



VIETNAM CHAMBER OF COMMERCE AND INDUSTRY (VCCI)

Annual Vietnam Business Forum 2016

Hanoi, 5 December 2016

STRENGTHENING THE SPILLOVER EFFECTS OF FOREIGN INVESTED ENTERPRISES AND FDI ABSORPTIVE CAPACITY IN VIETNAM: SOME RECOMMENDATIONS FROM VCCI'S SURVEY OF FOREIGN INVESTED ENTERPRISES IN VIETNAM

Summary: Foreign Invested Enterprises (FIEs) are important contributors to employment, industrial output, and exports in Vietnam. Despite these gains, Vietnam has still not benefitted as much from investment inflows as the huge numbers on its balance of payments sheet imply. Nearly 30 years after its foreign investment law, the formal business connections between foreign and domestic investors remain small. As a result, Vietnamese domestic firms have not seen the technology and labor productivity spillovers that come with close cooperation with foreign partners. In spite of positive changes recently when more and more FIEs are about to import inputs from domestic private enterprises, there remains major differences across provinces, sectors, and countries of origin, especially by technology level of FIEs. To improve spillover, Vietnam would benefit most from education improvements that enhance the capacity of its labor force and technological sophistication of domestic enterprises. The strong effect of geographical proximity indicates that the current predilection of policymakers for industrial zones may inadvertently undermine spillover potential. Without basic enhancements in absorptive capacity, lucrative tax breaks and subsidies will likely continue to prove less effective than officials would prefer

Developing countries all over the world have provided hefty benefits to FIEs to attract their investment and Vietnam is no exception. Over the past years, Vietnam has offered FIEs in prioritized sectors a reduced Corporate Income Tax (CIT), lowering the standard rate from 25 percent to 10-20 percent for up to 30 years. In addition, these FIEs can have their land rental fees waived for up to 15 years.¹ According to a survey of nearly 1,600 FIEs by end of 2015 conducted by the Vietnam Chamber of Commerce and Industry (VCCI)², 62 percent of FIEs report receiving investment incentives.

There is indeed a multitude of benefits associated with FDI. For example, FDI can bring cash-strapped developing countries much-needed capital, create employment for booming populations, and is less prone to fleeing during economic downturns than portfolio investment. Therefore, during periods of weak growth, high unemployment, or tepid investment, one can justify incentive programs that encourage investments. However, if FDI is important only for

¹Ministry of Planning and Investment. 2011. Investment Incentives. Retrieved February 2, 2016, from <http://fia.mpi.gov.vn/detail/689/investment-incentives>

²The PCI-FDI 2015 survey received responses from 1,584 enterprises coming from 43 different countries that are operating in 14 provinces and cities across Vietnam. These localities have the highest density of FIEs according to the General Office of Statistics

these reasons, then domestic and foreign investments should be promoted alike.³ In other words, a dollar of domestic investment is no different than a dollar of FDI.

A more compelling argument for promoting FDI is that FIEs bring advanced technologies. Through contacts between FIEs and domestic firms, especially through supplier-customer relationships, locals may improve their technological prowess by receiving higher technical specifications, standards, and/or training in the use of new equipment, being held to a higher standard, or simply observing FIEs' management techniques. The hope is that these technological spillovers will increase domestic firms' productivity and raise the competitiveness of the Vietnamese private sector on the international stage. In this sense, a dollar of FDI is potentially worth more than a dollar of domestic economic activity because of the advanced technologies foreign firms introduce.

However, several empirical studies have shown that this theoretical benefit of technological spillover is not certain in practice.⁴ To facilitate such spillover, three conditions must be in place: backward linkages, geographical proximity, and absorptive capacity.

Backward linkages

The first factor that facilitates technological transfer is FIEs' dense backward linkages, i.e FIEs sourcing input from domestic firms. Motivated by the need for a high quality supply chain, corporate social responsibility, or even pressure from governments, FIEs often provide technical assistance to their domestic suppliers. For example, some FIEs have set up educational programs and technical seminars on components or established supplier support funds for its local suppliers to help its qualified suppliers finance "technology development, facility investment, and operations."⁵ However, Vietnamese firms' opportunities to take advantage of such assistance depend on their ability to become the suppliers of and form linkages with FIEs. Indeed, Vietnamese economists have expressed concerns that these backward linkages are limited, leading to little technology transfer.⁶

Given the importance of backward linkages, we drill deep into a question in the PCIFDI survey asking FIEs where they obtain their inputs. Figure 1 shows the number of FIEs that source their inputs from each type of supplier. The three main types of suppliers for FIEs are 1) domestic private suppliers, 2) foreign suppliers from home, and 3) foreign suppliers from a third country. Although 1,000 FIEs source from domestic private suppliers, 1,500 FIEs import inputs from home or a third country, suggesting that backward linkages between FIEs and domestic suppliers can still be improved

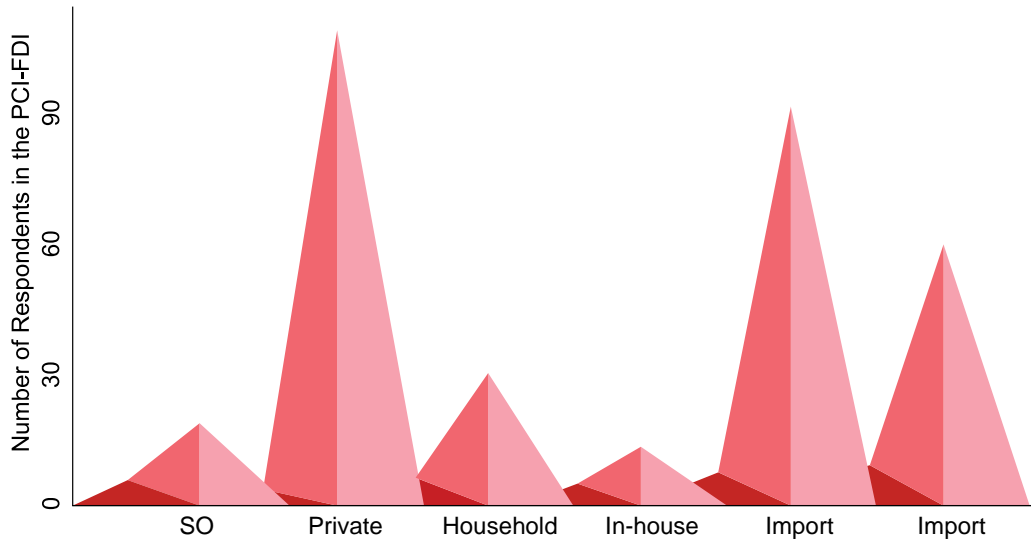
³Blomström, M. 2002, "The Economics of International Investment Incentives," *International Investment Incentives*, 165–183. Retrieved from <<http://www.cepal.org/prensa/noticias/noticias/2/9272/blomstrom.pdf>>

