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THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT AND LABOR PRODUCTIVITY IN THE MANUFACTURING INDUSTRY OF VIETNAM

THE FIRM-LEVEL DATA EVIDENCE

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ABSTRACT

Foreign direct investment (FDI) has become an essential source for the economic growth and development of many developing countries. FDI can deliver financial capital, a strategic way to access the global market, a channel to transfer technology and skills to the host country. Many developing countries pay attention to attracting FDI as an important issue. The first objective of this study is to investigate the determinants of FDI in the manufacturing industry in Vietnam by finding out the differences in characteristics between FDI and local enterprises and then examining the business climate factors which affect the operations of foreign-invested firms. Finding the importance of export and formal training to the labor productivity of the enterprise is the second objective. And the third objective of this study is to investigate the difference in investors' perspectives on the business climate after nine years of change and development by conducting a novel pilot study with foreign companies in Vietnam's manufacturing industry.

The empirical results indicate that foreign-invested enterprises tend to be young, larger, and have more percentage of sales comes from the manufacturing industry. Economic stability, quality of life, Vietnamese market, availability of skilled labor, raw materials and natural resources, acquisition of assets, and presence of joint venture partners statistically hamper as FDI in Vietnam. Conversely, government agency support services, personal security, bilateral trade agreements, availability of industrial zones, ASEAN free trade area, and incentive package positively affect FDI. We also find that political stability,

quality of infrastructure, country legal framework, labor costs, Vietnam-based suppliers, and taxation are not statistically significant as determinants of FDI.

About the labor productivity, we find that the age of the firm, the capital intensity and the skilled labor are the determinants of the average labor productivity. FDI has an impact on increasing the overall labor 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. Another positive sign is the impact of formal employees training on labor productivity. It shows the opportunity to increase the quality of Vietnamese labor through the attraction of foreign investment. However, the low labor productivity of export enterprises can be a major challenge to a highly open economy in transition, such as Viet Nam's.

Our pilot study adds novel evidence to the existing literature and, in particular, shows that tax exemptions and other fiscal incentives are the most favorable investment incentive. Moreover, the main motivation to invest in Vietnam is to access to lower production costs. Many foreign-invested enterprises apply new technology solutions to improve the productivity; however, they do not invest in Research & Development process in Vietnam. With the development of technology, foreign firms are starting to pay attention to the quality workforce and provide more internal and external training to keep up with the change.

To my family

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
MNE	Multinational Enterprise
OECD	Organization for Economic Co-operation and Development
R&D	Research and Development
TNC	Transnational Corporation
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organization
WAIPA	World Association of Investment Promotion Agencies

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CHAPTER 1

MOTIVATION AND OBJECTIVES

1.1 Introduction

Foreign direct investment (FDI) has played an essential role in the economic growth and development of many countries in recent decades. Due to the global recession in 2008, the amount of foreign investment has been declined; however, it is still critical for economic development, especially for developing countries. Host countries receive financial resources through the FDI of multinational enterprises (MNEs). This capital is very important to developing countries that have a limited ability to raise private capital. With the host country firms without access to capital markets, FDI can provide a way to raise capital cost-effectively. FDI is considered a standard mode of entry to a foreign market, a way to access technology and skills, and a way to pursue global strategic objectives and respond to market opportunity.

Policymakers of many countries, especially those with developing economies, work to encourage FDI by providing incentives to MNEs to establish plants or companies in their countries due to the numerous positive effects that FDI can bring to the host countries. By the direct increase in the amount of capital in the host country, FDI can: 1) promote economic growth and economics; 2) improve the efficiency of using domestic resources; 3) make economic restructuring; 4) create job opportunities; 5) improve the quality of labor

force and change labor structure; 6) transfer technology; 7) improve the capacity of state management and corporate governance; 8) contribute to international market integration.

1.2 Definition of Foreign Direct Investment

According to the definitions of IMF and OECD: “Direct investment reflects the aim of obtaining a lasting interest by a resident entity of one economy (the direct investor) in an enterprise that is resident in another economy (the direct investment enterprise). The “lasting interest” implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the latter. Direct investment involves both the initial transaction establishing the relationship between the investor and the enterprise and all subsequent capital transactions between them and among affiliated enterprises, both incorporated and unincorporated. It should be noted that capital transactions that do not give rise to any settlement, e.g., an interchange of shares among affiliated companies, must also be recorded in the Balance of Payments.”

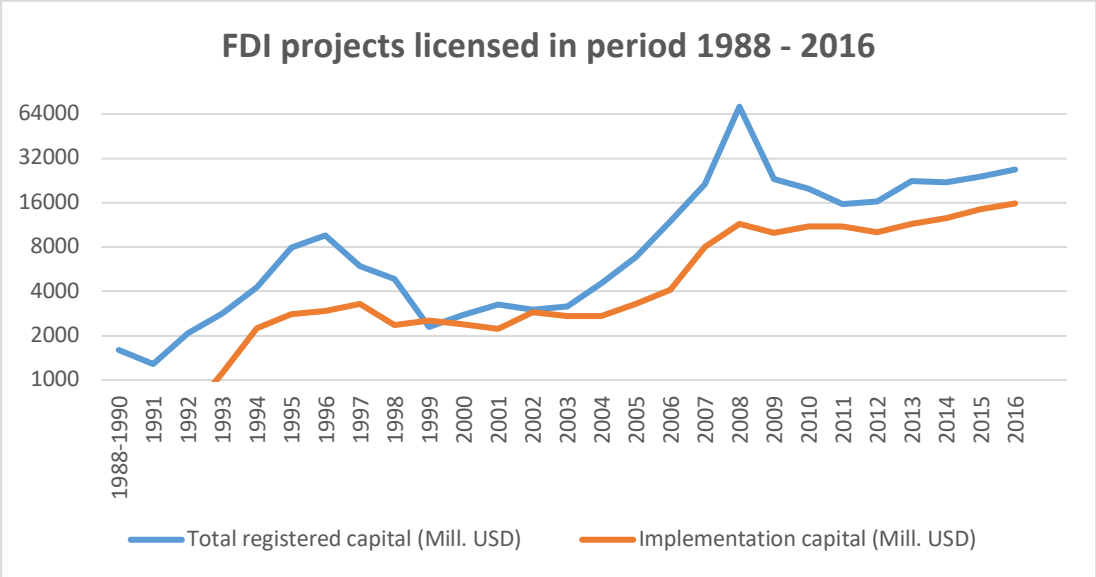
1.3 An Overview of FDI in Vietnam

After Vietnam's economic reforms in 1986, the National Assembly of Socialist Republic of Vietnam introduced the first law on foreign investment in December 1987. The law states that: "Vietnam welcomes and encourages foreign organizations and nationals to invest capital and technology in Vietnam on the basis of respect for national independence and sovereignty, full observance of the Laws of Vietnam, equality, and mutual benefit. The

State shall guarantee the ownership of the invested capital and other rights of the foreign investors, and extend to the latter favorable conditions and straightforward formalities". In the following year of 1990, 1992, 1996, 2000, 2003, and 2005, the law has been revised to improve to be suitable for the investment environment and the orientation to attract foreign capital. These amendments include tax, land, currency policies, and business environment.

The first law on Foreign Investment in late 1987 granted legal status for FDI inflows. Since this time, Vietnam has been dramatically attracted much attention from foreign investors, and the FDI inflow into Vietnam expanded quickly from the 1990s until the first half of the 2000s. The crucial legal changes were made in Decree 852 of January 1996 and the amended Foreign Investment Law 2000 to attract FDI inflows into Vietnam. In the decree 852, FDI coordination and planning was placed under the direct control of the provincial People's Committee of the Department of Planning and Investment (DPI). Moreover, in the Foreign Investment Law 2000, provinces were allowed to sign small FDI projects directly (below $10 million). The total registered capital of FDI projects has dropped significantly since 1996 and started increasing rapidly after the new investment law.

Figure 1 FDI projects licensed in period 1988 – 2016 in Vietnam

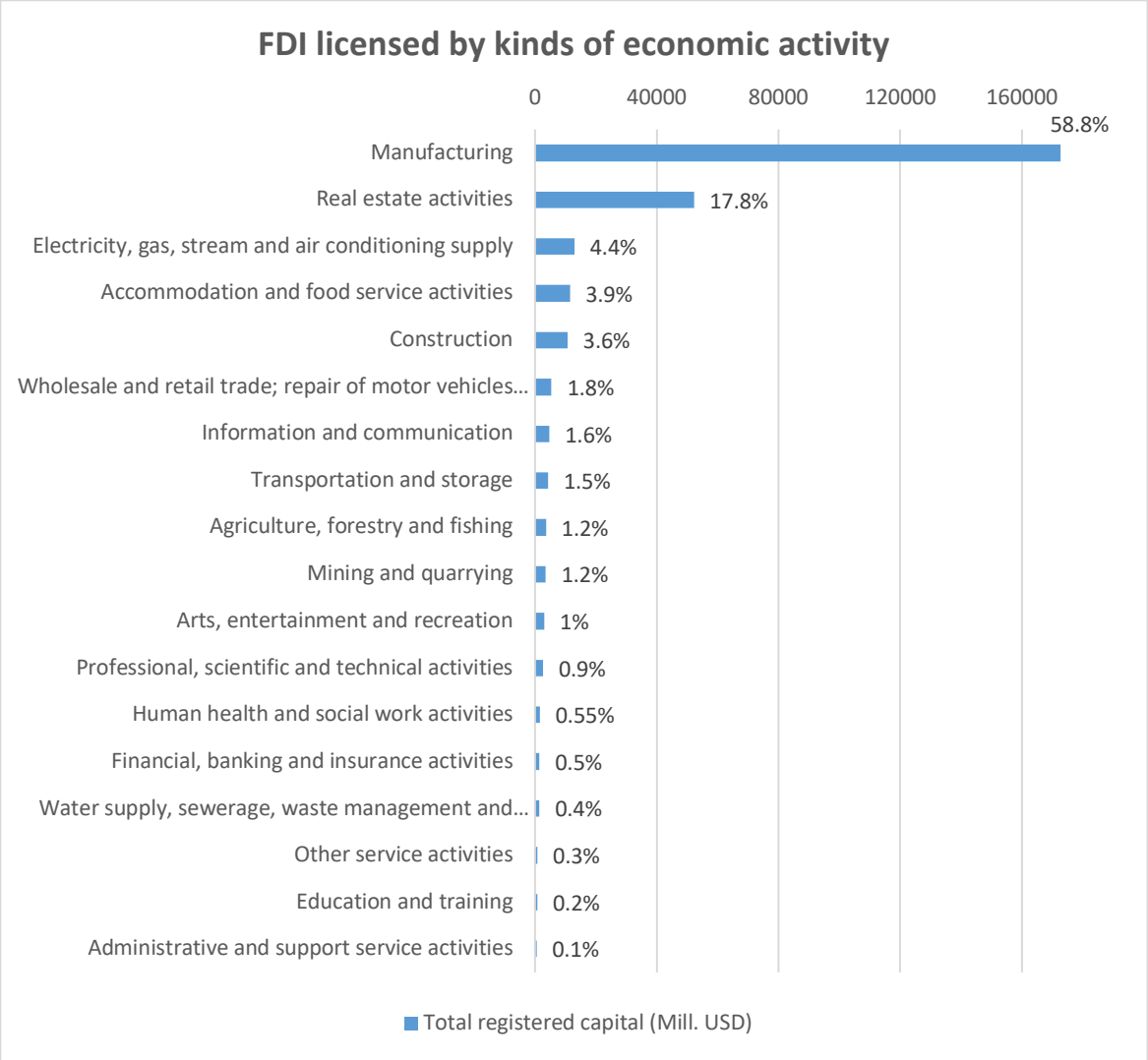


Source: General Statistics Office of Vietnam

Following figure 1, there is an upward trend in overall for the period 1989 – 2016. The number of FDI projects licensed got peak two times in 1996 and 2008 as the result of commercial agreements. Vietnam joined the trade agreement with ASEAN countries (1995) and World Trade Organization (2007) during that time. Aside from the ascending trend, there are also two downward trends in the period of 1997 – 2001 and 2009 - 2012, which was related to the Asian Financial Crisis (1997) and the World Financial Crisis (2008). After the Crisis passed, Vietnam kept attracting FDI and have a steady growth from 2012 until 2016.

Figure 2 FDI licensed by kinds of economic activity

(Accumulation of projects having effect as of 31/12/2016)



Source: General Statistics Office of Vietnam

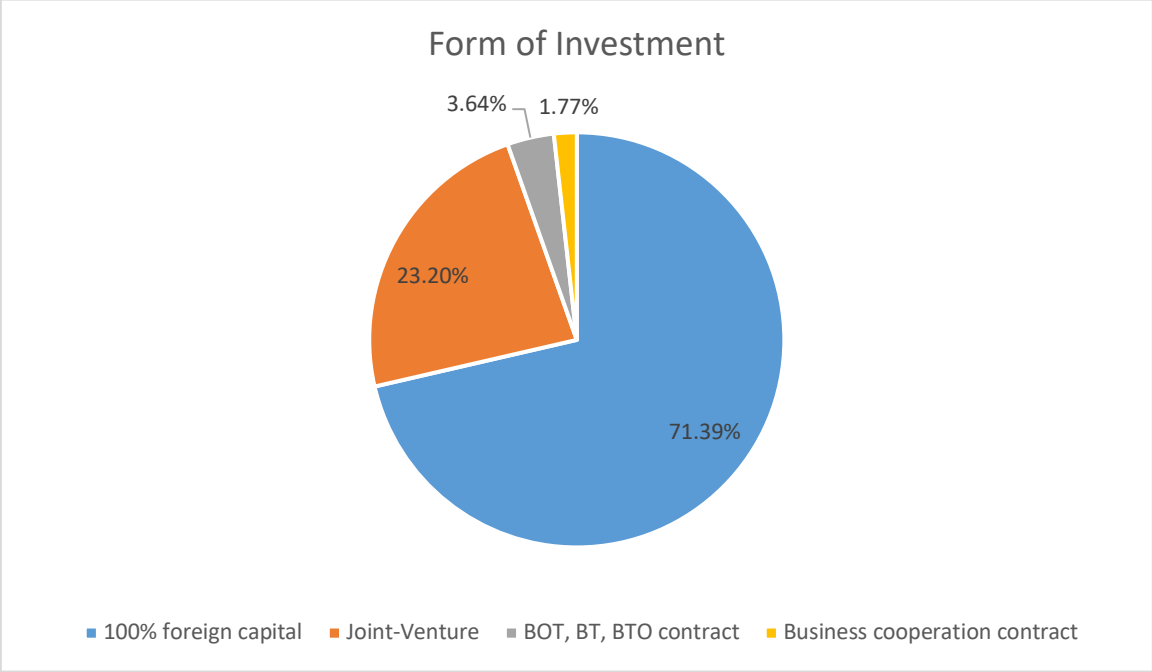
According to accumulated projects that were still valid as of 31/12/2016, manufacturing activity ranked first in the number of projects and total registered capital, with 11716 projects and nearly 172.7 billion USD, accounted for 58.8% of total registered capital. Real estate activities ranked second in registered capital, although the number of

projects was only 581 projects, size of projects was quite large, and total registered capital was 52.2 billion USD, accounted for 17.8% of total capital. The third was electricity, gas, and hot water with 108 projects; total registered capital reached 12.9 billion USD, accounted for 4.4%.

Agriculture, forestry, and fishing is an advantage sector, being encouraged development, but this field attracts very few projects and registered capital. By the end of 2016, only 522 FDI projects were still valid, with total registered capital reaching 3.6 billion USD, accounted for 1.2% of total FDI registered capital in Viet Nam. The registered capital size of projects was small, mainly used for breeding activities, production of poultry feed.

