



VIETNAM ACADEMY  
OF SOCIAL SCIENCES



MINISTRY OF PLANNING  
AND INVESTMENT



UNITED NATIONS  
DEVELOPMENT PROGRAMME

Summary report

# PRODUCTIVITY AND COMPETITIVENESS OF VIET NAM'S ENTERPRISES

## Volume 1: Manufacturing



Ha Noi – 4/2019

# Introduction

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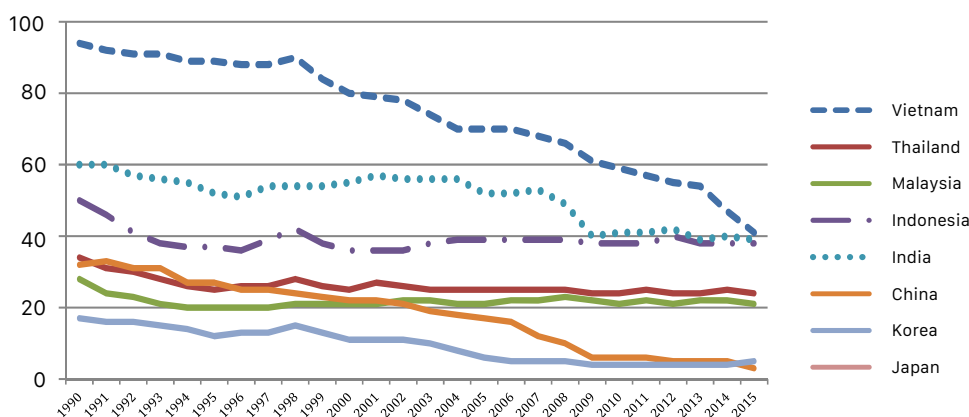
This report provides an assessment of Viet Nam's manufacturing sector productivity and competitiveness as well as factors contributing to manufacturing labour productivity (LP) growth. It analyzed United Nations Industrial Development Organization (UNIDO) and General Statistics Office (GSO) Enterprise Census data using different indicators (revenue, employment, value added (VA), net exports, foreign direct investment (FDI) backward-forward linkages with domestic firms) to describe key characteristics of manufacturing VSIC 2-digit sub-sectors, LP, Revealed Comparative Advantage (RCA), domestic content of exports, VA-to-output ratios and wage growth to assess productivity and competitiveness of sub-sectors.

Based on the comprehensive analysis of manufacturing and its sub-sectors' productivity and competitiveness performances, this report recommends Viet Nam prioritize the enhancement of domestic private enterprises' productivity and competitiveness during its next development stage and as integral parts of public investment, State-owned enterprise (SOE) reform and FDI policies. This report also makes several specific recommendations to elevate the productivity and competitiveness of different sub-sectors tailored to their specific characteristics and past performances.

# Key findings

While the manufacturing sector experienced remarkable productivity and competitiveness improvements in recent years, gaps to middle-income and developed comparator countries remain large.

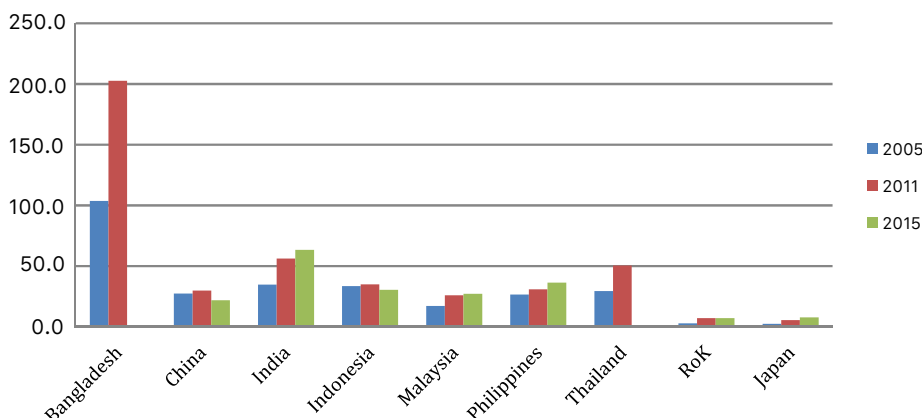
## Viet Nam's CIP ranking improved from nearly 100th in 1990 to around 40th (close to India's and Indonesia's) in 2015



Source: UNIDO (2017)

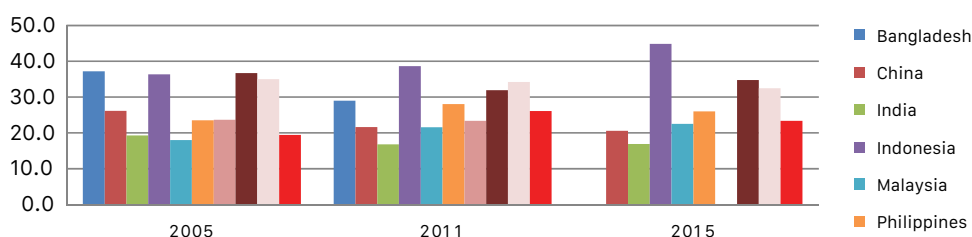
In recent years, Viet Nam's industrial competitiveness index (CIP), manufacturing exports and Revealed Comparative Advantage (RCA) have continuously improved compared to other regional countries. In some indicators (such as VA-to-output ratio and RCA) Viet Nam outperformed India and Bangladesh. In other manufacturing performance indicators, especially LP, Viet Nam lagged behind comparator countries with narrowing gaps still remaining large between Viet Nam and middle-income countries in the region (China, Indonesia and Malaysia) and very large to industrialized countries (Japan and the Republic of Korea (RoK)).