⁴Havranek, T., & Irsova, Z. 2011. "Estimating Vertical Spillovers from FDI: Why Results Vary and What The True Effect Is," *Journal of International Economics*, 85.2, 234–244; Javorcik, B. S. 2004, "Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages" *American Economic Review*, 94.3, 605–627; Kokko, A. 1994, "Technology, Market Characteristics, and Spillovers," *Journal of Development Economics*, 43(2), 279–293

⁵Samsung Electronics. (2015). *Samsung Sustainability Report 2015*. Retrieved from <http://www.samsung.com/us/aboutsamsung/sustainability/sustainabilityreports/download/2015/SAMSUNG_SUSTAINABILITY_REPORT_2015_ENG.pdf>

⁶Nguyen, D. 2014. "Hi-Tech Transfers by Foreign Firms Remain a Pipe Dream," *Vietnam Investment Review*, November 11, 2014. Retrieved February 2, 2016 <<http://www.vir.com.vn/hi-tech-transfers-by-foreign-firmsremain-a-pipe-dream.html>>

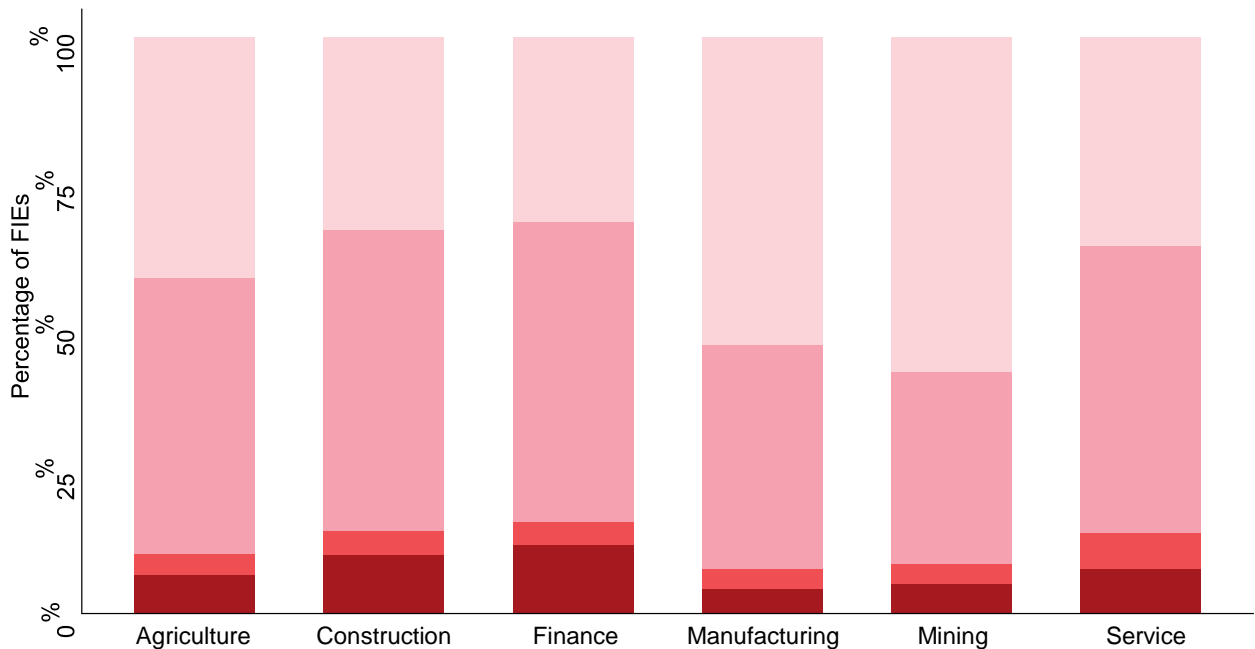
Figure 1: The Number of FIEs Served by Each Supplier Type



Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises.

Importantly, the pattern of backward linkages also varies substantially across sectors. Figure 2 shows the percentage of input expenditure that the average FIE in that sector spends with each of four types of supplier. Finance and service are the two sectors with the most backward linkages because they rely heavily on human capital, which cannot be imported. In contrast, FIEs in manufacturing and mining import over half of their inputs from foreign suppliers. It seems that Vietnamese suppliers still can not meet the demand of these FIEs, limiting the potential for technological transfers in these sectors.