Figure 3 Structure of FDI registered capital was licensed by form of investment

(Accumulation of projects having effect as of 31/122016)



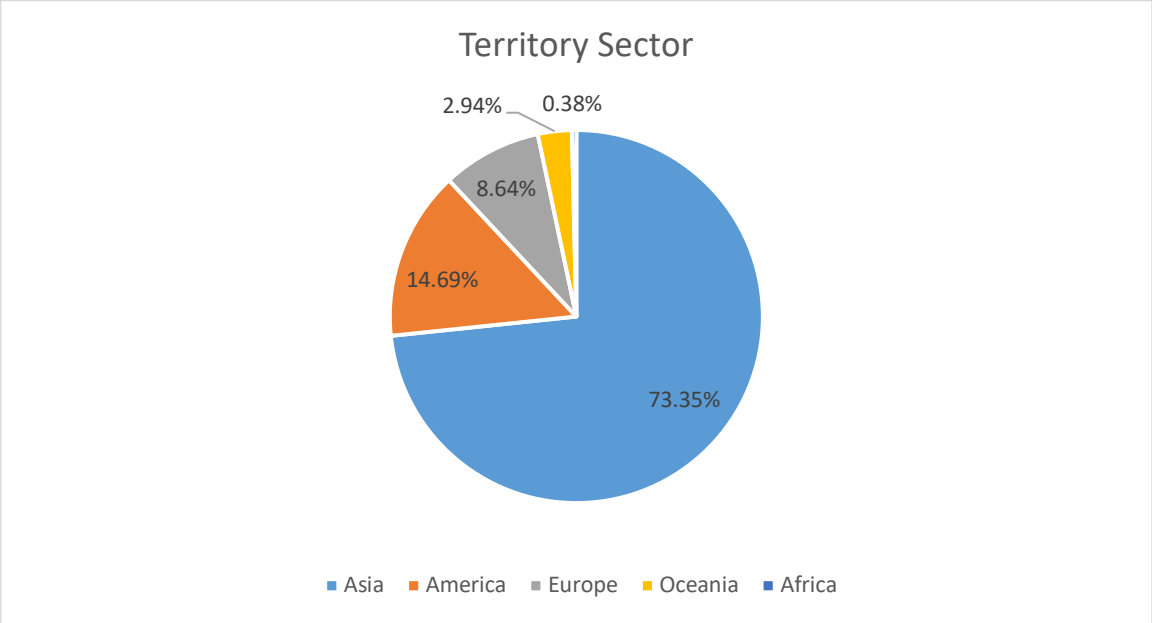
Source: General Statistics Office of Vietnam

The form of investment was mainly investment with 100% foreign capital, accounted for 71.4%, higher significantly than joint venture with 23.2%. After numerous years of investing in Vietnam, foreign investors have more experiences about the law, policies, customs, and business methods. Furthermore, Vietnam has been making licensing procedures easier to create encouraging conditions for them. Moreover, Vietnamese partners were often in weak position in term of capital and management capacity in the joint ventures form. Therefore, many investors choose to select locations for the implementation project, as well as operate, and decide on production and business plans without Vietnamese joint venture partners.

The remaining forms, such as Build-Operate-Transfer (BOT), Build-Transfer-Operate (BTO), Build-Transfer (BT), Business Cooperation Contract (BCC) was negligible, accounting for 5.4% of registered capital.

Figure 4 Structure of registered capital of FDI by territory sector

(Accumulation of projects having effect as of 31/12/2016)



Source: General Statistics Office of Vietnam

By the end of 2016, 115 countries and territories invested in Vietnam, of which Asian countries accounted for 73.35% of registered capital, following by American and European nations with 14.69% and 8.64%, respectively. South Korean, Japan, Singapore, Taiwan, and the British Virgin Islands were the top 5 largest investment partners in Vietnam. There were many massive projects from top global corporations, such as Samsung, Intel, LG, Mitsubishi, Panasonic, Sanofi group…

Table 1 FDI projects licensed by economic regions

(Accumulation of projects having effect as of 31/12/2016)

Economic regions	Number of projects	Total registered capital (Mill. USD)	Share of investment capital (%)
Red River Delta	7031	78531.4	26.73
North Central and Central coastal areas	1364	49055.0	16.7
South East	11961	130500.0	44.43
Mekong River Delta	1326	18549.2	6.32
Northern Midlands and mountains areas	723	13533.7	4.61
Central Highlands	139	762.4	0.27
Oil	50	2768.7	0.94
Total	**22594**	**293700.4**	**100**

Source: General Statistics Office of Vietnam

South East was the most significant area attraction of FDI with 11961 projects; registered capital was up to 130.5 billion USD, representing 44.4%. Followed by Red River Delta with 7031 projects, registered capital reached 78.5 billion USD, accounted for 26.7%. North Central and Central Coastal areas had 1364 projects; registered capital was 49.1 billion USD, accounting for 16.7%. Mekong River Delta had 1326 projects; registered capital was 18.6 billion USD, representing 6.3%. Northern midlands and mountain areas had 723 projects; registered capital was 13.5 billion USD, accounting for 4.6%. Central Highlands was the lowest attraction of FDI with 139 projects; registered capital reached 0.8 billion USD, accounted for 0.3%.

It can be seen that the attraction of FDI in the past time had quite large differences between regions, delta, and mountainous areas, between provinces which had good conditions and difficult conditions to develop the economy. FDI projects concentrated mainly in Red River Delta, South East, North Central, and Central Coastal areas. These areas had the good socio-economic infrastructure, convenient transportation, credit, and developed bank services.

South East was the most attractive region for FDI capital because of good regional infrastructure, adjacent seaports, airports, and developing cities. Moreover, this region had a high population density, high compensation per person, therefore the demand for commodities developed strongly for abundant labor force.

Notably, some localities attracted many big FDI projects, such as Bac Ninh, Thai Nguyen, Vinh Phuc, Hai Phong, Thanh Hoa, Binh Duong, and Dong Nai. FDI capital contributed to the development of the economic structure of each province, city fundamentally, and improved the economic growth and socio-economic localities significantly.

Figure 5 Economic regions in Vietnam

Source: https://www.nationsonline.org/oneworld/map/vietnam-administrative-map.htm

1.4 Objectives

A number of studies find evidence of the positive relationship between FDI and the economic growth of Vietnam. Borensztein et al. (1998) claim that FDI transfers the modern technology and through that, contributes better to the economic growth, comparing to the domestic investment. According to Tiwari and Mutascu (2011), FDI and exports enhance the growth process, labor resource; and financial capital play an essential role in the growth of Asian countries. In Vietnam, Lan (2006) finds out the linkage between FDI and economic growth using a panel dataset of 61 provinces of Vietnam over the period 1996-2003. The finding shows that FDI and economic growth are important determinants of each other, and there are two-way linkages. She proves the importance of foreign capital to Vietnam's industrialized development. However, Kotrajaras (2010) concludes that FDI will only affect positively on the economic growth of the countries if they already have proper economic conditions.

Therefore, creating a favorable investment environment, adjusting policy weaknesses, and investing in factors that significantly affect the ability to attract investment are all urgent issues for Vietnam to take full advantage of which this capital brings in. We focus on the manufacturing sector for a number of reasons. Firstly, business climate and firm's productivity are the main interests of the research and the manufacturing sector should be measured and evaluated differently from the other sectors such as services and agriculture. Secondly, another interest of the research is the exporting activities and its impact on the firm-level performance. By accounting for 58.8% of the registered capital, the manufacturing industry shows the top concern for its impact on the whole industrial

economy of Vietnam. It contributes to the production capacity, export capacity, and the promotion of industrialization and modernization of the country. Finally, this focus is justified by the intention to investigate the efficiency of the technology application and development. Although, technology application is not a new concept but it is increasingly taking an essential position in the development of enterprises. In other words, in addition to the issue of data availability, the focus on the manufacturing sector is a practical option to restrict the scope of the research to a manageable task.

Three main objectives will be fulfilled in this study to solve the problems above. The first objective is to study the determinants of FDI in the manufacturing industry in Vietnam. We will find out the differences in characteristics between FDI and local enterprises and then examine the business climate factors which affect the operations of foreign-invested firms by using the firm-level dataset - the Vietnam Industry Investor Survey (UNIDO, 2010). With the firm-level data FDI, firms' characteristic variables include information on the share of foreign ownership in firm capital, but there is no information about the volume of foreign investment. Therefore, the study will use the dependent variable (FDI) as the dummy variable. We will consider the entire sample of firms in Vietnam and estimate the probability of each firm to be foreign, then find out which characteristics are important for foreign firms. The control variables will be: age of the firm, size of the firm, sales come from manufacturing activity, total assets, region, and technology classification. Region and technology classification variables are also included to account for the cluster-effect of FDI. The business climate obstacles are taken from four groups: (i) general conditions, (ii) market conditions, (iii) Vietnamese resources, (iv) other

factors. This objective will also produce a set of guidelines that can be set forth as suggested legal policy recommendations for Vietnam to increase the business environment effectively.

The second objective is to analyze the impact of export and formal training on labor productivity of the firm. We will utilize the firm-level data from UNIDO survey to apply in this model. The dependent variable will be the labor productivity of the firm, measured by the ratio of the value added of the firm and the number of full-time employees. The control variables will be: age of the firm, capital intensity and skilled labor. Region and technology classification variables are also included to account for the cluster-effect of FDI.

The third objective is to investigate the difference in investors' perspectives to the business climate in Vietnam after nine years of change and development by conducting a pilot study on foreign companies in Vietnam's manufacturing industry. The data have been collected by face to face interviews. The main purpose of this pilot study is to explore the key-points that foreign investors are seeking in the business environment, including emerging factors in the era of technology 4.0, such as technology and intellectual property rights. Facing tremendous changes in technology over recent times, the result may provide the references and methods for policymakers to make some amendments based on the investors' point of view.

1.5 Structure of Dissertation

The remainder of the thesis is structured as follows. Chapter 2 begins with a review of the literature and other empirical works related to FDI determinants, FDI and economic

growth, and firm-level studies on the business climate. Chapter 3 presents the empirical results and analysis of the characteristics of FDI firms and the business climate in Vietnam, exploiting the Vietnam Industry Investor Survey (UNIDO, 2010). Chapter 4 shows the empirical analysis and results of the labor productivity model. Chapter 5 introduces the pilot study focusing on the difference in the opinion of investors after the period of nine years. The conclusion follows in the last section of the study.

CHAPTER 2

LITERATURE BACKGROUND

2.1 Foreign Direct Investment and Economic Growth

There is an enormous amount of literature analyzing the linkage between FDI and Economic growth. The way FDI affects economic growth is still debated among economists. In fact, the role of FDI in promoting economic growth has been viewed differently under different analyses.

Blomström and Kokko (1998) investigate that multinational corporations (MNCs) bring modern technologies into host countries to compete successfully with other MNCs and local enterprises. They allow for the spill-over effect, make local firms look for, imitate the foreign enterprises, the new and more effective technologies to apply in production. The human capital, such as managerial skills and skill labor, and research and development (R&D), are also improved by the FDI inflow. Through MNCs' internal and external training courses to their subsidiaries' local workers, the host country's human quality will be improved quickly. The quality of all employees' levels, including workers with low skills and advanced labors with high technical and managerial skills, is influenced totally by the training courses. These MNCs also finance for the R & D activities, which take part in the long-run improvement of the host countries' technology application and economic growth (Balasubramanyam et al., 1996).

Moreover, Dunning (1979, 1980, 1985, 1988, and 1993) develops the Eclectic Theory of FDI as the framework to study the linkage between FDI and economic growth. The theory provides three types of advantages that motivate MNCs to invest in foreign countries: ownership advantages, location advantages, and internalization advantages. Many empirical studies have found that economic growth also contributes to the attraction of FDI based on location advantages. Chakrabarti (2001) and Asiedu (2002) point out that higher economic growth results in more significant FDI inflows as it measures the host countries' attractiveness. Moore (1993), Lucas (1993), and Cernat and Vranceanu (2002) also argue that as economic growth rises, FDI inflows into host countries tend to be encouraged.

Some empirical studies indicate that higher economic growth will lead to a large amount of FDI inflows into host countries. Jackson and Markowski (1995) and Balasubramanyam et al. (1996) prove that in some Asian countries, high economic growth influences on FDI inflows into such countries positively. Using panel data for 23 developing countries for 1978-1996, Basu et al. (2003) point out two-way linkages between GDP and FDI. However, Ekanayake et al. (2003) estimate a vector autoregressive (VAR) model and error correction techniques to test for the existence and nature of the causal relationship between output growth, FDI inflows, and exports, using cross-sectional data of both developed and developing countries over the period 1960- 2001. Their findings support bidirectional causality between export growth and economic growth, but the relationship between FDI and economic growth has mixed results. Tsai (1994) employs a simultaneous equation system to test two-way linkages between FDI and economic growth

for 62 countries in 1975-1978 and 51 countries in 1983-1986. He finds that two-way linkages existed between FDI and growth in the 1980s. Bende-Nabende et al. (2001) also investigate whether FDI causes economic growth of the ASEAN-5 economies over the period 1970-1996 and whether the economic growth also has a significant effect in attracting FDI to the region. Their findings show that FDI promotes economic growth most effectively through the human capital factor and learning by doing effects, and in turn, economic growth influences FDI. By using an incomplete annual panel dataset for 20 countries in Latin America and the Caribbean for the period 1990-2001, Saha (2005) estimates a simultaneous system of two equations to test the relationship between FDI and economic growth and find that FDI and economic growth are significant determinants of each other in these countries.

Other empirical studies have also found linkages between FDI and economic growth in host countries. Using a single equation estimation technique with annual data over the period 1960-1985 for 78 developing countries, Blomstrom et al. (1992) show a positive influence of FDI inflows on economic growth. In an empirical study by Borensztein et al. (1998), an endogenous growth model is developed that measures the influence of FDI's technological diffusion on economic growth in 69 developing countries over two periods, 1970-1979 and 1980-1989. They find that FDI inflows positively influence economic growth. Moreover, the relationship between FDI and domestic investment in these countries is complementary. Using panel data for 18 countries in Latin America over the period 1970-1999, Bengoa and Sanchez-Robles (2003) point out that the

impact of FDI on economic growth is positive only when host countries have adequate human capital, economic stability, and liberalized markets.

Similarly, using a sample of 84 countries, Wang and Sunny Wong (2009) indicate that FDI stimulates economic growth only when host nations have sufficient human capital. Alfaro et al. (2004), using cross country data for the period 1975-1995, show that countries with well-developed financial markets gain enormously from FDI, and suggest that nations with greater financial systems can utilize FDI more efficiently. As a result, FDI can contribute more to economic growth in these countries. This finding is supported by Hermes and Lensink (2003) using panel data of 67 developing countries for the period 1970-1995 and by Aghion et al. (2006), who use a sample of 118 countries from 1960 to 2000. Using data from 12 Asian economies over the period 1987-1997, Wang (2009) finds a difference in the impact of FDI in each economic sector. FDI has a significant and positive effect on economic growth in the manufacturing sectors. Conversely, FDI in non-manufacturing sectors does not play an essential role in fostering economic growth.

In summary, FDI is viewed as a way to transfer knowledge, promote learning by doing, bring in technology spill-overs, and argument human capital augmentation. FDI stimulates economic growth in host countries. On the other hand, economic growth is also an essential factor in increasing competitiveness in attracting developing countries' investment. Therefore, improving the determinants of FDI is indirectly promoting economic development.

2.2 Determinants of Foreign Direct Investment

The United Nations Conference on Trade and Development suggests several factors influencing the FDI position in host countries (UNCTAD, 1998). They can group into three categories: 1) policy framework, 2) business facilitation, and 3) economic determinants.

Policy framework

FDI cannot take place unless a country has an openness to FDI. Even though this openness to FDI is necessary for attracting FDI, it is not by itself a sufficient determinant, and other determinants have essential roles to play. Trade policy plays the most prominent role. For example, some Asian countries have used both FDI and trade policies to encourage inward FDI and contribute to their export-oriented economic strategies. An international investment agreement is also an important determinant. Namely, the host country should provide fair and equitable treatment between domestic and foreign investors, including legal protection and guarantees against non-commercial risk. Furthermore, the host country should strengthen market controls in terms of competition (e.g., antitrust laws) and mergers and acquisitions or M&A (e.g., privatization).

