que Vo industrial zone is arguable less than fully efficient in promoting technology transfer. The financial incentives are not enough to encourage technology transfer. As indicated subsequently in the study, the lack of skilled labour, the low technology capacity of domestic enterprises, and the absence of forward and backward linkages between FIEs and domestic enterprises are the key impediments to technology transfer from FDI.

Hoang Van Thanh and Pham Thien Hoang (2010) employ panel data for the period 2003-2007 from the annual enterprise surveys to identify the channels and determinants of spillover impacts generated by FDI on the productivity of domestic enterprises. The empirical results show that such impacts are positive with large magnitude. Thus, the results emphasize the need to cut down the technology gap and to upgrade labour quality in domestic enterprises so as to maximize the benefits from FIEs.

Tran Ngoc Thin (2010) selects merchandise exports by FIEs in Viet Nam as the focal point for research, and looks into the exports of some major goods produced by FIEs, and the macroeconomic factors that promote FIE exports. He analyzes the strengths and weaknesses in exports in general and in exports of some products in particular, attempts to figure out the factors constraining FIE exports, and, on this basis, proposes several policies to promote FIE exports.

In a recent study, Vo Tri Thanh and Nguyen Anh Duong (2011) have assessed the impact of FDI on Viet Nam's exports, using data at the macro level. With an ex post analysis using a simultaneous equation system, the authors find evidence of the positive impact of FDI on exports in 1995-2009. In the short-run, a one-percent increase in FDI disbursement leads to an increase in exports of 0.14 percent. In the long-term, the impact is even greater, with the estimated figure reaching 0.99 percent. The greater long-term impact is arguably due to FDI spillover impacts on exports of other domestic enterprises. Both short- and long-term impacts are statistically significant, and subsequent empirical analysis also provides evidence of the positive spillover impacts of FDI on the exports of domestic enterprises.

Overall, the existing literature affirms that FDI generates positive impacts on various aspects of Viet Nam's economic development, including the transfer of technology and managerial skills from FIEs to domestic enterprises, particularly those supplying inputs to FIEs; improvement in productivity; and an increase in the output and exports of domestic enterprises. Moreover, the spillover impacts of FDI are beneficial even for those not working directly for the MNCs. However, the extent of linkage and sharing experience between FIEs and domestic suppliers remains limited[14].

THE EFFECTIVENESS OF POLICY ADJUSTMENT

The literature on the effectiveness of FDI policy adjustments is still very recent, and there are only a few studies on this topic. The first one, undertaken by Dinh Van An and Nguyen Thi Tue Anh (2008), considers some sectors that are potentially directly affected by Viet Nam's implementation of its WTO commitments, including import-substitution industries, banking-insurance services, and export-oriented industries. These are also the sectors with many large FDI projects which produce certain significant impacts on Viet Nam's economic development, particularly a shift in economic structure, economic growth, job creation, etc. Based on the survey of over 140 enterprises (including 137 eligible responses), the authors identify the important factors that affect various phases of the FDI project, from the initiation stage to the production stage. On that basis, the authors make several policy recommendations specific to the sectors that are directly affected by Viet Nam implementing its WTO commitments.

The United Nations Conference on Trade and Development (2008) also presents a review of investment policy in Viet Nam. Its report starts by looking into FDI trends and their impact on economic activity, investment and capital, technology and skills, employment and linkages, and the integration and diversification of exports. Drawing on the literature and available statistics, the report provides evidence of the positive impact of FDI on these aspects of Viet Nam's economic development. It then delves more deeply in the investment policy framework, focusing on various topics from the entry of FDI to regulations related to land, labour, etc. It concludes that Viet Nam has made drastic reforms to improve the framework for investment activities in

14 This particular aspect is analysed at more length in Chapter 3.4

the past decades. More importantly, these reforms reflect fundamental ideological changes towards attracting FDI and seeking to facilitate its contribution to dynamic economic development. A substantial part of the report is dedicated to discussing the investment framework for the electricity sector. The report makes several recommendations to address contemporary issues in the investment policy framework.

Recently, Nguyen Thi Tue Anh (2010) has evaluated the effectiveness of changes in FDI policies (in 1990, 1992, 1996, 2000 and 2005), focusing on: (i) a comparison of the contribution of FIEs to Viet Nam's socio-economic performance as an ultimate indicator of policy adjustment; and (ii) an assessment of the changes in FDI patterns, including FDI attraction and disbursement. In general, the author provides an assessment of changes in FDI volumes, project scale, form of investment, and structure of investment by sector and by region after each policy amendment. The author also looks into the ultimate effectiveness of FDI policy adjustmen tin terms of economic growth, total investment and balance of payments.

Chapter 2.2: Survey sample presentation and general indicators of FDI impact

GENERAL SAMPLE OVERVIEW

This Chapter introduces the data from the Viet Nam Industry Investor Survey 2011 and aims to serve as an introduction to the subsequent chapters of the Report. Its purpose is to provide the reader with background information on the dataset that will be complementary to the results presented in each section and to offer some initial insights that will encourage further reading. The main focus rests on the impact of foreign direct investment (FDI)[1] in Viet Nam and how this impact differs among different types of enterprise ownership – notably state owned enterprises (SOEs) and the domestic private sector, the so called non-state owned enterprise sector (NSOE). The comparison of enterprise characteristics is also taken at the sectoral and the provincial level. The Chapter starts with a description of the different types of investor categories and follows this with a closer look, first at the FIEs and then at the different types of FIEs in the Survey sample.

The sampling methodology used in the Survey aimed at capturing as much of Viet Nam's FDI as possible by targeting the provinces with the largest incidence of FDI[2]. As a reflection of the Survey sampling strategy, a majority, 57.2 per cent of the 1,493 enterprises in the sample, are of foreign ownership; 32.9 per cent are NSOEs (the second largest group); and around 9.9 per cent are SOEs. The heavy emphasis on FDI in the sample becomes clear when these figures are compared to Census Statistics from 2009 provided by the General Statistics Office (GSO). According to the GSO, foreign enterprises constitute 2.6 per cent,

1 The term foreign invested enterprise(s) stands to refer to FDI. FDI and FIEs are used interchangeably to signify the same foreign investment entity.

2 Please refer to General Annex II for a review of the Survey sampling methodology.

***Box 2.2:** Definition of foreign direct investment*

Foreign direct investment (FDI) can be broadly defined as international investment made to acquire a lasting influence over an enterprise operating outside the economy of the investor (IMF, 2009). Building on this definition, the OECD defines foreign direct investment in an enterprise as "an enterprise resident in one economy and in which an investor resident in another economy owns, either directly or indirectly, ten per cent or more of its voting power if it is incorporated or the equivalent for an unincorporated enterprise" (OECD, 2008). Where the foreign investor has voting rights of less than ten per cent, the OECD defines this as a portfolio investment. The ten per cent benchmark is considered by the OECD as sufficient to ensure that the investor has enough influence to have an effective voice in the enterprise's management.

In practice, this may not always be the case as managerial influence on an enterprise is determined by many factors, only one of which is ownership share. A foreign owner with a significantly larger share than ten per cent may, for example, still be prevented from having a proportionate influence on an enterprise's management if the rest of the ownership rights are concentrated in the hands of one shareholder or if the foreign owner, for some reason, does not assume an active role. Likewise, a smaller shareholding may come with considerable decision-making power if ownership is widely and evenly spread and the foreign owner is willing to have an active voice in management. Some countries, in fact, do not specify any threshold. Instead, they rely on other types of evidence, including an enterprise's own assessment (UNCTAD, 2009). However, from a practical perspective it is preferable to rely on an objective rule, such as share of voting power, rather than on purely subjective judgment. Furthermore, to ensure comparability between Surveys, it is desirable that only one definition of foreign direct investment is applied.

Although the ten per cent threshold recommended by the OECD is not universally adopted, this Survey follows the OECD definition and considers all foreign direct investment that gives the foreign investor ownership of ten per cent or more of the shares of an enterprise as FDI. Accordingly, PEs are enterprises with less than ten per cent foreign ownership, and SOEs are enterprises with less than ten per cent foreign ownership and more than 50 per cent state ownership.

NSOEs 96 per cent and SOEs 1.4 per cent of the total number of active enterprises in the Vietnamese economy (GSO 2010). However, it has to be noted that these figures are for the entire economy and that the definition of FDI used in the Census is more strict than the definition used in this Survey[3]. In the Survey, a company is considered foreign if it has a 10 per cent or above foreign ownership share. This definition is based on the international conventional definition as used by the IMF and OECD. The heavy emphasis on FIEs in the sample is also evident when firms are measured in terms of industrial output. Sample FIEs contribute 88 per cent, NSOEs 11 per cent and SOEs only 1 per cent of the sample's aggregated output[4]. For an explanation of the definition for foreign direct investment utilized in the Report, refer to Box 2.2.

Regarding distribution across industries, three industries, fabricated metal products except machinery and equipment, wearing apparel, and plastics products constitute approximately one quarter of the sample (Figure 2.6). Other industries with a high presence are furniture, textiles, food products and electrical equipment. At the lower end are two manufacturing industries, coke and refined petroleum products and tobacco products, and three non-manufacturing industries. When categorized according to technology level (following OECD 2005), most enterprises fall into either the low-technology or the high-technology groups. As shown in Figure 2.7, just above 40 per cent of enterprises operate in low-tech, almost 25 per cent in medium-tech and almost 30 per cent in high-tech manufacturing industries. A much smaller share of enterprises, just above five per cent, are non-manufacturing. Box 2.3 gives a brief description of how industries are classified according to level of technology whereas Table 2.4 refers to the technological classification of enterprises included in the Survey sample.

An examination of the distribution of enterprises across provinces reveals that almost one third of enterprises in the sample operate in HCMC, followed by the provinces of Binh Duong, Dong Nai, Hanoi and Hai Phong (Figure 2.8). Significantly fewer enterprises in the sample are based in the provinces of Ba Ria Vung

3 GSO statistics are based on the 30 per cent threshold level for foreign equity.

4 This compares to the official secondary statistics from the GSO Census (2010) which refer to the following shares of gross industrial output: the foreign-invested sector accounting for 43 per cent, the private domestic sector constituting 39 per cent, and the state-owned sector accounting for 18 per cent.

Figure 2.7: *Sample distribution by type of industrial sector*

Table 2.4: *Technological classification of the surveyed manufacturing sector firms*

number of enterprises

Sector	High-tech manufac-turing	Medium-tech manu-facturing	Low-tech manufactur-ing	Non-man-ufacturing	Total
Manufacture of food products	0	0	77	0	77
Manufacture of beverages	0	0	31	0	31
Manufacture of tobacco products	0	0	8	0	8
Manufacture of textiles	0	0	84	0	84
Manufacture of wearing apparel	0	0	110	0	110
Manufacture of leather and related products	0	0	61	0	61
Manufacture of wood and products of wood and cork, except furniture	0	0	57	0	57
Manufacture of paper and paper products	0	0	68	0	68
Printing and reproduction of recorded media	35	0	0	0	35
Manufacture of coke and refined petroleum products	0	2	0	0	2
Manufacture of chemicals and chemical products	55	0	0	0	55
Manufacture of pharmaceuticals, medicinal chemical and botanical products	38	0	0	0	38
Manufacture of rubber and plastics products	0	104	0	0	104
Manufacture of other non-metallic mineral products	0	65	0	0	65
Manufacture of basic metals	0	44	0	0	44
Manufacture of fabricated metal products, except machinery and equipment	0	121	0	0	121
Manufacture of computer, electronic and optical products	65	0	0	0	65
Manufacture of electrical equipment	72	0	0	0	72
Manufacture of machinery and equipment	55	0	0	0	55
Manufacture of motor vehicles; trailers and semi-trailers	37	0	0	0	37
Manufacture of other transport equipment	61	0	0	0	61
Manufacture of furniture	0	0	93	0	93
Other manufacturing	0	0	67	0	67
Repair and installation of machinery and equipment	0	0	0	17	17
Electricity, gas, steam and air conditioning supply	0	0	0	10	10
Water supply; sewerage, waste management and remediation activity	0	0	0	11	11
Construction	0	0	0	45	45
Total	**418**	**336**	**656**	**83**	**1493**

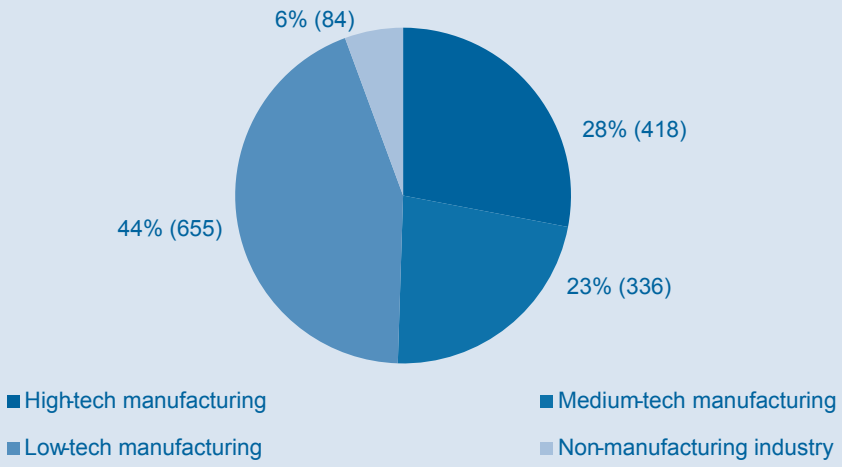
Tau, Da Nang, Bac Ninh and Vinh Phuc. Again, this is a reflection of the sample methodology used, which sought to include as much FDI as possible by focusing on provinces with the highest incidence of FDI[5].

COMPARISONS OF ENTERPRISE CHARACTERISTICS

A comparison of FIEs, NSOEs and SOEs reveals important differences among the different types of ownership, as shown in Table 2.5. Box 2.4 presents the definitions of terminology used in this Section and throughout the Report. In terms of the age of enterprises, SOEs are, as expected, considerably older than both NSOEs and FIEs. More specifically, 54.1 per cent of SOEs are more than 21 years old, compared to 20.3 per cent of PEs and only 0.8 per cent of FIEs. This is, of course, a reflection of the fact that the Vietnamese economy has only fairly recently opened up to competition from private domestic and foreign enterprises. The majority of PEs and FIEs are

5 Province was not a stratification variable.

Figure 2.8: *Sample distribution by type of manufacturing technology level*



Box 2.3: *Industrial sub-sector classification by technology level*

The classification of industries into low-, medium- and high-technology manufacturing follows that prepared by the OECD (OECD, 2005). In a slightly adjusted version – three categories were used instead of the original four – the industries represented in the Survey fall into the following categories:

Low-tech manufacturing:

Manufacture of food products
Manufacture of beverages
Manufacture of tobacco products
Manufacture of textiles
Manufacture of wearing apparel
Manufacture of leather and related products
Manufacture of wood and products of wood and cork, except furniture
Manufacture of paper and paper products
Manufacture of furniture
Other manufacturing

Medium-tech manufacturing:

Manufacture of coke and refined petroleum products
Manufacture of rubber and plastics products
Manufacture of other non-metallic mineral products
Manufacture of basic metals
Manufacture of fabricated metal products, except machinery and equipment

High-tech manufacturing:

Printing and reproduction of recorded media
Manufacture of chemicals and chemical products
Manufacture of pharmaceuticals, medicinal chemical and botanical products
Manufacture of computer, electronic and optical products
Manufacture of electrical equipment
Manufacture of machinery and equipment
Manufacture of motor vehicles, trailers and semi-trailers
Manufacture of other transport equipment

The remaining sectors were classified as non-manufacturing industry (not part of the OECD definition)

Non-manufacturing industry:

Repair and installation of machinery and equipment
Electricity, gas, stream and air conditioning supply
Water supply: sewerage, waste management and remediation activity
Construction

between six and twenty years old and relatively few, less than 20 per cent, are young (0-5 years). SOEs, NSOEs and FIEs are on average 27, 15 and 10 years old, respectively. In terms of the size of enterprises, measured by the number of employees, FIEs and SOEs are similar and significantly larger than their

Box 2.4: *Definitions used in the analysis*

North and south investor origin

North origin refers to investors from industrialized countries, while South origin refers to investors from developing countries, as defined in The International Yearbook of Industrial Statistics (UNIDO, 2010). As such, the definition is more related to the economic development of the country than to its geographical location, although the two often coincide. One exception is, for example, South Africa, which is classified as North.

Transnational corporations and foreign entrepreneurs

An enterprise is considered to be part of a transnational corporation (TNC) if it is the wholly-owned subsidiary or the joint venture of a parent enterprise with headquarters in another country. If the foreign investor is a foreign national or family that has invested in the enterprise alone or as a joint venture partner and is not a subsidiary of an enterprise based in another country, it is considered to be a foreign entrepreneur (FE) enterprise.

Wholly-owned enterprise and joint venture enterprise

The definition of wholly-owned enterprise and joint venture enterprise is only applied to foreign firms. A foreign enterprise is defined as wholly-owned enterprise (WOE) when it has a foreign ownership share equal to 100 per cent. A foreign enterprise is defined as a joint-venture enterprise (JV) when it is a joint venture with a Vietnamese partner, so it has a foreign ownership share equal to or greater than 10 per cent but less than 100 per cent.

Local, regional and global market orientation

Enterprises are considered to have a local market orientation if less than 10 per cent of total sales is exported and a regional market orientation if 10 per cent or more of total sales is exported and more than 50 per cent of the exported sales is directed to ASEAN member countries. An enterprise is regarded as having a global market orientation if 10 per cent or more of its total sales is exported and more than 50 per cent of the exported sales is directed to markets outside ASEAN.

Resource, market and efficiency seeking investment

The division of enterprises into resource, market and efficiency seeking enterprises follows Dunning (1993) to the greatest extent possible but with some necessary adjustments due to the design of the questionnaire. Investment with the aim of lowering production costs could, for example, have been undertaken with the goal of lowering labour costs (resource seeking) or of improving internal efficiency (efficiency seeking). As reducing labour costs is only one way to achieve lower production costs, in this Survey enterprises that have invested with the motive of lowering production costs have been placed in the more generic category "efficiency seeking enterprise". The investment motives have been grouped as follows:

Efficiency seeking
Enterprises that invested with the primary motivation of improving efficiency (e.g. lower production costs, export back too home country or benefit from trade agreement(s). This includes strategic asset seeking motives as in the case of partnering with Vietnamese partners.

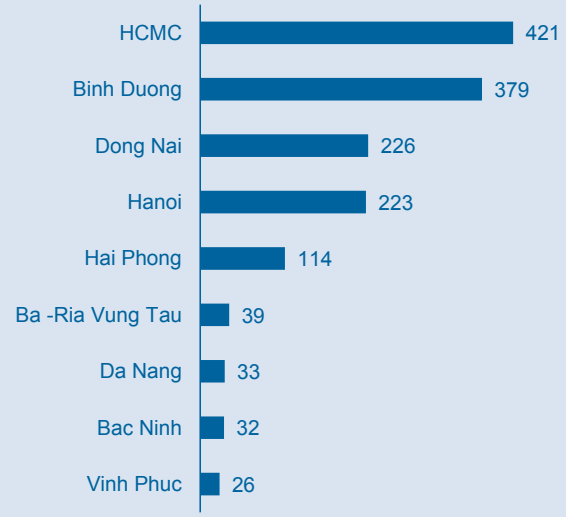
Resource seeking
Enterprises that invested with the primary motivation of accessing natural resources and inputs.

Market seeking
Enterprises that invested with the primary motivation of accessing the Vietnamese market.

Greenfield and Brownfield foreign direct investment

Greenfield foreign direct investment refers to investments that create new production facilities in host countries (for example, starting a new plant), while brownfield foreign direct investment refers to cross-border mergers and acquisitions(Cross-border M&As), in which case foreign entities acquire or take-over industrial assets previously owned by domestic economic entities.

Figure 2.9: *Survey sample distribution by Province*



domestic or private equivalents. Indeed, the majority of both FIEs and SOEs are in the large category[6], whereas most PEs are in the small one. This means that FIEs, SOEs and PEs in the sample have on average, 789, 657 and 355 employees respectively.

Enterprises differ greatly in their market orientation. Perhaps unsurprisingly, given the sectors in which they operate, the vast majority of SOEs, 79.6 per cent, have a local market orientation and only little more than 20 per cent have a regional or global orientation. The same seems to be true for PEs, with 69.7 per cent focusing on the local market and 30.3 per cent on the regional or global markets. FIEs, however, are markedly different: the vast majority, two-thirds, have a global market orientation and only one quarter have a local orientation. Generally, the proportion of enterprises with a regional market orientation is low across the board, ranging from two to seven per cent among the different categories of ownership[7].

Differences in the concentration of FIEs, NSOEs and SOEs across the various industrial sectors are evident and may be due to, for example, the advantages/disadvantages associated with each type of ownership. NSOEs may, for example, dominate sectors where knowledge of the local market constitutes an advantage, while FIEs may dominate sectors in which access to foreign know-how, technology and capital gives an edge over competing enterprises. Table 2.6 shows the distribution of types of ownership across sectors. As expected, FIEs dominate almost all sectors, a result of the sampling methodology, but some differences among the groups are discernible. Concentration of FDI is especially high in the manufacture of computer, electronic and optical products, the manufacture

6 Small sized companies are those that have 200 employees or less. Medium sized companies are companies that have more than 200 employees but less than 301 employees. Large sized companies are companies that have more than 300 employees.

7 For the exact classification criteria of this group, refer to Box 2.4.

Table 2.5: *Comparison of firm characteristics, by type of ownership*

	NSOEs		FIEs		SOEs		TOTAL	
	No. of resp.	% share in total	No. of resp.	% share in total	No. of resp.	% share in total	No. of resp.	% share in total
Enterprise age								
0 to 5 years	73	14.9	148	17.3	7	4.7	228	15.3
6 to 10 years	163	33.2	335	39.2	21	14.2	519	34.8
11 to 20 years	155	31.6	364	42.7	40	27.0	559	37.4
21 plus years	100	20.3	7	0.8	80	54.1	187	12.5
Total	491	100.0	854	100.0	148	100.0	1,493	100.0
Enterprise size								
Small	213	43.4	240	28.1	37	25.0	490	32.8
Medium	108	22.0	173	20.3	28	18.9	309	20.7
Large	170	34.6	441	51.6	83	56.1	694	46.5
Total	491	100.0	854	100.0	148	100.0	1,493	100.0
Market orientation								
Local market	342	69.7	225	26.4	117	79.6	684	45.9
Regional market	12	2.4	62	7.3	7	4.8	81	5.4
Global market	137	27.9	566	66.3	23	15.6	726	48.7
Total	**491**	**100.0**	**853**	**100.0**	**147**	**100.0**	**1,491**	**100.0**

Source: General Statistics Office, Viet Nam

of leather and related products and several other manufacturing sectors. PEs seem to dominate the manufacture of beverages, the manufacture of basic metals, the repair and installation of machinery and equipment and the construction sectors, most of which are local market-oriented sectors. SOEs are highly present in the manufacture of tobacco products and, not surprisingly, in the electricity, gas, steam and air conditioning supply and the water supply: sewerage, waste management and remediation activity sectors of the sample. Thus, to the extent that the sample is representative of Vietnamese manufacturing, one can conclude that high-tech (manufacture of computer, electronic and optical products) as well as low-tech (manufacture of leather and related products) sectors are particularly important in attracting FDI to Viet Nam.

In addition to differences in sector presence, there are also differences in the concentration of FDI among provinces. Some provinces may appeal more to foreign investors, thanks to, for example, an advantageous geographic location near main sea ports, and/or being able to offer a more conducive business climate, for example, factories located in industrial zones (IZs). Conducting the same exercise by province reveals that the share of FIEs in the total sample is particularly high in the Dong Nai and Binh Duong provinces, whereas the share of PEs in total is high in the provinces of Hanoi and Hai Phong (Table 2.7). SOEs are highly present in Da Nang and Ba Ria Vung Tau. Again, the extent to which conclusions can be drawn about the presence of manufacturing FDI in the provinces of Viet Nam

Table 2.6: *Enterprise ownership by sector*

Sector	NSOEs	FIEs	SOEs	Total	No. of respondents
	in percentage terms %				
Manufacture of food products	33.8	58.4	7.8	100	77
Manufacture of beverages	54.8	35.5	9.7	100	31
Manufacture of tobacco products	0.0	25.0	75.0	100	8
Manufacture of textiles	31.0	64.3	4.7	100	84
Manufacture of wearing apparel	30.9	62.7	6.4	100	110
Manufacture of leather and related products	27.9	67.2	4.9	100	61
Manufacture of wood and products of wood and cork. except furniture	40.4	50.8	8.8	100	57
Manufacture of paper and paper products	32.4	55.9	11.8	100	68
Printing and reproduction of recorded media	28.6	45.7	25.7	100	35
Manufacture of coke and refined petroleum products	50.0	50.0	0.0	100	2
Manufacture of chemicals and chemical products	32.7	54.5	12.7	100	55
Manufacture of pharmaceuticals. medicinal chemical and botanical products	47.3	39.5	13.2	100	38
Manufacture of rubber and plastics products	33.7	62.5	3.8	100	104
Manufacture of other non-metallic mineral products	44.6	44.6	10.8	100	65
Manufacture of basic metals	56.8	36.4	6.8	100	44
Manufacture of fabricated metal products. except machinery and equipment	24.8	64.5	10.7	100	121
Manufacture of computer. electronic and optical products	20.0	76.9	3.1	100	65
Manufacture of electrical equipment	30.6	61.1	8.3	100	72
Manufacture of machinery and equipment	27.3	58.2	14.5	100	55
Manufacture of motor vehicles; trailers and semi-trailers	24.3	62.2	13.5	100	37
Manufacture of other transport equipment	41.0	50.8	8.2	100	61
Manufacture of furniture	33.7	62.0	4.3	100	92
Other manufacturing	10.4	82.1	7.5	100	67
Repair and installation of machinery and equipment	52.9	29.4	17.7	100	17
Electricity. gas. steam and air conditioning supply	20.0	30.0	50.0	100	10
Water supply; sewerage. waste management and remediation activity	8.3	25.0	66.7	100	12
Construction	57.7	26.7	15.6	100	45

Table 2.7: *Enterprise ownership by Province*

Province	NSOEs	FIEs	SOEs	Total	No. of respondents
	in percentage terms %				
Hanoi	46.2	37.2	16.6	100	223
Vinh Phuc	30.8	57.7	11.5	100	26
Bac Ninh	43.8	53.1	3.1	100	32
Hai Phong	44.8	41.2	14	100	114
Da Nang	33.4	42.4	24.2	100	33
Binh Duong	22.7	75.5	1.8	100	379
Dong Nai	12.4	81.4	6.2	100	226
Ba Ria Vung Tau	35.9	43.6	20.5	100	39
HCMC	41.8	45.4	12.8	100	421

depends on the sample's representativeness of the wider Vietnamese economy.

FOREIGN INVESTED ENTERPRISES

The FIEs in the sample are now examined in more detail: their type, origin, ownership mode, initial investment mode and investment motive. Figure 2.10 shows the FIEs' ten most common origins. It is clear that most investors are of Asian origin and predominately from three countries: of the 843 foreign investors in the sample, 164 (25 per cent) come from China (Taiwan province), 151 (23 per cent) from Japan and 117 (18 per cent) from South Korea. This is roughly consistent with figures from 2011 provided by the Foreign Investment Agency (FIA) which give South Korea, China (Taiwan province) and Japan as the most important investor countries, measured by the number of projects. Interestingly, no European investors are among the top ten. French and British investors both constitute 1.3 per cent, Germans 0.7 per cent and Dutch only 0.6 per cent. The presence of Australian investors is also very low – only 0.7 per cent. All these are included in the category of 'Other origin'.

When categorized by level of technology, the top three most common origins of investors stay the same but, interestingly, they seem to operate in different industrial sectors. As shown in Table 2.8, Japanese enterprises are most common in high technology sectors but their presence seems to decline in lower technology sectors. This fall is fairly dramatic: the share of Japanese investors in the total number of foreign investors decreases from 29.5 per cent in the high-tech manufacturing category to just above 10.2 per cent in the low-tech manufacturing category.

Figure 2.10: *Main investor country of origin in Survey sample, percentage share in total responses*

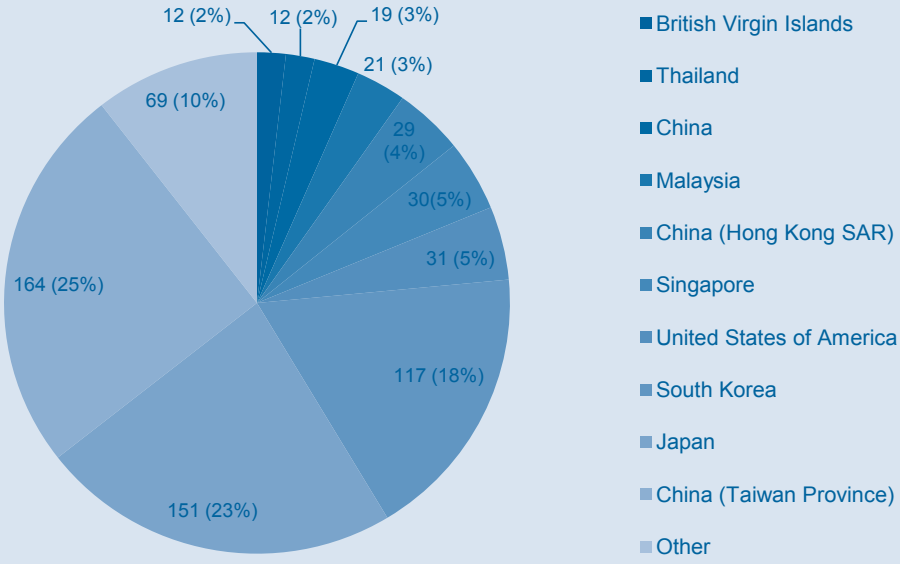


Table 2.8: *Main investor country of origin by technology level*

High-tech manufacturing			
Rank	Country	Percentage share in Total	No. of respondents
1	Japan	29.5	71
2	China (Taiwan Province)	19.5	47
3	Republic of Korea	7.9	19
4	Singapore	4.6	11
5	United States of America	3.7	9
Medium-tech manufacturing			
Rank	Country	Percentage share in Total	No. of respondents
1	China (Taiwan Province)	22.8	43
2	Japan	20.1	38
3	Republic of Korea	11.1	21
4	Singapore	4.2	8
5	United States of America	3.7	7
Low-tech manufacturing			
Rank	Country	Percentage share in Total	No. of respondents
1	Republic of Korea	18.2	73
2	China (Taiwan Province)	17.7	71
3	Japan	10.2	41
4	China(Hong Kong SAR)	4.5	18
5	United States of America	3.7	15
Non-manufacturing industry			
Rank	Country	Percentage share in Total	No. of respondents
1	Republic of Korea	18.2	4
2	China (Taiwan Province)	17.7	3
3	China	10.2	2
4	Malaysia	4.5	2
5	British Virgin Islands	3.7	1

Empirical evidence suggests that it is mainly in the manufacture of computer, electronic and optical products, the manufacture of electrical equipment and the manufacture of motor vehicles, trailers and semi-trailers sectors that Japanese investors dominate. The opposite seems to be true for investors from South Korea, the top group in the low-tech meta-sector at 18.2 per cent but only third in the high-tech meta-sector at 7.9 per cent. This is explained by the high presence of Korean investors in the manufacture of leather and related products, the manufacture of wearing apparel and the manufacture of textiles sectors. Investors from China (Taiwan Province) constitute the most common group in the medium-tech meta-sector but are also highly present in the other meta-sectors. There is a high occurrence of investors from China (Taiwan Province) in the manufacture of other transport equipment and the manufacture of electrical equipment sectors, which are classified as high-tech sectors, and the manufacture of furniture sector, which is classified as a low-tech sector. Thus, there seems to be a relationship between the country of origin of investors and the type of manufacturing sector in which they have chosen to operate. Investors from Singapore and the U.S. are also common in high- and medium-tech meta-sectors, while South Korea and China (Taiwan Province) constitute the largest group of investors in non-manufacturing industries, which include construction. However, the presence of FIEs in these industries is small – only 23 in the sample. Table 2.9 confirms that FDI from the North is more common than FDI from the South, with almost 57.7 per cent of investors being of northern origin[8]. Moreover, the sample shows that a great majority of foreign investors in the sample, almost 70 per cent, are subsidiaries of transnational corporations (TNCs).

Table 2.9 presents some selected characteristics of FIEs. It seems to be a lot more common for foreign investors to start up a new company as a wholly-owned enterprise than to join forces with a Vietnamese partner. Despite the fact that foreign investors were only allowed to enter by forming joint-ventures in many protected sectors, even after Doi Moi, the vast majority of FIEs are wholly-owned enterprises. However, this is in line with the general trend, observed by Tien (2009), that foreign investors in Viet Nam increasingly prefer to form wholly-owned enterprises rather than joint-ventures. According to Tien, this trend has its root mainly in the recent liberalization of investment policy and in the fact that many of the younger domestic private enterprises have a low competitive capacity and may appear unattractive as joint-venture partners. The vast majority, 85.3 per cent, of foreign investors in the sample, entered the country by creating a new operation as a wholly-owned enterprise (green-field investment), whereas only a small minority purchased already existing assets (brown-field investment or acquisition). When enterprises are divided according to

8 It is to be noted that of the five most common investor countries of origin, four are classified as North (Japan, South Korea, Singapore and US) and China (Taiwan Province) is classified as South.

Table 2.9: *Some selected characteristics of FIEs*

	No. of respondents	Percentage share in total
Investor origin		
South	275	42.3
North	375	57.7
Organizational structure		
TNCs	589	69.0
Fes	265	31.0
Joint-venture or WOE		
Joint-venture	104	12.2
Wholly-owned enterprise	750	87.8
Initial investment mode		
Creation of a new operation as a wholly-owned enterprise	727	85.3
Purchase of pre-existing assets from foreign owners	45	5.3
Purchase of pre-existing assets from Vietnamese private owners	14	1.6
Purchase of pre-existing state-owned assets	10	1.2
Other	56	6.6
Motive to invest		
Resource-seeking	20	2.4
Market-seeking	380	46.2
Efficiency-seeking	422	51.3
Market Orientation		
Local market	225	26.4
Regional market	62	7.3
Global market	566	66.4

investment motives, most fall into the efficiency-seeking category and almost as many into the market-seeking category. Of the efficiency seeking enterprises, the vast majority, almost 90 per cent, have indicated that their main motive was to lower production costs. Thus, according to the Survey, investment seems to be made primarily to lower production costs or to gain access to the Vietnamese market. Very few seem to have invested with the purpose of gaining access to natural resources. Some two thirds of FIEs have a global market orientation, while approximately one quarter is domestic market- oriented. Among global market destinations, the highest mean share of exports in sales goes to Japan (19 per cent), the European Union (15 per cent), the U.S (15 per cent) and China (Taiwan Province) (14 per cent). Somewhat surprisingly, with a mean export in sales ratio of only 5 per cent, mainland China does not constitute a top destination.

Tables 2.10, 2.11 and 2.12 focus on the characteristics of three types of foreign investors: North/South, transnational corporations (TNCs) and foreign entrepreneurs (FEs), and joint ventures (JVs) and wholly–owned enterprises (WOEs).

In Table 2.10, FIEs of North origin are compared with those of South origin. The table shows that a majority of Northern enterprises are efficiency-seeking whereas a majority of Southern enterprises are market-seeking. However, the difference between market-seeking and efficiency-seeking motives is small. The result suggests that the primary motive of Northern investors is to obtain efficiency gains by, for example, lowering production costs while, for Southern investors, access to the Vietnamese market seems to be at least equally important. The majority of both Northern and Southern investors have a global market orientation, but the share of enterprises with a global market orientation is almost ten per cent higher among Northern investors than among southern investors. This is in line with the finding that the majority of Northern enterprises and a large share of Southern enterprises entered the country in order to improve efficiency. It is also in line with Dunning's (1993) description of the efficiency-seeking enterprise as one that takes advantage of the availability and cost of traditional factor endowments in order to supply multiple markets. Thus, taken together, in the case of Viet Nam the Survey data suggests that Northern investors, in particular, invested in Viet Nam

Table 2.10: *Characteristics of FIEs by origin*

	North FIEs		South FIEs	
	No. of respondents	Percentage share in total	No. of respondents	Percentage share in total
Investment motive				
Resource-seeking	9	2.5	6	2.3
Market-seeking	140	38.1	132	49.8
Efficiency-seeking	218	59.4	127	47.9
Entry mode				
Creation of a new operation as a wholly-owned enterprise	338	90.4	256	93.1
Purchase of pre-existing assets from foreign owners	20	5.3	14	5.1
Purchase of pre-existing assets from Vietnamese private owners	3	0.8	3	1.1
Purchase of pre-existing state-owned assets	4	1.1	0	0.0
Other	9	2.4	2	0.7
Market Orientation				
Local market	77	20.6	70	25.5
Regional market	23	6.2	29	10.5
Global market	273	73.2	176	64.0
Joint-venture or Wholly-owned enterprise				
Joint-venture	16	4.3	7	2.5
Wholly-owned enterprise	358	95.7	268	97.5
Size				
Small	96	25.7	80	29.1
Medium	74	19.8	50	18.2
Large	204	54.5	145	52.7
Age of enterprise				
0 to 5 years	76	20.3	46	16.7
6 to 10 years	155	41.4	117	42.5
11 to 20 years	141	37.8	111	40.4
21 plus years	2	0.5	1	0.4

in order to take advantage of lower production costs and that they now produce mainly for a global market. As Table 2.10 also shows, there is no significant difference between Northern and Southern investors in mode of entry, ownership, size or age.

Table 2.11 indicates a significant difference in the investment motive between TNCs and FEs: the majority of TNCs are efficiency-seeking while the majority of FEs are market seeking. TNCs, too, have a greater global market orientation than do FEs, and, in origin, the vast majority of TNCs are of Northern origin whereas the vast majority of FEs come from the South. In addition, a smaller proportion of TNCs, only 4.1 per cent in the sample, are joint-ventures as opposed to 30 per cent of FEs. Interestingly, there is no significant difference between TNCs and FEs in terms of age of enterprises.

Table 2.12 shows that WOEs in the sample are more efficiency seeking than are joint-venture enterprises, which are predominantly market seeking. Thus it seems to be more important for FIEs to team-up with a Vietnamese enterprise if the target is to enter the Vietnamese market rather than to improve efficiency. The likely explanation is that the domestic partner has knowledge of the local market, consumer preferences, the legal system and trademarks that is valuable to a foreign investor entering that market, but less valuable to efficiency seeking investors not targeting the local market. This theory is supported by the observation that there is a clear difference between joint-ventures and WOEs in market orientation. As shown in Table 2.12, the majority of joint-ventures FIEs have with domestic partners have a local market orientation whereas the majority of WOEs have a global market orientation. The table also shows that

Table 2.11: *Characteristics of FIEs, by type of investor*

	TNCs		FEs	
	No. of respondents	Percentage share in total	No. of respondents	Percentage share in total
Investment motive				
Resourc-seeking	13	2.3	7	2.8
Market-seeking	244	42.5	136	54.8
Efficiency-seeking	317	55.2	105	42.4
Entry mode				
Creation of a new operation as a wholly-owned enterprise	541	91.9	186	70.7
Purchase of pre-existing assets from foreign owners	27	4.6	18	6.8
Purchase of pre-existing assets from Vietnamese private owners	6	1.0	8	3.1
Purchase of pre-existing state-owned assets	4	0.7	6	2.3
Other	11	1.8	45	17.1
Market Orientation				
Local market	135	23.0	90	34.0
Regional market	52	8.8	10	3.8
Global market	401	68.2	165	62.2
Investor origin				
South	195	37.3	80	63.5
North	328	62.7	46	36.5
Joint-venture or WOE				
Joint-venture	24	4.1	79	30.0
Wholly-owned enterprise	565	95.9	184	70.0
Size				
Small	153	26.0	87	32.8
Medium	121	20.5	52	19.6
Large	315	53.5	126	47.6
Age				
0 to 5 years	120	20.4	28	10.6
6 to 10 years	237	40.2	98	37.0
11 to 20 years	229	38.9	135	50.9
21 plus years	3	0.5	4	1.5

a number of FIEs that were formed as WOEs have gradually reduced their foreign equity share over time and are now joint-venture enterprises. Almost 40 per cent of the joint-venture enterprises in the sample were created as WOEs, implying that these enterprises, at some point after the initial investment, decided to join forces with a Vietnamese partner. Possible explanations for this decision could be that the enterprise wanted to take advantage of the benefits of having a domestic partner. Given the very limited number of observations, only 41, it is difficult to draw conclusions about why these enterprises chose to form joint-ventures. However, a general profile of these enterprises is that they invested in order to access the Vietnamese market or to lower production costs, that they are comparatively old (11-20 years), large, FEs of North origin and that they operate in HCMC, Hanoi or Binh Duong and in the manufacture of food products or in the manufacture of other non-metallic minerals industries. Finally, there is no significant difference between WOEs and JVs in terms of size but there is in terms of age: the majority of JVs are 11-20 years old while most WOEs are 6-10 years old. Thus JVs are typically older than WOEs. An interesting fact is that recently investing firms seem to be very reluctant to enter Viet Nam through a joint venture. Of 148 young foreign firms, only 5 firms (3.4 per cent) have chosen the joint venture mode, which is the lowest share of all four age categories in the sample.

Table 2.12: *Characteristics of FIEs, by mode of investment*

	Joint Ventures		Wholly owned enterprises	
	No. of respondents	Percentage share in total	No. of respondents	Percentage share in total
Investment motive				
Resource-seeking	0	0.0	20	2.8
Market-seeking	62	60.8	318	44.1
Efficiency-seeking	40	39.2	383	53.1
Entry mode				
Creation of a new operation as a wholly-owned enterprise	41	39.4	687	91.7
Purchase of pre-existing assets from foreign owners	5	4.8	40	5.3
Purchase of pre-existing assets from Vietnamese private owners	4	3.8	10	1.3
Purchase of pre-existing state-owned assets	6	5.8	4	0.5
Other	48	46.2	8	1.1
Market Orientation				
Local market	55	52.9	168	22.4
Regional market	5	4.8	57	7.6
Global market	44	42.3	524	70.0
Size				
Small	25	24.0	215	28.7
Medium	27	26 .0	145	19.3
Large	52	50.0	390	52.0
Age				
0 to 5 years	5	4.8	143	19.1
6 to 10 years	21	20.2	316	42.1
11 to 20 years	76	73.1	288	38.4
21 plus years	2	1.9	3	0.4

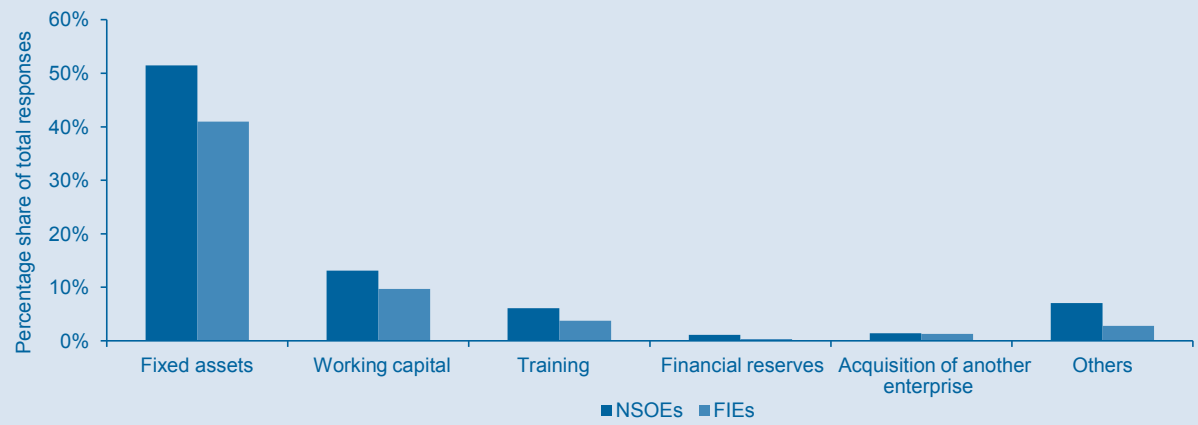
COMPARISONS OF SELECTED IMPACT INDICATORS BY OWNERSHIP TYPE

Earlier reference was made to empirical studies that show how foreign investment contributes significantly to total investment in Viet Nam's industry sector. The Survey data corroborates this evidence, suggesting that foreign investors tend to invest more than their Vietnamese counterparts: the average value of initial investment by foreign enterprises is USD 31 million compared to USD 26 million by domestic enterprises. The difference in investment becomes more pronounced with sequential investment and expansions. Survey responses indicate that the increase of FDI investment registered over the last three years surpasses the initial investment. Furthermore, FIEs plan to increase investment in the future much more than do domestic investors. These results may suggest that, after an initial period of familiarization with the host country market (in the case of local-market seeking FIEs) or the stabilization of export market shares (in the case of global-market seeking FIEs), foreign direct investors tend to consolidate their investment in Viet Nam and establish their operations on a sound footing for the longer term[9].

Some 56 per cent of domestic investors and 45 per cent of foreign investors responded that they have undertaken at least one major investment during the last three financial years. The extent of investment differs markedly between these two groups. For domestic investors, the mean investment increase is USD 4.9 million whereas for FIEs it is almost ten times more at USD 45.3 million. The increase in investment by foreign investors is mainly generated by subsidiaries of transnational corporations (TNCs). They account for approximately 92 per cent of the total increase in FDI, with

9 The extent to which this contribution corresponds to real capital formation may also depend on the extent of transfer pricing dynamics. It may be purported that the significant increase in investment can be a result of transfer pricing, as investment increase is not subject to investment appraisal as new investment. If this is the case then the real capital formation impact of FDI would be less positive. It is therefore pertinent to examine the underlying structural fundamentals and enterprise performance indicators that provide the background for this expansionary investment from FDI in Viet Nam. This analysis is beyond the scope of this Report.

Figure 2.11: *Investment patterns, by ownership*



foreign enterprises (FEs) accounting for less than 10 per cent of the total – the average investment increase of TNCs' subsidiaries is USD 60.4 million compared with USD 11.58 million for FEs. The TNCs subsidiaries' investment increase, as compared with that of FEs, is even more remarkable when one considers that they report less efficient performance than do stand-alone FIEs. Indeed, low performing TNC subsidiaries reinvest much more than high performing ones. In the Survey sample, there are 165 TNCs subsidiaries that have a profit rate of 10 per cent or less and a total investment increase of USD 3,922 million, giving an average investment increase of USD 23.77 million, while only 37 enterprises with a profit rate higher than 10 per cent have a total investment increase of just USD 268.79 million, giving an average investment increase of just USD 7.6 million[10]. The average payback period of TNC investment increase is 10 years, which is rather long and implies long-term engagement of foreign direct investors to the Vietnamese manufacturing sector. The break-down of investor responses by country of origin suggests that the larger share of the overall past investment increase results from Asian investors[11].

The pattern of increased investment, unlike its extent, is similar for both domestic and foreign investors. Enterprises are mostly concerned with investment in fixed assets, and then working capital and training (Figure 2.11). The very similar patterns of increased investment may imply that there may be 'demonstration effects' from FIEs to the NSOE sector. Some 41 per cent of FIEs and 51 per cent of domestic investors invest in fixed assets, confirming their long-term perspective in manufacturing in Viet Nam.

Foreign investors highlight the fact that they finance their working capital and fixed assets mostly by using internal funds and borrowing from their parent companies (about 30 per cent of FIE respondents). FIEs borrow only a small proportion of their funds (10-14 per cent) from banks in Viet Nam and this largely from foreign banks in the country. In this sense, FIEs do not seem to compete with and crowd out DIs access to finance from local financial institutions.

In terms of efficiency of investment, the impact of FDI on Vietnamese industry seems very small. The annual rate of FDI profit before tax over the last three financial years was 7.6 per cent, which is slightly higher than the 6.7 per cent registered by domestic investors. Breaking this down by source of investment, TNCs subsidiaries showed a profit rate of 7.2 per cent, while stand-alone FDI had a slightly higher rate of 8.3 per cent – a noteworthy result given the perceived 'strengths' of TNCs. In practice, the lower rate of TNC subsidiaries' profit in Viet Nam may not represent a weak performance but may rather be due to potential transfer pricing practices. TNCs' subsidiaries report a projected profit rate of 7.8 per cent over the next three years, which is a conservative forecast given the

10 There are TNCs' subsidiaries that did not report the rate of profit, possibly due to loss. The very fact of increased investment and the widening operation of low-performing TNCs' subsidiaries gives a signal of transfer pricing. Transfer pricing may occur in increased investment because increased investment is not subject to appraisal as new investment when foreign investors register. Hence, foreign investors can increase the value of the equipment, machinery and intangible fixed assets of their investment increase easily when they decide to report about their investment increase. Transfer pricing may occur in TNCs' subsidiaries because associates of a group can agree easily with each other about the transfer price level which serves the group best.

11 Hong Kong and Korea have corporate income tax rates of 16.5 per cent and 22.0 per cent, respectively, which are lower than Viet Nam's corporate income tax rate of 25 per cent. Hence, transfer pricing may help reduce the total tax liabilities. The fact that increased investment is mainly made by investors from Hong Kong, China, Korea, and Japan implies that to deal with transfer pricing, Vietnamese tax authorities have to give priority to co-operating with Chinese, Japanese and Korean counterparts in order to exchange information on transactions, and agree about pricing methods of cross borders transactions, etc.

past profit rate of 7.2 per cent. Besides their capital formation impact, FIEs contribute significantly to the Vietnamese state budget. Survey evidence suggests that, in general, TNCs' subsidiaries pay more tax than stand alone foreign enterprises. This result may be driven by the nature and size of TNCs' operations.

Table 2.13 presents some comparisons of selected impact indicators across the different types of enterprise ownership. As indicated earlier on the large difference in means and medians, the sample is skewed in favour of FIEs, but results are quite indicative of the general trends as corroborated by secondary data at the national level. The means are presented together with median values to give an early indication when the distribution for a given variable is, for example, driven by a few large observations in which case the mean would be relatively high but the median would remain unaffected.

The investment behavior of enterprises in the past as well as their propensity to re-invest in the future, normalized by the size of the enterprise, is an important indicator of the prospects of growth at the micro as well as the macro level. Enterprises that invest more are likely to be more productive and achieve faster growth than those that do not. One typically perceived virtue of FDI is that foreign enterprises bring important capital investments to the host economy and consequently contribute positively to aggregate investment and growth, at the macro as well as the micro level. Survey evidence suggests that FIEs, PEs and SOEs differ in both past and future investment patterns.

When measured at the mean level, on average FIEs invest 124 per cent of their value of sales, which is more than domestic enterprises (35 per cent) and SOEs (32 per cent). In their investment plans, FIEs seem to be more expansive than NSOEs, but the mean SOE planned investment is more than the one for FIEs and NSOEs. Given the skewness of the sample, it is likely that at least part of the difference may be attributable to the respective numbers of FIEs and SOEs in the sample and it also seems that there are few firms among the SOEs that have made very large investments which drive up the mean but leave the median at a moderate 11.2 per cent. As the description of the sample shows, enterprises are different in a number of important aspects, including, for example, type, origin, age, size, industry and the Province in which they operate. It is hardly surprising, therefore, that large differences are also found in their investment behaviour.

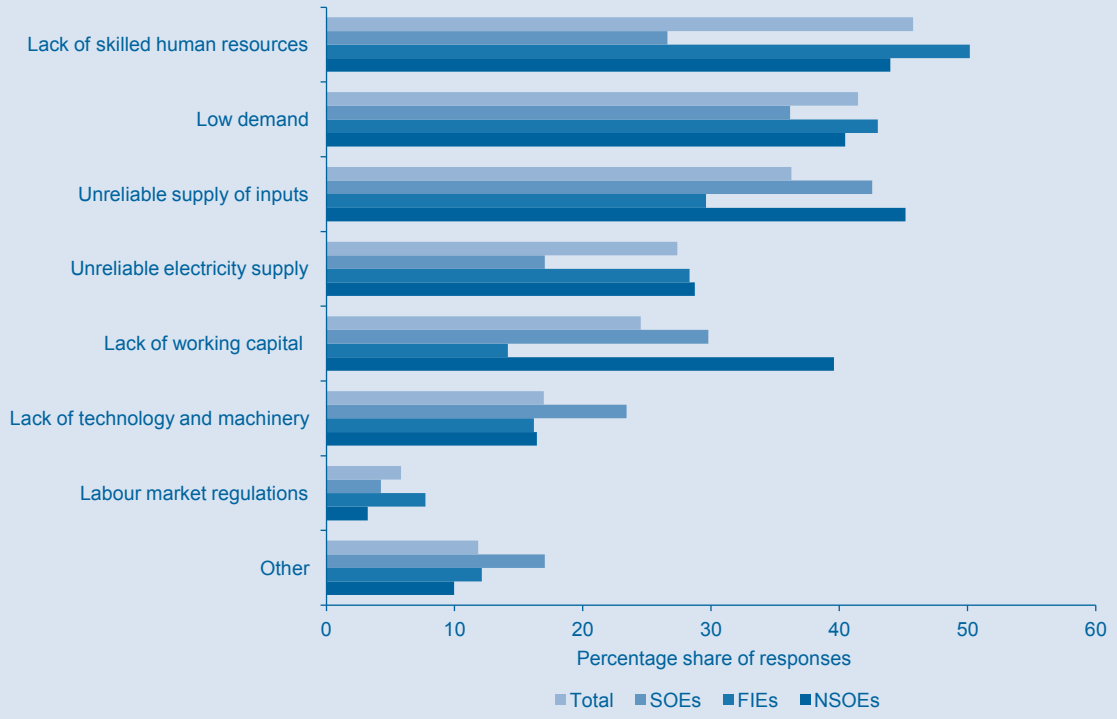
Table 2.13: *Comparison of selected economic impact indicators, by type of ownership*

	NSOEs		FIEs		SOEs		Total	
Indicator	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Last major investment/sales (in percentage terms)*	34.6	11.7	124.3	13.4	31.9	10.9	77.8	12.5
Planned investment/sales (in percentage terms)**	56.1	12.0	93.0	13.8	159.9	11.2	88.3	12.5
Average annual rate of profit before tax over the last 3 years (in percentage terms)	6.6	4.0	7.6	5.0	7.4	5.0	7.0	5.0
Expected average annual rate of profit before tax over the next 3 years (in percentage terms)	7.8	5.0	9.1	6.0	8.0	6.0	9.0	6.0
Average capacity utilization during last financial year (in percentage terms)	84.0	85.0	86.0	90.0	84.0	90.0	85.0	90.0
Tax contribution during last financial year (USD million)	0.6	0.1	83.8	0.0	4.0	0.3	48.4	0.1
Employment growth (in percentage terms)	4.0	2.0	6.0	2.0	-4.0	-2.0	4.0	1.0
Output growth (in percentage terms)	4.0	1.0	10.0	1.0	-5.0	-4.0	6.0	0.0

*Based only on companies that have invested. N=694. 1 extreme outlier has been removed.

**Based only on companies that plan to invest.N=542. 1 extreme outlier has been removed.

Figure 2.12: *Constraints to capacity utilization, by ownership*



FIEs, with an average tax payment of almost USD 84 million in the last financial year, are by far the largest tax contributors to the Vietnamese state budget in the sample. The large mean for FIEs compared to the other two ownership types is however, caused by a few very large tax contributors among the FIEs. Interestingly, the first fifty per cent of FIEs are not making any tax contribution, i.e. the median is zero, which could be a result of sizeable tax exemptions granted to a large portion of foreign investors.

When measured by the mean growth as per last financial year, FIEs grow at a higher rate than NSOEs, both in terms of output and employment. This result is in line with the observation that FIEs have both invested and plan to invest more than NSOEs. The median FIE, however, does not seem to be different from the median NSOE. Interestingly, SOEs are the only ones that grow at a negative rate, which is an indication of both SOE performance and their diminishing role in the Vietnamese economy. It has to be highlighted, though, that cross-section datasets, like the one used for this report, only provide a snapshot of how enterprises have grown during one particular year in time. Therefore such indicators must therefore be interpreted with care since ideally, growth figures should be analyzed over a period of at least five to ten years.