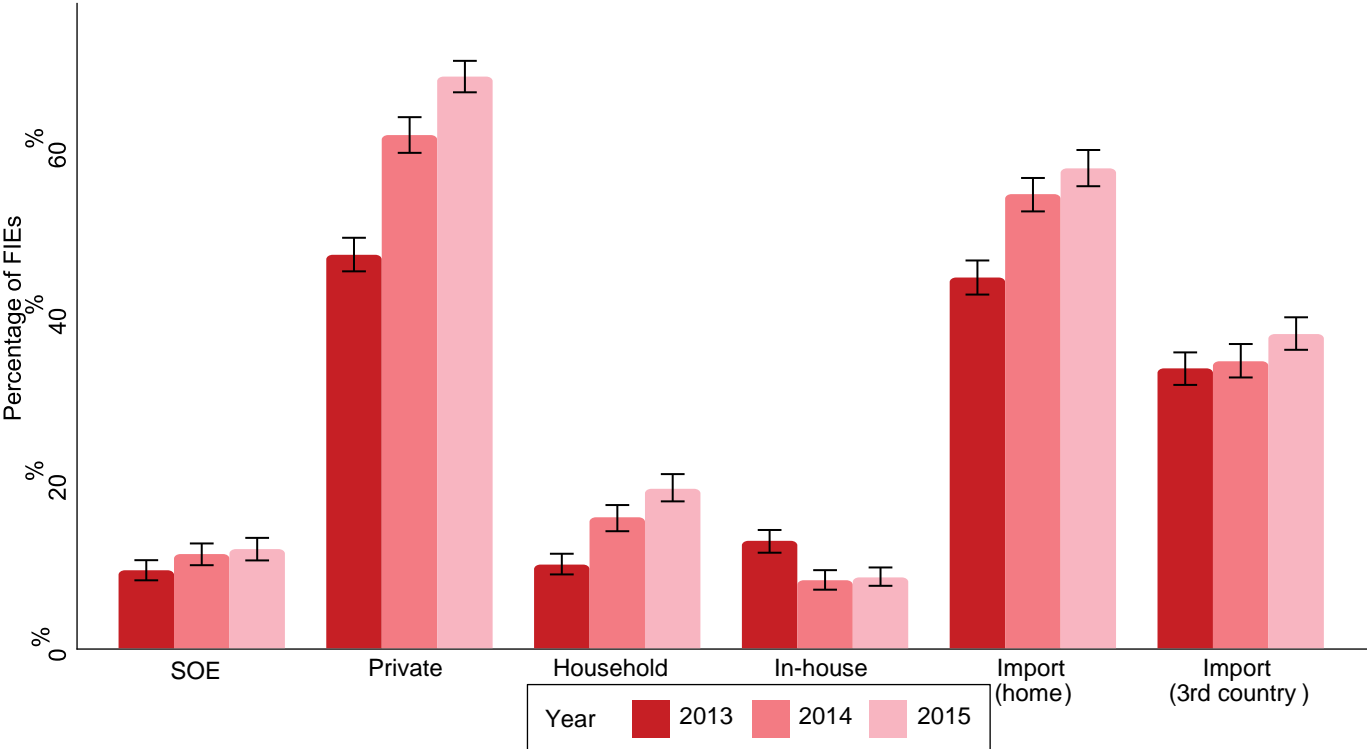
Figure 2: The Percentage of FIEs’ Input Expenditure Served by Each Supplier Type by FIEs’ Sector, 2010-2012



Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises.

Adding historical perspective, however, paints a more positive picture for Vietnamese suppliers (Figure 3). In 2013, only 45 percent of FIEs bought inputs from domestic private suppliers. This number rose steadily in 2014 (62 percent) and in 2015 (68 percent), a statistically significant increase each year. The percentage of FIEs who buy from other supplier types also all increase over time (except for in-house sourcing), suggesting that FIEs are diversifying their sourcing strategy, using more supplier types than before.

Figure 3: The Relationship Between Investment Incentives and FIEs’ Sourcing Strategies



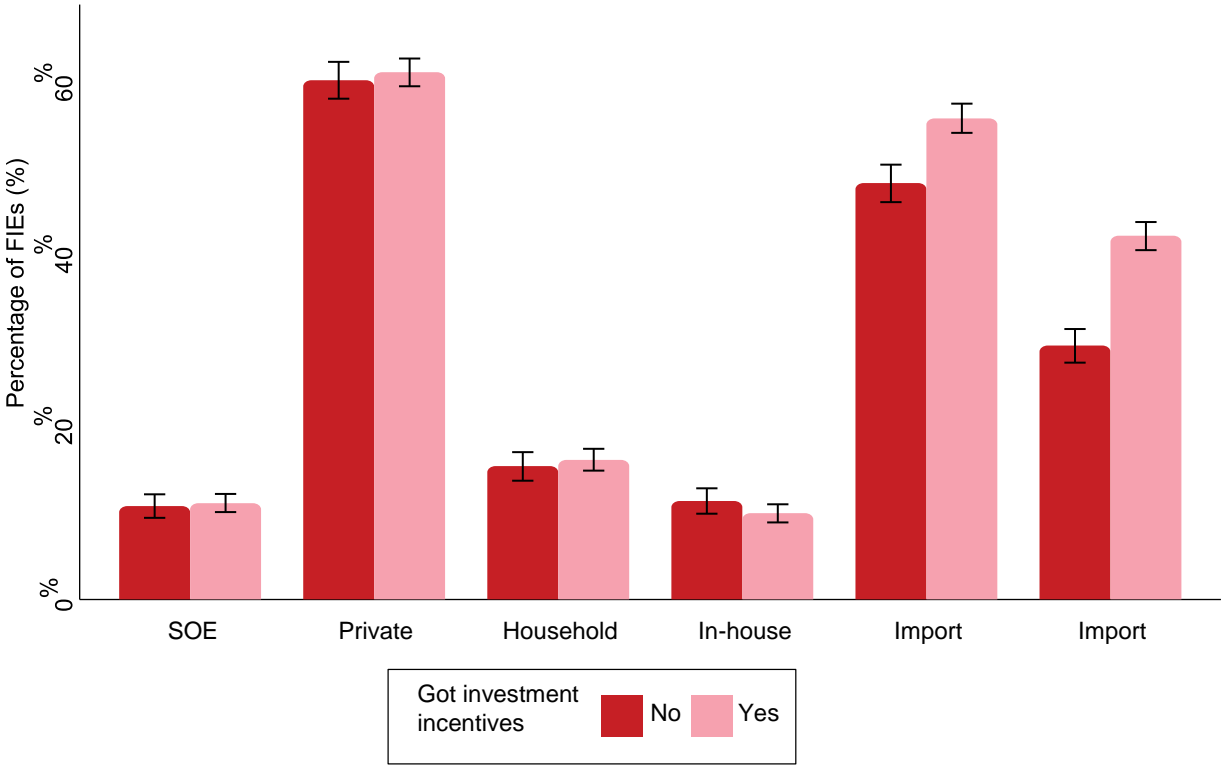
Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises. Disaggregated by survey year. Y-axis depicts share of FIEs purchasing inputs from each group.