As a result of interdependency and globalization, macroeconomic policies and macro-organizational policies also become determinants of FDI. Monetary and fiscal policies that determine economic stability, such as inflation rate and external and budgetary balances, can influence FDI. Tax policy and exchange rate policy will also influence FDI. Regarding macro-organizational policies, those influencing the industry composition of manufacturing are of primary focus and include the spatial composition of economic activities, the functional composition of activities, and the composition of activities by type

of ownership and competition intensity. Following these, policies affecting the supply and quality of productive resources are also relevant, including educational and health policies.

Business facilitation

For a country that wants to attract or regain investor attention, promotional activities have become necessary. Organizations such as the World Association of Investment Promotion Agencies (WAIPA) assist members in various image-building efforts. Investment-facilitation services are another vital part of promotional activities. These services consist of counseling, accelerating the approval process's several stages, providing assistance in obtaining all the needed permits, and providing after-investment services. Business facilitation measures, however, can only hold a supporting role as an FDI determinant. They are rarely decisive factors. Host countries may not attract FDI if they do not possess the fundamental economic determinants, as discussed in the next topic.

Economic determinants

The core economic determinants of FDI in host countries can be divided into three primary groups based on the specific type of FDI classified by the motives of the transnational corporations (TNCs).

The first group is market-seeking FDI. The determinants for attracting market-seeking FDI are national markets and include market size (i.e., population), per capita income, and the host country's market growth. National markets are essential for many service TNCs because most services are non-tradable and can be delivered to foreign markets only through establishment abroad. Another determinant is consumer preference, wherein a TNC must consider whether its products meet the host country's consumer

preferences or not. The last determinant is access to regional and global markets. Host countries with significant accessibility will be more attractive for FDI.

The second group is resource/asset-seeking FDI. Even though natural resources are a major FDI determinant, the investment may or may not occur in countries with abundant resources. The investment will most likely take place in countries that possess abundant resources, yet lack the technical skills needed to extract or sell these raw materials to the rest of the world. Physical infrastructure facilities for transport of the raw materials out of the host country and on to final destinations (e.g., roads, ports, power, and telecommunication) are another critical factor of attraction to resource-oriented FDI. The availability of low-cost, unskilled labor is another determinant for TNCs that require low costs of production. Specific determinants such as skilled labor, technological, innovatory, and other created assets can be determinants of FDI, depending upon industry needs.

The third grouping is efficiency-seeking FDI. The determinants of this category may be impacted by the results of a regional integration agreement. These determinants include:

1. The cost of resources and assets, as adjusted for the productivity of labor resources after the regional integration of production,
2. Other input costs such as transport and communication costs
3. Membership of regional integration agreements that facilitate the establishment of regional corporate networks.

Based on the theoretical framework, several variables have been suggested, such as economic stability, political stability, market size, openness, infrastructure, institutions,

human capital, labor force, labor cost, return on investment, and tax. They are all analyzed as the determinants of FDI inflows by many types of empirical research.

Economic stability

A host country's economic stability is essential for foreign investors when they consider future investments in a country because stability can increase business certainty and reduce related transaction costs (Mooya, 2003). Economic policies play a decisive role in influencing FDI inflows. Ahn et al. (1998) research the relationship between exchange rate, inflation, and FDI over the period of 1970 to 1981 in developing countries. Their research shows that high inflation rates reduced FDIs significantly. They also find that the more the country's exchange rate is overvalued, the higher the country's inflation rate. When firms invest in a host country, this country's depreciation of the exchange rate will be unfavorable to the investor when profits are transferred home. In that case, an investor may hesitate to invest in such a host country. Schneider and Frey (1985) show that a high inflation rate indicates a sign of weak economic management of the country, which demonstrates a negative relationship with FDI. Friedman (1977) takes the inflation rate as a proxy for economic stability. Nevertheless, recent studies have used the real exchange rate as an indicator of a country's macroeconomic stability (Gould David and Kamin, 2000 and Husain et al. 2005).

Political stability

Political stability in countries plays a vital role in attracting FDI. The political instability of a country reduces the ability to attract foreign entrepreneurs and their investments to that country’s economy. When the country has political instability, foreign

investors may suffer from suspending business activities or losing investment assets. Singh and Jun (1999) and Quazi et al. (2004) emphasized the significance of a negative impact of political instability on receiving FDI. However, there is another voice: Agarwal (1980) find no significant relationship between US foreign investment and a host country's political instability.

Market size

Based on Dunning's (1973) theory, the market size presents the host country's location advantage. It is usually by the real GDP of a country. Buckley et al. (2007) state that market size and labor force are the most critical factors for determining FDI. Artige and Nicolini (2006) find that market size is a suitable determinant for FDI, especially for market seeking FDI. Flores and Aguilera (2007) state that a country has a broader market when multinational firms can engage in investments and receive a higher return rate on those investments. In those cases, there is a positive relationship between market size and FDI inflows to that country. Chakrabarti (2001) also claims a positive relationship between the market size of a country and FDI inflows. Ang (2008) finds that real GDP has a positive and significant impact on FDI inflows. Concerning the potential market size, growth rates of GDP are considered. Pärletun (2008) states that the larger the host country's market size, the more FDI will be attracted to its economy. Vadlamannati et al. (2009) also find that GDP growth rates are essential for FDI inflows into a country.

Openness

Jordaan (2008) stated that the country's openness to FDI would differ according to investment types. "If investments are market-seeking, openness will have a negative effect

on FDI due to the tariff jumping hypothesis. Foreign firms that want to enter local markets may decide to establish subsidiaries in the host country if they have some difficulties in importing their products to the country." If the investment is export-oriented, openness has a positive effect on FDI because the protectionist trade policy causes higher transaction costs associated with the export of goods. Thus, multinational firms may then prefer to relocate their production facilities to a more open economy. If a country's domestic economy has opened up, it will be easier to import raw materials or other capital goods necessary for the investors, and is also more comfortable exporting domestic products abroad. Many studies find the positive effect of openness of the host country on attracting FDI inflows. A country with many favorable conditions for import and export with an open economy is always an ideal destination for multinational companies. Open market policies especially promote globalization and help local and foreign firms access the global supply chains.

Infrastructure

According to Marr (1997), poor infrastructure can be an obstacle and an opportunity for foreign investment. Mainly for low-income countries, infrastructure deficits are often assumed to be significant economic development constraints. Nevertheless, if the host countries allow foreign investors to participate in the infrastructure sector, the host countries can attract FDI. Jordaan (2008) states that good quality and well-developed infrastructure can increase the productivity of investment in that country, which in turn, stimulates FDI flows towards the country. Infrastructure can be measured as expenditure on road transport, city lights, electricity consumption, per capita energy usage, length of

railways, and the number of telephones mainlines per 1000 people. In long-term development, adequate infrastructure will bring many opportunities and advantages for economic growth.

Institutions

Institutional quality is a determinant of FDI, especially for less-developed countries for many reasons. First, economic growth, which is a factor attracting FDI inflows, is usually connecting with good governance.

Second, corruption, which is the main reason to cause investment costs and reduce profits, is allowed by weak institutions. Third, weak institutions' political uncertainty leads to the high sunk cost and makes investors consider the uncertainty (Zaw Yadanar Hein, 2014). Wheeler and Mody (1992) use firm-level US data to measure the effect of institutional factors such as regulatory framework, bureaucratic hurdles, red tape, judicial transparency, and the extent of corruption. However, they are all insignificant, and the empirical results are vague. Nevertheless, Wei and Smarzynska (1999) find that corruption significantly adds to firm costs and impedes FDI inflows. The two papers use different institutional quality measures and look at different types of data (investing firms versus aggregate FDI inflows), which might explain this difference.

Human capital

Human capital is typically measured by the secondary school enrollment rate and is considered one of the critical aspects of inward FDI, especially for efficiency-seeking FDI, which requires a skilled labor force (Dunning, 1990). Noorbakhsh et al. (2001) and Nunnenkamp (2004) found that human capital has a positive and significant effect on FDI

inflow. Golub (2003) also agreed that improving human capital can increase FDI inflow through an indirect effect obtained by strengthening civil liberties and health. Root and Ahmed (1979), Schneider and Frey (1985), Feenstra and Hanson (1997), and Dunning and Narula (2003) stated that the quality of human capital is not a necessary input for inward FDI. Chan and Mason (1992) and Ritchie (2002) stated that if the investment is a market or resource seeking-FDI focusing on low-value manufacturing types, then cheap labor and abundant natural resource would be more important.

Labor Force

The research of Ismail and Yussof (2003) discussed the question of how labor market competitiveness affects the inflows of FDI into the ASEAN economies based on a regression model, which uses time-series data. The results show that an increase of 1% of Thailand's labor force will increase the inflow of FDI by about 10%. It means that the size of the labor force can play an essential role in attracting FDI, but the Malaysian case data contradict that conclusion. The authors assume that the labor force is important not only for attracting FDI but also for the country's economic development to reduce a country's reliance on foreign labor. After adopting the well-known open-door policy, China has succeeded in attracting FDI due to its abundant cheap labor and a large domestic market. In Ranjan and Agrawal (2011) analysis of "FDI Inflow Determinants in BRIC countries," the author states that the total labor force as one of the determinants of FDI, and the result showed that the total labor force did not support the inflow of FDI in BRIC countries from 1975 to 2009. Tintin (2012) identified the factors that had played an essential role in attracting FDI to Myanmar for over 20 years. In their analysis, two linear regression models

were used. In the first analytical model, World Bank data were applied, whereas the Myanmar CSO dataset was used for the second model. In both analyses, the result showed that the labor force has a positive effect on FDI's inflow into Myanmar.

Labor cost

Chakrabarti (2001) argues that the wage is the most arguable measure for the labor cost, and it undermines all the potential determinants of FDI. There are different opinions regarding wages as an indicator of the labor cost in attracting FDI. Goldsbrough (1979), Saunders (1982), Flamm (1984), Schneider and Frey (1985), Culem (1988), and Shamsuddin (1994) demonstrate that higher salaries dampen FDI. Marr (1997) shows that labor costs are statistically significant in labor-intensive industries and export-oriented investments. The skilled labor force is expected to affect an FDI location's decisions when there is a little variation in the cost of labor among countries.

Return on Investment in the Host Countries

Countries with a higher return on investment can spur FDI. However,

it is not easy to obtain a suitable measure for the return on investment in developing countries. One way is to use the inverse of the real GDP per capita, as Edwards (1992) study. He finds a negative impact of the return on investment on FDI inflows. Inversely, Tsai (1994) stated that the two variables' relationship is positive for the market seeking FDI. Wei et al. (1999), and Fernández-Arias and Hausmann (2001) stated that the effect of investment on FDI is insignificant.

Clustering effects

Clustering effects are defined as the gather of foreign firms together in the adjacent places due to linkages among projects or due to a group of existing firms considering the business climate for foreign investors. FDI may initiate from the presence of existing foreign firms, where new investors pursue past investment decisions by other investors in location choice. By surrounding existing firms, new investors get benefits from spillover effects and linkages with suppliers and buyers. Evidence for these effects is demonstrated in the study of Wheeler and Mody (1992), Barrell and Pain (1999), and Campos and Kinoshita (2003). They all find the empirical evidence of agglomeration effects in the case of US, European, and transition economies, respectively.

Tax

The effect of tax incentives on FDI remains inconsistent based on the literature. Some studies report a negative relationship between FDI inflows and the corporate taxes of the host country. Hartman (1984), Grubert and Mutti (1991), Hines and Rice (1994), Loree and Guisinger (1995), Cassou (1997), and Kemsley (1998) show that the corporate taxes are significant and affect negatively on attracting FDI flows. Conversely, others demonstrate that taxes do not have a significant effect on FDI. Root and Ahmed (1979), Lim (1983), Wheeler and Mody (1992), Jackson and Markowski (1995), Yulin and Reed (1995), and Porcano and Price (1996) investigate that there is no significant effect of taxes on FDI.

In the empirical studies, various combinations of these determinants as explanatory variables have been analyzed. A group of factors such as labor costs, trade barriers, trade

balance, exchange rate, and tax has negative and positive effects on FDI. Moosa (2009) states that due to the absence of a consensus on a theoretical framework to guide empirical work on FDI, there is no widely accepted set of explanatory variables that can be considered as the right determinants of FDI.

2.3 Impact of Business Climate on Firms Internationalization Decision

A business climate reflects the country's economic conditions and how financial institutions, labor, political organizations, and the government behave towards business institutions (Pinkse and Kolk, 2009). Hadjila and Iuliana (2010) empirically explore the linkages among political risk, business climate, and foreign direct investment inflows. They conclude that reduced levels of political risk and favorable business conditions are associated with an increase in FDI inflows. Dollar et al. (2006) analyze the importance of the investment climate on export and FDI probability for eight Latin American and Asian countries using firm-level data. Their conclusions are drawn for all investment climate variables (which include physical and financial infrastructure variables) without giving the specific effect of a particular variable. The authors conclude that a better investment climate, in general, encourages FDI. Kinda (2010) introduces firm-level data for a large sample of developing countries to assess FDI determinants focusing on infrastructure, institution, and human capital. He considers foreign affiliates located in developing countries. The main results demonstrate that physical infrastructure problems, financing constraints, and institutional problems dampen FDI in developing countries, especially to Sub-Saharan African countries. Bayraktar (2013) and Borin and Mancini (2016) investigate the relationship between FDI and business indicators. Bayraktar (2013) examines the

relationship between FDI and ease of doing business indicators as one possible source of FDI's changing direction for 2004 – 2010. The countries tend to attract more FDI if they have better records of doing business. The higher FDI flows to developing countries can be partially explained by improving ease of doing business indicators. Borin and Mancini (2016) analyze the causal relationship between FDI and firm performance by building a brand new firm-level dataset. This dataset can describe the extent of Italian firms' foreign activity and provide reliable key performance indicators. Firms that invest abroad the first time show higher productivity and employment dynamics in the years following the investment, especially in advanced economies. Franco et al. (2019) exploit an original survey on roughly 1500 investors based in Vietnam to demonstrate that some characteristics of the investor firm (including size, productivity, experience, and autonomy in decision-making) affect linkages' capacity to create a more extensive network of local suppliers. It is providing a good investment climate and, more importantly, essential business support services that mainly influence investors' capacity to trigger knowledge and other vital resources' transfer to their local suppliers. Contractor et al. (2020) use World Bank data for 189 economies to examine which host country regulatory factors influence inward FDI. They find that countries with more vigorous contract enforcement and more efficient international trade regulations attract more FDI. Multinationals are willing to invest in states with less efficient entry and exit regulations in exchange for stronger contract enforcement.

Studies on FDI location using micro-level data mostly focus on variables such as R&D, factor cost differences, advertising expenditures, wages, trade cost, market size, and

taxation (Carr et al. 2001; Disdier and Mayer, 2004; Hanson et al. 2001; Yeaple, 2003). These predictors are intuitive as these studies have focused on developed countries (except China). For instance, the availability of cheap labor or a sizeable local market may be an essential factor in attracting foreign investment. However, these factors are not necessarily the most important in developing countries, given deficient infrastructure, high financing constraints, weak institutions, and lack of skilled labor.

Good institutions play a crucial role in attracting FDI to developing countries. The probability that foreign investors get a return on their investments is fundamental in their decision to invest in a state or not. Secure property rights, political stability, and lack of corruption allow markets to function correctly, therefore attracting MNEs (Daude and Stein, 2007; Disdier and Mayer, 2004; Urata and Kawai, 2000; Wei, 2000). It is generally believed that skilled workers' availability positively affects developing countries' attractiveness to foreign capital. In reality, according to the type of FDI (Vertical FDI or Horizontal FDI), MNEs look for unskilled cheap labor or a more expensive skilled labor force. Yeaple (2003) finds that US MNEs that invest in qualified labor-abundant countries are skill-intensive industries, while countries with a low-skilled labor force receive non-skilled intensive MNEs. Urata and Kawai (2000) and Fung et al. (2002) get similar results.