## While outperforming Bangladesh, Viet Nam's manufacturing LP remained around a quarter of China's and Malaysia's, one third of Indonesia's and Philippines, a half of India's and Thailand's, and just around 7% of Japan's and Rok's



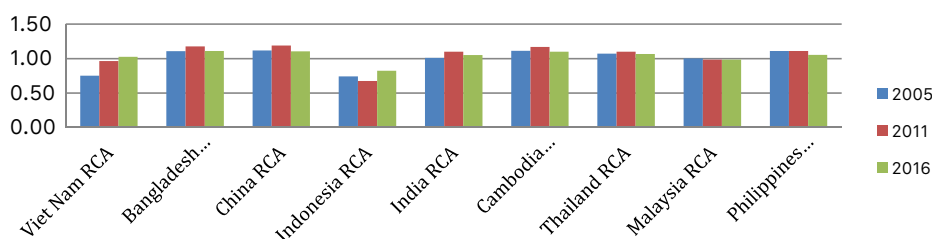
Source: Authors' calculation from UNIDO data

## Viet Nam's manufacturing VA-to-output ratio in 2015 is higher than China's and India's, at the similar level of Malaysia's



Source: UNIDO database, authors' calculation

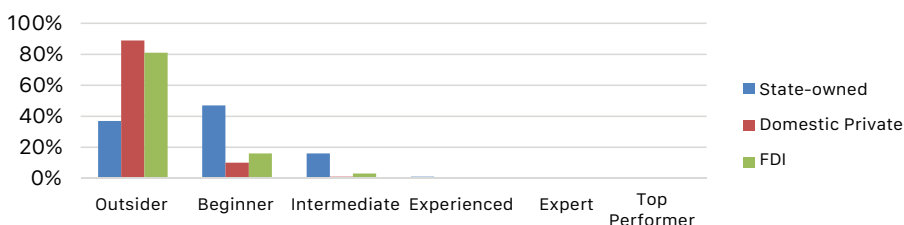
## Viet Nam's Manufacturing RCA first time became more than unity in 2016



Source: Authors' calculation based on UN Comtrade database

While the Fourth Industrial Revolution (IR4.0) accelerates and leaves simple skilled and repetitive manufacturing jobs at risk to automation, the majority of Viet Nam's manufacturing firms have low levels of IR4.0 readiness.

## Proportions of SOEs, domestic private and FDI firms at different IR4.0 readiness levels

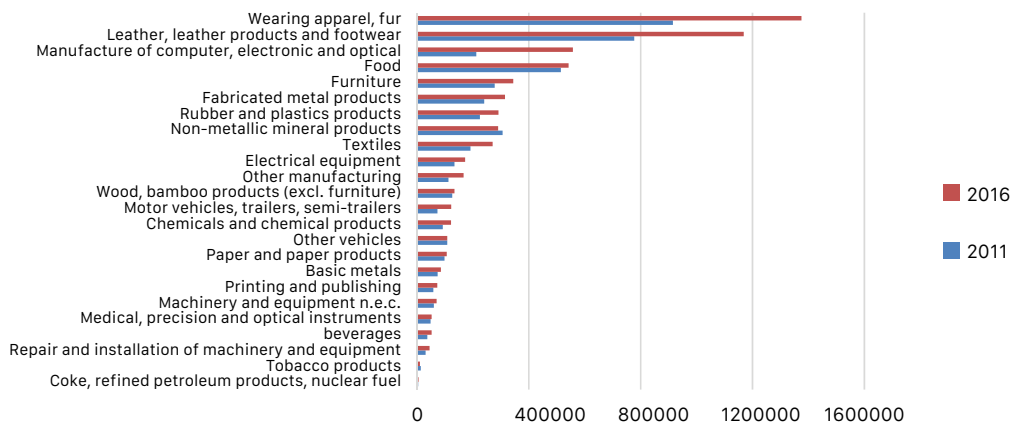


Source: MOIT-VASS-UNDP (2018)

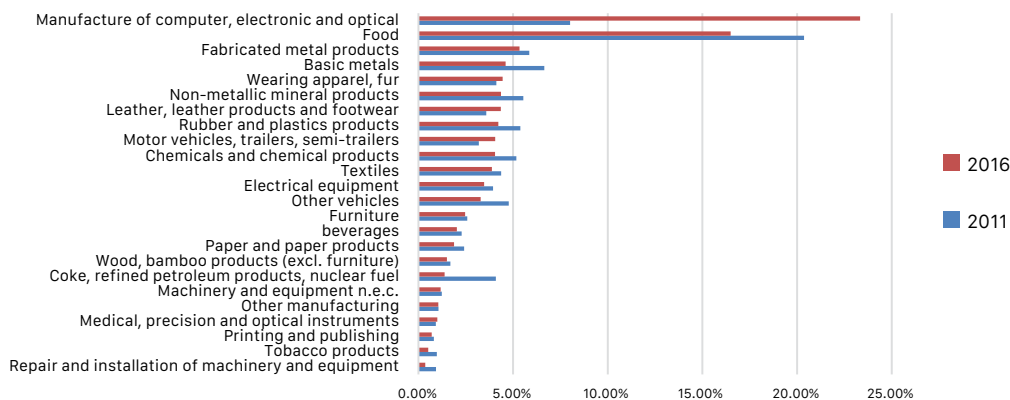
## Manufacturing sub-sectors differ by importance to the economy

Food and beverages, and furniture (medium-tech), textiles and wearing apparel, leather-footwear (low-tech) and electronics (high-tech) are sub-sectors with large economies of scale (except beverages and furniture that are medium-sized) making important contributions to the manufacturing sector and economy in terms of job creation, revenue, value addition and exports. Wood (excluding furniture), printing and tobacco as small-sized (low-tech) sub-sectors, other vehicles (high-tech) as a medium-sized sub-sector and non-metallic mineral products as a (medium-tech) large-sized sub-sector also contributed to manufacturing exports. A group of sub-sectors with high and medium technology, large and medium-sized, negative net exports (import substitution) included: rubber-plastics, basic metal, fabricated metal (large-sized sub-sectors), chemicals, electrical equipment and motor vehicles (medium-sized sub-sectors), coke-petroleum-nuclear fuel, paper products, medical precision-optical equipment, machinery and equipment n.e.c., repair and installation of machinery and other manufacturing (small-sized sub-sectors).