As mentioned above, Vietnam has provided substantial investment incentives for FIEs, including CIT exemption, preferential CIT rates, import duty exemptions for inputs, waivers of land rental fees, accelerated depreciation of fixed assets, and carrying losses forward (KPMG, 2011). The goal of these incentives is to promote investment in high-tech sectors, underprivileged regions, and other prioritized sectors (e.g. environmental technology, agriculture, forestry, and medicine).

However, it is difficult to tell whether the incentives truly lead to more backward linkages between FIEs and domestic firms. As we show in Figure 4, 60 percent of FIEs source from domestic private suppliers regardless of investment incentives. In contrast, FIEs that receive incentives import more inputs compared to FIEs without incentives. This difference may be due to the fact that Vietnam provides incentives precisely for sectors and regions where domestic firms are underdeveloped and may be ill-equipped to participate in the FIEs’ supply chain. Without knowing the counterfactual, it is difficult to ascertain whether the lack of backward linkages would have been even greater without these investment incentives. Nevertheless, this finding suggests that incentivized FIEs in priority sectors, such as high-tech industries and those operating in underprivileged regions, may

not produce as much technological transfer to the domestic private sector as policymakers hoped when authorizing the incentive programs.

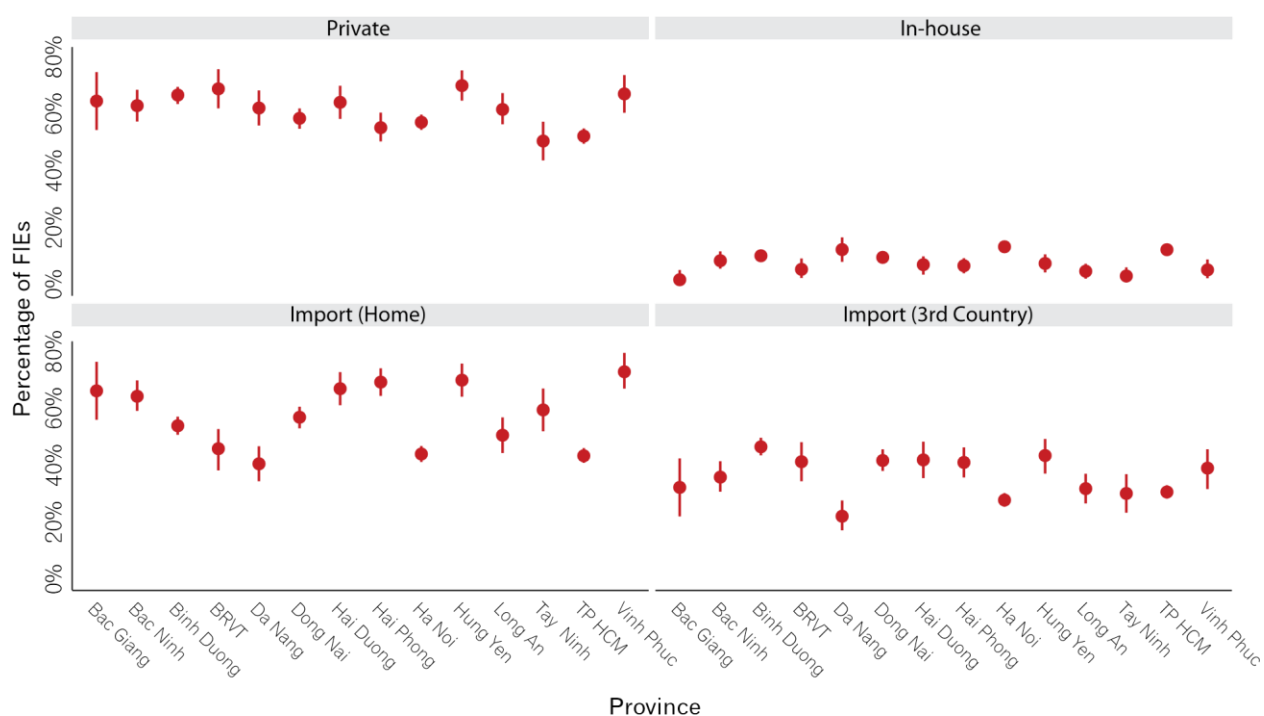
Figure 4: The Relationship Between Investment Incentives and FIEs’ Sourcing Strategy



Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises. Disaggregated by whether firms received investment incentive. Y-axis depicts share of FIEs purchasing inputs from each group.

Figure 5 plots FIEs’ backward linkages across provinces. Panel 1 (topleft) shows, across provinces (x-axis), the percentage of FIEs that source from private suppliers, ranging from 50 percent (Tay Ninh) to 70 percent (Vinh Phuc and Hung Yen), though the variation is generally not statistically significant. In contrast, there is more variation in the two bottom panels, showing that Da Nang’s FIEs import substantially less than those in other provinces. For example, only 40 percent of Da Nang’s FIEs import from home while 80 percent of Vinh Phuc’s FIEs do. This difference makes sense given Da Nang’s concentration of FIEs in real estate, food processing, and IT, which tend to use more local inputs. In contrast, Vinh Phuc’s FIEs focus on the assembly of automobiles and electronics, and thus tend to import technologically sophisticated parts.