Well-developed infrastructure is essential to attract foreign capital and promote economic growth. In the manufacturing or service sector, an adequate infrastructure provision reduces transaction costs by allowing entrepreneurs to connect easily with their suppliers and customers. By improving market access and increasing the available market's real size, a good infrastructure is particularly necessary for foreign firms, attracted in

general by large markets. Urata and Kawai (2000), based on Japanese Small and Medium Enterprises (SMEs) location, find that infrastructure is particularly necessary for developing countries, attractiveness for FDI. Deichmann et al. (2003), in a study of 293 foreign firms' locations in Turkey, find that infrastructure development increases the probability of MNE location.

Developed financial services have been paid little attention than other determinants of FDI (wages, market size, etc.) in current literature. The importance of financial services for foreign firms is twofold. Like local firms, foreign firms can use financial services for overdraft facilities, loans, or payments to their intermediate goods suppliers. Developed financial services also facilitate financial transactions between foreign firms and their customers and employees in the host country. Financial development is generally an engine of economic growth, providing better business opportunities for customers and firms. Since local investors have better information about the possibilities and the risks of the local market, the distance between foreign investors and the local market generally worsens this informational asymmetry. Obtaining better information about the local market's dangers through financial intermediaries allows foreign investors to know and be confident about the country's profit opportunities, encouraging FDI. Few studies have linked FDI location to economic development. They find that financial development encourages FDI (Deichmann et al., 2003; Kinda, 2008). Other studies have shown the complementarities between FDI and financial development in explaining economic growth (Alfaro et al. 2006; Alfaro et al. 2009).

Most of the studies on FDI determinants above use macro-level data. There are not too much studies using micro-level data to find out the determinants of FDI. This approach's advantage is the ability to investigate FDI determinants based on the enterprise's point of view and foreign-invested enterprises' operational information. The disadvantage of this approach is the restriction on the dataset and the difficulty to collect continuous data over time. In conclusion, we observe that all empirical studies about FDI determinants can broadly be categorized into two strands of literature: an econometric analysis using a sample of data in a period and in-depth case studies with investor surveys. The determinants of FDI can be found by analyzing the country-level and regional-level data. Still, firm-level data provides much more information about the operation and characteristics of the firm. We find that using the elements of business climate and firm's characteristics based on the firm-level dataset to analyze the determinants of FDI is another approach to get a new point of view on this topic, that motivates us to investigate in-depth.

2.4 Labor Productivity

Technology transfer, new production processes, advanced management skills, integration with global value chains, and new export markets are the potential benefits from FDI inflows to a country. These gains produce positive externalities such as spillover effects of technology and skills (Alfaro et al. 2004; Hale and Long 2006). And many researchers emphasize the positive impact of trade on labor productivity growth through access to advanced capital goods and technology. Recent endogenous growth models

underline the importance of foreign technology and knowledge for long-run growth (Romer, 1986; Grossman and Helpman, 1991).

Firms can increase their export capacities when they have access to advanced production facilities regarding export roles. Entry to the foreign marketplace grants opportunities to improve production efficiency. Additionally, the promotion of exports could also mitigate the foreign exchange gap, particularly at the early economic development stage. More significant imports of capital goods and technology can promote further export and labor productivity growth. FDI is an essential vehicle in this process. Consequently, the relationship between FDI, trade, and labor productivity can be formulated.

However, despite several studies advocating the positive effects of FDI and trade on labor productivity growth, many studies presented empirical evidence that trade and investment liberalization do not always boost production and facilitate labor productivity. An essential factor in making the most of the benefits of trade and FDI is the country's absorptive capacities. The absorptive capacities encompass the economic development strategy of the country, the capability of macroeconomic management, degree of financial development, domestic investment, human capital development, labor market structure, and institutional quality (Barro 1996; Blomstrom and Kokko 1998; Baldwin 2003; Thangavelu and Rajaguru 2004; Li and Tanna 2019).

In the case of Vietnam, this country placed economic opening and integration with the global economy as central to its reform and development path. It has pursued a fast-

paced integration strategy to import advanced production facilities, technology, and skills that contribute to its industrial structure upgrading (OECD 2020).

Vu (2008) investigates the relationship between FDI, labor productivity, and Vietnam's economic growth during the 1990s. He concludes that FDI had significant and positive effects on labor productivity and economic development. However, among industrial sectors, the benefits were not equally distributed. Le et al. (2019) employ the autoregressive distributed lag (ARDL) approach to study the impact of FDI and human capital development on Vietnam's labor productivity from 1986 to 2014. They conclude that FDI and human capital development had a significant and positive impact on labor productivity in the long run, while the short-run effects are ambiguous. Newman et al. (2015) do a survey of 4000 manufacturing firms in Vietnam from 2009 to 2012. They find out that direct forward linkages from foreign-invested input suppliers to domestic firms are positively related to productivity. The study also suggests that the dominance of foreign firms upstream harmed the productivity of downstream domestic firms. These different results imply the impact of FDI and trade on labor productivity requires further analysis.

CHAPTER 3

DETERMINAT OF FDI IN VIETNAM: THE UNIDO SURVEY

This chapter presents the analysis of the firm-level FDI data in the manufacturing industry of Vietnam. The chapter begins with describing the data, the reason why the researcher chooses the UNIDO database over others, and then the descriptive and empirical analysis.

3.1 Firm-level Surveys on FDI in Vietnam

The FDI data used in this study is the Vietnam Industry Investor Survey (2010). This survey was designed and conducted by the United Nations Industrial Development Organization (UNIDO) in collaboration with the General Office of Statistics, the Ministry of Planning and Investment, and the Foreign Investment Agency (FIA). The Vietnam Industry Investor Survey is conducted in 2010 in nice cities and provinces in Vietnam where principal agglomerations of foreign direct investment and domestic enterprises are located. The sample frame has a combined number of 1644 manufacturing, utility, and construction enterprises which have been randomly selected from totally 6836 ones across Hanoi, Hai Phong, Vinh Phuc, Bac Ninh, Da Nang, Ho Chi Minh City, Dong Nai, Binh Duong, and Ba Ria - Vung Tau. The survey has been conducted at the enterprise level to

gather information on business performance and assess Vietnam's current business climate. An additional focus of the survey is to analyze supply chain linkages in Vietnam to allow enterprises to take advantage of UNIDO's free benchmarking services to support capacity and capability self-assessment leading to business-to-business relations.

Other organizations also collect data at a firm-level on the Vietnamese economy, such as the World Bank (Enterprise Survey 2005, 2009 and 2015) and UN-WIDER (Vietnam Small–Medium Enterprise Survey 2011, 2013 and 2015). However, we choose to exclusively exploit the UNIDO dataset because it is the only one to focus on Vietnam's business climate. We consider this a key point for the phenomenon under investigation. The distribution between foreign and domestic enterprises is balanced enough (578 domestic firms and 831 foreign firms). Differently, the UN-WIDER only focuses on the small-medium enterprises of Vietnam. In the context of most foreign firms operating in Vietnam are large enterprises, this dataset does not include a large percentage of total foreign investment. Besides, the Enterprise survey from World Bank does not have enterprises with 100% government capital – many state-owned firms that significantly affect the Vietnamese economy. In conclusion, the UNIDO dataset is selected because it is the most sufficient for the research. We can assess which factors that the foreign investors prefer when they invest in Vietnam through the dataset.

We exclude four industries that are considered non-manufacturing business activities (including Repair and installation of machinery and equipment; Electricity, gas, stream and air conditioning supply; Water supply, sewerage, waste management, and

remediation activity; Construction). Therefore, our study focuses on 23 sectors of manufacturing industries that are described in Table 2 below.

Table 2 Classification of Manufacturing Industries

No	Manufacturing Industries Description	Abbreviation
1	Food Products	Food Products
2	Beverages	Beverages
3	Tobacco Products	Tobacco Products
4	Textiles	Textiles
5	Wearing Apparel	Wearing Apparel
6	Leather and Related Products	Leather Products
7	Wood and Products of Wood and Cork, except Furniture	Wood Products
8	Paper and Paper Products	Paper Products
9	Printing and Reproduction of Recorded Media	Printing
10	Coke and Refined Petroleum Products	Refinery Products
11	Chemicals and Chemical Products	Chemical Products
12	Pharmaceuticals, Medicinal Chemical and Botanical Products	Pharmaceuticals Products
13	Rubber and Plastics Products	Rubber & Plastics
14	Other Non-metallic Mineral Products	Non-metallic Mineral Products
15	Basic Metals	Basic Metals
16	Fabricated Metal Products, except Machinery and Equipment	Fabricated Metal Products
17	Computer, Electronic and Optical Products	Computer, Electronic & Optical Products
18	Electrical Equipment	Electrical Equipment
19	Machinery and Equipment	Machinery Equipment
20	Motor Vehicle, Trailers and Semi-trailers	Vehicles

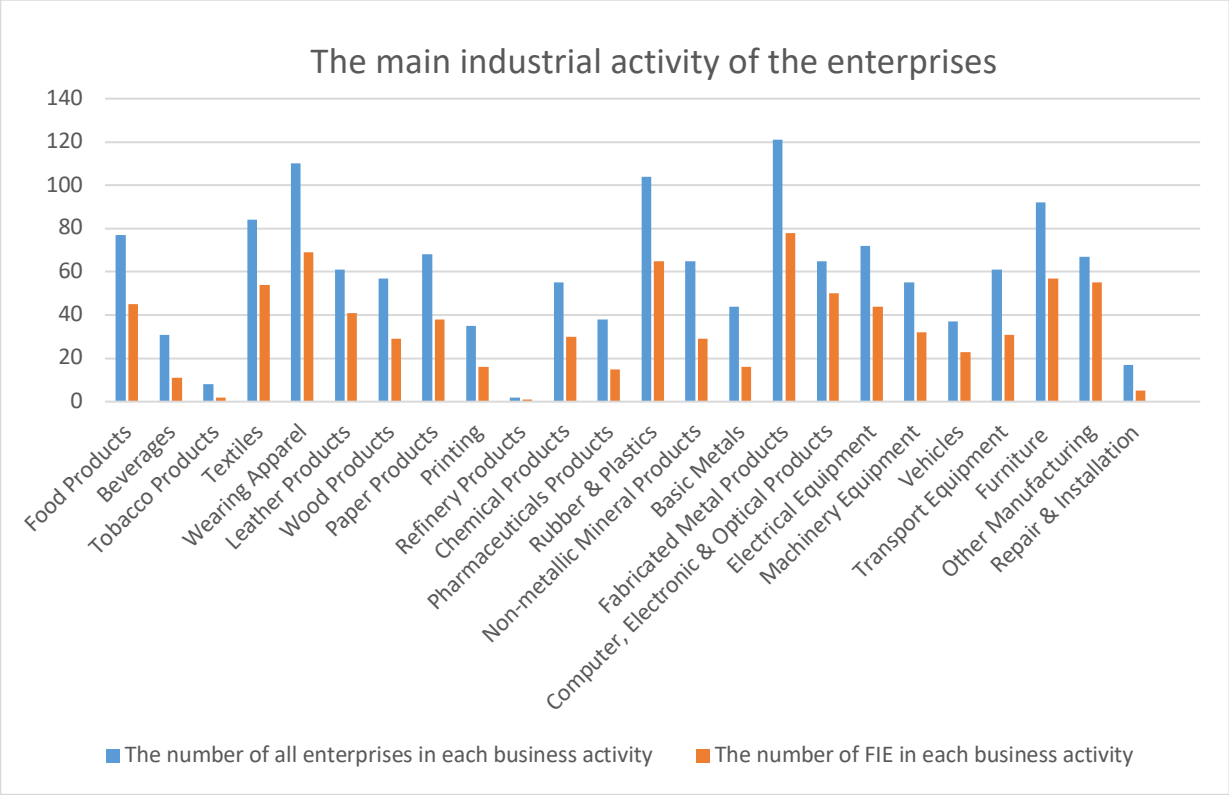
21	Other Transport Equipment	Transport Equipment
22	Furniture	Furniture
23	Other Manufacturing	Other Manufacturing

3.2 Descriptive Analysis: the UNIDO Database

3.2.1 Sectoral Distribution and Technological Classification

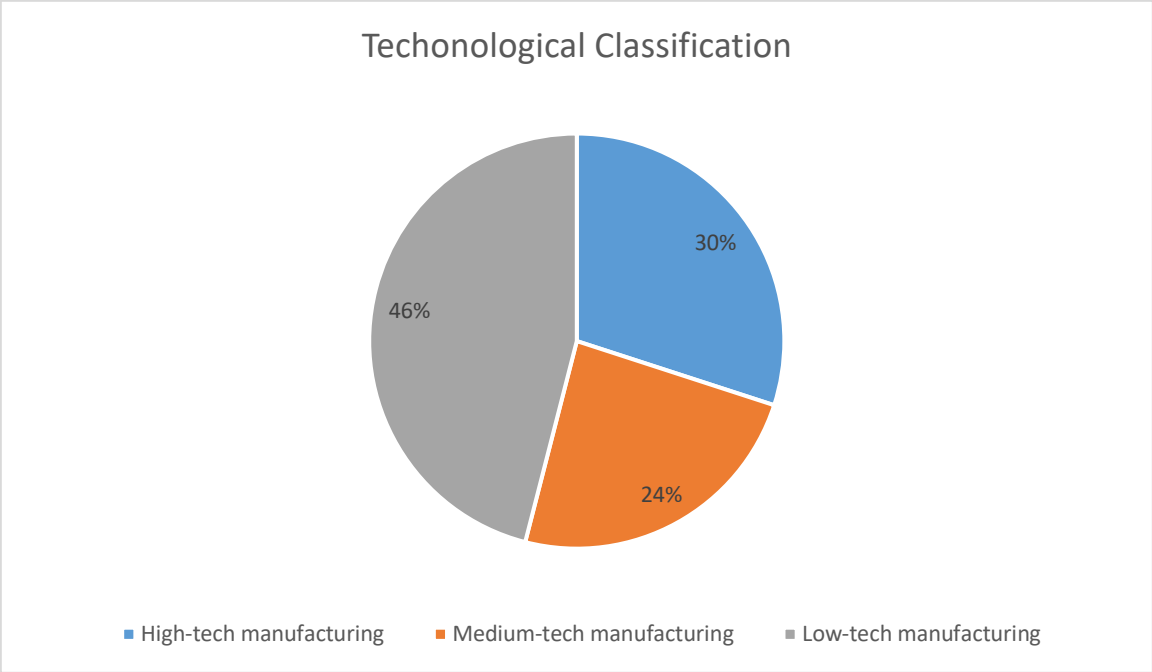
In Figure 6, we can see that Foreign-invested Enterprises (FIEs) account for a large proportion of all enterprises in most business activities. Regarding distribution across industries, three industries, fabricated metal products, wearing apparel, and rubber and plastics, constitute approximately one-quarter of the sample. Other sectors with a high presence are furniture, textiles, food products, and electrical equipment. At the lower end are three manufacturing industries, refinery products, tobacco products, and repair and installation.

Figure 6 The main industrial activity of the enterprises



When categorized according to technology level (following OECD 2005, in a slightly adjusted version), most enterprises fall into low-technology. Just above 46% of enterprises operate in low-tech, almost 24% in medium-tech, and nearly 30% in high-tech manufacturing industries (see Figure 7).

Figure 7 Technological classification of all enterprises



3.2.2 Geographical distribution

In addition to differences in sector presence, there are also differences in FDI concentration among provinces. Some provinces may appeal more to foreign investors, thanks to, for example, an advantageous geographic location near main seaports, and being able to offer a more conducive business climate. Conducting the same exercise by province reveals that the share of FIEs in the total sample is exceptionally high in the Hanoi, HCMC, Dong Nai, and Binh Duong provinces (accounting for 84.01% of total). Binh Duong is the province which attracts most FIEs with 33.94%. The other provinces only constitute below 6%. The distribution follows the theory about the location advantages of Duning (1973), the foreign firms will be attracted to the area with favorable production (see Table 3).