### Sub-sector shares in manufacturing employment (%)

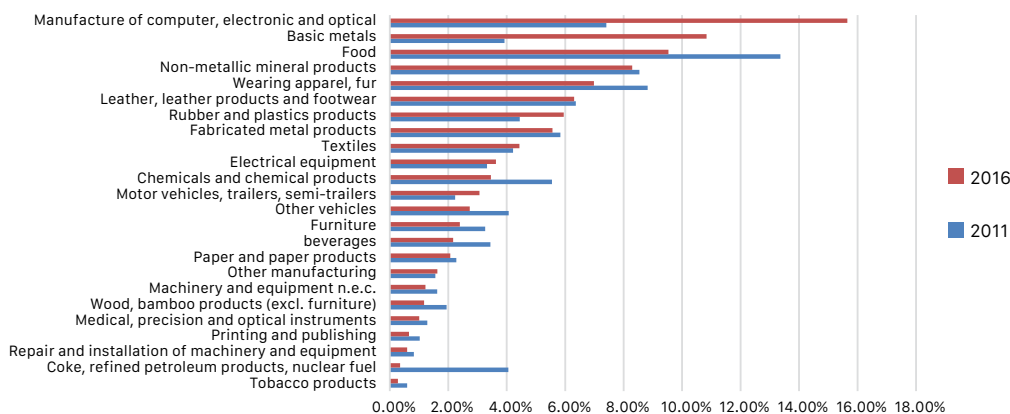


### Sub-sector revenue shares in manufacturing revenue (%)



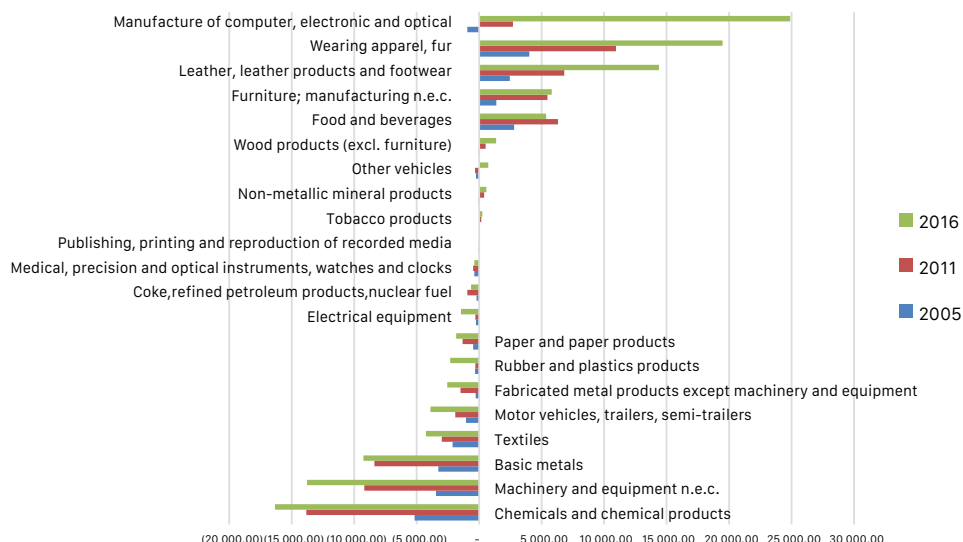
Source: Authors' calculation based on 2017 Enterprise Census data

### Sub-sector share in MVA (%)



Source: Authors' calculation based on 2017 Enterprise Census data

### Manufacturing sub-sector net exports (USD million, current prices)

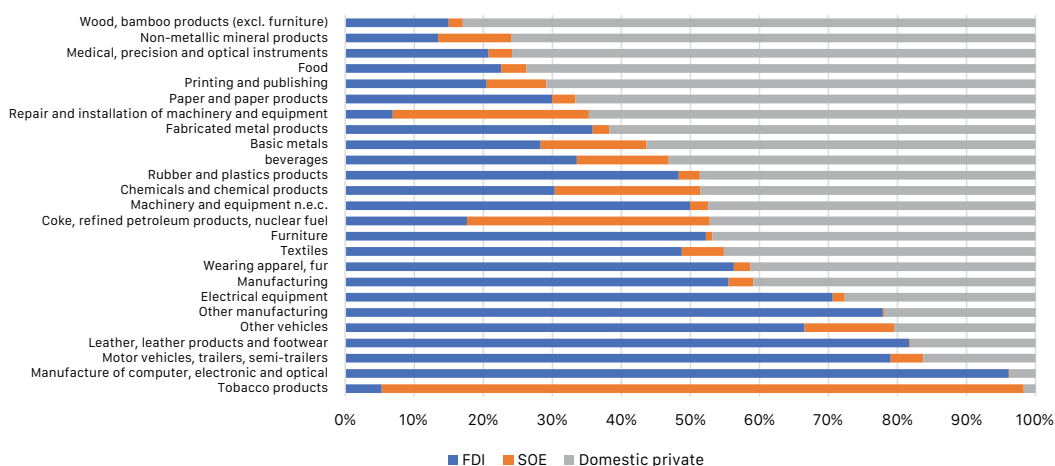


Source: Authors' calculation, UN Comtrade

## FDI, SOEs and domestic private firms differ in sub-sector participation levels and sizes

FDI is the biggest player in manufacturing, dominating a majority of sub-sectors with large sizes and net export values, as well as in high and medium technology import substitution sub-sectors. FDI participation (measured by its VA share) in manufacturing was high in 16 out of 24 manufacturing sub-sectors and in four out of the top five manufacturing exporting sub-sectors (textiles and wearing apparel, leather-footwear, electronics and furniture).