Survey evidence suggests that, although average capacity utilization is high across the board, the reasons for production capacity underutilization vary significantly among the different ownership types. Figure 2.12 presents eight potential reasons for capacity underutilization[12]. Overall, FIEs gave higher ratings than the domestic enterprises and SOEs to the lack of skilled human resources (50 per cent), low demand (43 per cent), unreliable electricity supply (30 per cent) and labour market regulations (8 per cent). A relatively large proportion of domestic enterprises identified unreliable supply of inputs (45 per cent), lack of capital (40 per cent) and unreliable electricity supply (29 per cent) as the most important reasons for capacity underutilization. On the other hand, SOEs refer to the unreliable supply of inputs (43 per cent), lack of machinery and technology (23 per cent) and lack of working capital (30 per cent) as important factors impacting their performance in terms of capacity utilization. On aggregate, the lack of skilled human resources (46 per cent) and low demand (41 per cent) are perceived as the most important reasons for capacity underutilization whereas the lack of access to machinery and technology (17 per cent) and labour market regulations (6 per cent)

12 Respondents were allowed to select up to three reasons.

are seen as less important reasons[13]. These results are very telling of the type of challenges perceived by different ownership types. FIEs seem to have relatively good access to a reliable supply of inputs and working capital but tend to suffer from constraints in the national physical infrastructure (e.g. electricity supply and public infrastructure) and availability of a trainable, semi-skilled labour force. On the other hand, domestic enterprises are more likely to lack the international networks that FIEs have access to and, as a result, suffer from lack of access to inputs and working capital. SOEs seem to have relatively limited access to capital and technology but relatively good access to a high quality supply of electricity and labour.

SUMMARY

Taken together, the results presented in this section provide some important information about FDI in Viet Nam. First of all, there are clearly considerable differences between the FIEs and the domestic private enterprises and SOEs. In line with theory on the importance of FDI to the development of the host economy, FIEs on average invest more and contribute more to the state budget than do private domestic enterprises. On average they also employ more, grow at a higher rate, operate at a slightly higher capital utilization and are more profitable. FIEs are therefore likely to contribute positively to capital formation, tax revenue and employment generation in Viet Nam.

The data also suggests that although FIEs in Viet Nam are by no means a homogeneous group, there are a few stylized observations that can be presented. Results suggest that certain type of foreign investment is attracted to Viet Nam. In the Survey sample, the typical FIE entered the country as a wholly-owned enterprise making a green-field investment and with the motive of gaining access to the Vietnamese market or of improving their efficiency. FIEs are typically large in size, 6-20 years old, and have a regional and global market orientation. In this, they distinguish themselves significantly from PEs and SOEs, who primarily have a local market orientation. They also appear to establish themselves in both high-tech industries, such as computer, electronic and optical products, and low-tech industries, such as the manufacture of leather products. The typical FIE is a TNC of north origin, although the top three investor origins come from South Korea, Japan and China (Taiwan Province). First of all, FIEs from the industrialized countries seem to be primarily efficiency seeking in contrast to FIEs from the South which seems to be more market seeking. The same appears to be true for investor type. The majority of TNCs in the sample have invested to achieve efficiency gains, whereas the majority of FEs have done so to access the Vietnamese market. Compared to TNCs, a significantly larger proportion of FEs are joint-ventures. This is important because it signals that forming a joint-venture with a local partner can be a strategy for gaining access to the Vietnamese market but such strategy is currently pursued by FEs. The average joint-venture enterprise entered as a market-seeking enterprise and now has a local market orientation. In contrast, the average WOE entered as an efficiency-seeking enterprise and now has a global market orientation.

In addition, results reveal that FIEs perceive different obstacles to their business from those perceived by PEs and SOEs. Of the enterprises that did not operate at full capacity, a much larger share of FIEs identified lack of skilled human resources and unreliable electricity supply as the most important obstacles. This is a critical finding in that it shows that amendments made to the original Law on Foreign Investment that sought to make the investment environment friendlier and more equal for foreign and domestic investors have not yet been implemented to the full extent. The perceived obstacles reported by FIEs are not only likely to affect foreign investors' willingness to enter Viet Nam but could also affect the longevity of their investment in the country in terms of the propensity for investment expansion and therefore the long-term impact of FDI. FIEs that are constrained from operating at full capacity are likely to grow more slowly, be less profitable and employ less people when compared to domestic enterprises. Eventually they may even be forced to exit the market.

13 Regarding the factor of low demand, it is noteworthy that this may not only relate to domestic demand but also global demand which has been generally sluggish in large target markets such as the EU and the United States.

Chapter 3:

Impact of foreign direct investment

Chapter 3.1: Employment generation and skill formation

EMPLOYMENT TRENDS

Over the last two decades, the foreign invested sector has become an integral part of the Vietnamese economy and has played an active role in changing the country's sectoral employment structure. The latest official GSO figures suggest that, although in 2010 this sector accounted for only 3.5 per cent of total employment (roughly equivalent to 1.727 million employees), its contribution to job creation in the manufacturing sector has been extremely strong. The FIE sector's share in total manufacturing employment has been on a steady increase and over the last decade has hovered around 43 per cent of total manufacturing employment. Since it is estimated that FIEs account for approximately 10 per cent of the total number of manufacturing enterprises (MEs) in that year, it can be suggested that manufacturing FIEs are prevalently labour-intensive (Table 3.1).

These overall macro trends are confirmed by the results from the UNIDO Industry Investor Survey 2011. Survey evidence suggests that on average the number of manufacturing employees in FIEs is greater than in either SOE or private enterprises. Interestingly, most workers (96 per cent of total employment) are engaged on a permanent basis, with the average share of permanent employees varying from 97 per cent for FIEs, 94 per cent for SOEs and 91 per cent for PEs. On the other hand, FIEs engage less non-permanent employees when compared to SOEs and NSOEs.

By far, the most labour-intensive industries are the wearing apparel, leather products, electrical equipment and electronic products sectors. Labour-intensive FIEs are export-oriented and extremely concentrated in these sectors. By contrast, SOEs generate more employment in sub-industries whose products are mostly geared for domestic consumption. These include the manufacture of other transport equipment, tobacco, rubber and plastics products and construction (Table 3.2). Notwithstanding the international financial crisis and adverse macro-economic conditions faced by the Vietnamese economy, the enterprises participating in the Survey increased their number of full-time permanent employees at an average rate of 4 per cent in 2009 and 5.5 per cent in 2010. As evidenced in Table 3.2, this employment growth has been prevalently driven by the FIE sector, in sectors such as the high-technology industries, e.g. industries engaged in the manufacture of computer and electronic products and electric equipment, and in sectors such as leather manufacture and wearing apparel. Conversely, the rate of employment growth has been relatively lower for those export enterprises engaged in the low-technology sectors, including textile, garment, leather and wood products.

CAPITAL INTENSITY AND EMPLOYMENT EFFECTS

The employment impact of FDI is associated with the greatest capital intensity, measured by the average value of fixed asset per full-time employee. There is evidence from the Survey that in some manufacturing

Table 3.1: *Structural indicators for manufacturing industry, by ownership, 2006-2009*

	2006		2007		2008		2009	
	% share in total manufacturing enterprises	% share in total manufacturing employees	% share in total manufacturing enterprises	% share in total manufacturing employees	% share in total manufacturing enterprises	% share in total manufacturing employees	% share in total manufacturing enterprises	% share in total manufacturing employees
	in percentage terms							
State-owned enterprises	4.0	16.0	3.0	13.0	2.0	10.0	2.0	9.0
Non-state owned enterprises	85.0	45.0	86.0	46.0	88.0	47.0	88.0	47.0
Foreign invested enterprises	11.0	39.0	11.0	41.0	10.0	43.0	10.0	44.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: General Statistics Office, Viet Nam

Table 3.2: *Average number of permanent employees by economic sector and type of ownership*

	Ownership type				
Sector	**FIEs**	**SOEs**	**NSOEs**	**Total**	**Sample Size**
Food products	791	754	310	626	77
Beverages	554	442	474	499	31
Tobacco products	313	1,048	…	864	8
Textiles	791	498	385	652	84
Wearing apparel	1,760	1,762	453	1,356	110
Leather and related products	2,124	2,413	1,074	1,845	61
Wood, wood and cork products, exc. furniture	276	382	382	328	57
Paper and paper products	392	313	336	364	68
Printing and reproduction of recorded media	250	317	210	256	35
Coke and refined petroleum products	227	…	61	144	2
Chemicals and chemical products	309	703	281	350	55
Pharmaceuticals, medicinal, chemical and botanical products	379	326	392	378	38
Rubber and plastics products	519	859	410	495	104
Other non-metallic mineral products	559	405	415	478	65
Basic metals	306	599	312	329	44
Fabricated metal products, exc machinery and equipment	503	594	328	469	121
Computer, electronic and optical products	1,525	121	212	1,219	65
Electrical equipment	1,119	807	291	840	72
Machinery and equipment	425	611	391	443	55
Motor vehicles, trailers and semi trailers	838	667	407	710	37
Other transport equipment	717	1,903	256	626	61
Furniture	674	746	423	592	92
Other manufacturing	613	181	443	563	67
Repair and installation of machinery and equipment	239	117	370	287	17
Electricity, gas, steam and air conditioning supply	276	521	90	361	10
Water supply, sewerage, waste management,remediation activity	142	354	58	277	12
Construction	264	717	370	396	45
Total	**806**	**681**	**384**	**655**	**1,493**
Sample size	854	148	491	1,493	

sectors, such as wood processing and non-metal mineral manufacture, FIEs are extremely capital-intensive but generate less employment[1]. For another five sectors with a relatively high capital-labour ratio, three are low-tech manufacture, namely furniture, food products, and wearing apparel. These results may suggest the following:

i. Some labour-intensive FIEs have very high capital intensity and these may be found in high-tech industries such as the manufacture of computer and electronic and electric equipment;

ii. Some FIEs in the low and medium-tech industries maybe capital-intensive but have a poor impact on employment generation;

iii. Some labour-intensive FIEs are low-tech but have a relatively high capital intensity;

iv. Most FIEs with a very high capital-labour ratio are in low-tech industries. Since clothing, wood products, furniture and food products are key export products in the FIEs, this result may imply that FDI tends to rely heavily on capital to produce low value added products.

WORK TIME

In general, average working days per year are relatively high in Viet Nam, and, on average, permanent full-time employees work more than 8 hours a day in all firms and across sectors and types of ownership. Survey findings suggest that, on average, permanent employees in

1 These sectors refer to low and medium technology sectors in accordance with the OECD definition.

FIEs work 8.6 hours per day, in SOEs 8.64 hours and in NSOEs 8.4 hours. Similarly, the average working days per year are lowest in the SOE sector and highest in the NSOE sector[2]. It is notable that manufacturing firms in the textile, garment, leather, rubber and plastics, furniture and refined petroleum sectors stand out as having more intensive work practices, with more than 300 working days per year. Enterprises in the textile sector tend to work the most, at 334 days per year. Table 3.3 highlights selected Survey responses in this regard.

FEMALE AND FOREIGN FULL-TIME EMPLOYEES

The skills composition of total full-time employees may be defined in four types according to the level of job qualification or labour skill required from them: production workers – those engaging directly in the production process – and three groups of skilled staff: managerial, technical and administrative officers who are indirectly involved in production, where they either manage and/or provide support services for production. As highlighted in Table 3.4, full-time female employees account for 46 per cent of total employment in the production job category. The proportion of female to male employees is highest in FIEs, then in NSOEs and then in SOEs, and is particularly high in the labour-intensive and low-value added sectors, such as textiles, wearing apparel and leather. Nearly half of the surveyed enterprises have foreign employees, 97.7 per cent of whom work for FIEs. These, however, account for only 2.4 per cent of total FIE employees. Only three SOEs and 20 private enterprises employ foreigners, and these firms are part of joint-ventures where the foreign partner contributes to as much as 50.0 per cent of total charter capital.

2 There are 13 companies (9 FIEs, 3 SOEs and 1 NSOEs) where the average number of working hours per day is 23 or more; these firms probably work three shifts a day.

Table 3.3: *Average working hours and days per year, by type of emploment and ownership*

	Hours per day	Days per year
State-owned sector		
Permanent full time	8.6	278
Temporary	5.7	121
Non-state owned sector		
Permanent full time	8.4	299
Temporary	6.1	129
Foreign invested sector		
Permanent full time	8.7	297
Temporary	5.1	107

LABOUR SKILL FORMATION

Since most enterprises are engaged in labour-intensive industrial operations in low value-added manufacturing sectors, the four-type job definition of production, technical, managerial and administrative categories, is appropriate for measuring labour skills. The large share of production workers in total employment implies that most employees have a low

Table 3.4: *Share of female and foreign employees by job categories and ownership*

	Share of female employees (%)				Share of foreign employees (%)			
	Total	FIEs	SOEs	NSOEs	Total	FIEs	SOEs	NSOEs
Production	45.4	52.7	30.3	37.0	0.27	0.4	N/A	0.0
Technical	27.0	29.4	26.0	23.1	10.0	15.7	N/A	0.0
Managerial	32.9	31.8	31.7	35.1	23.0	35.3	N/A	0.7
Administrative	67.3	70.9	58.6	63.8	1.0	2.3	N/A	…
Total	**45.6**	**52.2**	**33.2**	**37.9**	**1.6**	**2.4**	**N/A**	**0.1**
Sample	1,493	855	148	490	755	732	N/A	20

Table 3.5 *Permanent full-time employees by job category and ownership*

	FIEs			SOEs			NSOEs		
	Total	Female	Foreign	Total	Female	Foreign	Total	Female	Foreign
	in percentage terms								
Worker	80.5	75.8	4.0	72.8	59	0.0	77.4	65.7	9.2
Technician	7.5	5.8	22.2	10.2	10.4	100.0	8.7	6.6	16.7
Manager	5.3	13.0	5.4	9.1	17.2	0.0	6.9	17.2	0.0
Admin	6.7	5.4	68.4	7.9	13.4	0.0	7.0	10.5	74.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

level of qualification. Survey evidence shows that, on average, production workers account for around 77 per cent of the total employment in sampled enterprises while the proportion of skilled employees is around 17 per cent. Most notably, FIEs have the smallest proportion of skilled staff and SOEs the largest. This pattern is observed for all three types of skilled employees: i.e. technicians, managers and administration staff. This result may imply that FIEs operate more efficiently than SOEs. On the other hand, FIEs employ fewer females in management positions than do SOEs and private enterprises, while SOEs and the domestic private enterprises sometimes hire foreigners to work as technicians. FIEs mainly engage foreigners in managerial positions. It is worth noting that firms in the high-tech industries, such as the manufacture of chemicals and pharmaceuticals, computers and electronic products, electric equipment and motor vehicles, employ a higher proportion of skilled employees, most notably technical staff. Firms in the low-tech industries, such as textiles, clothing, leather and wood products, employ the highest proportion of unskilled employees who undertake manual production work.

FIEs generally refer to the lack of skilled workers as the main obstacle to penetrating the Vietnamese market[3]. Survey evidence highlights that most foreign enterprises referred to the availability of skilled labor and labour costs as being critical for their business in Viet Nam (refer to Chapter 4.1 for more details). Table 3.6 illustrates the importance of labour costs as an investment determining factor and provides information on the perceived changes in labour costs over the past three years. Some 51.5 per cent of FIE respondents highlight that labour costs are an important factor in their operations, whereas private domestic enterprises equally regard labour costs as important factor in their business. On the other hand, the majority of FIEs and SOEs consider that labour costs have remained the same over the last 3 years with the only exception being private enterprises the majority of which consider the labour costs to have actually improved. Importantly, 21.1, 18.9 and 18.1 of FIES, SOEs, NSOEs, respectively consider that the labour cost situation in Viet Nam to have actually worsened over the last 3 years. In terms of market orientation, the majority of market local market seekers and global market seekers indicated that labour costs conditions remained the same (refer to Table 3.7). Around 44 per cent of regional market seeking respondents consider that the situation as having improved. Some 18, 17, and 22 per cent of local market seekers, regional market seekers and global market seekers think that the situation in labour costs conditions has actually worsened.

3 This is consistent with the other Survey results where most foreign companies said that the availability of skilled labour and labour costs were critical for their business in Viet Nam.

Table 3.7: *Perceived changes in the labour cost factor over the last 3 years, by market orientation*

	percentage share of total responses				
	Worse	Same	Better	Total	Sample
Local market	17.8	42.6	39.6	100.0	684
Regional market	17.3	38.3	44.4	100.0	81
Global market	22.3	40.4	37.3	100.0	726

Table 3.8 refers to the importance and change over time of the availability of skilled labour. Overall the great majority of respondents from FIEs, SOEs, and NSOEs consider the availability of skilled labor as either important or very important. The situation in terms of availability of skilled labour does not seem to have changed much since the majority of respondents, irrespective of investor type, think that the situation in the skilled labour market has remained the same over the last three years.

As highlighted in Table 3.9, the results elaborated above are also reflected in the perceptions of respon-

Table 3.6: *Importance attached to the labour cost factor and perceived change over time*

	Importance (%)				Change over the last 3 years			
	Not important	Important	Very important	Total	Worse	Same	Better	Total
Foreign invested enterprises	2.2	46.3	51.5	100.0	21.2	42.7	36.1	100.0
State-owned enterprises	1.3	58.7	40.0	100.0	18.9	43.9	37.2	100.0
Non-state owned enterprises	2.4	51.3	46.3	100.0	18.1	38.1	43.8	100.0

Table 3.8: *Importance of the availability of skilled labour and change over time*

percentage share of total responses

	Importance				Change over the last 3 years			
	Not important	Important	Very important	Total	Worse	Same	Better	Total
Foreign invested enterprises	4.7	54.0	41.3	100.0	15.9	55.3	28.8	100.0
State-owned enterprises	3.4	48.0	48.6	100.0	20.9	48.7	30.4	100.0
Non-state owned enterprises	2.0	51.5	46.5	100.0	15.7	48.9	35.4	100.0

Table 3.9: *Changes in the availability of skilled labour over the last 3 years*

percentage share of total responses

	Worse	Same	Better	Total	Sample size
Local market	14.2	51.6	34.2	100.0	684.0
Regional market	11.1	56.8	32.1	100.0	81.0
Global market	19.0	52.8	28.2	100.0	726.0

dents disaggregated by market orientation. The great majority of respondents by any type of market orientation believe that the situation in terms of availability of skilled labour has remained the same. Some 34.2 per cent, 32.1 per cent and 28.2 per cent of respondents with local market, regional market and global market seeking orientation, think that the actual situation vis-à-vis availability of skilled labour has actually improved. Some 19 per cent of global market seekers consider that the situation with regards to skilled labour availability has worsened over the last 3 years.

SKILLS AND WAGES

The difference in labour skills can be reflected in the wage gaps between the four different types of employment categories identified earlier. Overall, there is a significant disparity in the average monthly wage of the four job types, regardless of firm ownership. In the total sample, the average monthly wage amounts to USD 159 for a production worker and USD 558 for a managerial employee. The low monthly wage for production workers is closely related to the low skill base required for this job category. The difference in the level of labour skills can also be seen in the gap in average monthly wages between the job types among different ownerships: the largest gap is registered by FIEs and the smallest by SOEs. On aggregate, the average monthly wage level for a manager is 3.5 times higher than that for a labourer; for FIEs it is 4.2 times higher; for domestic enterprises it is 2.8 times higher; and for SOEs it is 2.4 times higher[4]. The monthly wage of managers in FIEs is considerably higher than in SOEs or NSOEs which might be a result of the higher share of foreign managers as shown in the previous chapter. Table 3.10 presents the average monthly wages for each permanent full-time employee.

Interestingly, production workers in industries selling to the local market earn more than those in export-orientated industries. It is hard to find a significant difference in the average monthly wage of technical workers across low-tech and high-tech industries.

SKILLS AND LABOUR PRODUCTIVITY

Labour skills can be measured through the productivity of firms in different sectors and by looking at different ownership structures. In terms of productivity, most firms in the Survey seem not to have been adversely effected by the international financial crisis[5]. As shown in Table 3.11, Survey results show a big disparity in productivity, as measured by gross output per employee, across firms with different ownership types[6]. The median value of gross output per worker is highest in FIEs and lowest in the NSOEs, which may partly reflect the gap in labour skills between FIEs and domestic firms.

4 This result seems to confirm the common notion that the proportion of skilled labourers in the SOE sector was high but less effectively used than in the FIE sector. It can, however, be seen from the Survey that the average monthly wage of a production worker in the SOE sector was much higher than in other sectors, but that the wage of an SOE technical worker was relatively lower.

5 These achievements may be partly reflected by the improved business environment after Viet Nam's WTO accession.

6 The mean values are not shown this time because they were sensitive to a few large statistical outliers.

Table 3.10: *Average monthly wage for permanent full-time employees*

in USD

	Production	Technical	Managerial	Administrative
State-owned enterprises	196	279	476	258
Non-state owned enterprises	159	319	449	255
Foreign invested enterprises	152	321	642	228
Total	**159**	**316**	**558**	**240**

Table 3.11: *Employee productivity measures, by type of ownership*

in USD

		Value added per capita employee	Output per capita employee	Value added / output
State-owned enterprises	Median	5,281	20,987	0.3
	Sample	132	132	132
Non-state owned enterprises	Median	4,316	17,761	0.3
	Sample	417	417	417
Foreign invested enterprises	Median	5,464	22,100	0.3
	Sample	681	681	681
Total	Median	5,091	19,945	0.3
	Sample	1,230	1,230	1,230

Note: All observation with VA=<0 and outliers have been removed.

Correspondingly, the median value added per worker is highest in FIEs and lowest in NSOEs, while the median value added/output ratio of FIEs is higher than that of NSOEs, but only comparable with that of SOEs, partly reflecting the notion that input values account for a very large proportion of FIE production costs. The relatively low value added per employee registered by FIEs (when compared to SOEs) might also reflect again the undesirable reality in Viet Nam that capital-intensive FDI may be engaged in low value added production. Survey evidence suggests that labour productivity is lowest in the most labour-intensive sectors such as the garment, leather, wood products and furniture, and electronic product manufacturing sectors. This evidence is consistent with the established notion that these manufacturing sectors engage mostly unskilled labour, which may be driving value addition. Table 3.12, show the gross output and value added per employee, as measured by median value for the different industrial sectors.

CONTRIBUTION OF FDI TO LABOUR SKILL IMPROVEMENT

In principle, the aim of training is to improve the skills of employees and enhance the general capability of firms to absorb technology. FIEs are seen as pioneers in improving employee skills, with a corresponding expenditure on both internal and external training programmes, which outweigh similar initiatives taken by SOEs and private enterprises[7]. Survey evidence shows that all respondents, irrespective of ownership status, tend to give priority to internal training for managerial staff with, as expected, FIEs spending most per position (USD 3,726) compared to both SOEs and NSOEs. On aggregate, the amount spent on internal training for managers and technicians may partly reflect the very low level of availability of well qualified technicians and managers in Viet Nam and this may also indicate that the gap between current qualification levels and those required by companies, especially by FIEs, is still wide. Table 3.13, suggests that, whereas SOEs and private enterprises tend to spend most of their internal training budget on production workers, FIEs direct most of their internal training to managerial staff. Nonetheless, internal training expenditure of FIEs to production workers still far outweighs the expenditure that SOEs and NSOEs undertake for this category of employees. SOEs consistently tend to spend the least on internal training.

In terms of external training (Table 3.14), FIEs still take the lead in improving employee qualifications and skills in all types of employment positions. Do-

7 Internal training refers to training delivered by in-house enterprise representatives. External training is training provided by individuals, training institutions or agencies who are not part of the enterprise.

Table 3.12: *Gross output and value added per employee, by industry sector*

Sector	Value added per capita employee	Gross Output per capita employee
	in USD	
Food products	8,508	35,104
Beverages	10,417	23,460
Tobacco products	48,542	111,807
Textiles	4,236	15,687
Wearing apparel	2,436	4,747
Leather and related products	1,940	6,762
Wood, wood and cork products	2,952	10,483
Paper and paper products	5,618	32,489
Printing and reproduction of recorded media	3,646	15,767
Coke and refined petroleum products	13,213	64,672
Chemicals and chemical products	14,054	55,545
Pharmaceuticals, medicinal chemical and botanical products	10,486	31,338
Rubber and plastics products	5,943	21,794
Other non-metallic mineral products	5,269	26,583
Basic metals	10,443	85,311
Fabricated metal products, exc. machinery and equipment	6,341	23,770
Computer, electronic and optical products	3,784	16,628
Electrical equipment	5,253	26,650
Machinery and equipment	6,399	24,368
Motor vehicles; trailers and semi trailers	10,948	36,845
Other transport equipment	8,005	28,158
Furniture	2,742	10,327
Other manufacturing	2,807	10,417
Repair and installation of machinery and equipment	3,702	16,448
Electricity, gas, steam and air conditioning supply	22,141	250,368
Water supply sewerage, waste management etc	10,135	12,954
Construction	10,596	34,924
Total	**5,091**	**19,945**

Note: All observation with VA=<0 and outliers have been removed.

mestic enterprises' low expenditure on external training may reflect various operational and performance constraints that still prevent them from embarking on advanced training programmes.

LABOUR SPILLOVERS

One of the impacts of FDI is the spillover effect in skill formation through either vertical or horizontal linkages[8]. In particular, FIEs may contribute, through vertical linkages, to skills upgrading of their suppliers and/or buyers. In some cases, domestic firms are required to train their workforce in order to meet the skill levels required by foreign buyers. Similarly, linkages with domestic buyers and/or distributors can bring the same impact on employee skill formation because domestically-owned firms have to comply with product standards demanded by FIEs. Survey evidence suggests that a small proportion of total respondents say they have been instrumental in improving the quality of their local suppliers' workforces. Eleven per cent of FIEs interact with local suppliers to improve their quality as opposed to 10.5 per cent of NSOEs and 9.6 per cent of SOEs. It may be argued that the perceived weak vertical linkages between foreign buyers and local suppliers may be preventing domestic firms from, *inter alia,* achieving the improvement in labour skills that can be gained through linkages with FIEs. Policy incentives towards promoting these linkages may thus have a positive impact on labour skill improvement.

8 A more thorough analysis of FDI spillover effects will be presented in Section 3.4

Table 3.13: *Enterprises' expenditure on internal training*

in USD

	Total		Production		Technical		Managerial		Administrative	
	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita employ-ee
Foreign invested enter-prises	655,480	177	201,610	108	194,878	535	259,519	3727	149	6
State-owned enterprises	4,349	8	3,333	9	412	12	539	18	73	3
Non-state owned enter-prises	5,046	10	4,238	11	405	18	300	19	95	7
Total	**371,852**	**104**	**115,412**	**66**	**110,239**	**304**	**146,798**	**2110**	**123**	**6**

Note: Figures are computed for 2009

Table 3.14: *Enterprise's expenditure on external training*

in USD

	Total		Worker		Technician		Managerial		Administrative	
	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita em-ployee	Total	Per capita employ-ee
Foreign invested enter-prises	778,836	587	25,291	37,54	393,893	11,778	304,877	13,801	53,063	1,787
State-owned enterprises	7,621	14	1,348	5	3,054	142	2,928	168	355	14
Non-state owned enter-prises	1,331	5	339	3	334	13	578	27	81	5
Total	**453,891**	**344**	**14,961**	**23**	**229,657**	**6,774**	**177,819**	**8,040**	**30,957**	**1,043**

Note: Figures are computed for 2009

SUMMARY

Employment and labour skill trends in the Survey are relatively consistent with the overall employment status of the Viet Nam manufacturing sector. The analysis in this section provides additional evidence that manufacturing firms in Viet Nam are labour-intensive, and proves that FDI has a positive impact on employment. However, most employment generated by this sector is of workers in direct production, a large proportion of which can be classified as unskilled and female. The very important finding of this Section is that FIEs depend heavily on capital and imported inputs to produce low value added products in the key export industries. Thus it is not surprising that the average productivity of employees measured by the median value of value added per worker is rather low. Lack of skilled labour and increases in labour costs are two major constraints for all firms, but especially for FIEs and global exporters. Although the share of skilled labour is lowest in FIEs, their expenditure on internal and external training is much higher than that of domestic firms, implying that improving the skill level is the priority for FIEs. This has contributed directly to improving the quality and skill of local employees and may lead to other yet unobserved spillovers, for instance, the creation of new spin-off companies by former FIE employees. However, the indirect impact of FDI on improving labour skill is still low due to weak forward and backward linkages between FIEs and local suppliers and buyers as highlighted by enterprises Censuses conducted by GSO between 2007 and 2010[9].

9 The situation of enterprises through the results of surveys conducted in 2007, 2008, 2009. GSO (2010): Statistical Publishing House, 2010.

Chapter 3.2:
Trade and international market integration

INTRODUCTION

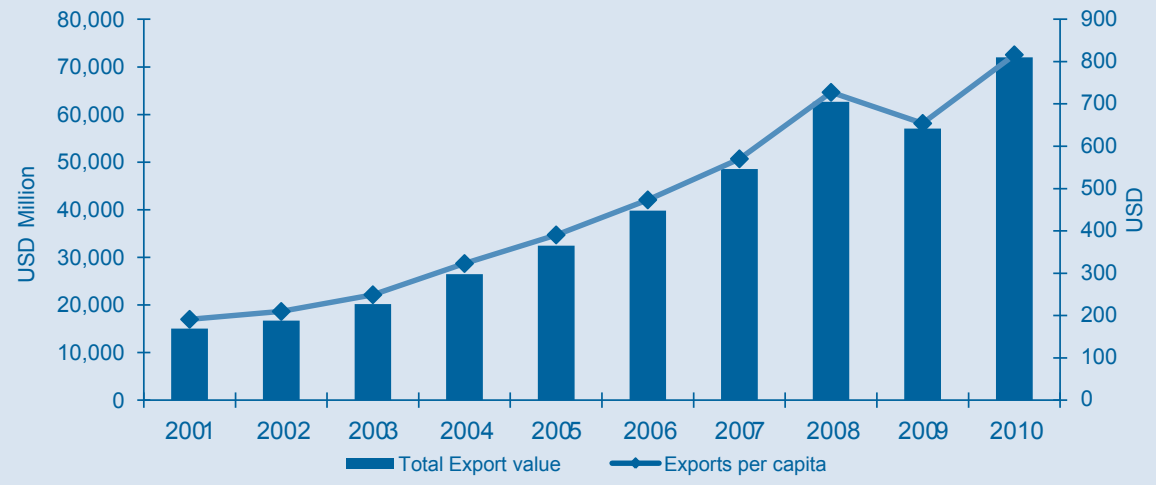
During the period 2001 to 2010, the value of Viet Nam's exports grew approximately five-fold, reaching USD 72.2 billion in 2010. This remarkable achievement shows the positive impact of the country's integration into the global economy and the results achieved through the process of trade liberalization. A number of important political economic developments underpinned this surge in exports. One of the key turning points was the implementation of the Viet Nam-US Bilateral Trade Agreement (BTA), which has been in effect since December 2001. Before this BTA was signed, Viet Nam had made considerable efforts to remove barriers to the liberalization of import and export trading rights, especially non-tariff barriers such as quotas and permits, in compliance with international practice. The Viet Nam-US BTA is considered the most important milestone in Viet Nam's process of trade liberalization, providing landmark opportunities for Vietnamese goods to enter the US market[1]. Yet, it was only after Viet Nam officially became a WTO member in 2007 that its economy became broadly and deeply integrated into the global economy. WTO accession has, to a significant degree, enabled the Vietnamese economy to further increase its export turnover and its export value per capita. As illustrated in Figure 3.1, although the global financial crisis and the ensuing downturn in global demand drove the country's exports downward in 2009, exports have gradually recovered since 2010 reaching an all-time high since.

It is noteworthy that the rapid growth of export value, which has averaged 18 per cent per annum over the last decade, outweighs the GDP growth rate of 7.3 per cent during the same period. As highlighted in Figure 3.2, the ratio of exports to GDP has continued to increase steadily, reaching a staggering 70.6 per cent in 2010. Overall, these indicators highlight the openness of the Vietnamese economy and the dramatic changes resulting from trade liberalization.

Undoubtedly, Viet Nam's export achievements have been largely driven by foreign direct investment activity, especially in industry. Official GSO statistics highlight that export values emanating from the FIEs started to exceed those from the domestic sector in 2003 (two years after the Viet Nam-US BTA was signed), and increased by 17.1 per cent annually from 2005 to 2010, accounting for 55.8 per cent of the total export value in 2010. Although it is estimated that FIE-generated exports fell by 12 per cent in 2009 as a result of the international financial crisis, these quickly recovered in 2010 with a growth rate of 28.7

1 Nguyen Thi Phuong Hoa and Le Hai Van (2007) use an enterprises survey conducted in 2006 to examine the impact of the US-Viet Nam Bilateral Trade Agreement (BTA) on foreign investment. According to their results, the BTA has an impact on the investment decisions of foreign investors, on their exports to the US market, and on employment.

Figure 3.1: *Export value and export value per capita, 2001-2010*



Source: General Statistics Office, Viet Nam

Box 3.1: *WTO Accession*

OVERVIEW

On 11th January 2007, Viet Nam officially became a full member of the World Trade Organization (WTO), a milestone in its international economic integration and its process of openness. This has led the economy on the path to higher economic growth rates, an increase in exports and greater FDI inflows. At the same time, however, Viet Nam's economy has been under pressure from high inflation; a large trade deficit; economic growth that, though high, is of low quality; and rising inequality. As a result, some of the Inherent internal weaknesses of the Vietnamese economy have been exposed. The overriding aim of WTO accession was to enable the creation of the right environment for economic development and, most importantly, to trigger an upgrading of development policies. It is argued that, on its own, WTO accession itself does not make a country rich or poor; the most important outcome of joining is that it enables improvement in development policies and the implementation of long-term changes envisaged for the economy (CIEM, 2010), As a result of WTO accession, Viet Nam has succeeded in gaining institutional and policy reforms, moving towards improving its investment and business environment, and finding ways to increase its commodity and service exports.

Some elements of Viet Nam's WTO accession agreement should be noted:

- Viet Nam has till 2018 to complete the tariff reduction programme in the cars and motorbikes sector;
- Import duties are to be cut to 13.4 per cent within 5-7 years of WTO accession (i.e. by 2014) from a current average of 17.4 per cent;
- Within 5 years of accession, i.e. in 2012, industrial subsidies will be dismantled. In effect, garments and textiles will have some of the largest reductions. Removal of government subsidies in these sectors was a main condition for WTO membership.

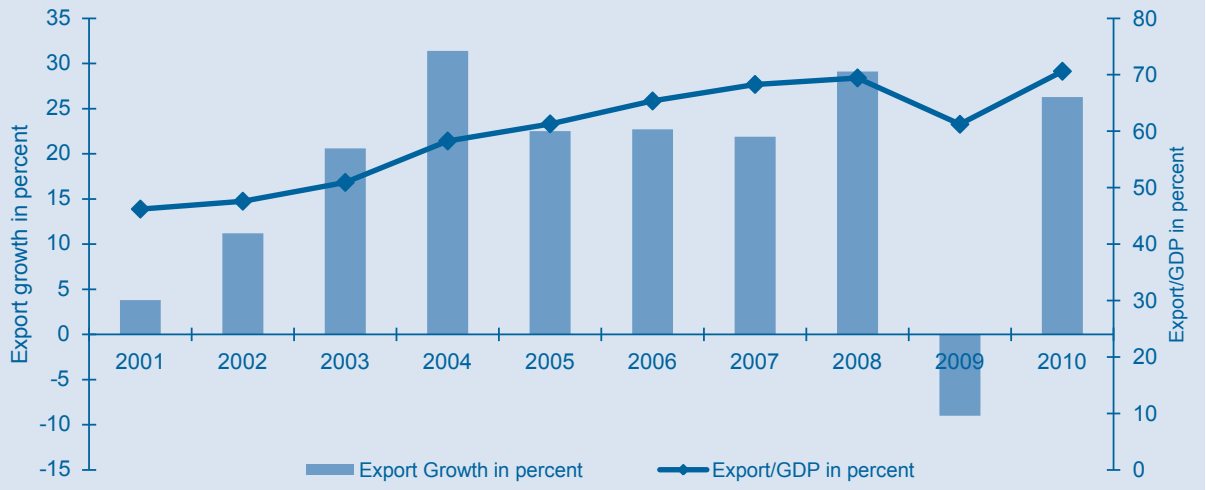
IMPACT OF WTO ACCESSION ON EXPORT PERFORMANCE

There are mixed signals of the impact of WTO accession on exports. Viet Nam's export revenues are said to have increased rapidly in the wake of accession. Though export revenues decreased in 2009 as a result of the world economic crisis, this reflects a decline in values and not in volume, partly suggesting that, despite unfavourable market conditions, the productive machinery geared for export continued unabated. The main sectors benefiting from the export boost of WTO accession seem to have been the most labour-intensive, such as garments and electronics. The garment sector has gained the highest growth rates from WTO accession, with Viet Nam consolidating its pre-2007 traditional garment markets and expanding in new markets. However, although exports have been on an increasing trend, WTO accession has also exposed the vulnerabilities of the Vietnamese economy to external shocks and international price fluctuations, revealing a *nexus* between the comparative and competitive advantages of Vietnamese industry. The competitive advantages of some product lines may have been reduced because of difficulties in both export activities and production. At the same time, the first gradual steps can be noticed in export restructuring from an export basket fully composed of cheap, labour-intensive products to one that includes sophisticated manufacturing and high-tech commodities.

CHALLENGES

Viet Nam's failure, as yet, to maximize the opportunities brought by its accession to the WTO can be attributed to the country's low level of competitiveness in enterprise capacity and capability and in products. The situation is improving only slowly when compared to other countries in the region. General competitiveness is limited by, in particular, low standards in areas such as human resource training, infrastructure, institutional capacity and technology. Export competitiveness is low because it depends heavily on processing and exploiting natural materials. Domestic enterprises are constrained by the lack of capital and human resources, low productivity and low efficiency, and high investment costs, and by the lack of supporting industries and local content; their profit ratios are on a declining trend. Only a strong and competitive domestic sector can bring Viet Nam the full benefits of WTO accession. To date, the country's economic benefits from WTO accession have been more fuelled by FDI inflows than by a competitive domestic sector.

Figure 3.2: *Export growth rate and the ratio of exports to GDP, 2001-2010*



Source: General Statistics Office, Viet Nam

per cent. In the latter period, the growth rate in exports emanating from the domestic sector was almost equally significant around 23 per cent.

The Viet Nam-US BTA and the implementation of Viet Nam's WTO commitments have had a strong impact on its export structure in general and the export structure of the FIEs in particular. Extractive and resource-based products, such as crude oil, coal and primary commodities (rice, coffee, cashew nuts, frozen seafood, etc.) were significantly reduced as a proportion of FIEs' exports, while the proportion of manufacturing commodities increased sharply. Before 2003, crude oil accounted for almost half of FIEs' exports, and this was the case until 2007. Since 2007, the share of crude oil exports in total exports has hovered around the 7 per cent level. This adjustment in export structure reflects the structural adjustment towards FDI export-oriented manufacturing activities.

Besides depending on the FIEs to shift its export structure, Viet Nam relies on a few products with high export values, mainly crude oil, primary agro-aquaculture products (rice, rubber, coffee, seafood) and a number of manufactured goods with low to medium technology content, such as wearing apparel, footwear, electronics and wood products. In 2010, all 10 of the commodities with an export value, each, of at least USD 2 billion belonged to this group and accounted for 62.1 per cent of total export value. On aggregate, exports of textiles, footwear, seafood and crude oil amounted to USD 26.3 billion and accounted for 36.4 per cent of total exports (CIEM and the Asia Foundation, 2011).

EXPORT GROWTH

The Survey differentiates firms according to their export activities. Export-oriented enterprises, also referred to as outward-oriented firms, are firms with export revenues accounting for more than 10 per cent of their total revenue. Some 993 enterprises, or 66.5 per cent of the total sample, are considered export-oriented enterprises. These are constituted as follows: 72.9 per cent FIEs; 22.2 per cent private domestic firms, and 4.9 per cent SOEs. Industries with a high proportion of firms with export activities (measured at 80 per cent and more) refer to footwear (92 per cent), other manufacturing activities (91 per cent), furniture (89 per cent), wearing apparel (89 per cent), wood (86 per cent), computers and electronics (84 per cent) and textiles (83 per cent). On average, export revenue accounts for 76.8 per cent of total sales in exporting firms and this revenue is mostly derived from direct exports which make up, on average, 72.0 per cent, 64.9 per cent and 463.8 per cent of FIEs', NSOEs' and SOEs' total revenue respectively. Only enterprises in the textiles, wearing apparel, electronics and computers, and wood industries have export revenues accounting for over 80.0 per cent of their total sales. Other industries where exports constitute a high proportion of total sales and which include both domestic and foreign enterprises are the wood, food processing, non-metallic mineral products and electrical equipment. Overall, the export structure in the Survey is quite representative of Viet Nam's overall macro-economic export structure and its related industrial characteristics.

Table 3.15: *Export growth rates, 2009 to 2011, by selected sectors*

Sector	% share in total exports
Leather and related products	87.7
Other manufacturing	80.0
Machinery and equipment	74.7
Furniture	72.7
Wearing apparel	71.5
Electrical equipment	69.4
Computer, electronic and optical product	68.6
Textiles	68.5
Basic metals	68.4
Wood	67.7
Motor vehicles etc	60.3
Pharmaceuticals	60.0
Rubber and plastics products	59.2
Beverages	58.0
Metal products, except machinery	56.3
Other transport equipment	56.0
Other non-metallic mineral products	54.6
Paper and paper products	48.9
Food products	45.4
Printing, recorded media	37.5
Chemicals and chemical products	33.5
Repair and installation of machinery and equipment	27.0

Table 3.16: *Export growth rates, 2009 to 2011, by selected sectors*

	2009/2008	2010/2009	2011/2010
Food products	23.8	0.2	17.4
Beverages	32.7	-3.4	20.4
Tobacco products	142.3	31.9	67.0
Textiles	14.8	9.1	12.3
Wearing apparel	7.0	-0.2	30.9
Leather and related products	32.6	16.8	11.1
Wood	30.6	6.7	8.5
Paper and paper products	32.7	45.2	24.1
Printing, recorded media	-11.6	3.4	35.4
Coke, refined petroleum	-50.6	3.2	4.4
Chemicals and chemical products	26.4	30.7	25.7
Pharmaceuticals	65.5	17.6	36.0
Rubber and plastics products	11.4	34.4	28.4
Other non-metallic mineral products	-8.4	13.4	39.0
Basic metals	-22.4	44.2	45.4
Metal products, except machinery	10.6	39.4	28.6
Computer, electronic and optical product	12.1	20.4	34.1
Electrical equipment	18.8	25.0	22.9
Machinery and equipment	42.9	56.6	36.1
Motor vehicles etc	41.8	13.5	6.5
Other transport equipment	8.9	6.2	28.3
Furniture	11.8	11.2	10.9
Other manufacturing	6.6	21.0	12.9
Repair and installation of machinery and equipment	-25.2	30.4	9.4
Note: Extreme values excluded			

It is noteworthy that around 66 per cent of exports are directed to overseas parent companies or network. As highlighted in Table 3.15, the proportion of such export sales are particularly high in Viet Nam's key export industries, notably leather and footwear, wearing apparel, furniture, machinery and equipment, electronics and computers and furniture. In this sense, Survey evidence reflects the established notion that Viet Nam's exports rely significantly on FIEs, and many of these enterprises operate at the manufacturing and processing stage in the production network of overseas parent companies which are then responsible for the global distribution[2]. The fact that FIEs in Viet Nam export through parent companies and foreign partners does reflect that domestic firms are hardly involved in foreign enterprise production chains and distribution networks[3].

In 2009, notwithstanding the adverse international conditions due to the global financial crisis, Survey respondents, refer to export growth rate of 6.1 per cent for domestic enterprises, 22.4 per cent for FIEs, and -3.4 per cent for SOEs. Therefore exports are underpinned by FIEs and to a lesser extent by domestic enterprises. Table 3.16 presents export growth rates over the 2009 to 2011 period in selected manufacturing sectors. The traditional export-oriented manufacturing sectors all seem to have maintained good export growth rates in terms of export value. Survey responses seem to suggest that in 2011 FIEs seemed to have found the conditions in export markets were more adverse, and had more difficulty accessing them.

2 A scenario of high proportions of intra-company trade gives way for FIEs for implementation of transfer pricing practices

3 The extent of vertical forward linkages from FIEs will be further analysed in Section 3.4.

CONSTRAINTS TO EXPORT GROWTH

The Survey sought to capture investors' perceptions of the main factors which constrain export growth. Table 3.17 refers to responses identified by enterprise type. Overall, the three factors which firms consider the main constraints to export growth in Viet Nam are, in descending order: infrastructure provision related to electricity and telecommunications; the efficiency of the ports systems; and supporting services by agencies that enable firms to meet international certification standards. These three factors are also seen as the greatest constraints to exports by foreign enterprise respondents, while domestic enterprises – as they are more geared towards domestic markets - additionally consider the inadequate transport infrastructure of railways and roads to be important constraints. It is noteworthy that other factors such as tariffs, lack of access to commercial credit, excessive administrative procedures related to exports, and the lack of effective support services are not seen as the main constraints to export growth. Investor perceptions in this regard may reflect a certain appreciation and satisfaction that recent reforms by Government in a number of related areas are having a positive impact on exporters. Notwithstanding this, much more needs to be done, especially in addressing the main constraints listed above.

Businesses in key export sectors and those with a high share in aggregate export revenue refer to the same main constraints to export growth referred to above. Of the three main constraints, the principal one points to the inadequate power and telecommunications infrastructure – around 28 per cent of foreign investor respondents highlight this as the main constraint

Table 3.17: *Constraints to export growth, by ownership type*

percentage of responses

	SOEs	NSOEs	FIEs	Total
Electricity, telecommunication infrastructure	27.6	16.3	18.5	23.5
Transport infrastructure excluding ports	9.1	10.7	10.2	9.6
Ports infrastructure	10.0	10.7	10.5	10.2
Tariffs barriers	8.0	10.0	10.0	8.9
Cost and access to trade finance	9.0	10.4	9.8	9.4
Bureaucracy and regulations	7.1	10.1	9.8	8.3
Lack of effective export support services	9.0	10.1	9.8	9.4
Inadequate agencies in Vietnam to meet international certification standards	9.9	10.5	10.4	10.2
Other barriers	10.3	11.0	10.9	10.6
Total	100.0	100.0	100.0	100.0

Table 3.18: *Importance of standards services provided by local service providers*

in percentage terms					
	Not important	Important	Very important	Total	No. of respondents
Certification	3.6	39.3	57.0	100.0	549
Testing	4.9	43.5	51.6	100.0	531

to their export activity. This invariably means that the electricity and telecommunication infrastructure is also a principal constraint to operational efficiency in Viet Nam. Poor transportation infrastructure further hampers exporting industries whose performance is based on export volume rather than value added.

All types of enterprises in the Survey, export and non-export alike, have experienced losses from power shortages. On average, a state owned enterprise loses 18.4 days of production, an FIE 19.7 days, and a private enterprise 20.8 days per year. Each export firm suffered power shortages equivalent to an average of 20.3 production days whereas each non-export firm lost 18.2 days. These results might suggest that policies to ensure power supply for export firms may not have been implemented effectively. In fact, some export firms, notably FIEs, tend to solve the problem directly by investing in new energy-efficient technologies or by using a generator. However, while this contingency planning may be feasible for some FIEs or for domestic enterprises with sufficient financial resources, most private enterprises may be short of production capital and be unable to afford such an investment.

Table 3.18 shows the importance of certification and testing services provided by local service providers. The lack of certifying agencies that meet international standards also hinders export firms from further increasing their export activity, especially for those enterprises engaged in the footwear, apparel and textile industries. Survey results suggest that, overall, some 54 per cent of all export firms have their products and production process certified, slightly more than half of which (26.9 per cent) have their products certified by national certifying agencies and bodies. The high proportion of firms which consider certification and testing services provided by agencies in Viet Nam to be `important' and `very important' is further proof that the general lack of such agencies is a serious constraint to firms' exports. The majority of firms not using certification and testing services supplied by agencies in Viet Nam are not required by their buyers to use such services. Others are required to be certified by an international body, not a national one. Apart from reasons such as high costs, a fair proportion of firms avoid using Vietnamese certification providers because of their perceived low quality and late delivery, and 10 per cent indicate that they do not know about the availability of such services possibly because they do not need them or these are provided by their parent companies[4].

To summarize, the biggest constraints on export growth seem to be more related to certain internal structural weaknesses of the Vietnamese economy than to external factors such as reduced demand for Vietnamese manufactured products or export prices. Faced with these problems, domestic firms seem to experience more difficulties than FIEs, since the latter mainly (i) export to their parent companies and/ or foreign partners, which ensures a 'guaranteed' market for their production for export, and (ii) are subsidiaries of large foreign enterprises investing in Viet Nam and have more back-up and resources in terms of finance, technology and management skills that can be exploited to address operational constraints (such as electricity shortages etc). For FIEs, these factors partly offset the difficulties arising from internal market factors and help them achieve better export growth than domestic enterprises.

REGIONAL AND GLOBAL EXPORT MARKETS

As mentioned earlier, Viet Nam has experienced a breakthrough in expanding its export market since the Viet Nam-US Bilateral Trade Agreement (BTA) came into effect in 2001. However, surprisingly, only 22.9 per cent of enterprises in the Survey know about this Agreement, while 36.14 per cent are familiar with the ASEAN Free Trade Area (AFTA), and 38.8 per cent

4 Currently, together with public agencies providing certification services for product quality, such as the Directorate for Standards, Metrology and Quality (STAMEQ) and the National Agro-Forestry-Fisheries Quality Assurance Department (NAVIQUAD), there are several foreign organizations that provide certification services in Viet Nam but they are still small-scale. Therefore, improving the quality of services provided by state agencies leading to international accreditation as well as creating a market with various service providers, including private institutions both at the domestic and international level, is likely to positively impact firms' exports.

are informed about Viet Nam's WTO commitments for trade liberalization. In order of importance, enterprises are more interested in the country's WTO commitments, followed by AFTA and the Viet Nam-US BTA. While the proportion of foreign respondents familiar with these agreements is rather high, as expected only around 18 per cent of SOEs know (or care) about the WTO commitments and about the implications of AFTA. Overall, the great majority of enterprises, irrespective of ownership, believe that bilateral and multilateral trade agreements are very important to the expansion of their exports. Also there is no big difference in their evaluation of the importance of these trade agreements in this regard, perhaps because Viet Nam is now a full WTO member and the implementation of WTO commitments does not conflict with but rather covers other trade agreements. However, although the agreements are seen as being very important to the expansion of exports, these seem to have had no major impact on the performance of 18.9 per cent of export enterprises in general, especially in the case of 20.2 per cent of FIE exporters who do not perceive these agreements to provide any significant premium to export performance. For the rest of Survey respondents, these trade agreements have contributed to export activities in different ways, such as the reduction in trade costs (22.3 per cent of enterprises), increased access to finance with better conditions (19.5 per cent), increased investment opportunities in the region (15.8 per cent) and better access to production inputs (11.1 per cent). Most enterprises, and especially FIEs, believe that the most positive impact of these agreements comes from their reduction of trade costs by eliminating non-tariff and tariff barriers, thereby reducing the cost of export production and increasing price competitiveness. Domestic private enterprises also see great impact as increased opportunities for investment expansion in the region and improved access to trade finance with better conditions, while SOEs regard access to raw materials as the most important benefit. From this it can be seen that a shortage of capital still presents the greatest challenge to the export performance of many private enterprises (See Table 3.19).

EXPORT MARKET STRUCTURE

Access to the US market has significantly changed the structure of Viet Nam's export market. The US is now Viet Nam's number one export market, and many enterprises have, as a result, gone beyond the Southeast Asia and Asia region to become global exporters. GSO official statistics indicate that the value of Viet Nam's exports to the US market increased dramatically from USD 1.0 billion in 2001 to USD 10.6 billion in 2010. As a result, the share of Vietnamese exports to the US over total exports increased from 7.1 per cent in 2001 to almost 20 per cent per cent in 2010. This expansion of exports to the US does not make the EU and Asian markets less important. Although the proportion of Viet Nam's exports to these markets has decreased, this decline has taken place gradually over time. Aside from the US market, the order of importance of its export markets has not changed, with the EU remaining the largest market, followed by the ASEAN region, Japan and China. However, this ranking is not reflected in the Survey findings since the proportion of Viet Nam's exports for the FIE sector (in terms of value) to the US only ranked third behind that to Japan and China (Taiwan Province) which are also among the main investor country of origin reflecting a large proportion of intra-firm exports. As for SOEs' exports, these are highly concentrated, with 32.1 per cent of exports directed

Table 3.19: *Importance of regional trade agreements, by type of ownership*

Percentage share in total respondents

	FIEs	SOEs	NSOEs	Total
Improved access to trade finance on better terms	19.3	12.1	21.7	19.5
Greater availability of skilled labor	8.0	3.0	4.4	7.1
Improved transport and communications infrastructure	5.1	3.0	7.5	5.5
Access to raw materials and other inputs	9.7	24.2	13.7	11.0
Increased regional investment opportunities	14.3	21.2	20.5	15.8
Reduction in costs of cross-border trade within the region	23.4	21.2	18.0	22.3
No impact	20.2	15.2	14.3	18.9
Total	100.0	100.0	100.0	100.0

Source: General Statistics Office, Viet Nam

Table 3.20: *Export markets and ownership type*

percentage share of total respondents

	FIEs	SOEs	NSOEs
U.S	15.0	5.8	15.3
Japan	20.7	11.6	11.8
China	4.7	4.6	5.1
Australia	1.3	1.9	3.1
ASEAN	12.5	22.8	10.8
South Korea	9.9	0.8	7.1
EU	11.0	32.1	29.6
China (Taiwan Province)	16.5	6.0	7.1
Other countries	8.5	14.5	10.1
Total	100.0	100.0	100.0

to the EU and 22.8 per cent going to the ASEAN region. Private domestic enterprises' exports are primarily directed to the EU market, followed by the US. In short, enterprises' export markets are rather diversified with variations among type of enterprises. Survey results suggest that enterprises, irrespective of ownership, have broadened their export markets and can be regarded as global exporters. According to Survey evidence, the FIE sector exhibits a lower level of export market concentration, its important markets with an export value of more than 10 per cent being, in order, Japan, China (Taiwan Province), United States, ASEAN and the EU.

As shown in Table 3.20, responses from foreign enterprises suggest that China (Taiwan Province) accounts for 16.5 per cent of Viet Nam's exports. China (Taiwan Province) emerges as an important export destination for SOEs (6.0 per cent) and domestic enterprises (7.1 per cent) in the Asia region. Overall, Asian countries account for almost 65 per cent of FIEs exports, and slightly less of SOEs (45.8 per cent). With respect to sectoral distribution, the larger share of garment exports are directed to the U.S. market (29.1 per cent), followed by Japan (20.2 per cent), the EU (15.1 per cent) and Korea (13.5 per cent). Textile exports are mainly directed to the South Korean market, followed by the EU and the U.S. As for leather products, the EU and China (Taiwan Province) receive the lion's share of these, while exports from the electronics and electronic product sector are mainly concentrated in the Japanese and South Korean markets, mainly as intra-firm exports between the South Korean or Japanese subsidiaries in Viet Nam and their respective Headquarters. Unlike such products as garments and furniture, which have rather concentrated export markets, the food sector's exports, a large proportion of which are exports by domestic firms, are directed to a well diversified market base, in part reflecting the considerable market diversity of these products.

Enterprises in the Survey sample export a lower share of their export value to ASEAN countries as compared to the macro trends for enterprises in the entire economy[5]. Survey evidence highlights the fact that, among ASEAN countries, Singapore and Thailand come out as the primary export markets and, in the case of FIEs, the three largest ASEAN markets are, in order, Thailand, Singapore and Malaysia (See Table 3.21).Almost 50 per cent of SOEs exporting to ASEAN market did so mainly to Cambodia and Malaysia. Around 47 percent of domestic private enterprises referred to Cambodia and Singapore as their main export markets.

Overall, in terms of market structure, Vietnam trade seems to be far from concentrated. Trade to Asian countries constitutes the majority of their total trade, and the major trading countries are Japan, ASEAN countries and Taiwan. Trade to ASEAN countries seems to be quite diversified across Thailand, Singapore, Malaysia and Cambodia.