Table 3 The located province of all enterprises and FIEs

Province	All enterprises		Foreign-invested enterprises	
	Frequency	Percentage	Frequency	Percentage
Hanoi	206	14.62	78	9.39
Vinh Phuc	23	1.63	15	1.81
Bac Ninh	30	2.13	17	2.05
Hai Phong	107	7.59	47	5.66
Da Nang	31	2.20	14	1.68
Binh Duong	374	26.54	282	33.94
Dong Nai	220	15.61	181	21.78
Ba Ria Vung Tau	32	2.27	15	1.81
HCMC	386	27.40	182	21.90
Total	**1,409**	**100**	**831**	**100**

3.2.3 Investors Motivation

Access to the Vietnamese market and lower production costs are two main motivations to invest in Vietnam. These two accounts for about 85% of all incentives. The domestic market of Vietnam is desirable with the demand of more than 95 million people. Furthermore, Vietnamese labor's low cost is also the most advantageous for FIEs if they want to reduce production costs. By the classification of Dunning (1993), we can conclude that most FIEs are the market-seeking and efficiency-seeking type (see Table 4).

Table 4 Main motivation for investment (FIEs)

Main motivation to invest in Vietnam	Freq.	Percent
To access the Vietnamese market	347	41.76
To lower production costs	359	43.20
To access natural resources and inputs	19	2.29
To join a specific partner	28	3.37
To export back to home country	34	4.09
To benefit from trade agreement(s)	14	1.68
Personal reasons	30	3.61
Total	**831**	**100**

3.2.4 Foreign-invested Enterprises Characteristics

Smarzynska and Wei (2000) say that foreign firms may prefer a joint venture with local partners to reduce risk when investing in a foreign country. However, the case of Vietnam is different. 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. Although 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. There are 52.31% of firms which are wholly owned enterprises, compared to 6.67% of joint-ventures (see Table 5).

The vast majority, 91.04%, of foreign investors in the sample, entered the country by creating a new operation as a wholly-owned enterprise (green-field investment). In contrast, only a small minority purchased already existing assets (brown-field investment or acquisition). When enterprises are divided according to investment motives, most fall

into the efficiency-seeking category and almost into the market-seeking category. Of the efficiency-seeking enterprises, the vast majority, nearly 90%, have indicated that their primary motive was to lower production costs. Thus, according to the Survey, the investment seems to be made primarily to reduce production costs or gain access to the Vietnamese market. Very few seem to have invested in gaining admission to natural resources. Some two-thirds of FIEs have a global market orientation, while approximately one quarter is domestic market-oriented. Among international market destinations, the highest mean share of exports in sales goes to Japan (19%), the European Union (15%), the U.S (15%), and China (Taiwan Province) (14%). Surprisingly, with a mean export in the sales ratio of only 5%, mainland China does not constitute a top destination (see Table 6).

Table 5 The ownership structure of all firms

Ownership structure	**Frequency**	**Percent**
Domestic	578	41.02
Joint Ventures	94	6.67
Wholly owned enterprises	737	52.31
Total	**1,409**	**100**

Table 6 The characteristics of FIEs by mode of investment

	Joint Ventures		**Wholly owned enterprises**	
	Frequency	Percentage	Frequency	Percentage
Investment motive				
Resource-seeking	0	0	19	2.58
Market-seeking	56	60.87	304	41.25
Efficiency-seeking	34	36.96	386	52.37
Other	2	2.17	28	3.80

Entry mode				
Creation of a new operation as a WOE	36	39.13	671	91.04
Purchase of pre-existing assets from foreign owners	5	5.43	40	5.43
Purchase of pre-existing assets from Vietnamese private owners	4	4.35	10	1.36
Purchase of pre-existing state-owned assets	3	3.26	6	0.81
Other	44	47.83	10	1.36
Market orientation				
Local market seeking	52	55.32	143	19.40
Regional market seeking	3	3.19	59	8.01
Global market seeking	39	41.49	535	72.59
Size				
Small	24	25.53	203	27.54
Medium	27	28.72	142	19.27
Large	43	45.74	392	53.19
Age				
0 to 5 years	6	6.38	138	18.72
6 to 10 years	17	18.09	313	42.47
11 to 20 years	68	72.34	282	38.26
21 plus years	3	3.19	4	0.54

3.2.5 Business Climate in Vietnam

Table 7 shows as four factors have the percentage of “very important” near and more than 50%: political stability (57.04%), economic stability (57.40%), taxation (51.99%), and labor costs (52.35%). There is all the common sense when a firm wants to operate abroad. They need a stable environment for a long time operation, the taxation as lowest as possible, and get the advantage from the low labor costs. In the case of domestic

firms, economic stability (62.98%), Vietnamese market (47.92%), political stability (53.98%), and taxation (49.39%) are the four highest factors. The foreign firms will prefer the labor costs; meanwhile, the domestic firms put a higher priority on the Vietnamese market.

Acquisition of assets (58%), Presence of Joint Venture partner (32.85%), and raw materials and natural resources (27.68%) are the three options that have the highest percentage of "Not important". It clearly shows that most foreign investors come to Vietnam by green-field investment, and they do not have much intention to work in the joint-venture form. Most of the foreign firms are the type of market-seeking and efficiency-seeking.

Table 7 Business climate (in percentage)

Business climate in Vietnam	**Foreign Invested Firms**			**Domestic Firms**		
	Not important	**Important**	**Very important**	**Not important**	**Important**	**Very important**
General conditions						
Political stability	1.20	41.76	57.04	1.90	44.12	53.98
Economic stability	1.56	41.03	57.40	0.69	36.33	62.98
Quality of infrastructure	2.41	56.51	41.08	3.11	58.48	38.41
Government agency support services	3.85	54.27	41.88	6.57	66.26	27.16
Country legal framework	2.29	55.23	42.48	3.29	56.92	39.79
Quality of life	7.22	66.31	26.47	3.98	63.49	32.53
Personal security	3.25	55.35	41.40	6.40	57.27	36.33
Double taxation treaties	7.34	60.29	32.37	10.73	61.94	27.34

Bilateral trade agreements	11.19	60.65	28.16	14.01	64.53	21.45
Availability of Export Processing Zones / Industrial Zones	4.33	66.06	29.60	11.59	65.40	23.01
Governance and enforcement of rule of law	3.73	61.13	35.14	5.19	60.90	33.91
Market conditions						
Vietnamese market	17.21	49.58	33.21	4.33	47.75	47.92
To take advantage of ASEAN Free Trade Area (AFTA)	17.09	58.24	24.67	15.74	58.82	25.43
Vietnamese resources						
Labor costs	2.17	45.49	52.35	1.73	53.46	44.81
Availability of skilled labor	4.69	53.55	41.76	2.25	50.17	47.58
Vietnam-based suppliers	10.11	65.34	24.55	9.00	64.36	26.64
Raw materials and natural resources	27.68	49.58	22.74	15.22	50.35	34.43
Other factors						
Incentive package	15.88	55.11	29.00	19.20	56.40	24.39
Acquisition of assets	58.00	34.90	7.10	48.96	44.12	6.92
Presence of Joint Venture partner	32.85	52.35	14.80	26.12	55.88	17.99
Taxation	1.93	46.09	51.99	1.56	49.05	49.39

3.3 Regression Analysis: the Determinants of FDI in Vietnam

With the firm-level data FDI, firm characteristics variables include information on the share of foreign ownership in firm capital. Still, information such as the volume of foreign investment is not available. Therefore, the study will use the dependent variable (FDI) as the dummy variable. It takes the value "1" if at least 10% of the firm's capital is foreign (following the IMF standard of FDI definition) and "0" otherwise. We will consider the entire sample of firms in Vietnam and estimate each firm's probability to be foreign, then find out which characteristics are essential for foreign firms. The logit model will be included variables relating to business climate to measure the importance of each factor to the enterprises' perspectives.

$$Prob(FDI_i) = \alpha X_{i1} + \beta X_{i2} + \gamma X_{i3} + \delta X_{i4} + \ldots\ldots + \varepsilon_i$$

FDI_i will be the dummy dependent variable of the firm i, which is equal "0" if the firm is a local enterprise and "1" if the firm is a foreign-invested enterprise. The control variables will be: age of the firm, size of the firm, sales come from manufacturing activity, total assets, region, and technology classification.

Region variable will contain three main economy regions: Red River Delta, North Central, and Central coastal areas and South East. The technology variable will be classified into three types based on the manufacturing sector: High-tech manufacturing, Medium-tech manufacturing, and Low-tech manufacturing. In order to find the relationship between the FDI firms and the business climate, the model will analyze based on four groups of dummy variables relating to each business climate obstacle. Each group is briefly explained as follows:

General conditions. This group contains all variables relating to the general conditions of the economics, as the macro-economic variables. These variables are political stability, economic stability, quality of infrastructure, country legal framework, government agency support services, quality of life, and personal security.

Market conditions. This group contains all variables relating to the openness and market size of the host country. These variables are bilateral trade agreements, availability of export processing zones/industrial zones, the Vietnamese market, and the advantage of the ASEAN Free Trade Area (AFTA). The market-seeking investors will pay attention to these factors.

Vietnamese resources. Labor costs, availability of skilled labor, Vietnam-based suppliers, raw materials, and natural resources are included. These factors reflect the competitive advantages of the Vietnam economy and the ability to attract resource-seeking and efficiency-seeking investment.

Other factors. This group includes incentive packages, acquisition of assets, the presence of Joint Venture partners, and taxation. These factors directly affect the stage of calling for investment and the decision to invest in foreign companies.

Table 8 provides a list of all variables used in the regression analysis.

Table 8 List of Variables

Variable	Description
FDI	Dummy variable, equal 1 if at least 10% of firm capital is foreign
Foreign ownership	Percentage of the firm owned by a foreign private firm
Agefirm	Firm age: 2009 – (the year start operates in Vietnam)
Manuf_intensity	% of the enterprise's Sales comes from manufacturing activity
Size	Size of the firm: equal to the Total Assets
Region	The region that the firm locate in (1 = Red River Delta, 2 = North Central and Central coastal areas, 3 = South East)
Tech_classification	The business sector of the firm (2 = High-tech manufacturing, 3 = Medium-tech manufacturing, 4 = Low-tech manufacturing)
Polit_stability	Importance of political stability for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Econ_stability	Importance of economic stability for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Infrastructures	Importance of quality of infrastructure for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Gov_support	Importance of government agency support services for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Legal_framework	Importance of country legal framework for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Life_quality	Importance of quality of life for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Person_security	Importance of personal security for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Trade_agreements	Importance of bilateral trade agreements for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
ExporIndustrial_zones	Importance of availability of Export Processing Zones/Industrial Zones for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)

Governance	Importance of governance and enforcement of rule of law for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Local_market	Importance of Vietnamese market condition for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
AFTA	Importance of taking advantage of the ASEAN Free Trade Area (AFTA) for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Labour_cost	Importance of labour costs for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Skilled_labour	Importance of availability of skilled labour for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Vietnam_suppliers	Importance of Vietnam-based suppliers for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Raw_materials	Importance of raw materials and natural resources for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Incentives	Importance of incentive package for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Assets_acquisitions	Importance of acquisition of assets for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Jv_partner	Importance of presence of Joint Venture partner for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)
Taxation	Importance of taxation for enterprises' investment decision (1 = Not important, 2 = Important, 3 = Very important)

We run five models with each group of obstacles and the last model, including all the groups to see the difference between foreign firms and the local firms' perspective. Each model has the same observation around 1408 and 1406 (due to a missing value). Table 9 reports the average marginal effects for each regression.

Table 9 Regression Analysis (marginal effects)

VARIABLES	(1) fdi	(2) fdi	(3) fdi	(4) fdi	(5) fdi	(6) fdi
agefirm	-0.0206***	-0.0191***	-0.0187***	-0.0198***	-0.0203***	-0.0169***
	(0.00136)	(0.00138)	(0.00137)	(0.00141)	(0.00137)	(0.00134)
size	0.0957***	0.0893***	0.0854***	0.0887***	0.0954***	0.0779***
	(0.0107)	(0.0105)	(0.0109)	(0.0108)	(0.0108)	(0.0107)
manuf_intensity	0.0480**	0.0396**	0.0404**	0.0495**	0.0478**	0.0346*
	(0.0192)	(0.0187)	(0.0191)	(0.0205)	(0.0192)	(0.0181)
2.region	-0.0161	0.000799	-0.0340	-0.0534	-0.0522	-0.0847
	(0.0859)	(0.0911)	(0.0793)	(0.0916)	(0.0860)	(0.0876)
3.region	0.144***	0.150***	0.128***	0.128***	0.133***	0.104***
	(0.0287)	(0.0281)	(0.0281)	(0.0289)	(0.0287)	(0.0275)
3.tech_classification	-0.0548*	-0.0518*	-0.0604**	-0.0436	-0.0497	-0.0400
	(0.0317)	(0.0312)	(0.0305)	(0.0319)	(0.0313)	(0.0301)
4.tech_classification	-0.0536**	-0.0559**	-0.0672**	-0.0409	-0.0481*	-0.0444*
	(0.0271)	(0.0264)	(0.0261)	(0.0274)	(0.0271)	(0.0258)
2.polit_stability		0.0134				0.0336
		(0.111)				(0.127)
3.polit_stability		0.0413				0.0507
		(0.112)				(0.127)
2.econ_stability		-0.183**				-0.198*
		(0.0873)				(0.106)
3.econ_stability		-0.246***				-0.254**
		(0.0866)				(0.107)
2.infrastructures		0.0406				0.0337
		(0.0806)				(0.0709)
3.infrastructures		0.0619				0.0455
		(0.0829)				(0.0730)
2.gov_support		0.103*				0.102*
		(0.0566)				(0.0571)
3.gov_support		0.229***				0.210***
		(0.0586)				(0.0595)
2.legal_framework		0.110				0.0895
		(0.0791)				(0.0882)
3.legal_framework		0.0891				0.0629
		(0.0810)				(0.0897)
2.life_quality		-0.147***				-0.125***
		(0.0397)				(0.0426)
3.life_quality		-0.254***				-0.218***
		(0.0459)				(0.0485)
2.person_security		0.122*				0.101

	(0.0637)				(0.0698)
3.person_security	0.190***				0.175**
	(0.0661)				(0.0728)
2.local_market		-0.201***			-0.185***
		(0.0338)			(0.0364)
3.local_market		-0.271***			-0.246***
		(0.0375)			(0.0407)
2.AFTA		0.0347			0.0713*
		(0.0381)			(0.0399)
3.AFTA		0.0348			0.0919*
		(0.0460)			(0.0472)
2.trade_agreements		0.0140			0.0390
		(0.0403)			(0.0398)
3.trade_agreements		0.0784*			0.0632
		(0.0456)			(0.0466)
2.ExporIndustrial_zones		0.219***			0.237***
		(0.0522)			(0.0492)
3.ExporIndustrial_zones		0.232***			0.247***
		(0.0560)			(0.0544)
2.labour_cost			-0.0405		-0.112
			(0.0923)		(0.0866)
3.labour_cost			0.0380		-0.0521
			(0.0929)		(0.0866)
2.skilled_labour			-0.111*		-0.155***
			(0.0580)		(0.0568)
3.skilled_labour			-0.177***		-0.237***
			(0.0605)		(0.0594)
2.vietnam_suppliers			0.0272		0.0378
			(0.0421)		(0.0417)
3.vietnam_suppliers			0.0569		0.0560
			(0.0485)		(0.0473)
2.raw_materials			-0.0704**		-0.0840***
			(0.0298)		(0.0306)
3.raw_materials			-0.165***		-0.176***
			(0.0361)		(0.0372)
2.incentives				0.0858**	0.104***
				(0.0370)	(0.0361)
3.incentives				0.136***	0.161***
				(0.0415)	(0.0407)
2.assets_acquisitions				-0.0458*	-0.0489*
				(0.0278)	(0.0273)
3.assets_acquisitions				-0.00861	-0.00923
				(0.0553)	(0.0517)

2.jv_partner					-0.0244	-0.00939
					(0.0298)	(0.0295)
3.jv_partner					-0.0945**	-0.0490
					(0.0444)	(0.0413)
2.taxation					-0.0881	-0.125
					(0.0887)	(0.0821)
3.taxation					-0.0635	-0.106
					(0.0887)	(0.0839)
Observations	1,408	1,407	1,408	1,408	1,407	1,406

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Model (1) is the base model that contains only the dependent variable and five variables: agefirm, size, manuf_intensity, region, and tech_classification. Agefirm, size, manuf_intensity are the firm's characteristic variables, and the other two control for the cluster effect. From the result, we can see that all these variables are significant. The variable agefirm has negative sign, size and manuf_intensity have the positive signs. It means that FIEs tend to be young, bigger, and have more focus on manufacturing activity. The government policy partly influences the age of the firm. Vietnam has just opened and attracted foreign investment for 30 years; it is one reason why FIEs are younger than domestic firms. Tech_classification variable is significant and has a negative sign. There are not too many foreign firms that operate in low-tech and medium-tech manufacturing. In the term of the region, the South East region is significant and has a positive sign. Conversely, the North Central and Central coastal areas region is insignificant and has a negative sign. It shows that there is the cluster effect, and the South East region attracts most of the FIEs. As we can see from the table 10 below, nearly 80% of FIEs operate in South East region and a total of only 20% in the left two regions.