### Sub-sector employment structure by ownership (2016)

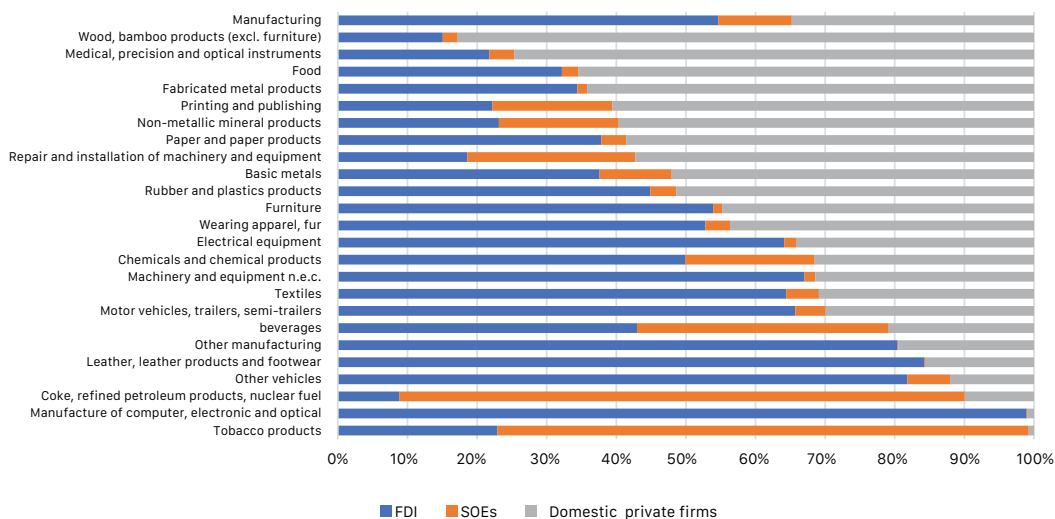


Source: Authors' calculation based on 2017 Enterprise Census data

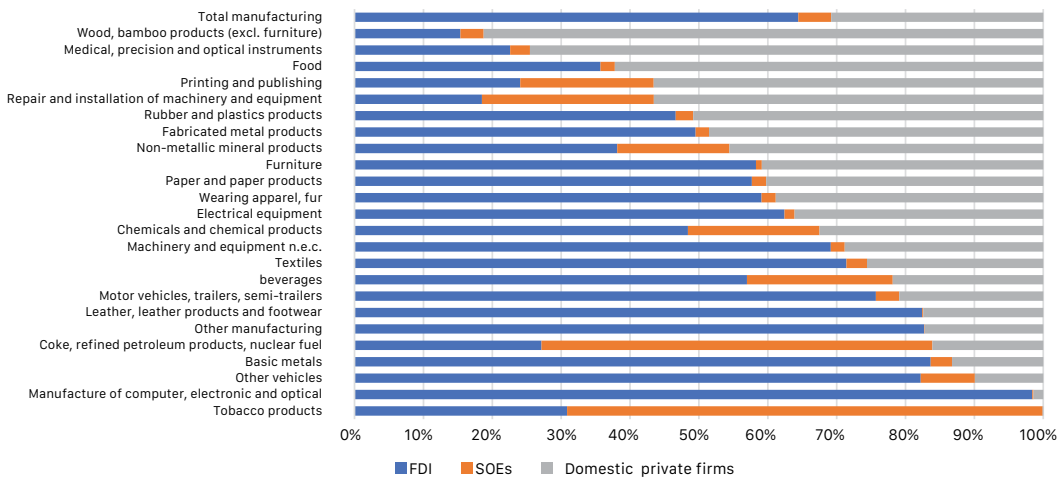
SOEs are the smallest player in manufacturing, high profile in only two small-sized sub-sectors (coke-refined petroleum products-nuclear fuel and tobacco). Domestic private firms are the second biggest player in manufacturing, but commanding in only two sub-sectors with large positive net export values (food and beverages, and furniture). Domestic firms also dominate in large size non-metallic mineral products subsector with medium positive net export, small size wood and bamboo (excluding furniture) and printing subsectors with medium positive net export, but display medium-level participation in large size wearing apparel and textiles sectors which have positive net export. In the remaining large and

medium-sized sub-sectors with positive net exports where FDI (and SOEs) dominate, domestic firms only have low participation levels. In contrast to often large-sized FDI and SOEs, domestic private firms tended to be SMEs.

**Domestic private firms, SOEs and FDI shares in sub-sector revenue (%), 2016**



**FDI, SOE and domestic firms' shares in sub-sector VA (%) 2016**

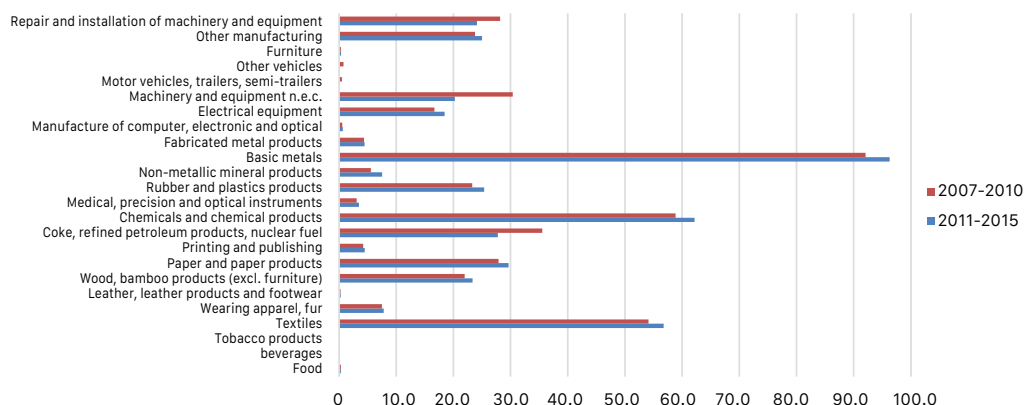


Source: Authors' calculation based on 2017 Enterprise Census data

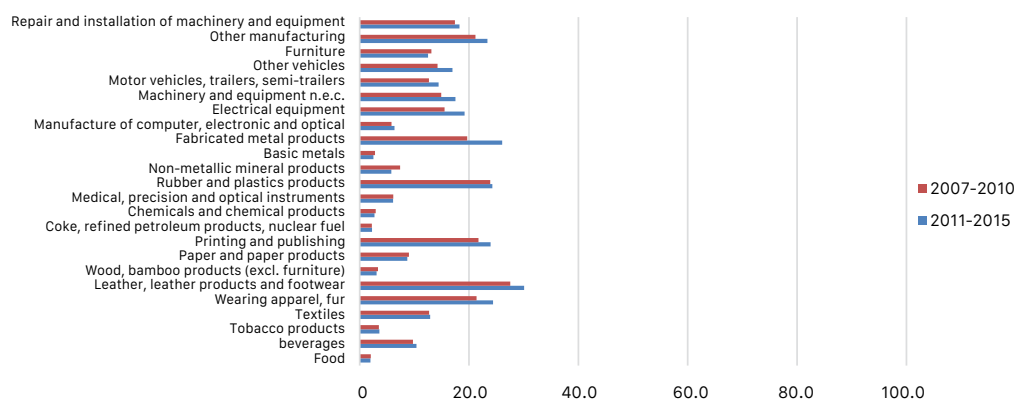
## Weak linkages between FDI and Domestic Firms

While FDI firms generate major employment, revenue and VA shares in many sub-sectors, they have weak linkages with domestic companies (especially in high- and medium-tech sub-sectors), while slightly stronger in resource-based sub-sectors.

### Backward-linkages between FDI and domestic firms in Viet Nam's manufacturing industry (% , max=100%)



### Forward-linkages between FDI and domestic firms in Viet Nam's manufacturing industry (% , max = 100%)

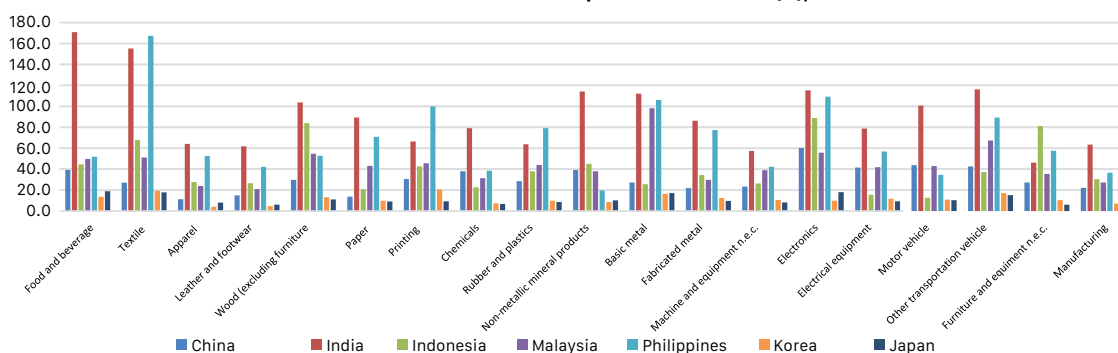


Source: Authors' calculation, 2017 Enterprise Census

## Productivity and competitiveness performances varied substantially across manufacturing sub-sectors

LP gaps with comparator countries remained large in some subsectors such as apparel, leather and footwear and chemicals, while the gaps were smaller in others such as electronics, other transportation vehicles, wood (excluding furniture) and basic metal.