IMPORT MARKET

On average, around 84.4 per cent of enterprises in the Survey import inputs for production, with the great majority being FIEs (89.2 per cent), SOEs (71.4 per cent) and NSOEs (69.5 per cent). It is very clear that Viet Nam's exports base is dependent on imported inputs for export production, with FIEs and SOEs being more dependent than domestic enterprises are. These Survey findings reflect empirical evidence and previous studies on Viet Nam's export base. The over dependence of FIE exports on imported intermediate inputs means that the proportion of imports is often high, a factor causing Viet Nam's very high trade deficit. This high trade deficit seems to have peaked in 2007 with WTO accession and has since been a major underlying cause of macroeconomic instability in the Vietnamese economy. Figure 3.3 depicts trends in the trade deficit *vis-a-vis* exports over the last decade.

5 This result emanates from the responses of the sampled enterprises participating in the Survey.

Table 3.21: *Most important export markets in ASEAN region, by ownership*

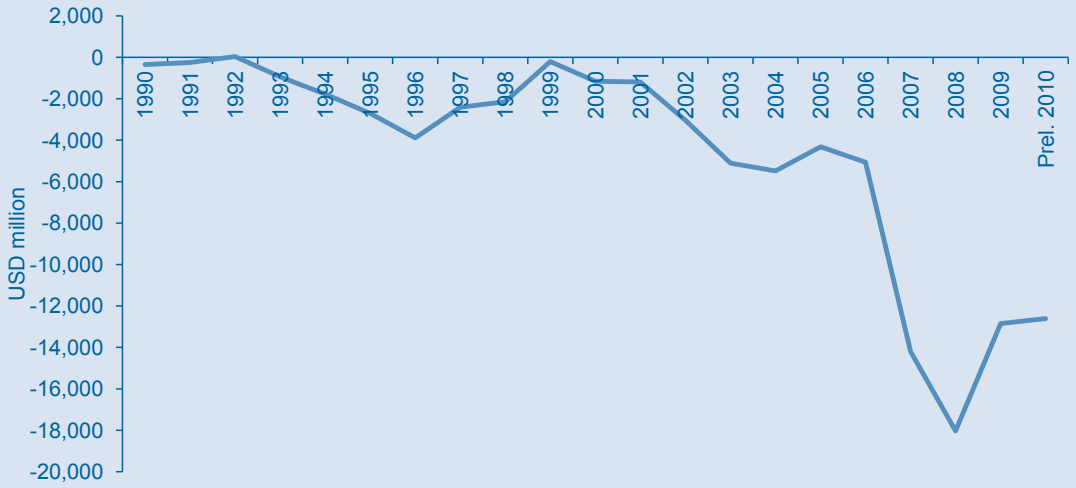
	percentage share of total responses*			
	FIEs	SOEs	NSOEs	Total
Cambodia	7.2	20.0	23.8	10.6
Indonesia	10.0	6.7	4.8	9.0
Laos	1.5	…	2.4	1.5
Malaysia	19.1	26.7	19.0	19.5
Myanmar	1.9	13.3	2.4	2.6
Philippines	6.7	6.7	4.8	6.4
Singapore	23.0	13.3	23.8	22.6
Thailand	30.6	13.3	19.0	27.8
Number of respondents	209	15	42	266

Note: *Proportion of respondents against the total number of firms exporting to ASEAN countries answering this question.

The enterprises surveyed were asked to provide information about their sources of imports. Survey evidence suggests (See Table 3.22) that FIEs and domestic enterprises differ in the source of their imports, with domestic private enterprises mostly importing from China – 28.7 per cent of the value of their imports – followed by the ASEAN countries and China (Taiwan Province), and the SOE sector importing nearly one third of their imports from China, followed by South Korea, the EU and Taiwan. The import sources of FIEs' imports are highly concentrated in three Asian markets: most are from Taiwan (22.7 per cent), followed by Japan (18.8 per cent) and China (18 per cent), with a little over 10 per cent of total import value coming from the ASEAN region and South Korea. Interestingly, these import sources often coincide with the country of origin of the FIE. The notion that imports of raw materials and/or semi-manufactured goods are undertaken to serve exports shows that enterprises tend to import from the nearest markets to reduce input costs. Domestic enterprises import nearly 25 per cent of their total import value from developed countries, such as the EU, Japan and South Korea, mainly imports of machinery and equipment for production as well as sophisticated intermediate manufacturing inputs. At the sectoral level, pharmaceutical manufacturing firms mainly import inputs from Japan and EU market; textile firms mainly import from China, South Korea and Taiwan; and the leather footwear firms mainly from China and Taiwan. The electronics, electrical equipment, and motor vehicle firms, which require a higher level of technology, mostly imported from Japan.

Within the Asian region, ASEAN countries rank second in supplying inputs for export production for Viet-

Figure 3.3: *Trade deficit against exports in the period 2001-2010*



Source: General Statistics Office, Viet Nam

Table 3.22: *Share of import value by markets and ownership*

percentage share in total responses

	FIEs	SOEs	NSOEs
China	18.0	31.8	28.7
Japan	18.8	7.3	9.3
South Korea	12.2	11.6	7.6
China (Taiwan Province)	22.7	10.8	15.5
ASEAN	13.8	8.5	16.6
US	4.1	1.5	4.1
India	1.1	3.9	1.3
EU	4.3	11.5	6.7
Other countries	5.3	13.1	10.3

Table 3.23: *Most important import provenance country in the ASEAN region*

percentage share of total responses*

	FIEs	SOEs	NSOEs	Total
Cambodia	0.8	7.1	0	0.9
Indonesia	9.3	21.4	5.9	9.2
Laos	…	…	2	0.3
Malaysia	17.8	14.3	23.5	18.6
Myanmar	0.4	…	2	0.7
Philippines	1.7	…	7.8	2.7
Singapore	25.8	21.4	31.4	26.8
Thailand	44.1	35.8	27.4	40.8
Number of respondents	236	14	51	301

Note:*Proportion of respondents against the total number of firms exporting to ASEAN countries that answered this question.

Box 3.2: *Viet Nam's trade deficit with China*

China is Viet Nam's largest neighbouring market. The two countries have an historical trading relationship and are partners in a number of international trade agreements: a Bilateral Trade Agreement, the Free Trade Agreement between ASEAN-China (ACFTA), and the World Trade Organization. Total exports from Viet Nam to China increased rapidly from USD 1.5 billion in 2000 to USD 5 billion in 2009, an average annual growth rate of 14 per cent. For the same period, Viet Nam's total imports from China soared from USD 1.5 billion in 2000 to USD 15.6 billion in 2009, giving an annual growth rate of 30 per cent. The result is that Viet Nam's trade balance with China has gone from a small surplus of USD 14 million in 2000 to a deficit of USD 10.6 billion in 2009. In Decision 23/2007/QD-BTM of the Ministry of Trade dated August 2nd 2007, the export target to China for 2010 was US 5.4 billion, which has been easily met. The target for 2015 doubles that figure. This decision does not address the issue of Viet Nam's huge trade deficit with China. It is worth noting that, in 2009, Vietnamese exports to China accounted for 9 per cent of its total exports, but imports from China accounted for 24 per cent of its total imports.

The main reason for Viet Nam's trade deficit with China is the unbalanced trade pattern between the two countries. Viet Nam exports low-value-added goods and imports from China not just volume but technology-intensive manufactures. Close proximity, technological progress and under valuation of the RMB by the Chinese government have made Chinese commodities very attractive in Viet Nam. Due to Viet Nam's global economic integration and it's attraction for foreign investment, the Vietnamese market is now more open to foreign investors through Engineering Procurement and Construction (EPC) contracts which are widely used for international bidding in Viet Nam. Based on EPC contracts, Chinese bidders are often successful as they can package design, machinery and equipment procurement together with construction. Domestic firms can only operate and use the resulting facilities. A number of large Chinese EPC contracts have been awarded in electricity, transportation and construction, for example the Hai Phong thermo power plan, the Quang Ninh thermo power plan, the Kinh Luong thermo power plan, the Kien Luong power plan, the Long Thanh-Dau Giay road of the North-South highway, the Hanoi internal railway, the Nghi Son cement plant and the Tay Nguyen bauxite project. Moreover, FDI in Viet Nam has often been linked to foreign firms relocating their final assembly in Viet Nam in order to take advantage of low labour costs and the preferential market access that Viet Nam receives. These firms leave if tariff conditions worsen, especially for Viet Nam's major exports like garments and textiles, footwear, computers, and electronics. Due to the underdevelopment of supporting industries, Vietnamese enterprises import production materials from China and then contribute only assembly labour before export to the EU or USA.

namese domestic enterprises, coming behind only China, and fourth in supplying inputs for FIEs, but are less important for SOEs. However, in terms of the proportion of enterprises, Vietnamese imports are concentrated in three markets in descending order: Thailand, Singapore and Malaysia (See Table 3.23) with 44 per cent of FIEs import from Thailand, around 28 per cent from Singapore and around 18 per cent from Malaysia. The major import provenance country of NSOEs is Singapore (31 per cent of NSOEs), followed by Thailand (27 per cent) and Malaysia (23). SOEs also mainly import from Thailand (36 per cent of SOEs respondents) and Singapore (21.4), but also from Indonesia (21.4).

Enterprises import inputs in two ways: from their parent companies and directly. Direct imports account for a higher proportion, approximately 31.2 per cent of the total input value, whereas imports from parent companies account for 12.8 per cent. In the FIE sector, imported inputs from the parent company account for a staggering 59 per cent of total input value. Domestic enterprises mainly import their inputs directly, except for a few joint-venture enterprises. These results seem to confirm the trend in Viet Nam that exports depend on imported inputs much more in the FIE sector than they do in the domestic sector. This in part reflects a shortage of input suppliers in Viet Nam to meet enterprise demand, exacerbated by the general lack of supporting industrial base in the economy. A further consequence of increase export activity is that it is therefore the large proportion of imported inputs, especially in the FIE sector, which is increasing Viet Nam's trade deficit.

IMPACT OF EXPORTS ON LABOUR PRODUCTIVITY: A REGRESSION ANALYSIS

As has been amply discussed in this Section, Viet Nam has become a relatively open economy with exports having become an important driver of economic growth since 2006. In spite of their positive economic contribution, Viet Nam's increased exports have revealed many problems, for example that the exports drive imports and consequently, widen the trade deficit and that key export sectors are labour-intensive and use a lot of imported inputs. Indeed, although it is a fact that export products and markets have become more diversified, manufacturing production remains low in value added and heavily concentrated in specific export markets. In particular, it is pertinent to focus on the impact of export activity on labour productivity patterns to ascertain the wider economic benefits of increased export performance. Although Viet Nam's economy has been growing intensively over the last two decades, its labour productivity is perceived to have remained low (CIEM, Viet Nam's Competitiveness Report 2010). Enterprises, therefore, need to improve their competitiveness and contribute, through their exports, to an improvement in the economy's labour productivity. The following section takes this assertion as the main hypothesis in the analysis of whether exports drives labour productivity gains. The general empirical model and method of analysis is presented below.

The empirical model is based on the empirical literature on the productivity of firms. The hypothesis is that exports have a role in explaining the variation in the productivity of firms. The model is as follows:

$$Productivity=f(X)$$

where productivity is a dependent variable. The simple measurement of productivity (i.e. labour productivity) is the value added of the firm, divided by the number of full-time employees.

Explanatory variables (vector X) include:

i. *Age of the firm:* the number of years since its establishment;

ii. *Capital intensity:* the total fixed asset value (book value) divided by the number of employees;

iii. *Skill:* A proxy for the quality of labour used by firms measured as the ratio of technical and management employees to total full-time employees.

iv. *Exporter dummy variable (Dex);* =1 if firms export more than 10 per cent of their total sales; =0 otherwise. A positive and significant Dex implies that companies in which export values are equal to or more than 10 per cent of total sales are more productive than those where these are less than 10 per cent.

v. *Concentration:* the Herfindahl index, measuring the product concentration.

Table 3.24: *Regression I: Determinants of labour productivity at firm-level*

Dependent variable: Labour productivity				
Explanatory variables	**Overall**	**High-tech**	**Medium-tech**	**Low-tech**
Age	0.2367**	0.151	0.3939*	0.220
Cap_Intensity	0.4025***	0.239	0.4568***	0.4279***
Skill	0.4802***	0.4551**	0.4970***	0.4765**
Dex	- 0.3132*	-0.085	- 0.5483*	-0.355
Concentration	0.271	0.231	0.240	0.368
DM Owner1	-0.5970***	-0.7124*	-1.1561**	-0.247
DM Owner2	-0.2642*	-0.257	-0.082	-0.3920*
Constant	3.7214***	5.4644***	2.9023**	2.7743***
No. of observations	714	220	155	339
R^2-Adjusted	0.251	0.119	0.377	0.229

Note: The signs ***, ** and * indicate that the estimated coefficients are statistically significant respectively at 1, 5, and 10 per cent level.

vi. *Ownership dummies* are used to test the impact of the ownership of the firm on productivity:

vii. *Owner 1:* Dummy variable, =1 if SOE, =0 otherwise.

viii. *Owner 2:* Dummy variable, =1 if PE, =0 otherwise.

The model is estimated by OLS using a robust standard to overcome possible heteroskedasticity for cross-sectional data for the whole sample. It is modified to check for different sub-samples: high-tech, middle-tech and low-tech firms.

To run the model, observations with missing variables are removed from the total sample. As a result, only 714 companies[6], equivalent to 47,8 per cent of the total sample, are eligible for the empirical analysis.

In the second instance, the model is then modified to test whether the origin of the parent company influences productivity. Two dummy variables are added: ASEAN=1 if the country of origin is an ASEAN country, =0 otherwise; DEVELOP=1 if it is a developed country (North), =0 otherwise. This modified model is estimated only for FIEs. The result is presented in column FDI1, Table 3.27

In general, all empirical models applied here have weaknesses due to the use of cross-section data sets which are unable to estimate the long-term impact of explanatory variables on labour productivity. Besides, all independent variables could explain only between 12.0 and 37.8 per cent of changes in the labour productivity of firms in the model.

First, the general model of productivity was conducted to test the impact of export firms on the average labour productivity of all the firms in the sample (714 firms, both exporting and not exporting). This model was then modified to test this impact on three groups of enterprises: those using high technology (high-tech), those using middle technology (middle-tech) and those using low technology (low-tech), as determined by the OECD's classification criteria. The impact of export firms on labour productivity is also tested for each group of enterprises disaggregated by ownership. The results of the estimation are presented in Table 3.24 which refers to the classification of enterprises participating in the Survey.

The results in Table 3.24 suggest that the age of firms, their capital intensity and their level of skilled labour are determinants of their average labour productivity. While the impact of sector concentration is not clear, the type of ownership is a factor that does affect labour productivity. Both SOEs and private enterprises lower the average labour productivity in the general model, which also reflects that their labour productivity is lower than that of FIEs. When each group of enterprises is considered by their respective level of technology, the SOE sector lowers the labour productivity in the group through reference to high-technology sectors, such as computers, electronic components, electrical equipment and to medium technology sectors such as rubber and plastic products, basic metals. The domestic enterprise sector only lowers productivity

6 For example, the productivity variable is only based on 800 observations. There are 14 enterprises that do not give information about value added and 237 enterprises with negative value added.

in the group using low-tech, such as textiles, leather products, wood.

The results of the estimation indicate that there is evidence that the export firms reduce the average labour productivity of enterprises in this survey. However, considered more carefully, this impact is only apparent for the group of enterprises using medium technology. The impact of the export firms on the average labour productivity of the groups with high technology and low-technology manufacturing activity has not been confirmed through this analysis. The explanation may lie in the supposition that SOEs in the sectors with medium technology have lower labour productivity than FIEs and private enterprises and that their export activities tend to reduce the labour productivity of the whole group.

To test the impact of the origin of investors (from the ASEAN countries or developed countries) on the average labour productivity, a dummy variable is added to the general model and is run separately for the FIE sector. The results of this second estimation are presented in Table 3.25.

When each group of enterprises is analyzed by ownership, the export enterprises only reduce the average productivity of the group of domestic private enterprises. In other words, the private export enterprises have lower labour productivity than private enterprises producing mainly for domestic market consumption. A similar impact is not apparent in the FIE and SOE sectors. Meanwhile, the origin of the investor, whether from the ASEAN region or from developed countries, has no impact on the average labour productivity of the FIE group. These results seem to suggest that attracting FDI from developed, North countries does not constitute a certain way to increase labour productivity.

SUMMARY

The export activities of enterprises in the survey partly reflect the overall export activity of the economy. Viet Nam's entry into the WTO is considered to have had the most impact on enterprises' international trade, particularly in the expansion of their export markets and the diversification of their export products. While the majority of export firms are global exporters, most imports come from the regional markets. Especially noteworthy is that export growth has been high but has tended to slow down gradually in some key export sectors. Exports are led by the FIE sector, but concentrated in a number of labour-intensive sectors. However, export firms still depend heavily on imported inputs, especially firms in the FIE sector, indicating a shortage of local input suppliers to meet their requirements. The three greatest difficulties faced by export enterprises – power and telecommunications infrastructure, ports, and agencies that enable firms to meet international certification standards for exports – are also common challenges to the entire economy. The results of the empirical model demonstrate that FDI has an impact on increasing the overall labour productivity of the enterprises in the survey, especially if it is skill-intensive, capital intensive and if the firm has been established some time ago. However, the

Table 3.25: *Regression II: Determinants of labour productivity at firm-level*

Dependent variable: Labor productivity				
Explanatory variables	**NSOEs**	**FIEs**	**FDI 1**	**SOEs**
Age	0.156	0.4353**	0.267	0.038
Cap_Intensity	0.4644***	0.3901***	0.4319***	0.3465**
Skill	0.3523*	0.5123**	0.5772***	0.392
Dex	- 0.5008*	-0.139	-0.204	-0.055
Concentration	0.241	0.319	0.182	0.269
ASEAN			-0.228	
DEVELOP			-0.158	
Constant	3.5873***	3.1692***	3.2803**	4.3743***
No. of observations	226	409	252	79
R^2-Adjusted	0.216	0.271	0.293	0.161

Note: The signs ***, ** and * indicate that the estimated coefficients are statistically significant respectively at 1, 5, and 10 per cent levels.
The number of observations in the group FDI 1 is lower than that for group FIEs because a number of enterprises did not answer the question relating to the origin of investors.

low labour productivity of export enterprises can be a major challenge to a highly open economy in transition, such as Viet Nam's. That means that export growth still depends on the low value added and labour intensive sectors (in the model, productivity is measured based on value added), especially in the SOE sector. This is not new in Viet Nam's experience, but it is re-examined here through the analysis of the Survey results and the quantitative analysis above.

Chapter 3.3: Productivity and technical efficiency: Benchmarking firm performance across provinces

INTRODUCTION

With its movement towards a market-based economy, Vietnamese industry is currently composed of a mix of state-owned firms (SOEs) and private enterprises, the latter including domestic and foreign firms. Previous chapters confirmed that foreign-owned firms are more productive than their private domestic counterparts and, in turn, privately-owned firms are expected to be more productive than state-owned ones. Many of the foreign firms in Viet Nam are from other developing countries and entered labour-intensive low-tech industries where they would find relatively inexpensive labour. The usual connotation of foreign firms being much more competitive thanks to more and better physical and human capital and superior technology may thus not hold. While they are likely to have a significant competitive advantage over domestic enterprises, the difference may not be overwhelming. What is of interest to policy makers is not only what types of ownership outperform one another but also if provinces and industrial sectors within provinces exhibit better performance.

Learning which enterprises are performing well, where performance is high and reasons for this is therefore critical. This is an empirical question, which this Section tries to answer by analyzing the relative productivity and efficiency performance of these three ownership groups of firms and their relative performance in industrial sectors and provinces. Based on a selected sub-sample of 1,001 firms (out of the total Survey sample of 1,493 enterprises), this is first done by way of descriptive analysis, where several measures of productivity and efficiency are matched with various firm characteristics thought to have explanatory power. In this way, a first vision of what is to be expected is obtained. Knowing that several of these firm characteristics may be correlated, several multivariate models explaining productivity and efficiency performance are estimated. The final part of the analysis considers productivity performance at the provincial level as determined by industrial zone location[1]. The real issue is of course not the zones themselves, but what the zones have to offer; for instance, high-quality infrastructure, access to land, security and many other factors that are likely to positively influence firm performance[2]. This Chapter continues with four sub-sections: (i) a descriptive analysis of the sub-sample; (ii) regression analysis testing and expanding on the findings of the descriptive analysis; (iii) a consideration of industrial policy; and (iv) the conclusions.

DESCRIPTIVE ANALYSIS OF FIRM PERFORMANCE

In order to be able to successfully conduct productivity and efficiency analysis, it was deemed necessary to exclude some observations from the original sample. This has been done in three steps. It was undertaken first by excluding firms that operate in the repair and installation of machinery equipment sector, the electricity, gas, steam and air conditioning supply sector, the water supply, sewage, waste management and remediation activity sector and the construction sector. The sample was therefore limited to include manufacturing firms only. Secondly, for technical reasons, firms with zero value added, zero capital stock, zero employees and zero output as well as firms with negative labour productivity measured in terms of value added, were excluded. These firms had to be excluded for the simple reason that their inclusion would hinder estimation of the models used in the productivity and efficiency analysis. Thirdly, the multivariate variable method for identifying and excluding outliers of Hadi (1992, 1994) was used to detect outliers in the labour productivity/capital intensity space[3]. The rationale for excluding outliers is that Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) methods do not produce meaningful results when conducted

1 The term Industrial Zone (IZ) is here meant as a general reference to encompass industrial zones, export processing zones and export zones.
2 Chapter 4.2 presents a more detailed descriptive analysis of Survey evidence related to FIE performance in industrial zones as compared to performance outside these zones.
3 The significance level for outlier exclusion was set at five per cent.

Table 3.26: *Sub-sample descriptive statistics*

Variables	N	Mean	Median	Max	Min	Standard deviation
Labour productivity (USD)	1001	6,617	4,139	33,743	24	6,474
TFP (USD)	1001	328	232	3,041	1	308
Capital stock (USD)	1001	6,597,383	2,304,152	387,000,000	4,102	18,036,693
Labour force (No, of employees)	1001	689	294	69,875	9	2,544
Capital intensity (USD)	1001	11,672	7,530	57,241	3	11,700
Skill level (White/(White & Blue ratio)	1001	0.19	0.16	1	0.01	0.13
Age (years)	1001	14	11	66	2	11

on heavily skewed data[4]. Therefore, observations identified as being outliers by the Hadi method were excluded. Steps one to three leave a dataset of 1,001 firms.

Table 3.26 reveals an overall skewed sample with large differences between maximum and minimum values, large standard deviations and a significant difference between the mean and the median measure of the sample average. The fact that the mean is higher than the median indicates a sample that is skewed to the left. When the level of the indicators is examined, they appear high compared to statistics available for the manufacturing sector as a whole. According to the latest available data from the World Bank on the manufacturing sector in Viet Nam, mean value added labour productivity reached USD 1,449 in 2006 (UNIDO's calculations on WDI 2011). The Viet Nam General Statistics Office (GSO) estimate of labour productivity is even higher: USD 3,006 for the year 2008 and USD 3,078 for the year 2009 (UNIDO's calculations on GSO 2010). However, regardless of the source, this is significantly lower than the average labour productivity calculation based on the sample used in this Section. Undoubtedly, the 2008/2009 and 2011 figures are hardly perfectly comparable, especially in a country that has experienced such rapid development in recent years as has Viet Nam. Yet the difference in labour productivity is significant. One possible explanation could be the high ratio of foreign firms to domestic enterprises in the sample as well as how the target provinces were selected. It is necessary to remind that provinces were essentially selected on the basis of their FDI concentration. In contrast, capital intensity appears to be slightly lower than expected compared to GSO estimates.

4 If one, or a few, firms are immensely better performers than the rest, the latter will all be given very low technical efficiency scores and with almost no variation among them. Hence, comparison of scores will not be very meaningful.

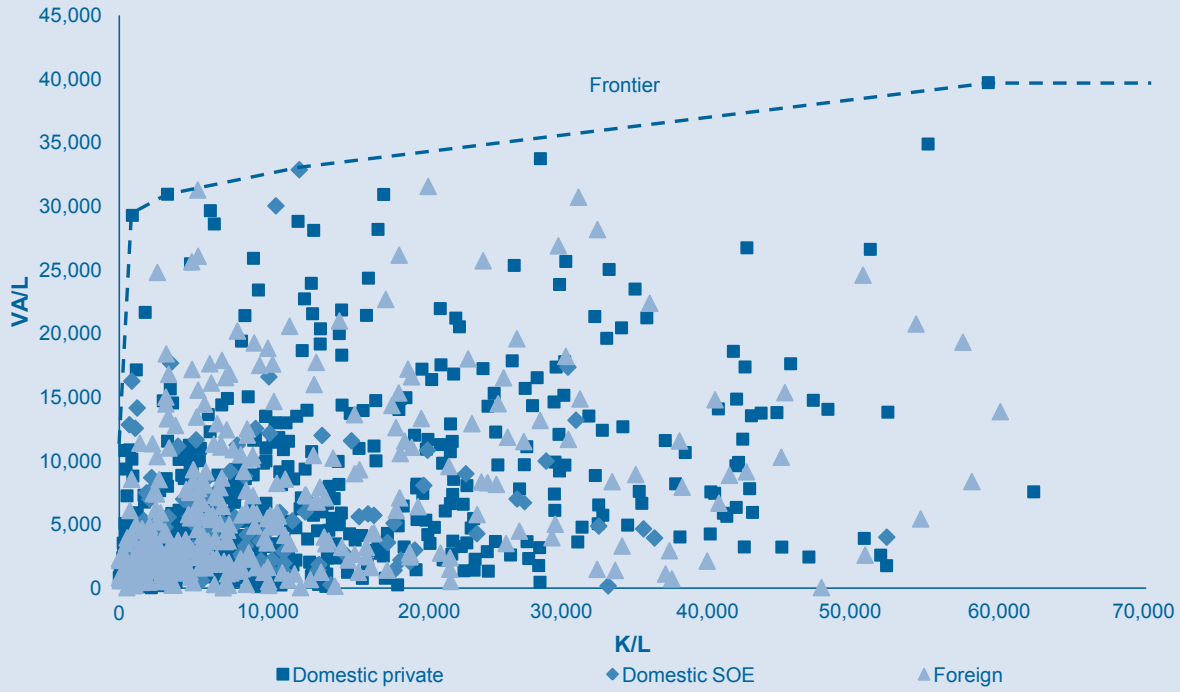
A description of the sub-sample used in the analysis of this Chapter is found in the Technical Appendix I at the end of this Chapter. Further technical comments related to the analysis contained in this Chapter are presented in Technical Appendix II.

ANALYTICAL RESULTS

The performance of each firm for the whole sample of firms is now calculated, and then results for different groups of firms are extracted and compared. For each comparison, the mean score relative to the leading firm and the mean score of a group of firms relative to the leading group of firms are presented—the latter in italics. Each table contains four results columns representing, in turn, labour productivity, total factor productivity (TFP), technical efficiency (TE) based on half-normal error distribution and SFA (TE SFA), and DEA (TE DEA). The Technical Annex to this Section provides a more in-depth discussion and formal description of the applied methodologies for productivity and efficiency measurement. For both productivity and technical efficiency scores, a low mean indicates that there are relatively few top performers and many firms far from the frontier. As an introduction, Figure 3.4 shows the observations in value added per worker-capital per worker space, with the manufacturing technology frontier in blue and the three ownership types indicated by different colours. An ocular analysis suggests that private sector firms generally out-perform state-owned enterprises and that there is no large difference between private domestic and foreign firms. Value added per worker appears to be increasing in capital intensity for the former group of firms, while, for the latter, an imaginary regression line would be more or less horizontal. Further analysis of the data will have to await the formal calculations below.

Table 3.27 presents the results for three groups of

Figure 3.4: *Value added per employee and capital per employee, by ownership*



firms: foreign-owned, domestic privately-owned and state-owned. For Viet Nam (category All), in terms of labour productivity there is a fair distance between top performers and the rest, and even more so for TFP. The different mean scores for labour productivity and TFP indicates that fewer firms are top performers in the sense of technology compared with factor accumulation. While the two parametric (SFA) technical efficiency scores suggest a more balanced sample, the non-parametric (DEA) measure shows more proximity to the results for labour productivity. The most striking result is that there is little or no discernible difference between the three ownership groups and the ranking is therefore not very meaningful to comment on. However, this does not necessarily mean that ownership does not matter at more disaggregated levels, such as provinces or manufacturing sectors. For example, when aggregating sectors that appear in line with the comparative advantage of the country with those that are not, important ownership differences might be washed out. Other examples are that foreign firms might locate in provinces thought to provide better services, or SOEs might focus their best activities in particular sectors.

Evidence for this notion is provided when we turn to provinces, still at the aggregate level, where there are fairly large differences in performance (Table 3.28). The most (labour) productive province is Vinh Phuc, which reaches a mean score of nearly 39 per cent; the other provinces attain between 16 and 21 per cent. This same province is also the best in terms of TFP. The technical efficiency scores may be at a different level but do not change the conclusions in any qualitative fashion. In terms of ranking, Da Nang and Bac Ninh occupy the two lowest positions, while Ho Chi Minh City is second best or third worst depending on the measurement method. Again, however, posi-

Table 3.27: *Mean productivity, efficiency scores relative to firm and group leader, by ownership*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Ownership	Firm	Group	Firm	Group	Firm	Group	Firm	Group
NSOEs	0.2	0.9	0.1	1.0	0.4	1.0	0.2	1.0
FIEs	0.2	1.0	0.1	1.0	0.4	1.0	0.2	1.0
SOEs	0.2	0.9	0.1	1.0	0.4	1.0	0.2	0.9
All	0.2	-	0.1	-	0.4	-	0.2	-

tions and scores below Vinh Phuc are most likely not statistically different from each other. These results stand in stark contrast to those presented by other studies and part of the discrepancy may be explained by the relatively few firms surveyed in the province. Technical Appendix I shows that there are only 13 firms from Vinh Phuc in the sample and only 16 from the province of Bac Ninh. A closer examination of the 13 firms from the Vinh Phuc province reveals that several of these are international high-performers, which helps explain the high ranking of the province. Another possible explanation is that, compared to the other provinces, a much larger share of firms in Vinh Phuc (62 per cent) are located in an industrial zone.

In terms of manufacturing sectors and labour productivity (Table 3.29), the highest scores are obtained for tobacco and coke and petroleum, which both attain close to 40 per cent, followed by pharmaceuticals, chemicals, motor vehicles and other transport equipment. The weakest scores are produced by sectors perceived to be "light" or low-tech, such as wearing apparel, leather, wood and furniture but also the computer, electronics, optical instruments sector and the electrical equipment sector. The latter two are typical assembly manufacturing sectors in Viet Nam with a relatively large workforce and low capital intensity. It is not entirely clear why tobacco scores so highly but it may be related to the fact that the result is based on a very small number of firms. Technical Appendix I shows that the sub-sample only includes three firms in the tobacco sector and one firm in the coke and petroleum sectors. Moreover, all tobacco firms in the sample are SOEs. For TFP, scores are much lower and more compressed but sectors such as tobacco and pharmaceuticals stand out as good performers. Technical efficiency scores reveal, to some extent, an alternative picture in that pharmaceuticals, tobacco and chemicals are top of the table. Finally, DEA singles out tobacco, but also emphasizes pharmaceuticals, chemicals and coke and petroleum.

In terms of distance from group leader, SFA scores tend not to show any particular difference, while the three others corroborate the results discussed above. To the weak performing sectors, one needs to add computer, electronics and optical precision. Interestingly, the food and beverage sectors rank fairly high, despite being low-tech. This is particularly the case when TFP is the measurement method, in which case printing, rubber and plastics and fabricated metal also perform well along with the aforementioned competitive sectors.

Some of the sector results are corroborated when performance is analyzed at levels of technology, or sophistication of activity (Table 3.30). Independent of measurement method, high-tech sectors perform better than medium-tech, which in turn have an edge over low-tech. The table shows that it is low-tech manufacturing that is lagging behind, particularly when based on labour productivity and DEA. High-tech manufacturing is consistently top-ranked. This suggests that firms in Viet Nam operating in relatively sophisticated sectors are also the most competitive firms. Indeed, this is a clear sign of remarkable progress and relatively rapid structural transformation since *Doi Moi*.

Table 3.31 shows that labour productivity and DEA TE performance are associated with more intensive use

Table 3.28: *Mean productivity and efficiency scores relative to firm and group leader, by province*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Province	Firm	Group	Firm	Group	Firm	Group	Firm	Group
Hanoi	0.2	0.5	0.1	0.6	0.4	0.8	0.2	0.5
Vinh Phuc	0.4	1.0	0.2	1.0	0.5	1.0	0.4	1.0
Bac Ninh	0.2	0.4	0.1	0.4	0.3	0.6	0.2	0.4
Hai Phong	0.2	0.6	0.1	0.5	0.4	0.8	0.2	0.6
Da Nang	0.1	0.3	0.1	0.3	0.3	0.6	0.1	0.3
Binh Duong	0.2	0.5	0.1	0.5	0.4	0.8	0.2	0.5
Dong Nai	0.2	0.5	0.1	0.5	0.4	0.8	0.2	0.5
Ba Ria Vung Tau	0.2	0.5	0.1	0.5	0.4	0.8	0.2	0.6
HCMC	0.2	0.5	0.1	0.6	0.5	0.8	0.2	0.5
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.29: *Mean productivity and efficiency scores relative to firm and group leader, by sector*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Sector	Firm	Group	Firm	Group	Firm	Group	Firm	Group
Manufacture of food products	0.2	0.6	0.1	0.7	0.5	0.9	0.3	0.6
Manufacture of beverages	0.3	0.7	0.1	0.6	0.5	0.9	0.3	0.6
Manufacture of tobacco products	0.4	1.0	0.2	1.0	0.6	1.0	0.5	1.0
Manufacture of textiles	0.2	0.4	0.1	0.5	0.4	0.7	0.2	0.4
Manufacture of wearing apparel	0.1	0.2	0.1	0.4	0.4	0.6	0.1	0.3
Manufacture of leather and related products	0.1	0.2	0.1	0.3	0.3	0.6	0.1	0.3
Manufacture of wood and products of wood and cork, except furniture	0.1	0.3	0.1	0.3	0.4	0.6	0.1	0.3
Manufacture of paper and paper products	0.2	0.5	0.1	0.6	0.4	0.8	0.2	0.5
Printing and reproduction of recorded media	0.2	0.6	0.1	0.6	0.4	0.7	0.2	0.4
Manufacture of coke and refined petroleum products	0.4	1.0	0.1	0.6	0.5	0.9	0.3	0.7
Manufacture of chemicals and chemical products	0.3	0.8	0.2	0.9	0.6	1.0	0.4	0.8
Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.3	0.8	0.2	0.9	0.6	1.0	0.4	0.8
Manufacture of rubber and plastics products	0.2	0.6	0.1	0.6	0.5	0.8	0.2	0.5
Manufacture of other non-metallic mineral products	0.2	0.5	0.1	0.5	0.4	0.7	0.2	0.4
Manufacture of basic metals	0.2	0.6	0.1	0.6	0.5	0.8	0.2	0.5
Manufacture of fabricated metal products, except machinery and equipment	0.2	0.6	0.1	0.6	0.5	0.8	0.3	0.5
Manufacture of computer, electronic and optical products	0.2	0.4	0.1	0.4	0.4	0.6	0.2	0.3
Manufacture of electrical equipment	0.2	0.5	0.1	0.6	0.5	0.8	0.2	0.4
Manufacture of machinery and equipment	0.2	0.5	0.1	0.5	0.4	0.8	0.2	0.4
Manufacture of motor vehicles; trailers and semi-trailers	0.3	0.8	0.1	0.7	0.5	0.9	0.3	0.7
Manufacture of other transport equipment	0.3	0.7	0.1	0.7	0.5	0.9	0.3	0.6
Manufacture of furniture	0.1	0.3	0.1	0.4	0.4	0.6	0.1	0.2
Other manufacturing	0.2	0.4	0.1	0.5	0.4	0.7	0.2	0.4
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.30: *Mean productivity and efficiency scores relative to firm and group leader, by technology level*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Technology level	Firm	Group	Firm	Group	Firm	Group	Firm	Group
High-tech manufacturing	0.2	1.0	0.1	1.0	0.5	1.0	0.3	1.0
Medium-tech manufacturing	0.2	0.9	0.1	0.9	0.4	0.9	0.2	0.9
Low-tech manufacturing	0.2	0.6	0.1	0.7	0.4	0.8	0.2	0.7
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.31: *Mean productivity and efficiency scores relative to firm and group leader, by capital intensity*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Capital intensity	Firm	Group	Firm	Group	Firm	Group	Firm	Group
Low	0.1	0.3	0.1	1.0	0.4	0.9	0.2	0.5
Low-Medium	0.2	0.6	0.1	1.0	0.4	0.9	0.2	0.6
Medium-High	0.2	0.7	0.1	1.0	0.4	0.9	0.2	0.8
High	0.3	1.0	0.1	1.0	0.5	1.0	0.3	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.32: *Mean productivity and efficiency scores relative to firm and group leader, by human capital*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Human capital	Firm	Group	Firm	Group	Firm	Group	Firm	Group
Low	0.2	0.5	0.1	0.6	0.4	0.8	0.2	0.5
Low-Medium	0.3	0.8	0.1	0.8	0.5	0.9	0.3	0.8
Medium-High	0.3	1.0	0.2	1.0	0.5	1.0	0.4	1.0
High	0.1	0.3	0.1	0.3	0.3	0.6	0.1	0.3
All	0.2	-	0.1	-	0.4	-	0.2	-

of capital, as measured by capital per worker[5]. This increase does not show up in terms of TFP or SFA TE, which might indicate a low correlation between disembodied technology and physical capital. The difference is most marked for labour productivity, with all methods agreeing that higher capital improves ranking.

A somewhat peculiar pattern emerges for human capital (Table 3.32) in that a greater volume of such capital is positively related to productivity and efficiency, but only up to medium-high; thereafter, it falls to the lowest level of the high category[6]. The most likely explanation is that there are very few firms with large amounts of human capital, that is, with a white collar over total workforce exceeding 75 per cent. Indeed, according to Technical Appendix I, there are only three firms, or 0.3 per cent of the sample, that have indicated such a high skill level. The conclusion is therefore that productivity and efficiency increase with human capital. Table 3.33 indicates that the youngest firms' performance is the weakest, while there is hardly any difference for the other age cohorts. Firm size (Table 3.34) also appears to be of little consequence for performance. In line with the age results, non-exporters have only slightly better performance than exporters, but the gap is unlikely to be statistically significant (Table 3.35). Joint ventures (Tables 3.36) perform considerably better than non-joint ventures in that the distance to the leader is between 11 and 25 percentage points, depending on the measurement method.

Focusing on foreign investors only, it comes as a small surprise that foreign entrepreneurs (FEs) exhibit better performance on all accounts except for labour productivity (Table 3.37). However, the difference is

5 Capital intensity is calculated by the value of fixed assets/L. The sample using quartiles i.e. the thresholds are: Low=First quartile, Low-medium=Second quartile, Medium-High= Third quartile and High=Fourth quartile. Around 25 percent of firms fall into each category, as the Annex table shows.

6 Human capital is white collar/(white+blue) collar workers, in our case Technical, managerial and administrative staff as share of total staff. The categories are defined as following: Low if HL<=0.25, Low-Medium if HL>0.25 and HL<=0.50, Medium-High if HL>0.50 and HL<=0.75, and High if HL>0.75 and HL<.

not extensive. Likewise, there is no significant difference between firms originating from an industrialized (North) or a developing country (South) (Table 3.38). The last table of this section shows that firms that are located in an industrial zone perform better than firms that are located outside of an industrial zone across the board (Table 3.39). The difference in relative performance is greatest in terms of labour productivity and when technical efficiency is calculated using the DEA method.

The analysis thus far offers some surprises, at least compared with possible perceptions that foreign-owned firms are always more competitive than their private domestic or state-owned counterparts. Likewise, one may have expected exporters, Northern firms and TNCs to have a significant productivity edge on non-exporters, southern firms and FEs, but this does not seem to be the case. However, it is possible that, by analyzing, for example, ownership within provinces and sectors, interesting patterns that

Table 3.33: *Mean productivity and efficiency scores relative to firm and group leader, by firm age*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Age	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**
0-5 yrs	0.2	0.8	0.1	0.8	0.4	0.8	0.2	0.8
6-10 yrs	0.2	1.0	0.1	0.9	0.4	1.0	0.2	1.0
11-20 yrs	0.2	1.0	0.1	0.9	0.4	1.0	0.2	1.0
21+ yrs	0.2	1.0	0.1	1.0	0.5	1.0	0.2	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.34: *Mean productivity and efficiency scores relative to firm and group leader, by firm size*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Size	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**
Small	0.2	0.9	0.1	0.9	0.4	0.9	0.2	1.0
Medium	0.2	1.0	0.1	1.0	0.4	1.0	0.2	1.0
Large	0.2	0.9	0.1	1.0	0.4	1.0	0.2	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.35: *Mean productivity and efficiency scores relative to firm and group leader, by exporting status*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Exporting status	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**
Non-exporter	0.21	1.00	0.12	1.00	0.45	1.00	0.22	1.00
Exporter	0.19	0.89	0.10	0.90	0.42	0.95	0.20	0.90
All	0.20	-	0.11	-	0.43	-	0.21	-

Table 3.36: *Mean productivity and efficiency scores relative to firm and group leader, by ownership type*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Ownership type	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**
Non-joint ventures	0.2	0.7	0.1	0.8	0.4	0.9	0.2	0.8
Joint ventures	0.3	1.0	0.1	1.0	0.5	1.0	0.3	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.37: *Mean productivity and efficiency scores relative to firm and group leader, by firm type*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Firm type	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**	**Firm**	**Group**
TNCs	0.2	1.0	0.1	0.9	0.4	1.0	0.2	0.9
FEs	0.2	1.0	0.1	1.0	0.4	1.0	0.2	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.38: *Mean productivity and efficiency scores relative to firm and group leader, by investor origin*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Origin	Firm	Group	Firm	Group	Firm	Group	Firm	Group
South	0.2	0.9	0.1	0.9	0.4	1.0	0.2	0.9
North	0.2	1.0	0.1	1.0	0.4	1.0	0.2	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.39: *Mean productivity and efficiency scores relative to firm and group leader, by location*

	Labour productivity		TFP		TE_SFA		TE_DEA	
Located in Industrial Zone	Firm	Group	Firm	Group	Firm	Group	Firm	Group
No	0.2	0.8	0.1	0.9	0.4	1.0	0.2	0.9
Yes	0.2	1.0	0.1	1.0	0.4	1.0	0.2	1.0
All	0.2	-	0.1	-	0.4	-	0.2	-

Table 3.40: *Mean provincial productivity and efficiency performance, by ownership*

Province	Ownership	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
Hanoi	NSOE	0.2	0.1	0.4	0.2
Vinh Phuc	NSOE	0.2	0.1	0.4	0.2
Bac Ninh	NSOE	0.1	0.1	0.3	0.1
Hai Phong	NSOE	0.2	0.1	0.4	0.3
Da Nang	NSOE	0.2	0.1	0.4	0.2
Binh Duong	NSOE	0.2	0.1	0.4	0.2
Dong Nai	NSOE	0.1	0.1	0.3	0.1
Ba Ria Vung Tau	NSOE	0.2	0.1	0.4	0.2
HCMC	NSOE	0.2	0.1	0.4	0.2
Hanoi	FIE	0.2	0.1	0.4	0.2
Vinh Phuc	FIE	0.5	0.3	0.7	0.6
Bac Ninh	FIE	0.2	0.1	0.4	0.2
Hai Phong	FIE	0.2	0.1	0.4	0.2
Da Nang	FIE	0.1	0.1	0.3	0.1
Binh Duong	FIE	0.2	0.1	0.4	0.2
Dong Nai	FIE	0.2	0.1	0.4	0.2
Ba Ria Vung Tau	FIE	0.2	0.1	0.4	0.3
HCMC	FIE	0.2	0.1	0.5	0.2
Hanoi	SOE	0.2	0.1	0.5	0.2
Vinh Phuc	SOE	0.1	0.1	0.3	0.1
Bac Ninh	SOE	---	---	---	---
Hai Phong	SOE	0.2	0.1	0.4	0.2
Da Nang	SOE	0.1	0.0	0.2	0.1
Binh Duong	SOE	0.3	0.2	0.6	0.3
Dong Nai	SOE	0.1	0.1	0.4	0.2
Ba Ria Vung Tau	SOE	0.1	0.0	0.3	0.1
HCMC	SOE	0.2	0.1	0.5	0.2

Table 3.41a: *Mean sector productivity and efficiency performance for domestic private firms*

Sector	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
Manufacture of food products	0.2	0.1	0.4	0.2
Manufacture of beverages	0.3	0.1	0.5	0.3
Manufacture of tobacco products	---	---	---	---
Manufacture of textiles	0.2	0.1	0.5	0.2
Manufacture of wearing apparel	0.1	0.1	0.3	0.1
Manufacture of leather and related products	0.1	0.0	0.3	0.1
Manufacture of wood and products of wood and cork, except furniture	0.1	0.1	0.3	0.1
Manufacture of paper and paper products	0.2	0.1	0.4	0.2
Printing and reproduction of recorded media	0.2	0.1	0.4	0.2
Manufacture of coke and refined petroleum products	0.4	0.1	0.5	0.3
Manufacture of chemicals and chemical products	0.2	0.1	0.5	0.3
Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.2	0.2	0.6	0.3
Manufacture of rubber and plastics products	0.2	0.1	0.4	0.2
Manufacture of other non-metallic mineral products	0.2	0.1	0.4	0.2
Manufacture of basic metals	0.3	0.1	0.5	0.3
Manufacture of fabricated metal products, except machinery and equipment	0.3	0.2	0.5	0.3
Manufacture of computer, electronic and optical products	0.2	0.1	0.4	0.2
Manufacture of electrical equipment	0.2	0.1	0.5	0.2
Manufacture of machinery and equipment	0.2	0.1	0.4	0.2
Manufacture of motor vehicles; trailers and semi-trailers	0.4	0.2	0.5	0.4
Manufacture of other transport equipment	0.3	0.1	0.5	0.3
Manufacture of furniture	0.1	0.1	0.3	0.1
Other manufacturing	0.2	0.2	0.6	0.3

highlight important performance differences would be revealed. The ensuing regression analysis throws some light on some of these issues, since several of the explanatory variables so far analyzed in isolation may be correlated in a multiple regression setting.

OWNERSHIP AND PERFORMANCE IN PROVINCES AND SECTORS

A different and more nuanced picture emerges when ownership by province is analyzed. Table 3.40 shows that the good performance of Vinh Phuc is due to foreign firms and that SOEs are pulling down performance, while performance of domestic private firms falls between the other two. Foreign firms perform notably weakly in Da Nang and strongly in Vin Phuc, while in the other provinces they attain a level at par with mean performance. SOEs' best accomplishments occur in Binh Duong, Hanoi and Ho Chi Minh City, while in other provinces their performance is fairly weak. Except for Bac Ninh, where their performance in terms of labour productivity is weakest, domestic privately-owned firms' average performance is well described by the overall sample mean result of 0.196.

Tables 3.41a, 3.41b, 3.41c present sectoral productivity and efficiency performance for, in turn, domestic private firms, foreign firms and SOEs. The earlier "aggregated" strong result for coke and petroleum appears to be attributable to domestic private firms, which is also the case for motor vehicles (Table 3.41a). These firms, on the other hand, perform very poorly in low-tech manufacturing such as wearing apparel, leather, wood and furniture. Interestingly, foreign firms, too, appear uncompetitive in these sectors (Table 3.43b). On the other hand, foreign investors show excellent performance in chemicals and pharmaceuticals, in particular, but also in several other sectors, for example, motor vehicles and other transport

Table 3.41b: *Mean sector productivity and efficiency performance for foreign firms*

Sector	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
Manufacture of food products	0.3	0.2	0.5	0.3
Manufacture of beverages	0.2	0.1	0.5	0.2
Manufacture of tobacco products	---	---	---	---
Manufacture of textiles	0.2	0.1	0.4	0.2
Manufacture of wearing apparel	0.1	0.1	0.4	0.1
Manufacture of leather and related products	0.1	0.1	0.4	0.1
Manufacture of wood and products of wood and cork, except furniture	0.1	0.1	0.4	0.2
Manufacture of paper and paper products	0.2	0.1	0.5	0.3
Printing and reproduction of recorded media	0.3	0.2	0.5	0.3
Manufacture of coke and refined petroleum products	---	---	---	---
Manufacture of chemicals and chemical products	0.5	0.2	0.6	0.5
Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.5	0.2	0.6	0.5
Manufacture of rubber and plastics products	0.2	0.1	0.5	0.2
Manufacture of other non-metallic mineral products	0.2	0.1	0.4	0.2
Manufacture of basic metals	0.2	0.1	0.4	0.2
Manufacture of fabricated metal products, except machinery and equipment	0.2	0.1	0.4	0.2
Manufacture of computer, electronic and optical products	0.2	0.1	0.4	0.1
Manufacture of electrical equipment	0.2	0.1	0.4	0.2
Manufacture of machinery and equipment	0.2	0.1	0.4	0.2
Manufacture of motor vehicles; trailers and semi-trailers	0.3	0.1	0.5	0.3
Manufacture of other transport equipment	0.3	0.1	0.5	0.3
Manufacture of furniture	0.1	0.1	0.4	0.1
Other manufacturing	0.2	0.1	0.4	0.2

equipment. Finally, tobacco production is carried out by SOEs only but with a good performance (Table 3.43c). Although SOEs are very weak in computers, electronics and optical instruments, as well as in leather and wood, they do not appear notoriously worse than their private counterparts.

Overall, productivity and efficiency are positively associated with the level of technology or complexity of production[7]. High- and medium-tech firms in Vinh Phuc are the top performers, but nearly all the remaining provinces cluster behind that province. On the contrary, Da Nang ranks at the lower end independently of the technology level. Although not shown here, Vinh Phuc's performance is driven mainly by large firms. Ba Ria Vung Tau stands out among medium-sized firms with an extraordinarily good average accomplishment. Also in this respect, Da Nang scores poorly for all size groups, with Bac Ninh at similar low levels for medium- and large-sized firms. Performance is, to some extent, related to capital intensity in Ban Ninh and the scores are dismal at low levels of capital intensity. However, at low to medium capital intensity levels, scores are already improving considerably, with Ba Ria Vung Tau in the lead and Da Nang at a very low level. The good performers driving Vinh Phuc are also richly endowed with physical capital, and performance levels are highest at the highest capital intensity level. Interestingly, the youngest and oldest firms in Vinh Phuc are among those with the lowest productivity and efficiency scores, while those aged 6-20 years attain some of the highest scores. An example of opposite 'behaviour' is the firms in Bac Ninh, where performance is the highest in the youngest age group and one of the weakest for older firms.

The results for human capital and provinces (results not shown here) are not necessarily reminiscent of those

7 Given the large amount of results and tables together with space limitation, only the most important ones are shown and referred to in the text. Some of the results not shown are also be discussed.

Table 3.41c: *Mean sector productivity and efficiency performance for SOEs*

Sector	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA _TE
Manufacture of food products	0.2	0.1	0.6	0.2
Manufacture of beverages	0.2	0.1	0.6	0.2
Manufacture of tobacco products	0.4	0.2	0.6	0.5
Manufacture of textiles	0.1	0.1	0.4	0.1
Manufacture of wearing apparel	0.1	0.1	0.4	0.1
Manufacture of leather and related products	0.1	0.0	0.3	0.1
Manufacture of wood and products of wood and cork, except furniture	0.1	0.1	0.4	0.1
Manufacture of paper and paper products	0.2	0.1	0.5	0.2
Printing and reproduction of recorded media	0.2	0.1	0.4	0.2
Manufacture of coke and refined petroleum products	---	---	---	---
Manufacture of chemicals and chemical products	0.2	0.1	0.5	0.2
Manufacture of pharmaceuticals, medicinal chemical and botanical products	0.2	0.2	0.5	0.3
Manufacture of rubber and plastics products	0.1	0.1	0.4	0.2
Manufacture of other non-metallic mineral products	0.1	0.1	0.4	0.1
Manufacture of basic metals	0.1	0.1	0.4	0.2
Manufacture of fabricated metal products, except machinery and equipment	0.3	0.2	0.5	0.3
Manufacture of computer, electronic and optical products	0.0	0.0	0.3	0.1
Manufacture of electrical equipment	0.2	0.1	0.5	0.2
Manufacture of machinery and equipment	0.2	0.1	0.4	0.2
Manufacture of motor vehicles; trailers and semi-trailers	0.2	0.1	0.5	0.2
Manufacture of other transport equipment	0.2	0.1	0.5	0.2
Manufacture of furniture	0.1	0.1	0.4	0.1
Other manufacturing	0.1	0.1	0.4	0.2

for capital intensity because at low levels of human capital Vinh Phuc is performing reasonably well as is Hai Phong. Moving to the next level of human capital—low-medium—firms in Vinh Phuc reach a score of 0.80, which is far higher than in any other province. Yet the average performance clearly improves at higher levels of human capital. Performance continues to increase at medium-high levels, but neither Vinh Phuc, Bac Ninh nor Ba Ria Vung Tau have any firms in that category. This means that the former province hosts firms that manage to score high without any particular levels of human capital. At the medium-high level of human capital, Binh Duong at 0.60 and Hai Phong at 0.46 are the top performers. The final category—high—shows clearly that very few of the firms surveyed undertake human-capital intensive production.

Table 3.42 - firm origin - shows that the most productive firms in Vinh Phuc, among foreign investors, are from other developing countries. Interestingly, the second best group of firms is from industrialized countries located in the same province. Apart from Da Nang, on average FIEs from the North display stronger performance than do those FIEs from the South[8]. Although not shown, in terms of sectors, foreign investors from other developing countries appear to be thriving in beverages, food and other transport equipment, for which the average score exceeds 0.30. Such investors do much worse in wearing apparel, leather and furniture, all classical low-tech production. High-quality firms from industrialized countries congregate in chemicals, pharmaceuticals, printing, motor vehicles, other transport equipment, rubber and plastics and food. Generally, across sectors, northern firms perform considerably better than do their southern counterparts.

8 The definition of terminology for North and South investors is included in Section 2.2. North investors refer to investors from industrialised countries. South investors refers to investors from developing countries.

Table 3.42: *Mean provincial productivity and efficiency performance, by firm origin*

Province	Origin	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA _TE
Hanoi	South	0.2	0.1	0.4	0.2
Vinh Phuc	South	0.6	0.4	0.8	0.7
Bac Ninh	South	0.1	0.0	0.3	0.1
Hai Phong	South	0.1	0.1	0.5	0.2
Da Nang	South	0.1	0.1	0.3	0.1
Binh Duong	South	0.2	0.1	0.4	0.2
Dong Nai	South	0.2	0.1	0.5	0.2
Ba Ria Vung Tau	South	0.2	0.1	0.5	0.3
HCMC	South	0.2	0.1	0.4	0.2
Hanoi	North	0.2	0.1	0.4	0.2
Vinh Phuc	North	0.4	0.2	0.6	0.4
Bac Ninh	North	0.3	0.1	0.5	0.3
Hai Phong	North	0.2	0.1	0.4	0.2
Da Nang	North	0.1	0.0	0.3	0.1
Binh Duong	North	0.2	0.1	0.4	0.2
Dong Nai	North	0.2	0.1	0.4	0.3
Ba Ria Vung Tau	North	0.2	0.1	0.4	0.2
HCMC	North	0.2	0.1	0.4	0.2

TYPE OF FIRM AND PERFORMANCE IN PROVINCES AND SECTORS

Overall, joint ventures score significantly higher than do their foreign wholly-owned and domestic equivalents (refer to Table 3.43). It has been shown that firms in Da Nang are among the weakest performers. However, it turns out that this is only the case for WOEs and domestic firms because joint ventures are among the best performers. For Vinh Phuc, it makes no great difference whether the firms are joint ventures, since firms in that province are the best performers independently of ownership type. Across sectors, firms that have not joined forces with domestic firms show a worse performance than do joint ventures. However, amongst the exceptions are the SOEs in tobacco and firms in coke and petroleum, chemicals, pharmaceuticals and motor vehicles, which all score greater than 0.30. Joint ventures, on the other hand, attain scores ranging from 0.40 to 0.60 in sectors such as chemicals, pharmaceuticals and machinery and equipment, and more than 0.30 in several other sectors as well. Poor performers operate in low-tech sectors independently of organizational form. The distinction between TNC and FE makes no difference for Vinh Phuc, which exhibits excellent performance for both firm types. FEs have a good performance in Ba Ria Vung Tua and Hai Phong as well, while TNCs achievements are more evenly spread. Although not shown in table form, it is worth noting the best achievers amongst exporters are located in Vinh Phuc, while for the non-exporters Hai Phong is the top location.