Table 10 Region distribution of firms

Region	FIEs		Local firms	
	Frequency	Percentage	Frequency	Percentage
Red River Delta	157	18.89	209	36.16
North Central and Central coastal areas	14	1.68	17	2.94
South East	660	79.42	352	60.90
Total	831	100	578	100

According to Richard Williams (2019), marginal effects are computed differently for discrete and continuous variables. Marginal effects for continuous variables seem much less useful and more challenging to interpret than marginal effects for discrete variables. For continuous independent variables, the marginal effect measures the instantaneous rate of change. Therefore, we only compare the magnitude between continuous variables to see which variable has the most impact. The firm's size has the largest proportion with 0.09, followed by the manufacturing intensity, 0.05, and the last is the firm's age with 0.02.

Model (2) includes the group of variables about general conditions obstacles: the economic stability, government support, quality of life, personal security are significant. Otherwise, politics stability, infrastructures, legal framework are insignificant. According to Arbatli (2011), domestic conflict events and political instability are found to have significant adverse effects on FDI. The economic stability and quality of life have a negative sign and the highest marginal effects mean that the local firms value these factors higher than the foreign firms. It is contrary to studies of Mottaleb and Kalirajan (2010) and Frenkel (2004). They conclude that the stable business environment plays a significant role

in attracting FDI. Hussain and Kimuli (2012) also state that a stable macroeconomic environment promotes FDI. On the other hand, foreign firms prefer other factors relating to government support, personal security. With the personal security, Tang et al. (2014) have the same result. They find out that the social uncertainty has a negative impact, and the effect of social uncertainty is found to be greater than macroeconomic uncertainty.

Model (3) adds the group of market conditions obstacles. As expected, the variable of local market is significant and has a negative sign. Trade agreements and industrial zones are significant and have a positive sign. AFTA is insignificant. Hoa and Lin (2016), Karim et al. (2019) show that market size is statistically significant and positively influences inward FDI. In the case of Vietnam, local firms would like to focus on the local market, and foreign firms prefer to manufacture in Vietnam and then export to other foreign markets. This result corresponds to the significance of bilateral trade agreements and the availability of industrial zones in the model (3). Demirhan and Masca (2008), Mottaleb and Kalirajan (2010), Liargovas, and Skandalis (2012) find that trade openness is the key factor in attracting FDI in developing countries. Trade agreements and industrial zones contribute to strengthening the integration of Vietnam's economy with the world. They promote the export operation of the firms and draw vertical FDI.

In the Model (4) for the Vietnamese resources obstacles, only skilled labor and raw materials are significant and have a negative sign. Noorbakhsh et al. (2001), Cieślik and Anh (2016), Le and Tran-Nam (2018) find that the availability of skilled labor force and labor cost are essential for attracting FDI. Hoang (2006) and Kinda (2010), on the other side, conclude that there is no strong connection between FDI and human capital quality,

and the skilled workers variable has a negative sign. This variable has a controversial conclusion. It is quite confusing that foreign firms do not value this factor much. They may only need regular labor to reduce the labor cost and send other skilled labor from the headquarter to Vietnam to keep the secret of technology.

The other obstacles, incentive package, acquisition of assets, presence of joint venture partner and taxation, will be included in Model (5). The investment incentives variable is significant and very important with foreign firms. This factor contributes mostly to the decision to invest in Vietnam. The other variables, including assets acquisitions and taxation are not significant. The presence of joint-venture partner is slightly significant and has a negative sign. It means that most foreign firms do not look for a partner in Vietnam; instead, they want to have 100% ownership.

Model (6) includes all explanatory variables to take advantage of avoiding potential confounding effects due to statistical association among covariates. Comparing with five previous models, we can see that there is no change in the signs of all variables. However, the significances of some variables are different from the sub-model. AFTA becomes significant, and vice versa, the trade agreement, and joint-venture partner are insignificant. Based on the magnitude of marginal effects, the foreign firms pay the most attention to the government support, personal security, incentives, and the export industrial zones. Conversely, the local firms focus most on the economic stability, quality of life, skilled labor, local market, and raw materials.

In conclusion, the empirical outcomes show that foreign-invested enterprises tend to be young, larger, and have more percentage of sales comes from the manufacturing

industry. Economic stability, quality of life, Vietnamese market, availability of skilled labor, raw materials and natural resources, acquisition of assets are statistically significant and have a negative sign. Government agency support services, personal security, AFTA, availability of industrial zones, and incentive package have a positive sign and are significant. Otherwise, political stability, quality of infrastructure, country legal framework, ASEAN free trade area, trade agreements, presence of joint venture partners, labor costs, Vietnam-based suppliers, and taxation are statistically insignificant.

3.4 Diagnostics of Regression

3.4.1 Descriptive Statistics

Table 11 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fdi	1408	0.589	0.492	0	1
agefirm	1408	11.546	11.044	0	111
size	1408	5.759	1.045	2.197225	11.15059
manuf_intensity	1408	4.479	0.634	0	4.60517
region	1408	2.459	0.876	1	3
tech_classification	1408	3.168	0.857	2	4
polit_stability	1408	2.543	0.527	1	3
econ_stability	1408	2.585	0.517	1	3
infrastructures	1407	2.373	0.537	1	3
gov_support	1408	2.308	0.559	1	3
legal_framework	1408	2.387	0.539	1	3
life_quality	1408	2.231	0.543	1	3
person_security	1408	2.348	0.564	1	3
local_market	1408	2.274	0.661	1	3
AFTA	1408	2.085	0.639	1	3
trade_agreements	1408	2.131	0.601	1	3
ExporIndustrial_zones	1408	2.196	0.551	1	3
labour_cost	1408	2.473	0.538	1	3
skilled_labor	1408	2.405	0.561	1	3
vietnam_suppliers	1408	2.158	0.570	1	3
raw_materials	1408	2.051	0.706	1	3
incentives	1408	2.099	0.658	1	3

assets_acquisitions	1408	1.528	0.625	1	3
jv_partner	1408	1.86	0.666	1	3
taxation	1407	2.492	0.534	1	3

Table 11 shows that all variables have a normal mean and small standard deviation, except for agefirm. There is a sign of outlier in the variable agefirm, which has a number of 111 and makes the standard deviation quite large.

3.4.2 Correlation Analysis

We use correlation analysis to determine if two variables are significantly related. A correlation analysis provides information on the strength and direction of the linear relationship between two variables. Table 12 below is the correlation matrix of all variables that we include in model (6). We can see that all the correlation coefficients are below 0.5, which mean that there are no highly relations between each two variables.

Table 12 Correlation analysis

	fdi	agefirm	size	manuf	region	tech	polit_sta	econ_sta	infras	gov_sp	legal_frw	life_qual	prn_secure	local_mrk	AFTA	trade_agr	ExInd_zone	lab_cost	skilled_lab	vn_supp	raw_ma	incentive	assets_ac	jv_partne	taxation
fdi	1.00	-0.36	0.13	0.09	0.20	0.03	0.03	-0.06	0.03	0.15	0.03	-0.08	0.07	-0.20	-0.01	0.08	0.13	0.07	-0.07	-0.03	-0.17	0.06	-0.07	-0.07	0.02
agefirm	-0.36	1.00	0.17	-0.01	-0.21	-0.12	0.00	0.05	0.01	-0.05	0.00	0.04	-0.05	0.14	0.04	-0.05	-0.10	-0.06	-0.01	0.00	0.08	0.00	0.06	0.02	0.00
size	0.13	0.17	1.00	0.05	0.03	0.05	0.00	-0.02	0.03	0.05	0.03	0.02	-0.01	-0.12	-0.03	0.03	-0.02	0.07	0.00	0.01	-0.04	-0.01	0.00	-0.08	-0.02
manuf_int	0.09	-0.01	0.05	1.00	0.07	0.00	0.04	0.06	0.08	0.04	0.00	-0.03	0.01	0.03	0.07	0.05	0.06	0.03	-0.02	0.07	0.03	0.02	-0.02	0.01	0.03
region	0.20	-0.21	0.03	0.07	1.00	0.18	0.00	-0.04	-0.04	-0.02	0.00	-0.01	-0.02	-0.12	-0.03	0.00	-0.03	-0.02	-0.05	-0.05	-0.09	-0.04	-0.16	-0.10	-0.02
tech	0.03	-0.12	0.05	0.00	0.18	1.00	-0.02	-0.03	0.00	0.04	0.01	0.02	0.00	-0.09	-0.02	0.07	-0.01	0.07	0.06	0.07	0.08	-0.02	0.01	-0.01	-0.01
polit_sta	0.03	0.00	0.00	0.04	0.00	-0.02	1.00	0.44	0.32	0.24	0.32	0.18	0.24	0.16	0.19	0.20	0.21	0.20	0.15	0.10	0.10	0.17	0.07	0.03	0.23
econ_sta	-0.06	0.05	-0.02	0.06	-0.04	-0.03	0.44	1.00	0.40	0.25	0.26	0.28	0.24	0.28	0.18	0.20	0.22	0.23	0.22	0.22	0.17	0.22	0.08	0.11	0.24
infras	0.03	0.01	0.03	0.08	-0.04	0.00	0.32	0.40	1.00	0.31	0.29	0.29	0.26	0.14	0.20	0.25	0.24	0.21	0.23	0.20	0.14	0.21	0.10	0.10	0.24
gov_sp	0.15	-0.05	0.05	0.04	-0.02	0.04	0.24	0.25	0.31	1.00	0.36	0.25	0.31	0.13	0.20	0.29	0.32	0.20	0.18	0.21	0.18	0.25	0.14	0.13	0.26
legal_frw	0.03	0.00	0.03	0.00	0.00	0.01	0.32	0.26	0.29	0.36	1.00	0.30	0.32	0.20	0.26	0.34	0.30	0.21	0.22	0.22	0.17	0.20	0.15	0.15	0.28
life_qual	-0.08	0.04	0.02	-0.03	-0.01	0.02	0.18	0.28	0.29	0.25	0.30	1.00	0.48	0.25	0.25	0.35	0.29	0.22	0.27	0.26	0.27	0.19	0.16	0.19	0.18
prn_secure	0.07	-0.05	-0.01	0.01	-0.02	0.00	0.24	0.24	0.26	0.31	0.32	0.48	1.00	0.22	0.28	0.33	0.32	0.24	0.25	0.21	0.22	0.27	0.20	0.21	0.25
local_mrk	-0.20	0.14	-0.12	0.03	-0.12	-0.09	0.16	0.28	0.14	0.13	0.20	0.25	0.22	1.00	0.39	0.16	0.13	0.11	0.18	0.24	0.29	0.22	0.20	0.21	0.21
AFTA	-0.01	0.04	-0.03	0.07	-0.03	-0.02	0.19	0.18	0.20	0.20	0.26	0.25	0.28	0.39	1.00	0.42	0.29	0.15	0.20	0.23	0.33	0.23	0.29	0.33	0.25
trade_agr	0.08	-0.05	0.03	0.05	0.00	0.07	0.20	0.20	0.25	0.29	0.34	0.35	0.33	0.16	0.42	1.00	0.40	0.22	0.21	0.22	0.21	0.27	0.24	0.22	0.26
ExInd_zones	0.13	-0.10	-0.02	0.06	-0.03	-0.01	0.21	0.22	0.24	0.32	0.30	0.29	0.32	0.13	0.29	0.40	1.00	0.21	0.23	0.24	0.18	0.23	0.20	0.18	0.20
lab_cost	0.07	-0.06	0.07	0.03	-0.02	0.07	0.20	0.23	0.21	0.20	0.21	0.22	0.24	0.11	0.15	0.22	0.21	1.00	0.42	0.31	0.13	0.22	0.08	0.11	0.32
skilled_lab	-0.07	-0.01	0.00	-0.02	-0.05	0.06	0.15	0.22	0.23	0.18	0.22	0.27	0.25	0.18	0.20	0.21	0.23	0.42	1.00	0.38	0.24	0.27	0.13	0.21	0.31
vn_supp	-0.03	0.00	0.01	0.07	-0.05	0.07	0.10	0.22	0.20	0.21	0.22	0.26	0.21	0.24	0.23	0.22	0.24	0.31	0.38	1.00	0.37	0.26	0.21	0.24	0.25
raw_materials	-0.17	0.08	-0.04	0.03	-0.09	0.08	0.10	0.17	0.14	0.18	0.17	0.27	0.22	0.29	0.33	0.21	0.18	0.13	0.24	0.37	1.00	0.25	0.32	0.26	0.18
incentives	0.06	0.00	-0.01	0.02	-0.04	-0.02	0.17	0.22	0.21	0.25	0.20	0.19	0.27	0.22	0.23	0.27	0.23	0.22	0.27	0.26	0.25	1.00	0.30	0.31	0.33
assets_acq	-0.07	0.06	0.00	-0.02	-0.16	0.01	0.07	0.08	0.10	0.14	0.15	0.16	0.20	0.20	0.29	0.24	0.20	0.08	0.13	0.21	0.32	0.30	1.00	0.45	0.10
jv_partner	-0.07	0.02	-0.08	0.01	-0.10	-0.01	0.03	0.11	0.10	0.13	0.15	0.19	0.21	0.21	0.33	0.22	0.18	0.11	0.21	0.24	0.26	0.31	0.45	1.00	0.22
taxation	0.02	0.00	-0.02	0.03	-0.02	-0.01	0.23	0.24	0.24	0.26	0.28	0.18	0.25	0.21	0.25	0.26	0.20	0.32	0.31	0.25	0.18	0.33	0.10	0.22	1.00

3.4.3 Specification Error

We will use linktest to check that if the model is properly specified. Linktest uses the linear predicted value (*_hat*) and linear predicted value squared (*_hatsq*) as the predictors to rebuild the model. The variable *_hat* should be a statistically significant predictor, since it is the predicted value from the model. The model is completely mis-specified when the variable *_hat* is statistically insignificant. On the other hand, if our model is properly specified, variable *_hatsq* does not have much predictive power except by chance. Therefore, if *_hatsq* is significant, then the linktest is significant and it means that we may have omitted relevant variables or our function is not specified correctly.

Table 13 Specification error test (linktest)

Logistic regression — Number of obs = 1406
LR chi2(2) = 504.20
Prob > chi2 = 0.0000
Log likelihood = -699.75974 — Pseudo R2 = 0.2648

fdi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_hat	.9931284	.0603984	16.44	0.000	.8747498	1.111507
_hatsq	.0289177	.0295623	0.98	0.328	-.0290233	.0868587
_cons	-.0345571	.077791	-0.44	0.657	-.1870248	.1179105

As we can see from the table 13, the variable *_hat* is statistically significant. The variable *_hatsq* is statistically insignificant and the linktest is also insignificant. We can conclude that the model is properly specified.