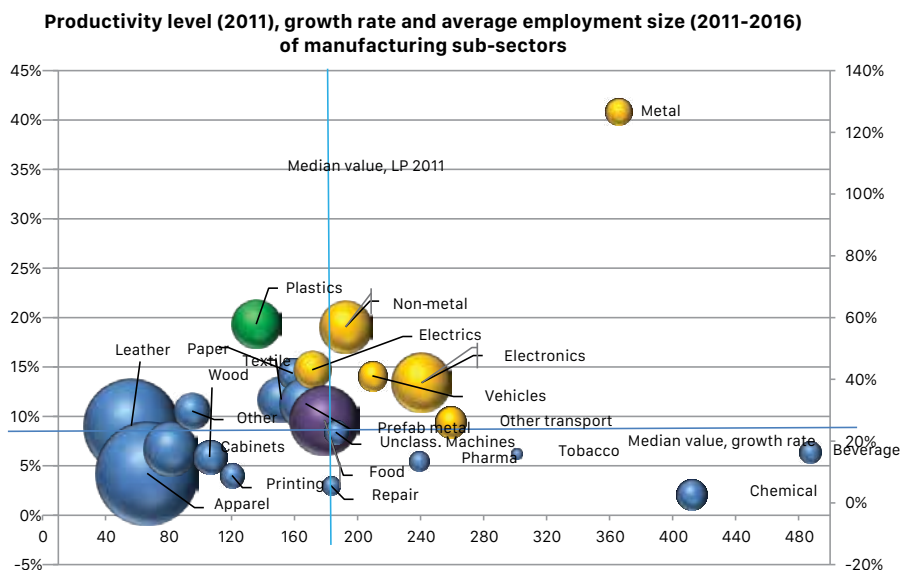
### Viet Nam's LP relative to comparator-countries' (%), 2015



Source: Authors' calculation, UNIDO Database



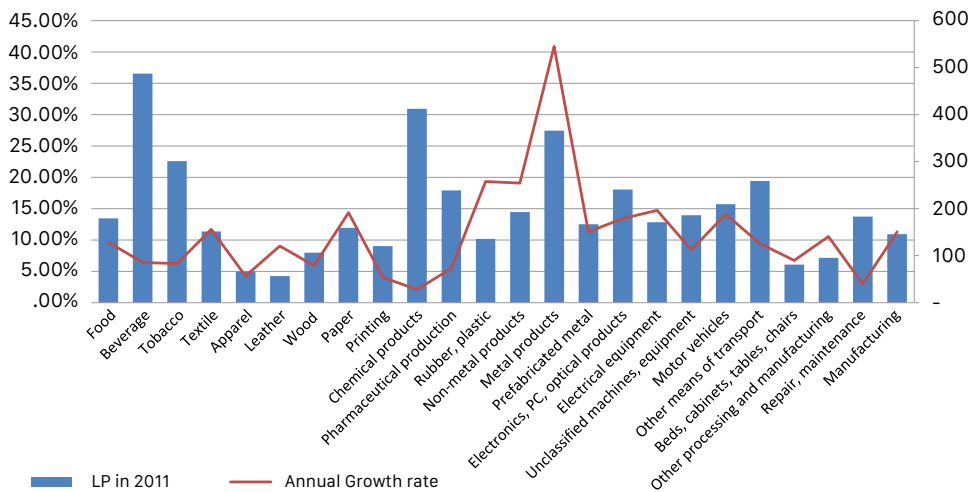
**Largest subsectors in terms of employment (and export) – apparel, leather and footwear, and food processing - experienced low LP growth**



Note: The size of each bubble reflects the employment size of each respective manufacturing sub-sector. Source: Authors' calculation, 2017 Enterprise Census

**Sub-sectors with higher productivity in 2011 grew slower during 2011-2016, reiterating the reduced scope for structural change to achieve productivity improvements and implying efforts should focus on "within sub-sector" factors to improve manufacturing LP in the future.**

**Labour productivity level in 2011 and annual growth rate in 2011-2016 (%)**

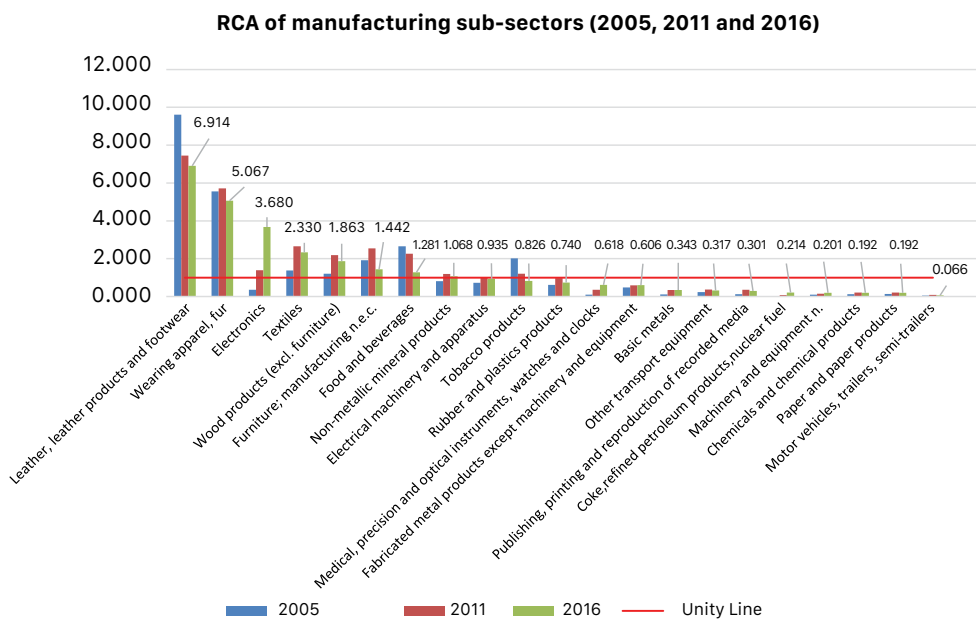


Measures of variation in labour productivity (2011 and 2016)