Turning to sectors, subsidiaries to TNCs are prospering in food, beverages, printing, chemicals, pharmaceuticals and motor vehicles, with scores ranging from 0.30 to 0.49. Yet they do not reach the heights of FEs in highly innovative sectors such as chemicals and pharmaceuticals, where growing big is not necessarily an advantage. These firms also perform well in motor vehicles and other transport equipment. As before, both groups of firms are uncompetitive in low-tech production. Table 3.45 introduces productivity and efficiency by ownership across levels of technologies. While both privately-owned domestic and foreign firms perform at higher levels the more sophisticated their production, SOEs' scores seem immune to such differences. The highest levels attained are by foreign firms in high-tech production, while all ownership types do equally weakly in low-tech activities. Joint ventures in high-tech production out-perform their foreign wholly-owned and domestic equivalents by a large margin, and those in medium-tech are also better (Table 3.44). This could be an indication that joining forces with domestic firms with already established supply-chains and knowledge of local market

conditions is a key to competitiveness. There is also an indication that northern firms accomplish higher efficiency levels than southern ones in both medium- and high-tech production. The same seems to hold true for TNC vis-à-vis FEs.

While it is clear that labour productivity and the three efficiency scores increase with capital intensity for privately-owned domestic and foreign firms, SOEs defy this pattern (Table 3.45). In fact, SOE performance appears to be more or less independent of the level of capital per worker. In terms of TFP, SOEs score the highest when capital intensity is the lowest. Although this is not the case in the private sector, TFP appears largely unaffected by investment in physical capital. This is not unexpected, since such investment increases embodied technology but may do little to increase disembodied technology.

Across all categories of firm size, labour productivity and DEA TE performance are increasing in capital intensity. Exceptions are TFP and SFA TE, for which no apparent trend is registered. For both south and north firms, performance increases with capital intensity, again with the sole exception of TFP. Interestingly, TNC and FE firm performances are almost indistinguishable across capital intensities. WOEs and domestic firms that invest in physical capital also manage to increase their performance. This is not the case for joint ventures above the lowest category of capital intensity (Table 3.46). Focusing on foreign investors only, it is found that both TNCs and FEs sharply increase their performance when they invest in physical capital. Amongst non-exporters, only high capacity intensity differs in any marked fashion from the other categories, while there is a more or less positive linear relationship between capital intensity and exporter performance.

EXPLAINING RELATIVE FIRM PERFORMANCE

The previous section has shown that firm performance is linked to endowments in production factors, whether firms are foreign- or domestically-owned as well as privately- or state-owned. In addition, organizational type appears to matter. Some of this pans out at aggregate levels, while other characteristics surface only at provincial or sector levels. Because these findings are based on descriptive analysis, they may not hold up when controlling for factors that may explain similar variation; for instance, capital intensity and human capital may explain the same phenomenon. It is also important to understand that small differences in efficiency scores may or may not

Table 3.43: *Mean technology productivity and efficiency performance, by ownership*

Technology	Ownership	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
High-tech	NSOE	0.2	0.1	0.5	0.2
Medium-tech	NSOE	0.2	0.1	0.4	0.2
Low-tech	NSOE	0.1	0.1	0.4	0.2
High-tech	FIE	0.3	0.1	0.5	0.3
Medium-tech	FIE	0.2	0.1	0.4	0.2
Low-tech	FIE	0.2	0.1	0.4	0.2
High-tech	SOE	0.2	0.1	0.5	0.2
Medium-tech	SOE	0.2	0.1	0.4	0.2
Low-tech	SOE	0.2	0.1	0.4	0.2

Table 3.44: *Mean technology productivity and efficiency performance, by ownership type*

Technology	Joint Venture	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
High-tech	No	0.2	0.1	0.5	0.3
Medium-tech	No	0.2	0.1	0.4	0.2
Low-tech	No	0.1	0.1	0.4	0.2
High-tech	Yes	0.4	0.2	0.6	0.4
Medium-tech	Yes	0.3	0.1	0.5	0.3
Low-tech	Yes	0.2	0.1	0.5	0.2

Table 3.45: *Mean ownership productivity and efficiency performance, by capital intensity*

Firm size	Capital intensity	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA_TE
NSOE	Low	0.1	0.1	0.4	0.1
NSOE	Low-medium	0.2	0.1	0.4	0.2
NSOE	Medium-high	0.2	0.1	0.4	0.2
NSOE	High	0.3	0.1	0.5	0.3
FIE	Low	0.1	0.1	0.4	0.2
FIE	Low-medium	0.2	0.1	0.4	0.2
FIE	Medium-high	0.2	0.1	0.4	0.2
FIE	High	0.3	0.1	0.5	0.3
SOE	Low	0.2	0.2	0.6	0.2
SOE	Low-medium	0.1	0.1	0.4	0.2
SOE	Medium-high	0.2	0.1	0.4	0.2
SOE	High	0.2	0.1	0.4	0.2

Table 3.46: *Mean joint venture productivity and efficiency performance, by capital intensity*

Joint Venture	Capital intensity	Labour productivity	Total Factor Productivity	SFA TE_HN	DEA _TE
No	Low	0.1	0.1	0.4	0.2
No	Low-medium	0.2	0.1	0.4	0.2
No	Medium-high	0.2	0.1	0.4	0.2
No	High	0.3	0.1	0.4	0.3
Yes	Low	0.1	0.1	0.4	0.1
Yes	Low-medium	0.3	0.2	0.5	0.3
Yes	Medium-high	0.3	0.1	0.6	0.3
Yes	High	0.3	0.1	0.5	0.3

indicate real performance differences. Regression analysis is intended to address these issues. Because the regression analysis aims to explain the relative performance of firms in terms of labour productivity, TFP and technical efficiency, which are measured as proportions variables and thus range from 0 to 1, they need to be transformed before the OLS estimator can be applied. To this end, a logistic transformation is employed, using technical efficiency as an example:

$$TE = \ln\left(\frac{TE}{(1-TE)}\right).$$

The drawback with this transformation is that frontier firms, i.e., with scores of unity, will be dropped because log zero is impossible. To overcome this, unity scores have been converted to 0.99999, which ensures frontier firms are retained and remain best performers. A typical regression explaining firm performance at country level generally takes the following log-linear form:

$$lnPERF_{ijkq} = \beta' lnX_{ijkq} + ln\varepsilon_{ijkq},$$

where PERF is the technical efficiency score for firm i of type j in province k in sector q, X is a vector of explanatory factors as listed below and ε is an iid error term.

The base model includes as explanatory variables capital intensity, human capital, firm size, firm age, exporter status; FIEs and PEs with SOEs as the reference point; and provincial and meta-sector (high and medium with low-tech as the reference point) dummy variables. Thereafter, the base model is extended to analyze whether firms that are richly endowed with human capital stand out in any fashion as well as to control for non-linearity[9]. This is done by way of including interaction terms between foreign and private domestic ownership and human capital. Another way to control for non-linearity is to include squared terms for capital intensity, human capital and firm age[10]. In

9 Initially, exporter status and human capital were included as well, but since the estimated parameter was not statistically significant the interaction term was dropped.

10 Firm size squared was also tested, but its coefficient was statistically insignificant and the squared term was excluded in the final estimation.

the final model at the aggregate level, both interaction and squared terms are included. The role of joint ventures is analyzed by simply including a dummy variable in these models. Finally, the sequence of regression analysis is repeated, but this time for foreign firms only, where the impact of firm origin and investor type is investigated.

Table 3.47 presents the regression results for, in turn, labour productivity, TFP, SFA technical efficiency and DEA technical efficiency. All parameters except the one for the unlogged human capital can be interpreted as elasticities. With a mean of 0.19[11], a percentage point increase of human capital amounts to a five per cent increase, implying that the estimated parameter needs to be divided by five for it to be interpreted similarly to the other parameters. Firms that invested more in physical and human capital were able to boost labour productivity, with human capital at 0.53 in a slight lead. Stated more accurately, abundance of production factors helps explain why some firms score higher than others. Privately-owned firms perform better than SOEs; in particular, foreign-owned firms attain the highest level. With a coefficient of 0.57, the performance gap between foreign firms and SOEs is considerable. Furthermore, the gap down to PEs is substantial and it is clear that involvement in high-tech activities makes a positive difference as well. Finally, exporter status, firm size or firm age do not have explanatory power for ranking. In terms of TFP ranking, human capital again stands out as the explanatory variable, with an elasticity of 0.35. Capital intensity, on the other hand, does not, statistically speaking, explain differences in TFP performance. The sign of the parameter is not surprising, as has been stated earlier, since physical capital is not necessarily related to disembodied technology and having more of such capital may even exert negative pressure on such technology. As expected, foreign-owned firms out-perform their domestic private and SOE counterparts, although the difference is smaller for TFP (0.35) than for labour productivity. Equally expected is the finding that both high- and medium-tech activities help to explain the TFP ranking. Finally, larger firms end up higher on the list, possibly explained by a combination of more resources for technological

11 As presented in Technical Appendix I.

Table 3.47: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.380***	-0.079	-0.043	-0.036
	(9.88)	(-1.469)	(-1.414)	(-0.208)
Human capital	2.628***	1.765***	1.597***	3.155***
	(4.07)	(4.87)	(4.92)	(3.29)
Firm size	0.055	0.101**	0.074*	0.075
	(1.01)	(2.04)	(1.93)	(0.69)
Firm age	0.178	0.052	0.075	0.009
	(1.39)	(0.70)	(1.09)	(0.07)
Exporter	-0.107	-0.17	-0.159	-0.318
	(-0.820)	(-1.636)	(-1.604)	(-1.264)
FIE	0.566**	0.350**	0.220*	0.27
	(2.39)	(2.14)	(1.66)	(0.60)
PE	0.204	0.057	-0.005	-0.237
	(1.16)	(0.40)	(-0.035)	(-0.602)
High-tech	0.409***	0.356***	0.299***	0.339*
	(3.39)	(3.51)	(3.27)	(1.84)
Medium-tech	0.281**	0.417**	0.244***	0.510*
	(2.31)	(2.14)	(2.66)	(1.81)
Constant	-6.892***	-3.106***	-1.022**	-2.447
	(-10.16)	(-6.399)	(-2.365)	(-1.384)
Observations	873	873	873	873
R^2	0.214	0.065	0.081	0.053
F-test	13.91	4.127	4.325	5.314

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

advancement and scale economics[12]. However, the elasticity at 0.10 is fairly small compared with those of the other explanatory variables.

While SFA largely agrees with the TFP results—coefficients are smaller but statistically significant with the same sign—DEA disagrees in that neither firm size nor foreign ownership contribute to explaining performance ranking. This disagreement is somewhat peculiar and, since the main difference between SFA and DEA is that the former is able to better handle the noise in the data, this may be the explanation. On the other hand, human capital, with an elasticity of 0.63, has, as in the other models, a very large impact.

Table 3.48 contains the effect of adding interaction terms between foreign ownership and human capital on the notion that firms that are able to attract skilled and talented workers while also having an ownership advantage may obtain a further boost. To capture the fact that some PEs, i.e. those with human capital, have an advantage over SOEs, an additional interaction term between PEs and human capital is included. The results show that it is those foreign firms with plentiful human capital that rank high in terms of labour productivity and technical efficiency. Foreign ownership is no longer statistically significant in any of the models, while human capital only enters the DEA model. The former suggests that being a foreign firm is not enough to generate above average performance; firms also need to have a skilled workforce. Thus, ignoring the insignificant individual foreign ownership effect, in the labour productivity model the calculated elasticity of foreign ownership amounts to 0.64, which is larger than that obtained in the base model for all firms. The effect of human capital, on the other hand, is about 0.36 and thus smaller than in

12 It should be noted that scale economy is unrelated to disembodied technology and therefore is best deduced from TFP in the course of its measuring—this was not done here.

Table 3.48: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.372***	-0.083	-0.046	-0.043
	(9.82)	(-1.535)	(-1.515)	(-0.245)
Human capital	0.802	0.816	0.779	1.567*
	(0.81)	(0.91)	(1.18)	(1.77)
FIE-Human cap	3.355**	1.654	1.356*	2.755**
	(2.12)	(1.64)	(1.76)	(2.09)
PE-Human cap	-0.036	0.129	0.225	0.238
	(-0.031)	(0.12)	(0.26)	(0.21)
Firm size	0.057	0.102**	0.075*	0.077
	(1.07)	(2.05)	(1.92)	(0.71)
Firm age	0.152	0.039	0.065	-0.012
	(1.27)	(0.53)	(0.93)	(-0.086)
Exporter	-0.155	-0.191*	-0.175*	-0.354
	(-1.271)	(-1.864)	(-1.780)	(-1.404)
FIE	-0.108	0.012	-0.061	-0.292
	(-0.388)	(0.05)	(-0.284)	(-0.681)
PE	0.14	-0.006	-0.083	-0.348
	(0.46)	(-0.024)	(-0.349)	(-0.789)
High-tech	0.434***	0.367***	0.308***	0.359**
	(3.53)	(3.64)	(3.39)	(1.98)
Medium-tech	0.321***	0.436**	0.259***	0.541*
	(2.64)	(2.22)	(2.81)	(1.93)
Constant	-6.331***	-2.815***	-0.771	-1.96
	(-10.03)	(-5.220)	(-1.632)	(-1.076)
Observations	873	873	873	873
R^2	0.228	0.069	0.085	0.057
F-test	12.77	4.068	4.166	4.849

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

the base model[13]. Interestingly, domestically-owned firms are still not statistically better than SOEs even when human capital is taken into account.

The greatest effect of human capital occurs in the DEA model, where an elasticity of 0.31 is obtained[14]. Exporter status now enters significantly in the TFP and SFA models, but with a negative sign, suggesting that such status rather explains why some firms rank low: exporters are nearly 20 per cent lower in rank in terms of TFP and technical efficiency than are non-exporters.

In Table 3.49, the interaction between ownership and capital intensity is analyzed. The coefficients for both domestic private enterprises (PEs) and FIEs with capital intensity are positive and statistically significant, implying that such firms perform considerably better than do SOEs, even those SOEs relatively well endowed with capital per worker. Since coefficients for foreign and domestic private ownership are negative and significant, the implication is that SOEs are more productive than foreign and domestic private firms with little capital per worker.

Next of interest is whether there are significant non-linear effects to be captured (Table 3.50). In this respect there are three effects to report. While productivity and efficiency fall with higher levels of capital intensity, they do so at a decreasing rate. While the elasticities obtained in the labour productivity, TFP and SFA technical efficiency models are fairly familiar from earlier results (0.50, -0.02 and 0.02), in the DEA model, at 0.61, a large positive explanation is obtained for capital intensity. In terms of human capital and firm age, except in the labour productivity model where squared human capital does not enter significantly, performance increases with these but at

13 Elasticities were calculated using the mean skill-level of 0.19 and the mean foreign-ownership share of 0.54 shown in respective Tables in Annex II to this Section.

14 Ibid.

Table 3.49: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.002	-0.382***	-0.338***	-0.006
	(0.02)	(-4.099)	(-4.072)	(-0.033)
FIE-capital intensity	0.395***	0.286**	0.288***	-0.124
	(3.68)	(2.57)	(3.20)	(-0.439)
PE-capital intensity	0.417***	0.395***	0.365***	0.156
	(3.72)	(3.72)	(3.72)	(0.85)
Human capital	2.565***	1.695***	1.535***	3.101***
	(3.97)	(4.73)	(4.77)	(3.25)
Firm size	0.0537	0.0990**	0.0726*	0.0713
	(1.00)	(2.02)	(1.89)	(0.66)
Firm age	0.177	0.0558	0.0778	0.0246
	(1.41)	(0.77)	(1.14)	(0.20)
Exporter	-0.113	-0.157	-0.152	-0.266
	(-0.886)	(-1.507)	(-1.541)	(-1.102)
FIE	-2.908***	-2.167**	-2.313***	1.358
	(-3.200)	(-2.106)	(-2.904)	(0.57)
PE	-3.462***	-3.401***	-3.204***	-1.554
	(-3.546)	(-3.623)	(-3.716)	(-1.119)
High-tech	0.423***	0.374***	0.314***	0.364*
	(3.53)	(3.65)	(3.45)	(1.88)
Medium-tech	0.285**	0.420**	0.248***	0.510*
	(2.35)	(2.16)	(2.72)	(1.82)
Constant	-3.551***	-0.441	1.575**	-2.744*
	(-3.866)	(-0.508)	(2.06)	(-1.960)
Observations	873	873	873	873
R^2	0.219	0.072	0.09	0.058
F-test	12.3	4.42	4.92	4.917

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

a decreasing rate. The three elasticities for, in turn, the TFP, SFA and DEA models are 0.54, 0.46 and 0.82, which are higher than previously registered. In two of the models—TFP and SFA—firm age enters significantly, with elasticities equal to 0.03 and 0.05, respectively. Thus, although statistically significant, the economic significance of firm age is not particularly great. Inclusion of squared terms considerably improves the R-square statistic, particularly for the model with technical efficiency based on DEA.

Including both square and interaction terms (Table 3.51) generally does not alter the results, except that the elasticity of human capital falls to 0.32, which is smaller than in the base model, and that the capital intensity elasticities are somewhat smaller. Firm age continues to have a small explanatory power for TFP and SFA technical efficiency rankings. However, it is worth noting that now the coefficient for the interaction term between foreign ownership and human capital is statistically significant for all models and that the dummy variable for medium-tech manufacturing does not enter the DEA-based model.

The next model at this level of aggregation adds joint venture to the base model (Table 3.52). For labour productivity and TFP, the previous results remain intact, however, with joint venture entering the TFP model. Joint venture also enters the SFA model, but does so by replacing foreign ownership, suggesting that those foreign firms that are significantly better performers than SOEs are those that have joined forces with local firms. Joint venture was also interacted with human capital level and capital intensity but yielded no significant coefficients. This means that the positive relationship between performance

Table 3.50: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	-0.491**	-0.598***	-0.631***	-4.519***
	(-1.964)	(-3.216)	(-3.736)	(-3.062)
Capital intensity sq	0.053***	0.031***	0.035***	0.274***
	(3.28)	(2.68)	(3.35)	(3.16)
Human capital	4.582***	4.606***	3.783***	6.439***
	(3.75)	(4.54)	(4.54)	(3.67)
Human capital sq	-3.512	-5.024***	-3.884***	-6.204***
	(-1.389)	(-3.000)	(-2.912)	(-2.634)
Firm age	0.397	0.706*	0.730**	0.963
	(0.71)	(1.89)	(2.11)	(1.47)
Firm age sq	-0.039	-0.129*	-0.129*	-0.167
	(-0.308)	(-1.719)	(-1.870)	(-1.290)
Firm size	0.076	0.125**	0.094**	0.137
	(1.36)	(2.45)	(2.45)	(1.27)
Exporter	-0.107	-0.185*	-0.175*	-0.32
	(-0.776)	(-1.781)	(-1.753)	(-1.248)
FIE	0.543**	0.296*	0.155	0.072
	(1.97)	(1.78)	(1.12)	(0.15)
PE	0.198	0.019	-0.048	-0.306
	(1.00)	(0.13)	(-0.353)	(-0.737)
High-tech	0.419***	0.378***	0.318***	0.356**
	(3.61)	(3.68)	(3.48)	(2.07)
Medium-tech	0.257**	0.393**	0.223**	0.418
	(2.13)	(2.04)	(2.45)	(1.51)
Constant	-3.983***	-2.084**	0.353	13.57**
	(-3.399)	(-2.486)	(0.47)	(2.21)
Observations	873	873	873	873
R^2	0.224	0.078	0.1	0.168
F-test	13.86	4.613	4.769	7.683

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

and joint venture ownership type is independent of the human capital level and capital intensity of firms.

The next set of models focuses only on foreign firms to find out whether origin and type of investor matter for the benchmarking results above. Here, only the results with statistically interesting entries are shown.

In Table 3.53 it can be seen that, amongst foreign firms, labour productivity increases with capital intensity and human capital. Incidentally, capital intensity has a coefficient equivalent to the often-assumed one-third in the productivity literature. At nearly 0.8, the impact of human capital is more than twice as strong. Moreover, older firms are much more productive as are those that operate in high-tech manufacturing. However, it does not matter for the ranking whether firms come from industrialized or developing countries, a result that holds across all models, including tests for interaction effects. The SFA model exhibits similar

Table 3.51: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	-1.025***	-1.042***	-1.064***	-4.943***
	(-3.118)	(-3.864)	(-4.493)	(-3.647)
FIE-capital intensity	0.404***	0.294**	0.306***	0.109
	(3.61)	(2.45)	(3.33)	(0.53)
PE-capital intensity	0.556***	0.482***	0.448***	0.604***
	(4.51)	(4.19)	(4.40)	(2.80)
Human capital	2.725	3.716***	2.971***	4.561**
	(1.52)	(3.11)	(2.79)	(2.33)
FIE-human capital	3.088**	1.491*	1.228*	3.041**
	(2.13)	(1.75)	(1.76)	(2.48)
PE-human capital	-0.664	-0.462	-0.19	-0.447
	(-0.625)	(-0.501)	(-0.236)	(-0.432)
Firm age sq	-0.0421	-0.138*	-0.138**	-0.195
	(-0.328)	(-1.788)	(-1.975)	(-1.556)
Capital intensity sq	0.0591***	0.0372***	0.0412***	0.284***
	(3.28)	(2.59)	(3.25)	(3.66)
Human capital sq	-3.017	-4.798***	-3.679***	-5.840**
	(-1.112)	(-2.913)	(-2.719)	(-2.326)
Firm size	0.0767	0.125**	0.0931**	0.132
	(1.38)	(2.45)	(2.41)	(1.25)
Firm age	0.397	0.749*	0.771**	1.107*
	(0.70)	(1.96)	(2.21)	(1.74)
Exporter	-0.144	-0.188*	-0.179*	-0.289
	(-1.132)	(-1.825)	(-1.811)	(-1.159)
FIE	-3.620***	-2.592**	-2.791***	-1.515
	(-3.700)	(-2.449)	(-3.393)	(-0.898)
PE	-4.586***	-4.123***	-3.950***	-5.510***
	(-4.460)	(-4.227)	(-4.453)	(-3.263)
High-tech	0.470***	0.418***	0.351***	0.435**
	(3.99)	(3.99)	(3.87)	(2.44)
Medium-tech	0.302**	0.416**	0.241***	0.459*
	(2.52)	(2.14)	(2.65)	(1.65)
Constant	0.638	1.446	3.810***	16.76***
	(0.35)	(1.01)	(3.13)	(2.86)
Observations	873	873	873	873
R^2	0.247	0.092	0.118	0.187
F-test	11.69	4.746	5.18	6.695

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

results, while, for TFP, capital intensity again does not enter the model. In addition, in the DEA model the coefficients for capital intensity as well as firm age are statistically insignificant.

Turning to type of investor (Table 3.54), the results are reminiscent of those obtained when North is included, that is, the coefficient for TNC is not statistically significant. However, when interacting TNC with capital intensity (Table 3.55) it can be seen that those TNCs with much physical capital out-perform FEs, while the opposite is the case when physical capital is lacking. This is only the case for the labour productivity model; for all the other models the coefficients for the interaction terms and TNC are statistically insignificant. Adding squared terms for capital intensity, human capital and firm age reinforces this result, with capital intensity squared terms entering all models and that for human capital entering the TFP model only (Table 3.56). Interestingly, in terms of SFA technical efficiency, FEs are also more competitive than TNCs at low levels of capital intensity, while the opposite is the case at higher levels of capital intensity.

PROVINCIAL PRODUCTIVITY PERFORMANCE AND INDUSTRIAL ZONE LOCATION

Raising productivity performance is a common goal among policy makers. However, it is not obvious how to go about it; that is, which policies work and which do not? Viet Nam presents itself almost as a "natural" experiment for testing the impact of industrial zones on productivity because the data allows comparison of firms inside such zones with those outside. If establishing industrial zones is to be regarded as a laudable policy, significant differences in performance should be detected those inside and those outside. Of course, potentially, industrial zones proxy for all the explanatory factors for good performance that are missing elsewhere. These notably include infrastructure, such as energy and clean water, cheap land, and possibly access to finance and production factors. The latter is impor-

Table 3.52: *Productivity and technical efficiency regression analysis, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Joint venture	0.2	0.245*	0.282**	0.182
	(0.98)	(1.66)	(2.27)	(0.84)
Capital intensity	0.380***	-0.079	-0.043	-0.036
	(9.87)	(-1.467)	(-1.411)	(-0.208)
Human capital	2.568***	1.691***	1.512***	3.100***
	(3.81)	(4.59)	(4.59)	(3.16)
Firm size	0.053	0.099**	0.072*	0.074
	(0.99)	(1.99)	(1.87)	(0.68)
Firm age	0.169	0.041	0.063	0.001
	(1.28)	(0.56)	(0.91)	(0.01)
Exporter	-0.104	-0.165	-0.154	-0.315
	(-0.795)	(-1.588)	(-1.547)	(-1.245)
FIE	0.528**	0.303*	0.166	0.236
	(2.06)	(1.77)	(1.23)	(0.51)
PE	0.194	0.046	-0.018	-0.246
	(1.09)	(0.32)	(-0.131)	(-0.621)
High-tech	0.418***	0.366***	0.311***	0.347*
	(3.51)	(3.64)	(3.40)	(1.87)
Medium-tech	0.284**	0.421**	0.249***	0.513*
	(2.32)	(2.17)	(2.71)	(1.82)
Constant	-6.853***	-3.059***	-0.967**	-2.412
	(-9.859)	(-6.330)	(-2.232)	(-1.361)
Observations	873	873	873	873
R^2	0.215	0.067	0.084	0.053
F-test	14.2	4.181	4.368	5.3

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3.53: *Productivity and technical efficiency regression analysis, sample = foreign firms*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.330***	-0.135	-0.080**	-0.221
	(6.64)	(-1.630)	(-2.081)	(-0.822)
Human capital	3.840***	2.431***	1.990***	4.697***
	(3.56)	(4.42)	(4.30)	(2.91)
Firm size	-0.022	0.067	0.032	0.073
	(-0.280)	(1.07)	(0.67)	(0.44)
Firm age	0.715**	0.355***	0.374***	0.277
	(2.45)	(3.16)	(3.57)	(1.01)
Exporter	-0.086	-0.165	-0.153	-0.723
	(-0.405)	(-0.911)	(-0.896)	(-1.048)
North	0.31	0.205	0.06	0.239
	(1.54)	(1.40)	(0.65)	(0.92)
High-tech	0.500***	0.367***	0.282**	0.464*
	(2.64)	(2.65)	(2.41)	(1.73)
Medium-tech	0.229	0.474	0.218*	0.735*
	(1.42)	(1.57)	(1.93)	(1.75)
Constant	-7.061***	-3.015***	-0.952*	-1.188
	(-8.276)	(-4.822)	(-1.784)	(-0.413)
Observations	514	514	514	514
R^2	0.264	0.082	0.118	0.072
F-test	10.24	5.121	6.199	3.993

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3.54: *Productivity and technical efficiency regression analysis, sample = foreign firms*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.337***	-0.13	-0.079**	-0.215
	(6.85)	(-1.606)	(-2.061)	(-0.808)
Human capital	3.747***	2.357***	1.974***	4.623***
	(3.57)	(4.33)	(4.25)	(2.76)
Firm size	-0.018	0.074	0.032	0.077
	(-0.221)	(1.14)	(0.68)	(0.51)
Firm age	0.699**	0.331***	0.373***	0.263
	(2.41)	(2.96)	(3.62)	(1.08)
Exporter	-0.055	-0.133	-0.149	-0.698
	(-0.253)	(-0.726)	(-0.880)	(-1.083)
TNC	0.181	0.053	0.046	0.13
	(1.04)	(0.49)	(0.47)	(0.59)
High-tech	0.510***	0.382***	0.283**	0.474*
	(2.67)	(2.69)	(2.42)	(1.65)
Medium-tech	0.227	0.481	0.216*	0.734*
	(1.39)	(1.57)	(1.91)	(1.67)
Constant	-7.064***	-2.986***	-0.958*	-1.186
	(-8.132)	(-4.719)	(-1.789)	(-0.404)
Observations	514	514	514	514
R^2	0.259	0.079	0.117	0.07
F-test	10.54	5.223	6.396	4.172

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3.55: *Productivity and technical efficiency regression analysis, sample = foreign firms*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	0.178*	-0.194**	-0.163**	-0.245
	(1.79)	(-2.523)	(-2.310)	(-0.885)
Human capital	3.787***	2.373***	1.996***	4.631***
	(3.57)	(4.35)	(4.25)	(2.81)
Firm size	-0.017	0.074	0.032	0.078
	(-0.217)	(1.14)	(0.69)	(0.51)
Firm age	0.705**	0.334***	0.376***	0.264
	(2.42)	(2.97)	(3.66)	(1.05)
Exporter	-0.073	-0.14	-0.159	-0.701
	(-0.342)	(-0.760)	(-0.938)	(-1.060)
TNC	-1.635*	-0.676	-0.913	-0.212
	(-1.744)	(-0.730)	(-1.384)	(-0.062)
TNC*Capital int.	0.208*	0.083	0.11	0.0391
	(1.81)	(0.82)	(1.46)	(0.10)
High-tech	0.518***	0.385***	0.287**	0.475*
	(2.69)	(2.74)	(2.46)	(1.67)
Medium-tech	0.235	0.484	0.220*	0.736*
	(1.44)	(1.59)	(1.94)	(1.68)
Constant	-5.706***	-2.441***	-0.241	-0.93
	(-6.623)	(-3.204)	(-0.341)	(-0.272)
Observations	514	514	514	514
R^2	0.264	0.08	0.121	0.07
F-test	9.396	4.955	5.878	4.369

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

tant because this implies that industrial zones tend to cater for cluster effects.

Table 3.57 adds a dummy variable representing industrial zones and finds that firms located in such zones are indeed better off in terms of TFP and SFA TE, with no significant impact for labour productivity and DEA TE. The size of the significant coefficients—0.16 to 0.25—is economically meaningful, pointing to a significant location advantage. The previous significant coefficient for foreign ownership in the TFP regression is lost, however. This could imply that the variable of foreign ownership was capturing positive traits in industrial zones that foreign firms were benefiting from. In other words, inclusion of an industrial zone dummy variable has proven important for understanding whether there are inherent differences between foreign and PEs rather than the fact that foreign firms may have access to prime quality infrastructure, security and so on.

The next issue is whether there is a difference between FIEs, PEs and SOEs operating in industrial zones, on the one hand, and all non-foreign firms outside such zones, on the other (Table 3.58). The reason for lumping together all PEs, independent of ownership status, is that there is only one SOE residing in an industrial zone. The first observation is that foreign firms operating in an industrial zone are not statistically different performance-wise, from PEs. Secondly, the coefficient for industrial zones is rendered insignificant. This suggests that previous results are driven by foreign enterprises located in such zones. Put differently, PEs do not seem to be able to capitalize on industrial zones. This implies that this kind of industrial policy is powerful for firms pre-disposed to take advantage of assets provided by zones, a pre-disposition that may be explained by support from the parent firm. In addition, if foreign firms are able to operate at a higher level of technological sophistication only when conditions are comparable to those in the home country — something which industrial zones may cater for—this would go a long way to explaining the combined result of Tables 3.57 and 3.58. Table 3.59 presents the results when accounting for squared terms on the notion that industrial zones might capture non-linearity. However, this is not the case and the previous inference still applies, with the

Table 3.56: *Productivity and technical efficiency regression analysis, sample = foreign firms*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Capital intensity	-1.033**	-1.004***	-1.069***	-6.738***
	(-2.365)	(-2.984)	(-3.554)	(-5.100)
Capital intensity sq	0.073***	0.047**	0.054***	0.388***
	(2.90)	(2.40)	(3.05)	(5.08)
Human capital	4.021**	4.599***	3.616***	6.289***
	(2.22)	(3.26)	(3.29)	(2.80)
Human capital sq	-1.085	-3.990*	-2.965	-4.047
	(-0.285)	(-1.804)	(-1.641)	(-1.258)
Firm age	-2.002	1.073	0.914*	1.211
	(-0.743)	(1.50)	(1.80)	(1.06)
Firm age sq	0.639	-0.164	-0.116	-0.153
	(0.94)	(-0.985)	(-1.054)	(-0.592)
Firm size	-0.009	0.097	0.051	0.138
	(-0.108)	(1.42)	(1.08)	(0.99)
Exporter	-0.076	-0.158	-0.179	-0.864
	(-0.346)	(-0.858)	(-1.068)	(-1.290)
TNC	-2.090**	-0.992	-1.256*	-2.541
	(-2.243)	(-1.051)	(-1.924)	(-1.016)
TNC*Capital int.	0.257**	0.115	0.145*	0.278
	(2.22)	(1.11)	(1.94)	(1.01)
High-tech	0.526***	0.375***	0.277**	0.401
	(2.66)	(2.71)	(2.41)	(1.46)
Medium-tech	0.243	0.443	0.183	0.566
	(1.57)	(1.50)	(1.64)	(1.34)
Constant	1.842	-0.153	2.690**	23.88***
	(0.48)	(-0.0873)	(1.97)	(4.01)
Observations	514	514	514	514
R^2	0.292	0.092	0.149	0.26
F-test	10.28	5.051	5.785	6.217

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

exception of foreign ownership in the labour productivity model, which is no longer statistically significant.

The policy of industrial zones is tested on foreign firms as well. Previous results suggested that country origin and type of foreign investor was immaterial for firm performance comparison. Now the issue is tested as to whether there is a difference in this respect when some foreign investors are located in industrial zones and others not (Table 3.60). However, when industrial zone is interacted with North origin and TNC, their respective coefficients are not statistically significant and thus the previous conclusion remains unaltered. Hence, the impact of an industrial policy such as industrial zones does not seem to extend to the sub-group of foreign firms.

SUMMARY

This Section has analyzed relative productivity and efficiency performance across groups of firms, sectors and provinces in Viet Nam with the aim of detecting patterns that may help actors involved in investment promotion and policy to enhance the positive effects of FDI on the Vietnamese economy and private business agents. Starting with provinces and sectors, large differences were detected in the mean performance of firms. The provinces of Vinh Phuc and Ho Chi Minh City were singled out as having many top-performers, whereas the provinces of Da Nang and Bac Ninh were typically found to be low performers. However, as the number of observations that the analysis is based on varies substantially among provinces and the analysis does not take account of differences in, for example, ownership, sector and location, such a comparison is

Table 3.57: *Test of industrial policy on productivity and technical efficiency, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Industrial zone	0.115	0.252*	0.160*	0.25
	(0.79)	(1.76)	(1.76)	(1.26)
Capital intensity	0.376***	-0.09	-0.05	-0.047
	(9.42)	(-1.563)	(-1.631)	(-0.265)
Human capital	2.666***	1.849***	1.650***	3.238***
	(4.24)	(5.02)	(5.06)	(3.47)
Firm size	0.054	0.101**	0.074*	0.075
	(1.01)	(2.02)	(1.91)	(0.69)
Firm age	0.188	0.075	0.09	0.034
	(1.54)	(1.03)	(1.29)	(0.24)
Exporter	-0.111	-0.177*	-0.164	-0.326
	(-0.838)	(-1.698)	(-1.645)	(-1.287)
FIE	0.516*	0.241	0.151	0.162
	(1.91)	(1.57)	(1.09)	(0.36)
PE	0.202	0.053	-0.007	-0.241
	(1.14)	(0.37)	(-0.052)	(-0.611)
High-tech	0.390***	0.313***	0.271***	0.297*
	(3.01)	(3.18)	(2.94)	(1.67)
Medium-tech	0.276**	0.405**	0.237***	0.498*
	(2.30)	(2.14)	(2.58)	(1.81)
Constant	-6.871***	-3.060***	-0.992**	-2.401
	(-9.980)	(-6.210)	(-2.296)	(-1.348)
Observations	873	873	873	873
R^2	0.215	0.07	0.084	0.055
F-test	13.53	3.957	4.184	5.127

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

admittedly weak. A closer look at the top-performing province of Vinh Phuc, for example, reveals that a large share of the sampled firms in this province are high-performing foreign firms and a majority of these are located in an industrial zone. Policy conclusions are therefore not easily drawn on the basis of this sample. What is more clear is that firms that operate in medium- to high-tech manufacturing should be the target if one wants to raise the overall productivity and technical efficiency of the Vietnamese economy. But such a focus also comes with at least one caveat since there is significant within-group variation. Two sectors, the manufacture of computer, electronic and optical products and the manufacture of electrical equipment, are, for example, classified as high-tech sectors although they are typically labour-intensive assembly manufacturing sectors in the Vietnamese context and consequently are found near the bottom of the list in mean relative performance and technical efficiency. Thus, not all firms in medium and high-tech sectors are top performers. A more general finding is the importance of focusing on firms with high capital intensity and an abundance of human capital. High capital intensity proves particularly important to firms that are seeking to reduce the gap with frontier firms in terms of labour productivity. Moreover, it seems to be the combination of foreign ownership and high capital intensity that gives foreign firms their productivity and technical efficiency edge over their competitors. The importance of investment in human capital becomes especially clear when we try to explain the relative productivity and efficiency performance of firms with the help of regression analysis. Among all the variables employed in the models, firms' level of human capital is by far the one with the strongest association to performance, almost regardless of the specification of the model. A first, generic policy conclusion is consequently that in order to be able to close the gap with FIEs, private enterprises need to invest primarily in human capital since this is the main explanation of differences in relative productivity and technical efficiency. Investment in human capital always gives an advantage, regardless of differences in sector, province, capital intensity, etc.

Table 3.58: *Test of industrial policy on productivity and technical efficiency, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Industrial zone	0.483	0.395	0.398	0.433
	(1.35)	(1.20)	(1.24)	(1.17)
FIE-industrial zone	-0.405	-0.158	-0.263	-0.202
	(-1.016)	(-0.434)	(-0.798)	(-0.466)
Capital intensity	0.377***	-0.0895	-0.049	-0.0461
	(9.40)	(-1.548)	(-1.611)	(-0.262)
Human capital	2.681***	1.855***	1.660***	3.246***
	(4.24)	(5.04)	(5.09)	(3.46)
Firm size	0.054	0.101**	0.0737*	0.0748
	(1.00)	(2.01)	(1.90)	(0.69)
Firm age	0.193	0.0768	0.0932	0.0351
	(1.56)	(1.05)	(1.34)	(0.25)
Exporter	-0.114	-0.179*	-0.166*	-0.327
	(-0.869)	(-1.709)	(-1.665)	(-1.294)
FIE	0.548*	0.253*	0.172	0.178
	(1.95)	(1.66)	(1.23)	(0.39)
PE	0.195	0.0505	-0.0118	-0.245
	(1.10)	(0.35)	(-0.0873)	(-0.620)
High-tech	0.393***	0.314***	0.274***	0.299*
	(3.03)	(3.20)	(2.97)	(1.69)
Medium-tech	0.274**	0.405**	0.236**	0.497*
	(2.28)	(2.13)	(2.57)	(1.80)
Constant	-6.899***	-3.071***	-1.010**	-2.415
	(-9.911)	(-6.192)	(-2.338)	(-1.351)
Observations	873	873	873	873
R^2	0.215	0.07	0.085	0.055
F-test	12.85	3.805	4.003	4.867

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

One surprising finding of the initial descriptive analysis is the small difference in performance between FIEs, domestic private enterprises and SOEs. For some measures of performance, and contrary to prior beliefs, SOEs appear to have the highest relative productivity performance and technical efficiency. The drawback of descriptive analysis, however, is that an observed relationship between two variables may be due to a third, fourth or fifth, etc., variable that is highly correlated with both variables and creates the spurious relationship between the two. Regression analysis shows that this is the explanation for the unexpectedly small difference in performance between the ownership groups. When the relationship between ownership and performance is isolated from factors that may simultaneously affect the two, FIEs are shown to be significantly better performers than both PEs and SOEs, especially in terms of relative labour productivity and TFP. Moreover, the relative performance of FIEs is further boosted if they hold abundant human capital and are capital intensive. Whether the enterprise is a TNC or an FE and whether the country of origin is north or south does not seem to matter significantly. Hence, the second policy insight is that a policy that seeks to increase the share of capital intensive foreign firms with a high level of physical and human capital is likely to alter the composition of firms in Viet Nam in favour of more productive and more technically efficient firms[15]. Another factor that matters a lot and that can be linked to the second policy conclusion is whether the firm is a JV or not. Analysis of the effect of JV ownership on performance shows that foreign firms that have decided to join forces with Vietnamese firms have higher TFP and technical. It may therefore

15 Such a policy recommendation, however, comes with at least one caveat. What has been analyzed here is only the composition effect of FDI, i.e. what is the direct effect on relative productivity and technical efficiency of changing the composition of firms in Viet Nam in favour of the identified firms? What is neglected are potential effects of the entry of such firms on the relative productivity and technical efficiency of the PEs that are already in the market. Such so-called spillover effects may be positive or negative and they have to be investigated if the net effect of FDI is to be assessed. FDI spillover effects are discussed in Chapter 4.2.

Table 3.59: *Test of industrial policy on productivity and technical efficiency, sample = all*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Industrial zone	0.533	0.417	0.42	0.653
	(1.43)	(1.23)	(1.29)	(1.56)
FIE-industrial zone	-0.482	-0.204	-0.306	-0.515
	(-1.159)	(-0.548)	(-0.919)	(-1.043)
Firm age sq	-0.0355	-0.128*	-0.127*	-0.163
	(-0.275)	(-1.692)	(-1.835)	(-1.250)
Capital intensity sq	0.0534***	0.0303***	0.0353***	0.275***
	(3.23)	(2.67)	(3.37)	(3.14)
Human capital sq	-3.518	-4.867***	-3.819***	-6.140**
	(-1.433)	(-2.998)	(-2.888)	(-2.579)
Capital intensity	-0.503**	-0.602***	-0.638***	-4.532***
	(-1.973)	(-3.295)	(-3.790)	(-3.055)
Human capital	4.634***	4.601***	3.805***	6.483***
	(3.86)	(4.62)	(4.60)	(3.65)
Firm size	0.076	0.124**	0.0935**	0.136
	(1.35)	(2.42)	(2.41)	(1.26)
Firm age	0.394	0.725*	0.736**	0.969
	(0.69)	(1.91)	(2.12)	(1.45)
Exporter	-0.114	-0.194*	-0.181*	-0.33
	(-0.818)	(-1.850)	(-1.809)	(-1.277)
FIE	0.541*	0.211	0.118	0.0341
	(1.68)	(1.34)	(0.81)	(0.07)
PE	0.189	0.0116	-0.0552	-0.317
	(0.96)	(0.08)	(-0.402)	(-0.762)
High-tech	0.407***	0.340***	0.296***	0.329**
	(3.29)	(3.45)	(3.22)	(2.03)
Medium-tech	0.250**	0.382**	0.215**	0.408
	(2.10)	(2.02)	(2.36)	(1.50)
Constant	-3.944***	-2.059**	0.382	13.62**
	(-3.327)	(-2.477)	(0.51)	(2.21)
Observations	873	873	873	873
R^2	0.226	0.082	0.104	0.17
F-test	12.75	4.341	4.462	7.559

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

be important not only to attract more FIEs to Viet Nam but also to encourage more foreign enterprises to enter in joint venture partnership agreements with domestic enterprises. Results suggest that joint ventures with a high level of physical and human capital are the absolute top performers and could constitute a more narrowed down investment targeting policy.

The third important factor identified in the analysis is the potential advantages of operating in an industrial zone. These potential advantages include superior infrastructure, such as energy and clean water, subsidized land, and cluster effects in the form of improved access to finance and production factors. The results show that access to such advantages is indeed important for the productivity performance and technical efficiency of firms in Viet Nam. It seems to be especially important for the relative TFP and the technical efficiency of firms but not necessarily for relative labour productivity. Interestingly, in terms of TFP and technical efficiency there is no longer any significant difference in performance between FIEs, PEs and SOEs once the issue of industrial zones is taken into consideration. In terms of labour productivity, however, FIEs are still the highest performers. But the analysis does show that domestic enterprises also benefit from operating in industrial zones and that there is no difference between PEs and FIEs on the

Table 3.60: *Test of industrial policy on productivity and technical efficiency, sample = foreign firms*

Independent variables	Labour productivity	Total factor productivity	SFA	DEA
Industrial zone	0.127	0.289*	0.183*	0.301
	(0.81)	(1.73)	(1.96)	(1.36)
Capital intensity	0.331***	-0.149*	-0.091**	-0.234
	(6.56)	(-1.695)	(-2.390)	(-0.863)
Human capital	3.762***	2.459***	2.037***	4.716***
	(3.70)	(4.37)	(4.34)	(2.89)
Firm size	-0.008	0.077	0.035	0.085
	(-0.101)	(1.14)	(0.72)	(0.52)
Firm age	0.688***	0.375***	0.398***	0.293
	(2.68)	(3.38)	(3.83)	(1.11)
Exporter	-0.02	-0.116	-0.136	-0.667
	(-0.089)	(-0.620)	(-0.807)	(-1.014)
High-tech	0.500**	0.317**	0.243**	0.414
	(2.26)	(2.36)	(2.05)	(1.62)
Medium-tech	0.239	0.465	0.208*	0.727*
	(1.51)	(1.55)	(1.85)	(1.74)
Constant	-6.993***	-2.990***	-0.955*	-1.155
	(-8.436)	(-4.670)	(-1.781)	(-0.399)
Observations	514	514	514	514
R^2	0.259	0.086	0.124	0.073
F-test	10.4	5.281	6.47	4.094

t-statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

margin. Results seem to indicate that foreign firms may not necessarily be more labour productive as a result of operating within industrial zones but certainly do operate at a more efficient scale. Operating within industrial zones seems to translate into differences in productivity and technical efficiency and this invariably impacts on the industrial performance at the provincial level.

Technical Appendix I: **Sub-sample description**

Provinces	N	%
Hanoi	161	16.1
Vinh Phuc	13	1.3
Bac Ninh	16	1.6
Hai Phong	71	7.1
Da Nang	25	2.5
Binh Duong	264	26.4
Dong Nai	150	15
Ba Ria Vung Tau	20	2
HCMC	281	28.1
Total	**1001**	**100**

Sectors	N	%
Manufacture of food products	51	5.1
Manufacture of beverages	19	1.9
Manufacture of tobacco products	3	0.3
Manufacture of textiles	66	6.6
Manufacture of wearing apparel	80	8
Manufacture of leather and related products	46	4.6
Manufacture of wood and products of wood and cork, except furniture	39	3.9
Manufacture of paper and paper products	56	5.6
Printing and reproduction of recorded media	29	2.9
Manufacture of coke and refined petroleum products	1	0.1
Manufacture of chemicals and chemical products	34	3.4
Manufacture of pharmaceuticals, medicinal chemical and botanical products	30	3
Manufacture of rubber and plastics products	75	7.5
Manufacture of other non-metallic mineral products	50	5
Manufacture of basic metals	18	1.8
Manufacture of fabricated metal products, except machinery and equipment	86	8.6
Manufacture of computer, electronic and optical products	41	4.1
Manufacture of electrical equipment	46	4.6
Manufacture of machinery and equipment	39	3.9
Manufacture of motor vehicles; trailers and semi-trailers	26	2.6
Manufacture of other transport equipment	49	4.9
Manufacture of furniture	72	7.2
Other manufacturing	45	4.5
Total	**1001**	**100**

JV or non JVs	N	%
Non-JVs	938	93.7
JVs	63	6.3
Total	**1001**	**100**

Capital intensity	N	%
Low	251	25.1
Low-Medium	250	25
Medium-High	250	25
High	250	25
Total	**1001**	**100**

Technological classification of the manufacturing sector	N	%
High-tech manufacturing	294	29.4
Medium-tech manufacturing	230	23
Low-tech manufacturing	477	47.7
Total	**1001**	**100**

Ownership	N	%
PE	356	35.6
FIE	541	54
SOE	104	10.4
Total	**1001**	**100**

Exporter or non-exporter	N	%
Non-exporter	181	20.7
Exporter	692	79.3
Total	**873**	**100**

Age	N	%
0-5 yrs	136	13.6
6-10 yrs	358	35.8
11-20 yrs	369	36.9
21+ yrs	138	13.8
Total	**1001**	**100**

Size	N	%
Small	300	30
Medium	213	21.3
Large	488	48.8
Total	**1001**	**100**

Firm type	N	%
TNC	366	67.7
FE	175	32.3
Total	**541**	**100**

Skill level (White/(White+Blue)	N	%
Low	754	75.3
Low-Medium	209	20.9
Medium-High	35	3.5
High	3	0.3
Total	**1001**	**100**

Investor origin	N	%
South	177	44.1
North	224	55.9
Total	**401**	**100**

Located in an industrial zone	N	%
No	686	68.5
Yes	315	31.5
Total	**1001**	**100**

Note: Percentages may not add up due to rounding

Technical Appendix II: **Technical Comments**

APPROACHES TO BENCHMARKING

Comparison of firm performance can be carried out along different lines. In this Section, the focus is on productivity performance, but not, for example, on profit or revenues. Even within this narrow field there are several possible approaches, and sometimes these lead to inconsistent inferences. The differences across approaches are often much deeper than first appears to be the case, and the analyst needs to be conscious of which performance is sought to be gauged. For example, comparisons of labour productivity and of total factor productivity (TFP) have very different content, with the latter being closer to the concept of technology. Both approaches are applied here. Related to the concept of productivity is that of efficiency, in particular of technical efficiency (TE)[16]. A large literature covering methodological advances as well as empirical applications has emerged, leading to two main approaches to TE benchmarking: stochastic frontier analysis (SFA)[17] and data envelopment analysis (DEA)[18], where the former is parametric and the latter non-parametric. Both methods have their advantages and disadvantages, and these will be discussed in some detail below[19].

SIMPLE PRODUCTIVITY RANKINGS

The simplest, but not necessarily the least valuable, productivity measure is labour productivity, that is, some measure of output divided by the number of employees involved in the production of that output. This is a measure of performance that, theoretically, is linked to important indicators such as wage formation and inflation. Benchmarking implies that firms' labour productivity is expressed relative to the best performer and thus is expressed as percentage productivity attained relative to the best performer[20]. However, the indicator confounds the role played by tangible production inputs such as physical capital and technology, the latter being approximated by TFP. If some firms operate in labour-intensive industries while others are engaged in capital-intensive production, labour productivity might be misleading if used to compare the two. Furthermore, some firms can achieve good productivity in one of their production inputs but be weak in another, and this will affect the performance ranking. Finally, a partial productivity indicator may erroneously attribute the performance to, say, workers when, in fact, they became more productive because of investments in physical capital or disembodied technology.

MORE COMPLICATED PRODUCTIVITY RANKINGS

For all these reasons, TFP may constitute a better indicator, since it considers all inputs used at the same time. However, there are measurement issues involved that may influence the benchmarking results. While for labour productivity one only needs to decide on whether gross output or value added is the best representation of output as well as be clear on how to measure labour input, TFP requires, in addition, measurement decisions on all other inputs and, most importantly, how to accurately combine them. Combination implies that the correct index form and choice of appropriate weights or income shares are used. Since income shares are often unknown, they have to be assumed. But when such data are available the preferred option is to use those. Alternatively, TFP can be estimated by way of a production function, where either the estimated coefficients can be used as shares or the residual is allowed to represent TFP. However, if the analyst opts for estimating a production function, other decisions need to be made. These include making an assumption of the appropriate functional form, possible endogeneity bias and error distribution, all of which impact on TFP measurement and thus on the ensuing inferences.

TECHNICAL EFFICIENCY RANKINGS

Another class of approaches to benchmarking is based on technical efficiency, which, contrary to the above-mentioned methods, is assumed to be conditional on the number of production factors. Allegedly, two of the most common measurement methods are DEA[21] and SFA. Conceptually, the notion of technical efficiency is quite close to that of TFP, but it is more focused on, for example, the reduction of slack in production

16 See foe example, Farrell (1957).
17 See for example, Aigner, Lovell and Schmidt (1977).
18 See for example, Charnes, Cooper and Rhodes (1978).
19 Only the approaches used in this chapter are discussed.
20 Relative performance can also be gauged against, for example, mean or median performers and thus the best performer need not be the yardstick. In this study, however, it seems reasonable to compare against the top performer.
21 When conducting the DEA, DEAP software developed by Coelli (1996) was used.

(X-inefficiency) than purely on technology. DEA has several nice features and graphically caters for a nice benchmarking analysis. The idea is that some of the data points, for example firms, at various input levels envelope all the other data points. The outer data points form a piecewise linear technology or best-practice frontier, that is, the best that can be accomplished at different levels of input. The distance of the data points inside this frontier are then measured vis-à-vis the frontier, yielding a range of efficiency scores between 0 and 1, where 1 marks the most efficient data point.

Compared with the production function approach, DEA is free of distributional choice, endogeneity bias or functional form considerations. However, it is not obvious in which direction the distance to the frontier should be gauged. In addition, unlike parametric approaches, DEA may yield biased information in cases of noisy data, for example outliers or measurement errors, and an insufficient amount of data, in which case there is an overestimation of fully efficient firms.

Noisy data is a good reason to involve SFA because, while the method shares the presentational advantages of DEA, inclusion of an error term deals with extreme values, measurement problems and outliers, etc. However, some disadvantages are shared with the production function approach, namely choice of functional form, endogeneity bias and error distribution. The latter in particular is a big issue in the SFA literature because technical efficiency is measured based on a one-sided error, which, in combination with a white noise component, forms the error term. This is very different to the production function approach, whose error term only consists of the standard iid (white noise) component. Moreover, the technical efficiency component may take several different forms, where half-normal, truncated normal and gamma distribution appear common in the literature.

Frontier methods share the problem that all the results are sample-specific, so even if a firm is part of the technology frontier this only means that it constitutes best-practice in the sample, not that it is a world or even, in this case, a Vietnamese leader. Comparing results from two different samples is usually not recommended and, at best, comparison of mean efficiencies says something about dispersion of scores. Again, a firm may be top in efficiency in a sample of poor performances and, despite a score of unity, may only be half as efficient as the top performer in another sample. The solution if one wishes to compare firm performance is to combine the two samples. Still, analysis of sub-samples is also important but speaks to different queries.

The good news is that most of these 'challenges' can be tested, suggesting the way forward at any point in the analysis. Yet it is recommendable to present different approaches alongside each other and work more on what they have in common than how they differ, that is unless the differences can be related to country specificities and the likes—this should be controlled for in section[5].

The different measurements used in Section 3.3 are hereunder presented in mathematical form:

LABOUR PRODUCTIVITY

Labour productivity (LP) is defined as value added (VA) divided by total full-time employees (L):

$$TE = \ln\left(\frac{TE}{(1-TE)}\right).$$

TOTAL FACTOR PRODUCTIVITY

Section 3.3 employs the standard growth accounting approach of Solow (1957) under the assumption that factor shares are 1/3 (α) and 2/3 (β) for capital (K) and L, respectively.

$$TFP = \frac{VA}{K^{\alpha}L^{\beta}}.$$

In this computation constant returns to scale, α+β=1, is assumed.

TECHNICAL EFFICIENCY

Frontier methods such as DEA do not have to wrestle with the determination of factor shares and thus offer a solution when it is difficult to measure α and β. Imagine a scatter diagram with output on the Y-axis and input on the X-axis. By connecting the outer data points a best-practice frontier that envelopes all other data points is created. This frontier shows the highest output attained for a given input. The idea of technical efficiency (TE) analysis is to measure the distance of each inner data point to that frontier. For example, the efficiency of inner point B – thus a technically inefficient point – to best-practice point A is simply:

$$TE_B = \frac{Performance_B}{Performance_A},$$

where $0 \leq TE_B \leq 1.$

This means that a score for each data point is obtained and these can be ranked according to their performance with, of course, top performers scoring 1. The information informs the extent to which a data point is inefficient and how much it would need to improve to reach best-practice. It contains no information on what, say, the firm would need to do to accomplish this goal. DEA benchmarking is sensitive to poorly measured data, outliers and similar issues because deterministic approaches do not have an error term that can absorb such issues. SFA, which finds its basis in standard parametric production function estimation, provides a viable solution in the case of noisy data. It does so by allowing for a two-component error term, one which is standard iid and thus absorbs the noise and one which represents technical efficiency. However, contrary to DEA decisions on the functional form and type of error, distribution becomes part of the estimation strategy decision.