3.4.4 Goodness-of-Fit

The commonly used test of model fit is the Hosmer and Lemeshow's goodness-of-fit test. The idea behind the Hosmer and Lemeshow's goodness-of-fit test is that the predicted frequency and observed frequency should match closely, and that the more closely they match, the better the fit. The Hosmer-Lemeshow goodness-of-fit statistic is computed as the Pearson chi-square from the contingency table of observed frequencies and expected frequencies. Similar to a test of association of a two-way table, a good fit as measured by Hosmer and Lemeshow's test will yield a large p-value.

Table 14 Hosmer and Lemeshow's goodness-of-fit test

Logistic model for fdi, goodness-of-fit test

(Table collapsed on quantiles of estimated probabilities)

Group	Prob	Obs_1	Exp_1	Obs_0	Exp_0	Total
1	0.1469	8	8.0	133	133.0	141
2	0.3233	34	34.3	107	106.7	141
3	0.4644	53	56.0	87	84.0	140
4	0.5626	73	73.2	68	67.8	141
5	0.6426	81	84.6	59	55.4	140
6	0.7128	102	95.6	39	45.4	141
7	0.7764	103	105.0	38	36.0	141
8	0.8463	120	113.3	20	26.7	140
9	0.9234	121	124.8	20	16.2	141
10	0.9982	134	134.2	6	5.8	140

```
number of observations =      1406
      number of groups =        10
Hosmer-Lemeshow chi2(8) =      5.19
            Prob > chi2 =      0.7374
```

With a p-value of 0.74, we can say that Hosmer and Lemeshow's goodness-of-fit test indicates that our model fits the data well.

CHAPTER 4

DETERMINANTS OF LABOUR PRODUCTIVY AT FIRM-LEVEL

4.1 Motivation

Although Viet Nam's economy has been growing intensively over the last two decades, its labor productivity is perceived to have remained low (Ngoc and Van Phuoc, 2017). Therefore, enterprises need to improve their competitiveness and contribute, through their exports and formal training for employees, to an improvement in the economy's labor productivity. The following section takes this assertion as the central hypothesis in analyzing whether exports and formal training drive labor productivity gains.

4.2 Descriptive Analysis

4.2.1 Export Firms Distribution

Table 15 Export and Non-export Enterprises

	Foreign Invested Firms		**Domestic Firms**	
	Frequency	Percentage	Frequency	Percentage
Export firms	717	91.57	268	59.96
Non-export firms	66	8.43	179	40.04
Total	**783**	**100**	**447**	**100**

As we can see in table 15, there are much more export FIEs than domestic export firms. The number of export FIEs is nearly double the number of domestic export firms. Within the FIEs, the percentage of foreign firms with more than 10% of sales from export

activities is 91.57%. Compared to the domestic firms, only 59.96% of local enterprises have more than 10% export sales. However, it shows that the difference is not too large and Vietnamese firms are also promoting the export activity to utilize the advantages of the international commercial's openness.

4.2.2 Formal Internal/External Training to Employees

72.1% of FIEs do not provide internal/external training to their employees. It seems not good for the Vietnam economy because it does not create many opportunities to improve the domestic labor force's capability. In the case of domestic firms, the result is similar, with 59.79% of domestic respondents did not spend on internal/external training. These figures show the real fact about the possibility of improving labor quality and labor spill-over. All firms only focus on taking advantage of low-labor cost without investing in enhancing quality (see Table 16).

Table 16 Internal and external training

	Foreign Invested Firms		**Domestic Firms**	
	Frequency	Percentage	Frequency	Percentage
Yes	231	27.90	232	40.21
No	597	72.10	345	59.79
Total	**828**	**100**	**577**	**100**

4.3 Regression Analysis: the Determinants of Labor Productivity

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:

$$Labour\ Productivity = f(X)$$

where the dependent variable is the labour productivity. The labor productivity is measured by the ratio of the value added of the firm and the number of full-time employees.

Independent variables include:

1. Age of the firm: the number of years since its establishment
2. Capital intensity: the total fixed asset value (book value) divided by the number of employees
3. Skilled labor: a proxy for the quality of labor used by firms measured as the ratio of technical and management employees to total full-time employees
4. Region: this variable will contain three main economy regions: Red River Delta, North Central, and Central coastal areas and South East.
5. Technology classification: the variable will be classified into three types based on the manufacturing sector: High-tech manufacturing, Medium-tech manufacturing, and Low-tech manufacturing
6. Export intensity: the total exports divided by the total sales
7. Formal training for employees: indicates whether the responding company provides formal internal/external training to its employees

Table 16 provides a list of all variables used in the regression analysis.

Table 17 List of all variables

Variable	Description
Labour_productivity	The labour productivity of the firm
Agefirm	The age of the firm
Capital_intensity	The capital intensity of the firm
Skilled_labour	A proxy for the quality of labour
Region	The region that the firm locate in (1 = Red River Delta, 2 = North Central and Central coastal areas, 3 = South East)
Tech_classification	The business sector of the firm (2 = High-tech manufacturing, 3 = Medium-tech manufacturing, 4 = Low-tech manufacturing)
Export_intensity	The export intensity of the firm
formEmpTrain	Dummy variable, equal 1 if the company provides internal/external training to its employees

We estimated the model using OLS with a robust standard to overcome possible heteroskedasticity for cross-sectional data for the sample. However, 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 labor productivity.

Table 18 Descriptive Statistics (FIEs sample)

Variable	Obs	Mean	Std. Dev.	Min	Max
Labour_productivity	657	8.774	1.603	3.463	18.344
Agefirm	831	8.256	5.101	0	57
Capital_intensity	800	9.201	1.790	-3.460	17.726
Skilled_labor	831	2.174	0.849	-1.635	4.536
Region	831	2.605	0.786	1	3
Tech_classification	831	3.193	0.858	2	4
Export_intensity	718	3.789	1.521	-8.057	4.605
formEmpTrain	828	0.279	0.449	0	1

In table 18, we can see that the mean and standard deviation of all variables are normal. However, the variable capital intensity, skilled labor and export intensity have negative values. We will have to drop these observations when run regression.

The first regression is only for foreign invested enterprises and observations with missing variables are removed from the sample.

Table 19 Regression I: Determinants of labor productivity at firm-level (FIEs sample)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
agefirm	0.0428***	0.0432***	0.0431***	0.0240**	0.0410***	0.0220*
	(0.0109)	(0.0110)	(0.0109)	(0.0122)	(0.0110)	(0.0125)
capital_intensity	0.374***	0.373***	0.366***	0.373***	0.364***	0.368***
	(0.0678)	(0.0691)	(0.0732)	(0.0786)	(0.0705)	(0.0857)
skilled_labour	0.308***	0.311***	0.299***	0.253***	0.304***	0.248***
	(0.0686)	(0.0685)	(0.0666)	(0.0786)	(0.0669)	(0.0742)
2.region		-0.649***				-0.360*
		(0.188)				(0.205)
3.region		0.0361				0.253*
		(0.122)				(0.136)
3.tech_classification			-0.154			-0.203
			(0.125)			(0.139)
4.tech_classification			-0.184			-0.0897
			(0.137)			(0.143)
export_intensity				-0.202**		-0.201**
				(0.0847)		(0.0854)
1.formEmpTrain					0.164	0.217*
					(0.126)	(0.131)
Constant	4.277***	4.267***	4.490***	5.294***	4.341***	5.196***
	(0.546)	(0.594)	(0.634)	(0.860)	(0.560)	(0.905)
Observations	637	637	637	545	635	544
R-squared	0.285	0.290	0.288	0.342	0.285	0.351

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The result in the first model suggests that the age of the firm, the capital intensity and the skilled labor are all significant and have the positive sign. The coefficients of capital intensity and skilled labor are much higher than age of the firm, with 0.374 and 0.308 respectively. The coefficient of age of the firm is very small, only 0.0428. The region variable is significant, however, there is the difference of the sign between each region. The North Central and Central coastal has the negative sign, meanwhile the South East region has the positive sign. The impact of technology classification is insignificant and reduce the average of the labor productivity.

The estimation shows that the export firms reduce the labor productivity of FIEs in this survey. The export intensity variable is significant and has the negative sign, with the coefficient of -0.649. Nguyen, H., Le, T., Dang, T., Nguyen, T. and Le, V., (2020) also conclude that non-exporting firms have higher labor productivity than export firms based on the panel data in Vietnam from 2010 to 2016.

Meanwhile, as expected, the formal employees training impacts positively on the firm productivity, but is insignificant in model (5). It is only significant in the model (6) which include all other variables.

All independent variables only explain 35.1% of changes in the labor productivity of FIEs. Ngoc, P.T.B. and Van Phuoc, N.H., (2017) find that expense on labor is the most important factor affecting labor productivity of firms in all sectors and the key drivers for labor productivity.

The second regression is for two sample: foreign invested enterprises and domestic firms sample.

Table 20 Regression II: Determinants of labor productivity at firm-level

(FIEs and domestic firms sample)

VARIABLES	(1) FIE	(2) Domestic Firm
agefirm	0.0220*	0.00356
	(0.0125)	(0.00595)
capital_intensity	0.368***	0.403***
	(0.0857)	(0.0703)
skilled_labor	0.248***	0.122
	(0.0742)	(0.0957)
2.region	-0.360*	-0.564
	(0.205)	(0.439)
3.region	0.253*	0.248
	(0.136)	(0.167)
3.tech_classification	-0.203	-0.152
	(0.139)	(0.217)
4.tech_classification	-0.0897	-0.293
	(0.143)	(0.190)
export_intensity	-0.201**	-0.109***
	(0.0854)	(0.0384)
1.formEmpTrain	0.217*	0.187
	(0.131)	(0.147)
Constant	5.196***	4.708***
	(0.905)	(0.705)
Observations	544	228
R-squared	0.351	0.316

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The difference between two models is that the age of the firm, skilled labor, region and formal employees training all become insignificant. However, the sign of all variables remains the same as the model of FIEs sample. The impact of export intensity on the labor productivity of domestic firms is less than of FIEs, with -0.109 comparing to -0.201.

In conclusion, the age of the firm, the capital intensity and the skilled labor are the determinants of the average labor productivity. FDI has an impact on increasing the overall

labor 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. Another positive sign is the impact of formal employees training on labor productivity. It shows the opportunity to increase the quality of Vietnamese labor through the attraction of foreign investment. However, the low labor productivity of export enterprises can be a major challenge to a highly open economy in transition, such as Viet Nam's.

CHAPTER 5

THE DETERMINANTS OF FDI AT FIRM LEVEL: A PILOT STUDY

5.1 Motivation, Questionnaire and Data Collection

With the desire to find out the difference in investors' perspectives on the business climate in Vietnam after nine years of change and development, the researcher would like to do an interview with FDI firms in the manufacturing industry to collect the information. The questionnaires of the survey are based on the UNIDO survey to have the same standard to the comparison. Besides, the author would like to include a few more questions relating to investment incentives, technology and property rights, which are the emerging important factors in the era of Internet 4.0, to have a broader view and may provide the methods for policymakers to change and develop in accordance with the investors' point of view.

In 2016, Vietnam had 13448 FDI companies which are operating in the economy. All firms have unequal distribution in four main economic regions: Red river delta, North central and Central coaster areas, South East, and Mekong River Delta. Two main regions attract most of the firms are Red river delta and South East with a distribution of 32.78% and 56.28%, respectively. The left regions account for only 10.94% in total. In the manufacturing industry, the number of FDI enterprises is 7441, occupies 55.33% of all firms.

Table 21 The FDI firms distribution by main economic regions

Main economic regions	Number of firms	Distribution (%)
Red river delta	4408	32.78
North central and Central coaster areas	772	5.74
South East	7568	56.28
Mekong River Delta	700	5.2
Total	**13448**	**100**

Due to the time and budget constraint, the researcher only plans to interview 1% of all FDI enterprises in the manufacturing industry, which is 75 firms and follow the distribution above in four main economic regions. However, there are many difficulties in practice in the position of an independent researcher. Many firms decline to interview and even do not reply because they do not want to reveal the number and do not have the obligations and responsibilities to take part in. By the personal relationship, the researcher tries to connect and interview only 65 enterprises (uneven distribution), which is not enough to do the statistical analysis. The only possible way to use this data is to do the descriptive analysis to get information about the investors' perspectives.

Table 22 The dataset distribution of firms by main economic regions

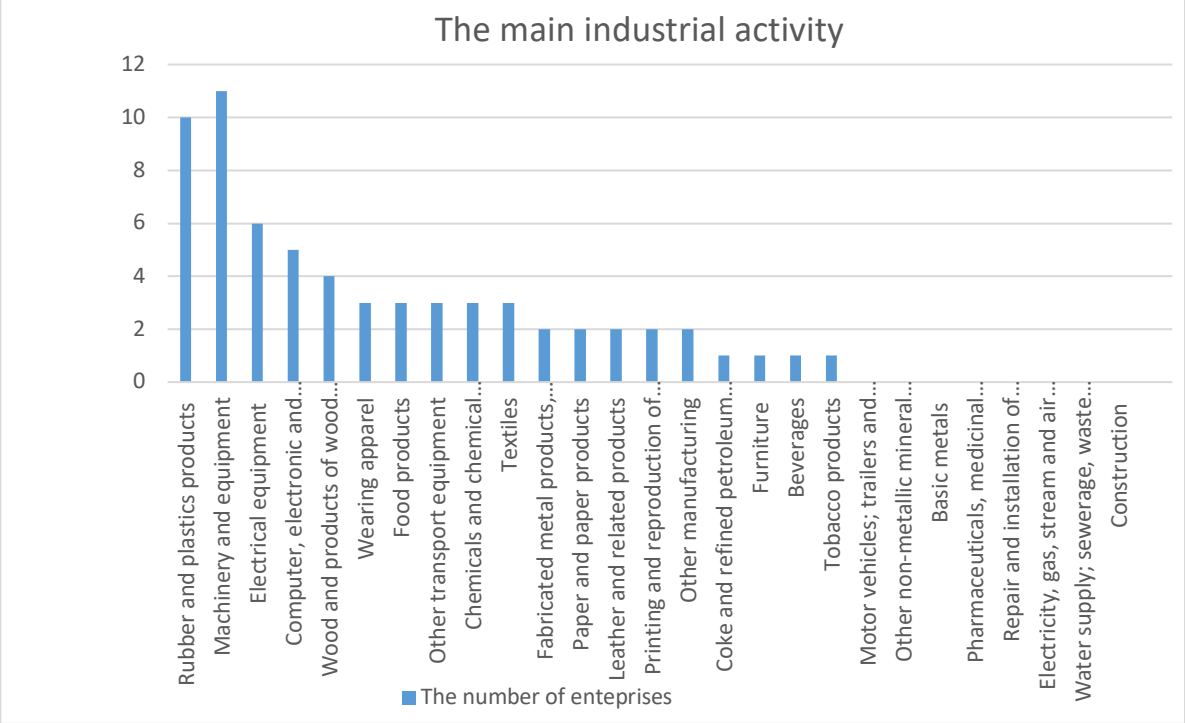
Main economic regions	Expected	In practical
Red river delta	25	53
North central and Central coaster areas	4	12
South East	42	0
Mekong River Delta	4	0
Total	**75**	**65**

5.2 Descriptive Analysis

5.2.1 The Main Business Activity of the Enterprises

The data contains a variety of the main industrial activity. There are two activities that have most of the firms operate in: Rubber and plastics products and Machinery and equipment, with 10 and 11 firms, respectively. The three following activities are Computer, electronic and optical products, Electrical equipment and Wood and products of wood and cork, except furniture. This dataset contains a large proportion of foreign firms operating in the electronics industry and the roughly equivalent ratio among other activities (see Figure 8).