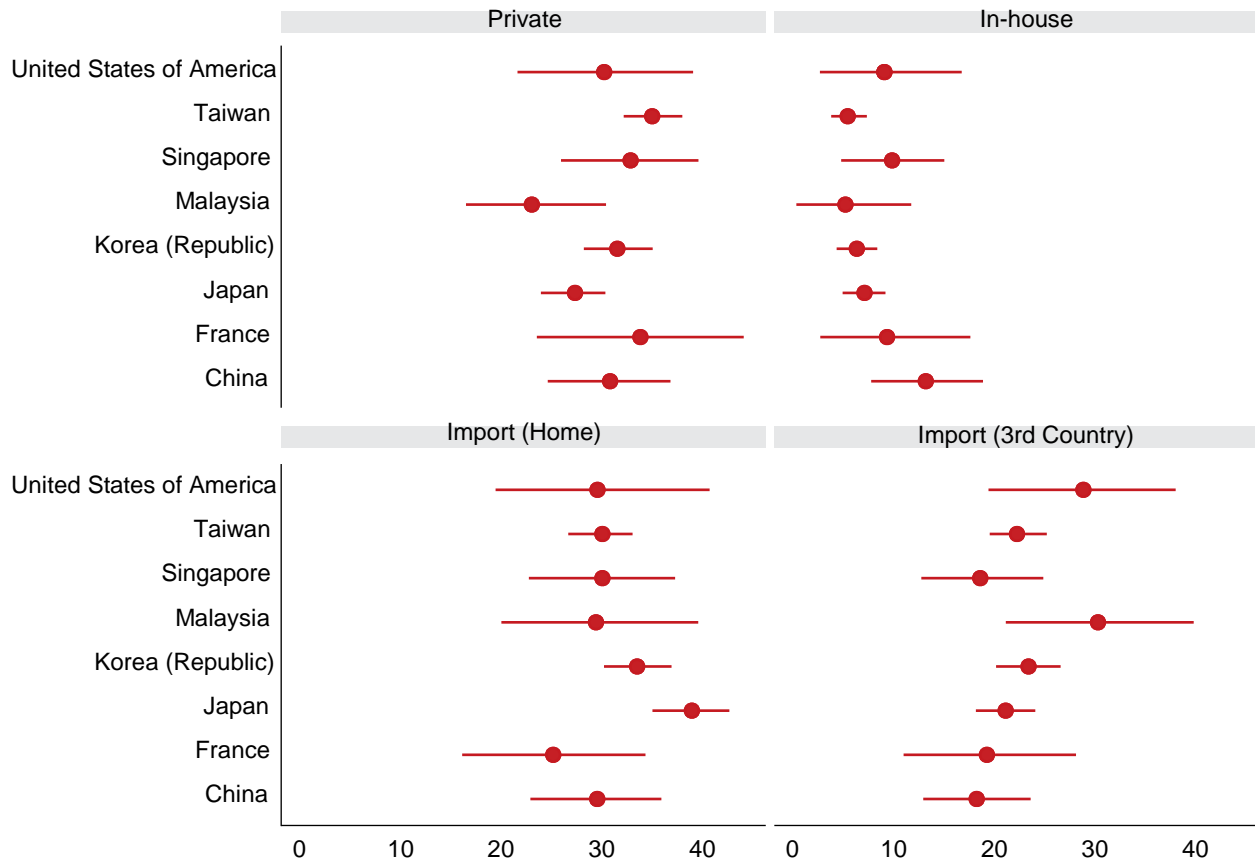
Figure 5: The Percentage of FIEs served by Each Supplier Type- by Province



Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises. Disaggregated by province. Y-axis depicts share of FIEs purchasing inputs from each group.

Figure 6 examines the sourcing strategy of FIEs from the most popular investor countries. Thanks to the large number of companies from Taiwan, South Korea, and Japan, we can draw reliable inferences about FIEs from these countries, as shown in the short error bars. Japanese FIEs, which concentrate on automobiles and complex electronics, import substantially more from home (40 percent) and source less from private suppliers (27 percent). In contrast, Taiwanese FIEs, which concentrate on textiles, light manufacturing, and light electronics, import less from home (30 percent) and source more from private suppliers (35 percent). This suggests that Vietnamese suppliers are more able to form linkages with FIEs in lower-tech sectors, where the technological gap is not prohibitively large.

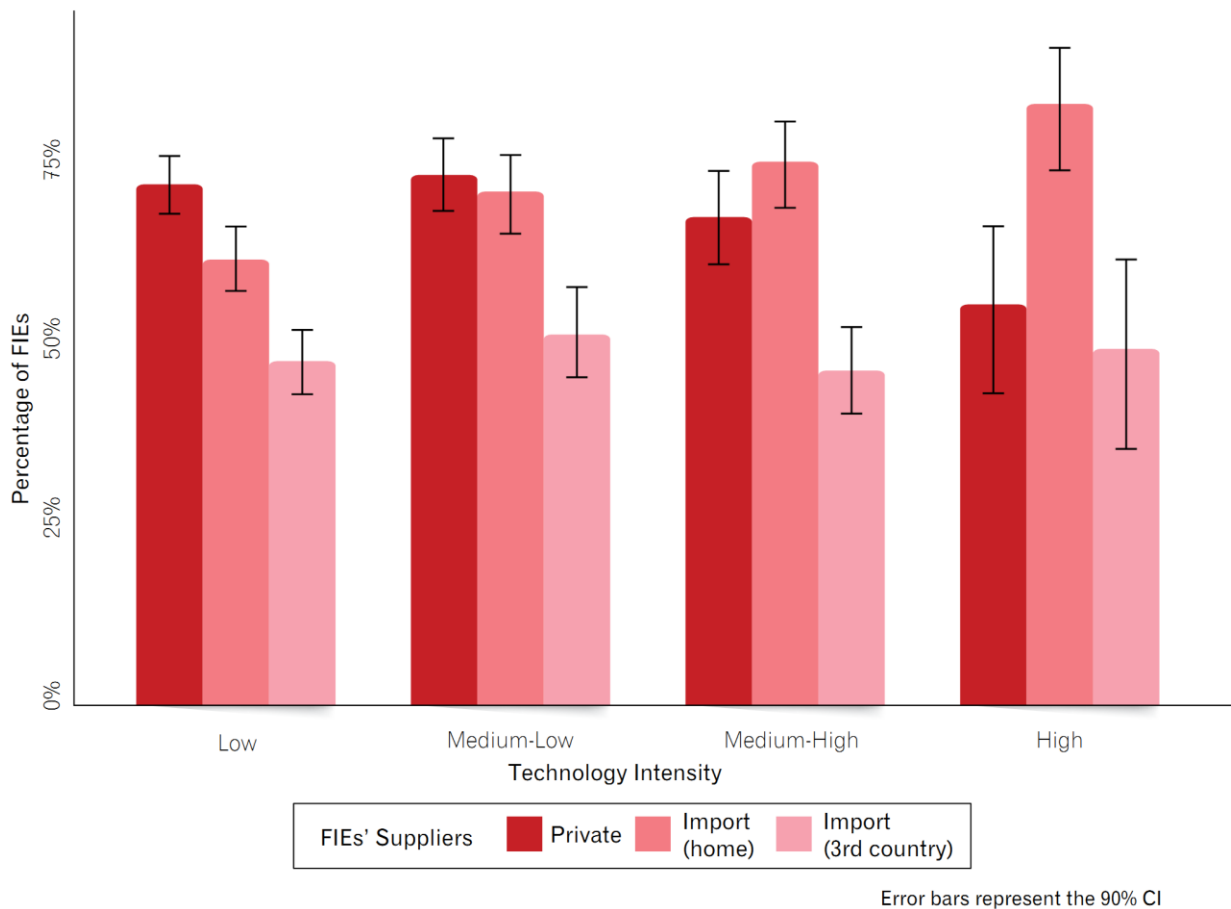
Figure 6: FIEs’ Sourcing Strategy—by Company Home Country