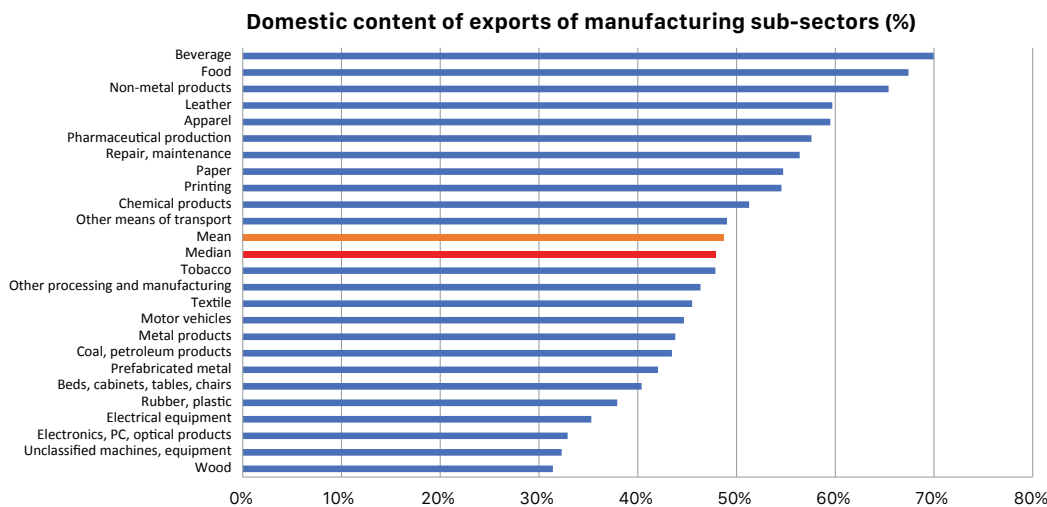
	2011	2016
Coefficient of variation */	2.65	1.00
Max/Min	101.98	24.85

\*/ Coefficient of variation is equal to standard deviation divided by the mean; Source: Authors' calculation, 2017 Enterprise Census Labour productivity level in 2011 and annual growth rate in 2011-2016 (%)

**Leather and footwear, Apparel, Textile, Wood (excluding furniture), Furniture, Food and beverage continued having Revealed Comparative Advantage index remains higher than unity in since 2005, while RCA of Electronics and Non-metallic mineral products become higher than unity more recently; domestic contents of Electronics export were low.**



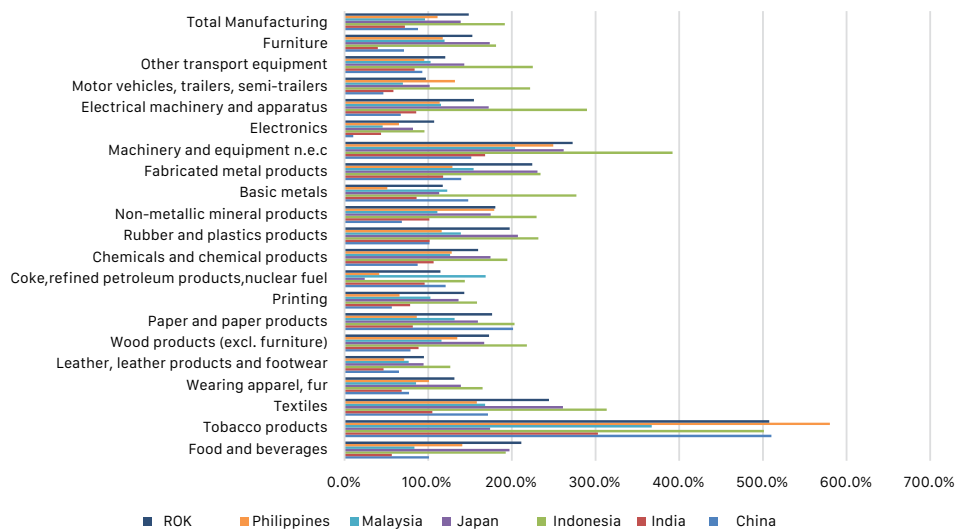
Source: Authors' calculations based on UN Comtrade data



Source: Adapted from Pham Minh Thai et al (2018)

**Viet Nam's VA-to-output ratios are "within reach" to comparator-middle income countries' in several subsectors, such as Furniture, other transportation vehicle, motor vehicle, electronics, basic metal, wood (excluding furniture) and apparel.**

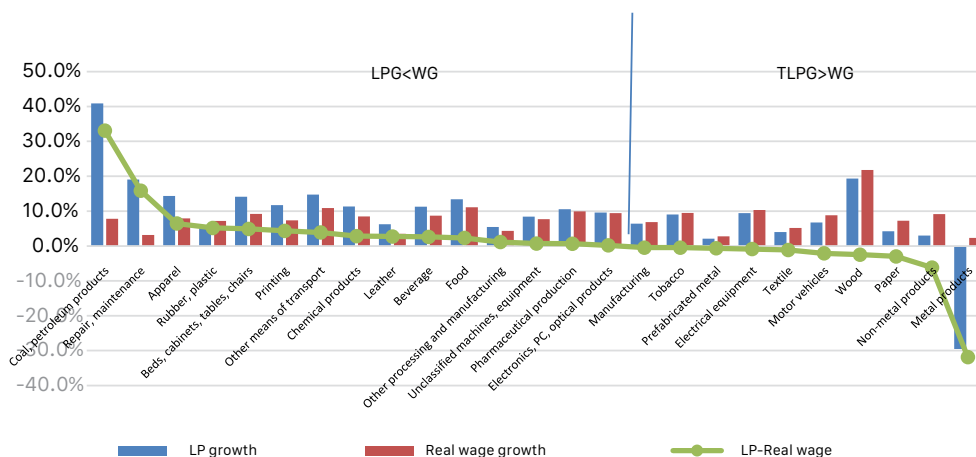
**Comparator countries' VA-to-Output ratios as percentage of Viet Nam's**



Source: Authors' calculation, UNIDO database

**10 out of 25 manufacturing subsectors have labor productivity growth lower than wage growth (but only in few subsectors, such as Apparel, the gap between LP and wage growths is ""competitiveness damaging), indicating their weakening comparative advantage (in simple skill labor).**

**Viet Nam's productivity (LPG) and wage growth in manufacturing, 2011-2016 (%)**



Source: Authors' calculation, 2017 Enterprise Census

## Assessment of performance of manufacturing subsectors

### Top exporting sub-sectors

**Electronics:** This manufacturing sub-sector had the highest VA and revenue shares, large employment share and largest positive net exports among manufacturing sub-sectors, with a high RCA. Its LP was

assessed as “within reach” to comparator countries. Dominated by FDI (with a VA share of more than 98 percent), it was assessed as “competitive” in the stage of final product assembling with a “promising” increase in domestic suppliers of components as long as: (i) foreign firms maintained competitiveness of products, (ii) Viet Nam’s sub-sector LP and wages remained competitive amid the high risk of losing repetitive assembling jobs to automation and (iii) Viet Nam’s domestic firms accelerated participation as major suppliers in domestic and global value chains (GVCs). Electronics sub-sector industries that focused on assembling electronic home appliances for the domestic market (to substitute imports) also faced risks of FDI firms moving assembly plants to other countries if no longer competitive due to trade agreements. Looking forward, strengthened backward-forward linkages between FDI and domestic firms, solidified domestic firms’ linkages in GVCs and movement to higher value chain stages will need to be prioritized.