Two functional forms are used in this chapter, Cobb-Douglas and the Translog, with the frontier estimated assuming a half-normal error (in logs):

$$\ln VA = A + \alpha_1 \ln K + \beta_1 \ln L + (-\mu + \varepsilon)$$

and

$$\ln VA = A + \alpha_1 \ln K + \beta_1 \ln L + \alpha_2 (\ln K)^2 + \beta_2 (\ln L)^2 + \gamma_1 \ln K \ln L + (-\mu + \varepsilon)$$

where A is TFP, $-\mu$ is technical efficiency with half-normal distribution and ε is a white noise error component. Clearly, $-\mu$ may have other distributions and this is determined by the environment and circumstances. It is important to note that $-\mu$ may not exist, in which case the production function collapses to a standard one.

Chapter 3.4: FDI spillover effects

INTRODUCTION

Previous Chapters and sections have clearly shown how, since the mid-2000s, the Vietnamese economy has, as a result of important political and economic developments (most notably its WTO accession in 2007), recorded a remarkable expansion of FDI inflows and trade. These, together with more concentrated industrial activity by foreign enterprises in specific sectors, have served to heighten the general expectations of a positive FDI contribution to the economy. As has been argued earlier, the *a priori* expectations that FDI generates employment opportunities, increases exports and, in some instances, operates at a higher level of technical efficiency when compared to domestic counterparts may hold true but with some important caveats. There is indeed a vast stream of economic literature and empirical studies that show a positive impact from foreign investment in the host developing economies. Foreign firms bring capital, technology and managerial and marketing skills, which may spill over to domestic companies and contribute to the economic growth of the host country. Based on Survey evidence, this Section aims to throw light on the nature and extent of FDI spillover in the firms in the Survey operating in Vietnamese industry. The Chapter draws on Survey evidence for an analysis of vertical and horizontal linkages as conduits for FDI spillover effects, starting by presenting some descriptive indicators for FIEs' vertical linkages (backward and forward) and following with an estimation of the impact of the foreign presence on domestic output through regression analysis. The section closes with the main conclusions from the analysis. This Section draws on and is guided by the vast literature on the topic. Box 3.3 presents a succinct overview of selected seminal literature on FDI spillover effects. In the Technical Appendix I to this Chapter, an overview of main studies that have specifically examined the impact of FDI spillover effects in Viet Nam is presented.

VERTICAL BACKWARD LINKAGES

This Chapter starts with a descriptive overview of Survey evidence for vertical backward linkages. The focus of this analysis is on the three main aspects of the subcontracting and local procurement process: (i) the share of outsourced work to manufacturing operations in total inputs, (ii) the source of production inputs and (iii) the typology of suppliers and their respective shares. The share of outsourced work from manufacturing operations is computed as a share of total inputs. The source of production inputs refer to the percentage share of inputs procured from a domestic manufacturer located in Viet Nam. For completeness, the share of imported inputs and share of inputs procured from a foreign manufacturer located in Viet Nam are also included. Lastly, reference is made to the typology of suppliers: domestic, foreign suppliers

Table 3.61: *Vertical backward linkages by FIEs, by type of investment*

percentage terms (%)

	Total	TNCs	FEs
Share of outsourced manufacturing work in total inputs*	10.5	8.5	16.1
Source of Production inputs, by total input value, all surveyed firms			
Imported through parent enterprise	20.4	29.0	NA
Imported directly	38.0	34.6	46.0
Imported by a Vietnamese-based importer/distributor	2.5	2.3	3.4
Procured from a domestic manufacturer located in Viet Nam	26.6	22.5	36.1
Procured from a foreign manufacturer located in Viet Nam	12.5	11.6	14.5
Total	100.0	100.0	100.0
Typology of suppliers and respective shares			
Share of domestic suppliers	47.9	43.9	56.4
Share of foreign suppliers based in Viet Nam	29.0	31.9	22.9
Share of foreign suppliers based outside Viet Nam	23.1	24.2	20.7
Total	100.0	100.0	100.0

Note: * mean computed only for the companies outsourcing work in Viet Nam

Table 3.62: *Vertical backward linkages by FIEs, by investor country of origin*

percentage terms (%)

	China	Europe	Japan	Rest of the World	Other Asia	South Korea	USA
Source of Production inputs, by total input value, all surveyed firms							
Imported through parent enterprise	20.4	24.0	36.7	10.9	20.5	27.1	28.5
Imported directly	38.8	37.8	37.1	46.5	37.2	30.3	38.8
Imported by a Vietnamese-based importer/ distributor	0.9	1.9	2.0	0.4	3.3	2.2	3.3
Procured from a domestic manufacturer located in Viet Nam	24.1	26.2	14.3	30.9	27.3	25.5	20.6
Procured from a foreign manufacturer located in Viet Nam	15.8	10.1	9.9	11.3	11.7	14.9	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Typology of suppliers and respective shares							
Share of domestic suppliers	47.0	52.0	40.2	47.4	49.2	42.1	36.7
Share of foreign suppliers based in Viet Nam	25.3	31.0	37.5	28.3	28.7	32.2	36
Share of foreign suppliers based outside Viet Nam	27.6	17.0	22.3	24.3	22.1	25.7	27.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 3.63: *Vertical backward linkages by FIEs, by level of manufacturing technology*

percentage terms (%)

	High-tech	Medium-tech	Low-tech
Source of Production inputs. by total input value. all surveyed firms			
Imported through parent enterprise	25.7	20.7	18.1
Imported directly	40.2	42.1	35.9
Imported by a Vietnamese-based importer/distributor	1.2	3.5	2.4
Procured from a domestic manufacturer located in Viet Nam	19.1	23.5	30.7
Procured from a foreign manufacturer located in Viet Nam	13.8	10.2	12.9
Total	100.0	100.0	100.0
Typology of suppliers and respective shares			
Share of domestic suppliers	41.3	49.3	50.4
Share of foreign suppliers based in Viet Nam	35.3	27.5	26.7
Share of foreign suppliers based outside Viet Nam	23.4	23.2	22.9
Total	100.0	100.0	100.0

based in Viet Nam, foreign suppliers based outside Viet Nam. In accordance with this approach, Table 3.61, 3.62, 3.63 and 3.64 present a number of selected indicators for vertical backward linkages for the surveyed FIEs in the sample, distinguishing between types of FIEs (TNCs or FEs), disaggregating by country of origin of the investment and by the level of manufacturing technology and further, by market orientation.

Survey evidence suggests that the foreign invested enterprises (FIEs) in the sample have a low level of local sourcing of intermediate production inputs (refer to Table 3.61). Even though almost 48 per cent of suppliers to FIEs are domestic, the share of production inputs procured from domestic manufacturers by all types of FIEs is relatively low, amounting to 26.6 per cent of the value of their total inputs. FIEs import the greater share of their inputs (58.4 per cent), either through their parent enterprise (20.4 per cent), or directly (38 per cent). Their subcontracting activity is generally limited, too. The value of outsourced manufacturing related work accounts for only 10.5 per cent of respondents' total input requirements.

The Survey results also reveal large differences between the subcontracting and out-sourcing activities

Box 3.3: Literature on FDI spillover effects

FDI represents an important source of both direct capital inputs and indirect knowledge and technology spillovers. Broadly interpreted, technology includes product, process and distribution technology as well as managerial and marketing skills. The literature identifies technological spillovers from FDI in two groups: horizontal and vertical spillovers.

Horizontal spillovers are defined as the beneficial effects from FDI on domestic firms operating in the same industry or sector (Aitken and Harrison, 1999; Spencer, 2008). In this case, spillovers may occur when local firms improve their efficiency by copying the technology of foreign affiliates, either through observation or by hiring workers trained by the foreign companies; or when local firms are forced to use their resources more efficiently or to source new technologies. These horizontal spillover effects are referred to as demonstration effects, movement of labour effects and the technology gap hypothesis (Meyer and Sinani, 2009; Meyer, 2004. However, these spillovers may rarely take place: if foreign and domestic firms compete in the same industries, the former have an incentive to prevent technology transfer and spillovers in their concern to protect their intellectual property and preserve trade secrecy, or they may pay higher wages to avoid labor turnover, or locate in industries and countries where domestic companies have limited imitative capacities to begin with.

Vertical spillovers include backward and forward linkages. Backward linkages occur when foreign firms purchase goods and services from firms in upstream industries (Blomström and Sjöholm, 1999; Javorcik, 2004). In this case, FDI may affect domestic firms through direct knowledge transfer from foreign companies to local suppliers; higher requirements of product quality and on-time delivery by foreign affiliates; indirect knowledge transfer through labor turnover; increased demand for intermediate products which allows local suppliers to reap the benefits of scale economies; or other effects of competition. Forward linkages occur when foreign firms sell goods and services to local firms but they are by far less obvious and less observed than backward linkages (Havranek and Irsova, 2010).

Lall (1978) Dunning (1993), Javorcik (2008), Meyer and Sinani (2009) suggest that linkage creation by MNEs in developing countries varies according to industry, network strategy and host country factors; for example, the industry that FDI enters may or may not lend itself to linkages, depending on a wide range of factors, such as the nature of the industrial process, the complexity of the technology involved and the extent of technological change required, economies of scale, and market considerations. The foreign affiliate's country of origin, its corporate philosophy and its market orientation will also have a direct bearing on the nature and extent of linkages established in the host country.

Local content in MNE production is one of the principal determinants of the strength of linkages (Belderbos and Capannelli, 2001; UNCTAD 2001). Domestic-market-oriented affiliates generally purchase more locally than do export-oriented firms because of lower quality requirements and technical specifications (Reuber et al., 1973, Altenburg, 2000). On the other hand, export-oriented firms create less competition or crowding out effects to local firms because they target outside markets (Spencer, 2008). Rodriguez Clare (1996) shows that more linkages are created when the production process of MNEs involves the intensive utilization of intermediate goods, when the costs of communication between parent and affiliates are high and when the home and host country are not too different in terms of variety of intermediate goods produced. Given the absorptive capacity structures in developing countries, some authors find it unrealistic for developing countries to attract FDI with high linkage potential (Stewart, 1977, Rodriguez-Clare, 1996). For example, O'Brien (1993) and Warr (1989) note that foreign firms which utilized a higher level of technology had to source their inputs from elsewhere due to the low and unreliable product quality of local firms. The reverse arguments finds also support, that is that the larger the host market and the more sophisticated the technological capabilities of local suppliers, the more pronounced the MNE linkages are expected to be (Liu and Wang, 2009). McAleese and McDonald (1978) argue that backward linkages tend to increase primarily with the addition of production processing stages over time and in relation to the growth of the industrial base in the host country.

Continued on next page.

Table 3.64: *Vertical backward linkages by FIEs, by market orientation*

percentage terms (%)

	Local market-seeking	Regional market-seeking	Global market-seeking
Source of Production inputs. by total input value. all surveyed firms			
Imported through parent enterprise	10.7	17.3	24.6
Imported directly	33.1	41.6	39.5
Imported by a Vietnamese-based importer/distributor	4.8	2.4	1.7
Procured from a domestic manufacturer located in Viet Nam	36.6	25.8	22.7
Procured from a foreign manufacturer located in Viet Nam	14.8	12.9	11.5
Total	100.0	100.0	100.0
Typology of suppliers and respective shares			
Share of domestic suppliers	52.7	46.0	46.1
Share of foreign suppliers based in Viet Nam	21.3	30.7	32.0
Share of foreign suppliers based outside Viet Nam	26.0	23.3	21.9
Total	100.0	100.0	100.0

Continued from previous page.

This point is reiterated in various studies, such as Aitken and Harrison (1999). Blomstrom and Kokko (1997) suggest that some host country characteristics that may influence the extent of linkages are market size, local content regulations and the size and technological capability of local firms. Government policies can play an important role in the creation of MNE vertical linkages (UNCTAD, 2001; Bellak, 2004).

The extent of MNE vertical linkages also largely depends on the procurement strategies of foreign affiliates (Chen, 1996). As a result, MNE affiliates are more likely to be integrated backward in the host country when they source relatively simple inputs (Ganiatsos 2000, Carillo 2001). Local procurement by foreign affiliates tends to increase over time as a result of their experience of investment, upgrading of the host country location factors and possibly lower costs of local sourcing (Driffield and Mohd Noor, 1999, McAleese and McDonald, 1978, Görg and Ruane, 1998, Scott-Kennel and Enderwick, 2001). The time factor is highlighted also by Rasiah (1994) and is related to the experience and integration of MNE affiliates in the host country through greater 'indigenization' of their operations in terms of management. The embeddedness of firms is often (but not always) a function of how long the MNEs have been present in the host country, since firms tend to build incrementally.

of subsidiaries of transnational corporations (TNCs) and those of stand-alone foreign entrepreneurs (FEs). In general, FEs tend to be more vertically integrated in the host economy than TNCs, in that they are more likely to procure a higher share of their production input requirements domestically. The share of domestic suppliers in the total number of suppliers is 56.4 per cent for FEs compared to 43.9 per cent for TNCs. As expected, TNC subsidiaries rely more on imported inputs, procuring some 63.6 per cent of their production input requirements (in terms of value) abroad. Surprisingly, TNC subsidiaries tend to import more of their inputs directly than from their parent enterprise (34.6 per cent compared to 29 per cent), although it is extremely difficult to correctly ascertain whether TNC subsidiaries are exporting to sister companies within the same multination network of companies as distinct from exporting to parent entity. Not surprisingly, FEs also outsource more than TNCs do – the value of their outsourced manufacturing activity operations is around 16.1 per cent of their production inputs compared to 8.5 per cent for TNCs.

Local procurement and subcontracting operations of FIEs are also analyzed by the main investment country of origin. As illustrated in Table 3.62, Survey evidence seems to suggest that Japanese investors are less likely to undertake local sourcing. They purchase only 14.3 per cent of their production input requirements from domestic manufacturers and this share is the lowest share of all the countries of investment origin in the Survey. On the other hand, Japanese investors tend to import a relatively high share of their inputs

through their parent company (36.7 per cent) which ranks as the highest among the investment originating countries. On the other hand, FIEs from European and Asian countries (excluding Japan), seem to be more integrated with local suppliers to varying extents. Survey results suggest that investors from the US are those most propense to establish long-term collaborative relationships with domestic supplier firms. Around 78 per cent of US companies long-term contracting arrangements are with domestic suppliers, constituting almost 25 per cent of their total inputs.

An important determinant of the vertical integration of foreign enterprises is represented by the sector in which the enterprise is operating and as constituted by the level of manufacturing technology[1]. Survey evidence, presented in Table 3.63, clearly suggests that firms engaging in low-tech manufacturing activities are more likely to be vertically integrated with domestic suppliers. Their share of production inputs procured from domestic manufacturers is the largest while the share for enterprises engaged in high-tech manufacturing is the smallest. These results tend to reflect a better alignment between the type and level of technological sophistication of inputs required by buyers and the capability of domestic suppliers. This result links to the predominance of FEs being more vertically linked when compared to TNC subsidiaries since at the broader level FEs are more engaged in low tech manufacturing than are TNC subsidiaries. Overall, low-tech and medium-tech manufacturing firms tend to exhibit a higher share of domestic suppliers in their total number of suppliers when compared to the high-tech category. Corresponding to this finding, foreign companies in the low-tech manufacturing sectors tend to import less than do foreign companies in other more technologically intensive sectors. A closer look at some sectors engaged in low-technology manufacturing provides further evidence of this phenomenon. FIEs in traditionally low-tech manufacturing, such as food, textiles, leather and furniture have a high share of domestic suppliers and extent of local sourcing. FIEs in the food and furniture manufacturing sectors tend to create significant backward linkages to domestic suppliers both in terms of the number of suppliers as well as in terms of value of domestic subcontracting over the total. On the other hand, local input subcontracting is much lower in the textiles sector where procurement strategies are more tilted towards long-term foreign supply especially from multinational networks in the case of TNC subsidiaries.

Survey evidence also suggests that local market-seeking FIEs tend to purchase more inputs locally than do export-oriented ones (refer to Table 3.64). This result links to the FEs - *low technology- more backward linkages* nexus. Sectors that have shown to attract local market-oriented FDI are the food, beverages, furniture and paper manufacturing. It is plausible that these manufacturing activities require locally available resources for which local supply capacity in Viet Nam seems to exist due to the inherently low technology content. In addition, the quality and technical requirements of goods targeted to the domestic market may tend to be lower and require less sophistication when compared to the situation of the output were to be exported. It is of course obvious that global market-seeking FIEs are, by definition, part of international production systems and therefore, more likely to be dependent on the global sourcing policies of their parent company and thus have less freedom to choose their own suppliers in the host country.

As well as providing a snapshot of the vertical backward linkages of FIEs, the Survey results also point to what are the most important factors that influence the decision of foreign enterprises to engage in local subcontracting and sourcing activities (See Figure 3.5). Perhaps not surprisingly, the great majority of foreign firms (79 per cent) refer to price as being the main factor, while only 2 per cent refer to the fact that local procurement is a consequence of local content being either encouraged or required by the country's legislative framework. If anything, the latter factor points towards the need for enhanced local content, scope and enforcement of similar requirements, although existing local content policies are being phased out in the wake of WTO accession commitments. Since the mid-1990s, in fact, local content policies in Viet Nam have been mostly focused on motor-bike and automobile manufacturing. As other previous studies have emphasized (see for example, Nguyen Thi Phuong Hoa, 2004), more than 50 per cent of foreign respondents report that they have cancelled or not entered into domestic procurement contracts because of the low quality of local products. It also becomes clear that local supplier development may not be a factor that falls within the FIE definition of corporate

1 Again here, the OECD definition is used for the analysis.

Figure 3.5: *Determinant factors for FIEs' domestic subcontracting arrangements*

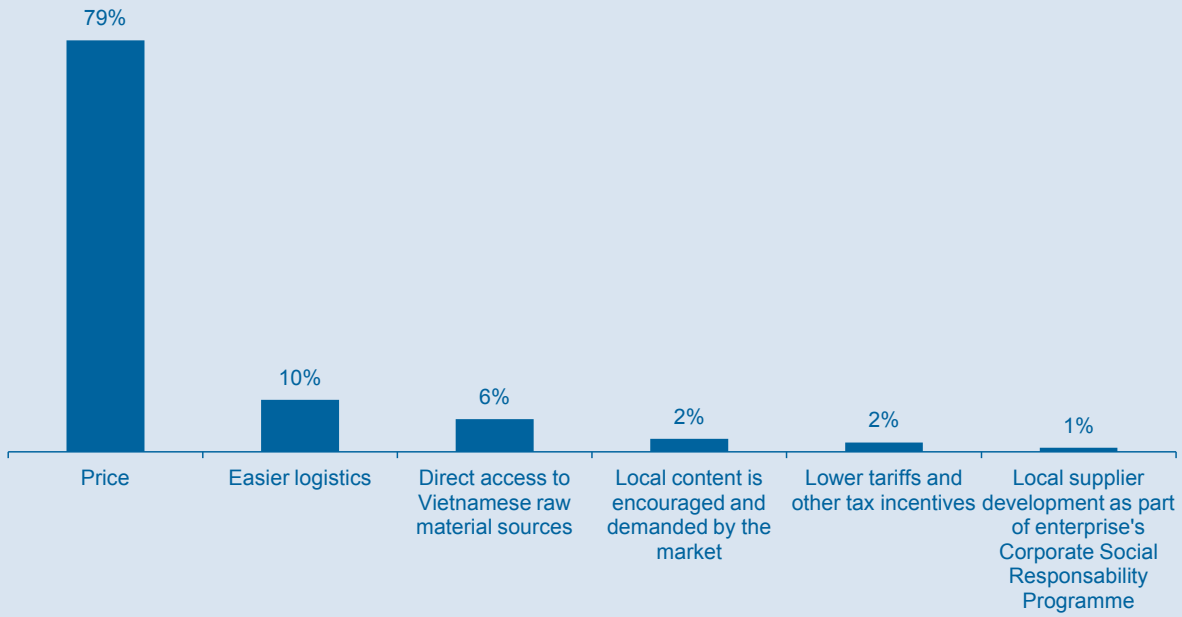
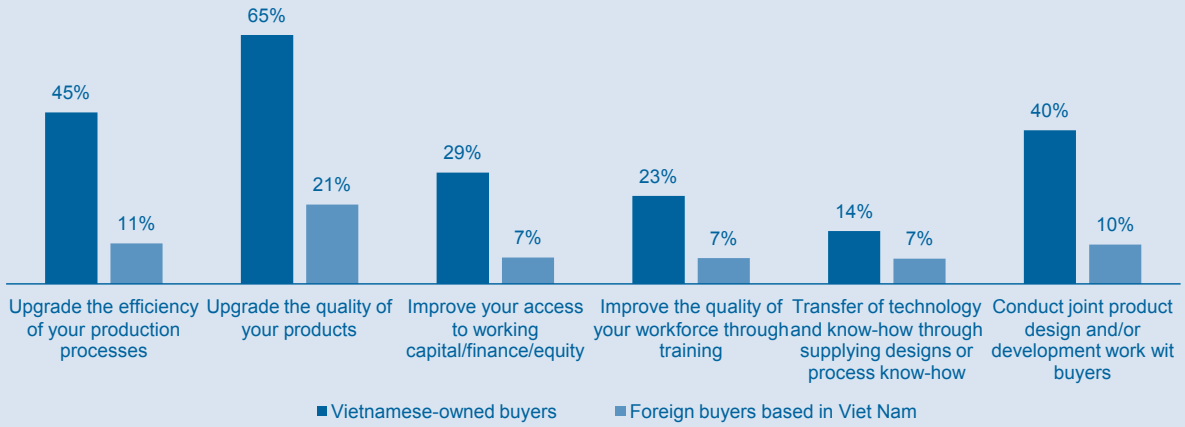


Figure 3.6 *Outcome of interactions between Viet Nam based suppliers and FIE buyers*



social responsibility (CSR) because foreign buyers may not want to be exposed to the risk of lowering product quality or interrupting established production intervals due to delayed supply.

The Survey confirms that Vietnamese enterprises' interaction with their foreign buyers based in Viet Nam brings them a variety of benefits: (i) improved product quality (21 per cent of domestic enterprises); (ii) improved efficiency in their production processes (11 per cent); (iii) more joint product design (10 per cent); (iv) improved quality of their workforce (7 per cent); (v) the transfer of technology and/or know-how (7 per cent); and (vi) better access to working capital and finance (7 per cent). However, as highlighted in Figure 3.6, foreign buyers have less impact than Vietnamese buyers on the local enterprises, suggesting that the spillover effects from foreign buyers to Vietnamese producers is an underexploited potential. For example, two thirds of domestic suppliers indicated that the interaction with domestic buyers was helpful in the upgrading of their products.

As shown in Figure 3.7, foreign firms indicate that they help their suppliers to upgrade the quality of their products (67 per cent of respondents), upgrade the efficiency of their production processes (39 per cent), conduct joint product design (42 per cent), improve their access to working capital, finance or equity (22

per cent) and improve the quality of their workforce (21 per cent). Spillover effects from technology and know-how transfer, however, seem to be limited as only 13 per cent of foreign respondents selected this option. The comparison of responses from foreign buyers in terms of their interaction with Vietnamese suppliers with those actually provided by Vietnamese suppliers gives interesting perception differences for the same set of variables. The ranking of responses follows a similar pattern in the sense that support in product upgrading and joint product design are important interactive channels in the perception of both foreign buyers and domestic suppliers. It may be that Vietnamese suppliers give a more realistic perspective on the real impact of these interactions, something which is reflected by the fact that the share in responses is between 6 (technology transfer) and 46 percentage points (product upgrading) lower than what foreign buyers are indicating for the same variables.

VERTICAL FORWARD LINKAGES

Vertical forward linkages between FIEs and domestic enterprises may also represent an important conduit for technology and knowledge spillovers. Similar to the analysis of vertical backward linkages, the focus of the subsequent analysis is on three main aspects of the vertical forward linkage process: (i) the share of contract work undertaken for manufacturing operations in total inputs, (ii) the destination of sales and (iii) the typology of buyers and their respective shares. The share of contracted work for manufacturing operations is computed as a share of total sales. The destination of sales refers to the percentage share of sales sold in Viet Nam, or directly or indirectly exported. Lastly, the analysis refers to the typology of buyers and their respective shares: domestic, foreign buyers based in Viet Nam, foreign buyers based outside Viet Nam. Accordingly, Table

Figure 3.7: *Outcome of the FIE buyer supplier interaction process*

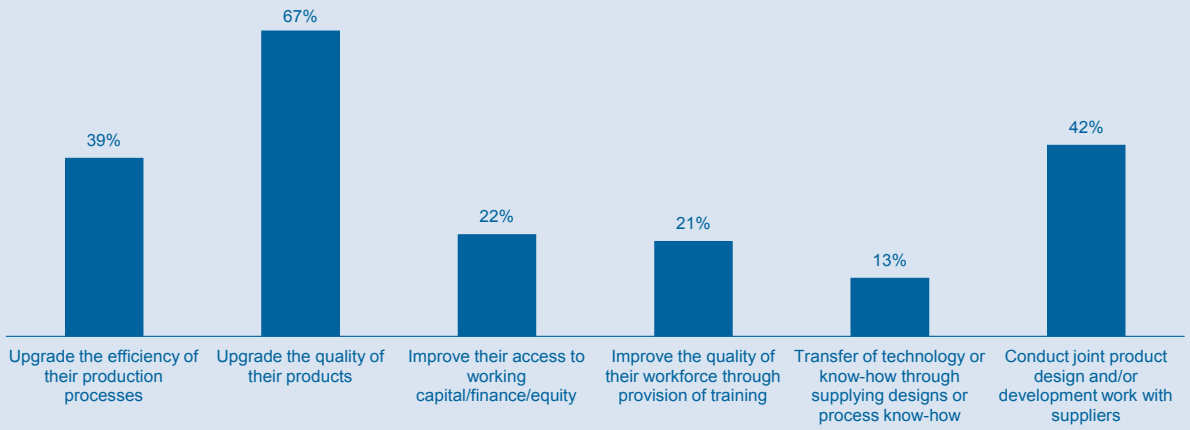


Table 3.65: *Vertical forward linkages by FIEs, by type of investment*

percentage terms (%)

	Total	TNCs	FEs
Share of contract work undertaken for manufacturing operations in total sales*	34.6	28.6	52.7
Disaggregation of total sales value by destination			
Sold in Vietnam (%)	20.8	19.0	25.3
Directly exported (%)	71.9	73.2	68.4
Indirectly exported (%)	7.3	7.8	6.3
Total (%)	100.0	100.0	100.0
Typology of buyers and respective shares			
Share of domestic buyers (%)	33.2	29.2	41.9
Share of foreign buyers based in Vietnam (%)	20.8	21.7	18.8
Share of foreign buyers based outside Vietnam	46	49.1	39.3
Total (%)	100.0	100.0	100.0

Note: * mean computed only for the companies undertaking contract work

Table 3.66: *Vertical forward linkages by FIEs, by sales destination*

percentage terms (%)

	China	Europe	Japan	Rest of the World	Other Asia	Korea	USA
Disaggregation of total sales value by destination							
Sold in Viet Nam	23.3	15.8	13.3	16.2	31.9	15.8	19.9
Directly exported	67.8	79.8	83.5	74.1	58	72.8	70.9
Indirectly exported	8.9	4.4	3.2	9.7	10.1	11.4	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Typology of buyers and respective shares							
Share of domestic buyers	29.9	43.5	17	33.9	43.3	25.1	22.1
Share of foreign buyers based in Viet Nam	24.2	8.9	22.1	23	23.6	22.2	17.5
Share of foreign buyers based outside Viet Nam	45.9	47.6	60.9	43.1	33.1	52.7	60.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3.65 and 3.66 present a number of selected indicators for vertical forward linkages for the surveyed FIEs in the sample, distinguishing between types of FIEs (TNCs or FEs) and the destination country.

As shown in Table 3.65, Survey evidence suggests that foreign enterprises in Viet Nam tend to export the majority of their sales (79.2 per cent) with TNC subsidiaries surpassing FEs in this respect. FEs tend to be more integrated in the local market than TNCs given that they sell most of their output in the Vietnamese market. The results also suggest that foreign affiliates of TNCs tend to undertake contract work for other enterprises in Viet Nam for a value far lower than that of FEs.

Vertical forward linkages by investor country of origin are shown in Table 3.66. Results suggest that FIEs of Asian origin (excluding Japan and Korea) tend to establish more forward linkages with domestic enterprises, *inter alia* through distribution networks throughout different provinces across the country. In fact, 23.3 per cent and 31.9 per cent of Chinese and other Asian firms' total sales, respectively, is sold in Viet Nam, thereby constituting the largest proportions of sales to domestic buyers in the Survey. Japanese companies sell only 13.3 per cent of their total sales to local buyers whereas they export 86.7 per cent of their output. Unexpectedly, US investors are also less integrated in the local market in terms of vertical forward linkages with only 19.9 per cent of their sales going to local buyers, whereas they tend to export more than 80 per cent of their output.

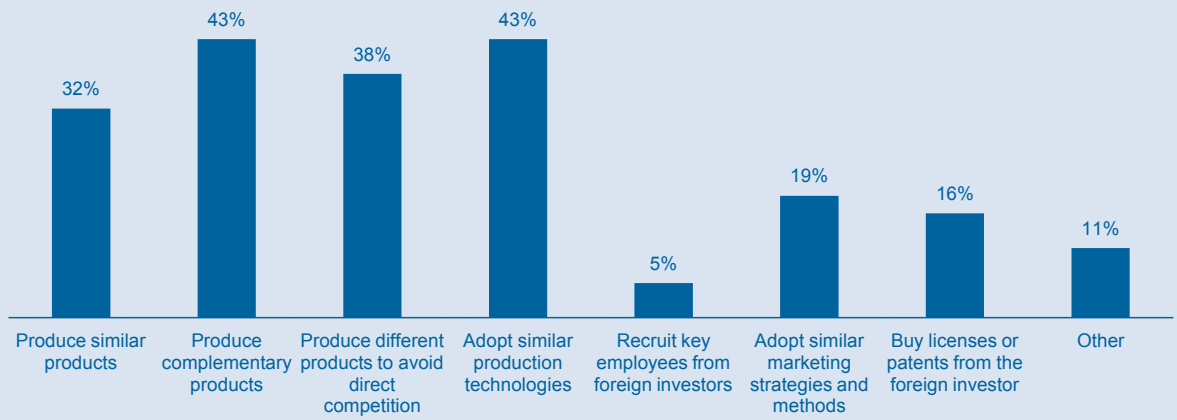
FIES' SPILLOVER EFFECTS

Having gone through a descriptive analysis of the Survey evidence related to vertical backward and forward linkages, an examination of spillover effects stemming from the FIE presence on the local economy is now presented.

At the outset, it is useful to examine the reaction of domestic enterprises to the foreign presence, both at the intra-sectoral and inter-sectoral level. Figure 3.8 shows that domestic enterprises tend to adopt similar production technologies, produce complementary products and produce different products to avoid competition. There appears, therefore to be evidence of demonstration effects in the stimulation of local inventors to develop new processes or technologies. At the same time, domestic firms seem reluctant to compete with foreign affiliates, preferring instead to produce complementary or different products.

Judging from the Survey evidence, the potential for direct technology transfer from foreign to domestic enterprises appears to be challenging since only

Figure 3.8: *Reaction of domestic enterprises towards the presence of FIEs*



16 per cent of respondents indicate that they have bought licenses or patents from foreign firms. From their point of view, foreign firms seem to prefer to protect their intellectual property in order to preserve a competitive edge over their domestic counterparts. These results would appear to suggest that domestic enterprises prefer to compete with their domestic counterparts rather than upscale their 'competitive game' to take on foreign firms operating in Viet Nam. Since domestic enterprises are predominately domestic-market-oriented and FIEs are mainly export-oriented, there is a clear dichotomy between the two which precludes any competition in the Vietnamese market and which in turn acts as a disincentive for domestic enterprises to emulate and benchmark their operations with FIEs. Broadly speaking, there seems to be inconclusive evidence of FIE spillover effects on to domestic enterprises.

To further investigate the impact of FIEs presence on domestic output, a regression analysis is presented hereunder, based on a log-linearization of a Cobb-Douglas production function used to analyze the following aspects:

i. The impact of the presence of foreign firms in an industry on the sales of domestic firms in the same industry;

ii. The impact of the presence of foreign firms in a Province on the sales of domestic firms in the same Province;

iii. The effect of linkages – backward and forward – with domestic and foreign firms on sales of domestic firms;

iv. The effect of linkages – backward and forward – with foreign companies on domestic on sales of domestic firms.

The model is formulated as follows:

$$lnY_{psj} = \beta_0 + \beta_1 lnK_{psj} + \beta_2 lnL_{psj} + \beta_3 FS_p + \beta_4 FP_s + \beta_5 X_{psj} + u_{psj}$$

- Y_{ps} stands for domestic output, measured as total sales,
- K_{ps} and L_{ps} represent he production inputs: capital, defined as the replacement value of total fixed assets at the end of the year, and labor, defined as total number of employees.
- FS_p and FP_s represent the main variables of interest in this analysis.
- FS_p is the share of industry *s'* s total output produced by foreign firms.
- FP_s is the share of province *p'* s total output produced by foreign firms.
- X_{ps} denotes the control variables included in the regressions, which are the following:
  - Herfin is the Herfindahl index which represents the product concentration of domestic firm *j*.

- SOE is an ownership dummy variable which takes value 1 if the company is a state-owned enterprise, 0 otherwise.
- Exporter is a dummy variable taking value 1 if the company exports more than 10 per cent of the total sales and 0 otherwise.
- Backward Linkages (in log) is the total number of suppliers of the domestic firm *j*.
- Forward Linkages (in log) is the total number of buyers of the domestic firm *j*.
- Backward Foreign Linkages (in log) is the total number of foreign suppliers of the domestic firm *j*.
- Forward Foreign Linkages (in log) is the total number of foreign buyers of the domestic firm j.

The model is estimated by using OLS with robust standard errors to correct for the possible presence of heteroskedasticity. In order to check the robustness of the results, a random effects model is also estimated.

Tables 3.67 and 3.68 illustrate the results of the regressions.

The first regression results are listed in Table 3.67. The coefficient of foreign presence in the same sector as domestic companies (FS) is statistically significant and negative in all regressions, which can be interpreted as a form of a crowding out or 'market-stealing' effect produced by foreign entrants. The domestic firms' sales could, in fact, be squeezed by the entry of foreign affiliates, which may also lead to a decrease in

Table 3.67: *Regression results - I: Dependent variable: domestic sales*

Explanatory variables	OLS1	OLS2	OLS3	RE1	RE2	RE3
Capital	0.4050***	0.3746***	0.4300***	0.3489***	0.3040***	0.3470***
	(12.91)	(9.31)	(6.90)	(11.38)	(8.12)	(6.28)
Labour	0.6626***	0.6298***	0.5482***	0.7312***	0.7033***	0.7122***
	(12.95)	(9.92)	(5.53)	(15.69)	(11.52)	(7.99)
FS	-0.9629***	-0.6170**	-1.4100***	-0.8574*	-0.5067	-1.3266*
	(-5.87)	(-2.81)	(-3.65)	(-2.48)	(-1.26)	(-2.14)
FP	0.7951***	0.7045*	0.3678	0.8595***	0.7675**	0.5387
	(3.55)	(2.49)	(0.88)	(4.10)	(3.00)	(1.55)
Herfin		0.1292	-0.1020		0.2799	0.1330
		(0.71)	(-0.37)		(1.59)	(0.54)
SOE		-0.0467	0.0699		-0.0329	0.0287
		(-0.41)	(0.34)		(-0.30)	(0.18)
Skill		0.0148***	0.0207**		0.0146***	0.0240***
		(3.62)	(2.95)		(3.69)	(4.00)
Exporter		-0.0234	0.1083		0.0486	0.1637
		(-0.22)	(0.52)		(0.47)	(0.89)
Backward Linkages		0.1487***			0.1274***	
		(4.24)			(3.45)	
Forward Linkages		0.0733*			0.0694*	
		(2.37)			(2.26)	
Backward foreign linkages			0.1563**			0.1677**
			(2.63)			(2.98)
Forward foreign linkages			0.0212			0.0162
			(0.30)			(0.28)
Constant	6.0604***	5.4348***	6.3688***	6.3568***	5.8382***	6.1344***
	(12.89)	(8.77)	(6.51)	(12.57)	(9.44)	(6.30)
R^2	0.6042	0.6356	0.6378	0.6091	0.6315	0.6791
No of observations	635	450	198	635	450	198

Note: t statistics in parentheses = * p<0.05 ** p<0.01 *** p<0.001

productivity if adjustment costs prevent inputs being reduced accordingly or if economies of scale are operating (Markusen and Venables, 1999). Conversely, the impact of the presence of foreign firms in the same province as domestic companies (FP) is positive and statistically significant in four out of six regressions, suggesting the existence of a demonstration effect, caused by the proximity of foreign companies to the domestic ones that positively affects the sales of local firms at the provincial level. It is therefore suggested that, by their mere presence in the provinces, through their ownership of specific assets and their management practices and technology endowments, FIEs' operations may create positive spillover effects enticing domestic firms to develop similar products and adopt similar production processes.

The positive effect of FP may also be interpreted as a result of the vertical linkages established between domestic and foreign enterprises at the provincial level.

Table 3.68: *Regression results - II: Dependent variable: domestic sales*

Explanatory variables	OLS1	OLS2	OLS3	RE1	RE2	RE3
Capital	0.3916***	0.3763***	0.4496***	0.3916***	0.3763***	0.4496***
	(13.75)	(10.39)	(7.81)	(13.75)	(10.39)	(7.81)
Labour	0.6489***	0.6152***	0.5105***	0.6489***	0.6152***	0.5105***
	(13.71)	(9.81)	(5.21)	(13.71)	(9.81)	(5.21)
FS_European	1.1597*	1.1191*	1.9723**	1.1597*	1.1191*	1.9723**
	(2.49)	(2.03)	(2.77)	(2.49)	(2.03)	(2.77)
FS_AmericanSal	-3.4953***	-2.1273	-4.9306**	-3.4953***	-2.1273*	-4.9306**
	(-3.92)	(-1.96)	(-2.73)	(-3.92)	(-1.96)	(-2.73)
FS_Asian	-0.5194***	-0.3047	-0.7451**	-0.5194***	-0.3047	-0.7451**
	(-3.94)	(-1.85)	(-2.82)	(-3.94)	(-1.85)	(-2.82)
FP_European	-0.1852*	-0.3152*	-0.5200*	-0.1852*	-0.3152*	-0.5200*
	(-2.39)	(-2.04)	(-2.24)	(-2.39)	(-2.04)	(-2.24)
FP_American	0.0234**	0.0332*	0.0545*	0.0234**	0.0332*	0.0545*
	(3.13)	(2.28)	(2.51)	(3.13)	(2.28)	(2.51)
FP_Asian	-0.0005	-0.0006	-0.0008	-0.0005	-0.0006	-0.0008
	(-1.90)	(-1.29)	(-1.13)	(-1.90)	(-1.29)	(-1.13)
Herfin		0.2508	0.0398		0.2508	0.0398
		(1.34)	(0.14)		(1.34)	(0.14)
SOE		-0.0578	0.0864		-0.0578	0.0864
		(-0.49)	(0.46)		(-0.49)	(0.46)
Skill		0.0152***	0.0204**		0.0152***	0.0204**
		(3.66)	(3.13)		(3.66)	(3.13)
Exporter		0.0080	0.0739		0.0080	0.0739
		(0.07)	(0.38)		(0.07)	(0.38)
Backward Linkages		0.1521***			0.1521***	
		(3.88)			(3.88)	
Forward Linkages		0.0747*			0.0747*	
		(2.33)			(2.33)	
Backward foreign linkages			0.1403*			0.1403*
			(2.30)			(2.30)
Forward foreign linkages			0.0344			0.0344
			(0.54)			(0.54)
Constant	6.6027***	5.7015***	5.9551***	6.6027***	5.7015***	5.9551***
	(17.92)	(11.75)	(6.96)	(17.92)	(11.75)	(6.96)
R^2	0.6064	0.6371	0.6703	0.6090	0.6506	0.6715
No of observations	635	450	198	635	450	198

Note: t statistics in parentheses = * p<0.05 ** p<0.01 *** p<0.001

The coefficient becomes, in fact, insignificant in the third and sixth regressions (OLS3 and RE3) when the variables referred to the forward and backward linkages with foreign companies are added to the model. However, only backward linkages with foreign firms seem to have a positive and significant impact on domestic sales, suggesting that, when domestic enterprises purchase their inputs from foreign affiliates, they may benefit from the advanced know-how and technology embedded in the inputs provided by foreign firms. On the other hand, the coefficient of forward linkages in the regressions is positive, but insignificant. This outcome may reflect the fact that foreign manufacturing firms in Viet Nam prefer to procure their intermediate inputs from abroad (largely their home countries) and, given that the share of local inputs is low, spillovers from forward linkages may be weak and statistically insignificant as a factor of domestic output. The results also show a positive coefficient of the domestic enterprises' skill level which seems to re-confirm the positive performance effect of human capital not only on labour productivity and technical efficiency but also on domestic sales.

In order to get further insights into their impact, FIEs are divided according to their region of origin. Foreign investors' provenience may, in fact, matter for spillovers to domestic firms. First, foreign companies may purchase a higher share of intermediate inputs locally as the physical distance between the host and the source economy increases. A larger share of local sourcing may then imply more contacts between FIEs and domestic firms and thus increasing the probability that knowledge and technology spillovers take place. Secondly, local outsourcing decisions may also be affected by preferential trade agreements between the host country and the country of investor origin. In this respect a further round of regression results are included in Table 3.68. Three different measures of FP and FS are calculated for three regions of origin: Europe, America and Asia[2]. Results suggest that domestic firms' sales are positively correlated with the presence of European firms in the same sector, but negatively correlated with the presence of American and Asian firms. These results seem to constitute some evidence of the "market stealing effect" from American and Asian firms, possibly caused by the advanced technology of the former, and by the similarity of the Asian products with those of Vietnamese firms. Conversely, results suggest that, within the provinces, the impact of the presence of European firms is negatively correlated with the sales of the domestic firms in the same Province, while the presence of American investors is positively correlated. As highlighted earlier, investors from the USA tend to establish long-term relationships with local suppliers and this may facilitate knowledge and technology transfer over time. On the other hand, the negative impact of European investors' presence might be caused by asymmetries in bargaining power. More specifically, foreign affiliates may be expected to have much more bargaining power than local firms because of their size and international operations and, consequently tend to appropriate the advantages as well as productivity gains during the transaction process. Lastly, the effect of Asian investors on the domestic sales is insignificant within provinces which may be a consequence of the fact that the technology gap between these investors and Vietnamese firms is narrow and as a result the spillovers may be insignificant.

2 In order to do so, each foreign affiliate is assigned to one of the three regions as follows: Europe encompasses investors from EU member countries; America includes only the USA because there are very few investors from South America and North America, other than the U.S., in the sample; and Asia includes China, China (Taiwan Province), Japan, South Korea, Malaysia, Singapore, Thailand, and the Philippines.

SUMMARY

This Chapter has aimed to analyze the impact of FIEs in Viet Nam. First, it examined the presence of forward and backward linkages between foreign and domestic companies. Results suggest that foreign firms have a low level of local sourcing of intermediate production inputs. In fact, they import most of their inputs. Among foreign companies, FEs tend to be more integrated than TNCs in the host economy and purchase a higher share of their production inputs locally. The analysis also shows that the country of origin of the foreign investors has an impact on their sourcing patterns. Japanese investors are less likely to procure locally, while European and other Asian investors are more integrated with the local suppliers, and investors from the USA establish more long-term relationships with local suppliers than do others. Differences are also found across sectors: firms operating in low-tech manufacturing are more likely to source locally. Firms' export orientation also seems to influence their degree of contact with domestic firms: domestic-market-oriented foreign firms tend to purchase more locally than do export-orientated firms. Foreign affiliates in Viet Nam sell their goods mostly to foreign buyers based outside Viet Nam. This behavior is particularly evident in

the case of Japanese investors who sell only 14 per cent of their sales to local buyers. The Chapter presents regression analysis to estimate the impact of foreign firms on domestic sales. This analysis shows that, in terms of horizontal spillover effects, the potential technology transfer between foreign firms and their local counterparts in the same sector is more than offset by the competition created by the entry of the foreign firms in the same sector. The net effect of the horizontal presence of foreign firms on domestic sales is thus negative. On the other hand, the presence of foreign firms in the same province impacts positively on the performance of domestic enterprises. This effect seems to be driven by the backward and forward linkages that domestic firms have with the foreign firms. In particular, the Survey results suggest that, when domestic enterprises purchase their inputs from foreign firms, they may benefit from the advanced know-how and technology embedded in the inputs e.g. through reverse engineering. However, forward linkages with foreign firms have an insignificant impact on domestic sales, suggesting that, since foreign manufacturing firms in Viet Nam prefer to import their intermediate inputs and given that the share of local inputs is low, spillovers from forward linkages are weak or do not occur at all. The regression analysis also supports the hypothesis that the country of origin of foreign investors influences the degree of spillover. The sales of domestic firms are positively correlated with the presence of European firms in the same sector, but negatively with the presence of American and Asian investors. Conversely, within the provinces the impact of the presence of European firms is negatively correlated with the sales of domestic firms in the same province, while the presence of American investors is positively correlated. The effect of Asian investors on the domestic sales within the provinces is insignificant.

Technical Appendix I: **FDI spillover effects in Viet Nam: An overview of empirical studies**

Following the study of Nguyen and adopting quantitative analysis on both primary and secondary data, Nguyen Thi Tue Anh et al. (2005) showed that the spillover impacts by 2005 have only been evident via two channels, namely production linkages (including forward and backward linkages) and competition. Another finding from this study was that private enterprises acquired benefits through these two channels, while their state-owned counterparts did not. The study further found that many state-owned enterprises (SOEs) have suffered from negative spillover impacts, but they overcame the situation due to some advantages unavailable to private enterprises rather than to changes in their behaviour. Alternatively, the SOEs may enjoy positive spillovers through production linkages, but these offset by negative spillovers induced by tougher competition from foreign-invested enterprises.

Notably, the sectors with a higher presence of foreign enterprises experienced higher wage levels. Domestic firms engaging in backward linkages with FIEs may benefit from spillover impacts on productivity, and are therefore in a position to pay higher wages. It was found that, for these vertical spillovers to materialize, domestic enterprises have to invest in training, otherwise vertical spillovers disappear. Horizontal spillover impacts on wages are significant in enterprises of all ownership types in both medium- and low-technology industries, while vertical ones only affect private firms in low-technology industries. Regarding firm size, enterprises of all sizes are affected by horizontal spillover effects, while only SMEs are affected by vertical ones.

In a subsequent study, Le Quoc Hoi (2008) mined the same data set at enterprise-level from 2000 to 2004 and employed the Cobb-Douglas production function to estimate the technology spillover effects from FIEs to domestic enterprises in Viet Nam through horizontal and backward linkages, The author controlled for industry effects, ownership (foreign vs. domestic), size of

domestic enterprises, the quality of labor and the size of technology gap between domestic and foreign firms. The author finds evidence of backward linkages from FIEs to domestic enterprises. In addition, the productivity of domestic enterprises in industries with a larger foreign presence exceeds those of others. However, the impact of the presence of foreign firms on productivity levels of domestic firms in the same sector was found to be negative which was mainly attributable to competition effects Moreover, the study found that domestic productivity is weakened by the presence of wholly-foreign-owned enterprises, but not by that of partially-foreign-owned counterparts. In another aspect, the impact of domestic market-oriented FIEs on the productivity of domestic enterprises is negative, while that of export-oriented ones is insignificant.

Le Thanh Thuy (2007) identified the extent of spillover effects of FDI on labour productivity of Vietnamese firms during the periods 1995-1999 and 2000-2002 using the Cobb-Douglas production function. In doing so, the author relied on industry-level data from GSO for the same periods, including a total of 29 sectors from the three industrial groups of mining and quarrying, manufacturing and electricity, and gas and water supply. The study also quantified the impact of technology gap between foreign and domestic enterprises, industry characteristics such as an enterprise's capital-intensive or labor-intensive nature, and the extent to which domestic private firms are linked to operations of FIEs. The author found the technology gap to be among the important determinants of spillover effects. Yet this relationship is not maintained for all levels of technology gap. Specifically, a large technology gap leads to negative productivity spillovers on domestic firms due to crowding-out effects. Besides, with their export orientation, Viet Nam's labor-intensive industries are found to be quite efficient and highly technological compared to other sectors which put this sector in a more favourable position for reaping spillover effects than capital-intensive sectors. The regression results also indicate evidence of a changing "absorptive capability" of Vietnamese firms for FDI. As most firms in Viet Nam operate with outdated technologies, only firms with advanced technologies are able absorb the transfer of advanced technologies from MNCs. Nonetheless, this impact diminishes over time when technology levels of foreign and domestic firms are converging. Le Thanh Thuy (2007) also found that spillover effects are much greater in the period of 1995-1999 than in the period 2000-2002. The author confirmed that private domestic enterprises have to make efforts towards the improved absorption of spillover effects from FDI and policies for promoting private sector development play a critical role in that regard.

As opposed to that, the study of Giroud (2007) found only a limited magnitude of linkages as well as knowledge sharing between FIEs and local suppliers in Viet Nam. The author presented evidence that the spillover effects of FDI are beneficial to workers not directly employed by the MNCs. Specifically, FDI creates a positive externality so that workers can get higher wages than they would receive in the absence of FDI.

Nguyen Ngoc Anh et al. (2008) also investigate the technological spillover effects of MNCs' presence in Viet Nam, both in terms of horizontal effects and vertical effects i.e. backward and forward linkages. In doing so, the authors analyzed the enterprise-level panel data from the enterprise surveys conducted by GSO in 2000-2005. The novelty of this study was to include the services sector. Spillover impact of FDI was measured in terms of demonstration effects, competition and movements of labour. Like previous studies, Nguyen Ngoc Anh et al (2008) based their econometric model on the Cobb-Douglas production function. The first set of results is acquired by estimating the basic model through a pooled ordinary least squares (OLS) method. Subsequently, the authors delve more deeply into the panel data set, attempting to address the possible correlation between the unobserved productivity shock and the inputs by re-estimating the basic model, using the random-effect and fixed-effect models. Finally, the authors develop the first difference form of the model for estimation, to deal with the issue of exogeneity. They observed positive and significant spillover effects through backward linkages in the manufacturing sector and backward and forward spillover effects in the services sector. The paper found evidence of spillover effects through labor movement but no spillover effects in terms of output for domestic firms in the same manufacturing sector as FIEs. However, the empirical evidence supports horizontal spillover effects in the services sector through both output and labour movement channels. On the basis of these findings, the authors concluded with a set of detailed policy recommendations for Viet Nam, particularly for encouraging FDI into sectors whose potential for technological spillovers is large

In a parallel effort, Nguyen Phi Lan (2008) rigorously

examinee FDI technology spillover effects on the productivity of domestic enterprises while simultaneously examining the extent of variance of FDI in domestic manufacturing enterprises across geographical regions. For the empirical analysis, Nguyen Phi Lan (2008) used data from the annual enterprise surveys conducted by GSO in the years 2000-2005, but unlike Nguyen Ngoc Anh et al. (2008), focusing only on manufacturing enterprises.. The paper also relies on the Cobb-Douglas specification of production function for estimations at both industry and enterprise levels. The model is estimated with the two stage least squares method with the correction for heteroskedasticity. In doing so, the model also incorporates dummy variables for industry, region and time, together with lagged values of relevant variables of horizontal, backward and forward linkages. This specification arguably helps to avoid the potential endogeneity that may result from an FDI presence and the characteristics of industries. Interestingly, although the analyses are based on the same subset of data used in the study of Nguyen Phi Lan (2008), the results are quite different. Notably, in the period 2000-2005 there is evidence of a positive impact of FDI on the productivity of domestic manufacturing enterprises through horizontal and backward linkages, while a negative impact is only observed on domestic productivity through forward linkages.

The empirical evidence in other developing countries shows the negative impact on domestic enterprises' productivity of horizontal linkage, which results from the more technologically advanced FIEs competing successfully with domestic enterprises, thereby forcing the latter to reduce their productivity (Pham Thien Hoang 2009). Domestic firms gain access to foreign technologies mainly through observing and imitation. The impacts through horizontal and backward linkages on productivity of domestic enterprises also arguably depend upon the extent to which these enterprises can absorb the impacts. Enterprises with a larger pool of human capital, better financial development and a lower technology were found to be more absorptive for technology spillovers of FDI, which, in turn, affects their productivity positively. Another finding by Nguyen Phi Lan (2008) is that the presence of FDI tends to weaken the productivity of domestic enterprises in industries with low technologies. Industries with medium technologies benefit from forward linkages with FIEs. As a result, domestic enterprises in these industries can produce intermediate goods of better quality at lower costs and can, consequently, increase their productivity and attain larger economies of scale. There is some evidence that large Vietnamese firms with higher levels of technology qualify for becoming intermediary goods suppliers to FIEs and benefit more often than other firms from FIE supplier development assistance.

The author also found varying benefits from technology spillover effects in different geographical regions of Viet Nam. The empirical evidence showed that backward linkages are more often observed in the Red River Delta, the North East, the South Central Coast, and the South East of Viet Nam. These are the regions with relatively more advanced infrastructure, human capital stock, higher levels of technology and trade integration. These regions, however, fail to benefit from horizontal linkages because the high concentration of FDI puts local companies in the same sector under competitive pressure. In more remote regions of Viet Nam, domestic enterprises realize productivity gains through horizontal linkages and learning but they have no backward linkages with FIEs.

The study by Nguyen Xuan Kien (2008) finds unambiguous and strongly positive evidence of an FDI spillover impact on Viet Nam's overall labor productivity. This finding gives further confirmation of the essential importance of FDI in the development of economies such as Viet Nam's: for Viet Nam as the host country, FDI channels the necessary capital, modern technology, management skills, and marketing skills. The author refers that the presence of FIEs enhances competition between enterprises in the host country, which is critical to ensuring a more efficient use of resources, improvement of technology, and enhancement of management and labor productivity.

The evidence put forward by Nguyen Xuan Kien (2008) shows, further, that the spillover impact of FDI in Viet Nam depends on the gaps between FIEs and domestic enterprises in terms of skills, scale, and capital intensity. The negative impact of skills and capital intensity gaps on overall labor productivity implies that Viet Nam should encourage FDI with labor-intensive technologies in the short-term in order to utilize the current vast pool of cheap labor force. In the long run, however, the country should focus on narrowing the technology gap between domestic enterprises and FIEs. Also, taking a long-term view, Nguyen Xuan Kien (2008) emphasizes the need to improve the skills of local workers since the attractiveness for FDI of relatively cheap labor will disappear in the near future.