Source: PCI-FDI Survey Question A16, “Who are your suppliers of intermediate goods and services?” Note that private includes formally registered firms while household includes only household enterprises. Disaggregated by country. Y-axis depicts share of FIEs purchasing inputs from each group.

In Figure 7, we focus on manufacturing FIEs, disaggregating these firms by their technology intensity to investigate their sourcing strategy. Figure 7 shows a statistically significant difference between high-tech and low-tech manufacturing FIEs. High-tech manufacturing FIEs, compared with low-tech ones, import more from home (84 percent vs 62 percent, respectively) and use fewer domestic private suppliers (56 percent vs 73 percent, respectively). This linkage gap reiterates the concern that simply having high-tech FIEs in Vietnam does not mean technological spillover will occur. Indeed, since FIEs are under no obligation to transfer their technology, if Vietnamese firms fail to join the high-tech supply chain and establish forward linkages, there will be very limited spillover

Figure 7: FIEs' Sourcing Strategy – Technology Intensity



Geographical Proximity

While innovations in transportation and information technology have allowed firms to buy from and communicate with each other despite being a world apart, scholars have found that geographical proximity still matters greatly for technological transfer.⁷ The most famous example of a technology cluster is Silicon Valley, where IT firms - those most competent in communications technology - still congregate to facilitate a seamless exchange of ideas. In the case of FIEs and domestic suppliers, Ivarsson & Alvstam (2005) confirm the importance of proximity, showing that Volvo plants in Brazil, China, India, and Mexico, create more technological spillovers when their local suppliers are near. One key reason is that transfer of technologies most often still happens in face-to-face technical consultations between engineers.⁸

There is one caveat in interpreting the impact of proximity on technological spillover. It is difficult to determine the extent to which the proximity between FIEs and domestic firms is exogenous and how much of it is engendered by domestic firms' strategy. In either case, geographical proximity still provides a reasonable proxy for the potential amount of technological spillover.

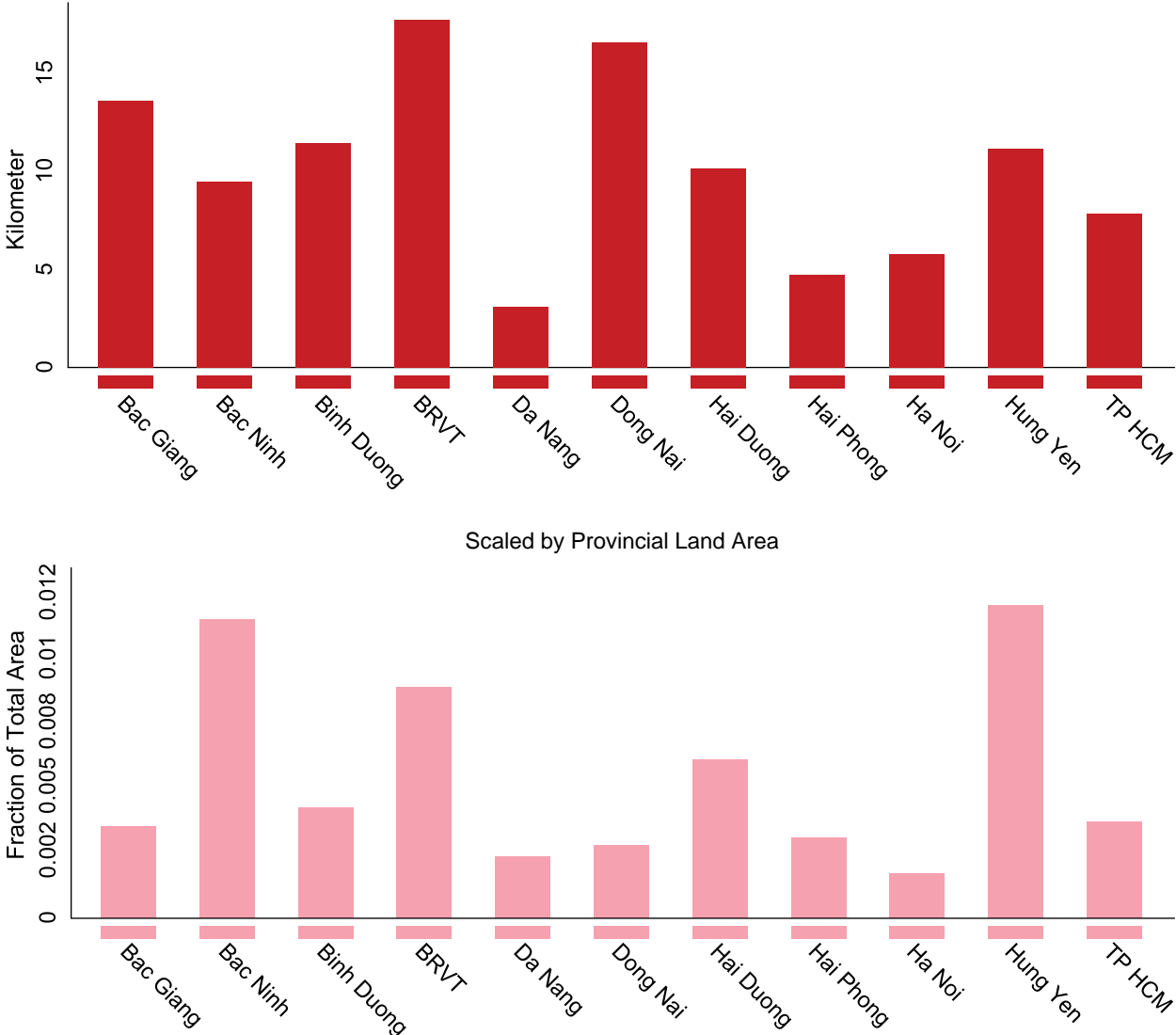
⁷Glaeser, E., Kallal, H., Scheinkman, J., & Shleifer, A. 1991, "Growth in Cities," National Bureau of Economic Research Working Paper 3787, Retrieved February 2, 2016 from<<http://www.nber.org/papers/w3787>>