Figure 8 The main industrial activity of the enterprises



5.2.2 Geographical distribution

Most of the firms concentrate on the Bac Ninh province (73.85%), which has many industrial areas and policies to attract foreign investment. Da Nang contains 18.46%, and Hanoi has only 7.69%. As indicated above, all the firms are interviewed through the personal connection, so that the researcher cannot find a way to do the interview in other provinces. However, Bac Ninh, Da Nang, and Hanoi are all major key economic regions in attracting foreign investment with many industrial zones (see Table 23).

Table 23 The firms distribution by province

Province	**All enterprises**	
	Frequency	**Percentage**
Hanoi	5	7.69
Bac Ninh	48	73.85
Da Nang	12	18.46
Da Nang	0	0
Binh Duong	0	0
HCMC	0	0
Total	**65**	**100**

5.2.3 Investment incentives

From the UNIDO dataset, we find out that the investment incentive is the critical factor in investors' perspectives. Through this survey, we would like to dig deeper on this factor by listing all types of investment incentives that the government can provide, to investigate the preference of foreign investors.

95.4% of all firms prefer Tax exemptions and other fiscal incentives, and only 4.6% choose Dedicated physical infrastructure. It is very common when a foreign firm would like to invest abroad, and they would want to reduce the tax as much as possible to get the advantage. Furthermore, it is due to the policies of the Vietnam government when they call for investment. They emphasize on reducing taxes to get the attention from investors (see Table 24).

Table 24 The types of investment incentives

Investment incentives	Frequency	Percentage
Capital grants	0	0
Tax exemptions and other fiscal incentives	62	95.4
Grants for hiring and/or training of employees	0	0
Dedicated physical infrastructure	3	4.6
Other	0	0
Total	**65**	**100**

5.2.4 Investors Motivation

With the same table as the UNIDO's analysis, we can see the change of motivation through 9 years of development. In the UNIDO dataset, to access the Vietnamese market and to lower production costs are the two main reasons to invest in Vietnam with a total percentage of 85.01%. However, in the pilot study, lower production costs (46.15%) is the only main motivation when foreign investor plans to invest in Vietnam. Along with tax reduction, lower cost is also an important factor for getting the advantage when a foreign

firm operates abroad. The factor of accessing the Vietnamese market decreases to 23.08%, and the factor of benefiting from trade agreements increase to 15.38%. The difference in motivation shows the change of interest when foreign investors would like to come to Vietnam. They are attracted by the trade agreements, which make a better business environment for export (see Table 25).

Table 25 Main motivation for investment

Main motivation to invest in Vietnam	Freq.	Percent
To access the Vietnamese market	15	23.08
To lower production costs	30	46.15
To access natural resources and inputs	5	7.69
To join a specific partner	5	7.69
To export back to home country	0	0
To benefit from trade agreement(s)	10	15.38
Personal reasons	0	0
Total	**65**	**100**

5.2.5 Applying Technology for Manufacturing and the Investment for R&D

With the wave of the Internet 4.0, many robots and machines will replace human labor in the manufacturing process. Which firms can utilize and apply technology in their production chain, they will get a huge, comparable advantage. The proportion of 81.5% provides evidence for this statement. However, the percentage of investment in R&D is just average. The reason might come from the structure of FDI firms in Vietnam. Most enterprises choose green-field investment, which means that they will invest in R&D in their home country and only transfer and apply technology in Vietnam. This situation will

create a disadvantage to Vietnam because Vietnam cannot get the knowledge spill-over effect from foreign countries and cannot increase technological competence (see Table 26).

Table 26 Apply technology and R&D

	Apply technology for manufacturing		**Investment for R&D**	
Yes	53	81.5%	27	41.5%
No	12	18.5%	38	58.5%
Total	**65**	**100%**	**65**	**100%**

5.2.6 Business Climate in Vietnam

In the UNIDO dataset, business climate factors have a nearly similar proportion between options “Important” and “Very important”. Meanwhile, in the pilot study, many factors have a high ratio in the option “Very important”. Vietnamese market, Raw materials, and natural resources and the Presence of Joint Venture partners are three factors that have valuation as “Not important” from the investors. It shows that most investors are not interested in these factors. They are just seeking a stable environment to manufacture and then export, lower labor cost, and tax reduction to get advantages. Especially, Incentive package and Intellectual property rights have 100% of “Very important”. These factors provide the interest and the concern of foreign investors. They are interested in incentive packages as tax reduction and infrastructure when they invest in Vietnam, and they also have the concern of losing their secret technology when operating abroad. The factor relates to skilled labor is the interest of the researcher when doing this survey. It has 92.3% “Very important” which means as the increase of technology, the foreign firms are starting to pay

attention to the quality workforce and provide more internal and external training. It is the opportunity to improve the quality of Vietnamese labor and get the benefit from foreign capital flows (see Table 27).

Table 27 Business climate (in percentage)

Business climate in Vietnam	Importance of business climate factor		
	Not important	**Important**	**Very important**
Political stability	0	19.68	80.32
Economic stability	0	14.32	85.68
Quality of infrastructure	0	25.55	74.45
Government agency support services	1.3	75.15	23.55
Country legal framework	0	39.02	60.98
Quality of life	0	78.23	21.77
Personal security	0	9.21	90.79
Bilateral trade agreements	0	18.68	81.32
Availability of Export Processing Zones / Industrial Zones	0	14.09	85.91
Governance and enforcement of rule of law	15.21	60.68	24.11
Vietnamese market	31.45	48.49	20.06
Labor costs	0	5.13	94.87
Availability of skilled labor	0	7.7	92.3
Vietnam-based suppliers	4.62	64.63	30.75
Raw materials and natural resources	22.60	50.10	27.30
Incentive package	0	0	100
Presence of Joint Venture partner	30.27	44.35	25.38
Taxation	0	15.38	84.62
Intellectual property rights	0	0	100

CONCLUSIONS AND POLICY IMPLICATIONS

The objective of this study is to analyze FDI determinants at the firm-level for the manufacturing industry in Vietnam. The study uses the UNIDO dataset, which collected in 2010 in Vietnam. We will find out the differences in characteristics between FDI and local enterprises and then examine the business climate factors which affect the operations of foreign-invested firms. Another objective is to finding the importance of export and formal training about the labor productivity of the firm. And the last objective of the study is to investigate the difference in investors' perspectives on the business climate in Vietnam after nine years of change and development by conducting a pilot study with foreign companies in Vietnam's manufacturing industry. The study explores the key points that foreign investors are seeking in the business environment, including emerging factors in the era of technology 4.0, such as technology and intellectual property rights. A number of helpful conclusions can be drawn in this chapter.

Foreign-invested enterprises are younger, larger, and have more percentage of sales comes from the manufacturing industry. The significant business climate factors, that affect the attraction of foreign investment, include political stability, government agency support services, personal security, bilateral trade agreements, availability of industrial zones, and incentive package. There are some unexpected factors, including: economic stability,

quality of life. They have contrary signs, comparing to other empirical researchers, and need to do further research.

The age of the firm, the capital intensity and the skilled labor are the determinants of the average labor productivity. FDI has an impact on increasing the overall labor 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. Another positive sign is the impact of formal employees training on labor productivity. It shows the opportunity to increase the quality of Vietnamese labor through the attraction of foreign investment. However, the low labor productivity of export enterprises can be a major challenge to a highly open economy in transition, such as Viet Nam's.

About the emerging factors, technology, and intellectual property rights are mostly valued as very important in the investors' perspectives. However, there is only a conclusion from the descriptive analysis. For future research, we will need to collect more data to run empirical analysis to observe the significance of these variables with other control factors.

Based on the study results, a number of specific policy implications and recommendation can be presented for consideration by government:

- According to the export industrial zones' significance, the government should develop and expand these areas to attract more foreign investors. The analysis shows the high priority of FIEs in terms of export industrial zones. Furthermore, it can also promote the export-oriented policy and increase the capability of other domestic firms that operate in the same industry through spill-over effects.

- Government support is also the factor that foreign investors consider as very important. The government should improve administrative procedures and make it easier to apply. Besides, they should develop support channels to help foreign investors get more information about Vietnam's business climate investment.
- The government should provide investment incentives for a period to attract foreign firms in development-oriented industries, connecting with the export industrial zones, to have a clear direction for the economy.
- In the empirical results, the skilled labor is not paid attention by the investors. However, as the survey data in 2019, foreign companies highly value the labor force's capacity. Furthermore, from the analysis of labor productivity, formal internal and external employees training contributes positively to the increase in productivity. The government should also invest continuously in the education system and prepare advance labor force for a wave of investment shifts from China.
- In terms of technology and intellectual property rights, the government should investigate and tighten the control of intellectual property rights to ensure foreign investors' rights when bringing production and technology lines into Vietnam.

APPENDIX A

VIETNAM MANUFACTURING INDUSTRY SURVEY 2019

Date of interview: _____
Start time: _____
End time: _____

This survey has been designed and is being conducted by Msc. Do Hong Quan (PhD student in the Departments of Economics, Business and Statistics, University of Palermo, Italy), based on the Survey of United Nations Industrial Development Organization. The aim of this survey is to collect information from selected foreign investors in Vietnam in Manufacturing Industry.

This survey is being conducted at the firm-level to gather information on business performance and the perspectives of the investors about the business environment in Vietnam. The information will be analyzed to evaluate the factors which mainly affect the firm performance.

All information provided in this questionnaire will always remain strictly confidential and used only for research aims. No individual enterprise information will be published.

1. Name of the enterprise:

1.1 Name of the enterprise: ……

1.2 Starting year of business: …….

2. Address of the enterprise:

2.1 Hamlet (house number, road, street):……...

2.2 Commune/ward/town: …….

2.3 District: ……

2.4 Province: ……..

2.5 Telephone number: ……..

2.6 Fax number: ……

2.7 Email: ……..

3. Sampling region

Region	**[Select only one]**
1. Red River Delta	
2. North Central Area & Central Coastal Area	
3. South East	
4. Mekong River Delta	

4. Size of locality

Size of locality	**[Select only one]**
1. City with population over 1 million	
2. Over 250.000 to 1 million	
3. 50.000 to 250.000	
4. Less than 50.000	

5. Main business activity of the enterprise:

Main business activity		[Select only one]
1	Manufacture of food products	
2	Manufacture of beverages	
3	Manufacture of tobacco products	
4	Manufacture of textiles	
5	Manufacture of wearing apparel	
6	Manufacture of leather and related products	
7	Manufacture of wood and products of wood and cork, except furniture	
8	Manufacture of paper and paper products	
9	Printing and reproduction of recorded media	
10	Manufacture of coke and refined petroleum products	
11	Manufacture of chemicals and chemical products	
12	Manufacture of pharmaceuticals, medicinal chemical and botanical products	
13	Manufacture of rubber and plastics products	
14	Manufacture of other non-metallic mineral products	
15	Manufacture of basic metals	
16	Manufacture of fabricated metal products, except machinery and equipment	
17	Manufacture of computer, electronic and optical products	
18	Manufacture of electrical equipment	
19	Manufacture of machinery and equipment	
20	Manufacture of motor vehicles; trailers and semi-trailers	
21	Manufacture of other transport equipment	
22	Manufacture of furniture	
23	Other manufacturing	

6. **Is this enterprise a joint venture with a Vietnamese partner?**

Yes	
No	

7. **The current ownership structure of this enterprise:**

Ownership structure	**%**
1. Local ownership	
2. Foreign ownership	

8. **The principal investor comes from?**

……

9. **The total value of the original investment?**

…….

10. **The main motivation to invest in Vietnam?**

Motivation	**[Select only one]**
1. To access the Vietnamese market	
2. To lower production costs	
3. To access natural resources and inputs	
4. To join a specific partner	
5. To export back to home country	
6. To benefit from trade agreement(s)	
7. Other reason	

11. Labor (in the last financial year, 2018):

1. Total full-time employees	
- Production workers	
- Technical/supervisory employees	
- Managers	
- Clerical/administrative employees	
2. Average working hours per day	
3. Average working days per year	

12. Does this enterprise provide formal internal/external training to its employees?

Yes	
No	

13. Total expenditure on training in the last financial year, 2018?

……..

14. What was the average rate of utilization of the production capacity in the last financial year, 2018? …… %

15. What is the most important reason for underutilization of production capacity?

Reasons	**[Select only one]**
1. Low demand	
2. Unreliable supply of production inputs	
3. Unreliable electricity supply	
4. Lack of skilled human resources	
5. Lack of working capital/credit	
6. Restrictive labor market regulations	

7. Lack of necessary specialized technology/ machinery & spare-parts	
8. Others, please specify	

16. In the last financial year, 2018, what was:

1. Total turnover/sales	
2. Total profit before taxes	
3. Exports	
4. Total tax paid	
5. Total wage bill	
6. Value of production inputs	
7. Expenditure on advertising	

17. During the last three years, did the enterprise apply any new technology method in production chain to improve productivity?

Yes	
No	

18. During the last three years, did the enterprise spend on formal research and development activities?

Yes	
No	

19. During the last three years, did the enterprise receive any government assistance?

Yes	
No	

20. Which type of government assistance did the enterprise receive?

Government assistance	[Select only one]
1. Financial assistance	
2. Technical assistance	
3. Procedure assistance	
4. Other type, please specify …….	

21. Did the enterprise have to pay communication fees in order to obtain the assistance?

Yes	
No	

22. Did the enterprise receive any investment incentives?

Yes	
No	

23. Which investment incentives was critical?

Investment incentives	[Select only one]
1. Capital grants	
2. Tax exemptions and other fiscal incentives	
3. Grants for hiring and/or training of employees	
4. Dedicated physical infrastructure	
5. Other	

24. Does the enterprise import any of its inputs?

Yes	
No	

25. Does the enterprise outsource work to other enterprises in Vietnam, such as manufacturing products and/or business services?

Yes	
No	

26. What is the most important factor that influences the decision to procure inputs locally?

Factors	**[Select only one]**
1. Price	
2. Direct access to Vietnamese raw material sources	
3. Local content is encouraged and demanded by the market	
4. Easier logistics (e.g. proximity to suppliers and/or reduced inventory)	
5. Local supplier development as part of the enterprise's Corporate Social Responsibility Program	
6. Lower tariffs and other tax incentives	

27. What is the most important factor that influences the decision to cancel or not enter into domestic procurement contracts?

Factors	**[Select only one]**
1. Uncompetitive local prices	
2. Unsatisfactory product and/or service quality	
3. Unreliable delivery of orders and contract compliance	
4. Concerns over retention of intellectual property	
5. Inadequate managerial skills in existing/potential supplier enterprises	
6. Technology capacity of existing/potential supplier enterprises	

28. What is the most important barrier to increasing exports?

Barriers	**[Select only one]**
1. Utilities, electricity, telecommunication infrastructure	
2. Transport infrastructure excluding ports (e.g. roads, railways)	
3. Ports infrastructure (e.g. airports, harbors)	
4. Tariff barriers	
5. Cost and access to trade finance	
6. Bureaucracy and regulation (e.g. Export permits, border procedures)	
7. Lack of effective export support services	
8. Inadequate agencies in Vietnam to meet international certification standards (e.g. testing laboratories, certification boards, etc)	
9. Other barriers, please specify:	

29. Evaluate the following factors in the enterprise's decision to invest in Vietnam?

Factors	**Evaluation**		
1. Political stability	Not important	Important	Very important
2. Economic stability			
3. Quality of infrastructure			
4. Governmental support			
5. Legal framework			
6. Personal security			
7. Bilateral trade agreements			
8. Availability of export/ industrial zones			
9. Vietnamese market			

10. Labor cost			
11. Skilled labor			
12. Vietnam-based suppliers			
13. Raw material and natural resources			
14. Investment incentive			
15. Joint-venture partner			
16. Taxation			
17. Property rights			

30. Information of the respondent to this survey

- Name of the respondent: ……
- Position within the enterprise: ……...
- Contact address: ……
- Telephone: …….
- Email:…….

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