Chapter 4:

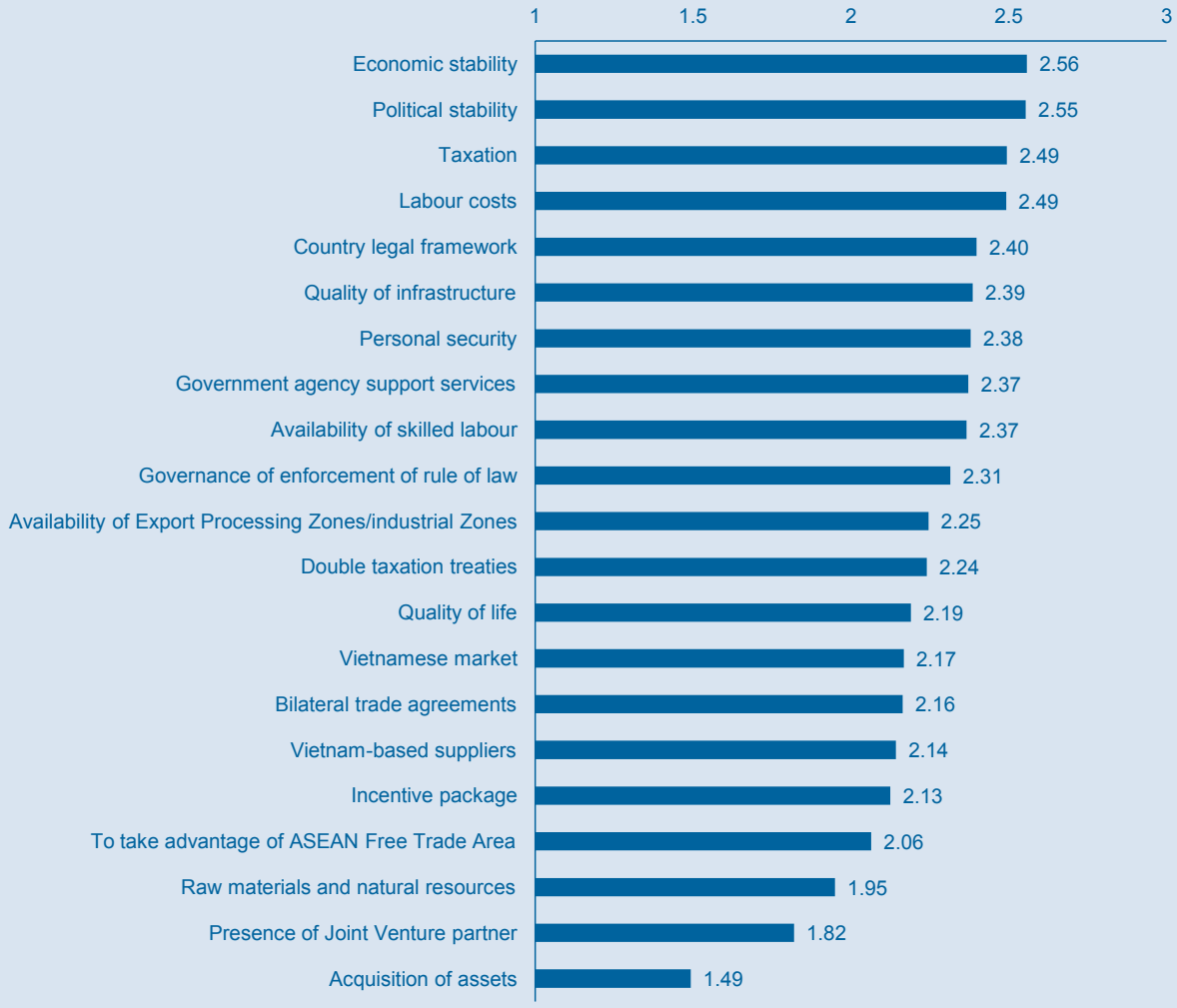
Investment climate conditions

Chapter 4.1: Business climate in Viet Nam and investment support services

INTRODUCTION

This Chapter analyses a number of foreign investor perceptions of Viet Nam's business climate and operating environment as revealed in the Survey responses: what influences their decision to invest in Viet Nam; how they become aware of the investment opportunities; and how they rate the business support services they receive from the country's investment promotion institutions at both central and provincial levels. It begins by analyzing the general investor perception of the business climate in Viet Nam. This is undertaken through an analysis of the importance of and direction of changes in the country's investment location factors. Then the focus moves to the various sources through which investors become aware of the investment opportunities in Viet Nam. This is followed by a study of investors' experience of the foreign investment registration process, the type and quality of investment incentives they receive, and the business support services that are offered to them, including their quality and which institution provided such services. The support services are considered at four distinct stages in the investment

Figure 4.1: *FIEs' ranking of location factor importance, last three years*



Note: Mean value based on a 3-point likert scale with: 1="not important", 2="important", 3="very important"

process: the pre-investment/pre-expansion stage, the entry stage, the implementation stage and the operational/aftercare stage.

THE BUSINESS CLIMATE IN VIET NAM

The attractiveness of a country to investors is determined by its investment location factors. This Section analyses foreign investors' perception of the importance and direction of change of 21 different location factors in Viet Nam. Investors rank the importance of these factors in their decision to invest in the country and indicate the changes they have seen in them over the last three years. Figure 4.1 summarizes their responses[1].

Foreign firms consider economic stability, political stability, taxation, labor costs and the country's legal framework as the five location factors that most influence their investment decisions. Interestingly, most firms give a relatively low rating to the availability of raw materials and natural resources, the presence of a joint venture partner and the acquisition of assets[2]. It is also interesting that, between the two conflicting location factors of low labour costs on the one hand and the skill level of work force on the other hand (driving up their costs), investors continue to attach relatively higher importance to the costs than to the skills dimension. The relatively low ranking of the Vietnamese market as well as the ASEAN Free Trade Area as a location factor, confirm the clear orientation of FIEs towards global markets.

Differences in the attribution of the importance of location factors are also analyzed on the basis of investors' country of origin (Table 4.1 below). The shaded cells represent the five most important location factors for

1 The ranking of location factor importance is calculated on the basis of the Likert scale between 1 and 3: 1 being the lowest (not important), 2 in the middle (important) and 3 being the highest (very important). The assignment of numerical values to rank order categories is quite common (Laboviz 1970).

2 This indicates that the 'strategic asset seeking' motive according to Dunning´s classification of investor motives may have not yet emerged in Viet Nam.

Table 4.1: *Importance of location factors, by investment country of origin*

Location factors	China	Europe	Japan	South Korea	USA	Other Asia	Rest of the World
Political stability	2.6	2.4	2.6	2.6	2.7	2.6	2.7
Economic stability	2.6	2.5	2.5	2.6	2.7	2.6	2.7
Government agency support services	2.4	2.4	2.4	2.3	2.5	2.5	2.6
Taxation	2.4	2.4	2.5	2.5	2.6	2.6	2.5
Availability of skilled labor	2.3	2.2	2.4	2.4	2.3	2.4	2.5
Labor costs	2.5	2.4	2.5	2.6	2.6	2.6	2.5
Governance of enforcement of rule of law	2.3	2.3	2.4	2.2	2.3	2.4	2.5
Country legal framework	2.4	2.3	2.4	2.3	2.6	2.4	2.5
Quality of infrastructure	2.4	2.3	2.4	2.4	2.5	2.3	2.4
Personal security	2.4	2.3	2.4	2.3	2.4	2.5	2.4
Availability of Export Processing Zones/ industrial Zones	2.3	2.1	2.4	2.2	2.4	2.3	2.3
Double taxation treaties	2.2	2.1	2.3	2.3	2.2	2.3	2.3
Quality of life	2.1	2.1	2.2	2.2	2.1	2.3	2.3
Bilateral trade agreements	2.2	2.1	2.2	2.2	2.1	2.2	2.2
Vietnam-based suppliers	2.1	2.1	2.1	2.2	2.2	2.2	2.2
To take advantage of ASEAN Free Trade Area	2.0	2.0	2.1	2.1	2.0	2.2	2.2
Vietnamese market	2.1	2.2	2.1	2.2	1.9	2.4	2.1
Incentive package	2.1	2.1	2.2	2.1	2.0	2.1	2.0
Raw materials and natural resources	1.9	2.0	2.0	1.8	1.9	2.0	1.9
Presence of Joint Venture partner	1.8	1.7	1.8	1.8	1.7	1.9	1.8
Acquisition of assets	1.5	1.5	1.5	1.5	1.5	1.6	1.5

Note: Mean value based on a 3-point likert scale with: 1="not important", 2="important", 3="very important"

Table 4.2: *Importance of location factors, by type and market orientation of FIE*

	TNCs	FEs	Exporter	Non-Export
Acquisition of assets	1.5	1.4	1.5	1.7
Availability of Export Processing Zones/industrial Zones	2.3	2.2	2.3	2.2
Availability of skilled labour	2.4	2.3	2.4	2.3
Bilateral trade agreements	2.2	2.1	2.2	2.1
Country legal framework	2.4	2.4	2.4	2.4
Double taxation treaties	2.3	2.2	2.2	2.2
Economic stability	2.5	2.6	2.6	2.6
Governance of enforcement of rule of law	2.3	2.3	2.3	2.4
Government agency support services	2.4	2.3	2.4	2.3
Incentive package	2.1	2.1	2.1	2.1
Labour costs	2.5	2.4	2.5	2.3
Personal security	2.4	2.4	2.4	2.4
Political stability	2.5	2.6	2.6	2.5
Presence of Joint Venture partner	1.8	1.9	1.8	2.0
Quality of infrastructure	2.4	2.4	2.4	2.4
Quality of life	2.2	2.2	2.2	2.2
Raw materials and natural resources	1.9	2.0	1.9	2.1
Taxation	2.5	2.5	2.5	2.5
To take advantage of ASEAN Free Trade Area	2.1	2.0	2.1	2.0
Vietnam-based suppliers	2.1	2.1	2.1	2.2
Vietnamese market	2.2	2.2	2.1	2.4

Note: Mean value based on a 3-point likert scale with: 1=”not important”, 2=”important”, 3=”very important”

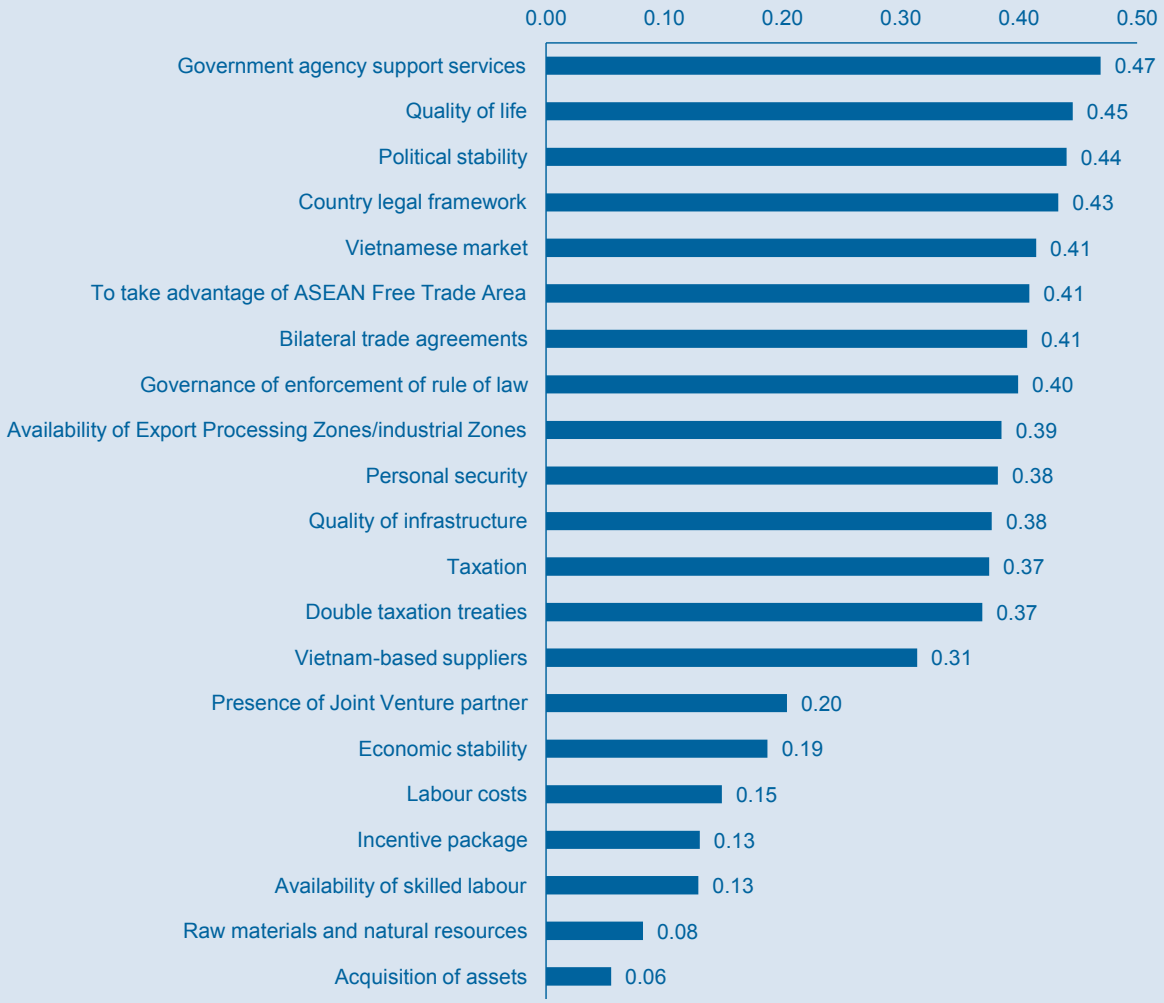
each investor country or region of origin. Most notably, investors from all the countries consider fundamental factors such as political stability, economic stability, taxation and labor costs as being the most important. In particular, Asian investors seem to worry relatively more about personal security than do investors from other countries, whereas the quality of the infrastructure is more important for South Korean investors than for those from other countries. On the other hand, government agency support services seem to be particularly important for European investors.

The importance of location factors varies slightly according to whether an investor is an exporter or whether it is a subsidiary of a transnational corporation (TNCs) or a foreign entrepreneur (FEs). Significantly, several TNCs identify labour costs as an important factor, while FEs seem to consider the quality of infrastructure as more important. On the other hand, exporting firms are more interested in lower labour costs than are non-exporting firms, which are more concerned with the quality of the infrastructure to ensure quick transport of goods in the domestic markets (Table 4.2).

Table 4.2 illustrates the mean change rating of the location factors given by type and market orientation of investor. With values ranging from -1 to +1, the positive numbers indicate an improvement, while negative numbers suggest that, according to the foreign investors, the location factors have degenerated over the past three years (Figure 4.2). The zero point indicates that there was no perceived change for a given factor. Overall, firms report that all the location factors have improved over the past three years, particularly government agency support services, quality of life, political stability and the country’s legal framework. A positive finding is that the most important factor, political stability, is also among the factors that have considerably improved. The second most important factor, economic stability, has though been close to stagnation which is not too much of a surprising result given the global economic turmoil.

Interesting differences emerge, however, when we consider the investor country of origin. Interestingly, only the European enterprises indicate that two location factors, the availability of raw materials and natural resources and labor costs, have deteriorated over

Figure 4.2: *FIEs' assessment of location factor changes over the last three years*



the last three years, while investors from US indicate that the situation with respect to the availability of raw materials and natural resources has degenerated. On the other hand, a high proportion of US investors are optimistic about several other location factors, such as the country's legal framework, the government support services, political stability, the quality of life, governance of enforcement of rule of law and the general quality of infrastructure. European firms are more optimistic about the quality of the infrastructure, the quality of life and government support services, while South Korean investors are more upbeat about the Vietnamese market and political stability. Only Chinese investors consider that taxation and government support services have actually improved. On the other hand, Japanese investors are more positive about specific Vietnamese location factors since they consider the ASEAN Free Trade Area as a most important factor, much more than other investors so. Table 4.3 illustrates changes in the perception of location factors by investors of Asian and non-Asian origin, respectively.

In this context, it is important to analyze some further Survey evidence about the different perceptions of investors from the North and the South[3]. On average, investors from the South are more positive than those from the North about the direction of change in Viet Nam's investment environment, in particular in the quality of infrastructure, political stability, taxation, the country legal framework and government agency support services. On the other hand, firms from the North are generally more upbeat about the Vietnamese market, seeing advantages in the ASEAN Free Trade Area, benefits from bilateral trade agreements, and the general quality of life.

3 The definition of North and South investor countries of origin is provided in Chapter 2.

Table 4.3 *Changes in FIEs' perceptions of location factors, by country of origin*

	China	Europe	Japan	South Korea	USA	Other Asia	Rest of the World
Raw materials and natural resources	2.08	1.95	2.11	2.11	1.97	2.16	2.08
Acquisition of assets	2.06	2.02	2.07	2.07	2.00	2.04	2.12
Incentive package	2.15	2.05	2.11	2.15	2.00	2.22	2.15
Presence of Joint Venture partner	2.23	2.15	2.14	2.20	2.13	2.18	2.23
Labour costs	2.20	1.85	2.06	2.21	2.16	2.12	2.00
Economic stability	2.17	2.12	2.20	2.20	2.19	2.22	2.38
Availability of skilled labour	2.17	2.24	2.07	2.06	2.23	2.19	2.12
Double taxation treaties	2.35	2.41	2.42	2.41	2.23	2.40	2.46
Taxation	2.45	2.32	2.27	2.42	2.23	2.44	2.23
Vietnam-based suppliers	2.31	2.37	2.26	2.36	2.29	2.37	2.42
Personal security	2.39	2.41	2.32	2.37	2.29	2.44	2.35
Vietnamese market	2.37	2.44	2.44	2.48	2.35	2.60	2.19
Availability of Export Processing Zones/industrial Zones	2.36	2.37	2.39	2.38	2.39	2.44	2.38
Bilateral trade agreements	2.38	2.44	2.47	2.41	2.39	2.40	2.58
To take advantage of ASEAN Free Trade Area	2.38	2.37	2.49	2.38	2.42	2.47	2.35
Quality of infrastructure	2.39	2.46	2.30	2.29	2.48	2.48	2.54
Governance of enforcement of rule of law	2.41	2.41	2.35	2.41	2.48	2.33	2.35
Quality of life	2.38	2.54	2.44	2.41	2.52	2.51	2.58
Political stability	2.43	2.32	2.37	2.46	2.55	2.44	2.46
Government agency support services	2.49	2.54	2.41	2.42	2.58	2.53	2.65
Country legal framework	2.44	2.46	2.36	2.44	2.58	2.38	2.73

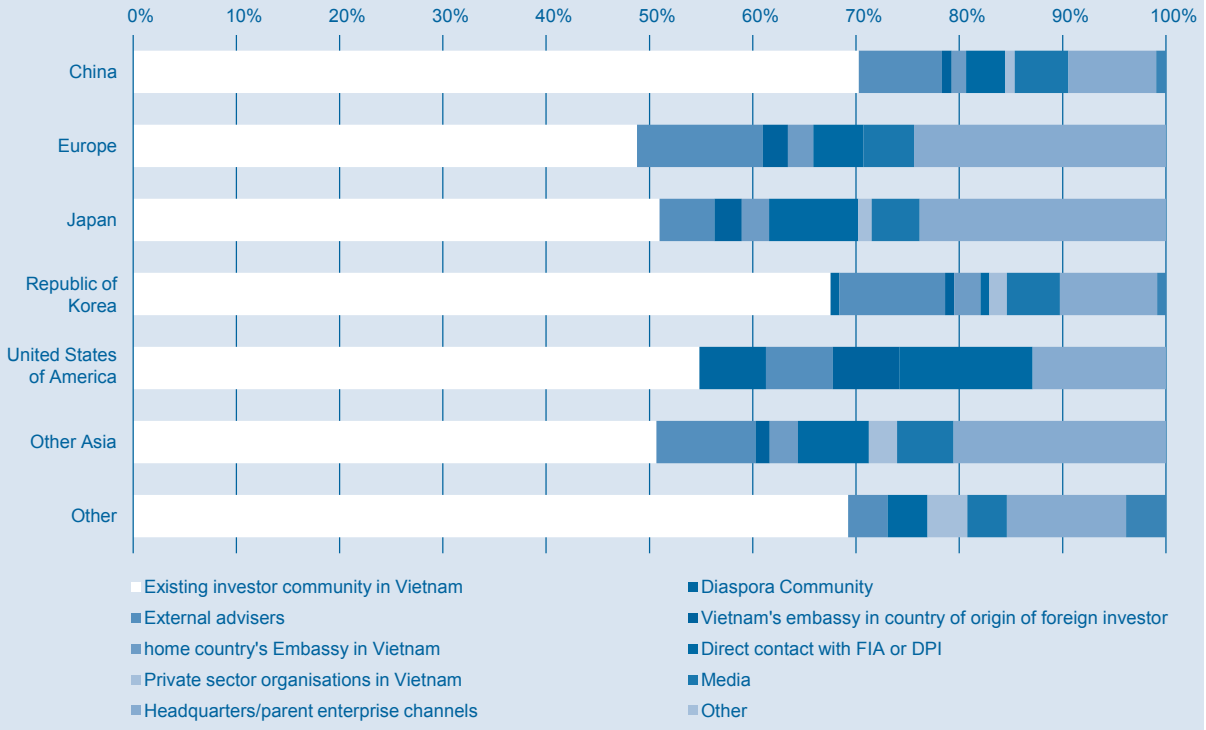
Note: Mean value based on a 3-point likert scale with: 1="not important", 2="important", 3="very important"

INVESTMENT AWARENESS

The Survey provides important information about how investors from different countries of origin first become aware of investment opportunities in Viet Nam. The Survey results also bring forth valuable insights into the source of FIE investment opportunity awareness and decision. This evidence provides the policy maker with an invaluable overview of investors' perception of Viet Nam's investment promotion efforts and highlights how best to capture the attention of foreign investors and encourage them to invest in the country.

As shown in Figure 4.3, the main source of information for foreign investors from most countries of origin is the existing investor community in their prospective host country. More than 70 per cent of Chinese investors tend to tap the existing investor community in Viet Nam for a direct insight into investment opportunities in the country, as compared to 68 per cent, 55 per cent and 49 per cent of South Korean, US and European investors, respectively. Ranked second to this are information sources provided by investor company headquarters and parent company channels of communication. It is interesting to note that only investors from the US find the Vietnamese diaspora community a source of information on investment opportunities for investors from the US, while potential investors from European countries and South Korea seem to make more use of external advisory support services in sourcing investment opportunities. A more disaggregated analysis reveals more significant differences among investors. For example, the direct contact with the Foreign Investment Agency (FIA) and/or the Department of Planning and Investment (DPI) at the Province level is also a primary source of information for US and Japanese investors (13 per cent and 9 per cent of respondents, respectively), but only for 1

Figure 4.3: *Information sources for investment opportunities in Viet Nam*



per cent of South Korean investors and 4 per cent of Chinese investors do tap this source.

In summary, Survey evidence clearly indicates that, notwithstanding the ongoing and improved efforts by government institutions and public agencies to increase investment promotion, it is clear that potential investors tend to seek information from their peers in the host country and share their expectations and insights into current and predicted investment opportunities[4]. Whilst maintaining their current efforts to have direct contact with prospective investors, investment promotion agencies in Viet Nam, should therefore seek to develop and enhance their relationships with the existing investor community in the country. The strategy towards increased engagement of existing investors in a country is widely reflected in the research on the most effective investment promotion strategies implemented in developing countries (Wells and Wint, 2000; UNCTAD, 2008; UNCTAD, 2009; World Bank, 2009). Survey evidence seems to suggest that investment promotion bodies in Viet Nam would do well to focus more on prospective foreign investors from South Korea because, although Korean investors are among the three most common foreign investors in the country, only one per cent tend to rely on investment information from the FIA or the DPIs. An effective strategy to build good relationships with potential investors from South Korea would therefore consist of, on the one hand, taking a more targeted approach to prospective Korean investors in their home country so that these become primary advocates for investment in Viet Nam, and, on the other, to further consolidate public agencies' links with the existing South Korean investors already operating in Viet Nam.

INVESTMENT REGISTRATION AND BUSINESS SUPPORT SERVICES

INVESTMENT REGISTRATION

Investors were asked which office or institution they utilized to register their investment in the country (Figure 4.4)[5]. The majority of respondents say that they registered with the Management Boards of Export Processing Zones or Industrial Zones (52.8 per cent), though some 42 per cent registered with the FIA or the Department of Planning and Investment (DPI) in the various provinces. Significant differences are

4 It has to be highlighted that these results are similar to findings emerging in Sub Saharan Africa where investors in the host countries constitute the main source of information on investment opportunities to potential investors. For further reference, please refer to the UNIDO Africa Investor Report 2011, 'Towards evidence-based Investment Promotion Strategies' is based on a Survey conducted in 19 African countries (UNIDO, 2012).

5 It has to be highlighted that only large scale project of national importance are registered at the central level with all other investment registered at the provincial level.

Figure 4.4: *Investment registration entities, share of responses*

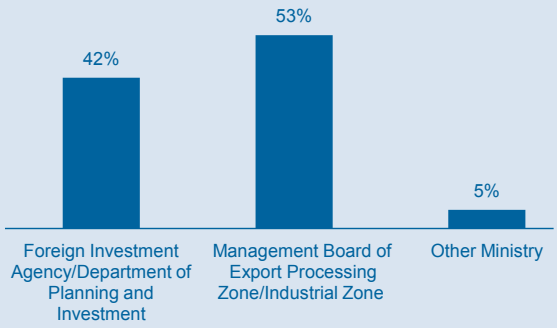
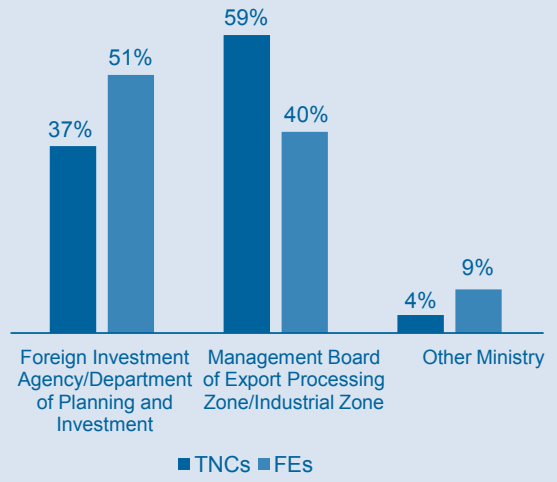
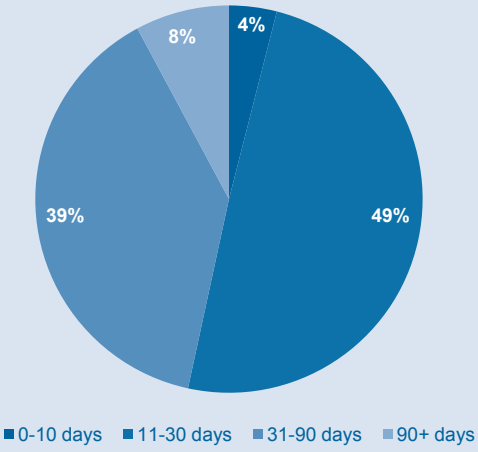


Figure 4.5: *Investment registration entities, utilisation by FIE type*



found when one looks at the choice of institution by type of FIE (Figure 4.5). TNCs mostly register with the Management Boards of Export Processing Zones/ Industrial Zones, while FEs register more often with the FIA/DPI. This results may be a reflection of the changes in the Law on Investment undertaken in 2005, whereby issuance of investment registration certificates has been largely de-centralized to the provincial level which makes DPI offices and the Management Boards of EPZs or IZs to be the initial and primary interlocutor for foreign investors (for a more detailed discussion, please see UNCTAD, 2008).

Figure 4.6: *Time to license and permits, FIEs*



As well as providing information about where investors registered, the UNIDO Industry Investor Survey 2011 also reveals how long it took FIEs to complete the registration process[6]. This constitutes important information for investment promotion agencies in the country in their quest to better their registration service provision. As shown in Figure 4.6, around 49 per cent of respondents completed the investment registration process in 11 to 30 days and 39 per cent required between 31 and 90 days. A smaller subgroup of investors, 4 per cent, received all licenses very swiftly within 10 days, whereas 8 per cent had to wait for more than 90 days.

6 The time taken for registration is dependent on the year registration was undertaken: i.e. whether it was before or after the implementation of decentralization of the registration process to the provinces.

Figure 4.7: *Time to license and permits, number of days, by FIE country of origin*

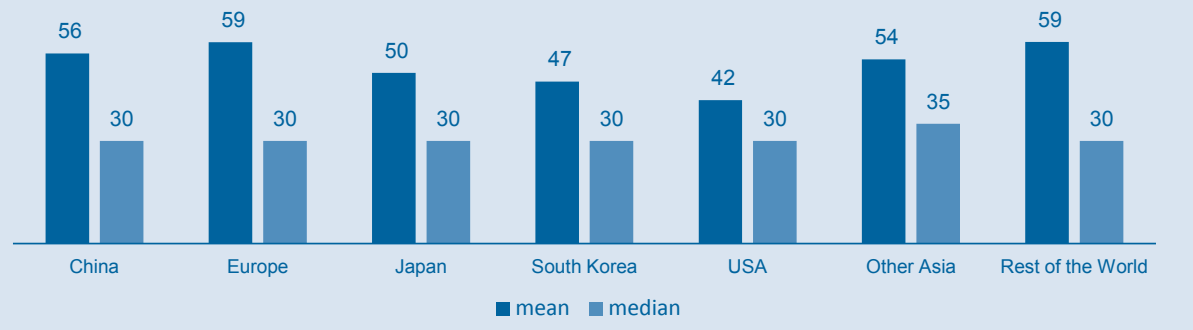


Figure 4.8: *Time to license and permits, number of days, FIE registration with FIA/ DPI*

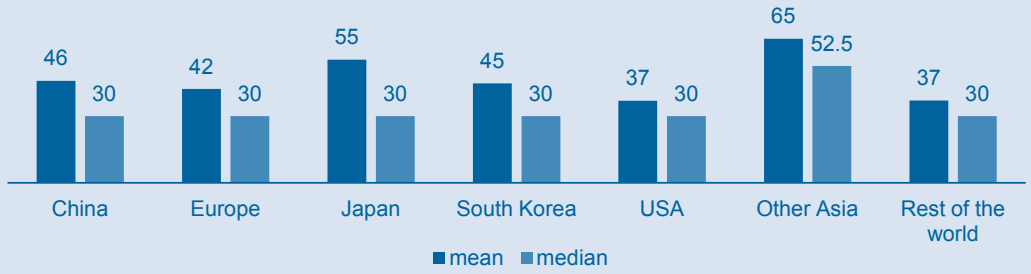


Figure 4.9: *Time to license and permits, number of days, FIEs registration with MBs EPZs/IZs*

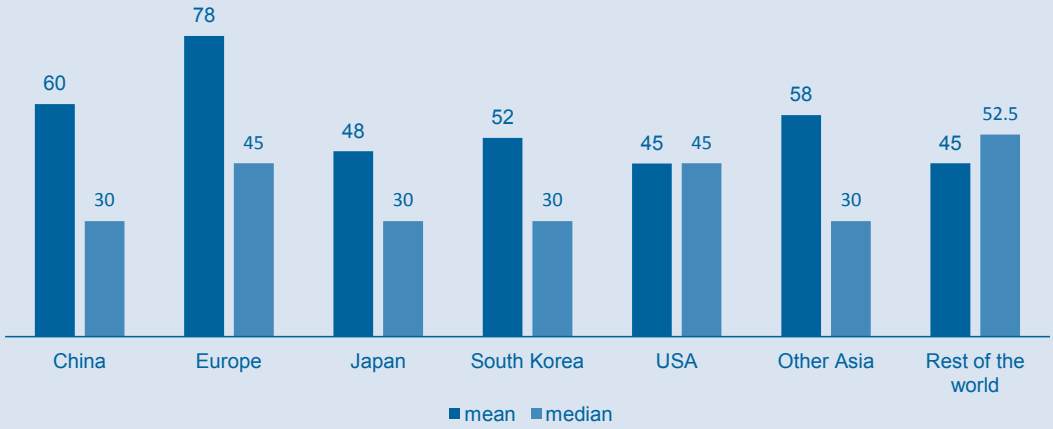


Figure 4.10: *Time to license and permits, number of days, FIEs registration with Other Ministry*

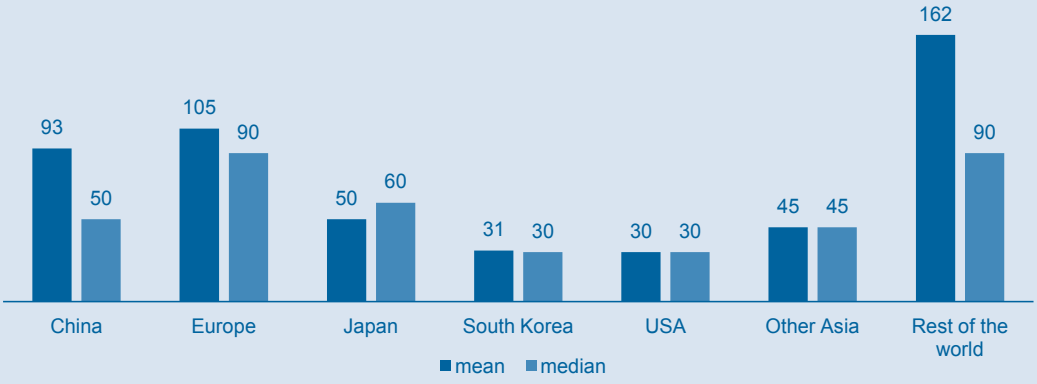


Figure 4.7, shows the mean and median of registration completion time by country of investor origin. Asian countries, excluding China, Japan and South Korea, seem to take longer to complete the process, while US investors take less time. Notwithstanding these variances, the differences across the countries are not great. Indeed, 50 per cent of foreign investors surveyed from each country completed the registration process in around or less than 30 days.

Figures 4.8 to 4.10 display further time-to-register/ license data, by investor country of origin and by registration institution[7]. It appears that the decentralization of the registration and licensing process to MBs has not considerably shortened the time to obtain their issuance, since, overall, the investment registration and licensing process is in fact shorter when

7 For the sake of analysis, the time to register and to license is taken altogether. In reality there might be a need to distinguish and separate the two processes.

Figure 4.11: *Time to license and permits, number of days, by registration entity*

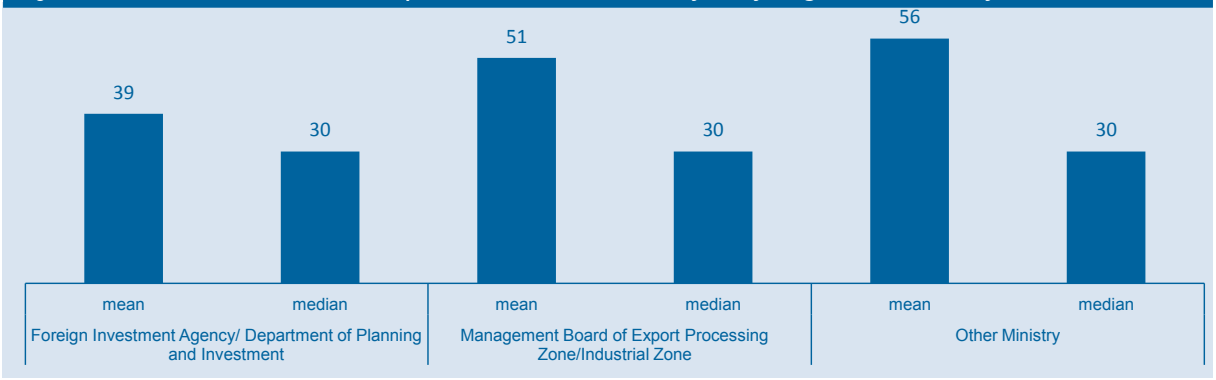


Figure 4.12: *Time to license and permits, number of days, by FIE type and registration entity*

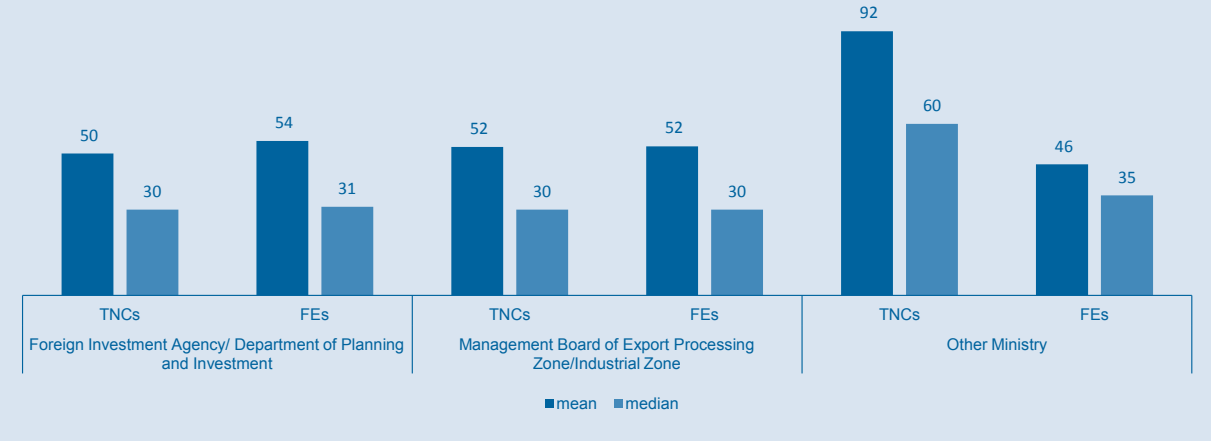
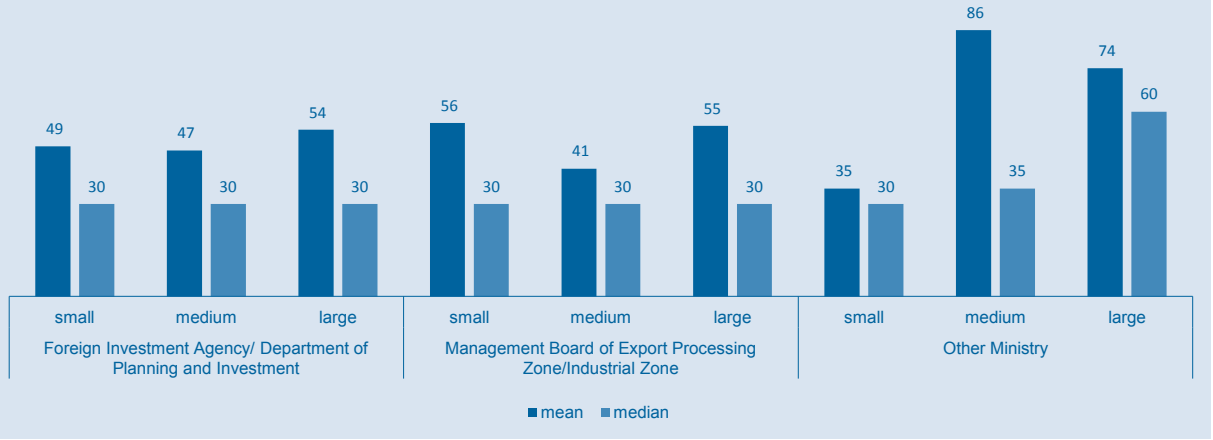


Figure 4.13: *Time to license and permits, number of days, by FIE size and registration entity*



it is handled by FIA/DPIs. Investors from Japan, US and South Korea seem to face shorter waiting times for licensing and getting permits when they register with Management Boards of EPZs and/or IZs, while investors from other countries are better off when registering with the FIA or the DPI. This is especially true for European investors, who find that registering in the EPZs/IZs takes almost twice as long as registering with the FIA/DPIs. Most investors, with the exception of those from South Korea and the US, find that, in general, the investment registration process through the ministries is relatively less efficient. Table 4.11 shows time to license and permit comparisons between FDI/DPI, MBs and other ministries.

Foreign investors' responses on the registration process are also analyzed by company size and investor type (whether TNCs or FEs). It is important to know

Figure 4.14: *Investment incentives, by issuing entity*

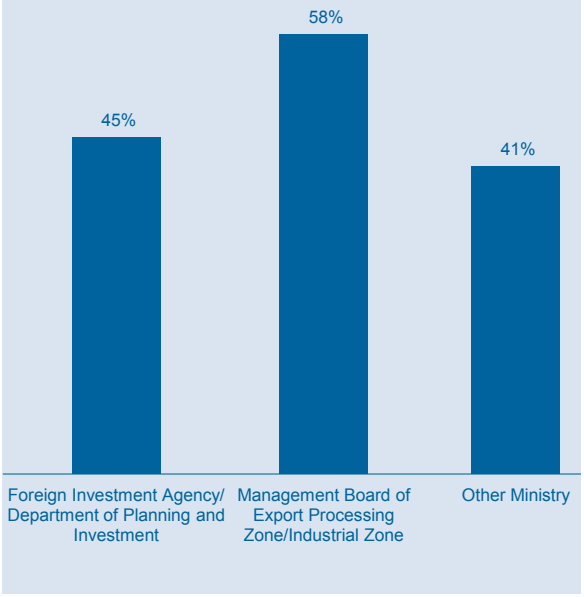
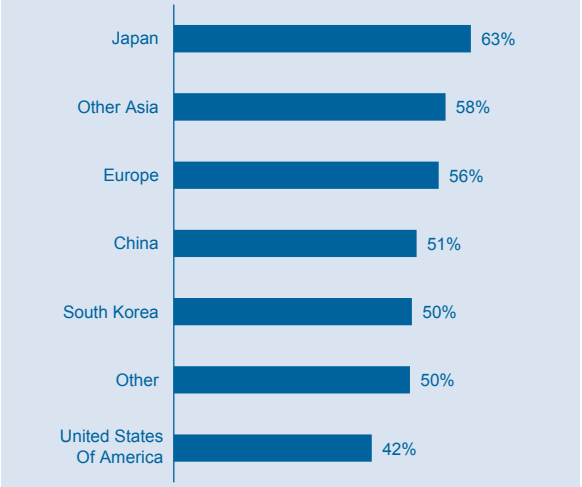


Figure 4.15: *Investment incentives received, by FIE country of origin*



whether the size and the ownership type of foreign enterprises bring a different experience of the investment registration process. The results are shown in Figures 4.12 and 4.13. In essence, the time to license and the duration of the registration process with other Ministerial departments seem to be quite lengthy for TNCs or large and medium-sized enterprises, while in general, registration with either the FIA/DPI or the Management Boards of Export Processing or Industrial Zones is quite standardized among investor groups and size of enterprises.

INVESTMENT INCENTIVES

Having examined how investors become aware of investment opportunities in Viet Nam, and their experience of time needed to complete the investment registration procedure and to receive licenses and permits, we now look in some depth at the nature and extent of the investment incentives investors receive once they establish themselves in the country. More than half of the foreign enterprises that responded to the Survey have received and benefited from investment incentives. As highlighted in Figure 4.14, incentives have been mostly received from the Management Boards of EPZs and IZs. This may reflect the fact that locating within industrial zones brings, automatically certain incentives as infrastructure facilities, utility services, etc., and, furthermore, enterprises that locate in such zones can take advantage of the preferential land, tax, labour and other incentives on offer. In terms of country of origin, investors from Japan seem to be the most often receivers of such incentives (Figure 4.15)[8], whereas the investors from the USA do not appear to benefit from these incentives at all. This may be for different reasons, primarily depending to what extent incentives are sought by the investor in the first place.

An examination of Survey responses by sector and by Province (Figures 4.16 and 4.17, respectively) provides some important insights. At the sectoral level, it can be seen that the highest share of incentives has been received by firms in the machinery and equipment sector (75 per cent of FIE respondents) and in the chemicals and chemical products (70 per cent). On the other hand, only 17 per cent of foreign enterprises in the construction sector and 26 per cent in the furniture sector have received any incentives. With respect to Province location, large differences are also found across the nine provinces, with most incentives received by FIEs in Vinh Phuc (93 per cent of total respondents) and in Hanoi (75 per cent), much more than received by FIEs in the Ba Ria Vung Tau Province (35 per cent) and the Binh Duong Province (27 per cent). Although the latter results should be interpreted with caution as they depend on the skewness of the sampling frame, these still provide some valid comparisons among provinces in terms of the extent of investment promotion efforts and outreach.

8 Only the sectors with at least 10 foreign companies in the sample are reported in Figure 4.15.

Figure 4.16: *Investment incentives received by FIEs, by sector of operation*

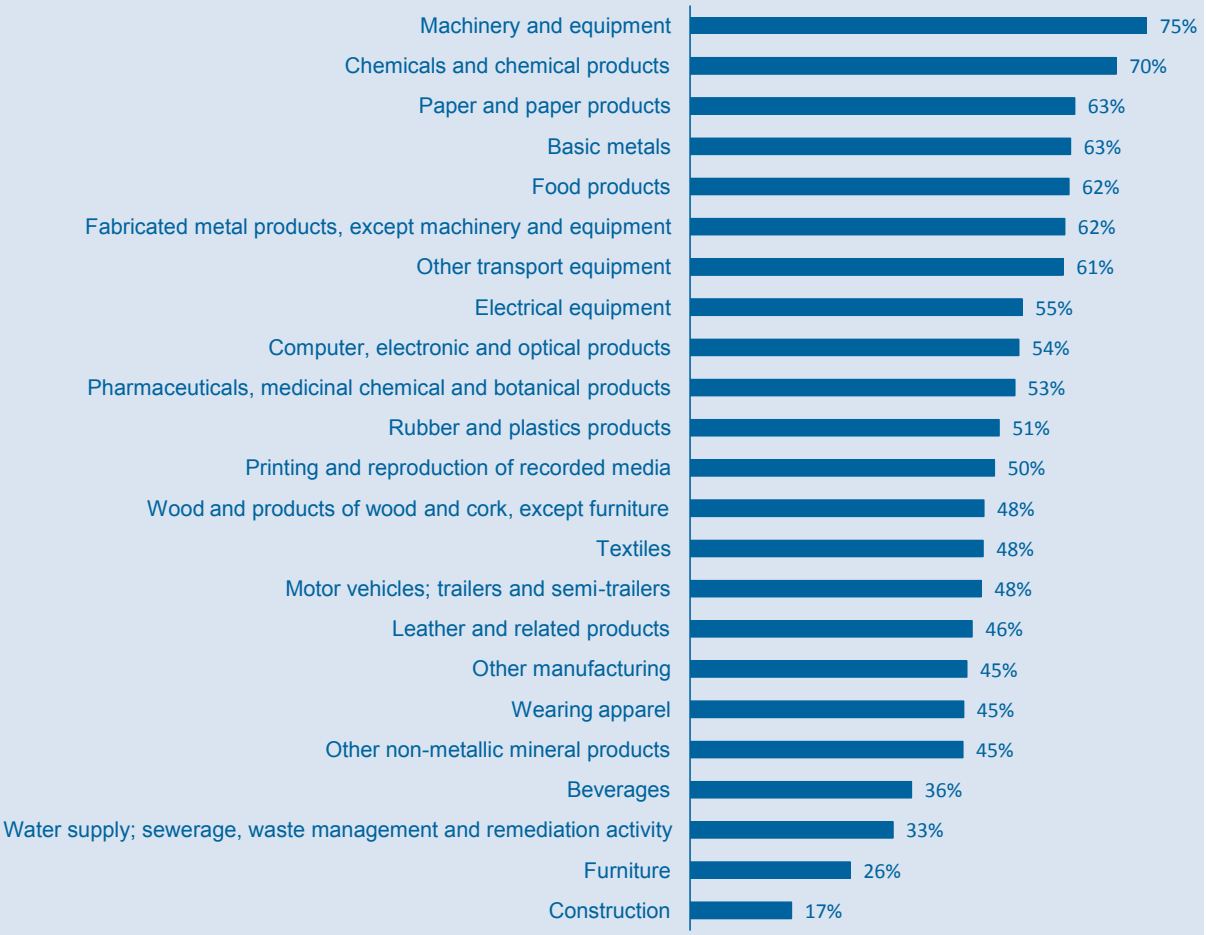
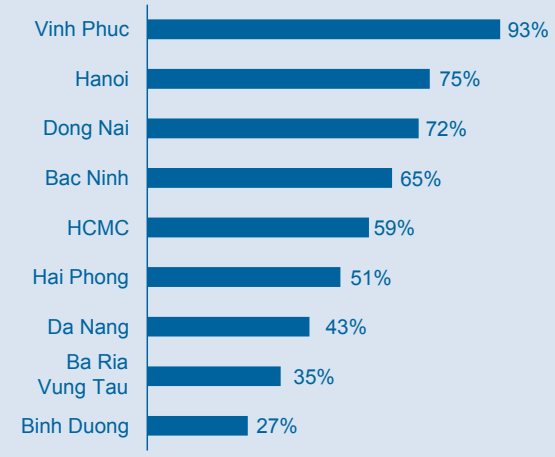
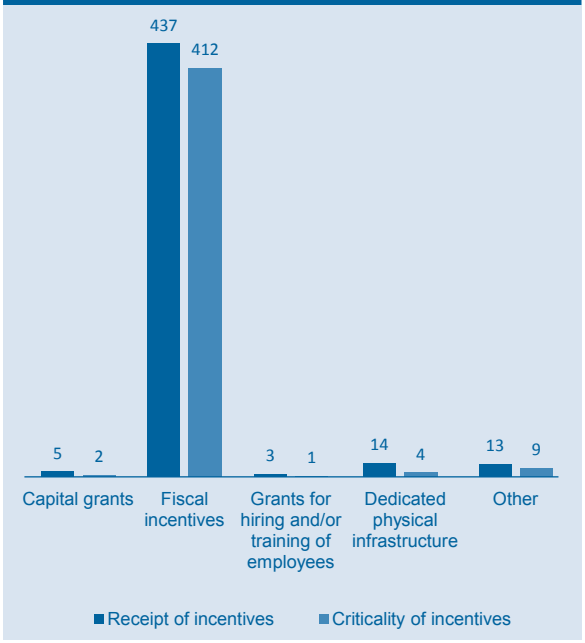


Figure 4.17: *Investment incentives received by FIEs, by Province location*



Firms were also asked to identify the type of investment incentives they have received and to assess the criticality and relative importance of each. Figure 4.17 collates these responses. By far the greatest majority of FIE respondents receive fiscal incentives, which they consider most important and critical to their ongoing operations in the country. These include, *inter alia*, tax holidays, reduced corporate income tax rates, investment allowances or accelerated depreciation, and special exemptions from import duties and other indirect taxes. Only very few respondents have received non-fiscal incentives, such as employee training and the provision of dedicated infrastructure above and beyond the infrastructural support already provided, for example, in industrial zones. The overall low share of grants received for hiring and/or training employees is somewhat surprising given that many firms have indicated their difficulty in recruiting skilled work force and also against the backdrop of previous regression results in this Report highlighting the positive nexus between human capital and company performance. The low share of training grants may be partly explained by the fact that the time and costs required for worker training in Viet Nam is often shorter and lower than in other countries and their associated

Figure 4.18: *Receipt and criticality of investment incentives, by FIE number of responses*



value compared to other incentives is quite negligible[9]. Overall, the responses are, to some degree, consistent with the responses on the importance of location factors in the foreign investors' investment decisions. Taxation and fiscal policy is rated as a most important factor, much more important than the availability of skilled labor and the quality of infrastructure.

BUSINESS SUPPORT SERVICES – IMPORTANCE, FREQUENCY AND QUALITY

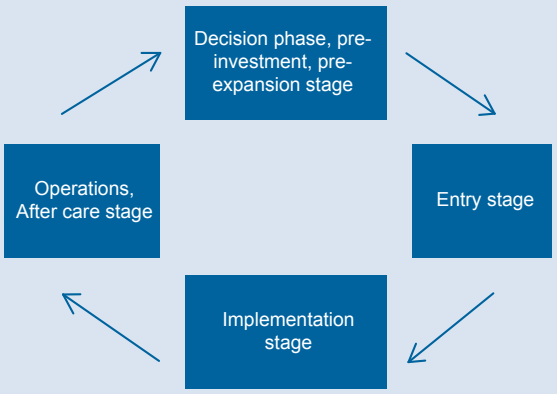
The Survey provides extensive data on investor perception of the various business support services that are provided in Viet Nam, and specifically how investors see the inter-related aspects of the importance, availability and quality of these services. It is important here to define what is meant by business support services. Table 4.4 and Figure 4.19 show how these services are categorized in the four stages of the conventional investment cycle, i.e: (i) the pre-investment/pre-expansion stage, (ii) the entry stage, (iii) the implementation stage; and (iv) the operational stage. Respondents were asked to rank their perception of the importance and the quality of business support services along a Likert scale of perception from 1 ("not important"), 2 ("important") to 3 ("very important").

9 This also depends on the availability of subsidized service of this nature of training programmes which might pre-empt the need for such specific institutional incentives.