**Leather-footwear, textiles and wearing apparel:** Major manufacturing sub-sectors in terms of exports, employment, revenue and VA share. These subsectors are dominated by FDI (while domestic firms have significant VA and employment shares in wearing apparel) and had the lowest LP among Viet Nam’s manufacturing sub-sectors with LP gaps with comparator countries either widening or narrowing very slowly. The performance of these sub-sectors, mainly focused on the final stage of physical production in value chains (producing final products based on foreign firms’ orders), can be assessed as rather “competitive” with weakening competitiveness (also evidenced by the leather-footwear and wearing apparel subsectors’ wage growth higher than their LP growth, and especially wearing apparel’s damaging competitiveness wage growth in addition to its long struggle to move vertically up value chains). Future competitiveness depends on several factors: (i) foreign firms’ ability to maintain competitiveness of products, (ii) Viet Nam’s sub-sector LP and VA-to-output ratio’s ability to continue growing and (iii) how the high risk of losing repetitive jobs to automation will unfold. Given these sub-sectors’ large sizes and importance to Viet Nam’s economy in terms of GDP, exports and employment, the impacts of not effectively increasing productivity and competitiveness as well as managing risks of losing jobs to automation will be highly significant for Viet Nam’s socio-economic development. In the short term, however, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTTP) will offer significant opportunities for leather-footwear, textiles and wearing apparel sub-sectors for growth in the context of increased exports demand and development of local value chains, including local firms to climb on value chains.

**Furniture, food and beverages:** Are the fourth and fifth largest of Viet Nam’s manufacturing export sub-sectors, respectively. FDI firms have high participation levels in beverages and furniture with VA shares of 57 and 58.3 percent respectively, but low backward linkages with domestic firms. In these two sub-sectors, while SOEs have low participation levels, domestic private firms have medium VA and high employment shares in beverages and rather high VA, employment and revenue shares in furniture. Food processing is the only large-sized and large positive net export manufacturing sub-sector in which domestic private firms dominate with a VA share of 62.2 percent (FDI participation is medium level).

Labour productivity of food processing was at medium level, while high in beverages and low in furniture. The LP gaps with comparator countries were: (i) medium and narrowing in food processing, (ii) small and narrowing in beverages and (iii) large and slowly narrowing in furniture. VA-to-output ratios were low and gaps with comparator countries were large in food processing and beverages, while furniture featured a medium ratio and narrower gap. Wage growth was lower than LP growth in food processing, but higher (though remaining competitiveness enhancing) in beverages and furniture.

Overall, Viet Nam’s food processing sub-sector was assessed as “competitive” (comparative advantages of local agriculture commodities a key factor). Domestic private firms are big players in this sub-sector, being export-oriented and aggressively expanding shares in global markets, diversifying export markets and moving up in the GVCs. To unlock further productivity and competitiveness, the sub-sector must build capacity in branding, marketing and play leading roles in GVCs and especially local value chains (increasing economy-of-scale for higher efficiency of agriculture production and ensure international

quality, food safety and environmental standards, promote organic farming/green production methods and application of IR4.0 technologies).

Furniture and beverages sub-sectors were assessed as "competitive" with risks. The furniture sub-sector's dependency on wood imports (while CPTPP requires higher export content from origin countries) presents the key threat. FDI domination in this sub-sector, negative (though still competitiveness enhancing) wage-LP growth and the likelihood of simple-skilled jobs being swallowed up by automation heighten the probability of FDI relocating production. In the beverages sub-sector FDI increased its participation level, while smaller-sized and fragmented domestic firms will face more robust competition in the near future. To confront increased competition, domestic firms must build linkages with local suppliers in domestic value chains to enhance productivity and competitiveness within the next five years.

### **Other export-contributing sub-sectors**

**Other vehicles:** The only hi-tech (medium-sized in terms of employment, revenue and VA) sub-sector in this group is characterized by a large FDI footprint and very low backward-forward linkages with domestic firms. LP is high compared to other manufacturing sub-sectors in Viet Nam and "within reach" of comparator countries. Its medium-level VA-to-output ratio and gaps with comparator countries have narrowed. Notably within the sub-sector, the motorcycle industry experienced a significant improvement in "local" value chains and very high levels of "domestic" content, though possibly mainly produced by Viet Nam-based FDI firms. The sub-sector, mainly motorcycles (and production of bicycles/parts), was assessed as "competitive" and its competitiveness could be greatly enhanced through stronger linkages between FDI and Vietnamese firms to allow the latter to climb local value chain. Strong linkages between Vinfast, the first leading domestic firm in electric bicycles, and domestic suppliers as well as effective domestic market competition to build capacity for future exports will be key to the success of Vinfast and Viet Nam's electric bicycle industry.

**Wood (excluding furniture), printing, tobacco and non-metallic mineral products:** Small-sized and low-tech sub-sectors, aside from the later which is large-sized and medium tech, are dominated by domestic private firms (SOEs are prominent in tobacco). Gaps between Viet Nam and comparator countries in VA-to-output ratios of wood (excluding furniture) and printing were closing, while distant in tobacco and non-metallic mineral products. LP gaps with comparator countries in these four sub-sectors remain wide and slowly narrowing. Overall, these sub-sectors were assessed as having "low competitiveness". Given their large domestic markets and presence of domestic firms, there is significant scope for policy interventions to elevate productivity and competitiveness. Tailored support to build stronger linkages between wood (excluding furniture) and local firms in the oil refinery and chemicals sub-sectors as well as suppliers of bamboo, rattan and other related materials available in Viet Nam and for sub-sector firms to upgrade technologies, branding and marketing capabilities must be explored.