⁸Ivarsson, I., & Alvstam, C. G. 2005, "The Effect of Spatial Proximity on Technology Transfer from TNCs to Local Suppliers in Developing Countries: The Case of AB Volvo in Asia and Latin America," *Economic Geography*, 81.1, 83-111.

Figure 8 focuses on the geographical proximity between FIEs and domestic firms in Vietnam. To construct Figure 8, we geo-code the addresses of FIEs and domestic firms to obtain their coordinates. Then, we calculate the distance between each domestic and foreign firm and find the median of these distances. The top panel shows the median distance (in kilometers) between foreign and domestic firms for each province. A typical domestic firm in Da Nang is only 2.5 kilometers away from a foreign firm, facilitating frequent contact and exchange. In contrast, a typical domestic firm in Ba Ria-Vung Tau is almost 20 kilometers away from a foreign firm.

In the bottom panel, we divide this median distance by a province’s total land area for a fairer comparison between provinces of different sizes. After re-scaling, Ha Noi has the most geographical mingling of domestic and foreign firms (median distance = 0.2 percent of total area) while Hung Yen has the least (median distance = 1.25 percent of total area).

Figure 8: Median Distance between a Foreign and a Domestic Firm – by Province

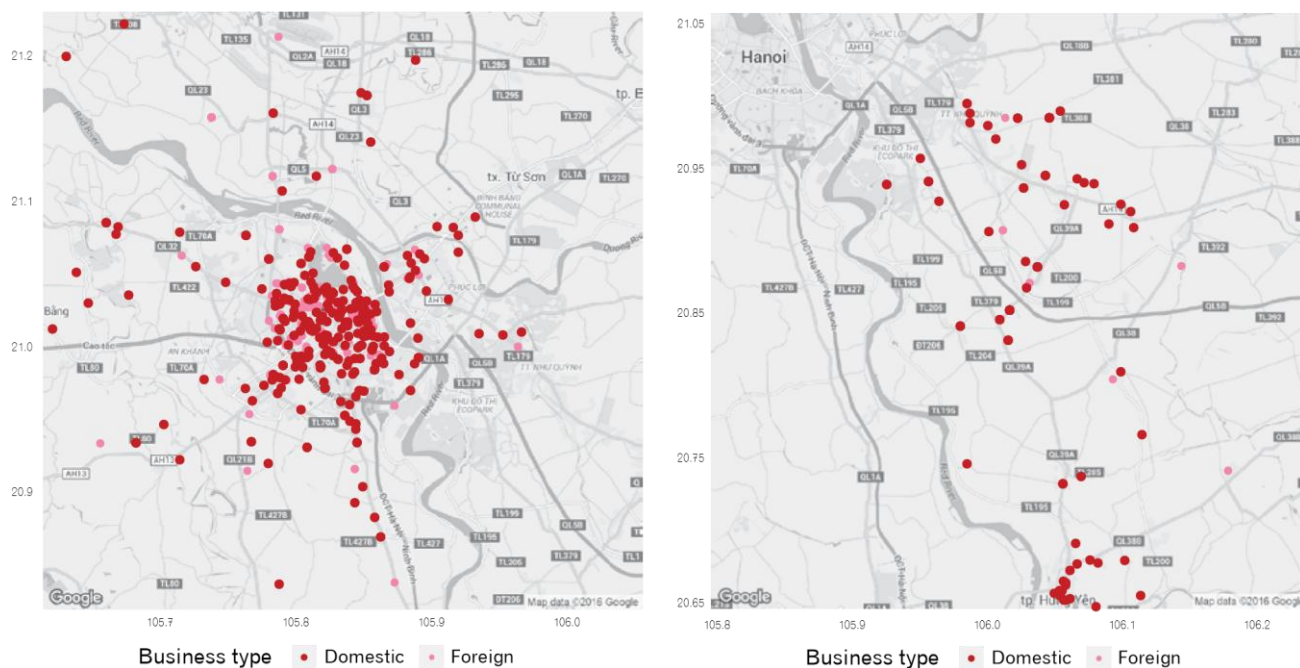


To visualize this geographical mingling of firms, Figure 9 plots the approximate locations of businesses in Ha Noi and Hung Yen. We can clearly see FIEs and domestic firms in Ha Noi mixing thoroughly while firms in Hung Yen form two disparate clusters; one stays close to Hanoi while the other centers on Hung Yen’s capital district. If proximity matters for

technological spillover, there is lesser likelihood of transfer of technology between Hung Yen's FIEs and domestic firms.