Table 4.4: *Business support services: a definition*

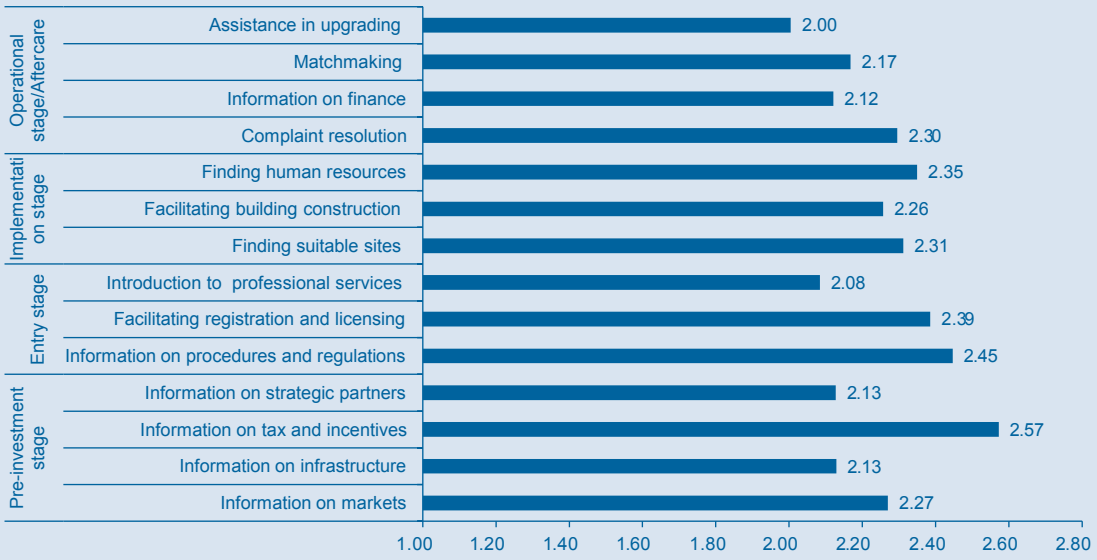
Stage of investment cycle	Type of business support service
Pre-investment stage	Information on markets
	Information on infrastructure
	Information on tax and incentives
	Information on strategic partners
Entry stage	Information on procedures and regulations
	Facilitating registration and licensing
	Introduction to professional services
Implementation stage	Finding suitable sites
	Facilitating building construction
	Finding human resources
Operational stage / after-care	Complaint resolution
	Information on finance
	Matchmaking
	Assistance in upgrading

Figure 4.19: *The investment cycle stages*



When a comparative assessment is made along the four stages of the investment cycle, it is clear that it is generally at the pre-investment and entry stages that business support services are considered most important. Figure 4.20 shows that foreign investors consider information on tax and incentives to be one of the most important support services they receive,

Figure 4.20: *Importance of business support services to FIEs (1=lowest, 3=highest)*



whereas on the other hand they see assistance in upgrading and introduction to professional services as the least important. Interesting differences can be discerned at the level of the individual service – for example, aftercare services in terms of legal advice on effective complaint resolution is given relatively more importance than the pre-investment service of introduction to strategic partners or information on infrastructure. These results are important indicators for policy makers in their efforts to better understand investor perceptions of the business support services provided at distinct stages in the investment cycle. As Figure 4.21 indicates, both types of FIEs – TNCs and FEs – tend to rank the importance of services very similarly – both consider information on tax and incentives and information on procedures and regulations as the most important services they receive at the pre-investment and entry stage. Further important

Figure 4.21: *Importance of business support services to FIEs, by ownership type (1=lowest, 3=highest)*

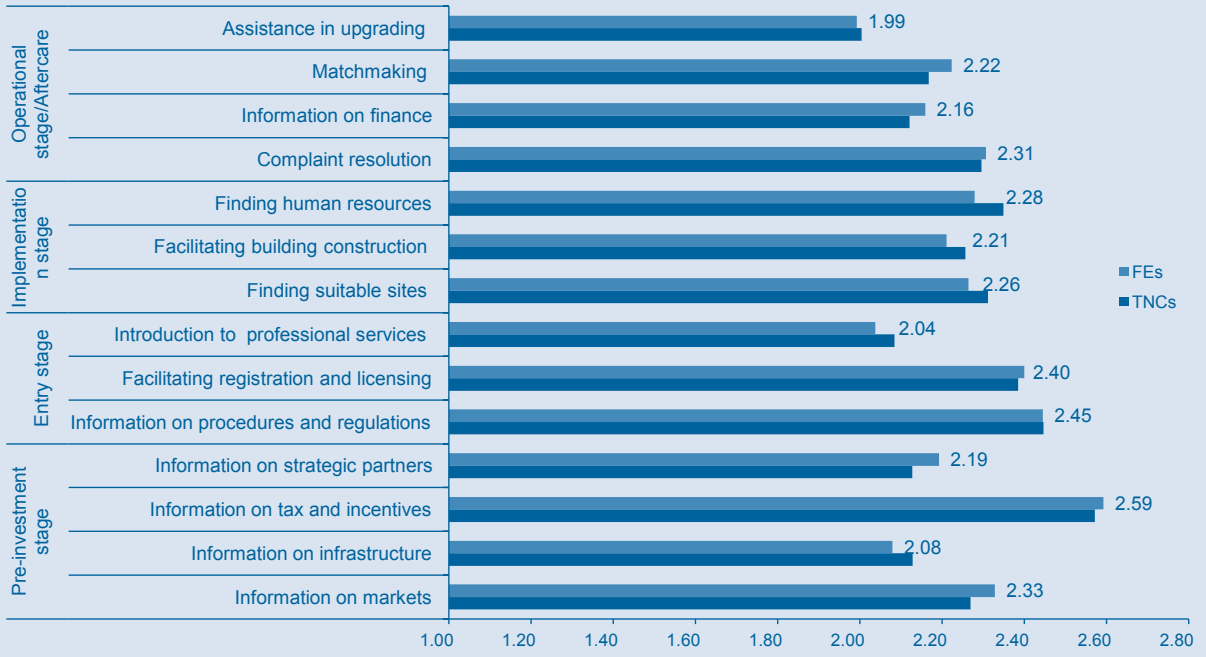


Figure 4.22: *Importance of business support services to FIEs, by size (1=lowest, 3=highest)*

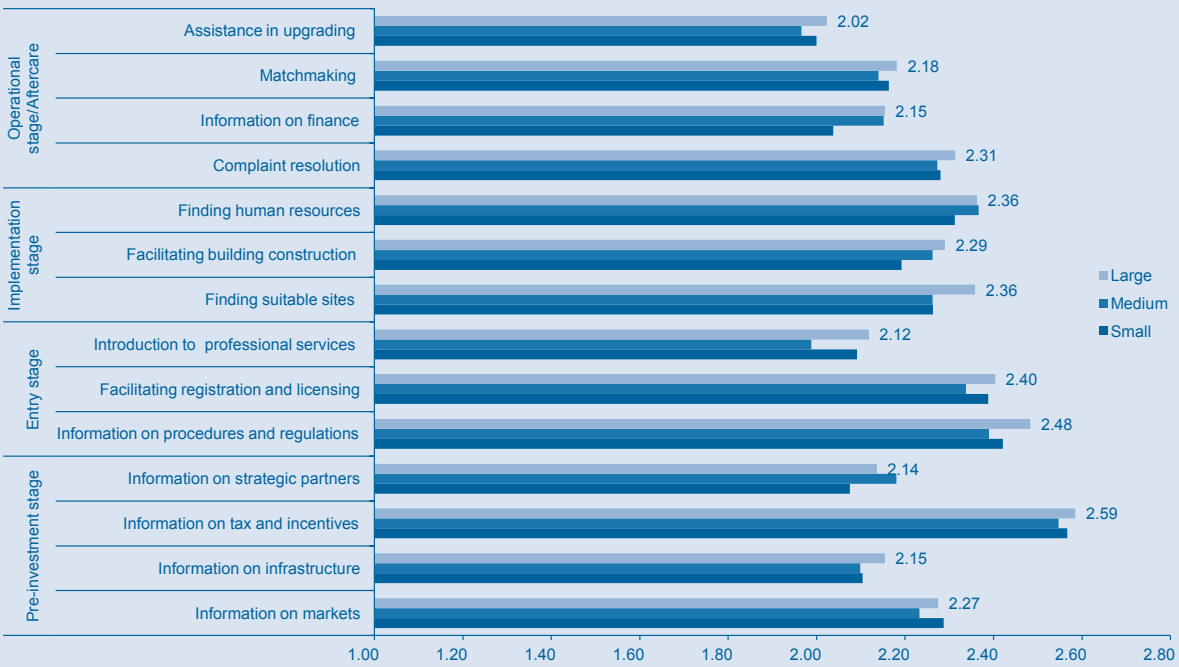


Table 4.5: *Importance of business support services to FIEs, by type of service and sector (1=lowest, 3=highest)*

		Manufacturing	Construction	Utilities
Pre-investment stage	Information on markets	2.3	2.3	1.8
	Information on infrastructure	2.1	2.0	1.8
	Information on tax and incentives	2.6	2.3	2.8
	Information on strategic partners	2.1	2.3	1.8
Entry stage	Information on procedures and regulations	2.5	2.1	2.3
	Facilitating registration and licensing	2.4	2.3	2.0
	Introduction to professional services	2.1	2.0	2.0
Implementation stage	Finding suitable sites	2.3	2.3	2.2
	Facilitating building construction	2.3	2.2	1.8
	Finding human resources	2.4	2.4	2.0
Operational stage / after-care	Complaint resolution	2.3	2.0	2.0
	Information on finance	2.1	2.1	2.0
	Matchmaking	2.2	2.3	1.7
	Assistance in upgrading	2.0	2.1	1.7

insights can be gained from the disaggregation of these results by company size (Figure 4.22). Large enterprises tend to give higher ratings to each type of service, whereas medium-sized companies give lower ratings. For example, the latter do not seem to think that business support services such as the introduction to professional services are important. The registration and licensing process and its expedited handling by government institutions is a factor that receives high levels of importance by all FIE size groups, so the focus on streamlining registration and licensing processes is justified as long as the country´s investment promotion support is not only restricted to this.

The perception of the importance of business support services also varies by broad economic sector

(see Table 4.5). All the services are considered very important in the manufacturing sector. It is noteworthy that services such as the introduction to professional services and information on finance are regarded as the least important by FIEs in the manufacturing sector, and information on tax and incentives as the most important. Investors in the construction sector rate finding human resources more important than the other services.

Information on the importance attributed to business support services is only relevant if it is linked to information on the extent to which such services have been effectively provided for and actually received by foreign investors. Based on Survey responses, Figure 4.23 illustrates the frequency with which FIEs actually receive services in the different stages of their investment cycle. Services in the entry stage are the most frequently received, in particular those providing information on procedures and regulations, while around 92 per cent of respondents say they have received information on tax and incentives in the pre-investment stage. The after-care stage services are the least frequently received, especially assistance in upgrading.

As with the previous descriptive analysis, it is important to show the frequency with which services are received by both TNCs and FEs (Table 4.6). The pattern with which services are provided to FEs or TNCs respectively is relatively similar during the first three investment stages, yet the services become slightly more tilted towards FEs than TNCs in the aftercare stage. Common to the observations for the total sample, both FIE types receive more services in the entry stage than in the other stages, especially information on procedures and regulations, and less in the aftercare stage. Also, although both TNCs and FEs regard information on strategic partners as important, a low proportion of respondents have actually received these services. This is noteworthy in view of earlier analyses that have shown that joint venture firms tend to perform better than wholly-owned ones in terms of labour productivity and technical efficiency. An increased focus on providing support for joint venture partnerships could thus result in increased benefits to both the individual foreign and domestic investor.

Table 4.7 highlights the frequency with which services are received by firm size – large, medium and small. Large companies receive more services in all four stages of the investment cycle, particularly in the implementation and aftercare stages, whereas small companies tend to receive more support than medium-sized FIEs in the implementation stage, particularly regarding selecting human resources. Medium-sized

Figure 4.23: *Receipt of business support services by FIEs, percentage share in total responses*

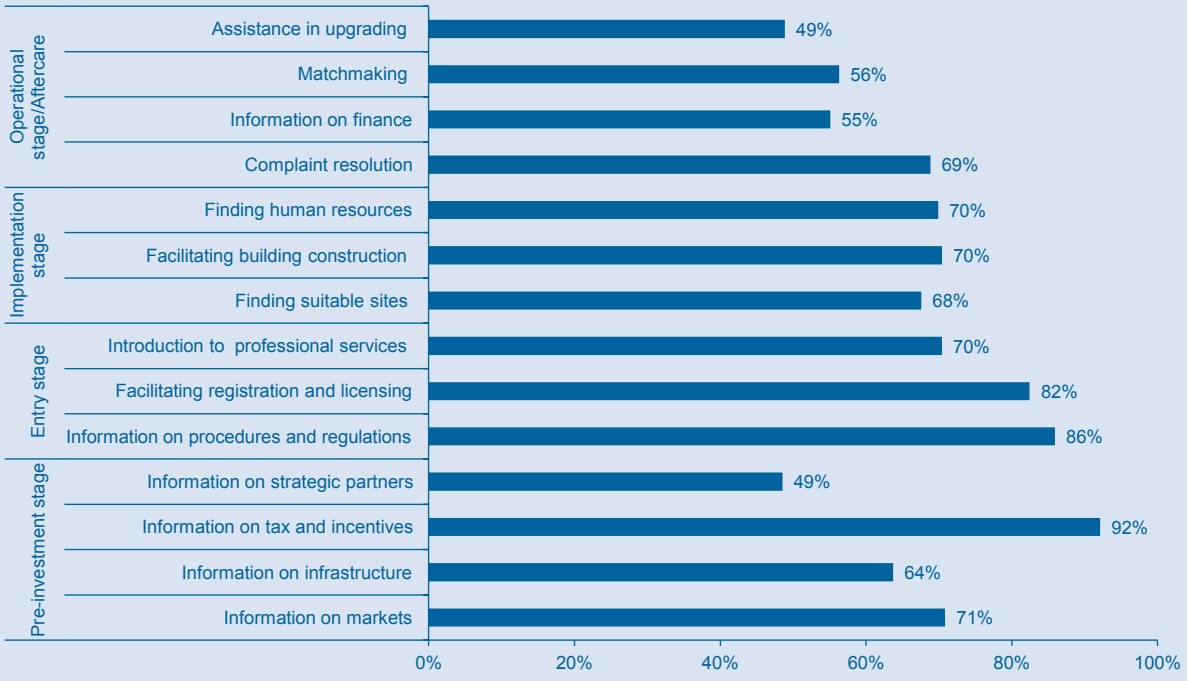


Table 4.6: *Receipt of business support services by type of FIE, percentage share of total responses*

		TNCs	FEs
Pre-investment stage	Information on markets	70%	72%
	Information on infrastructure	66%	59%
	Information on tax and incentives	93%	91%
	Information on strategic partners	48%	49%
Entry stage	Information on procedures and regulations	85%	88%
	Facilitating registration and licensing	83%	82%
	Introduction to professional services	72%	68%
Implementation stage	Finding suitable sites	69%	64%
	Facilitating building construction	70%	71%
	Finding human resources	70%	69%
Operational stage / after-care	Complaint resolution	69%	69%
	Information on finance	54%	58%
	Matchmaking	55%	60%
	Assistance in upgrading	49%	49%

Table 4.7: *Receipt of business support services by FIE size, percentage share of total responses*

		Small	Medium	Large
Pre-investment stage	Information on markets	70%	69%	72%
	Information on infrastructure	60%	62%	67%
	Information on tax and incentives	92%	92%	93%
	Information on strategic partners	47%	55%	47%
Entry stage	Information on procedures and regulations	84%	87%	87%
	Facilitating registration and licensing	83%	78%	84%
	Introduction to professional services	71%	69%	71%
Implementation stage	Finding suitable sites	65%	64%	70%
	Facilitating building construction	68%	67%	73%
	Finding human resources	73%	65%	70%
Operational stage / after-care	Complaint resolution	69%	69%	69%
	Information on finance	47%	56%	59%
	Matchmaking	54%	53%	59%
	Assistance in upgrading	45%	51%	50%

FIEs receive more services for finding strategic partners than do the other size categories.

Table 4.8 shows the services received by sector. Information on tax and incentives is the service most received by manufacturing and utility enterprises, while enterprises in the construction mostly receive information on markets. FIE respondents in manufacturing tend to receive the largest proportion of services at the entry stage and the lowest proportion during the operational stage. Although all three economic sectors are very close in terms of the importance for finding suitable sites, this service is a lot less provided to the construction sector. When comparing the levels of importance attached by the utilities sector with the actual provision of such services, it appears that there is an overprovision of information services in the pre-investment stage and an unmet demand for certain services in the aftercare stage, particularly regarding information on finance.

In addition to the data generated on the perceived importance of business support services and on the frequency of service actually received by FIEs, the Survey also provides data on FIEs' perception of the quality of services. Figure 4.24 illustrates that, overall, foreign enterprises consider business support services encompassing information on tax and

Table 4.8: *Receipt of business support services by FIEs, by sector, percentage share of total responses*

		Manufacturing	Construction	Utilities
Pre-investment stage	Information on markets	71%	75%	67%
	Information on infrastructure	64%	33%	67%
	Information on tax and incentives	93%	58%	100%
	Information on strategic partners	49%	33%	50%
Entry stage	Information on procedures and regulations	86%	58%	83%
	Facilitating registration and licensing	83%	50%	67%
	Introduction to professional services	71%	58%	50%
Implementation stage	Finding suitable sites	68%	42%	67%
	Facilitating building construction	71%	58%	67%
	Finding human resources	70%	67%	50%
Operational stage / after-care	Complaint resolution	69%	50%	83%
	Information on finance	55%	42%	33%
	Matchmaking	56%	67%	50%
	Assistance in upgrading	49%	50%	67%

Figure 4.24: *Quality of business support services received by FIEs (1=lowest, 3=highest)*

incentives and procedures and regulations as being of the highest quality, while, at the other end of the spectrum, they rate the upgrading of services as of relatively lower quality but nonetheless useful[10]. There are no services that have been categorically been perceived as not useful.

As for the analysis above of the perceived importance and frequency of services, Survey evidence is further disaggregated by type of FIE and by size (Figure 4.25 and Figure 4.26). On the one hand, FEs rank the quality of support services higher in the implementation and after care stages, especially support services dealing with complaint resolution and facilitating building construction. On the other hand TNCs tend to consider services provided in the entry stage

10 The Likert scale for the service quality was 1 "not useful", 2 "useful" and 3 "very useful".

Figure 4.25: *Quality of business support services received by type of FIE (1=lowest, 3=highest)*

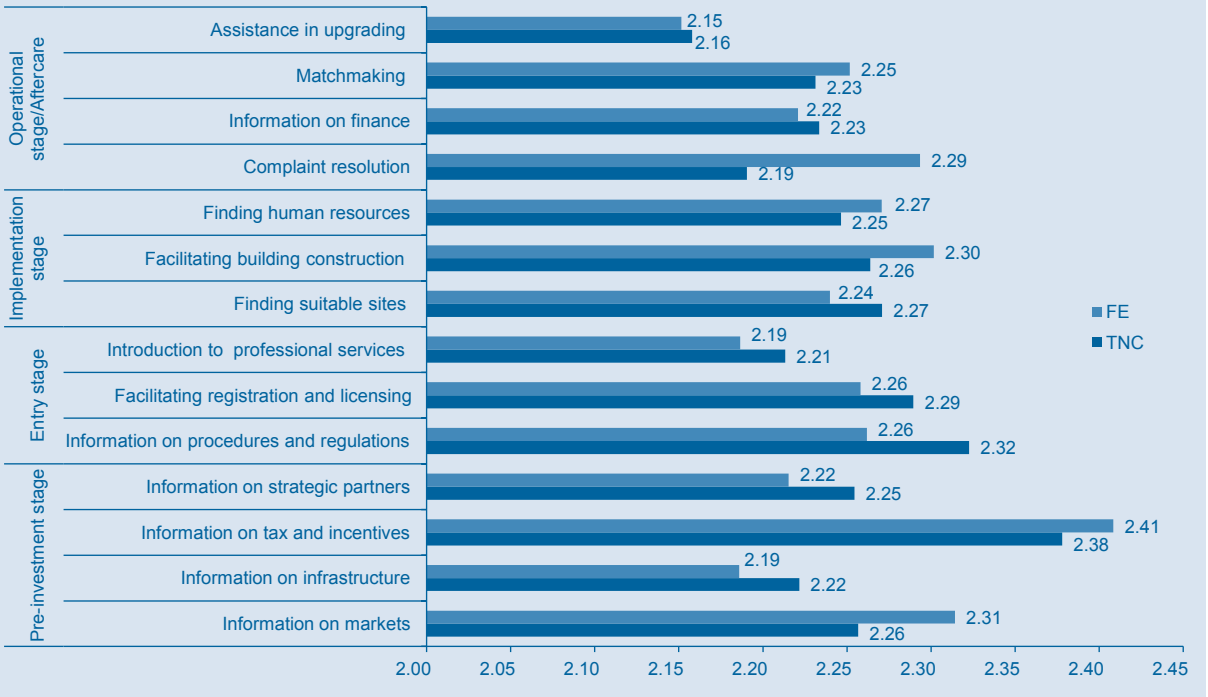
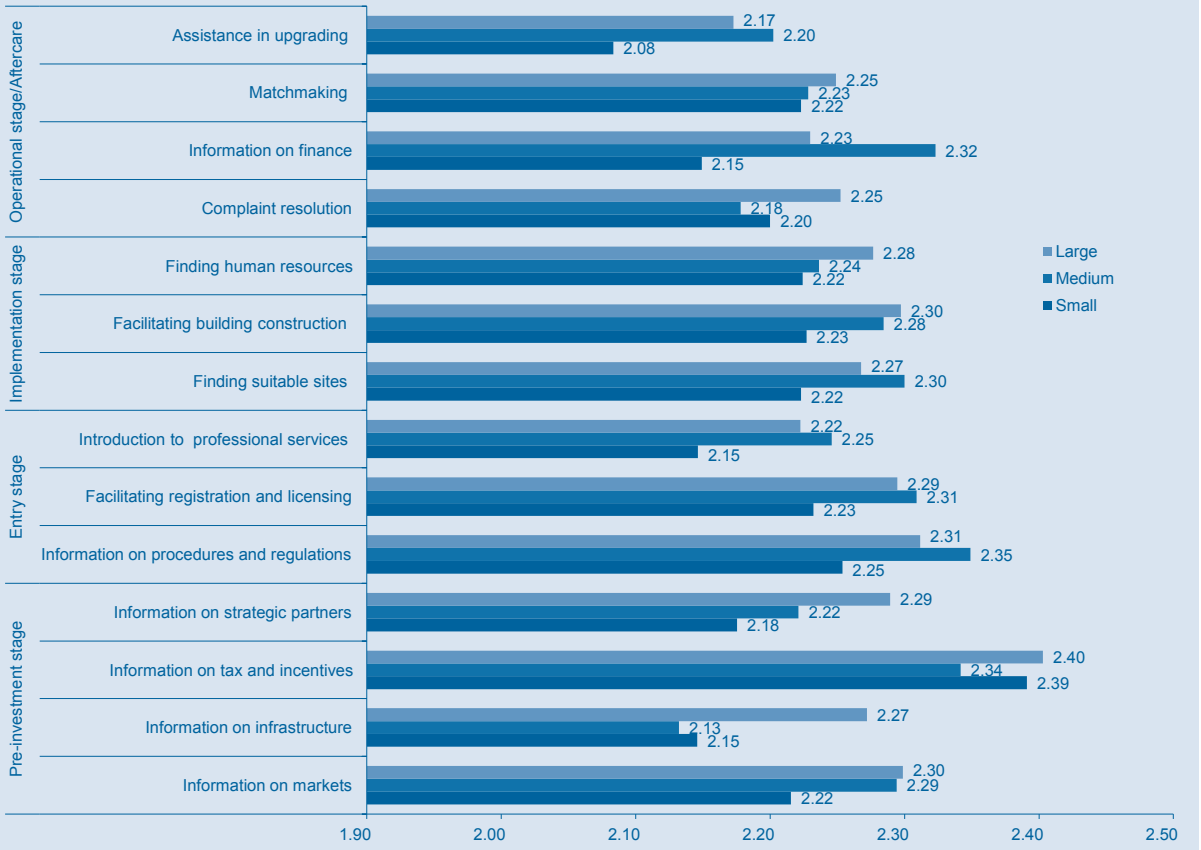


Figure 4.26: *Quality of business support services received by FIE size (1=lowest, 3=highest)*

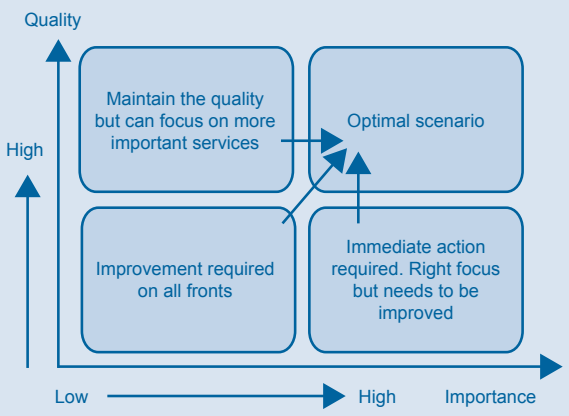


of the investment cycle as being of comparatively higher quality. Perceptions also vary by FIEs' size: medium and large companies tend to give a higher quality rating to all the services in all four stages of the investment cycle, while small companies rate the assistance in upgrading as relatively very low.

IMPORTANCE AND QUALITY OF SUPPORT SERVICES: POLICY IMPLICATIONS

A primary objective of including investor perception questions in the Survey is to inform and suggest policy recommendations for the management and alignment of support services based on empirical evidence of how FIEs rate the importance and quality of such services. On the basis of the evidence presented earlier, the following analysis presents suggestions on where improvements to the quality of these services need to be had. Figure 4.27 shows how each combination of the two dimensions of importance and quality can potentially result in a different policy recommendation. The top right quadrant indicates a desirable scenario where importance and quality of a service are both high. If importance is high but the quality is low (bottom right quadrant), an improvement of the service may therefore be required. On the other hand, if the quality is high but the service is considered of low importance (top left quadrant), this may mean: (i) that the service may not be specifically required and should therefore be streamlined or eventually discontinued, or (ii) may indicate that the investors are not adequately informed about the potential benefits of the service. If the perceived quality and importance are both low (bottom left quadrant), improvement may be required on all fronts in part reflecting potential streamlining and prioritization of service provision. Figure 4.28 refers to the Survey evidence on the importance and quality of business support services by type at each stage of the investment cycle[11].

Figure 4.27: *Business support services: quality-importance nexus*



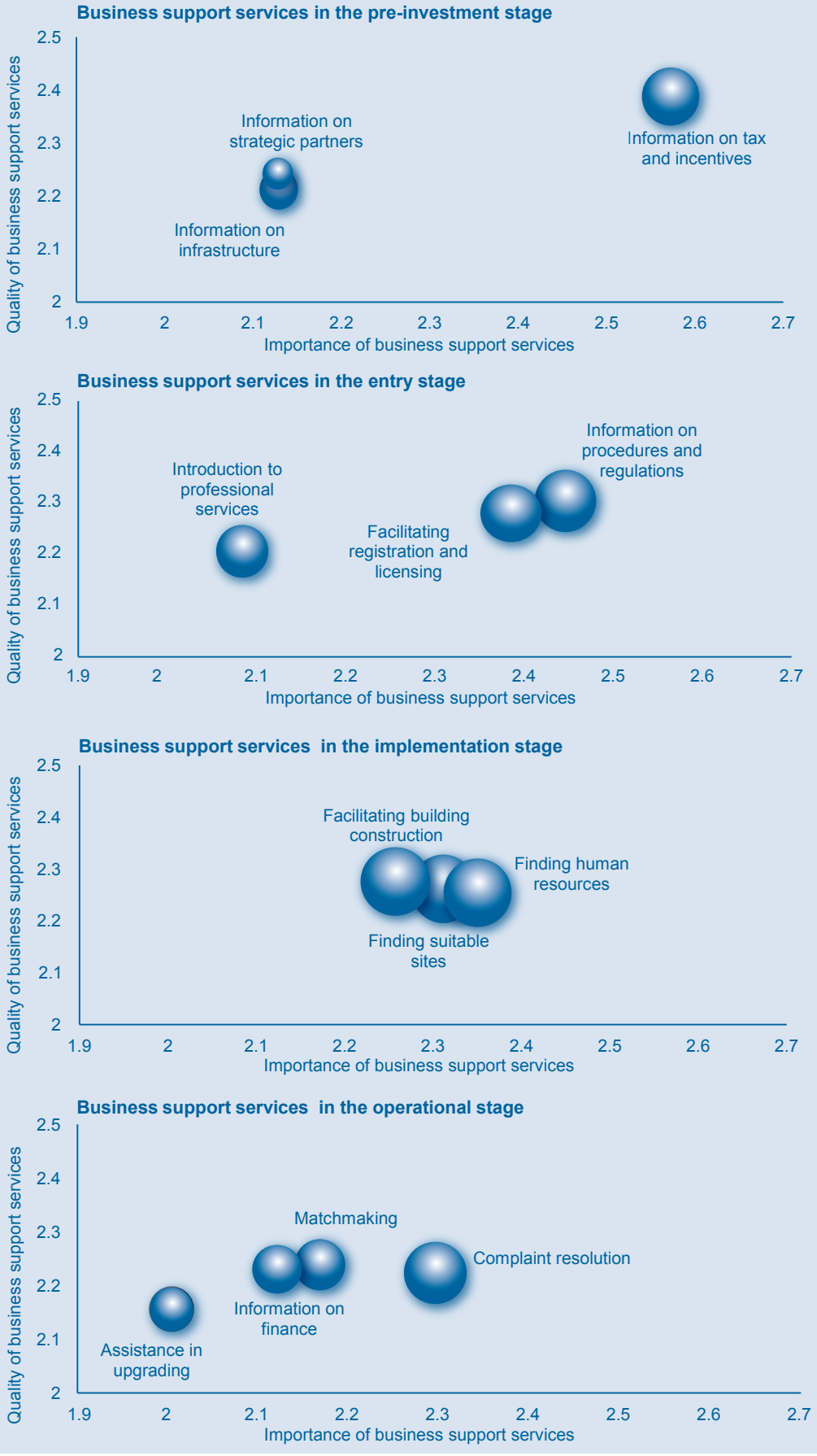
In the pre-investment stage, information on tax and incentives, in the top right quadrant, is considered most important, whereas information on strategic partners and infrastructure is considered less important although the quality of information on strategic partners is considered as slightly higher than the quality on infrastructure. This result would seem to suggest that information on taxes and incentives may be considered by respondents as having reached a certain optimum level *vis-à-vis* the perception of quality and importance and this may represent good news for service providers in this field. Improvement may be required on all fronts for information provision on infrastructure, and investor perceptions in this regard may be interpreted to suggest that urgent action is be required on this front.

At the entry stage, information on procedures and regulations and services in facilitating registration and licensing is considered almost optimal *vis-à-vis* the relationship between quality and importance. On the other hand, services related to the introduction to professional services are located at the bottom left quadrant and seem to require some attention by service providers and policy makers alike on whether the reason for low importance is due to a lack of awareness of potential service recipients or whether such a service is perceived as unnecessary in relation to other services provided at this investment stage.

Overall, respondents seem to suggest that business support services provided during the implementation stage of the investment cycle may be of lower quality than services provided during the first two stages. Indeed, services that seem to require immediate action for improvement because of their currently perceived low quality refer to assistance in infrastructure (finding suitable sites) and human capital engagement (finding human resources), both of which are considered highly important. This latter result is quite telling since such services, although considered highly important by investors, are yet being provided (as seen from

11 The size of the bubbles indicates the percentage of respondents receiving the service.

Figure 4.28: *FIEs' perception of importance and quality of business support services (1=lowest, 3=highest)*



the bubble sizes being quite similar for all services of that stage) at a substantially lower level of quality that falls below expectations. Action on this front is to be considered crucial in terms of previously presented evidence that FIEs consider human resource issues and physical infrastructure as primary factors that require constant upgrading. When assessed within the scope of the services provided during the implementation stage only, it appears that there is an over-provision on "finding building construction"[12] because it ranks relatively lower in terms of importance but is perceived as being of the highest quality. Finally, the quality of the services in the operation stage is ranked lowest compared to the service quality in the other stages. It is quite clear that this service front requires urgent attention by service providers, whether these are to be found in the public or private agencies. Services provided for complaint resolution are considered to be of optimal quality and in line with the importance attached to them. Other important services such as matchmaking and information on finance seem to be considered of relatively high quality and the level of Survey responses may indicate that the investors have to be kept informed about the potential benefits of these services for their ongoing operations.

A set of policy recommendations for improving the provision of business support services would not be complete without giving some consideration about who provides these services. Investors were therefore asked about their service providers, categorized in four types: (i) FIEs' own internal resources, (ii) Government agencies; (ii) Chambers of Commerce and/or business and trade associations, and (iv) professional advisers. Table 4.9 shows FIEs' responses in this regard. FIEs' own internal resources and government agencies seem to come out on top as the main service providers. More than 50 per cent of respondents say that they receive information on tax and incentives, infrastructure, procedures and regulations, facilitation of registration and licensing, and facilitation of building construction from the government agencies. FIEs' own internal resources provide more than 50 per cent of information on strategic partnerships, finding human resources and matchmaking. Interestingly, less than 30 per cent of respondents receive services from professional advisers and the various private sector associations in all types of services, with the exception of professional services, where, as expected, the main providers seem to be the professional advisers.

It is also important to examine the relationship between the importance and quality scores on the basis of FIEs' responses disaggregated by Province. As can be seen in Table 4.10, among the nine provinces, Bac Ninh and Vinh Phuc seem to offer the highest quality of services, and in these provinces, too, the importance of the services is ranked highest, with

12 Nonetheless, this service is still important when compared to services provided during all four investment stages.

Table 4.9: *Business support service provision to FIEs, by type of service provider*

		FIEs' internal resources	Government agencies	Chambers of Commerce/ business and trade associations	Professional advisers
Pre-investment stage	Information on markets	36%	25%	23%	16%
	Information on infrastructure	16%	54%	15%	15%
	Information on tax and incentives	13%	57%	11%	18%
	Information on strategic partners	53%	16%	16%	15%
Entry stage	Information on procedures and regulations	11%	58%	11%	20%
	Facilitating registration and licensing	11%	63%	14%	13%
	Introduction to professional services	24%	22%	13%	40%
Implementation stage	Finding suitable sites	31%	38%	11%	19%
	Facilitating building construction	23%	53%	13%	11%
	Finding human resources	54%	19%	13%	14%
Operational stage / after-care	Complaint resolution	19%	44%	13%	25%
	Information on finance	42%	20%	18%	21%
	Matchmaking	62%	11%	16%	11%
	Assistance in upgrading	40%	29%	15%	16%

Table 4.10: *Business support services to FIEs; average score by importance and quality, by Province (1=lowest, 3=highest)*

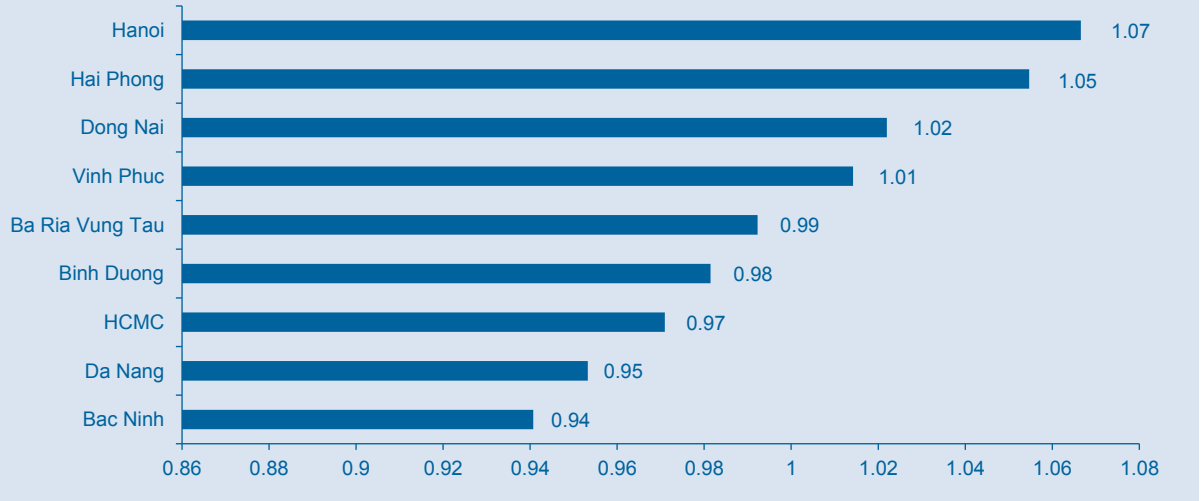
		Importance		Quality	
		Province	Score	Province	Score
Pre-investment stage	Information on markets	Vinh Phuc	2.60	Bac Ninh	2.85
	Information on infrastructure	Bac Ninh	2.69	Bac Ninh	2.60
	Information on tax and incentives	Bac Ninh	2.88	Da Nang	2.64
	Information on strategic partners	Vinh Phuc	2.87	Vinh Phuc	2.60
Entry stage	Information on procedures and regulations	Bac Ninh	2.69	Bac Ninh	2.80
	Facilitating registration and licensing	Hai Phong	2.66	Bac Ninh	2.67
	Introduction to professional services	Hanoi	2.41	Bac Ninh	2.54
Implementation stage	Finding suitable sites	Bac Ninh	2.75	Bac Ninh	2.83
	Facilitating building construction	Bac Ninh	2.69	Bac Ninh	2.82
	Finding human resources	Bac Ninh	2.63	Vinh Phuc	2.73
Operational stage / after-care	Complaint resolution	Bac Ninh	2.50	Bac Ninh	2.67
	Information on finance	Hanoi	2.54	Bac Ninh	2.70
	Matchmaking	Hanoi	2.58	Bac Ninh	2.75
	Assistance in upgrading	Hanoi	2.41	Bac Ninh	2.80

the exception of the operational stage where Hanoi is ranked highest in terms of importance.

Figure 4.29 shows how provinces rank on the basis of the ratio of importance to quality of each service. A ratio of unity (1) stands for perfect alignment between importance and quality; a ratio of less than unity indicates that the quality of service is perceived to be relatively higher than its importance. If the ratio is more than unity, the importance of the service is not seen to be matched by its quality. Vin Phuc shows the greatest alignment in providing important services that are of the quality demanded by investors. Survey evidence seems to suggest that the perceived quality of services offered to investors in the provinces of Hanoi, Hai Phong and Dong Nai fall below the perceived importance attributed to these services. On the other hand, investors in the Provinces of Ba Ria Vung Tau, Binh Duong, Ho Chi Minh City, Da Nang and Bac Ninh seem to perceive the services they receive as being of much higher quality than is really required[13].

13 Of course these indicators have to be taken with a certain degree of caution since these are results solely based on subjective investor perceptions of highly important criteria, and the Survey does not provide further information on whether service providers are located in the same province as the enterprise base.

Figure 4.29: *Province ranking for FIEs' perceptions of business support services importance-to-quality ratio (1=optimal)*



SUMMARY

This Chapter has sought to analyze foreign investors' responses to a series of questions aimed at gaining an understanding of what influences their investment decisions and their perceptions of the business climate and business support services in Viet Nam. The results show that foreign firms are mostly influenced by the location factors of political and economic stability, taxation, labour costs and the legal framework. There are no large differences across their countries of origin. Asian investors seem to worry relatively more about personal security. South Korean firms are more interested in the quality of the infrastructure. Government agency support services are very important for the European investors. Small differences can also be noted according to whether an investor is an exporter or not, or is a TNC or a foreign entrepreneur. Most notably, foreign investors have found that all the location factors in Viet Nam have improved over the last three years, in particular government agency support services, the quality of life, political stability and the country's legal framework, with investors from the South being, on average, more positive than those from the North. The analysis also shows that potential investors become aware of the investment opportunities in Viet Nam mainly through the existing investor community, that headquarters and parent company channels are also an important source of investment awareness, and that the main source for investors from the U.S. and Japan is direct contact with the FIA or the DPI. In terms of time to license, Survey evidence suggest that FIA and DPI warrant a short time to license to investors and that this even surpasses the time to license offered by the supposedly more efficient Management Boards of Industrial Zones. The incentives that foreign investors receive appear to be mainly fiscal and they consider these to be highly critical. FIEs in export processing or industrial zones receive the highest share of incentives provided by the management of these zones, and, among the national investor groupings, Japanese investors receive the most incentives. Both the importance and quality of business support services in the implementation and aftercare stage is rated lower than in the pre-investment and entry stages. FEs seem to receive more services in the pre-investment, entry and implementation stage than do TNCs, which receive more in the aftercare stage. Services that need to be improved are those for finding suitable sites and human resources, which are considered highly important by the foreign respondents. The main service providers are the enterprises' own internal resources and government agencies.

Chapter 4.2: FDI activity in industrial zones

INTRODUCTION

This Chapter briefly touches on the topic of industrial zones (IZs)[1] and draws on the Survey evidence to analyze the performance of manufacturing FIEs operating in such zones. The industrial zone policy in Viet Nam is an important component of the country's overall investment and industrial policy framework and in recent years industrial zones across different Vietnamese Provinces have assumed a very prominent role as one of various determinant factors driving industrial performance. Increasingly, the IZ infrastructure has come to signify an important aspect of the business environment and incentive framework in the country and one which is heavily characterized by FIE activity. Box 4.1 presents a brief overview of the IZ regulatory and related incentive framework in Viet Nam.

Overall, IZs afford potential advantages to firms operating in them, namely superior infrastructure, subsidized land, and possible cluster effects in the form of improved access to finance and production factors. As highlighted in Chapter 3.3 in this Report, firm-level analysis of Survey evidence suggests that access to such IZ-induced advantages may be important for firm level productivity performance and technical efficiency. However, it is not clear whether these advantages and their resultant effects translate into broader economic benefits as measured in terms of value added generation, employment creation, export volumes and spillover effects. Indeed, since the general microeconomic theory and empirical evidence provide mixed views on the use of IZs in developing countries (see Box 4.2), it is important to examine FDI performance in IZs in the context of and in comparison with enterprise performance outside such zones.

1 The term Industrial Zone (IZ) is here meant as a general reference to encompass industrial zones, export processing zones and export zones.

DISTRIBUTION OF SAMPLED FIES

Overall, this analysis is based on a sample of 455 FIEs operating in IZs and this sub sample constitutes more than half of the total number of FIEs participating in the Survey. The analysis consists of two main parts: the first part provides a description of the sample distribution and the second part delves into some aspects of comparative performance indicators of FIEs operating inside and outside IZs.

Table 4.11 shows the distribution of the sampled FIEs at the provincial level and shows that the majority of sampled firms operate in IZs located in the provinces of Binh Duong, Dong Nai and HCMC. The distribution of the sampled FIEs located in IZs by investor country of origin is illustrated in Figure 4.30. It is not surprising that the Survey has a concentration of Japanese, Chinese (Taiwan Province) and South Korean enterprises operating within IZs, given the extent of bilateral investment agreements covering industrial zone infrastructure in Viet Nam driven by the respective entities in these countries. It is worth reminding that as for the entire sample of FIEs, China (Taiwan Province) was ranked first in terms of frequencies of FIE origin, followed by Japan as second. In the subsample of FIEs located in IZs, these two FIE groups swap rank position which may serve to indicate that Japanese investors may be relatively more attracted by the amenities of an IZ than investors from China (Taiwan Province). As highlighted in Table 4.12, close to 40 per cent of FIEs located in IZs are operating in low technology manufacturing activities, 22.9 per cent operate in medium technology manufacturing and 36.3 per cent operate in high-technology manufacturing sectors[2].

SOME COMPARATIVE PERFORMANCE INDICATORS

Table 4.13 shows the accumulated sales, exports, value added and employment for FIEs operating inside and outside IZs. As expected, accumulated employment and exports are higher in those FIEs operating in IZs. Exports are, in fact, almost double the accumulated exports of FIEs outside IZs, whereas employment generated is greater by around 4 per

2 Overall these distribution indicators from the Survey sample reflect economy-wide secondary data and information about foreign enterprises operating in IZs as disseminated by Vietnamese national authorities, primarily the Ministry of Planning and Investment.

Table 4.11: *Sampled FIEs operating in IZs, by Province*

Province	Number of FIEs
Binh Duong	142
Dong Nai	122
HCMC	91
Hanoi	40
Hai Phong	20
Bac Ninh	14
Vinh Phuc	10
Da Nang	10
Ba Ria Vung Tau	6
TOTAL	455

Figure 4.30: *Selected sampled FIEs operating in IZs, by country of origin*

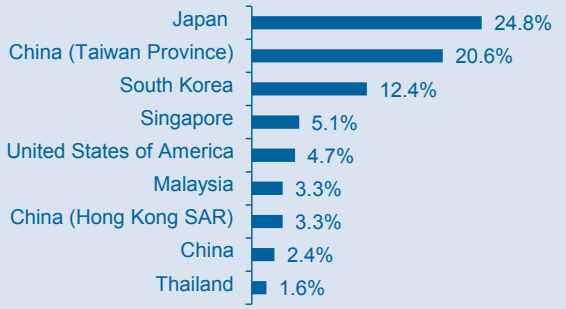


Table 4.12: *Sampled FIEs operating in IZs, by type of manufacturing technology level*

	percentage share of total
High-tech manufacturing	36.3
Medium-tech manufacturing	22.9
Low-tech manufacturing	39.7
Non manufacturing industry	1.1
TOTAL	100.0

cent. Table 4.13 also compares the mean and median for the two FIE categories. The mean is higher than the median for each variable and this proves that the sample is skewed to the left. According to these findings, IZ located firms seem to be more export-oriented and smaller than non- IZ companies. Interestingly, they produce on average lower value added than do FIEs located outside IZs, but they tend to be more labour-productive, possibly as a consequence of the infrastructure provided in these zones. However, the median value added and median labour productivity of FIEs inside the IZs are higher than the median value added and median labour productivity of FIEs outside the industrial zones. The latter result reflects the conclusions of Chapter 3.3 alluded to earlier. Across the board, as shown in Table 4.14, FIEs in IZs have on average a higher value of labour productivity than FIEs outside IZs, whether they are engaged in high-tech, medium-tech or low-tech manufacturing. This result seems, in any case, to be driven by the presence of outlier companies in the sample. The median value added per employee of FIEs inside the IZs operate in low-tech manufacturing activities is higher than the one for non-IZ FIEs in the same sector. For FIEs operating in the medium and high technology manufacturing this difference is no longer the case. Interestingly, the difference between median value added per employee for the low-tech and median value added per employees for high–tech manufacturing is lower when foreign enterprises inside the IZs are considered. This result might point to the fact that FIEs operating in these zones are benefiting from the superior operative conditions which in turn prove to be determinant for labour productivity gains. However, this effect seems to only interest those firms engaged in the low technology manufacturing sectors. FIEs engaged in high-tech manufacturing may tend to be penalized by the general low quality of labour

Table 4.13: *Selected comparative indicators for FIEs operating in and outside IZs*

	FIEs operating outside IZs			FIEs operating in IZs		
	Sum	Mean	Median	Sum	Mean	Median
Number of employees	295,552	741	301	308,064	679	334
Total Sales (in USD)	226,551,380,039	569,224,573	5,600,255	178,336,252,997	391,947,809	7,573,167
Total Exports (in USD)	77,516,614,249	209,504,363	2,020,000	127,673,250,019	297,606,643	3,480,000
Value Added (in USD)	6,141,280,194	15,910,052	1,078,592	3,695,034,827	8,455,457	1,549,736
Value Added per capita employee (in USD)		465,282	4,525		558,948	5,848

Note: Computations are based on a sample of 399 non IZ FIEs and 455 IZ FIEs

Table 4.14: *Selected comparative indicators for FIEs operating in and outside IZs, by technology level*

	FIEs operating in IZs					
	High-tech		Medium-tech		Low-tech	
	Mean	Median	Mean	Median	Mean	Median
Number of employees	703	308	484	334	781	362
Total Sales (in USD)	382,600,000	9,376,000	14,675,677	8,184,631	627,700,000	5,098,200
Total Exports (in USD)	170,600,000	3,800,000	9,659,238	3,971,351	581,600,000	3,161,863
Value Added (in USD)	5,210,587	1,341,834	17,264,216	2,000,000	7,072,553	1,346,804
Value Added per capita employee (in USD)	142,082	7,273	188,955	6,154	1,156,173	4,270
	FIEs operating outside IZs					
	High-tech		Medium-tech		Low-tech	
	Mean	Median	Mean	Median	Mean	Median
Number of employees	980	308	499	290	793	318
Total Sales (in USD)	82,250,324	17,835,675	152,000,000	6,439,027	943,100,000	3,575,889
Total Exports (in USD)	46,323,570	2,000,000	19,840,954	1,179,975	350,000,000	2,266,951
Value Added (in USD)	23,712,645	3,497,307	9,045,810	1,301,389	16,844,641	739,807
Value Added per capita employee (in USD)	48,212	11,545	131,357	7,853	759,939	3,104

Note: Computations are based on 76, 85 and 220 non IZ FIEs for the high-tech, medium-tech and low tech sector, respectively, and 165, 104, and 181 for IZ FIEs for the high-tech, medium-tech and low-tech sector, respectively.

Table 4.15: *Selected employment indicators for FIEs operating in and outside IZs*

in percentage terms

	FIEs in IZs	FIEs outside IZs	NSOEs
Share of female employees	53.7	50.5	35.4
Share of female employees in Production	54.4	50.9	35.4
Share of female employees in Technical/Supervisory Work	29.3	29.7	23.8
Share of female employees in Clerical/Administrative Work	72.3	69.2	34.3
Share of female employees in Managerial Work	31.5	32.2	62.6
Share of foreign employees (%)	2.5	2.3	0.0
Share of foreign employees in Production Work	0.4	0.5	0.0
Share of foreign employees in Technical/Supervisory Work	17.4	13.7	0.3
Share of foreign employees in Clerical/Administrative Work	37.3	33.2	0.5
Share of foreign employees in Managerial Work	2.7	1.9	-
Share of production workers in total workers	81.2	79.7	76.3
Share of technical/supervisory workers in total workers	7.2	7.8	9.1
Share of clerk workers in total workers	6.3	7.1	7.4
Share of managerial workers in total workers	5.2	5.4	7.2
Working hours per day of a permanent employee	8.7	8.6	8.4

engaged in their operations and consequently, it may be hypothesised that the potential gains afforded by the IZ location may somehow be offset by deficiencies in human capital which results in driving down labour productivity and general value added.

The average share of exports in the sales of FIEs in IZs is around 67 per cent, 7 per cent more than the export share of sampled FIEs operating outside IZs. As expected, the majority of enterprises in IZs are global-market seekers with their main export destinations being the USA, Japan and China Taiwan.

Substantial differences are found when one compares selected labour indicators for FIEs operating in and outside IZs (Table 4.15). Employment creation is

Table 4.16: *Training expenditure for FIEs in and outside IZs, by investor country of origin*

	FIEs outside IZs			FIEs in IZs		
	Total training expenditure over Sales	Internal training expenditure over Sales	External training expenditure over Sales	Total training expenditure over Sales	Internal training expenditure over Sales	External training expenditure over Sales
China	0.03	0.03	0.01	3.20	3.41	0.08
Europe	7.71	8.66	0.02	0.16	0.17	0.00
Japan	0.17	0.17	0.03	23.02	0.01	25.06
South Korea	0.03	0.00	0.03	0.00	-	0.00
United States of America	0.01	0.00	0.01	0.27	0.08	0.21
Other Asia	0.00	0.00	0.00	0.05	0.05	0.01
Rest of the world	0.06	0.04	0.03	12.71	2.92	10.43

Table 4.17: *Vertical backward linkage comparison between FIEs operating in and outside IZs*

in percentage terms		
	FIEs in IZs	FIEs outside IZs
Share of domestic suppliers in total suppliers	51.7	58.7
Share of long-term contracting arrangements with domestic suppliers in total number of contracting arrangements	49.7	55.5
Share of production inputs procured from a domestic manufacturer located in Viet Nam	20.0	33.2

considered one of the fundamental objectives of the industrial zone policy, and female employment seems to be a principal result emerging from the implementation of this policy. In general, FIEs operating within the industrial zones tend to hire female employees in production workers or administrative/clerical employees. Supervisory and managerial positions are assigned to male employees. This labour market characteristic holds true for both FIEs operating inside and those outside industrial zones, but is particularly evident in the case of those firms operating within the zones[3]. As a comparison with the prevailing employment trends outside industrial zones, a significantly lower proportion of sampled NSOEs' employees are women[4]. It may seem that women have more opportunities to develop a career in domestic enterprises, as evidenced by the fact that, according to Survey evidence, most managerial positions in domestic firms are held by women. Working hours in FIEs operating in IZs are slightly higher than the industrial norm.

Table 4.15 also shows that FIEs seem to mainly hire domestic employees. The percentage of foreign employees is slightly higher for those FIEs operating in IZs but it remains very low (2.5 per cent). Foreigners are more usually employed in clerical/administrative and technical/supervisory positions, while only a few are production workers. Overall, these results seem to reflect industry-wide labour market characteristics, and operating in IZs does not seem to afford any advantages nor impose any major variations to the norm. Similar assertions can be made for training expenditure programmes. Whereas FIEs operating in IZs hire more production workers and pay lower wages (when compared to both FIEs operating outside industrial zones), they tend to spend more on internal and external training than their counterparts located outside industrial zones. The levels of internal and external training expenditure normalised as a proportion to sales by investor country of origin are highlighted in Table 4.16. With the exception of FIEs from Europe and South Korea, in general, zone located FIEs seem to spend more on training when compared to FIEs located outside industrial zones. Japanese zone located enterprises tend to spend most on training when compared to the other FIEs firms in these zones, possibly because they are also the main employment generators. Almost all training by these Japanese FIEs refers to external training programme activities.

3 This evidence is also reflected in the analysis contained in Chapter 3.1.

4 It is to be noted that there are also NSOEs and SOEs that have established within IZs but this is not subject of this analysis.

It is also important to examine the extent of vertical backward integration of FIEs operating within industrial zones as compared to enterprises operating outside the zones. Table 4.17 shows three indicators of backward linkages: (i) the share of domestic suppliers in total suppliers; (ii) the share of long-term contracting arrangements with domestic suppliers; and (iii) the percentage of production inputs procured from domestic manufacturers located in Viet Nam. Interestingly, FIEs located outside IZs seem to have a higher level of local sourcing than do firms operating in IZs, even though the share of production inputs procured from domestic suppliers is very low for both types of enterprises. In general, subcontracting tends to be more limited in FIEs located in IZs than outside IZs and this re-affirms the established notion that foreign enterprises tend to operate in economic enclaves.

SUMMARY

This Chapter has aimed to briefly describe the characteristics of FIEs located and operating in industrial zones. Survey evidence seems to confirm that manufacturing activity in industrial zones is mainly labour-intensive and characterized by low-technology manufacturing operations, which in turn is mainly export-oriented and global-market seeking. Although, generally speaking the country's industrial zone policy may be reaching its targets of employment creation, the concentration of low-skilled employment seems to characterize the overall zone specific manufacturing activity. More than half of the total employment generated in industrial zones is female. FIEs operating in such zones tend to generate less backward linkages to local suppliers and more government support may be required towards the realization of clustering effects in and around such IZs. Overall, the above descriptive analysis serves to show that, although FIEs in IZs may operate at a more technically efficient level, due to the infrastructural conditions in IZs and as a result of the incentive framework associated with IZ policy, they may not necessarily be more labour-productive nor better able to generate more value added than other foreign enterprises located outside such zones. It has to be reiterated that these broad indications should not be taken as representative of the wider industrial landscape since they are based on a very limited sample of FIEs. Indeed a more comprehensive analysis, especially at the zone and province level, is further required to evaluate in much more detail the performance and impact of FDI activity in these zones as compared to such activity outside these economic jurisdictions.

Box 4.1: *Industrial zones in Viet Nam*

Viet Nam first set up industrial zones (IZs) in 1991 to be legal bases for investors seeking to avoid Viet Nam's bureaucracy. Viet Nam has 234 IZs, most of which are in economic zones. Investment in IZs and EPZs is generally regulated by Decree 108/2006/ND-CP of September 2006. Decree 29/2008/ND-CP dated and in force from March 14th 2008 contains conditions and procedures for establishing such zones. An IZ is a zone in which enterprises specializing in the production of industrial goods and the provision of services for industrial production are concentrated. An EPZ is an industrial zone specializing in the production of goods for export and the provision of services for such production and export activities. However, enterprises in EPZs are not legally obliged to export their production which makes distinction between IZs and EPZs somewhat blurry.

The extent and duration to which preferential corporate income tax (CIT) is provided, depends on the type and sector of project that the company may be envisaging:

- New infrastructure development projects in IZs and EPZs are entitled to a preferential corporate income tax (CIT) rate of 10 per cent for 15 years from the commencement of operations. In addition, these projects may be granted a tax holiday for four years beginning from the first year of profitable operations or a 50 per cent CIT reduction for nine years (starting from the fourth year revenue is generated), whichever comes first.
- New manufacturing projects in IZs and EPZs are entitled to a preferential rate of 15 per cent for 12 years from the beginning of operations, as per Decree 108/2006/ND-CP.. These enterprises may also be granted exemption from CIT for two years (counting from the first

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profitable year) or a 50 per cent CIT reduction for seven years (counting from the fourth year revenue is generated), whichever comes first.

- Investment in new services projects in IZs qualify for a preferential rate of 20 per cent for ten years (from the commencement of operations). In addition, they may be granted CIT exemption for two years (beginning with the first profitable year) or 50 per cent CIT reduction for six years (from the fourth revenue-generation year), whichever comes first.
- Decree 108, implemented in October 2006, continues to apply reduced land rents to EPZs and IZs. Customs clearance can also still be made inside an EPZ to speed up the export process. In addition, Decree 29/2008/ND-CP of March 14th 2008 applies the following favourable policies to IZs and EPZs:
- A 50 per cent reduction in the personal income tax of Vietnamese and foreign employees working in these zones (Circular 176/2009/TT-BTC, with effect from October 2009, provides guidance on how these incentives are applied); and
- A deduction from the CIT of enterprises of the cost of building, maintaining and renting apartments and other buildings for the use of employees.

However, incentives for avoiding restrictive investment rules and protective tariffs are gradually being abolished since Viet Nam's accession to the World Trade Organization in January 2007. The main provision of the EPZs—duty-free imports of inputs as long as finished goods are exported—no longer applies under WTO prohibitions on export subsidies and the new incentives regime adopted to comply with the WTO in February 2007.

Box 4.2: *Economic theory and empirical evidence on industrial zones*

The world has seen a massive proliferation of EPZs from an estimated 75 zones in 1975 to approximately 3500 zones in 2006. In many cases, however, the expectations that host country governments and investors have tied with the zones in terms of performance and economic impact, have not been met and many of existing EPZs are in fact not (fully) functional (UNIDO, 2009). According to the neoclassical analysis, the establishment of an EPZ has a negative welfare effect on a host country because it increases inefficiency by reallocating production away from the domestic economy where it enjoys a comparative advantage. Capital is siphoned off, labor is transferred from the domestic market to the EPZs, and the production of capital-intensive goods increases in these zones, while that of labor-intensive goods decreases. Warr(1989) dismisses this theory by arguing that the model treats capital as being internationally immobile and, in this way, it fails to capture the international mobility of capital goods that is central to the functioning of EPZs. He promotes the cost-benefit approach to assessing the impact of the zones. His method is based on the computation of all the costs and benefits associated with the zones and the estimation of the net gain to the host country in employment generation, foreign exchange earnings, greater use of local materials, increase of capital equipment, and tax revenues (Jayanthakumaran, 2003). The costs include those of administration and maintenance, and of the additional physical and administrative infrastructure. UNIDO (2009) argues that the cost-benefit analysis general turns from positive towards negative as the country moves from a low growth-low income status to that of a fast-growing middle-income country. This is because in a dynamic economic context of a middle-income country, clusters emerge spontaneously around naturally grown urban areas which means that the risk of unnecessarily subsidizing EPZ occupants increases considerably. A third school, the new growth theory, asserts that the neo-classic theory does not take into account the catalyst and spillover effect of the zones on the host economy. There are scenarios where FDI flows would simply not have been triggered without the existence of an EPZ (Head and Ries, 1999). Successful FDIs in a zone represent an opportunity for the domestic firms to learn and copy from their foreign counterparts. Foreign firms would work as catalysts because they would improve the non-traditional export-oriented production by combining their know-how and access to world markets with the domestic endowments (Johansson and Nilsson, 1997¸FIAS, 2008). And although the advent of the age of information technology and the development of regional integration

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agreements may lower this demonstration effect, the positive effect of FDI would include not only this effect but also a technology and knowledge transfer that would foster industrial development in non-traditional goods and improve the efficiency of production processes. This process may then favour the development of backward linkages of foreign firms to domestic firms, which would allow the domestic companies to step in as suppliers of EPZ or IZ firms, and foster the integration of the zone

Chapter 5:

Conclusions and recommendations

OVERALL CONTEXT

This is a milestone period in Viet Nam's industrial development and modernization process. The 2011-2020 Socio-Economic Development Strategy and the 2011-2015 Socio-Economic Development Plan (SEDP) clearly set out Viet Nam's ambition to become a modern industrialized economy by 2020. In recent years, Viet Nam has achieved relatively high industrial growth, with the value of industrial production accounting for a significant share of the country's economic structure. Manufacturing industry has been at the core of Viet Nam's impressive economic performance over the last two decades and its role as a driver of economic growth is likely to persist. The country has registered impressive growth rates in manufactured exports, which have simultaneously led to a significant increase in import volumes, an effect which has been further spurred by additional steps towards full trade liberalization (UNIDO 2011). At the same time, however, Viet Nam´s negative manufacturing trade balance points to the need to continue with the process of structural change with its focus on industrial transformation in strategic sectors that can support sustained economic growth as well as reap the benefits of technological change, innovation and learning.