### **High and medium technology sub-sectors with negative net exports**

FDI firms have high VA shares in almost all sub-sectors in this group, while domestic firms have relatively higher VA shares in chemicals and fabricated metals and significant ones in rubber-plastics and medical precision-optical equipment. SOEs only have medium employment and high VA in coke-petroleum-nuclear fuel and repair and installation of machinery and equipment. FDI in resource-based industries tended to have higher backward-forward linkages with domestic firms (backward linkages in basic metals and chemicals were 96 and 62 percent, respectively and backward-forward linkages in rubber-plastics were 25 and 24 percent, respectively). Linkages in other sub-sectors were small during 2011-2015.

**The basic metals, paper, chemicals, coke-petroleum-nuclear fuel and motor vehicles** sub-sectors had high LP, with gaps to comparator countries narrowing. However, the performance measured by VA-to-output revenue showed only motor vehicles had a high ratio and reduced gaps to comparator

countries, while paper, coke-petroleum-nuclear fuel, rubber-plastics, chemicals and basic metals had low/medium VA-to-output ratios and sizable gaps to other nations.

**The motor vehicle sub-sector** was assessed as “competitive” as long as FDI car-assembly plants in Viet Nam remained competitive. The main risks were trade agreements (including ASEAN), which could provide tax incentives for products with higher (20 percent and more) local content and fluid movement of goods encouraging FDI firms to relocate car-assembly plants if Vietnamese firms failed to become FDI suppliers. With the Vinfast car project operational in late 2018, its active presence in the domestic market and development of local value chains will elevate this sub-sector’s productivity and competitiveness.

**Basic metals, paper, rubber-plastics, chemicals, coke-petroleum-nuclear fuel** sub-sectors were assessed as having “medium competitiveness” if the supply of local resource-based (as well as electricity supplies for energy-intensive basic metal sub-sector) inputs continued. Key challenges included: (i) accelerating LP and VA-to-revenue ratios, (ii) improving logistics and linkages with other sub-sectors in local value chains and (iii) applying higher environmental standards and changing competition rules towards application of more environment-friendly technologies. Moving up value chains in plastics and the rubber industry moving away from exporting rubber raw materials to producing high-quality plastics and rubber products for other sub-sectors (cars, bikes, motorcycles and electronics or high-quality rubber-plastics products for healthcare) is necessary for the industry to become more competitive.

**Fabricated metals, electrical equipment, other manufacturing and machinery-equipment n.e.c., medical-precision equipment and installation of machinery** have medium or low LP and VA-to-output ratios, with large LP and VA-to-output ratio gaps with comparator countries. These sub-sectors were assessed as having “low competitiveness”.

# Looking Forward, this Report Recommends

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Enhancing Vietnamese firms' productivity and competitiveness, particularly: (i) linkages and upward movements in local and global value chains, (ii) increased productivity, value addition and (iii) local market shares and especially export volumes and values must be achieved through implementing a wide range of integrated and concerted policy actions. This should be a common prioritized goal within a wide range of national policies, from industrialization, SOE reforms and private sector/enterprise development to trade, FDI attraction, R&D, skills training and public investment. As lower middle-income Viet Nam, in its next stage of development, pursues an inclusive growth pathway to generate more productive jobs for its workers, enhance productivity and competitiveness, Vietnamese manufacturing firms must be at the centre of Viet Nam's growth strategy.

Urgent action is required to address well-known weaknesses of limited linkages between trade negotiations, industrial policies and programmes supporting enterprise development. Consultation and engagement of domestic private firms in formulation and implementation of such policies and programmes are paramount.

SOE reform efforts must focus on enhancing SOEs' (especially those at higher stages or leading local value chains with relatively high productivity and competitiveness) effectiveness and efficiencies, plus backward-forward linkages with domestic firms. Equitization of SOEs in industries/sub-sectors where domestic private firms are ready to take over leading roles from SOEs (with equitization going hand-in-hand with building capacity of domestic private firms) should be accelerated.

Public investment should aim to crowd-in domestic private sector investment. Public investment could help create demand for domestic private firms' products and services, and thus incentives to invest in business and technology upgrades. Public investment could also provide domestic private firms with opportunities to build capacity, including through learning-by-doing and receiving technology transfers through public investment from ODA loan projects.

Public investment in development of IT/telecommunications infrastructure (cloud computing, network and data security as well as e-commerce platforms, including for intermediate goods), e-payments and e-banking (similar to e-tax, e-customs and e-government payments), will not only help private firms (especially SMEs) improve IR4.0 readiness and efficiency, but also value chain connections. While public services (R&D and skills training) will benefit SMEs in general, special services such as testing and certification (and perhaps radiation and cold storage) have strong potential to enhance access and competitiveness of food and agriculture processing SMEs in global markets.

Within the overarching goals of sustainable development and creation of productive jobs for Vietnamese workers, Viet Nam must shift its focus from quantity to attraction of higher-quality FDI and bridge gaps between FDI and domestic private firms. The most important element of higher-quality FDI firms is long-term partnerships with local firms (as key players in production chains) as the core of their international competition strategy. Government should cooperate with such FDI firms, in a "win-win" approach, to support capacity development of domestic firms to benefit from technology transfers and connect them as first-tier suppliers to leading FDI firms and GVCs.

Domestic sector development will need to be prioritized in the upcoming Socio-Economic Development Strategy (2021-2030) and Plan (2021-2025). Key policy objectives should support domestic private firms to grow in size, accelerate transition to formalization and enhance productivity and competitiveness through development of local value chains, improved linkages within and upward movement in domestic

and global value chains, with special attention to facilitate the emergence of big domestic firms to lead domestic value chains and become significant GVC players. In addition to continued efforts to nuance the business environment and support domestic private enterprises to access land and credit, more tailored support is needed for SMEs to elevate their: (a) capacity for business management and marketing, (b) linkages in domestic and international value chains and (c) technical capacity to adopt new technologies and readiness to grasp opportunities unlocked by IR4.0 and a new wave of higher quality FDI. Establishment of independent (para-governmental) institutions specialized in providing training and R&D support to Vietnamese firms is necessary. Besides access to credit, guidance on technology upgrades is needed for domestic private firms to improve integration and generate upward movement in local and GVCs.

The assessment of productivity and competitiveness performance of the manufacturing sector and its sub-sectors presented in this report identified challenges and opportunities for Viet Nam to greatly enhance domestic firms' competitive edge through capturing more value added from a bigger local and global value chain footprint. With the enhancement of domestic firms' productivity and competitiveness as a central tenet in Viet Nam's growth strategy for its next development stage, it is the time for interlinked policy actions to be formulated and implemented within an integrated policy framework with concerted efforts by different stakeholders from government and business sectors.