A policy implication of the proximity effect is that industrial zones which isolate FIEs from the larger economy may increase the efficiency of exporting but can undermine positive spillovers to the rest of the economy.

Figure 9. Mapping the Distance between foreign and Domestic firms - Ha Noi and Hung Yen



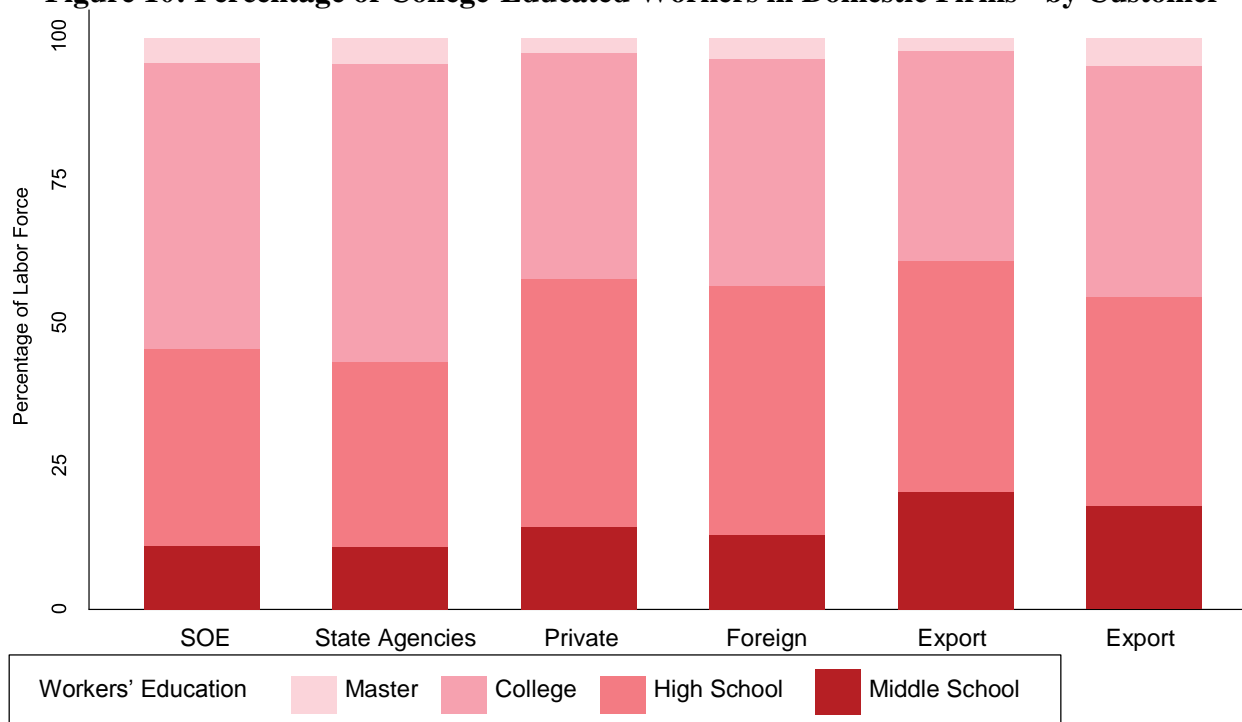
FDI Absorptive Capacity

The third factor that facilitates technological transfer is the absorptive capacity of domestic firms. If the technological gaps between FIEs and domestic firms are too large, or if domestic firms' labor force is not well trained to learn new technologies, then the potential for transfer will be limited.

Focusing on labor quality, Figure 10 compares the percentage of college-educated workers in domestic firms, disaggregating by their customer types. Domestic firms that serve SOEs and state agencies have the best labor quality with nearly 60 percent of the labor force having a college or graduate-level degree. In contrast, domestic private firms that supply to other private firms, to FIEs, or to the international market all have a less educated labor force (40 percent having a college education or higher).

This statistically significant difference suggests that domestic suppliers of FIEs only have limited absorptive capacity, preventing them from learning from their foreign clients. Therefore, improving labor quality is the key missing piece in promoting FDI spillover. Improving Without a high quality labor force, no matter how dense the backward linkages or how labor quality geographically close the suppliers and clients are, Vietnamese firms would not be able to is the key adopt FIEs' technologies and management techniques. After all, linkages and proximity missing piece in promoting FDI only put people in touch. Whether learning and improving happen still depend on the spillover people themselves

Figure 10: Percentage of College-Educated Workers in Domestic Firms - by Customer



Summary and Implications

FIEs are important contributors to employment, industrial output, and exports in Vietnam. Despite these gains, Vietnam has still not benefitted as much from investment inflows as the huge numbers on its balance of payments sheet imply. Nearly thirty years after its foreign investment law, the formal business connections between foreign and domestic investors remain small. As a result, Vietnamese domestic firms have not seen the technology and labor productivity spillovers that come with close cooperation with foreign partners. This is particularly true of the high-technology sector, where policymakers would like to see domestic private firms advance.

VCCI’s survey results show that change does appear to be on the horizon, as the number of FIEs contracting with domestic private firms has increased dramatically over the past two years. Major differences are apparent, however, across provinces, sectors, and countries of origin. In particular, manufacturing firms in high-tech sectors are far more likely to import inputs from their home markets. Three factors are responsible for the differences: backward linkages in sourcing, geographical proximity between FIEs and domestic firms, and absorptive capacity of firms and workers.

To improve spillover, Vietnam would benefit most from education improvements that enhance the capacity of its labor force and technological sophistication of domestic enterprises. The strong effect of geographical proximity indicates that the current predilection of policymakers for industrial zones may inadvertently undermine spillover potential. Without basic enhancements in absorptive capacity, lucrative tax breaks and subsidies will likely continue to prove less effective than officials would prefer.

This report is a summary from Chapter 2 – FIEs Survey of the PCI Report launched by the Vietnam Chamber of Commerce and Industry (VCCI) and the United Agency for International Development (USAID) in 2016 within the framework of the PCI Project, visit www.pcivietnam.vn for details.