A fundamental cornerstone of this industrial transformation process can be foreign direct investment (FDI). Existing evidence on the past contribution of FDI suggests that Viet Nam's recent economic growth trajectory can be largely attributed to the growing presence of foreign-invested enterprises (FIEs), as evidenced by their role in the growth of the country's industrial production, employment, exports and tax revenue. As argued by Yasheng (2001) and Freeman (2002), FDI activity can act as a substitute private sector for an economy in transition when the domestic private sector is not yet robust enough to have much macroeconomic impact and when reform in the state sector remains sluggish. In a transition phase of economic development, bringing in foreign investment is tantamount to importing a ready-made private sector, capable of having a fairly immediate and positive impact on economic growth in the host country.

So far, Viet Nam's FDI strategy has been quite effective in attracting robust FDI inflows which have brought in the country abundant foreign capital and initial exposure to new technology and know-how, organizational and management techniques, and overseas market information and market access. Since 1987, FDI activity in Viet Nam has gone through successive development and policy stages, and appropriate changes in the FDI management methods have ensured that investment attraction objectives have been met and have served socio-economic development and international integration. Clearly, to date, the main policy objective has been to secure the volume of investment flows as a much-needed outcome of the important economic liberalization reforms enacted in recent years. These commendable reforms today represent the rule rather than the exception given that Viet Nam´s competitors have implemented similar reforms that impose very limited regulations on FDI entry and activity in their economies. Viet Nam may have now entered a regulatory phase characterized by diminishing returns to legal and regulatory reform as these are increasingly losing their effectiveness as a locational determinant of FDI[1]. By the same token, it is unlikely that FDI inflows in Viet Nam will continue to grow at the same volumes as they have over the last decade, given the dismal international economic conditions, particularly as these affect the majority of industrialized economies.

These new conditions require a re-assessment and re-calibration of current approaches to promoting foreign direct investment by finding Viet Nam's optimal position(s) in the international market place and designing policies that will develop the industrial strengths needed to compete in these niches. There is ample consensus about the fact that the country's FDI strategy should move strongly away from the quantitative to the more qualitative aspects of FDI impact. This policy stance must be supported by an FDI strategy that is interlinked with the wider industrial and socio-economic development agenda and unanimously supported by the country´s public and private sector stakeholders. Policy makers need to position the country's FDI strategy in the context of a thorough understanding of where Viet Nam's main comparative advantages lie so that this strategy can then direct policy measures to maximize these advantages to the best possible effect.

The Viet Nam Industrial Investment Report (VIIR) 2011 re-affirms the imperative for Viet Nam to bring

1 Freeman (2002) argues that, as adequate core FDI policies, favourable legislative and regulatory conditions may now start to be taken for granted by prospective investors.

a sharper focus to its approach to foreign investment promotion and management since those policies and factor conditions that served it well in promoting direct investment in the country and enabling it to reach middle income status might not be sufficient to sustain the attainment of industrial development objectives and economic transformation in the medium and long term.

RECOMMENDATIONS

The findings presented in this Report provide a significant empirical foundation for government agencies dealing directly and indirectly with foreign direct investment as well as for a multitude of other stakeholders, including the private sector, engaged in the industrial development process. As the country continues to move forward with its ambitious development agenda, it becomes critical for policy makers in Viet Nam to draw upon recommendations with which they can leverage the catalytic role that FDI can and must play in industrial diversification and in achieving growth in industrial efficiency and competitiveness. The recommendations fall into two categories: (I) Recommendations for institutional decision-making, and (II) Recommendations for policy actions.

I. RECOMMENDATIONS FOR INSTITUTIONAL DECISION-MAKING

I. THE INVESTMENT PROMOTION FRAMEWORK AND MPI/FIAs ADVOCACY FUNCTION

At the institutional level, it is clear that, in recent years, the Foreign Investment Agency (FIA) of the Ministry of Planning and Investment (MPI) has had a central role in the investment promotion process, reaching out to potential investors and putting the country firmly on the international investment map. At this important juncture in the country's economic development and industrialization process, FIA needs to be further empowered and supported in developing investment promotion policies to determine business support services that concretize the much vaunted emphasis on the quality of FDI as measured by its impact in the economy. The reform in the investment law in 2005 has entailed a major reorganization and decentralization of the responsibility for investment promotion primarily to Provincial People's Committees (PPCs) and, in the case of industrial and export processing zones, to the respective Management Boards. Although this institutional development ensures a decentralized framework of investment promotion, it may have put the FIA and the MPI at the wrong end of the information flow, starving these institutions of timely and reliable information about the actual performance of foreign investment activity as well as their propensity to re-invest in the country. No reversal of the decentralized nature of the country's investment promotion framework is required but there is nevertheless an urgent need to support the central monitoring and policy-driving role of MPI and FIA, not only in terms of investment management and monitoring but also in their outward investment promotion efforts to increase the awareness of business and investment opportunities in Viet Nam. It is in this sense that institutions and management agencies involved in various aspects of investment promotion and management at the national-level, primarily FIA, need to acquire new tools and sharpen their skills to assess the changing contours of the investment climate in the country and keep abreast of the developing trends in Viet Nam's investment topography at both the national and the provincial levels. This up-to-date information is not limited solely to focusing on investment trends and performance indicators but also provides an outlook on investment prospects and forecasts of expansions, examines sectoral performances and assesses policy outcomes. Added emphasis needs to be placed on investment aftercare services. As highlighted in one main Report finding, existing investors are crucial in promoting new FDI in Viet Nam. In this sense, continuous aftercare support services serve a dual objective – they trigger re-investment by existing investors in the country and they take advantage of their role as ambassadors to promote new FDI in Viet Nam.

It is hoped that the UNIDO Viet Nam Industry Investor Survey 2011, this Report and the Viet Nam Investment Monitoring Platform (V-IMP) may have kick-started a process of improving the availability and quality of firm-level data to support the FIA's central policy advisory and advocacy role and its investment promotion and monitoring efforts in Viet Nam in general. Further collection, processing and diffusion of quality business-related information are deemed essential to expanding the existing database, to meet multi-stakeholder agendas and to foster consensus-building and partnership creation among stakeholders.

II. PLACE INVESTMENT PROMOTION AT THE CORE OF INTER-MINISTERIAL DIALOGUES

The present economic challenges faced by Viet Nam, among which is the need to leverage the role of FDI in the country's industrial upgrading process, require the building of consensus at the policy level to include productive investment as a central part of Viet Nam's socio-economic development process.

The continuous need for the country to move up the development ladder and improve the attractiveness of its location advantages both for new investment and for investment expansion is a challenging task and calls for more sophisticated and wide-ranging institutional decision-making processes to effectively reach this end. Sustained FDI inflows at higher productivity and technology levels require not only a continuation of good macroeconomic performance but also the deepening and broadening of wide-ranging sectoral reforms which will improve the business environment at the micro-level. This development agenda should not be seen as the monopoly of one particular ministry or government agency, but should encompass a widened group of government and institutional stakeholders that, through their formal mandates and execution, have a bearing on foreign investor perception and actions that can foster the country's required industrial transformation process. Policy-making towards FDI may best be seen as part of a 'discovery process', where industry and government learn to coordinate strategies in the management of complementary investment projects that bring about industrial development. There is therefore a need to promote investment within a broad ministerial stakeholder policy cooperation and coordination framework. Since they stand out at the forefront of the foreign investment promotion effort in the country, MPI and FIA should lead the process of collecting, monitoring and processing investor information and should subsequently coordinate results-oriented discussions and information exchange at the national and at the provincial level. The institutional dialogue would go a long way to bolster efforts to resolve challenges to investment falling under the responsibility of different ministries and public agencies and should, as a consequence, lead to concrete policy actions and initiatives.

II. RECOMMENDATIONS FOR POLICY ACTIONS

I. ASSESS THE FDI-LED EXPORT GROWTH MODEL BASED ON FIRM-LEVEL EVIDENCE

This Report reveals, on the one hand, that the underlying fundamentals of Viet Nam´s FDI sector are primarily labour-intensive, with positive income-generating effects on parts of the Vietnamese work force, but, on the other hand, that the FDI sector exhibits significant levels of dependency on capital and material imports to offset the lack of local supply, especially in the case of intermediary industrial products. So, while FDI performance has, overall, been very positive, it has also magnified the inherent structural economic challenges faced by the Vietnamese economy. A more in-depth assessment of the country's FDI-led export growth model should therefore be undertaken. It is fundamentally important that a thorough analysis of the relationship between export orientation, employment creation, value addition and productive efficiency among manufacturing sectors engaged in low, medium and high technology manufacturing is undertaken on a periodic and systematic basis. Macro-economic studies should be complemented and validated through timely and accurate firm-level panel-data as provided by further iterations of the UNIDO Investor Survey and the continuous updating of the Viet Nam Investment Monitoring Platform. The Government must put in place evidence-based policy mechanisms over the longer term to validate policy actions and initiatives aimed at facilitating the transition to higher-value-added activities across diverse manufacturing value chains. For example, the Report suggests that more emphasis could still be placed on the growing Vietnamese domestic market and the ensuing change of consumer patterns towards more sophisticated manufactured products, as a means to attract higher-value-added foreign investment. The domestic market could be used as a launch pad into international markets, and policies should be directed to provide specific support to industries embarking on this development trajectory. These dynamics have to be captured and monitored using timely and accurate data such as that emanating from future Industry Investor Surveys and the application of the Viet Nam Investment Monitoring Platform.

II. FOCUS ON HUMAN CAPITAL DEVELOPMENT AND SKILL FORMATION INITIATIVES

A key finding in the VIIR 2011 is that firms' labour productivity in Viet Nam is still low and exports are mainly concentrated in labour-intensive, low-value-added manufacturing. The main challenge is to raise productivity in existing operations and expand the share of higher-value-added, higher-productivity activities. To stimulate the transition to high-value-added activities, the country needs to steer away from promoting itself as an investment location solely based on generic location factors and, more particularly, replace a cheap labour force as the main factor of attraction with, instead, the country's new comparative advantages. To achieve the latter, Viet Nam needs to enable existing segments that already have achieved relatively high productivity to thrive and grow, and to encourage new companies—both FIEs and domestic enterprises—to channel investments into such higher-value-added and higher-productivity activities. The key determinant factor here is the skill levels of employed human capital, which at the outset would need to be aligned with the relative skill requirements of different manufacturing sectors. In some instances, low technology manufacturing activities may afford high productivity levels due to the alignment of skills required and sourced from the labour market. On the other hand, increasing productivity in high technology activities swiftly necessitates added impetus to human capital development to maintain a correlation between capital intensity and productivity gains. The analyses in this Report suggest that FDI in manufacturing activities characterized by high and low technology utilization can lead to productivity gains. From an immediate, short-term policy perspective, it is therefore important for Viet Nam to enable and support FDI flows in a varied technological spectrum (low, medium and high tech) of manufacturing activities, while, from a more long-term perspective, it is critical that concerted efforts are put in place to ensure that Viet Nam´s domestic manufacturing industries catch-up with foreign investors in terms of manufacturing value added as characterized by increased high technology industrial activities.

In order to achieve such an industrial transformation through higher-value-added and improved labour productivity, there is therefore a strong need for continuous support to the skill formation and vocational training mechanisms as a response to the fast-changing labour market needs in industry, especially in the higher wage and medium to high-tech industrial segment. Skill formation, through, for example, vocational training, is by definition a gradual process which interests wide ranging national institutions (state and privately owned) and reaps dividends over the medium and long term. However, the human capital needs of industry, enterprises and investors are primarily immediate and may ill afford to 'wait' for the fruition of skill formation policies occurring in the future. It is therefore even more important that skill formation mechanisms are put in place or enhanced and implemented by national institutions immediately as part of a general policy framework encompassing education, industry and investment promotion. The impetus to vocational training and skills formation and upgrading can however also come from enterprises' internal and external training programmes, and these initiatives should continue to be assisted through dedicated incentives and targeted support services.

III. ADDRESS BUSINESS ENVIRONMENT SHORTCOMINGS

In addition to the deficiencies in human capital, the Report has highlighted investors' perceptions on a number of important inherent structural weaknesses of the Vietnamese economy, primarily in the physical infrastructure and the regulatory environment.

Over recent years, substantial public investment has been directed at enhancing Viet Nam's physical infrastructure, including the development of industrial estates, the upgrading of airports, ports, roads and railroad capacity and the building of new airports to meet the increasing demands of a fast-developing country. Yet challenges in the business environment persist. Investors singled out electricity and power utility as the foremost business environment factor impinging negatively on enterprise capacity utilization and performance. Concerted efforts need to be put in place to overcome these infrastructural bottlenecks so as to meet and even surpass investors' expectations. This applies particularly to the provision of infrastructure external to industrial zones which brings a wide range of positive spillovers in terms of national transport and communications systems for the Vietnamese economy in general. This is particularly important since the growing Vietnamese market is highly dependent on domestic transportation systems and reliable infrastructure in and around the largest urban agglomerations

Viet Nam also needs to strengthen its regulatory environment by further streamlining burdensome and unclear regulations. Investors indicated that the time required to start a business is still quite long (52 days) and policy makers should aim, through the different ministries and public agencies, to speed up the investment process.

III. EVALUATE INVESTMENT INCENTIVES AND POLICIES FOR INDUSTRIAL ZONES

There is the need to evaluate and streamline the present investment incentive framework and assess the economic benefits resulting from the application of investment incentives to benefiting FIEs. This is especially important in the context of those enterprises operating in manufacturing sectors with high-value-addition potential and characterized by heavy export orientation. It is crucial that policy actions are put in place to make sure that FDI activity delivers according to prescribed plans and objectives. Action in this regard would also serve to gain understanding of the reasons for and address the current gap between registered and implemented FDI capital. This exercise is crucial in terms of both sharpening industrial policy and investment management actions and ensuring the cost effectiveness of state funds utilization for incentive policy implementation and the provision of related support services.

The VIIR 2011 findings suggest that FIEs located in industrial zones may not be performing differently from nor have a dissimilar economic impact to other FIEs located outside these zones. From the Survey it emerges that the industrial zones in Viet Nam have represented an efficient and productive way of absorbing surplus labour and attracting FDI, but their ability to stimulate long term economic growth seems to be uncertain, in particular given their relatively low contribution to technology transfer and spillover effects. Therefore, a cost and benefit impact assessment of FIEs' performance and technical efficiency within industrial zones needs to be undertaken in order to appraise the economic benefits of incentive schemes provided to enterprises located in these zones.. The stimulation of a combination of foreign investors in both high-tech and high-value-addition sectors through specialized incentives may improve the role that these zones can play through demonstration effects. However, it is clear from the Report findings that the benefits accruing to FIEs operating in industrial zones as measured by productivity performance are somewhat undermined by weaknesses in human capital engaged in the same industrial activities. Clearly a holistic assessment of the industrial zone policy should include an analysis of the magnitude of the incentive effort required to set up these zones and the resultant wider economic impact of FIE performance and should give reference to inherent structural weaknesses currently existing in the Vietnamese economy. In this context, the existence of industrial zones should be seen as a transitory step towards the liberalization of the economy where, in the medium to long term, all economic entities would benefit from the same policies and incentives independently of whether their operations are within or outside an industrial zone.

IV. COUNTER FIES' ENCLAVE OPERATIONS THROUGH THE DEVELOPMENT OF SUPPORTING INDUSTRIES

Even though the foreign investment presence has had a positive impact on the Vietnamese economy, large segments of FIEs seem to operate in enclave sectors. This phenomenon is further exacerbated by the proliferation of industrial zones in many provinces across the country. FIEs are mainly located in export-oriented manufacturing sectors and tend to import the majority of their intermediate inputs. The vast majority of domestic enterprises are not yet in a position to be integrated into the global value chains of FIEs, especially those of TNCs, while the larger national enterprises are mostly SOEs, and FIEs may be reluctant to engage in supplier contracts with them. Specific policies and targeted incentives – within the limits of international trade rules – should be implemented and promulgated to promote domestic supporting industries. In this respect, investment promotion efforts directed at both foreign and domestic investor categories should focus on attracting more supporting industries to Viet Nam in a bid to enable more industrial subcontracting and increase the local content of FIEs, thereby embedding FDI manufacturing activity in the country's industrial landscape, unlocking the potential of technology and management transfer and ensuring learning and adaptation effects from strategic and more long-term supplier-buyer partnerships[2].

2 Through the establishment of the Subcontracting and Partnership Exchange Programme (SPX) in Viet Nam, UNIDO is providing technical cooperation assistance in supplier profiling, matchmaking and benchmarking activities with the objective of linking domestic enterprises in the country to the supply chains of large domestic or international enterprises. SPX Viet Nam, which was set up within the Viet Nam Chamber of Commerce and Industry, has been successfully providing subcontracting services to Vietnamese SMEs since 2010.

V. FACILITATE MORE JOINT VENTURES

A direct way to ensure that the domestic industrial sector is adequately supported to operate side by side with FIEs is through improved facilitation of joint venture agreements between FIEs and domestic enterprises and/or investors. Such a policy emphasis would enable domestic enterprises to better link up and absorb the economic benefits emerging from FDI activity. Report results suggest that joint ventures are most likely to interest those manufacturing activities geared towards the domestic market. It is therefore important to keep track of the sectoral performance indicators in order to be better able to target policies and support services in line with sectoral and market characteristics. Systematic and periodic data and project feasibility analyses should serve to identify those sectors and industries most capable of accommodating feasible joint-venture arrangements. Viet Nam's investment promotion efforts by ministries and governmental institutions should be complemented by the promotion of viable, joint-venture project proposals which are also vetted by stakeholder private sector associations and are in line with the country's natural and factor endowments.

VI. TARGET FDI THROUGH MERGERS AND ACQUISITIONS (M&As)

To date, the great majority of FDI in Viet Nam occurs through greenfield investment. This is the result of the evolution of the political economy of the foreign investment legislation in the country over the past decades, which imposed restrictions on foreign investment through M&As. Clearly, restrictions on M&As have not deterred foreign investment in Viet Nam, partly because there are few sizeable private domestic enterprises that could be a target for acquisition by foreign investors. This is likely to change rapidly as domestic private enterprises grow and as more industrial SOEs are restructured and are gradually equitized. An assessment of the costs and benefits of promoting inward FDI through M&As is best done at the individual project-level. This points to the need to stimulate a more wide-spread use of existing tools, including UNIDO's tools, for project and industrial feasibility analyses. From the policy perspective, it should be noted that the largest shares in global FDI flows take the form of M&As, and if Viet Nam wants to remain a valid contender in the FDI attraction game, then it has to be able to tap this FDI market through the implementation of adequate and appropriate policies, yet keeping in mind that it is less the establishment mode per se which is a predictor of positive spillovers effects but rather the foreign investor's commitment to transfer technologies to and invest in the human capacities of the firm to be acquired.

THE WAY FORWARD

Good policy frameworks and actions can accelerate and sustain the positive economic impact that different forms of investments have on the host economy provided policy makers can tap into a relevant, accurate and comprehensive information repository. Viet Nam has long recognized the importance of having the means with which to monitor investment flows and trends in the economy, as well as to be able to assess the performance of such investment and ascertain the impact of investor categories on key economic indicators. The Viet Nam Industrial Investment Report 2011, the UNIDO Industry Investor Survey 2011 and the Viet Nam Investment Monitoring Platform serve to reinforce this recognition and policy stance on the basis of the 'collective voice' of nearly 1,500 enterprises in the country. It is UNIDO's hope that the findings and recommendations emanating from the VIIR 2011 as well as the utility of the Viet Nam Investment Monitoring Platform (available at "http://investment.unido.org/imp/") will trigger a process of successive industry investor surveys to continuously update the information and data base available for evidence-based policy making. The availability of up-to-date information facilitates the process of consensus building among the relevant stakeholders in the country; this should be a continuous and dynamic process if it is to drive the requisite changes. Policy-making based on such empirical evidence from the private sector will be more meaningful and will create a virtuous cycle whereby the efficacy of policies is assessed against the feedback provided by enterprises through subsequent surveys or directly through their input to the Investment Monitoring Platform. This will serve to further assist MPI and FIA in their respective coordinating roles of speeding up foreign investment inflows in Viet Nam and particularly in securing the much needed inflow of capital and managerial and technological know-how through targeting successful and balanced combinations of investor types rather than specific individual investor groups per se.

This process has to create the fundamentals for crowding-in effects to mobilize further domestic direct investment activity and ensure the wider spread of economic benefits in the country. This objective is corroborated in the Report findings which present multiple evidence about the need to continue encouraging economic sectors and enterprises to develop their productive activities and business so as to generate more employment opportunities and achieve productivity gains. More programmes are therefore required to support domestic enterprises in overcoming technical and capacity constraints, in becoming full members of international supply chains and in proposing themselves as credible joint-venture partners. The promotion and formulation of enabling policies for foreign direct investment does not run in contradiction to efforts to promote domestic direct investment. On the contrary, both objectives can be mutually pursued provided that the traditional separation between domestic enterprise development and the attraction of inward foreign investment is replaced by an integrated policy and an accommodating institutional framework in which the two processes reinforce one another.

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General Annex I: Project description

Title:	Platform for Investment Monitoring and Supplier Development in Viet Nam (Phase 1) - FB/VIE/09/009
Budget:	$0.975 million
Duration:	30 months - from January 2010 - June 2012
Funding:	UN One Plan Fund
Thematic area:	One UN Plan Outcome 1: "Social and economic development policies, plans and laws support equitable and inclusive growth and conform to the values and goals of the Millennium Declaration and other relevant international agreements and conventions". One UN Plan Output 1.18: "Improved investment environment" One UN Plan Result 1.18.1: "Investment policy assessment and formulation capacity enhanced at the national level"
Implementing partners:	Ministry of Planning and Investment (MPI) Foreign Investment Agency (FIA) Vietnam Chamber of Commerce and Industry (VCCI)
Objectives:	• Better monitoring and management of investment flows by national institutions and private sector decision makers through the establishment of a web-based investment monitoring platform as a tool for analysis and management of foreign direct investment; • Domestic manufacturing sector is better equipped to present itself as a viable and competitive supplier base for global enterprises through the establishment and strengthening of a supplier benchmarking and subcontracting exchange (SPX) unit within the VCCI
Outputs and Outcomes:	The outputs under this programme included a) an Industry Investor Survey of foreign and domestic investors; b) the set-up of the Viet Nam investment monitoring and management platform (VIMP) as a tool for developing investment promotion strategies; and, c) introduction of UNIDO's benchmarking methodology and supplier development tools as part of the Supplier and Partnership Exchange Programme (SPX) as a complement to the VMIP for leveraging the supplier base of Viet Nam in investment promotion. The project has involved a wide array of capacity building initiatives across all project components in particular benefiting the Foreign Investment Agency (FIA), the Ministry of Planning and Investment (MPI), the Viet Nam Chamber of Commerce and Industry (VCCI), and the General Statistics Office (GSO). Capacity building was mainly related to (i) SPX training and SPX programme implementation support (profiling, buyer engagement, SPX promotion, SPX Benchmarking methodologies); (ii) the implementation of Investor Surveys (questionnaire construction, sampling methodology, Survey implementation, interview process, data generation, data analysis, interpretation, report writing; and (ii) training to investment promotion officials on how to use the VIMP The principal result of the Project is the enabling of the broad improvement of Vietnamese stakeholders' investment flows monitoring and management which is expected to have long term crowding-in impacts resulting from favourable investment policies. The Vietnam Investment Monitoring Platform serves to assist the country's policy makers and other private sector decision makers to take more informed and evidence-based investment decisions. Through the establishment of the SPX Programme within VCCI, contacts between buyers and suppliers as well as concrete matchmaking results have been registered with resulting positive impact on SME expansion and growth.

Concrete results:	**Viet Nam Investment Monitoring Platform and Investor Survey** • Viet Nam Industry Investor Survey was undertaken among a sample of 1,494 enterprises (both foreign and domestic) from 9 different Provinces; • Online Survey Management Tool was designed and shared with the General Statistics Office (GSO) and the Provincial Statistics Offices (PSO) for the effective handling of questionnaire distribution, collection, quality checking and validation • The publication of the Viet Nam Industrial Investment Report 2011 Report and extensive data analysis pertaining to the collected data and information; • The design, launch and maintenance of the Viet Nam Investment Monitoring Platform, (available at "http://investment.unido.org/imp/"), which serves as a web-based repository of the Survey data (more than 300 variables) available for data analysis; • Training and capacity development on the utilization of the VIMP to a broad based audience of FIA, MPI, DPI and MB officials. **Subcontracting and Partnership Exchange Programme** • SPX Programme with 675 profiled enterprises uploaded on the specific UNIDO SPX Management Information System; • SPX Capacity Building including training on profiling, benchmarking, buyer engagement and match-making undertaken and initial contacts with key buyers in the country established; • SPX Programme methodology (incl. the profiling of enterprises as well as benchmarking of supplier firm) implemented in the Northern and Southern provinces in Viet Nam; • Promotional efforts of the SPX Programme involved, among others, the creation of a website (available at "http://spxvietnam.vn/en/vcci-spx-vietnam") and the organization of an SPX-VCCI Pavilion at the 20th Vietnam International Industrial Exhibition in 2011. • A number of key buyers engaged in the SPX Programme for requests for quotations (RFQ) and match-making ; • Benchmarking of 40 enterprises through UNIDO's specific SPX benchmarking tool for further use in the supplier development and upgrading process as well as for investment promotion • 50 Buyer Opportunity Reports produced as a result of the buyer engagement and matchmaking process, serving to identify opportunities for local subcontracting opportunities. • Representative from SPX Viet Nam participating in the "Delegate Programme" of the Investment and Technology Promotion Offices (ITPO) in Tokyo and Seoul in 2011 and 2012, serving to link investment attraction efforts as well as broader sensitisation of the SPX programme to existing and prospective investors from Japan and South Korea.
Project Coordination:	UNIDO, Investment and Technology Unit (ITU) - Business Investment Technology Services Branch

General Annex II: Survey methodology

I. THE SAMPLING FRAME AND SAMPLE ALLOCATION

Typically, the sampling design for an Industry Survey is based on a list frame and the selection method within strata is preferred to be systematic sampling with random start (SSRS), equal probability. The need to depart from the classical sampling approach to a more "user-defined" sampling process requires that the prior discussions appropriate decisions are made on:

i. What are the kind of estimates to be produced and what are the expected estimators (i.e. means, proportions, regression coefficients);

ii. Which level estimates are required at the sector, provincial or/and national level;

iii. How precise estimates should be; do we want to produce the estimates at specific confidence intervals;

iv. How much resources and time is available for the implementation of the Survey.

The frame for the Vietnam, Industry Investor Survey 2011 was compiled from the Business Register maintained by the General Statistical Office (GSO) Vietnam. The GSO regularly updates its register, thus it could be used as the sampling frame for investment survey without any extent of field verification[1] . A list of establishments received from GSO provided the number of establishments for all sectors by VISIC. Subsequently, the sampling frame count was based on the following:

i. Industry including manufacturing, construction and utilities sectors (i.e. VISIC 10 - 33, 35, 36-39 and 41-43);

ii. Employment size categories with the suggested size groups of small, medium and large (50 and 99 employees, between 100 and 249 employees, and 250 and more employees, respectively);

iii. Capital threshold of 5 million VND and above;

iv. The suggested sampling frame covering 9 Provinces (Hanoi, Vinh Phuc, Hai Phong, Hai Duong, Da Nang, HCMC, Dong Nai, Binh Duong, Ba Ria - Vung Tau);

The sampling strategy applied aimed to achieve a representative sample through a deep stratification. For this purpose, the target population was divided into three domains (i) Private domestic enterprises, (ii) foreign direct invested enterprises, (iii) state owned enterprises; for each of which a separate set of estimates were generated. Establishments of all domains were cross-stratified by the kind of sector and economic activities (based on VISIC 2 digit level) and the employment size class. For each domain a fixed sample size was suggested to keep the total sample size around 1,600, due to budgetary and time considerations for implementing the Survey. Systematic sampling was used in the selection of companies within each stratum from an ordered sampling frame. Systematic random sampling with a random start was implemented as an equal probability method, in which k^{th} element in the frame is selected, where k, the sampling interval, is calculated as:

$$K_j = \frac{n_j}{N_j}$$

where n is the sample size, and N is the population size in j-th VISIC group.

1 The compilation of most up-to-date business register information or recent industrial census or using multiple lists should be taken into consideration to develop a more accurate and complete frame by focusing areas of the survey objective and sampling methodology

The selected units, u_{ij} in each stratus were as follows:

$$u_{ij} = r_j + i_j k_j$$

where $t_j = 0,1,2,...,n_j\text{-}1$ and n_j is a random number in $[1, k_j]$

Based on above considerations, the sampling scheme applied took a different approach for the different size groups and ownership structure, dictated from the varying selection probabilities. For a number of available sectors, selection probabilities were calculated for a required number of samples. Sampling decisions are highlighted in Table I.

Implementation of above sampling plan in case of Vietnam has resulted in the total sample size of 1986 establishments, which has been allocated along the lines highlighted in Table II.

The quality of data in terms of its reliability expected from the survey highly depended on the correct

Table I. *Employment size class and sampling decision*[1]

Size class	Domestic Investments			Foreign Investments			State Owned Enterprises		
	Condition	Sampling decisions	Selection probability p_i	Condition	Sampling decisions	Selection probability p_i	Condition	Sampling decisions	Selection probability p_i
250 and more	$N_j > 15$	Fixed sample of 15 units	$15 \times \frac{1}{N_j}$	$N_j > 30$	Fixed sample of 30 units	$30 \times \frac{1}{N_j}$	$N_j > 5$	Fixed sample of 5 units	$5 \times \frac{1}{N_j}$
	$N_j \leq 15$	Take all	1.0	$N_j \leq 30$	Take all	1.0	$N_j \leq 5$	Take all	1.0
100 do 249	$N_j > 15$	Fixed sample of 15 units	$15 \times \frac{1}{N_j}$	$N_j > 20$	Fixed sample of 20 units	$20 \times \frac{1}{N_j}$	$N_j > 5$	Fixed sample of 20 units	$5 \times \frac{1}{N_j}$
	$N_j \leq 15$	Take all	1.0	$N_j \leq 20$	Take all	1.0	$N_j \leq 5$	Take all	1.0
50 - 99	$N_j > 10$	Fixed sample of 10 units	$10 \times \frac{1}{N_j}$	$N_j > 10$	Fixed sample of 10 units	$10 \times \frac{1}{N_j}$	$N_j > 5$	Fixed sample of 10 units	$5 \times \frac{1}{N_j}$
	$N_j \leq 10$	Take all	1.0	$N_j \leq 10$	Take all	1.0	$N_j \leq 5$	Take all	1.0
less than 50	Take none								

1 Selection method for systematic sampling with a random start to employment size without replacement. Design weights for estimation of total is assigned to each sampled unit $w_i = \frac{1}{p_i}$

Table II. *Final allocation of samples*

Province	Region	Sampling Frame Counts									Total	Sample %	Frame %
		Small			Medium			Large					
		DI	FDI	SOEs	DI	FDI	SOEs	DI	FDI	SOEs			
Hanoi	**01**	37	23	32	32	30	19	42	52	38	**305**	19%	17%
Vinh Phuc	**26**	2	3	3	4	6	0	4	6	2	**30**	2%	1%
Bac Ninh	**27**	5	4	0	3	2	2	3	11	3	**33**	2%	4%
Hai Phong	**31**	9	12	7	20	13	11	15	21	9	**117**	7%	6%
Da Nang	**48**	3	3	5	4	0	1	5	10	5	**36**	2%	2%
Binh Duong	**74**	18	82	3	31	87	1	34	123	4	**383**	23%	24%
Dong Nai	**75**	6	45	7	10	44	4	9	98	10	**233**	14%	12%
BaRia	**77**	1	4	2	3	7	1	8	9	4	**39**	2%	2%
HCMC	**79**	46	45	21	64	53	18	64	118	39	**468**	28%	31%
	Total	**127**	**221**	**80**	**171**	**242**	**57**	**184**	**448**	**114**	**1644**	**1**	**1**

implementation of the sampling plan and the survey procedure. Enumerators were provided with the list of selected establishments, together with a substitution list for the sample. The substitution list was generated by applying the simple random sampling within intervals of the strata. All cases of non-response, non-identification and closures were recorded by enumerators[2] .

THE SURVEY IMPLEMENTATION PROCESS

PREPARATION FOR THE SURVEY

The Survey implementation process started with a preparatory phase covering the rigorous theoretical and methodological groundwork required to ensure that the Survey met all international standards and is internationally recognized as an authoritative reference. GSO Vietnam was selected as the national subcontractor entrusted to execute the Survey in the selected Provinces. In fulfillment of this task, GSO worked together with Provincial Statistics Offices in the selected Provinces to effectively and efficiently implement the Survey and ensure adequate outreach at the Provincial level. During the preparatory phase, the sampling frame, based on the methodology described above, was discussed and agreed with GSO Survey Team. During this inception period, the design of the Survey Questionnaire was a process guided by an Advisory Team consisting of UNIDO Staff and Consultants. A draft questionnaire was first proposed to the Project Stakeholders at the end of 1st Quarter 2010 and thereafter till 3rd Quarter of the same year, UNIDO Advisory Team undertook extensive discussions and consultations with key Project Stakeholders, namely, the Foreign Investment Authority (FIA) and the General Office of Statistics (GSO) as well as Local Project Consultants (including Researchers and Survey practitioners) to tailor the Survey questionnaire to the Vietnamese context. In the 3rd Quarter of 2010, the finalized English version of the questionnaire was fully translated into Vietnamese and was ready to be pilot tested in the field in July 2010.

The main purpose of the Pilot Test was to simulate conditions under which the full-scale survey would be carried out and to collect the respondents' feedback with regard to clarity and comprehensibility of the questionnaire. The Pilot Survey was conducted over 4 days between the 20th and 24th July, 2010 in Hai Phong Province. The pilot served to test the validity of the questionnaire tool through physical visits to enterprises and assess the relevance of the questions in the questionnaire, as well as to test the effectiveness of conducting interviews in Vietnamese and/or English languages with domestic and foreign enterprises validating the role of the General Statistics Office (GSO) and the participation of Provincial Statistics Office (PSO). The Pilot Test was conducted by teams comprising UNIDO Advisors, GSO and PSO staff and Local Consultants. In total, 12 enterprises were surveyed during this Pilot Test[3]. The results of the Pilot Test were used to finalize the Survey Questionnaire and to document the implementation process in the form of a Survey Handbook to Enumerators. Afterwards, enumerator training was undertaken in September 2010 in Hanoi and HCMC. Enumerator training conducted over 2 days in the respective Provinces served the dual objective of training GSO and PSO Survey Teams as well as training Local Consultants to be able to provide ongoing support to GSO/PSO supervisors and enumerators in the respective selected locations.

SURVEY WORK FLOW AND QUALITY ASSURANCE

The GSO Survey Team consisted of 10 supervisors equally allocated to two location clusters: a North Cluster comprising the Provinces of Hanoi, Vin Phuc, Bac Ninh, Hai Phong and Da Nang; and a South Cluster, comprising HCMC, Dong Nai, Bin Duong, Ba-ria Vung Tau. GSO Survey supervisors monitored the field work of 9 PSO Team Leaders, each leader assigned to a specific Province. Each Province Team Leader oversaw a team of PSO Enumerators and the number of enumerators was determined to be in line with the respective sample frame size for the selected Province. The main mode of data collection was through face-to-face interviews to ensure a maximum level of participation of companies. In most cases, the interview was scheduled with the most senior decision maker within the company i.e. the chief executive or general manager. For some,

2 All selected units were surveyed irrespective of the difference in the status detected during the implementation of the Survey from that in the sample list, such as different employment size, type of ownership or kind of activity. Such difference should be recorded on-site by the field staff and presented in the enumerator's report.

3 The participating enterprises in the Pilot Test consisted of the following: 2 state-owned enterprises in the shipbuilding and Water Supply company, 6 foreign owned enterprises from different manufacturing sectors such as medical supplies, steel, rubber and plastics, heavy metal fabrication, electronics, shoe and glass manufacturing and 4 domestic enterprises from the construction, steel and metal industries

more specialized and rather technical questions, the enumerator was referred to other members of the management team, such as the chief financial officer, the human resources manager, or the sales manager. In the field, the collected data was controlled by enumerators and supervisors both manually and with the assistance of questionnaires uploaded in PDF format and electronically through the use of a Survey IT software specifically designed to meet the requirements of the Survey. This software had a built-in function for direct data transmission through the internet and was based on a Survey work flow consisting of 4 levels: the Enterprise, the Provincial Statistics Office (PSO), the General Statistics Office (GSO) and UNIDO HQ. The IT system was designed to collect data using PDF forms and transmitting the data securely via the internet to UNIDO's back-end database system. PDF questionnaire forms in English and Vietnamese were being developed and backed up by a web-based interface system and back-end system on a server provided by UNIDO. The workflow system was set up to route the completed Survey questionnaire forms for appropriate verification and approval.

At the outset, UNIDO, in collaboration with MPI, FIA and GSO sent introductory letters to each enterprise in the sample. The objective of the introductory letter was to explain to senior management of each enterprise the objectives of the Survey and seek their active participation. Sensitisation activities such as Technical Workshops and newspaper article in specialized press, served to highlight the importance of the Survey exercise. Afterwards, GSO sent out electronic versions of the questionnaire to PSO offices in the nine Provinces covered by the Survey. This was undertaken through e-mails and the activation of web links. The questionnaire was available in both English and Vietnamese and each enterprise could choose which language version it wished to complete. Before the enumerator could visit an enterprise, it was vital to check that the enterprise had received an electronic copy of the questionnaire and which language version (Vietnamese or English) would be completed by the enterprise. GSO and PSO officers ensured that enterprises are contacted and interviews/meetings were arranged. GSO was responsible for contacting enterprises and arranging the scheduling of enterprise visits and this activity was vital in ensuring a positive response from enterprises and a high participation rate for the Survey. The enterprise could choose to complete the questionnaire either electronically or manually using a paper version. The electronic questionnaire used a PDF format laid out in a user-friendly form designed to make filling in the questionnaire easy. The electronic version had in-built basic consistency tests of the data entry process. If the enterprise chose to complete a paper version of the questionnaire, the enterprise needed to print out the questionnaire using the PDF electronic version which then required to be filled in by hand.

The enumerator's visit to the enterprise to meet and interview the Chief Executive Officer (CEO) was deemed the most effective way to gather information about the CEO's perception of the business environment in Vietnam. Enterprises were actively encouraged to complete as much as possible of the questionnaire ahead of the face to face interview. During the interview, both the enumerator and the CEO would have a paper copy of the questionnaire and the enumerator would take the CEO through the questionnaire checking his/her answers already recorded on the questionnaire and ask for his/her responses to the questions that were not yet completed. Frequent reference to the number of the question being discussed by the enumerator eased the smooth flow of the interview and make sure the CEO is answering the right question.

Once the interview was over, the completed questionnaire was passed on to the enumerator's supervisor in the PSO (Second level) for checking. If the enterprise had chosen to complete the questionnaire electronically, the enterprise would be asked to upload this to the PSO Enumerator's attention. If the enterprise had filled in the questionnaire by hand, it was the enumerator's responsibility to collect the paper copy and pass it to his/her supervisor. If the questionnaire was incomplete or contained errors, and these were discovered after the interview, the enumerator was responsible to undertake corrections. In some situations it was necessary for the enumerator to re-visit the enterprise to collect the missing information and depending on the type of error that was discovered the PSO Team Leader had to decide whether it was necessary for the enumerator to telephone the enterprise for clarification or to revisit. For every enterprise participating in the Survey, each enumerator was responsible for receiving and checking the completed questionnaire submitted by each firm he/she inter-

viewed, either in electronic form or in hard copy form (First Control). Therefore, for every enterprise visited there would be a corresponding questionnaire, either in electronic form or in paper form. The enumerator (and/or his/her immediate PSO Team Leader) had to ensure that each hard copy of the questionnaire was entered into a computer so that an electronic version could be sent to the GSO (Level 3). If the supervisor found errors in a questionnaire, then he/she would instruct the enumerator to seek clarification from the enterprise. Once an electronic version of the questionnaire had been submitted to GSO Supervisors, it required a final quality check by the. When questionnaires passed this quality check, they were then submitted to UNIDO HQ. In those cases were questionnaires did not pass the quality check from GSO Supervisors, it has to be sent back to the relevant PSO for further clarification, action and follow up. At UNIDO HQ, the data was stored on independent database. The survey data was subsequently controlled a second time by capturing the completeness of the answers within each section of the questionnaire. Afterwards, a rigorous data quality check was applied to detect inconsistencies between answers of each questionnaire and related variables (e.g. costs vs. turnover) which helped to detect statistical outliers that were caused by mistakes during data entry, currency conversions or any other misunderstandings between enumerator and interviewee. The results of these quality checks were then communicated to GSO to complete and improve the content of the questionnaires through re-visits.

A comprehensive and final data quality assurance process was undertaken on the Survey database, once this was received at UNIDO HQ.

The first aspect of quality assurance analyzed the completeness of the questionnaires submitted through the computation of the response rates. This phase aimed to test how the Survey was performed as well as ensuring that the responses surpassed certain thresholds. Frequencies of missing data were calculated at the level of items across respondents and at the level of each respondent across all items. This process helped to identify problems of Survey implementation and particularly problematic items in the management of the questionnaire. The second dimension of the data quality assurance referred to the assessment of errors by studying the variance and extreme values of each key variable contained in the Survey. This procedure allowed for the finding of interviewer errors when posing the questions, respondent mistakes or response misreporting, data entry and other processing errors, non-responses and incorrect estimation techniques. The third component involved the check of coherence and comparability of the data. First, data responses contained in the questionnaire were analyzed in terms of plausibility and consistency with other variables in the Survey for the specific enterprise. Afterwards, the data was reviewed in comparison with other related data originating from other sources. The cleaning-up of the database involved checking o breakdown and totals, checking of percentage shares, recoding of currency variables, computation of dollar values, replacement of missing values with zeros and NA were applicable and the checking of extreme values. In addition, after consultation with GSO Survey supervisors, changes of the raw data have been undertaken where it was possible to rectify data entry problems through recoding variables for selected questions.

General Annex III: List of survey questions

PART I: Enterprise Profile and Investor Perceptions

SECTION A. GENERAL PROFILE OF THE ENTERPRISE

1. Please state the end of the financial year covered in this questionnaire.

2. What percentage of the enterprise's sales/turnover comes from manufacturing, construction, other activities?

3. Please indicate the enterprise's three main products and their current share in total sales and/or turnover.

4. Please select one sub-sector that best describes the main industrial/business activity of this enterprise.

5. In which year did this enterprise originally start its production operations in Vietnam?

6. What was the total value of the original investment? If this is a joint stock company (JSC), in which year was the enterprise equitised? If a JSC, what was the declared capital value at equitization?

7. Please indicate details of the current ownership structure of this company.

8. Is this a foreign owned enterprise that is a subsidiary of a parent company? If yes, the parent company is [name of the parent company] with Headquarters in [country]. Does the parent company have other subsidiary enterprises in Vietnam/in other South East Asian countries/in the rest of the world? What is the number of establishments? What was the approximate total value of the parent company's global sales during the last financial year?

9. Is this a private enterprise owned by an individual or a family that has no subsidiary enterprises? If yes, the principal investor is an individual or family from (the country). Does the principal investor have investments in other enterprises? If yes, please indicate the number of enterprises in Vietnam/in other South East Asian countries/in the rest of the world.

10. Is this a Vietnamese-owned enterprise with other subsidiary enterprises? If yes, please indicate the number of subsidiary enterprises in Vietnam/in other South East Asian countries/in the rest of the world.

11. Is this a Diaspora investment (of Vietnamese origin)? If yes, what is the ownership share of Diaspora investors? In which country/countries were/are they residents?

12. Are the General Manager and/or one of the Managing Directors a major shareholder in this enterprise?

13. How do you rate this enterprise's current performance compared to your plans of three years ago?

14. Please indicate the average rate of utilization of your production capacity during the last financial year. If underutilized, please select the most important reasons up to three.

15. If the production capacity of this enterprise is utilized by on average 100% , what is the average age of your capital equipment used in production?

16. Has this enterprise undertaken any major investment in the last three financial years? If yes, in what did you invest? What was the value of this investment? What is the payback period for this investment?

17. Has this enterprise permanently closed down any of its manufacturing facilities in the last 3 years? If yes,

18. What was the value of this facility?

19. Do you plan to make any investment in plant and equipment or close down facilities over the next three years? If yes, by how much?

20. Do you expect to expand any of your operations, in the next three years, by investing in Vietnam/ outside Vietnam? If yes, what is the value of planned investment?

21. During the last three years, did this enterprise operate under a: Management contract/Licence agreement? If yes, what is the annual amount paid?

22. What was the value of total sales and/or turnover, exports and the number of full-time employees two financial years and last financial year ago? What is the estimates of abovementioned values in the current and next financial year?

23. In the last financial year, what was the value of the total wage bill /total value of fixed assets/total expenditure on advertising/total tax paid/average price change (year on year) of main products?

24. What was the average annual rate of profit before tax over the last three financial years? What is your forecasted average annual rate of profit before tax for the next three financial years?

25. What was the average number of production shifts worked per day during the last financial year?

26. Do you currently have any loans outstanding? If yes, please indicate the interest rate on short-term/ long-term (including debt from equitisaton) loans.

27. For your main product(s) sold on the domestic market, where does your main competition come from?

28. Which investment incentives did this company receive? Which one was critical? What was the value of this critical incentives received in the last financial year?

SECTION B. VIETNAMESE-OWNED ENTERPRISES (ONLY BY ENTERPRISES WITH VIETNAMESE OWNERSHIP OF MORE THAN 90%)

29. For the initial investment in Vietnam, what was the enterprise's main source of finance?

30. Has this enterprise ever had a foreign owner and/or been a foreign-invested joint venture? If yes, when was?

31. How has your enterprise reacted/is reacting to the presence of foreign investors?

32. Have you undertaken any investment as a result of the presence of foreign enterprises in Vietnam? If yes, what was the amount invested over the last three financial years?

SECTION C. FOREIGN-INVESTED ENTERPRISE (ONLY BY ENTERPRISES WITH FOREIGN OWNERSHIP OF 10% OR MORE)

SECTION C1: FOREIGN INVESTOR HISTORY

33. Were you involved in the initial decision to invest in Vietnam?

34. In which year did the initial foreign investment take place? What was the total value of the initial foreign investment? What was the percentage of foreign ownership at the time of the initial foreign investment?

35. What was the main motivation for the foreign investor's decision to invest in Vietnam?

36. What best describes the way in which the initial investment took place?

37. How did the foreign investor initially become aware of investment opportunities in Vietnam?

38. Is this enterprise a joint venture with a Vietnamese partner?

39. Has the foreign investor formed this enterprise as a new joint venture with a local partner?

40. Does the Vietnamese partner have other enterprises in: Vietnam/other South East Asian countries/ rest of the world?

41. Please include any additional information and/or clarifications concerning your enterprise mentioned above?

SECTION C2: ORGANIZATIONAL RELATIONSHIPS

42. [a wholly-owned subsidiary of a foreign enterprise: answer 43 to 44/ a joint venture between a foreign and a Vietnamese investor: answer 46 to 47/ owned by a foreign investor (an individual or a family business group): answer 47 to 48]

43. Please evaluate the decision-making power of the Vietnamese management in making the following decisions in the enterprise.

44. How important is the role of the foreign parent enterprise in the following areas?

45. How does the foreign joint venture partner influence this enterprise?

46. How much decision-making power does the Vietnamese joint venture partner have?

47. How important is the role of the foreign owner and the Vietnamese management?

48. How important is the expertise of the foreign owner for the enterprise?

49. If the owner has other ongoing operations as a part of family or business group/trust, how important is the assistance to this company of other associate companies in the business group?

SECTION D. BUSINESS CLIMATE IN VIETNAM AND CHOICE OF INVESTMENT LOCATION

SECTION D1: BUSINESS CLIMATE

50. How important were the following factors in this enterprise's decision to invest in Vietnam and how have these factors changed over the last 3 years: General conditions (political stability, economic stability, quality of infrastructure, etc.)/ Market conditions (vietnamese market/ to take advantage of ASEAN Free Trade Area (AFTA))/ Vietnamese resources (labour costs, availability of skilled labour, etc.)/ Other factors (incentive packages, acquisition of assets, etc.)?

SECTION D2: INVESTMENT REGISTRATION

51. Did this enterprise get registered in: Foreign Investment Agency or Department of Planning and Investment/ Management Board of Export Processing Zone or Industrial Zone/Other Ministry? In what year did you register? In total, how long did it take this enterprise to obtain all the licenses and permits necessary to start operations? What areas of service(s) should be improved by the institution?

SECTION D3: BUSINESS SUPPORT SERVICES

52. How important is the availability of business support services? Who was your main service provider? How do you rate the quality/utility of service provided?

SECTION E. TRADE

53. [if the enterprise exports less than 10% of sales go directly to Question 61]

SECTION E1: REGIONAL AND INTERNATIONAL TRADE

54. In the last financial year, what percentage of this company's total sales was: Sold in Vietnam/Directly exported/Indirectly exported?

55. What is the percentage share of this enterprise's exports sent to the foreign parent company/foreign partner?

56. What do you consider to be the most important barrier(s) to increasing exports?

57. Are you familiar with any of these international/regional trade agreements: Vietnam's commitments on goods and services in WTO/ASEAN Free Trade Area/Other Bilateral Trade Agreements (BTAs)/US-Vietnam Bilateral Trade Agreement? If YES, please evaluate how important they have been in stimulating/ expanding your exporting activities.

58. What is the most important impact of regional trade agreements on your enterprise operations?

SECTION E2: ENTERPRISE EXPORTS

59. What was the percentage share of this enterprise's exports to United States/Japan/China/Australia/ South East Asia/South Korea/European Union/China Taiwan/Other, in terms of value, during the last financial year?

60. If the enterprise exported to the South East Asian region, please indicate the three most important countries and their respective share in total exports, during the last financial year.

SECTION E3: ENTERPRISE IMPORTS

61. Does this enterprise import any of its inputs?

62. What was the percentage share of this enterprise's total direct imports coming from the following countries and/or regions during the last financial year: China/Japan/South Korea/China Taiwan/South East Asia/ United States/India/European Union/Other?

63. If this enterprise imported from the South East Asian region, please indicate the three most important countries and their respective percentage share in total imports, during the last financial year.

SECTION F. LINKAGES WITH SUPPLIERS AND BUYERS

SECTION F1: LINKAGES WITH SUPPLIERS

64. What is the number of suppliers of raw materials, components or finished goods to this company? How many of them have long-term arrangement? What percentage of inputs, by value, comes from these suppliers with a long-term arrangement? How many new suppliers have been added to your supplier's list during the last 3 years?

65. During the last financial year, what was the value of production inputs procured through Imported through parent enterprise/Imported directly/Imported by a Vietnamese-based importer or distributor/Procured from a domestic manufacturer located in Vietnam/Procured from a foreign manufacturer located in Vietnam?

66. During the last financial year, what percentage of production inputs (by value), were procured through Imported through parent enterprise/Imported directly/Imported by a Vietnamese-based importer or distributor/Procured from a domestic manufacturer located in Vietnam/Procured from a foreign manufacturer located in Vietnam?

67. Do you have a separate department for local procurement?

68. Does this enterprise outsource work to other enterprises in Vietnam, such as manufacturing products and/ or business services? If yes, please indicate the approximate value of outsourced work in the last financial year (excluding transportation costs): Manufacturing operations/Support services.

69. Please provide the names and location details of your three most important Vietnam-based suppliers.

70. What is the most important factor that influences the decision to procure inputs locally?

71. What is the most important factor that influences the decision to cancel or not enter into domestic procurement contracts?

72. Does this enterprise interact with local suppliers with the intention of helping them to improve their operations in any of their operations?

SECTION F2: LINKAGES WITH BUYERS

73. What is the number of commercial buyers (excluding direct end consumers)? How many of them have long-term arrangement? What percentage of total sales comes from these buyers with a long-term arrangement? How many new buyers have been added to your buyers' list during the last 3 years?

74. What are the shares of Retailers/Distributors and(or) Wholesalers/Manufacturers/Government entities/ Direct to consumers/Others in your total sales?

75. In which ways do your buyers interact with your enterprise with the intention of helping you to improve your operations?

76. Does this enterprise undertake contract work, such as manufacturing activity or supply business services, for other enterprises in Vietnam? If yes, please indicate the value of contracted work in the last financial year (excl. transportation): Manufacturing operations/Support services.

77. Please provide the names and locations of your three most important buyers in Vietnam.

78. How many times did you reject orders due to capacity problems during the last financial year?

SECTION G. PRODUCT AND PROCESS CERTIFICATION

79. Are any of this enterprise's products or production processes certified by a national or international certification agency? If yes, please specify the type(s) of standardisation agency.

80. How important for your operations is the use of the services of certification and testing institutions in Vietnam?

81. If you have never used any services of certification and testing institutions in Vietnam, what are the main reasons for this?

PART II: Information from the Enterprise's Accounts

SECTION H. LABOUR FORCE PROFILE

82. Please indicate the average number of permanent and non-permanent employees of this enterprise with their average weekly work hours per employee and the number of days worked per year over the last financial year.

83. How many of the total permanent full-time employees were: Production workers/Technical, supervisory employees/Managers/Clerical or administrative employees?

84. What was the average monthly wage/salary paid to: Production workers/Technical, supervisory employees/Managers/Clerical or administrative employees during the last financial year?

85. Does this enterprise provide formal internal/external training to its employees? If yes, what was this enterprise's expenditure on internal and external training last financial year?

86. How many unpaid workers did this enterprise have on average during the last financial year?

SECTION I. TURNOVER, WORKING CAPITAL AND FIXED ASSETS

87. Is this enterprise's production subject to seasonal variations? If yes, how many months is this enterprise's production spread during the year: What is the main reason for this seasonal variation in production?

88. What was the value of your annual sales and other receipts during the last financial year?

89. What was the total value of the inputs purchased during the last financial year?

90. What were the sources of working capital and fixed assets for this enterprise during the last three financial years?

91. What was the value of the stock of this enterprise at the beginning and end of the last financial year?

92. What was the total value of current assets of this enterprise at the end of the last financial year?

93. What was the value of this enterprise's liabilities at the end of the last financial year?

94. What was the value and depreciation rate of the fixed assets of this enterprise at the end of the last financial year? What was the book value of new assets acquired during the last financial year?

95. How does this enterprise acquire capital goods and what is the respective value?

SECTION J. ENERGY CONSUMPTION

96. Which of the following fuels does this enterprise consume and what was the quantity of those fuels consumed in the last financial year?

97. How many days of production were lost by this enterprise due to power outages/cuts during the last financial year?

98. Do you own or share a generator? If yes, what percentage of your total electricity consumption came from the generator during the last financial year?

99. Please list quantities and costs of electricity consumption from grid/from generator (if applicable)?

SECTION K. CLOSING QUESTIONS

100. Would you be interested in receiving a report of the final report?

101. Please select the information to be visible on the Investment Monitoring Platform: Name, contact and products (VISIC code)/Size (sales, number of workers)/Exports (markets, volumes)/Investment support services required (to be contacted by the IPA)/None

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